Proposal Summary

This page provides a read-only view of a Proposal. The sections below are organized to help review teams quickly and accurately review a proposal and therefore may not be in the same order as the proposal information is entered.

Proposal GEOREV-2000-031-00 - Enhance Habitat in the North Fork John Day River Project Number: 2000-031-00

Proposal History

Date	Time	Type	From	To	By	Archive
12/12/2012	3:32 PM	Status		Draft	John Zakrajsek	
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Basics

Proposal Number: GEOREV-2000-031-00
Proposal Status: ISRP - Pending First Review
Review: 2013 Geographic Review
Portfolio: 2013 Geographic Review
Type: Existing Project: 2000-031-00
Primary Contact: John Zakrajsek
Created: 12/12/2012 by John Zakrajsek
Proponent Organizations: Umatilla Confederated Tribes (CTUIR)

Project Title: Enhance Habitat in the North Fork John Day River

Proposal Short Description: This project protects, enhances, and restores functional floodplain, channel and watershed processes to provide sustainable and healthy habitat and water quality for aquatic species in the John Day River Subbasin. This project will achieve biological objectives and strategies established in the John Day River Subbasin Plan, address limiting factors in the FCRPS BiOp and Fish Accords and support physical and ecological conditions for the CTUIR First Foods Framework and the Umatilla River Vision.

Proposal Executive Summary:

The purpose of this project is to protect and enhance habitat for improved natural production of indigenous, Mid-Columbia River (MCR) Evolutionary Significant Unit (ESU) summer steelhead (Oncorhynchus mykiss), listed as threatened under the Federal Endangered Species Act (ESA), and spring Chinook salmon (Oncorhynchus tshawytscha) within the North Fork of the John Day River Basin. This entails singular and coordinated cooperative efforts to protect and improve anadromous fisheries habitat consistent with the strategies and objectives outlined in the John Day Subbasin Plan.Much of the John Day Subbasin lies within ceded lands of the Confederated Tribes of the Umatilla Indian Reservation (CTUIR) who have reserved treaty rights to the use of this land and its resources which are still used for ceremonial and subsistence purposes, including hunting, fishing, livestock grazing and gathering plants. In support of tribal culture which is tightly interwoven with these resources the CTUIR Department of Natural Resources (DNR) has developed and accepted a First Foods organization and approach to ecosystem management based on the cultural traditions and practices of the Longhouse. The organization follows the serving order of food and conceptually “Extends the Table” to manage for sustainability within ceded lands. The First Foods are considered to be the minimum ecological products necessary to sustain CTUIR culture. The order is watershed-based beginning with water at the first and lowest point and progresses up to salmon, deer, cous, and huckleberry. This creates clear links to treaty rights and resources and sets direction and goals that relate to the community culture. In addition the CTUIR Department of Natural Resources developed the Umatilla River Vision (Jones et al. 2008) that provides a description of the processes and conditions needed to protect and provide for riverine First Foods. The River Vision describes physical and ecological processes in support of 5 touchstones; hydrology, geomorphology, connectivity, riparian vegetation, and aquatic biota.

The goal of the CTUIR North Fork John Day Habitat Enhancement Project (the Project) is to protect, enhance, and restore cannel, riparian, and floodplain function and function relating these locations to upland adjacent upland areas using a ‘ridge top to ridge top’ approach to provide sustainable and healthy habitat and water quality for aquatic species in the North Fork John Day River Subbasin. The Project began after Oregon Department of Wildlife (ODFW) and other cooperators identified a need to work with landowners in the northern areas of the subbasin. These parties supported CTUIR’s proposal to Bonneville Power Administration which was funded in 2000 with work beginning in 2001. The Project has and continues to work with private and public stakeholders within the subbasin to participate in and coordinate planning and implementation efforts and holds a dedicated position on the North Fork John Day River Watershed Council Board.

To increase the Projects effectiveness Objectives which apply across individual efforts were identified to include; preserving and maintaining existing habitat, improving and protecting stream channel complexity and morphology, improving riparian and floodplain complexity, improving floodplain connectivity, improve sediment routing and sorting, improve hyporheic complexity, improve floodplain storage, improve passage between habitat and existing populations, and improve water quality. These objective are reconciled with limiting factors, the North Fork John Day Subbasin Plan, recovery and planning documents, and the Umatilla RiverVision (Jones et al, 2008) to undertake efforts within focal Geographic Areas (5th Unit HUC) including Upper and Lower Camas Creek, Desolation Creek, and Granite Creek and in cooperation with others outside of focal areas when identifying and undertaking new efforts. This approach prohibits a ‘scattergun’ approach to more effectively address limiting factors within a smaller area before moving to another issue elsewhere. Past and proposed efforts reconciling these documents with local prioritizations and action plans are link limiting factors with biological objectives through multiple measurement strategies. Additionally the Project strives to address processes that have brought about existing conditions and avoid treating a fixed point or the result of a process. This approach is likelier to result in a dynamically stable habitat form with more effective function then treating a ‘symptom’ would. The Projects efforts are focused on tributaries that provide spawning, rearing and migration habitat for listed species such as Middle Columbia River steelhead and Columbia River bull trout, and non-listed species such as Spring Chinook salmon, Pacific lamprey, preferred species of traditional importance to CTUIR. Under the current 2008 Columbia Basin Fish Accords Memorandum of Agreement between the Three Treaty Tribes and FCRPS Action Agencies (Fish Accords 2008) estimates of future improvements to population egg-to-smolt productivity are directly correlated to habitat enhancements which are directed at tributary habitat in the Steelhead Recovery Plan (NMFS, 2008). Estimated habitat improvements in the NFJD Subbasin above Camas Creek are estimated to improve 16% and 32% over a 10 and 25 year period respectively. Past and proposed efforts noted later in this proposal expect to improve upon existing conditions by addressing multiple limiting factor during each effort thus cumulatively increasing benefits to aquatic species.

Specific restoration actions proposed for completion by the project in cooperation with partners during the 2014-18 period will address in-stream, riparian, and floodplain instabilities and issues by eliminating passage barriers, removing mine tailings, channel reconstruction and streambank stabilization, large wood placement, native vegetation plantings, riparian fencing, and addressing grazing management. The Project will also continue to maintain developments where Conservation Agreements exist to and work with those landowners to further protect, enhance, and monitor floodplain and riparian habitat and investments. The 2007 ISRP review identified monitoring as a weak point and recommended cooperation with ODFW. Since then, a suite of methods have been adopted to identify and track the physical attributes of individual efforts which will be reconciled with those outlined in CRUIR’s DNR Fishery Habitat Monitoring Plan now under development. Generally speaking, monitoring practices will continue to use longitudinal and cross-sectional profiles, vegetation grids or transects, shade measurements, photo-points, wood counts, bank stability, pebble counts, floodplain mapping, and various stream morphology measurements at restoration project sites. The Project has also worked with and will continue to work with ODFW to complete spawner surveys in focus areas and individual spawner surveys where culvert barriers were removed. CTUIR’’s new DNR Fishery Research Plan will also be reconciled with current monitoring protocols. The Projects results will continue to present effort results through progress and annual reports, presentations, and contributions to cooperative efforts addressing larger scale efforts. The development of a DNR database as a central depository for monitoring will facilitate the transfer of data and assist project managers in reporting the status of progress toward meeting objectives. Additionally, monitoring will activities guide future project development from learned project experiences in the context of the watershed.

Efforts will be implemented through a variety of methods depending upon the available funding, cooperators and skills and capacities of the cooperators. On private lands where the Project is the primarily implementing agency or cooperators such as with the Granite Creek In-stream Restoration effort (Deliverables/Budget > Deliverables tab) competitive bids from local contractors shall be secured by the Project. Where the Project is not the lead on private lands such with the Fox Creek effort (Deliverables/Budget > Deliverables tab) cooperators may secure a competitive contract from qualified local contractors. Additionally, in efforts such as the UNF Fence Maintenance effort (Deliverables/Budget > Deliverables tab) the Project and cooperators may use available staff to reduce costs and use resources at hand. Where possible multiple actions will be undertaken at once to both reduce costs and improve effort effectiveness such as with the Ten Cent Creek Culvert replacements (History > Results tab).i.e. mobilization).

Purpose: Habitat
Emphasis: Restoration/Protection
Species Benefit: Anadromous: 90.0% Resident: 10.0% Wildlife: 0.0%
Supports 2009 NPCC Yes

Program:
Subbasin Plan: John Day
Fish Accords: Fish Accord - LRT - Umatilla

Biological Opinions: FCRPS 2008 (RPA 35.1, ~~RPA 34~~, ~~RPA 35~~)

Contacts

Contacts:
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Project Significance & Problem Statement

Project Significance to Regional Programs:
Fish populations and their food base shall be reestablished or bolstered by addressing limiting factors related to habitat and addressing land management practices which contribute to unstable stream channels, and riparian, floodplain, and upland areas. Limiting factors are addressed using a hierarchical approach tied to the Umatilla River Vision, Project objectives, and Ecological Concerns within the Summarize History > Results, Reporting, Accomplishments, and Impact tab. Additionally, the Umatilla River Vision (Jones et al, 2008), CTUIR Fishery Habitat Monitoring Plan in development, and CTUIR's Fishery Research BioMonitoring Plan (BPA Project #200801400) have been and are being developed to reconcile efforts with larger scale plans and protocols in place or under development. As an example, the CTUIR's Fishery Habitat Monitoring Plan identifies monitoring protocols at the reach scale while recognizing the value of CHaMPS (CHaMP, 2011) protocols at the site level and those of the MERR (MERR, 2010) across sixth level Hydrologic Unit and accepts protocols outlined in CTUIR's biomonitoring Plan. Touchstones contained within CTUIR's Umatilla River Vision are and will be used in conjunction with the John Day Subbasin Plan under a working hypothesis that if habitat restoration objectives are met focal species will respond in such a manner that limiting factors shall be addressed and in turn targets for aquatic species will also be satisfied. The Projects focus basins are among the five highest priority GA's for aquatic habitat restoration in the NFJD subbasin plan. The project has been and will continue to implement these strategies in the plan within these GA's and during cooperative efforts outside these areas.

Other documents used to identify and treat limiting factors or prioritize efforts in addition to the CTUIR Umatilla River Vision include the Mid-Columbia Steelhead Recovery Plan (NMFS, 2008), John Day bull trout recovery plan (USFWS, 2002), and basin specific action and coordination plans such as the Granite Creek Action Plan (USFS, 2008). As previously noted these documents are reconciled with those above to decrease redundancy and improve the end product of individual efforts and long term goals and objectives of the Project, CTUIR, and all their cooperators.

Umatilla River Vision Touchstones listed below do not directly address some associated biological Objectives addressed by the John Day Subbasin Plan. These objectives are primarily related to conservation agreements where CTUIR is the primary implementing entity, cooperative efforts with other NFJD entities and/or parties, outreach efforts, and creating designs for implementation efforts. Conservation Agreements are essential in protecting funding investments, securing landowner commitments, and ensuring adequate habitat recovery to address limiting factors on private properties within the Desolation, Upper Camas and Lower Camas Creek Geographic Areas where CTUIR is the primary implementing entity. However, where CTUIR is not the primary implementing entity cooperative efforts provide opportunities to address limiting factors which would otherwise be unavailable. Success will be ensured on public lands through multiple use management strategies while on private lands efforts are typically tied to specific interests of the landowner. In either case, the process of selecting, designing, and permitting comprehensive or individual efforts filters out those that are less desirable, technically weak, or fiscally unsound. Improvements in habitat and land management techniques shall also be improved through outreach efforts (public meetings, tours, mailings and presentations) to obtain input, identify public concerns, provide educational opportunities, and promote stream habitat improvements and protection. These practices also address limiting factors through coordination with resource agencies and private parties to obtain cost share funds and developing partnerships in proposed project areas. The CTUIR NFJD Habitat Project Lead also holds a dedicated seat on the North Fork John Day Watershed Council further enabling CTUIR participation in cooperative efforts.

Strategies G (pg. 270), I (pg. 278)

Touchstone - Geomorphology
Requisite habitat for supporting healthy focal species populations and their food base will be addressed by identifying and creating dynamically stable channel forms given limitations imposed by larger scale influences and land management objectives primarily within the Upper and Lower Camas, Granite, and Desolation Geographical areas identified in the John Day Subbasin Plan. Geomorphic features and processes shall be defined and designed using established protocols and monitored using CTUIR's Fishery Habitat Monitoring Plan currently under development. Examples of specific factors treated include but are not limited to stream channel form (sinuosity, width the depth ratio, channel entrenchment, and slope), pool/riffle/run sequences, large woody debris and structures, and sediment.

Examples of treatments related to stream channel form may include recreating channels in combination with plug and pond methods, mine tailing redistribution, reestablishing side channels, increasing in-channel complexity, increasing riparian and floodplain vegetative health, construct fencing to promote introduced or natural vegetative regeneration, and improve upland stock management through water developments or fence construction.

Examples of treatments related to pool/riffle/run sequences include but are not limited to constructed pools, riffle, and runs, placement of structure to naturally create and/or maintain pool/riffle/run sequences, increasing riparian and floodplain vegetative health, construct fencing to promote introduced or natural vegetative regeneration, and improve upland stock management through water developments or fence construction.

Examples of treatments for large wood include but are not limited to installing structures designed to capture woody debris, create and maintain scour, provide streambank stability, increase in-stream, riparian, or floodplain roughness, increasing riparian and floodplain vegetative health, improve future opportunities for on-site wood recruitment, construct fencing to promote introduced or natural vegetative regeneration, and improve upland stock management through water developments or fence construction.

Examples of sediment treatments may include but are not limited to adjustments to channel form, pool/riffle/run sequences, large woody debris noted above, adjustments within riparian and floodplain areas to deposit, remove, or pass sediment, increasing riparian and floodplain vegetative health, and improve upland stock management through water developments or fence construction.

Strategies A (pg. 252), B (pg. 255), C (pg. 257), D (pg. 260), E (pg. 263), F (pg. 267), H (pg. 273)

Touchstone - Riparian Vegetation
Requisite habitat for supporting healthy focal species populations and their food base will be addressed by identifying and improving riparian vegetative associations within the riparian and floodplain given limitations imposed by larger scale influences and land management objectives primarily within the Upper and Lower Camas, Granite, and Desolation Geographical Areas identified in John Day Subbasin Plan. Riparian and floodplain vegetative associations shall be defined and designed using established protocols and monitored using CTUIR's Fishery Habitat Monitoring Plan currently under development. Examples of specific factors treated include but are not limited to addressing vegetative associations, increasing vegetative shade for the stream channel, increasing allochthonous inputs to the stream channel, increasing riparian and floodplain roughness, and raising groundwater levels. Upland areas may also receive treatments where Quaking Aspen regeneration is being promoted.

Examples of treatments for riparian and floodplain vegetation include but are not limited to singular plantings, plantings associated with stream channel structures, adjustments to geomorphic features or processes to increase off-channel vegetative association health, removing levees and floodplain features to increase floodplain connectivity, treatment of noxious weeds with herbicides or biological controls, fencing construction to promote introduced or natural vegetative regeneration, and improve upland stock management through water developments or fence construction.

Strategies A (pg. 252), B (pg. 255), C (pg. 257), D (pg. 260), E (pg. 263), F (pg. 267), H (pg. 273)

Touchstone - Hydrology
Requisite habitat for supporting healthy focal species populations and their food base will be addressed by identifying and restoring natural hydrology to the extent possible given limitations imposed by larger scale influences and land management objectives primarily within the Upper and Lower Camas, Granite, and Desolation Geographical areas identified in the John Day Subbasin Plan. Hydrologic features and processes shall be defined and designed using established protocols and monitored using CTUIR's Fishery Habitat Monitoring Plan currently under development. Examples of specific factors addressed include but are not limited to increasing hyporheic complexity and connectivity to the stream channel, increasing ground water contributions to the hyporheic zone and stream channel, increasing stream channel base flow, and improving water quality parameters such as temperature dissolved oxygen, and sediment.

Examples of treatments related to hydrologic attributes include but are not limited to geomorphic factors noted above to reduce channel incision, increase hyporheic complexity, increase groundwater and hyporheic contributions to the channel, levee removal or actions within the floodplain to increase periodic flooding and off-channel aquatic habitat, reestablish floodplain storage, increase the health of riparian and floodplain vegetative associations, construct fencing to promote introduced or natural vegetative regeneration, and improve upland stock management through water developments or fence construction.

Strategies A (pg. 252), B (pg. 255), C (pg. 257), D (pg. 260), E (pg. 263), F (pg. 267), H (pg. 273)

Touchstone - Connectivity
Requisite habitat for supporting healthy focal species populations and their food base will be addressed by identifying and restoring habitat connectivity to the extent possible given limitations imposed by larger scale influences and land management objectives primarily within the Upper and Lower Camas, Granite, and Desolation Geographical areas identified in the John Day Subbasin Plan. Processes and features related to vertical, lateral, longitudinal, and temporal connectivity shall be defined and designed using established protocols and monitored using CTUIR's Fishery Habitat Monitoring Plan currently under development. This plan primarily discusses longitudinal connectivity related to passage barriers; however, ignoring the other three dimensions during design and monitoring efforts cannot be avoided. Examples of specific factors addressed include but are not limited to addressing vertical connectivity between the stream channel and hyporheic zone and /ground water aquifers, longitudinal connectivity between habitats within stream channels, lateral connectivity between the stream channel and floodplain features, and temporal connectivity in the form of geomorphic changes or response to stochastic and seasonal climactic and geomorphic events.

Examples of treatments related to connectivity include but are not limited to removing barriers or prohibiting access to irrigation diversions or desirable focal species, reducing point or non-point contaminants or sediment inputs, addressing geomorphic factors noted above altering stream channel morphology and in-stream habitat to improve site, reach, and basin habitat complexity, sediment deposition, sediment evacuation, or sediment passage, decreasing base flow width to depth rations and increasing base flow volumes, adjust channel, riparian, and floodplain form and conditions to reduce the occurrence of dry stream channels, increase hyporheic complexity and groundwater and hyporheic contributions to the channel, reestablish floodplain connectivity and floodplain storage, increase the health of riparian and floodplain vegetative associations, construct fencing to promote introduced or natural vegetative regeneration, and improve upland stock management through water developments or fence construction.

Strategies A (pg. 252), B (pg. 255), C (pg. 257), D (pg. 260), E (pg. 263), F (pg. 267), H (pg. 273)

Touchstone - Aquatic Biota
Requisite habitat for supporting healthy focal species populations and their food base will be addressed by identifying and restoring species diversity and habitat complexity within the stream channel and riparian and floodplain areas to the extent possible given limitations imposed by larger scale influences and land management objectives primarily within the Upper and Lower Camas, Granite, and Desolation Geographical areas identified in the John Day Subbasin Plan. Aquatic biota shall be defined and habitat improved using established protocols and monitored through a combination of efforts by the CTUIR's NFJD Habitat Project and in cooperation with others where possible. Considering the mobility of aquatic species and their food base examples of specific factors addressed include but are not limited to increasing site, reach, and basin species habitat diversity and or complexity, increasing site, reach, and basin rearing and spawning habitat, removing geomorphic and man-made barriers where possible.

Examples of treatments generally include but are not limited to those related to increasing improve vertical, lateral, longitudinal, and temporal connectivity and habitat conditions within the stream channel and in floodplain side channels and wetland habitats, condition of aquatic populations across site, reach, and basin scales within the stream channel and between the stream channels and floodplain features such as side channels and wetlands. Specific actions influencing aquatic biota include those associated with Geomorphology, Hydrology, Riparian Vegetation, and Connectivity, and may include altering channel conditions to increase habitat complexity within a reach, decreasing base flow width to depth ratios, adjusting channel form in light of altered sediment regimes, channel creation associated with plug and pond methods, removing or replacing man-made barriers, or increasing riparian and floodplain vegetation, and improving upland stock management through water developments or fence construction.

Strategies A (pg. 252), B (pg. 255), C (pg. 257), D (pg. 260), E (pg. 263), F (pg. 267), H (pg. 273)

Although more specific then the NFJD subbasin plan with respect to recovering threatened Mid-Columbia steelhead trout limiting factors including degraded floodplain connectivity and function, channel structure and complexity, and riparian areas, compromised large woody debris recruitment, altered hydrology, degraded water quality and sediment routing, and impaired fish passage. Strategic Actions and Impacts on Limiting Factors, Threats, and Population listed on pages 9-78 through 9-93 detail Strategies for restoring steelhead populations, including protect and conserve natural ecological processes that support the viability of populations and their primary life history strategies throughout their life cycle, restore passage and connectivity to habitats blocked or impaired by artificial barriers and maintain properly functioning passage and connectivity, maintain and restore floodplain connectivity and function, restore degraded and maintain properly functioning channel structure and complexity, restore riparian condition and LWD recruitment and maintain properly functioning conditions, restore natural hydrograph to provide sufficient flow during critical periods, improve degraded water quality and maintain unimpaired water quality, and restore degraded and maintain properly functioning upland processes to minimize unnatural rates of erosion and runoff. These strategies are addressed through the Umatilla River Vision and the Projects objectives as noted above.

After reviewing the Draft Columbia River Basin Monitoring, Evaluation, Research and Reporting (MERR) Plan (MERR, 2010) guidance provided by the plan, at least at this time, appears to coincide with the Projects existing practices to adaptively manage efforts although details outlined in the plan have not yet been officially been adopted time. The Projects has refined methods used to select, permit, design, implement, monitor, and report efforts over time as protocols and plans are identified and developed and will continue to do so. With regard to the MERR Plan the Project will continue to work with cooperators to Increase communication and the efficiency and effectiveness of research, monitoring, and evaluation efforts, adaptively manage the Project using the best known practices and protocols, continue to identify gaps and report on effort progress, effectively implement and manage efforts alone or in cooperation with others, provide outreach and share information with the public, and provide information to the ISRP as required.

Although the objective of the Columbia River Research Plan (NPCC, 2006) promotes principles (pg 6) across a broader scale than that of the project they generally apply to past and future efforts undertaken by the Project. This includes improving population fitness and diversity, improving the dynamic stability of ecosystem, working at the reach scale with consideration of the influence of and influence upon larger spatial scales, increasing habitat complexity and diversity, and improving management practices. Likewise the Project recognizes that cooperation with other basin entities needs to be practiced where feasible to eliminate redundancies, facilitate collaborative efforts, redirect funding to priority areas, and improve communication within the practicing community and with the public and local entities. Critical uncertainties and focal research themes 3 (pg. 14), 6 (pg. 17), 7 (pg. 18), 8 (pg. 19), 9 (pg. 19), 10 (pg. 20), and 12 (pg. 22) are all directly or indirectly considered and/or treated through the Projects Basic Objectives noted in the Summarize History > Results, Reporting, Accomplishments, and Impact tab.

Ties to smaller scale documents such as watershed action plans also support the Projects objectives and ability to address limiting factors. These documents are developed through a cooperative effort, identify, and prioritize specific actions within a specified basin. This cooperative and interdisciplinary approach improves the outcome of individual efforts and habitat for aquatic species throughout a single basin.

Problem Statement:
Prior to 2000, tributary habitat on private properties in the upper Subbasin, requiring habitat restoration and protection, were largely unaddressed. The CTUIR determined through discussions with ODFW that these areas were a high priority for implementation of habitat enhancements, but logistical constraints such as distance from ODFW's John Day Office restricted the agency's ability to secure landowner agreements in this portion of the basin. Both ODFW and the UNF felt there was a need for and supported CTUIR's bid for undertaking habitat restoration activities on private properties in upper Subbasin. The CTUIR successfully secured funding from BPA to begin habitat enhancements in Fiscal Year (FY) 2000 with the intent to integrate protection of public owned headwater sanctuaries with private land restoration efforts through coordination with the UNF and private landowners in the upper North Fork watershed. The Projects intent remains the same as cooperative and funding opportunities have increased within the basin.

The stated goal of the Project is simply to protect, enhance, and restore functional floodplain, channel and watershed processes to provide sustainable and healthy habitat for aquatic species in the Subbasin. The project therefore works to support viable efforts to achieve progress toward physical and biological objective identified in the First Foods Policy which is supported by the Umatilla River Vision (Jones et al, 2008) planning and recovery documents such as the John Day Subbasin Plan (Subbasin Plan) (CBMRCDA, 2005). Mid-Columbia Steelhead Recovery Plan (Steelhead Plan) (NOAA, 2008), and Bull Trout Recovery Plan (USFWS, 2002). These documents are used to identify limiting factors, priority actions, and priority areas in which to focus the Projects efforts. Given a rather large Subbasin the Projects has reconciled information derived from these documents with potential cooperators to identify focus areas for its efforts based upon 5th field HUCs including Upper and Lower Camas Creek, Desolation Creek, and Granite Creek. The Projects 2007 ISRP Proposal identified these Geographical Areas (GA) in which the Project made concerted efforts to improve conditions more holistically then a 'scattergun' approach would have allowed. Although Subbasin lands are predominantly owned and managed by federal agencies largely the Umatilla, Wallowa-Whitman and Malheur National Forests (62%) with the balance owned by private entities (37%) and the State of Oregon (1%) Subbasin aquatic populations have declined below historic levels and habitat degradation is widespread in tributary streams. Current conditions are largely the result of historic land management practices, primarily grazing, timber harvest, transportation infrastructure and mining in select location such as Granite Creek. An example would be the loss of historic beaver habitat complexes which are suspected to have created a shift in the hydrologic curve due to greatly soil infiltration rates, reduced groundwater storage

capacity for ground water and riparian storage, and diminished in-channel storage in beaver ponds (NWPPC 2001). In spite of the disturbances, aquatic habitat in the Subbasin is healthier than in many other Columbia Basin tributaries due in part to a lack of large dams and existing higher quality habitat in areas managed by public agencies in the headwater areas where tributary habitat exists. This tributary habitat has been identified as an important resource for juvenile salmonids in the both the Subbasin Plan and the Steelhead Recovery Plan (NOAA, 2002) and supports populations of Spring Chinook salmon (*Oncorhynchus tshawytscha)*, Summer Steelhead trout *(Oncorhynchus mykiss),* Pacific lamprey (*Entosphenus tridentatus*), Bull trout (*Salvelinus confluentus*), and rainbow and Redband trout *(Oncorhynchus mykiss gairdneri),* as well as dace and other non-game species. Westslope Cutthroat trout (*Oncorhynchus clarkii lewisi*) were introduced from the John Day Basin proper in the early 1960's (NWPCC, 2005).

Spring Chinook salmon and summer steelhead are the primary focal species the Project in addition to bull trout where they exist. Both Spring Chinook salmon and Mid-Columbia summer steelhead trout have been delineated as wild MCR ESU populations within the Subbasin by the National Oceanic and Atmospheric Administration (NOAA) Fisheries. Trends show a general increase in spawning density for spring Chinook salmon, with the exception of the Granite Creek system which has shown a dramatic decrease in abundance over the last 30 years for unknown reasons (Barnes & Associates, Inc. 2003). While the basin supports healthy populations of these anadromous species, they are less abundant than they were historically. Empirical escapement data (2000-2004) demonstrates that the NFJD supports 46% of the distribution of adult spring Chinook salmon (NPCC, 2005), the highest numbers within the John Day Basin. However, the NFJD population of adult spring Chinook salmon has lost 66% productivity and 72% of its abundance, compared to historic conditions (Table 31.).

Population Area	EDT Historic Abundance Potential	EDT Baseline Abundance (no harvest)	EDT Baseline Productivity [1] (no harvest)	EDT Baseline Capacity (no harvest)	Empirical 1992-1997 Average	Empirical 2000-2004 Average	Professional Judgment Estimated Historic
North Fk JD	6,252	1,731	5.2	2,145	1,139	2,554	22,280
Granite Cr	1,059	85	2.2	157	501	667	3,760
Middle Fk JD	2,152	177	2.2	328	431	942	7,680
Upper JD	1,767	217	2.7	345	538	1,353	6,280
Total	11,230	2,210		2,975	2,609	5,516	40,000

Table 31. Spring Chinook adult population averages (amended from the Subbasin Plan). Observed data per ODFW. [1] smolts per spawner.

The Ecosystem Diagnosis and Treatment (EDT) Model used to estimate spring Chinook salmon smolt production in the Subbasin Plan indicates that the North Fork averaged 110 smolts/spawner and the Granite Creek population averaged 76 smolts/spawner from 1992 through 1997 (Table 32.). However, the Subbasin Plan technical team believes that smolt production estimated by EDT is too small and unreliable for use at this time. Juvenile population estimates from United States vs. Oregon indicate smolt numbers for the entire John Day Basin to be approximately 4.5 times higher than smolt production estimated by EDT (NPCC, 2005).

Population Area	EDT Historic Abundance Potential	EDT Baseline Abundance (no harvest)	EDT Baseline Productivity [1] (no harvest)	EDT Baseline Capacity (no harvest)
North Fk JD	127427	42130	110	54078
Granite Cr	22682	3806	76	9252
Middle Fk JD	43025	7416	81	15376
Upper JD	38570	8601	98	14426
Total	231704	61953		93132

Table 32. Spring Chinook juvenile population averages from EDT (amended from the Subbasin Plan). [1] smolts per spawner.

Summer steelhead are distributed throughout the Subbasin and despite episodic increases in abundance, the total John Day Basin population has been trending downward since 1958 (NPCC, 2005). EDT baseline reports indicate that 45% of steelhead escapement in the Subbasin Plan is to the North Fork (Table 3.) However the Subbasin Plan's technical team doubted the accuracy of the EDT data. Empirical data (2000-2004) suggests that the NFJD supports 27 % of the adult steelhead within the John Day Drainage (NPCC, 2005). This represents the highest numbers of steelhead within a major watershed in the entire John Day System. The EDT Model suggests no steelhead population within the John Day Basin is in immediate danger of decline. However, compared to historic levels, current populations are substantially less productive than formerly (Table 33) and MCR ESU steelhead remain listed as threatened under the ESA.

Population Area	EDT Historic Abundance Potential	EDT Baseline Abundance (no harvest)	EDT Baseline Productivity (no harvest)	EDT Baseline Capacity (no harvest)	Empirical 1992-1997 Average	Empirical 1999-2003 Average	NOAA Fisheries Interim Targets	Professional Judgment Estimated Historic
Lower JD	10,108	1,292	2.8	2,028	3,355	6139	3200	17,738
North Fk JD	14,698	4,870	4.7	6,202	3,345	6120	2700	25,578
Middle Fk JD	5,930	1,448	3.6	2,010	1,534	2806	1300	10,934
South Fk JD	2,941	1,221	4.7	1,553	690	1262	600	5,586
Upper JD	5,912	1,737	4.2	2,283	1,369	2505	2000	10,164
Total	39,589	10,568		14,076	10,293	18,832	9800	70,000

Table 33. Summer steelhead population averages historic abundance potential, baseline abundance and baseline capacity based on EDT results, observed averages, and interim targets (amended from the Subbasin Plan). Empirical data per ODFW, NOAA interim targets per NMFS 2002. Empirical data per ODFW, NOAA interim targets per NMFS 2002.

The importance of the Subbasin to steelhead recovery in the John Day Basin cannot be understated in meeting recovery goals as outlined in NMFS (2008). The recommendation for recovery includes the Subbasin and one highly viable population (the Subbasin currently is) with either the Middle Fork or Upper John Day Populations becoming highly viable and the South Fork population maintained. At this time the Subbasin is the only population viable population in the John Day Basin. This should not be taken as a reason to rejoice as the plan identifies improvements in population performance for all developed scenarios with the greatest results through habitat improvements accruing for the 100 year scenario. This coincides with other documents such as the Subbasin Plan's working hypothesis and the Treaty Tribes MOA (Accords, 2008) which identifies a direct relationship between habitat improvements and population productivity.

The importance of tributary habitat to juvenile salmonids and the relationship between habitat improvements and population productivity lies in addressing identified limiting factors and supports the Projects efforts to address limiting factors in focus basins. The Subbasin Plan and Steelhead Plan both identified similar limiting factors for the Projects focal species including;

- Degraded floodplain connectivity and function and loss to off-channel or seasonal habitats for rearing or over wintering.
- Degraded channel structure and complexity which may include a loss of functional large woody debris, pool/riffle sequences, or structure, resulting in a loss of rearing or spawning opportunities.
- Degraded riparian areas and LWD recruitment and complexity influencing nutrient delivery and ability to maintain habitat functional stability.
- Altered hydrology influencing survival or fitness
- Degraded water quality due to detrimental temperatures, suspended sediments, toxics, or oxygen levels.
- Altered sediment routing or sorting issues leading to undesirables size distributions, deposition, or mobilization.
- Passage barriers preventing passage to or between habitat or populations.

The Projects efforts to address these limiting factors in focus GAs are supported by 5th Field HUC Priority and Strategy Rankings

identified in the Subbasin plan and to some extent specific to a particular focus GA. For instance Granite Creek has been heavily influenced by placer mining and to a lesser degree hardrock mining. As such, extensive stream channel, riparian, and floodplain habitats have been turned over to depths reaching ten or more feet with much of the fine material removed. While Granite Creek and several of its tributaries are temperature limited and/or sediment limited (ODEQ, 2012) it remains one of the stronger refuges for bull trout in the Subbasin. This is in part due to the UNF and WNF managing land surrounding inholdings largely on Granite and Clear Creeks proper. One of the more prominent relics of past mining practices are the tailing piles left across floodplain areas which severely restrict floodplain connectivity and in turn channel and floodplain habitats and processes in a variety of ways. The Project has worked with cooperators to improve habitat within the basin and will continue to do so. Conversely, the both the Camas Creek GAs have been influenced by less intensive land management practices in the form of grazing and timber harvest in the upper elevations although the streams show somewhat similar disturbance. Due to much of the landownership along Camas Creek and the dry benches above being privately owned grazing was largely unregulated and as such floodplain and riparian habitats were extensively over grazed for long periods of time resulting in a loss of channel and floodplain structure. The lack of structure allowed stream channels to become excessively wide and shallow in many locations and with a loss of riparian vegetation thermal inputs flux to the channel increased. While Camas Creek has been identified as a temperature limited stream (ODEQ, 2012) it does contain critical Bull trout habitat in part due to the upper elevations being managed for multiple uses by the UNF. The Desolation Creek GA sits somewhere between the other two in that it has witnessed grazing and timber management practices resulting in compromised floodplain and in-channel habitat, largely from loitering cattle and logging roads on 11 miles of private land and in higher elevations which may still be influenced by grazing management no longer occurs there. High elevation stringer meadows are abundant within the Desolation Creek GA where they are currently managed for multiple uses by the UNF. These reaches have to potential to provide high quality baseflows to lower elevation with appropriate steps to improve in-stream, riparian, and floodplain habitat. Passage barrier replacements by the Project and cooperators have returned access to several of these habitats over the last several years. Both the Granite and Camas Creek GAs the upper elevations are managed for multiple uses by the UNF and/or WNF. Although anadromous species are of greater concern to BPA, addressing habitat conditions for Bull trout addresses many of the limiting factors for anadromous species as well in the Projects focal GAs.

In support of adaptive management, recovery plans, and to provide information related to individual efforts and the combined influence of individual efforts the Project undertakes monitoring efforts where Conservation Agreements exist and in cooperation with partners where feasible. This includes status and trend monitoring to determine longer term trends related to conditions or effectiveness monitoring to identify if actions were effective in meeting objectives. The Project is also required to defend efforts addressing limiting factors identified in the Treaty Tribes Memorandum of Agreement (Accords, 2008). Under Attachment G of this agreement estimates to future improvements to population egg-to-smolt productivity are based on estimated watershed improvements from the implementation of all tribal habitat actions. This refers to the relationship between habitat restoration and population productivity previously noted. For the Subbasin above Camas Creek which includes both the Desolation and Granite Creek GAs Columbia River summer steelhead productivity is estimated to improve 16% over a 10-year period and 32% over a 25-year period.

The project has adopted a long term monitoring policy for physical attributes in 2007 and and more recently adopted biological sampling protocols. While efforts have been made to assist ODFW with spawner surveys for Summer Steelhead trout and Spring Chinook salmon since 2007 and similar efforts are made for two years after a barrier replacement additional efforts will be made to incorporate snorkel surveys. Given constraints imposed upon the project related to monitoring expenditures and a lack of equipment and experience by available staff a thorough investigation of biological response to the Projects efforts is not possible. To this end, the CTUIR initiated a planning project in 2008 to address the effects of habitat restoration on fish population, survival, abundance or condition, that is, to determine the effect of habitat improvement/restoration actions on fish population characteristics.

Two fundamental Biomonitoring questions were posed by CTUIR to guide the development of Biomonitoring objectives and associated hypothesis for Spring Chinook salmon, Steelhead and Bull trout populations:

1. What are the effects of the habitat improvement/restoration actions on fish abundance and distribution at multiple scales?

2. What particular habitat restoration action(s) have had a positive effect on species of concern?

A conceptual design was presented during the RME/AP Categorical review and received a “Meets Scientific Criteria (Qualified).”, but ISRP/Council requested an additional review of the final and completed plan. A final was completed in 2012 and submitted for ISRP/Council review and recommendation (ISRP 2012-17). CTUIR is currently preparing to present final plans to the ISRP during the upcoming Geographic Review and is planning to begin implementation in 2013.

This plan aims to detect measurable changes in biotic conditions, specifically changes to growth, survival and abundance of various salmon life stages. These biotic conditions were guided by NOAA’s Viable Salmonid Population (VSP) parameters for determining the long-term viability of salmonid populations—abundance, productivity, spatial structure and diversity (McElhany et al. 2000).The following objectives were identified for the CTUIR Biomonitoring program:

- Quantify the biotic outcome of specific restoration actions on the population abundance, distribution and productivity for the three focal species.
- Differentiate the effects of alternative restoration actions on target species, to better understand the individual or combination of actions that yield the most significant population response.
- Quantify the degree of correlation between a given action or suite of actions and their effect(s) on limiting life stages for each the three focal species.
- Extrapolate the results of CTUIR biomonitoring to guide future restoration actions in other parts of the Umatilla Subbasin.

The biomonitoring plan will address a range of spatial scales of restoration effectiveness: (1) the reach scale (a short length of channel, usually defined by homogenous gradient and riffle/pool sequence, $<10^2$m), (2) the segment scale (homogenous segment of second or third order tributary within a watershed e.g. Meacham Creek), (3) the watershed scale (e.g., major forks or tributaries), and (4) the Subbasin scale (e.g., the mainstem rivers and catchment areas of the Umatilla, Walla Walla, Grande Ronde rivers). And will focus on 3 species:

- Spring Chinook salmon (*Oncorhynchus tshawytscha*)
- Summer Steelhead (*Oncorhynchus mykiss)*
- Bull trout (*Salvelinus confluentus*) populations

Although the scope of this biomonitoring plan does not include the direct measurement of the nature or persistence of habitat improvements, the benefits of systematically collecting physical habitat data in conjunction with the biological data generated in this study is needed in order to gain the greatest understanding of mechanistic relationships of restoration actions. The complete Biomonitoring Plan and full purpose and scientific study details of the plan can be found in existing project documents ID #P130747.

The current physical habitat monitoring protocols were identified and implemented in 2007 and includes cross-section, longitudinal profiles, pebble counts, shade measurements, water temperature measure, and when feasible bank pins and scour chain deployment. To standardize physical habitat monitoring practices within the CTUIR’s Fishery Habitat Program the Project participated in a Physical Habitat Monitoring plan Development effort during 2012 and 2013. This will lead to a suite of protocols reconciled with site scale metrics such as CHaMPs (CHaMP, 2011) and broader scale plans such as MERRS(MERR, 2010) with the reach scale efforts the Project undertakes. Tables 34, 35, 36 display relationships between the Projects Ecological Concerns, Metrics, and Monitoring Methodology.

NFJD Subbasin Ecological Concerns	Metrics to Monitor Limiting Factors	Monitoring Methodology	Metrics Collected
*all protocols and more details can be viewed at http://www.monitoringmethods.org/protocol/details/681 & 677.			
Water Quality	Temperature	Stream temperature monitoring (HOBO pendant)	Stream Temperature
		FLIR Flights	surface water temperature
		Macroinvertebrate Collection & Analysis	Temperature, Embeddedness, Riparian Vegetation, Water Quality and Human Disturbance.
	Water Chemistry	Water Chemistry Grab Sample	Water samples are tested for nitrates, nitrites, E. coli, Arsenic, pH, mercury, dissolved oxygen and a variety of other components.
	Sediment	ISCO	Samples are tested for: Conductivity, Total Suspended Solids, Total Dissolved Solids and Turbidity
		Macroinvertebrate Collection	Temperature, Embeddedness, Riparian Vegetation, Water Quality and Human Disturbance.
		Pebble Counts	Particle Size, Percent Fines, D50, Amount of Bedrock, Particle Distribution
Riparian Condition	Amount of Quality of Riparian Vegetation	Stream Habitat (CHaMP) Surveys	see description above
	Riparian Planting Survival	Riparian Planting Survival Transects	Plant Density, Plant Survivorship, Plant Diversity
	Canopy Cover	Photopoints	n/a
		Stream temperature monitoring (HOBO pendant)	Stream Temperature
		Aerial Photography	canopy cover, channel morphology, sinuosity
		Stream Habitat (CHaMP) Surveys	see description above
Water Quantity	Floodplain Storage	Groundwater Surface Elevation Monitoring	water depth (in the form of pressure), temperature
		Stream temperature monitoring (HOBO pendant)	Stream Temperature
		USGS Gauge Hydrograph	Gauge Height and Discharge
	Seasonal/Yearly Hydrograph	USGS Gauge Hydrograph	Gauge Height and Discharge
		Stream Discharge v. Stage Relationship Development	Gauge Height and Discharge
Sediment Condition	Substrate Quality and Quantity	Stream Habitat (CHaMP) Surveys	see description above
		Macroinvertebrate Collection & Analysis	Species Composition, Temperature, Embeddedness, Riparian Vegetation, Water Quality and Human Disturbance.
		Pebble Counts	Particle Size, Percent Fines, D50, Amount of Bedrock, Particle Distribution
	Embeddedness	Pebble Counts	Particle Size, Percent Fines, D50, Amount of Bedrock, Particle Distribution
		Macroinvertebrate Collection & Analysis	Temperature, Embeddedness, Riparian Vegetation, Water Quality and Human Disturbance.
		Stream Habitat (CHaMP) Surveys	see description above

NFJD Subbasin Ecological Concerns	Metrics to Monitor Limiting Factors	Monitoring Methodology	Metrics Collected
*all protocols and more details can be viewed at http://www.monitoringmethods.org/protocol/details/681 & 677.			
Channel Structure and Form	Channel Sinuosity	LiDAR Flights	surface elevation changes, floodplain connectivity
		Aerial Photography	canopy cover
		Photopoints	n/a
	Amount of LWD	Stream Habitat (CHaMP) Surveys	see description above
	Floodplain Connectivity	Aerial Photography	canopy cover
		Photopoints	n/a
		Stream temperature monitoring (HOBO pendant)	Stream Temperature
		FLIR Flights	surface water temperature
		Cross Sectional Channel Mapping	Stream bed elevation, Width:Depth Ratio, Bankfull Height and Width, Floodplain Connectivity, Stream Capacity
		Groundwater Surface Elevation Monitoring	water depth (in the form of pressure), temperature
		LiDAR Flights	surface elevation changes, floodplain connectivity
	Available Off-Channel, Spawning, Winter Rearing and Summer Rearing Habitat	Stream Habitat (CHaMP) Surveys	embeddedness, substrate composition, large wood counts, canopy cover, down wood cover, fish cover, percent fines, pH, conductivity, bank angle, bankfull width, wetted width, width to depth ratio, habitat unit types channel alignment, slope, sinuosity, thalweg profile, hourly air and stream temperature, and macroinvertebrate composition
		LiDAR Flights	surface elevation changes, floodplain connectivity
	Habitat Diversity	Stream Habitat (CHaMP) Surveys	see description above
		LiDAR Flights	surface elevation changes, floodplain connectivity
Peripheral & Transitional Habitat	Floodplain Connectivity	Aerial Photography	canopy cover, channel morphology, sinuosity
		Photopoints	n/a
		Cross Sectional Channel Mapping	Stream bed elevation, Width:Depth Ratio, Bankfull Height and Width, Floodplain Connectivity, Stream Capacity
		Groundwater Surface Elevation Monitoring	water depth (in the form of pressure), temperature
		LiDAR Flights	surface elevation changes, floodplain connectivity
	Available Off-Channel Habitat	Stream Habitat (CHaMP) Surveys	see description above
	Wetland Development	Stream Habitat (CHaMP) Surveys	embeddedness, substrate composition, large wood counts, canopy cover, down wood cover, fish cover, percent fines, pH, conductivity, bank angle, bankfull width, wetted width, width to depth ratio, habitat unit types channel alignment, slope, sinuosity, thalweg profile, hourly air and stream temperature, and macroinvertebrate composition
	Amount of Quality of Riparian Vegetation	Stream Habitat (CHaMP) Surveys	see description above
	Riparian Planting Survival	Riparian Planting Survival Transects	Plant Density, Plant Survivorship, Plant Diversity
	Canopy Cover	Photopoints	n/a
		Stream temperature monitoring (HOBO pendant)	Stream Temperature
		Aerial Photography	canopy cover, channel morphology, sinuosity
		Stream Habitat (CHaMP) Surveys	see description above
Fish Passage and Connectivity	Upstream movement of juvenile fish	As Built Designs Compliance	Juvenile Fish Absence/Presence
		Local M&E fish inventory surveys	
	Upstream movement of adult fish	As Built Designs Compliance	Adult Fish Absence/Presence
		Local M&E fish inventory surveys	

Objectives

Preserve and Maintain Existing Habitat (OBJ-1)

Develop and implement conservation programs associated with active and passive restoration to protect anf maintain physical, ecological, and biological processes that form and provide diverse and dynamically stable habitat.

Techniques to achieve the objective include: establishment of conservation easements, including CTUIR riparian easements, coordinating with landowners to enroll projects under various FSA Farm bill programs (CREP, EQUIP, and WRP), and easement/land acquisiton through the CTUIR-BPA Accord land acquisition effort.

Improve Passage to Existing High Quality Habitats (OBJ-2)

Improved passage through removal of antropogenic barriers be they the result of structures or the result of a land management action which compromises in-stream, riparian, or flooddplain habitat thereby preventing passage.

Improve Floodplain Connectivity (OBJ-3)

Reconnect channels with riparian or floodplain habitit or historic channels where appropriate and feasible.

Remove or relocate channel confinement structures such as road prisims, levees where appopriate.

Improve or Preserve Water Quality (OBJ-4)

Improve or preserve surface water and ground water quality to include consideration of temperature, toxics, or sediment as limiting factors dictate.

Improve Riparian and Floodplain Complexity (OBJ-5)

Protect and enhance riparian and wetland habitats to promote dynamic stability

Improve Stream Channel Complexity and Morphology (OBJ-6)

Where feasible and appropriate construct a dynamically stable and complex channel with appopriate floodplain connectivity during high flow events, and/ or enhance existing channel to reduce limiting factors and meet project objectives. Improve channel structural complexity (LWD, Pools, Boulders, Bank overhang, Cover, Substrate stability, and Habitat diversity) to benefit focal species.

Improve Sediment Routing and Sorting (OBJ-7)

Address channel, riparian, and floodplai structure and morphology to reduce the influence of sediment entrainment or deposition as appopriate given the influence of subbasin processess.

Improve Hyporheic Complexity (OBJ-8)

Imprive Channel structure and morphology to promote or regain complex hyporheic flows and interaction with the stream channel and perphial habitats.

Increase Floodplain Storage (OBJ-9)

Restore channel, riparian, and floodplain processess and conditions to the extent possible to improve floodplain storage.

Reduce the Influence of Toxic Sources (OBJ-10)

Reduce the influence of toxic sources upon stream channels and riparian and floodplain habitats.

and natural function for riparian and wetland dependent fish and wildlife (Salmon, beaver, river otter, neotropical migrants).

In degraded habitats, improve the density, seral condition, species diveristy, and composition of hydrophytic and macrophyte plant communities through improved agricultural, grazing, and forest management practices, planting and seeding as necessary to facilitate recovery, and encouragement in the participation in agricultural and farm programs (CREP, EQUIP, WRP). Increase riparian and floodplain habitits to include wetlands and side channel habitat and relocate developed recreational facilities, where appropriate, from riparian areas to upland sites.

Project History

Financials

Budgets

Expense	SOY	Working Budget	Contracted Amount	Modified Contract Amount	Expenditures *
FY2007	$200,000	$249,000	$214,566	$214,566	$232,898
General		$200,000	$172,342	$172,342	$187,067
Interim Ops Agreement		$49,000	$42,224	$42,224	$45,831
FY2008	$200,000	$307,958	$307,958	$307,958	$249,520
Fish Accord - LRT - Umatilla		$307,958	$307,958	$307,958	$249,520
FY2009	$510,450	$386,824	$386,824	$386,824	$326,469
Fish Accord - LRT - Umatilla		$386,824	$386,824	$386,824	$326,469
FY2010	$523,211	$446,110	$446,110	$446,110	$597,344
Fish Accord - LRT - Umatilla		$446,110	$446,110	$446,110	$597,344
FY2011	$525,531	$450,526	$450,526	$450,526	$539,244
Fish Accord - LRT - Umatilla		$450,526	$450,526	$450,526	$539,244
FY2012	$549,699	$966,855	$966,855	$966,855	$474,163
Fish Accord - LRT - Umatilla		$966,855	$966,855	$966,855	$474,163
FY2013	$330,197	$582,478	$574,027	$574,027	$461,013
Fish Accord - LRT - Umatilla		$582,478	$574,027	$574,027	$461,013

No Capital budgets

* Expenditures data includes accruals and are based on data through 31-Jan-2013

To view all expenditures for all fiscal years, click on "Proj Exp by Fiscal Year"

Project Cost Share: FY2012 15 % FY2011 19 % FY2010 13 % FY2009 19 % FY2008 32 % FY2007 24 %

Fiscal Year	Cost Share Partner	Total Proposed Contribution	Total Confirmed Contribution
FY2011	City of Ukiah		$750
FY2011	North Fork John Day Watershed Council		$10,000
FY2011	Umatilla Confederated Tribes (CTUIR)		$10,000
FY2011	US Forest Service (USFS)		$85,000
FY2012	(Unspecified Org)		$86,200
FY2012	City of Ukiah		$750
FY2012	National Fish and Wildlife Foundation		$25,000
FY2012	North Fork John Day Watershed Council		$10,000
FY2012	US Forest Service (USFS)		$35,850
FY2012	US Geological Survey (USGS)		$17,000

Explanation of Recent Financial Performance:

Additional funding provided by the 2008 Accords have resulted in restoration efforts that are typically larger in scope, far more complex in terms of design and desired outcomes, and provide greater challenges related to environmental permitting, private landowner negotiations, and implementation. For this reason the Confederated Tribes of the Umatilla Indian Reservation's North Fork John Day Habitat Enhancement Project (the Project) will begin implementing a much more rigorous and structured process of project planning whereby a multi-year planning process begins with planning, assessment and design in year one, then moves into environmental permitting in year two, and finally construction in year three.

The annual variances seen in the budget are primarily related to one or more issues including delays related to unsecured permits or cost share, loss of landowner interest, or changing cooperator roles which have forced shifting projects to the following year. In years where the Project is involved with planning, assessment, design, and permitting expenditures are reduced. During years of construction the expenditures expand considerably because of the costs associated with purchasing materials and hiring operated heavy equipment. FY 12 provides an example of this where delays related to permitting requirements pushed back in-stream work on Upper Camas Creek resulting in prescheduling funds to cover implementation the following year

Cost share funding has always been a priority for the Project and allows BPA dollars to go further and improves efforts through additional scrutiny. As part of a passage barrier removal in 2012 the North Fork John Day Watershed Council (NFJDWC) secured $82,000 to supplement $91,000 from the Project and $17,000 plus survey and design efforts by the Umatilla National Forest (UNF). Other previous efforts have included cost share through competitive grants and in-kind in the form of materials and supplies.

Finally, some of the differences seen between the working budget, the contracted amount, and the project expenditures are a result of when invoices were paid and the ability to shift funds between performance periods. This ability reflects the desirability to react to shortfalls in grant funds, plan for design and development efforts with larger or more complicated efforts, and improve project effectiveness.

Explanation of Financial History:

Records indicate funding rose from $104,129 in 2001 to $249,000 in 2007 with performance period funding amounts of $221,205 in 2002, $188,726 in 2003, $261,468 in 2004, $244,544 in 2005, and $238,774 in 2006. Funding between 2000 and 2005 totaled $885,827 with funding for 2007 through 2009 identified above.

It appears that accounting and management practices have evolved since the projects inception originating in a 'running' contract with annual allotments into a three year budget cycle and finally the system in place. Along with these practices, implementation tactics and cost share development have changed. For the 2002 ISRP review proposal CTUIR's NFJD Habitat project largely worked with landowners on passive restoration efforts constructing riparian enclosures and introducing or bolstering existing native vegetation in conjunction with the landowner's participation in programs under the Natural Resource Conservation Service (NRCS) or Farm Services Agency (FSA). With expanded funding and funding duration during the 2007-2009 cycle the CTUIR was able to undertake larger and more complicated efforts and develop strategic plans for structured implementation efforts. Examples include active modifications to stream channels, contributions to larger multi-participant efforts addressing mine tailing issues, and movements toward removing passage barriers; all of which required more technical capabilities and an ability to look across annual performance periods. More recent funding described under the 'Explanation of Recent Financial Performance' header above further increased the CTUIR's ability to cooperate with others in the basin and undertake larger more complicated efforts. More recent funding of CTUIR still includes potential tripping points as landowners receptive to cooperative efforts later choosing not to cooperate with CTUIR or cost share may not come through; both of which have influenced the CTUIR's ability to complete projects over the past several years and resulted in transferring funds between years.

Coordination between cooperators has improved over time increasing opportunities for landowners, their advocates, and agencies to develop projects and provide cost-share. As previously noted, the primary sources for cost-share in the 2002 ISRP Proposal were contributions by the landowner and NRCS or FSA.

Dependence upon cost-share has not decreased in fact due to the scope of many efforts the need has increased and may now include funding and in-kind from entities such as the North Fork John Day Watershed Council through competitive grants, the technical capabilities of SWCD's, agency staff, competitive grants secured by CTUIR, or contributions by landowners.

Reporting & Contracted Deliverables Performance

Annual Progress Reports

Expected (since FY2004):	8
Completed:	5
On time:	5

Status Reports

Completed:	32
On time:	14
Avg Days Late:	9

Earliest Contract	Subsequent Contract(s)	Title	Contractor	Start	End	Status	Accepted Count of Contract Deliverables Reports	Complete	Green	Yellow	Red	Total	% Green and Complete	Canceled
6613	22616, 27391, 32946, 37318, 42947, 46079, 51701, 56226, 60597	2000-031-00 EXP N FORK JOHN DAY FISH HABITAT ENHANCEMENT	Umatilla Confederated Tribes (CTUIR)	09/2001	01/2014	Issued	31	134	11	0	42	187	77.54%	3
46273 REL 56		2000-031-00 EXP ENHANCE N. FORK JOHN DAY RIVER - NOAA	National Oceanic and Atmospheric Administration	01/2013	06/2013	Issued	0	0	0	0	0	0		0
						Project Totals	**31**	**134**	**11**	**0**	**42**	**187**	**77.54%**	**3**

Elevated Contracted Deliverables in Pisces (2004 to present)

The contracted deliverables listed below have been selected by the proponent as demonstrative of this project's major accomplishments.

Contract	WE Ref	Contracted Deliverable Title	Due	Completed
37318	I: 186	Improve 2007 Upland Stock Watering Ponds on Fletcher Property	12/31/2008	12/31/2008
42947	R: 84	Remove Neal Pushup Dam	1/31/2010	1/31/2010
46079	S: 175	Upper West Fork Ten Cent Creek Surveys	5/31/2010	5/31/2010
51701	X: 115	Lower Camas Creek Assessment	11/30/2011	11/30/2011
51701	R: 154	Prater Water Right Certification	1/31/2012	1/31/2012
56226	O: 29	Fox Creek Channel Realignment	8/15/2012	8/15/2012
56226	J: 184	Lower Ten Cent Creek Culvert Replacement	9/14/2012	9/14/2012
56226	K: 184	Middle Ten Cent Creek Culvert Replacement	9/14/2012	9/14/2012
56226	L: 184	Upper Ten Cent Creek Culvert Replacement	9/14/2012	9/14/2012
56226	P: 40	Butcherknife Creek Fence Construction	12/31/2012	12/31/2012

View full Project Summary report (lists all Contracted Deliverables and Quantitative Metrics)

Explanation of Performance:

Restoration projects implemented by the Project go through several phases beginning with planning then assessment, design, permitting, implementation, and finally monitoring. Each of these phases includes multiple steps that must be fulfilled and if any part of this process is significantly delayed then a red deliverable will show up in Pisces. We have reviewed past Pisces status reports and found that the majority of "red" deliverables fall into these five categories:

- Change in landowner priorities - All project restoration work is done in cooperation with private and public landowners and the planning, design, and implementation process may require several years to complete. Landowners have decided against cooperating with the Project after initially agreeing to do so for any number of reasons. An example would be the 2011 WEs V and W where the landowner began serious consider selling the land resulting in six red marks on the final Status Report.

- Environmental permit delays - Before implementation can occur, permits must be secured from the Fish and Wildlife Service (USFWS), the National Oceanic and Atmospheric Administration (NOAA), the State Fish and Wildlife and environmental quality agencies, the city or county, and state and tribal cultural resource agencies (National Historic Preservation Act). Although efforts such as riparian fencing may require minimal permits complex efforts may require a year or longer. In these instances red marks from adjusted Pisces dates are typically due to either delayed implementation efforts from unsecured permits or additional findings or comments during the permit process that require additional design work. An example of this would be the 2010 WE Q where comment related to cultural resource concerns resulted in redesign efforts delaying the project resulting in nine red marks for the performance period and 2011 WE M where a Biological Opinion did not arrive in time to begin implementation resulting in eight red marks for the performance period.

- Cost-share funding-projects are designed and implemented over several fiscal years and typically involve multiple funding agencies and sources. It can very difficult to juggle several funding sources that may be on different award schedules and operating rules. A delay in funding will result in a change in project scope and/or schedule. An example of this happened in in 2008 WE K where funding from a competitive grant did not arrive in time to install riparian exclusion fencing resulting in four red marks for the performance period.

- Shifting Cooperator Roles - As efforts evolve changes in staffing, cost share, or the scope of an effort may change cooperator roles creating a delay in implementation. An example of which occurred during the 2012 performance period (WE T) where the UNF took on culvert designed efforts resulting in six red marks for the performance period.

- Amendments to Contracts - As new opportunities arise during performance periods and funding is available contract modifications have been completed to allow for permitting or implementation efforts. Unfortunately the process may delay task completion such as WEs Z where weather prohibited implementation after the amendment arrived.

Although strenuous efforts are made to identify and reconcile resources for available projects prior to submitting a Statement of Work for the following performance period mid-year contract amendments have used in response to new or modified restoration efforts. To reduce time spent on mid-year contract modifications proposed efforts that appear reasonable and likely are included in Statements of Work without assigned funding amounts. While this increases the potential for 'Red Deliverables' it does streamline mid-year amendments and shows that efforts are being made to work with local cooperators. In many cases, incomplete WEs are shifted into the following performance period or conversations continue to modify the scope or conditions of individual efforts. In several cases and primarily with public organizations, several attempts have been required to identify and settle issues related to the roles of each party.

Results: Reporting, Accomplishments, and Impact

Results: Reporting, Accomplishments, and Impact:

Beginning in 2001 the Project identified and selected projects through conversation with local landowners, SWCDs, and watershed councils as opportunities arose within loosely defined emphasis areas. The development of the John Day Subbasin Plan (Subbasin Plan) (NPCC, 2005), John Day Bull Trout Recovery Plan (USFWS, 2002), Mid-Columbia Steelhead Recovery Plan FJD (NMFS, 2008) increased the Projects ability to more clearly identify focus areas and justify individual and cooperative efforts. By 2006 the Project's funding grew to a level where the Project could provide cost share toward competitive grants and the skill sets of Project and Confederated Tribes of the Umatilla Indian Reservation (CTUIR) Fishery Habitat Program staff facilitated more complex efforts. That is, early efforts which generally used passive techniques to treat stream channel instability combined with Natural Resource Conservation Service programs to fund riparian fencing, plant trees, and develop upland stock watering opportunities has shifted toward active stream channel stabilization techniques and Project staff capable of producing in-house assessments. During 2006 these resources allowed the Project to identify focal Geographical Areas identified in the Subbasin Plan based upon past efforts, Subbasin Plan designations, available cooperators, and Project resources including the Upper and Lower Camas, Granite, and Desolation Creek Geographical Areas (GA). These GA's have been identified as high priority restoration GAs in the Subbasin Plan and given their relative health relative to other surrounding GAs will provide significant benefits relative to restoration dollars spent The projects has since focused efforts within these GAs and cooperated with others as worthy opportunities arose outside of these focal areas.

While the Project is still somewhat opportunistic with regard to project selection, concerted efforts have been made to focus efforts within particular GAs and avoid getting pulled into efforts elsewhere. This is partially due to cooperators such as the Umatilla, Wallowa-Whitman, and Malheur National Forests developing Watershed Action Plans, local landowners working in tandem to address limiting factors, and groups such as the North Fork John Day Watershed Council who works as an advocate for both private landowners and local land use values. The ability to reconcile available resources including recovery documents and strategies developed by CTUIR's Department of Natural Resources including the Umatilla River Vision (Jones et al, 2008), Fisheries Habitat Monitoring Plan (currently in development), and Biomonitoring Plan (BPA Project #200801400) have improved the Projects ability to implement more effective efforts. While the latter two documents are directly related to

monitoring efforts a common thread throughout all ties together efforts from beginning to end. While there has not yet been a scoring protocol developed to rank potential projects an assessment of available information is typically enough to identify priority efforts which are submitted for review in the proposed statement of work due each November. This includes consideration of limiting factors identified in the Subbasin Plan and recovery documents to Touchstones within the Umatilla River Vision, base objectives of the Project, and general ecological concerns (Table I) combined with site specific limiting factors, available cooperators, technical feasibility, and potential cost share that are reconciled with landowner desires and land management strategies. Where action plans have been developed the Project is typically involved in their creation which helps remove less desirable or practical efforts and prioritizes those that remain. Prioritizing individual efforts within a suite of prioritized tasks typically reconciles their relative spatial distributions and specific tasks in a stepwise process to implement all efforts in a single subbasin and/or within the shortest period of time where possible. For instance, three culverts were replaced in the Upper Granite GA during 2012 performance period (WEs J, K, L) to reduce implement costs and return passage to six mile of Ten Cent Creek as opposed to limiting access to the lower two or three miles by replacing one at a time.

Ecological Concerns	Ecological Concerns ID	Ecological Concern Subcategory	Ecological Concern Definition	NFJD Habitat Project Objectives Addressed	RiverVision Touchstones	JD Subbasin Plan Limiting Factors (pg. 138)	Accords Limiting Factors (pg. G-34)
Multiple	1.0	Existing Habitat	Preserve and maintain existing and/or improved habitat	Preserve and maintain existing habitat - Improve passage to existing high quality habitats	Biota Connectivity Geomorphology Hydrology Riparian Vegetation	Habitat Quality, Habitat Diversity, Riparian Condition, Barriers, Predation, Channel Stability	In-channel Characteristics Floodplain/Riparian Passage/Entrainment
	1.1	Altered Primary Productivity	Alteration of ecological dynamics affecting the quantity, quality and/or species composition of phytoplankton or detritus resulting in insufficient food available for salmonids or prey species.	Improve stream channel complexity and morphology - Improve floodplain connectivity - Improve riparian and floodplain complexity - Improve and maintain native vegetation - Improve water quality			
	1.2	Altered Prey Species Composition and Diversity	Alteration of ecological dynamics affecting the species composition, distribution or nutritional quality of zooplankton, macroinvertebrates, forage-fish or other prey resulting in insufficient food for salmonids.	Improve stream channel complexity and morphology - Improve floodplain connectivity - Improve riparian and floodplain complexity - Improve and maintain native vegetation - Improve water quality			
	1.3	Reduced Genetic Adaptiveness	Genetic changes that result in the loss of adaptedness to the habitat or set of habitats a population experiences including reproductive rate, loss of genetic resilience, or loss of genetic adaptedness in a population due to reductions in abundance.	Improve stream channel complexity and morphology - Improve floodplain connectivity - Improve riparian and floodplain complexity - Improve and maintain native vegetation - Improve water quality - Improve passage to and between avaliable habitats and populations			
Habitat Quantity	2.1	Anthropogenic Barriers	Loss of access to habitat and/or habitat sub-types due to anthropogenic activity. Includes partial or ephemeral barriers.	Improve passage to existing high quality habitats	Biota Connectivity	Barriers, Channel Stability, Habitat Diversity	Passage/Entrainment In-channel Characteristics Riparian/Floodplain Temperature
	2.2	Natural Barriers	Lasting natural barriers to stream or estuary access, including waterfalls, sand bars, log jams, sufficiently steep gradients or insufficient water. May represent the end of good quality habitat	Improve passage to existing high quality habitats - Improve channel complexity and morphology - Improve riaprian and floodplain complexity and commectivity - Improve sediment routing and sorting - Improve water quality	Biota Connectivity		
Channel Structure and Form	3.1	Bed and Channel Form	Changes to river, stream, lake, estuarine tributary and distributary channel form, including width to depth ratios, sinuosity and bedload movement such as the loss (scour) or fill (aggradation) of the channel.	Improve stream channel complexity, morphology, and dynamic stability - Improve hyporheic complexity - Improve riparian and floodplain complexity - Improve sediment routing and sorting - Improve and maintain native vegetation	Geomorphology	Channel Stability, Sediment Load, Riparian Condition, Habitat Diversity	In-channel Characteristics Sediment Riparian/Floodplain
	3.2	Instream Structural Complexity	Decline of the instream habitat quality. Based on the degree of habitat complexity and variety, includes the quantity and variability of stream depth and pools of varying size and depth.	Improve stream channel complexity, morphology, and dynamic stability - Improve hyporheic complexity - Improve riparian and floodplain complexity - Improve sediment routing and sorting - Improve and maintain native vegetation	Biota		

Table 1.0. Ecological concerns and ties to Project objectives, Umatilla River Vision, NFJD Subbasin Plan, and the Accords.

Ecological Concerns	Ecological Concerns ID	Ecological Concern Subcategory	Ecological Concern Definition	NFJD Habitat Project Objectives Addressed	RiverVision Touchstones	JD Subbasin Plan Limiting Factors (pg. 138)	Accords Limiting Factors (pg. G-34)
Peripheral and Transitional Habitats	5.1	Side Channel and Wetland Conditions	Degradation, elemination and loss of access to peripheral freshwater habitat, including side-channels and freshwater wetlands.	Improve avaliable spawning and rearing habitat -Improve stream channel complexity, morphology, and dynamic stability - Improve hyporheic complexity - Improve riparian and floodplain complexity - Increase floodplain connectivity - Improve and maintain native vegetation - Increase floodplain storage	Biota, Connectivity, Geomorphology	Riparian Conditions, Temperature, Habitat Quality, Habitat Diversity	Floodplain/Riparian Temperature
	5.2	Floodplain Condition	Degradation, elemination and loss of access to the over or beyond bank habitat, of streams and rivers that is periodically inundated during high flows.	Improve stream channel complexity, morphology, and dynamic stability - Increase floodplain connectivity - Improve riparian and floodplain complexity	Biota, Connectivity, Riparian Vegetation		Floodplain/Riparian
Water Quality	6.1	Temperature	Water temperature deviations, either in intensity or duration, sufficient to have adverse effects on listed salmonids	Improve stream channel complexity, morphology, and dynamic stability - Improve hyporheic complexity - Improve riparian and floodplain complexity - Increase floodplain connectivity - Improve and maintain native vegetation - Improve water quality	Hydrology	Temperature, Sediment, Channel Stability, Flow	Temperature Sediment In-channel Characteristics
	6.2	Toxics	Direct exposure to toxic substance in the water column.	Reduce the influence of toxic source			
	6.3	Sediment	Excessive or degraded sedimt routing or sortiny that influences site specific in-stream and floodplain processess and habitats	Improve stream channel complexity, morphology, and dynamic stability - Improve floodplain connectivity - Improve sediment routing and sorting			
Water Quantity	7.1	Increased Water Quantity	Habitat disturbance associated with abnormally (compared to background) high water flow and increased "flashiness", including loss of channel substrate and the flushing of young fish downstream.	Improve stream channel complexity, morphology, and dynamic stability - Improve hyporheic complexity - Improve riparian and floodplain complexity - Increase floodplain connectivity - Improve and maintain native vegetation - Increase floodplain storage	Hydrology	Flow, Channel Stability, Riparian Condition	Not Identified for the NFJD
	7.2	Decreased Water Quantity	Habitat disturbances associated with abnormally (compared to background) low water flow, including but not limited to, increased temperature, loss of sediment, nutrients and barriers to passage and redd dewatering.	Improve stream channel complexity, morphology, and dynamic stability - Improve hyporheic complexity - Improve riparian and floodplain complexity - Increase floodplain connectivity - Improve and maintain native vegetation - Increase floodplain storage			
Riparian Condition	7.4	Riparian Condition	Disturbance to streamside ecological relationships, including but not limited to, loss of flora, erosion and increased light and temperatures	Improve stream channel complexity, morphology, and dynamic stability - Improve hyporheic complexity - Improve riparian and floodplain complexity - Increase floodplain connectivity - Improve and maintain native vegetation - Increase floodplain storage	Riparian Vegetation	Habitat Diversity, Riparian Condition, Habitat Diversity	Floodplain/Riparian
	7.5	LWD Recruitment	Loss of mature streamside trees that may become instream structures and associated decline in habitat complexity				
Sediment Conditions	4.1	Decreased Sediment Quantity	Decreased input of sediment to the stream system or some part of the stream system.	Improve stream channel complexity, morphology, and dynamic stability - Improve riparian and floodplain connectivity - Improve sediment routing and sorting	Geomorphology	Channel Stability, Sediment Load	Sediment In-channel Characteristics Floodplain/Riparian
	4.2	Increased Sediment Quantity	Increased input of sediment to the stream system.				

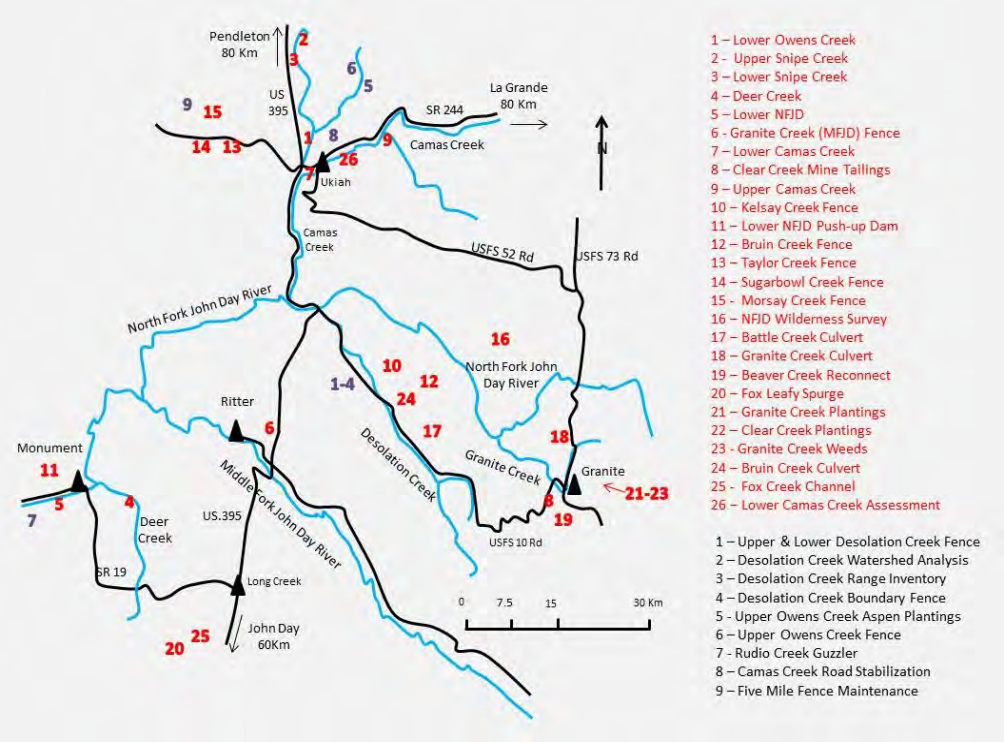
Table 1.1. Ecological concerns and ties to Project objectives, Umatilla River Vision, JD Subbasin Plan, and the Accords.

As noted in the 2007 ISRP review one of the Projects weaknesses was a lack of monitoring data related to both habitat and fisheries. Since that time the Project has made efforts to collect pre and post-implementation data for all projects where conservation agreements exist and has cooperated with others to collect physical habitat monitoring data and fishery data. Previously temperature data was downloaded to the NOAA database which will be replaced by the CTUIR's monitoring database. Habitat data other than temperatures has been kept on the Projects computers and presented in annual reports developed by Project staff to Bonneville Power Administration (BPA). However, the CTUIR is developing a database for all Fishery Habitat projects to centrally compile data and make it available to cooperators. To date coordination meetings have occurred though once available, photopoints, sediment data, longitudinal and cross-sectional profile data, along with other yet unnamed data will be entered each year. Data has been and will continue to be available to cooperators upon request with the new database facilitating data transfer. Annual reports will continue to present monitoring data and/or analysis of that data depending upon the reporting period. The Project has moved toward a periodic monitoring schedule once new efforts have been completed for approximately five years. This has been done to track initial effort stability and once established reduce staff time given monitoring effort funding restrictions imposed by BPA. In support of these efforts CTUIR's Fishery Habitat Program has begun developing a habitat specific monitoring plan to reconcile site specific protocols such as CHaMPS (CHaMP, 2011) with large scale plans such as MERRS (NPCC, 2010), and the Projects reach specific protocols.

The Project has not collected pre or post-implementation fish data although that will begin shortly. The Project has however completed spawner surveys related to passage barrier projects and contributed to Oregon Department of Fish and Wildlife (ODFW) spawner surveys for steelhead trout and/or Chinook salmon the since 2007 the data for which is tabulated and provided to partners and the public. The CTUIR's Department of Natural Resources Fisheries Research Program has developed a bio-monitoring plan (BPA Project # 200901400) to provide coordinated biological monitoring efforts between CTUIR's Fishery Research and Habitat staff across CTUIR's ceded areas. The plan will implement a multi-year program to assess the effectiveness of CTUIR habitat improvements/restoration actions each of the five CTUIR sub basins by identifying the effects of the habitat improvement/restoration actions on fish

abundance and distribution at multiple scales and what particular habitat restoration action(s) have had a positive effect on species of concern.

During the 12-year project history, the CTUIR has helped administer and implement 29 efforts (Figure 1 in red) developed 26 stock water sites to help protect 9.7 miles of stream channel and 1600 acres of riparian, floodplain, and upland acres entered into Conservation Agreements. Additional cooperative work constructed 24.75 mile of riparian exclusion fence outside of the Conservation Agreements, replaced 5 passage barriers, provided weed control on over 300 acres, and redistributed 276,640 cubic yards of mine tailings. Additional work to develop efforts which did not mature included a fence construction, a watershed analysis, and a range inventory in the Desolation GA, aspen plantings with associated fencing along Upper Owens Creek (Lower Camas Creek GA), guzzler development above Rudio Creek (Lower NFJD GA), and road stabilization above Ukiah, Oregon (Lower Camas Creek GA) where landowners backed off of cooperative efforts and one boundary fence and culvert replacement in the Desolation Creek GAdropped due to a shortfall in available funding (Figure 1 in blue). Annual reports describe (see Documents and Reports tab) progress toward habitat recovery and include monitoring data and/or analysis of that data for each performance period. Descriptions of implemented efforts are noted below in addition to their relationship with the RiverVision Touchstones.



Effort & Year	GA	Ecological Concern	Species	CTUIR River Vision Touchstones/ Habitat Limiting Factors (PLF's shaded in yellow-NOAA BiOP)								Outputs
				Biota-Connectivity	Geomorphology	Connectivity		Hydrology			Riparian Vegetation	
				Passage Barriers/ Entrainment	In-channel Characteristics	Habitat Diversity (LWD)	Floodplain Confinement	High Temps	Sediment	Low Flows	Riparian/ Floodplain	
Owens Creek Riparian Fence 2001-16	Lower Camas Creek	1.0, 1.1, 3.0, 3.1, 4.0, 5.2, 6.0	STS RB CHK		X			X	X		X	5.2 riparian acres protected by 1,580 feet of 4-strand barbed wire riparian fence. One stock watering well developed with two associated troughs. Structure maintenance and noxious weed treatments for the life of the agreement.

Table 2. Efforts related to the Lower Owens Creek effort.

Project Summary:

The Lower Owens Creek site is located approximately one mile west of Ukiah, Oregon. Conversations between the landowner and the Project resulted in a 15 year Conservation Agreement with the primary objective being to improve riparian and floodplain complexity and stream channel complexity and morphology through passive means along 0.3 miles of Owens Creek (Table 2). The limiting factors identified for this site were identified as compromised riparian condition, channel stability, and temperature with objectives including improvements in riparian and floodplain complexity, stream channel complexity and morphology, and water quality by addressing compromised riparian habitat, function, and diversity and channel simplification (lack of channel complexity, pools, LWD, etc.. Historic grazing management and nearby transportation influences changed what was likely a narrow and highly sinuous channel within a broad valley into a much less sinuous and wider inset channel with greatly simplified habitat.

To address these issues the Project constructed 1580 feet of 4-strand barbed wire riparian fence riparian exclusion fencing surrounding 5.2 acres with one water gap. To replace lost stock watering opportunities one well was developed to include a pump and two water troughs distributed to enhance forage. The Conservation Agreement provided noxious weed treatments and structure maintenance for the life of the agreement. Monitoring efforts began in Photopoints were collected beginning in 2004 and cross-sections in 2008.

Ecological Outcomes:

To date, streambanks have stabilized without bank cutting by grazing cattle and native vegetation in the form of grasses have provided protection against annual high flows. The channel and riparian/floodplain areas have remained stable although without active channel modifications in-stream complexity has not occurred to a significant degree (Figure 2). This is a site where the Project will begin conducting snorkel surveys to identify aquatic species use and with agreement of the landowner identify potential future treatments.

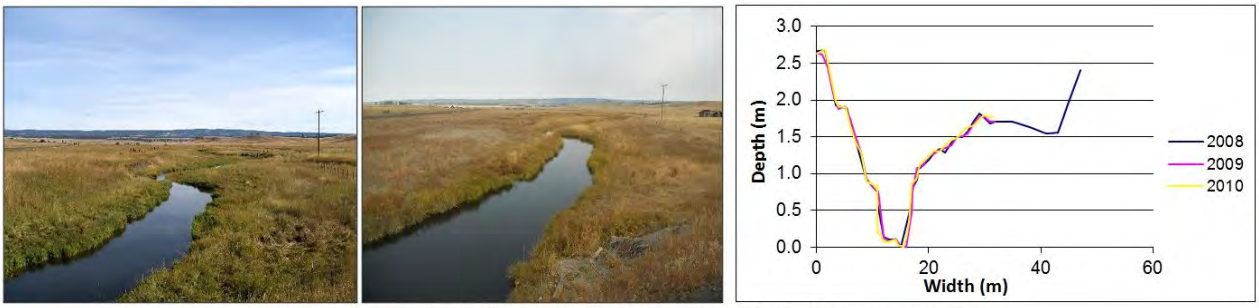


Figure 2. Photopoints (2004 and 2012 respectively) and cross-sectional data for the Lower Owens Creek site.

Effort & Year	GA	Ecological Concern	Species	CTUIR River Vision Touchstones/ Habitat Limiting Factors (PLF's shaded in yellow-NOAA BiOP)								Outputs
				Biota-Connectivity	Geomorphology	Connectivity		Hydrology			Riparian Vegetation	
				Passage Barriers/ Entrainment	In-channel Characteristics	Habitat Diversity (LWD)	Floodplain Confinement	High Temps	Sediment	Low Flows	Riparian/ Floodplain	
Upper Snipe Creek Riparian Fence 2001-16	Lower Camas Creek	1.0, 1.1, 3.0, 3.1, 4.0, 5.2, 5.3, 6.0	STS RB		X	X		X	X		X	34 riparian acres of protected by 7,280 feet of 4-strand barbed wire riparian fence. Two spring developments constructed. Structure maintenance for the life of the agreement.

Table 3. Efforts related to the Upper Snipe Creek site.

Project Summary:

The Upper Snipe Creek site is located approximately ten miles north of Ukiah, Oregon. Conversations between the landowner and the Project resulted in a 15 year Conservation Agreement with the primary objective being to improve riparian and floodplain complexity and stream channel complexity and morphology through passive means along 0.8 miles of Snipe Creek (Table 3). The limiting factors identified for this site include channel stability, habitat diversity, fine sediment, and riparian condition reflecting the efforts objectives to improve stream channel complexity and morphology and riparian and floodplain complexity by addressing compromised riparian width, function, and diversity and channel simplification (lack of channel complexity, pools, LWD, etc.. Historic grazing management reduced effective riparian vegetation and simplified the stream channel although the steeper and narrower valley type help reduce the influence of cattle compared to the Lower Snipe Creek site. To address these issues the Project constructed 7,280 feet of 4-strand barbed wire riparian fence riparian exclusion fencing surrounding 34 acres with three water gaps. To replace lost stock watering opportunities two upland spring developments were constructed to enhance upland forage use. The Conservation Agreement provided noxious weed treatments and structure maintenance for the life of the agreement. Monitoring efforts began in 2004 consisting of photopoints, longitudinal and cross-sectional profiles, and water temperatures.

Ecological Outcomes:

To date, native grasses and hardwoods have recovered to the point where the channel is largely shaded by riparian vegetation, and woody decries is being captured and maintained (Figure 3). Within water gaps riparian vegetation, streambank stability, and channel complexity still suffer although spring runoff appears to be passing fine sediments resulting from the bank cutting downstream with channel and riparian complexity in protected areas maintaining habitat for aquatic species. During monitoring efforts Summer Steelhead trout are identified within protected portions of the channel and not in water gaps. Upland spring developments have required little to no maintenance and have provided water for stock and wildlife since their construction. The size the channel will prevent future snorkel surveys.

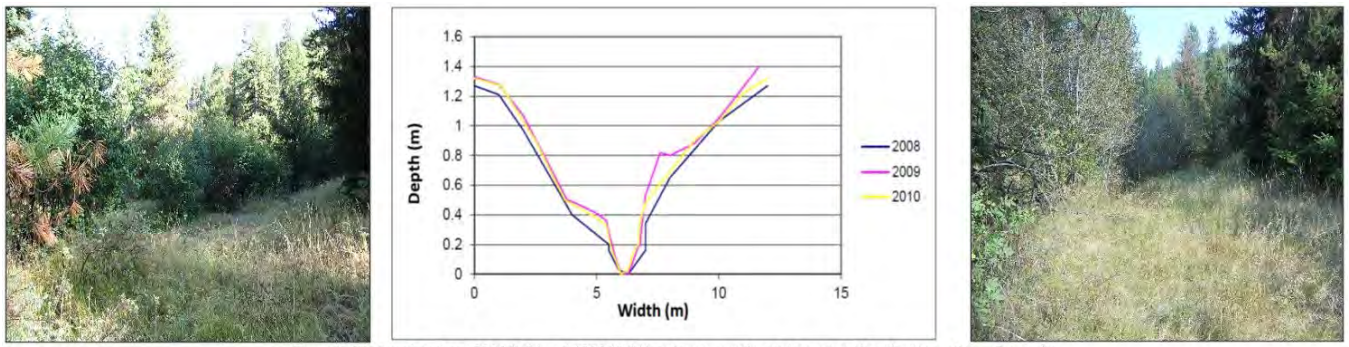


Figure 3. Photopoints from 2004 (left) and 2012 (right) and cross-sectional data related to the Upper Snipe Creek site.

Effort & Year	GA	Ecological Concern	Species	CTUIR River Vision Touchstones/ Habitat Limiting Factors (PLF's shaded in yellow-NOAA BiOP)								Outputs
				Biota-Connectivity	Geomorphology	Connectivity		Hydrology			Riparian Vegetation	
				Passage Barriers/ Entrainment	In-channel Characteristics	Habitat Diversity (LWD)	Floodplain Confinement	High Temps	Sediment	Low Flows	Riparian/ Floodplain	
Lower Snipe Creek Riparian Fence 2001-16	Lower Camas Creek	1.0, 1.1, 3.0, 3.1, 4.0, 5.2, 5.3, 6.0, 7.0	STS RB		X	X		X	X		X	54 riparian acres protected 13,900 feet 4-strand barbed wire riparian fence. Two stock watering wells developed. 7,000 native hardwoods planted. Structure maintenance and noxious weed control for the life of the agreement.

Table 4. Efforts related to the Lower Snipe Creek site.

Project Summary:

The Lower Snipe Creek site is located approximately ten miles north of Ukiah, Oregon. Conversations between the landowner and the Project resulted in a 15 year Conservation Agreement with the primary objective being to improve riparian and floodplain complexity and stream channel complexity and morphology through passive means along 0.8 miles of Snipe Creek (Table 4). The limiting factors identified for this site include channel stability, habitat diversity, fine sediment, high temperature, and riparian condition reflected in the efforts objectives of improving riparian and floodplain complexity, stream channel complexity and morphology, sediment routing and sorting, and water quality by addressing compromised riparian habitat and channel simplification (lack of channel complexity, pools, LWD, etc.. Historic grazing management changed a once highly sinuous and narrow stream channel into a much less sinuous and deeper stream channel with a greatly reduced channel complexity and native hardwood populations. Although grasses still reduce the disturbances related to spring runoff and stochastic events the stream channel incised progressively from the sites lower to upper ends. To address these issues the Project constructed 13,900 feet of 4-strand barbed wire riparian fence riparian exclusion fencing surrounding 54 acres with two water gaps and 7,000 native hard and softwoods were planted in 2006. To replace lost stock watering opportunities two well developments were constructed to enhance upland forage use. Additionally, the landowner entered the riparian enclosure into a Farm Services Agency's CREP Program. The Conservation Agreement provided noxious weed treatments and structure maintenance for the life of the agreement. Monitoring efforts began in 2007 consisting of permanent longitudinal and cross-sectional profiles, photopoints, and water temperature data collection.

Ecological Outcomes:

To date, the combination of a thick clay depositional layer and cattle exclusion appears to have retarded vertical erosion although much of the active channel remains below the rooting depth of native grasses. Because of this, lateral erosion has slowly widened the active channel resulting in streambank collapse in the form of large chunks of undercut grasses which have greatly increased channel complexity. Unfortunately, channel incision beginning well below the site has compromised floodplain storage and contributed to the loss of native vegetation plantings. While many within the incised channel and on inset floodplains in the sites upper end the unsuccessful planting are being replaced through the natural recruitment of Ponderosa Pine capable of sustaining growth in dryer conditions (Figure 4). The two wells have been maintained with issues address as they arise. One of the wells has gone dry several times which resulted in the landowner drilling a deeper well on site. Additionally the use of water gaps severely compromised streambank conditions resulting in a severely over widened channel with deep muck as the substrate. CTUIR worked with the landowner to harden the crossings, narrow the channel, and plant native vegetation to improve conditions. To reduce further disruption the landowner now uses a temporary bridge in conjunction with a much narrower water gap. The size the the channel will prevent future snorkel surveys.

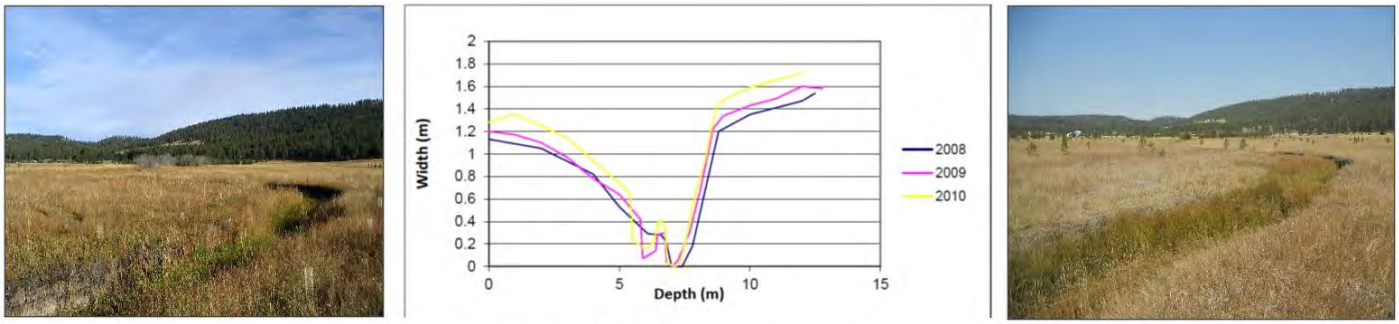


Figure 4. Photopoints from 2004 (left) and 2012 (right) and cross-sectional data related to the Lower Snipe Creek Site.

Effort & Year	GA	Ecological Concern	Species	CTUIR River Vision Touchstones/ Habitat Limiting Factors (PLF's shaded in yellow-NOAA BiOP)								Outputs
				Biota-Connectivity	Geomorphology	Connectivity		Hydrology			Riparian Vegetation	
				Passage Barriers/ Entrainment	In-channel Characteristics	Habitat Diversity (LWD)	Floodplain Confinement	High Temps	Sediment	Low Flows	Riparian/ Floodplain	
Deer Creek Enhancement Effort – 2003-18	Deer Creek	1.0, 1.1, 3.0, 3.1, 4.0, 5.2, 5.3, 6.0	STS RB		X	X		X	X		X	219 riparian, floodplain, and upland habitat protected 8,976 feet of new and 9,480 feet of refurbished 4-strand barbed wire fence with 11 associated water gaps and 8 spring developments. Approximately 7,500 native hardwoods Approximately 4.8 miles of stream chan improved through natural processes.

Table 5. Efforts related to the Deer Creek site.

Project Summary:

The Deer Creek site is located approximately two miles north of Monument, Oregon. Conversations between the landowner and the Project resulted in a 15 year Conservation Agreement with the primary objective being to improve riparian and floodplain complexity and stream channel complexity and morphology through passive means along 4.9 miles of Snipe Creek (Table 5). The limiting factors identified for this site include channel stability, habitat diversity, fine sediment, high temperature, and riparian condition reflecting the efforts objectives to address hyporheic complexity, riparian and floodplain complexity, water quality, sediment routing and sorting, and stream channel complexity and morphology by treating compromised riparian width, function, and diversity and channel simplification (lack of channel complexity, pools, LWD, etc. Historic grazing management which included heavy over-winter pasture severely disrupted riparian and channel conditions resulting in a less sinuous and over widened channel with a greatly reduced channel complexity, bank stability, and native hardwood populations. To address these issues the Project constructed 8,976 feet of 4-strand barbed wire riparian fence riparian exclusion fencing and refurbished another 9,480 feet surrounding 219 riparian, floodplain, and upland acres with 11 water gaps, 8 spring developments, and 7,500 native hardwoods were planted. The Conservation Agreement provided noxious weed treatments and structure maintenance for the life of the agreement. Monitoring efforts began in 2007 consisting of permanent longitudinal and cross-sectional profiles, photopoints, and water temperature data.

Ecological Outcomes:

To date, reaction to the selected treatments has been extremely positive. Riparian vegetation has recovered extremely well and stabilized the stream channel enough that Summer Steelhead trout are seen during monitoring efforts and beaver have reinhabited the property. Disturbances within water gaps do not appear to have influenced protected areas. Other than regular spring and fence maintenance efforts have primarily been limited to removing large wood from water gaps when necessary. Unfortunately, the adjacent landowner maintains a pasture with an excessive noxious weed infestation which influences efforts on this site. The project has attempted to work with local cooperators and the landowner to address the issue with no success. The size the channel will prevent future snorkel surveys.

Figure 5. Photopoint related to the Deer Creek Site.

Effort & Year	GA	Ecological Concern	Species	CTUIR River Vision Touchstones/ Habitat Limiting Factors (PLF's shaded in yellow-NOAA BiOP)								Outputs
				Biota-Connectivity	Geomorphology	Connectivity		Hydrology			Riparian Vegetation	
				Passage Barriers/ Entrainment	In-channel Characteristics	Habitat Diversity (LWD)	Floodplain Confinement	High Temps	Sediment	Low Flows	Riparian/ Floodplain	
NFJD Riparian Fence – 2005-20	Lower NFJD	1.0, 1.1, 4.0, 5.2	STS CHK RB					X	X		X	6 riparian acres of riparian protected by 4,224 feet of 4-strand barbed wire riparian fence. One stock watering well developed with solar pump and panels. 3,700 native hardwoods planted. Structure maintenance and noxious weed treatments for the life of the agreement

Table 6. Efforts related to the Lower NFJD site.

Project Summary:

The NFJD site is located approximately eight miles west of Monument, Oregon. Conversations between the landowner and the Project resulted in a 15 year Conservation Agreement with the primary objective being to improve riparian and floodplain complexity through passive means along 0.5 miles of the NFJD. The limiting factors identified for this site including channel stability, habitat diversity, fine sediment, high temperature, and riparian condition reflect the efforts objectives to improve riparian and floodplain complexity. Historic grazing management allowed cattle and sheep access to the river within the sites entire reach which compromised riparian vegetation and contributed sediment to the river. To address these issues the Project constructed 4,224 feet of 4-strand barbed wire riparian fence riparian exclusion fencing to protect six riparian, floodplain, and upland acres with one stock water development created with associated solar pump and panels and a single trough (Table 6). A total of 3,700 native hardwoods were planted with the Conservation Agreement providing noxious weed treatments and structure maintenance for the life of the agreement. Monitoring efforts began in 2007 consisting of photopoints, and water temperature data collection.

Ecological Outcomes:

To date, reaction to the selected treatments has been mixed. Although the fence and stock water development have been maintained with all issues addresses and corrected native vegetation plantings have fared as well as native planting have not taken as expected. Although watering could have occurred more frequently the dry environment and sandy soils require extra work to meet survival standards, especially when there is a seven to eight foot difference between the floodplain and baseflow water surface. Additionally, excessive browse by wildlife and the loss of root systems to mice and moles contributes to poor survival. With the installation of a central pivot pump (noted detained later) the project secured larger native vegetation plantings with more developed root systems planted along the enclosures margins where the pivot pump could provide water. These planting have survived much better with the loss of only two so far. Although noxious weed treatments have improved conditions for native grasses adjacent seed sources require annual treatments.

Figure 6. Photopoints and cross-sectional data related to the NFJD site.

Effort & Year	GA	Ecological Concern	Species	CTUIR River Vision Touchstones/ Habitat Limiting Factors (PLF's shaded in yellow-NOAA BiOP)								Outputs
				Biota-Connectivity	Geomorphology	Connectivity		Hydrology			Riparian Vegetation	
				Passage Barriers/ Entrainment	In-channel Characteristics	Habitat Diversity (LWD)	Floodplain Confinement	High Temps	Sediment	Low Flows	Riparian/ Floodplain	
Granite Creek (MFJD) Riparian Fence-2005	Middle Fork / Big Creek	1.0, 1.1, 3.0, 3.1, 4.0, 5.2, 6.0	STS RB		X	X		X	X		X	3.0 riparian acres protected by 8,400 feet 4-strand barbed wire riparian fence. Two stock water troughs installed.

Table 7. Efforts related to the Granite Creek (MFJD) site.

Project Summary:

The Granite Creek site is located approximately one mile north of the Middle Fork John Day River along US395. The project worked with Grant SWCD to address issues related to compromised riparian and stream channel habitat within an 84 acre feedlot where cattle were allowed to freely access the creek. To address these issues the Project provided funding toward 6,336 of riparian fencing protecting three acres, one stock well, and ten water gaps. Although the riparian fence has been completed details related monitoring data have not been identified (Table 7).

Effort &Year	GA	Ecological Concern	Species	CTUIR River Vision Touchstones/ Habitat Limiting Factors								Outputs
				Biota-Connectivity	Geomorphology	Connectivity		Hydrology			Riparian Vegetation	
				Passage Barriers/ Entrainment	In-channel Characteristics	Habitat Diversity (LWD)	Floodplain Confinement	High Temps	Sediment	Low Flows	Riparian/ Floodplain	
Lower Camas Creek Restoration Effort – 2006-18	Lower Camas Creek	1.0, 1.1, 3.0, 3.1, 5.0, 5.1, 5.2, 5.3, 6.0	STS CHK BT RB		X	X	X	X	X		X	338 acres of riparian and floodplain enrolled into CREP contracted and protected by 6,880 feet 4-strand barbed wire riparian fence. 1,100 feet of levees removed. 5 J-hook structures installed, 2 LWD structures installed, and 700 feet of stream channel regraded. 3 upland stock water ponds created, one existing upland stock water pond improved, and one spring development created. Approximately 16,500 native plantings and 100 lbs. of native grasses applied. Structure maintenance and noxious weed treatments for the life of the agreement

Table 8. Efforts related to the Lower Camas Creek Site.

Project Summary:

The Lower Camas Creek site is located approximately 0.5 miles south of Ukiah, Oregon. Conversations between the landowner and the Project resulted in a 15 year Conservation Agreement with the primary objective being to improve floodplain connectivity closely followed by maintaining and improving existing habitat, hyporheic complexity, riparian and floodplain complexity, water quality, and channel complexity and morphology through riparian through active measures along one mile of Camas Creek (Table 8). Limiting factors identified for this site include compromised channel stability, habitat diversity, fine sediment, high temperature, and riparian conditions in addition to inaccessible floodplain habitats flowing from nearby springs and wetland areas. Historic grazing management used the entire 400 acre surrounding Camas Creek for stock grazing in addition to adjacent upland areas and flood control measures undertaken to protect nearby structures resulted in extensive levees within and above the sites upper portions. Although one stock pond existed on the properties upper elevations opportunities across the upland pasture were extremely limited. Riparian and floodplain hardwood vegetation populations were depressed as a result of past grazing management and use by wildlife throughout the year, especially during the winter months. To address these issues the Project constructed 6,880 feet of 4-strand barbed wire riparian fence riparian exclusion fencing isolating 388 stream channel, riparian, and floodplain acres from cattle grazing (enrolled in a Farm Services Agency CREP Program by the landowner), removed 1,100 feet of levee and installed five J-hook structures and two LWD structures in 700 feet of channel, created three upland stock ponds and refurbished another, completed one spring development, and applied 100 pounds of native grasses. The CREP contract required planting approximately 16,000 trees completed under a contract between the landowner and contractor. The Conservation Agreement provided noxious weed treatments and structure maintenance for the life of the agreement. Monitoring efforts began in 2006 with cross-sections used for design purposes which were incorporated into post-implementation monitoring efforts including photopoints and measures of cross-sectional and longitudinal profiles, pebble counts, and water temperatures. This is one site where future snorkel surveys will occur to develop an understanding of summer and perhaps winter habitat use due to number of nearby springs and wetlands and cool water entering the channel from above

Ecological Outcomes:

To date, reaction to the selected treatments has been mixed. The removal of 1,000 feet of levee and placement of J-hook structures and LWD have successfully improved in-stream complexity and increased floodplain access while riparian fencing and stock water developments have successfully improved upland grazing opportunities with maintenance completed on all structures (Figure 7). With respect to Camas Creek, natural process have shifted the channel above and below the removed levees perhaps in response to the levee removal itself or excessive bedload transport from above which has resulted in robust sediment deposition above and below the treated area and a fair amount of sediment deposition within the treated channel. The source of this bedload is currently unknown although efforts to address the question are underway. In any case, neither of these issues appear to be problematic at this time and regardless the CREP contract prohibits additional actions within the stream channel and riparian/floodplain habitats.

Riparian and floodplain grasses have done extremely well and with deer, elk, and waterfowl regularly using the site, especially at the sites lower end away from human interaction. Hard and softwood plantings have not fared so well though. While the plantings met their required survival rate Camas Creeks shifting

channel and predation by wildlife has greatly increased mortality. In an effort to reduce mortality wire horse fence cages were installed on select trees which have proven successful and are now used in other efforts. Unfortunately these wire cages are not inexpensive so once plantings have grown above the browse line wire cages will be shifted to another location. The size the channel will prevent future snorkel surveys.

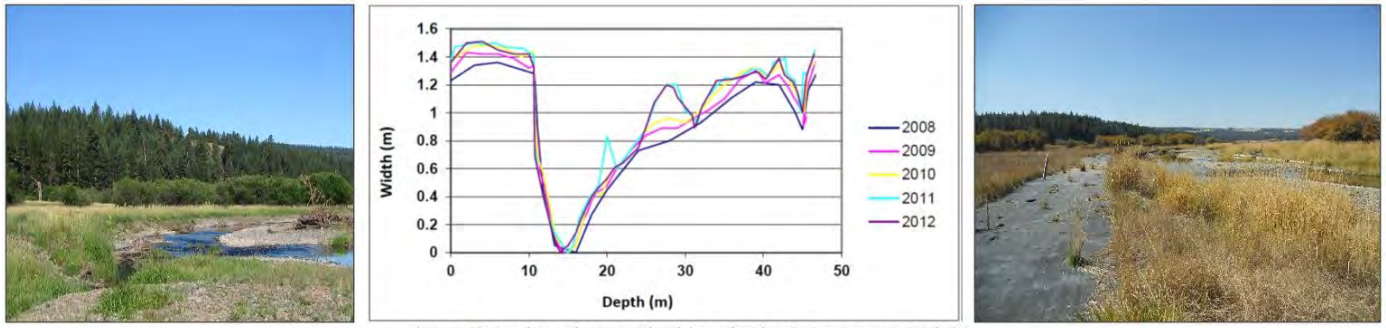


Figure 7. Photopoints and cross-sectional data related to the Lower Camas Creek site.

Effort & Year	GA	Ecological Concern	Species	CTUIR River Vision Touchstones/ Habitat Limiting Factors								Outputs
				Biota-Connectivity	Geomorphology	Connectivity		Hydrology			Riparian Vegetation	
				Passage Barriers/ Entrainment	In-channel Characteristics	Habitat Diversity (LWD)	Floodplain Confinement	High Temps	Sediment	Low Flows	Riparian/ Floodplain	
Clear Creek Mine Tailing Redistribution – 2006/07	Lower Camas Creek	2.0, 3.0, 3.1, 4.0, 5.0, 5.1, 5.2, 5.3,	STS CHK BT RB		X	X	X	X	X		X	Recontoured 276,640 cubic yards of mine tailings along 2.4 miles of stream channel. Established an inset floodplain to promote floodplain connectivity and sediment / debris deposition. Native hardwood plantings and LWD placement on the floodplain have occurred by the UNF with future cooperative efforts between the UNF and the Project to place additional large wood

Table 9. Efforts related to the Clear Creek Mine Tailing site.

Project Summary:

The Clear Creek Mine Tailing site is located approximately 7 miles southwest of Granite, Oregon. Historic placer mining severely disturbed or obliterated much of the stream channel and riparian/floodplain habitats throughout the Granite Creek Basin including Clear Creek. Large mobile dredges left well sorted tailing piles up to 25 feet in height which severely confined streamflows where they remained and often left little accessible habitat for anadromous species. During the 1980's the WNF began working to restore in-channel baseflows in the remnants of stream channels which would often dry out as a direct result of fine material being lost during dredging operations. These methods were largely successful although they did not address the remaining tailing piles (Figure 8). The WNF, UNF, Grant SWCD, and the Project approached this effort with the primary objective of increasing floodplain connectivity and secondarily improving stream channel complexity and morphology by recontouring tailings to the extent possible thereby creating a functional floodplain. Limiting factors identified for this site reflect the efforts objectives in compromised floodplain connectivity and resulting channel simplification (lack of channel complexity, pools, LWD, etc) in addition to addressing sediment and water temperature issues. To address these issues the cooperators recontoured 276,640 cubic yards of mine tailings along 2.4 miles of Clear creek establishing an inset floodplain, planted native hardwoods, and placed LWD within the new floodplain (Table 9). Future efforts between the UNF and the Project will place additional LWD to further promote sediment ad debris deposition. Monitoring efforts through this reach include annual spawner survey counts through this reach.

Ecological Outcomes:

To date, the effort remains as it was after the tailing redistribution with sediment and debris being deposited on the floodplain. Due to the make-up of tailings vegetative growth has been minimal although future high flows and sediment and debris deposition will improve vegetative survival which will be further addressed through native vegetation plantings and large wood placements. Extensive manipulation of the tailings in the future may not occur in part due to the sheer volume of material and lack of space to stick the material and the cost of trucking the material from the area which is in and of itself cost prohibitive at least at this point.

Figure 8. Photopoints and cross-sectional data related to the Clear Creek Mine tailing site before redistribution (left) and after (right).

Effort & Year	GA	Ecological Concern	Species	CTUIR River Vision Touchstones/ Habitat Limiting Factors								Outputs
				Biota-Connectivity	Geomorphology	Connectivity		Hydrology			Riparian Vegetation	
				Passage Barriers/ Entrainment	In-channel Characteristics	Habitat Diversity (LWD)	Floodplain Confinement	High Temps	Sediment	Low Flows	Riparian/ Floodplain	
Upper Camas Creek Restoration Effort - 2009/12	Upper Camas Creek	1.0, 1.1, 3.0, 3.1, 5.2, 6.0	STS CHK BT RB		X	X		X	X		X	6 riparian and stream channel acres protected by 10,140 feet of 4-strand barbed wire riparian fence and 3 water gaps. 250 acres of upland pasture subdivided by 8,200 feet of 4-strand barbed wire fence associated with a well development and associated solar pump and panels to provide water to two troughs. Structure maintenance and noxious weed treatments for the life of the agreement.

Table 10. Efforts related to the Upper Camas Creek site.

Project Summary:

The Upper Camas Creek site is located approximately 7.0 miles east of Ukiah, Oregon. Conversations between the landowner and the Project resulted in a 15 year Conservation Agreement with the primary objective being to improve upland grazing management, channel stability, habitat diversity, fine sediment, high temperature, and riparian conditions through active measures along 0.8 miles of Camas Creek (Table 10). The limiting factors identified for this site were compromised channel stability, habitat diversity, high temperature, and riparian condition. Historic grazing management in a 40 acres floodplain pasture and what appears to be issues related to transportation infrastructure removed in-stream structure and compromised riparian vegetation which allowed camas Creek to over-widen and incise. Given concerns of the landowner restoring floodplain connectivity was not feasible and as such the objective of this effort became to improve channel structure and morphology by decreasing baseflow width to depth ratios and increasing channel complexity in addition to improving upland stock watering opportunities. To address these issues the Project constructed 8,200 feet of 4-strand barbed wire riparian exclusion fencing isolating six riparian acres from cattle grazing with three water gaps, constructed 10,141 feet of 4-strand barbed wire fence upland cross fence with eight gates and developed one stock watering well with associated solar pump panels, and two troughs within a 250 acre pasture. The Conservation Agreement provided noxious weed treatments and structure maintenance for the life of the agreement. Monitoring efforts began in 2009 with the establishment of permanent cross-sectional and longitudinal profiles in the stream channel in addition to water temperature data at locations above and below the site (Figure 9).

Ecological Outcomes:

The construction of the upland structures significantly increased the landowner's ability to better use available forage during the summer months after existing ponds went dry. Once installed simply removing cattle from the stream channel significantly improved vegetative growth in the channel itself. Unfortunately a disagreement between the landowner and the Project ended cooperative efforts before channel modifications could be completed although the developed fences and stock watering structures will be used as designed in the future.

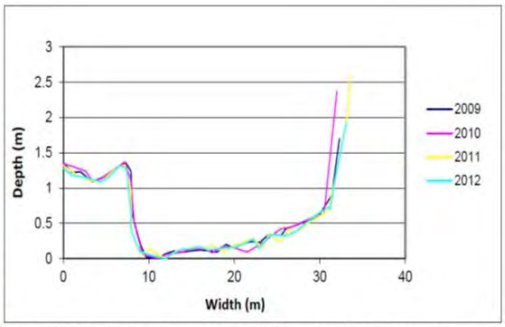


Figure 9. Photopoints and cross-sectional data related to the Upper Camas Creek site.

Effort & Year	GA	Ecological Concern	Species	CTUIR River Vision Touchstones/ Habitat Limiting Factors								Outputs
				Biota-Connectivity	Geomorphology	Connectivity		Hydrology			Riparian Vegetation	
				Passage Barriers/ Entrainment	In-channel Characteristics	Habitat Diversity (LWD)	Floodplain Confinement	High Temps	Sediment	Low Flows	Riparian/ Floodplain	
Kelsay Creek Riparian Fence 2008/09	Desolation Creek	3.0, 3.1, 5.0, 5.1, 5.2, 6.0	STS RB		X	X		X	X		X	100 acres of riparian and floodplain protected by 14,520 feet 4-strand barbed wire fence and one water gap. Maintenance by grazing permittee with oversight by UNF Range Conservationist

Table 11. Efforts related to the Kelsay Creek site.

Project Summary:

The Kelsay Creek site is located south of Ukiah, Oregon and is a tributary of Desolation Creek. Discussions with the UNF indicated there was a need to follow up on a 2006 effort to protect existing in-stream and adjacent riparian and floodplain habitats from grazing cattle where temporary electric fences were proving inadequate. To this end the Project worked with the UNF and NFJDWC to address the limiting factor of compromised channel stability, habitat diversity, high temperature, and riparian conditions with the primary objective being to improve riparian condition followed by channel stability, habitat diversity, fine sediment, and high temperature and upland grazing management. This reach of Kelsay Creek as with many others in the Desolation GA consist of high quality stringer meadows important for restoring and maintain water quality in lower elevation areas. To address these issues the Project constructed 14,520 feet of 3-strand New Zealand style riparian exclusion fencing isolating 100 acres from cattle grazing with one water gap (Table 11). Monitoring efforts began in 2009 with the establishment of permanent photopoints and the installation of data loggers recording water temperatures where the Project secures water temperatures and the NFJDWC collect photopoints. UNF Range Conservationists administer grazing permits on this allotment and are responsible for administering fence maintenance and UNF biologists who track in-stream habitat and fish populations through regular surveys.

Ecological Outcomes:

Fence construction has successfully restricted cattle access to sensitive areas improving in-stream, riparian, and floodplain conditions and habitat while reducing sediment entrainment during all flows (Figure 10). Post-implementation photopoint data for the enclosure is unavailable; however, a photograph from the enclosure constructed several years before just downstream represents the vegetative recovery aside and within the newly fenced stream channel.


Figure 10. Photographs and cross-sectional data related to the Upper Camas Creek site before fence construction (left) and within an enclosure constructed two years before (right).

Effort & Year	GA	Ecological Concern	Species	CTUIR River Vision Touchstones/ Habitat Limiting Factors								Outputs
				Biota-Connectivity	Geomorphology	Connectivity		Hydrology			Riparian Vegetation	
				Passage Barriers/ Entrainment	In-channel Characteristics	Habitat Diversity (LWD)	Floodplain Confinement	High Temps	Sediment	Low Flows	Riparian/ Floodplain	
NFJD Push-up Dam Removal and Water Right Certification -2009/10	Lower NFJD	1.0, 3.0, 3.1	STS RB		X				X			One irrigation point moved approximately 500 feet moved to a permanent scour hole. 80 acres of floodplain once watered by wheel line now watered by central pivot pump. One water gap removed. Water right POD change completed. Maintenance of equipment by landowner.

Table 12. Efforts related to the NFJD Push-up site.

Project Summary:

The NFJD Push-up Dam site is located approximately 8.0 miles west of Monument Oregon. Discussions with the NFJDWC who had been discussing the effort with landowners led to the Projects participation in this effort. A push-up dam maintained annually to provide water for two irrigation diversions and the intent of the effort was to move diversions approximately 500 feet upstream to a permanent scour hole which was to be followed up by a separate effort by the landowner to switch from wheel line to central pivot irrigation. The project supported one of the diversion relocations and pipe installation and efforts to secue the necessary documents for the POD shift (Table 12). To this end the Project worked with the NFJDWC and landowner to address the limiting factor of reduced in-stream structure and complexity by reducing annual disturbance related to push-up dam maintenance; objectives primarily being to increase irrigation efficiency and in-stream habitat complexity. To this end equipment related to the new diversion has improved irrigation efficiency on 80 acres with one water gap removed. Monitoring related to this effort included Greenline surveys, permanent cross sections, and photopoints provided to the NFJDWC by the Project.

Ecological Outcomes:

The diversion remains in place with minimal maintenances and no disturbances of in-stream areas (Figure 11).

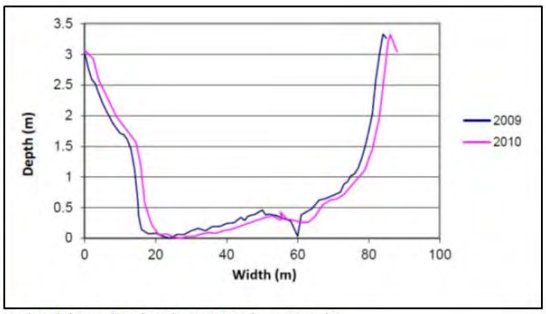



Figure 11. Photopoints and cross-sectional data related to the NFJD Push-up Dam site.

Effort & Year	GA	Ecological Concern	Species	CTUIR River Vision Touchstones/ Habitat Limiting Factors								Outputs
				Biota-Connectivity	Geomorphology	Connectivity		Hydrology			Riparian Vegetation	
				Passage Barriers/ Entrainment	In-channel Characteristics	Habitat Diversity (LWD)	Floodplain Confinement	High Temps	Sediment	Low Flows	Riparian/ Floodplain	
Bruin Creek Riparian Fence - 2010	Desolation Creek	3.0, 3.1, 4.0, 5.0, 5.2, 6.0	STS RB Opportunistic CHK BT		X	X		X	X		X	19 riparian acres protected with 2,280 feet of three strand 'New Zealand' fence. Maintenance by grazing permitte with oversight by UNF Range Conservationist.

Table 13. Efforts related to the Bruin Cree Fence.

Project Summary:

The Bruin Creek site is located south of Ukiah, Oregon and is a tributary of Desolation Creek. Discussions with the UNF indicated there was a need to address stream channel and riparian disturbances from grazing cattle on a 0.5 mile reach of Bruin Creek (Table 13). To this end the Project worked with the UNF and NFJDWC to address the limiting factors of channel stability, habitat diversity, fine sediment, high temperature, and riparian condition with the primary objective being to protect riparian and floodplain complexity, water quality, and stream channel complexity and morphology existing habitat improve upland grazing management and stream channel complexity and morphology. To address these issues the Project constructed 2,280 feet of 3-strand New Zealand style riparian exclusion fencing isolating 19 acres from grazing cattle. Monitoring efforts occur by UNF Range Conservationists who administer grazing permits on this allotment and are responsible for administering fence maintenance and UNF biologists who track in-stream habitat and fish populations through regular surveys.

Ecological Outcomes:

Fence construction has successfully restricted cattle access to sensitive areas improving in-stream, riparian, and floodplain conditions and habitat while reducing sediment entrainment during all flows. Figure 12 shows both the constructed fence and vegetative growth after construction.

Figure 12. Photographs and cross-sectional data related to the Bruin Creek Fencing site showing the constructed fence (left) and protected area within the fence after construction (right).

Effort & Year	GA	Ecological Concern	Species	CTUIR River Vision Touchstones/ Habitat Limiting Factors								Outputs
				Biota-Connectivity	Geomorphology	Connectivity		Hydrology			Riparian Vegetation	
				Passage Barriers/ Entrainment	In-channel Characteristics	Habitat Diversity (LWD)	Floodplain Confinement	High Temps	Sediment	Low Flows	Riparian/ Floodplain	
Taylor Creek Riparian Fence - 2010	Lower Camas Creek	3.0, 3.1, 4.0, 5.0, 5.2, 6.0	RdB		X	X		X	X		X	46 riparian and upland acres protected by 10,500 feet of 4-strand barbed wire fence Maintenance by grazing permitte with oversight by UNF Range Conservationist.

Table 14. Efforts related to the Taylor Creek fence.

Project Summary:

The Taylor Creek site is located approximately 15 miles west of Ukiah, Oregon. Discussions with the UNF indicated there was a need to address stream channel and riparian disturbances from grazing cattle along Taylor Creek where temporary electric fences were proving inadequate. To this end the Project worked with the UNF and NFJDWC to address the limiting factors of channel stability, habitat diversity, fine sediment, high temperature, and riparian condition with the primary objective being to protect riparian and floodplain complexity, water quality, and stream channel complexity and morphology existing habitat improve upland grazing management and stream channel complexity and morphology. To address these issues the Project constructed 10,500 feet of four strand barbed wire exclusion fencing isolating 46 acres from grazing cattle (Table 14). Monitoring efforts occur by UNF Range Conservationists who administer grazing permits on this allotment and are responsible for administering fence maintenance and UNF biologists who track in-stream habitat and fish populations through regular surveys.

Ecological Outcomes:

Fence construction has successfully restricted cattle access to sensitive areas improving in-stream, riparian, and floodplain conditions and habitat while reducing sediment entrainment during all flows. Figure 13 shows both the constructed fence and vegetative conditions before construction.

Figure 13. Photographs and cross-sectional data related to the Taylor Creek Fencing site showing the constructed fence (left) and a portion of the constructed fence (right). Photographs by Amy Charette.

Effort & Year	GA	Ecological Concern	Species	CTUIR River Vision Touchstones/ Habitat Limiting Factors								Outputs
				Biota-Connectivity	Geomorphology	Connectivity		Hydrology			Riparian Vegetation	
				Passage Barriers/ Entrainment	In-channel Characteristics	Habitat Diversity (LWD)	Floodplain Confinement	High Temps	Sediment	Low Flows	Riparian/ Floodplain	
Sugarbowl Creek Riparian Fence - 2010	Lower Camas Creek	3.0, 3.1, 4.0, 5.0, 5.2, 6.0	RdB		X	X		X	X		X	18 riparian and upland acres protected by 5,280 feet of 4-strand barbed wire fence. Maintenance by grazing permitte with oversight by UNF Range Conservationist.

Table 15. Efforts related to the Sugarbowl Creek fence.

Project Summary:

The Sugarbowl Creek site is located approximately 15 miles west of Ukiah, Oregon. Discussions with the UNF indicated there was a need to address stream channel and riparian disturbances from grazing cattle along Taylor Creek where temporary electric fences were proving inadequate. To this end the Project worked with the UNF and NFJDWC to address the limiting factors of channel stability, habitat diversity, fine sediment, high temperature, and riparian condition with the primary objective being to protect riparian and floodplain complexity, water quality, and stream channel complexity and morphology existing habitat improve upland grazing management and stream channel complexity and morphology. To address these issues the Project constructed 5,280 feet of four strand barbed wire exclusion fencing isolating 18 acres from grazing cattle (Table 15). Monitoring efforts occur by UNF Range Conservationists who administer grazing permits on this allotment and are responsible for administering fence maintenance and UNF biologists who track in-stream habitat and fish populations through regular surveys.

Ecological Outcomes:

Fence construction has successfully restricted cattle access to sensitive areas improving in-stream, riparian, and floodplain conditions and habitat while reducing sediment entrainment during all flows. Post-implementation photographs from within the enclosure are unavailable.

Effort & Year	GA	Ecological Concern	Species	CTUIR River Vision Touchstones/ Habitat Limiting Factors								Outputs
				Biota-Connectivity	Geomorphology	Connectivity		Hydrology			Riparian Vegetation	
				Passage Barriers/ Entrainment	In-channel Characteristics	Habitat Diversity (LWD)	Floodplain Confinement	High Temps	Sediment	Low Flows	Riparian/ Floodplain	
Morsay Creek Riparian Fence - 2010	Lower Camas Creek	3.0, 3.1, 4.0, 5.0, 5.2, 6.0	RdB		X	X		X	X		X	100 riparian and floodplain acres protected by 38,540 feet of 4-strand barbed wire fence. Maintenance by grazing permitte with oversight by UNF Range Conservationist.

Table 16. Efforts related to the Morsay Creek fence.

Project Summary:

The Morsay Creek site is located approximately 15 miles west of Ukiah, Oregon. Discussions with the UNF indicated there was a need to address stream channel and riparian disturbances from grazing cattle along Taylor Creek where temporary electric fences were proving inadequate. To this end the Project worked with the UNF and NFJDWC to address the limiting factors of channel stability, habitat diversity, fine sediment, high temperature, and riparian condition with the primary objective being to protect riparian and floodplain complexity, water quality, and stream channel complexity and morphology existing habitat improve upland grazing management and stream channel complexity and morphology. To address these issues the Project constructed 38,540 feet of four strand barbed wire exclusion fencing isolating 100 acres from grazing cattle (Table 16). Monitoring efforts occur by UNF Range Conservationists who administer grazing permits on this allotment and are responsible for administering fence maintenance and UNF biologists who track in-stream habitat and fish populations through regular surveys.

Ecological Outcomes:

Fence construction has successfully restricted cattle access to sensitive areas improving in-stream, riparian, and floodplain conditions and habitat while reducing sediment entrainment during all flows. Figure 14 shows both the constructed fence and vegetative conditions immediately after construction.

Figure 14. Photographs and cross-sectional data related to the Morsay Creek Fencing site showing the constructed fence immediately after construction. Photographs by Amy Charette.

Effort & Year	GA	Ecological Concern	Species	CTUIR River Vision Touchstones/ Habitat Limiting Factors								Outputs
				Biota-Connectivity	Geomorphology	Connectivity		Hydrology			Riparian Vegetation	
				Passage Barriers/ Entrainment	In-channel Characteristics	Habitat Diversity (LWD)	Floodplain Confinement	High Temps	Sediment	Low Flows	Riparian/ Floodplain	
NFJD Wilderness Survey - 2010	Upper NFJD	1.0, 5.1, 5.2	STS CHK RB								X	Survey of noxious weeds along 135 miles of trail within the NFJD Wilderness area. Information passed on the UNF.

Table 17. Efforts related to the NFJD Wilderness Survey.

Project Summary:

Discussions with the UNF and NFJDWC indicated there was a need to provide baseline information regarding noxious weed distributions within the NFJD Wilderness Area. The information was at that time not available as surveys of this area had not previously occurred. To this end the cooperators work to address the limiting factor of related to native riparian and floodplain habitats with the primary objective protecting those habitats (Table 17). To address these issues 135 miles of trail within the wilderness area were surveyed with the data passed on to the UNF.

Effort & Year	GA	Ecological Concern	Species	CTUIR River Vision Touchstones/ Habitat Limiting Factors								Outputs
				Biota-Connectivity	Geomorphology	Connectivity		Hydrology			Riparian Vegetation	
				Passage Barriers/ Entrainment	In-channel Characteristics	Habitat Diversity (LWD)	Floodplain Confinement	High Temps	Sediment	Low Flows	Riparian/ Floodplain	
Battle Creek Culvert Replacement - 2010	Desolation Creek	2.0, 3.0, 4.0	STS RB Opportunistic CHK BT	X	X				X		X	Return access to 8.5 miles of existing high quality habitat using an open bottom culvert Maintenance by UNF engineers.

Table 18. Efforts related to the Battle Creek culvert.

Project Summary:

The Battle Creek site is located south of Ukiah, Oregon and is a tributary of Desolation Creek. Discussions between the UNF and the Project led to the proposed replacement of this six by nine foot oval culvert which formed a complete passage barrier which was included in the Projects 2007 ISRP Review Proposal. Additionally, this barrier was identified in the draft action plan for Desolation Creek (USDA, 2009) as a priority for replacement. To this end the Project worked with the UNF and NFJDWC to address the primary limiting factor (passage barriers) with the objective of passage to and between available habitats and addressing sediment routing and sorting through an undersized culvert. To address these issues the cooperators installed a 16' by 9' bottomless culvert designed with natural channel design practices (Table 18). Monitoring efforts occur by UNF biologists who track in-stream habitat and fish populations through regular surveys, UNF engineers assessing road and culvert stability during regular surveys, and the Project who conducted Summer Steelhead trout spawner surveys for two years following implementation.

Ecological Outcomes:

The replacement (Figure 15) allowed passage to approximately 8.5 miles of existing high quality habitat and spawner surveys found one red two years after replacement. Surveys have not identified stability issues with the new culvert.

Figure 15. Photopoints and cross-sectional data related to the Battle Creek site Before (left) and after (right) construction..

Effort & Year	GA	Ecological Concern	Species	CTUIR River Vision Touchstones/ Habitat Limiting Factors								Outputs
				Biota-Connectivity	Geomorphology	Connectivity		Hydrology			Riparian Vegetation	
				Passage Barriers/ Entrainment	In-channel Characteristic	Habitat Diversity (LWD)	Floodplain Confinement	High Temps	Sediment	Low Flows	Riparian/ Floodplain	
Granite Creek Culvert Replacement - 2010	Granite Creek	2.0, 3.0, 4.0	STS BT RB	X	X				X		X	Return to 8.5 miles of existing high quality habitat using an open bottom culvert Maintenance by UNF engineers.

Table 19. Efforts related to the Granite Creek culvert.

Project Summary:

The Granite Creek site is located approximately five miles north of Granite, Oregon. Discussions between the UNF and the Project led to the proposed replacement of this 1.5 foot round culvert presenting a passage barrier to adult Summer Steelhead trout which was included in the Projects 2007 ISRP Review Proposal. Additionally, this barrier was identified in the draft action plan for Granite Creek (USDA, 2008) as a priority for replacement. To this end the Project worked with the UNF and NFJDWC to address the primary limiting factor (passage barriers) with the objective of passage to and between available habitats and addressing sediment routing and sorting through an undersized culvert. Cooperators addressed relevant issues cooperators installed an eight by 3 foot bottomless culvert designed with natural channel design practices (Table 19). Monitoring efforts occur by UNF biologists who track in-stream habitat and fish populations through regular surveys, UNF engineers assessing road and culvert stability during regular surveys, and the Project who conducted Summer Steelhead trout spawner surveys for two years following implementation.

Ecological Outcomes:

The replacement (Figure 16) allowed passage to approximately 2.7 miles of existing high quality habitat and although spawner surveys did not identify activity for red two years after replacement. Surveys have not identified stability issues with the new culvert.

Figure 16. Photopoints and cross-sectional data related to the Granite Creek site Before (left) and after (right) construction. Left Photograph by Kathy Ramsey.

Effort & Year	GA	Ecological Concern	Species	CTUIR River Vision Touchstones/ Habitat Limiting Factors								Outputs
				Biota-Connectivity	Geomorphology	Connectivity		Hydrology			Riparian Vegetation	
				Passage Barriers/ Entrainment	In-channel Characteristics	Habitat Diversity (LWD)	Floodplain Confinement	High Temps	Sediment	Low Flows	Riparian/ Floodplain	
Beaver Creek Reconnect – 2010/11	Granite Creek	2.0,3.0	STS CHK BT RB	X	X					X	X	Restore summer baseflows to 600 feet of channel using approximately 700 cubic yards of nearby native clay and a Bentonite blanket combined with native rock. Reshape channel to reduce incision and increase complexity with native rock including removing 5 logs drops installed in the 1980's. Approximately 5000 native hardwoods were planted by the UNF in adjacent riparian and floodplain areas.

Table 20. Efforts related to the Beaver Creek reconnect.

Project Summary:

The Beaver Creek Reconnect site is located approximately 7 miles southwest of Granite, Oregon. Historic placer mining severely disturbed or obliterated much of the stream channel and riparian/floodplain habitats throughout the Granite Creek Basin including Beaver Creek. Large mobile dredges left well sorted tailing piles up to 25 feet in height which severely confined streamflows where they remained and often left little accessible habitat for anadromous species. During the 1980's the WNF began working to restore in-channel baseflows in the remnants of stream channels which would often dry out as a direct result of fine material being lost during dredging operations. Although these methods were largely successful efforts to restore baseflows in Beaver Creek were not entirely successful and the channel would often be left during late summer baseflows. The cooperators for this effort included the WNF, UNF, Grant SWCD, NFJDWC, and the Project whose primary objective was to improve passage to and between available habitats. To address this issue the cooperators excavated the existing stream channel and using 700 yards of native clay and rock and a Bentonite blanket to seal the channel bottom (Table 20). Funding for theis effort came from BPA Budget 200820100 which is obligated for replacing passage barriers. Efforts were required during 2011 to address scour in one small location which exposed the blanket and the UNF has planted native hardwood vegetation and LWD adjacent to the treated reach (Figure 17). Monitoring efforts have included permanent cross-sections conducted by the UNF which are unavailable at this time. Summer Steelhead and Spring Chinook spawner surveys are conducted by ODFW with assistance from the Project annually.

Ecological Outcomes:

To date, the effort has proven successful with baseflow moving through the 600 foot reach annually (Figure 17).

Figure 17. Photographs of the Beaver Creek site before in 2009, 2011, and immediately after implementation in 2010). Left Photograph by Ed Calame.

Effort & Year	GA	Ecological Concern	Species	CTUIR River Vision Touchstones/ Habitat Limiting Factors								Outputs
				Biota-Connectivity	Geomorphology	Connectivity		Hydrology			Riparian Vegetation	
				Passage Barriers/ Entrainment	In-channel Characteristics	Habitat Diversity (LWD)	Floodplain Confinement	High Temps	Sediment	Low Flows	Riparian/ Floodplain	
Fox Creek Leafy Spurge Control 2010/12	Fox / Cottonwood Creek	5.1, 5.2	STS CHK RB								X	Approximately 215 acres treated with herbicide and biological controls. 345 acres survey for infestations and tracking the progress of previous treatment.

Table 21. Efforts related to the Fox Creek Leafy Spurge site.

Project Summary:

The Fox Creek Leafy Spurge effort took place along approximately 40 miles of Fox/Cottonwood Creek from roughly Monument, Oregon to above Fox, Oregon. Leafy Spurge introduced in the 1970's has become an issue in the valley for local ranchers who showed an interest in working to knock back and if possible eliminate the weed from the subbasin. The cooperators objective was to both Preserve and maintain existing habitat and Improve riparian and floodplain complexity although treatments did occur in upland areas. To address the issue NFJDWC staff and contractor surveyed 345 acres and treated 215 acres with a combination of biologic controls and herbicide treatments over three years (Table 21). Additional treatments are being considered at this time. Monitoring efforts indicate that although both biological and herbicide treatments were successful leafy spurge remains widely distributed in the areas where targeted mapping was conducted (Figure 18).

Figure 18. Treated area in 2010 (upper left), the same area during 2011 (upper right), and successful biological controls from 2010 noted in 2012 (lower left).

Effort & Year	GA	Ecological Concern	Species	CTUIR River Vision Touchstones/ Habitat Limiting Factors								Outputs
				Biota-Connectivity	Geomorphology	Connectivity		Hydrology			Riparian Vegetation	
				Passage Barriers/ Entrainment	In-channel Characteristics	Habitat Diversity (LWD)	Floodplain Confinement	High Temps	Sediment	Low Flows	Riparian/ Floodplain	
Granite Creek Native Vegetation Plantings - 2010	Granite Creek	5.1, 5. 5.32	STS CHK BT RB			X					X	Planted 8,400 native hardwoods in floodplain and riparian areas.

Table 22. Efforts related to the Granite Creek Native Vegetation site.

Project Summary:

The Granite Creek Native Vegetation site is located approximately three miles southwest of Granite, Oregon. During 2009 the UNF obliterated several roads in the Ten Cent Creek subbasin a tributary of Granite Creek. In cooperation with the UNF and NFJDWC the cooperators cooperate to plant native hard and softwood species on the obliterated road beds to improve stability of the recontoured surfaces. Although different than previous Project efforts this task was identified as a necessary part of addressing priority road obliterations identified in the Granite Creek Action Plan (USDA, 2008). It also addressed potential sediment issues above several culverts which were in line for replacement within several years. To address this issue the cooperators provided materials and supplies to install a mix of 8,400 species selected to match those existing on site. Thus far the UNF has tracked survival of the effort with softwoods planted on mine tailings suffering high mortality (Table 22), (Figure 19). Future efforts will use cuttings to a depth intersecting the floodplain aquifer. This may however, be a difficult proposition given the extent and depth of historic placer mining.

Figure 19. Photographs of the Granite and Clear Creek Planting site where hardwoods were planted on obliterated roads and recontoured mine tailings (left) and hardwoods along Granite Creek (right). Photographs by Amy Charette.

Effort & Year	GA	Ecological Concern	Species	CTUIR River Vision Touchstones/ Habitat Limiting Factors								Outputs
				Biota-Connectivity	Geomorphology	Connectivity		Hydrology			Riparian Vegetation	
				Passage Barriers/ Entrainment	In-channel Characteristics	Habitat Diversity (LWD)	Floodplain Confinement	High Temps	Sediment	Low Flows	Riparian/ Floodplain	
Clear Creek Native Vegetation Plantings - 2010	Granite Creek	5.1, 5. 5.32	STS CHK BT RB			X					X	Planted 5,040 native hardwoods in floodplain and riparian areas.

Table 23. Efforts related to the Clear Creek Native Vegetation site.

Project Summary:

The Clear Creek Native Vegetation site is located approximately seven miles southwest of Granite, Oregon. As previously noted historic placer mining severely disturbed much of Clear Creek's in-stream, riparian, and floodplain habitats which have been addressed through cooperative efforts previously noted with the Clear Creek Mine Tailing Removal, and the Beaver Creek Reconnect. This task followed up on those efforts by planting additional native hardwoods on recontoured tailings to supplement previous efforts. The objective for this effort was to simply Improve riparian and floodplain complexity within the constraints imposed by existing conditions. Cooperators included the UNF, NFJDWC, and the Project and the effort was completed along with the Granite Creek Native Vegetation Plantings and the Granite Creek Noxious Weed Treatments (Table 23). A total of 5,040 hardwood species matching those already in place were installed with the UNF tracking survival. As with the Granite Creek Native Vegetation softwoods planted on mine tailings suffering high mortality (Figure 19). Future efforts will use cuttings to a depth intersecting the floodplain aquifer. This may however, be a difficult proposition given the extent and depth of historic placer mining.

Effort & Year	GA	Ecological Concern	Species	CTUIR River Vision Touchstones/ Habitat Limiting Factors								Outputs
				Biota-Connectivity	Geomorphology	Connectivity		Hydrology			Riparian Vegetation	
				Passage Barriers/ Entrainment	In-channel Characteristics	Habitat Diversity (LWD)	Floodplain Confinement	High Temps	Sediment	Low Flows	Riparian/ Floodplain	
Granite Creek Noxious Weed Control - 2010	Granite Creek	5.1, 5.2	STS CHK BT RB								X	40 acres of riparian and floodplain habitats surveyed for noxious weeds. 28.5 acres of riparian and floodplain areas treated with herbicides for noxious weeds

Table 24. Efforts related to the Granite Creek Noxious Weed sites.

Project Summary:

The Granite Creek Noxious Weed Control sites were located approximately seven miles southwest of Granite, Oregon. As previously noted historic placer mining severely disturbed much of Clear Creek's in-stream, riparian, and floodplain habitats which have been addressed through cooperative efforts previously noted with the Clear Creek Mine Tailing Removal, and the Beaver Creek Reconnect. This task was originally designed to treat noxious weeds on recontoured mine tailings along Clear Creek and along Granite Creek, however, these treatments were prevented after funding had been secured on UNF lands. This resulted in the treatments occurring on nearby private lands where possible. The objective for this effort was to simply Improve riparian and floodplain complexity within the constraints imposed by existing conditions. Cooperators included the UNF, NFJDWC, and the Project with the effort completed after pre-treatment surveys and herbicide application over 28.5 acres of yellow toadflax, Canada thistle, bull thistle, and spotted knapweed with the 2010 treatments assessed and additional treatments following the following year with available funding (Table 24). Treatments the following year were less extensive due to the previous year's treatments although species treated were similar.

Effort & Area	GA	Ecological Concern	Species	CTUIR River Vision Touchstones/ Habitat Limiting Factors								Outputs
				Biota-Connectivity	Geomorphology	Connectivity		Hydrology			Riparian Vegetation	
				Passage Barriers/ Entrainment	In-channel Characteristics	Habitat Diversity (LWD)	Floodplain Confinement	High Temps	Sediment	Low Flows	Riparian/ Floodplain	
Lower Camas Creek Assessment - 2011	Lower Camas Creek	2.0, 3.0, 3.1, 4.1, 5.1, 5.2, 7.0	STS CHK RB	X	X				X		X	Completed and distributed findings of the survey to local citizens and gave presentations to the City of Ukiah

Table 25. Efforts related to the Lower Camas Cree Assessment site.

Project Summary:

The Lower Camas Creek Assessment resulted from questions by local landowners and the city of Ukiah who were concerned about sediment deposition within levees above, below, and within the city. During prior to the construction of existing levees citizens would channelize Camas Creek through town every year to deal with deposited sediments. After the 1964 floods when levees were constructed to protect private lands and the city and to various extents maintained since then the U.S. Army Corps of Engineers channelized Camas Creeks channel to a greater degree than before. Since then, maintenance has not been completed to any reasonable extent. Although the Project had a desire to assist with identify a solution to the issue there did not appear to be any information related to past and current conditions beyond qualitative descriptions of events and conditions. To establish some form of baseline condition, identify relevant processes, or identify potential data needs the Project conducted a survey along three miles of Camas Creek collecting longitudinal and cross-sectional profiles and sediment data (Table 25). This data was reconciled with other easily available resulting in a breif describing conditions, relevant processes, and an approach to begin addressing the issues which was circulated amongst the local population. This effort resulted in several presentations to the City of Ukiah and a WE in the 2013 statement of work to coordinate with willing landowners and citizens to identify and implement reasonable treatments. Generally speaking, the alluvial fan on which Ukiah, Oregon residents has been and is suffering from local headcuts (Figure 20) which are mobilizing sediments in addition to those naturally moving through the system and are being deposited within and below Ukiah due to a change in channel and floodplain gradient. The extent to which treatments can or will occur remains to be seen.

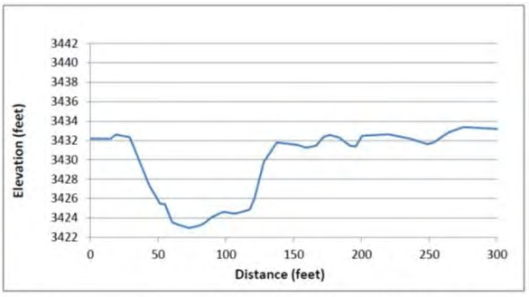


Figure 20. Photographs of the Lower Camas Creek Assessment site approximately 2 miles above Ukiah (left) and associated cross-section and just below Ukiah.

Effort & Area	GA	Ecological Concern	Species	CTUIR River Vision Touchstones/ Habitat Limiting Factors								Outputs
				Biota-Connectivity	Geomorphology	Connectivity		Hydrology			Riparian Vegetation	
				Passage Barriers/ Entrainment	In-channel Characteristics	Habitat Diversity (LWD)	Floodplain Confinement	High Temps	Sediment	Low Flows	Riparian/ Floodplain	
Bruin Creek Culvert Replacement - 2011	Desolation Creek	2.0, 3.0, 3.1	STS RB Opportunistic CHK BT	X	X				X		X	Return access to 5.3 miles of existing high quality habitat using an open bottom culvert Maintenance by UNF engineers.

Table 26. Efforts related to the Bruin Creek culvert site.

Project Summary:

The Bruin Creek site is located south of Ukiah, Oregon and is a tributary of Desolation Creek. Discussions between the UNF and the Project led to the proposed replacement of this complete barrier to passage which was identified in the draft action plan for Desolation Creek (USDA, 2009) as a priority for replacement. To this end the Project worked with the UNF and NFJDWC to address the primary limiting factor (passage barriers) with an objective of improving passage to and between available habitats and addressing sediment routing and sorting through an undersized culvert. Fortunately for the cooperators planning to replace the culvert had begun prior to noting significant erosion around the culvert causing cracking and tilting of the upper orifice. Debris plugged this end resulting in complete loss of the structure the following year and much of the road prism. As such, the accepted design was amended to provide a smaller road prism and the replacement occurred without any complicating issues. Deposited sediment below the culvert was left in place and allowed to be removed and a channel excavated with natural processes. To address these issues the cooperators replaced a four foot round culvert with a 16 by 9 foot bottomless culvert designed with natural channel design practices with additional efforts by the UNF and the Project to plant native hardwoods below the culvert to bolster native vegetation (Table 26). Monitoring efforts occur by UNF biologists who track in-stream habitat and fish populations through regular surveys, UNF engineers assessing road and culvert stability during regular surveys, and the Project who will conduct Summer Steelhead trout spawner surveys for until 2013.

Ecological Outcomes:

The replacement (Figure 21) allowed passage to approximately 5.3 miles of existing high quality habitat and surveys have not yet noted spawning activity. Surveys have not identified stability issues with the new culvert.

Figure 21. Photographs of the Bruin Creek Culvert Replacement site with photographs showing pre-implementation (left) and post-implementation (right) culverts at the lower end.

Effort & Year	GA	Ecological Concern	Species	CTUIR River Vision Touchstones/ Habitat Limiting Factors								Outputs
				Biota-Connectivity	Geomorphology	Connectivity		Hydrology			Riparian Vegetation	
				Passage Barriers/ Entrainment	In-channel Characteristics	Habitat Diversity (LWD)	Floodplain Confinement	High Temps	Sediment	Low Flows	Riparian/ Floodplain	
Fox Creek Channel Enhancement - 2012	Fox / Cottonwood Creek	1.0, 3.0, 3.1, 4.0, 5.0, 5.1, 5.2, 5.3, 7.0	STS RB		X	X			X		X	Restore flow to 2,300 feet of historic channel Restricted flow access to 2,300 feet of excavated channel Prevented channel incision and restored floodplain storage

Table 27. Efforts related to the Fox Channel Enhancement site.

Project Summary:

The Fox Creek site is located just south of Fox, Oregon. In response to landowner concerns about the state and function of Fox Creek flowing through their properties, the NFJDWC conducted an assessment along 20 miles of Fox Creek in 2009 resulting in a list of potential actions addressing hydrologic, geomorphic, and land management concerns. The Project contributed toward this effort, participated in the 'agency' prioritization meeting, and provided funding during 2011 and 2012 to install LWD in the historic channel to create and maintain scour and use plug and pond methods to restrict flows through a channel created during the 1960's to provide flood control. The excavated channel captured enough flow that the original channel was essentially abandoned and severe erosion of the excavated channel reduced floodplain connectivity. To this end the Project worked with the NFJDWC and landowners to address the existing conditions and limiting factors (channel stability, habitat diversity, fine sediment, high temperature, and riparian condition) with the objective of improving stream channel complexity and morphology with a secondary objective of improving riparian and floodplain complexity, sediment routing and sorting, and water quality. To address these issues the cooperators installed 50 pieces of large wood creating 14 structures to create and maintain scour and 19 riffles to control channel grade and over time fill the excavated channel with sediment, debris, and native vegetation (Table 27). Monitoring will include spawner surveys conducted by the NFJDWC and annual collection of photopoints at established points.

Ecological Outcomes:

The work (Figure 22) improved channel complexity and morphology in 2,300 feet of stream channel and will reduce channel instability. Since implementation of the 'plug and pond' portion of this efforts ended in 2012 there is not yet any monitoring data to present.


Figure 22. Photographs of the Fox Creek Channel Enhancement showing LWD installed in 2011 (left) and a finished 'plug' in 2012 (right).

Effort & Year	GA	Ecological Concern	Species	CTUIR River Vision Touchstones/ Habitat Limiting Factors								Outputs
				Biota-Connectivity	Geomorphology	Connectivity		Hydrology			Riparian Vegetation	
				Passage Barriers/ Entrainment	In-channel Characteristics	Habitat Diversity (LWD)	Floodplain Confinement	High Temps	Sediment	Low Flows	Riparian/ Floodplain	
Butcherknife Creek Riparian Fence - 2012	Desolation Creek	3.0, 3.1, 4.0, 5.0, 5.2, 6.0	STS RB		X			X	X		X	11,880 feet of four strand barbed wire fence constructed to protect approximately 1,200 acres of in-stream, riparian, floodplain, and upland habitat along 1.5 miles of stream channel. Maintenance by grazing permitte with oversight by UNF Range Conservationist.

Table 28. Efforts related to the Butcherknife Creek fence site.

Project Summary:

The Butcherknife Creek site is located approximately 20 miles east of Ukiah, Oregon. Discussions with the UNF indicated there was a need to address stream channel and riparian disturbances from grazing cattle along Butcherknife Creek. A natural terrain trap would funnel cattle down into the riparian area where cattle would congregate. Although riders had been used to move cattle the method did not prove effective or acceptable to either the permittee or the UNF. To this end the Project worked with the UNF and NFJDWC to address the limiting factors of channel stability, habitat diversity, fine sediment, high temperature, and riparian condition with the primary objective being to protect riparian and floodplain complexity, water quality, and stream channel complexity and morphology existing habitat improve upland grazing management and stream channel complexity and morphology. To address these issues the Project constructed 11,880 feet of four strand barbed wire exclusion fencing isolating 1,200 acres of stream channel, riparian, and floodplain areas from grazing cattle (Table 28). Monitoring efforts occur by UNF Range Conservationists who administer grazing permits on this allotment and are responsible for administering fence maintenance and UNF biologists who track in-stream habitat and fish populations through regular surveys.

Ecological Outcomes:

Fence construction has successfully restricted cattle access to sensitive areas improving in-stream, riparian, and floodplain conditions and habitat while reducing sediment entrainment during all flows.

Effort & Year	GA	Ecological Concern	Species	CTUIR River Vision Touchstones/ Habitat Limiting Factors (PLF's shaded in yellow-NOAA BiOP)								Outputs
				Biota-Connectivity	Geomorphology	Connectivity		Hydrology			Riparian Vegetation	
				Passage Barriers/ Entrainment	In-channel Characteristics	Habitat Diversity (LWD)	Floodplain Confinement	High Temps	Sediment	Low Flows	Riparian/ Floodplain	
Ten Cent Creek Culvert Replacements - 2011	Desolation Creek	2.0, 3.0, 3.1	STS RbB Opportunistic CHK BT	X	X				X		X	Return access to 6.0 miles of existing high quality habitat using an open bottom culvert Maintenance by grazing permitte with oversight by UNF Range Conservationist.

Table 29. Efforts related to the Ten Cent culvert.

Project Summary:

The Ten Cent Creek Culvert site is located three miles west of Granite Oregon and is a tributary of Granite Creek. Discussions between the UNF and the Project led to the proposed replacement of three partial barriers to passage identified in the action plan for Granite Creek (USDA, 2012) as a priority for replacement. Given that three barriers were identified in a single basin efforts were made to replace all under a single contract to reduce costs. To this end the Project worked with the UNF and NFJDWC to address the primary limiting factor (passage barriers) with the objective for this effort of removing the undersized culverts. To address these issues the cooperators installed two bottomless culverts and one precast concrete bridge designed with natural channel design practices (Table 29, Figure 23). Monitoring efforts occur by UNF biologists who track in-stream habitat and fish populations through regular surveys, UNF engineers assessing road and culvert stability during regular surveys, and the Project who will conduct Summer Steelhead trout spawner surveys until 2014.

Ecological Outcomes:

The replacement of all three barriers returned passage to six miles of existing high quality habitat. Spawner surveys will begin in 2013.

Figure 23. Photographs of the Ten Cent Creek culverts with pre-implementation on top and post-implementation below. Pictures are displayed from higher elevation (left) to lowest elevation (right).

Effort & Year	GA	Ecological Concern	Species	CTUIR River Vision Touchstones/ Habitat Limiting Factors (PLF's shaded in yellow-NOAA BiOP)								Outputs
				Biota-Connectivity	Geomorphology	Connectivity		Hydrology			Riparian Vegetation	
				Passage Barriers/ Entrainment	In-channel Characteristics	Habitat Diversity (LWD)	Floodplain Confinement	High Temps	Sediment	Low Flows	Riparian/ Floodplain	
Five Mile Fence Maintenance - 2012	Lower Camas Creek	3.0, 3.1, 4.0, 5.0, 5.2, 6.0	RbB	X	X				X		X	Heavy maintenance along 5 miles of riparian exclusion fencing.

Table 30. Efforts related to the Five Mile Fence Maintenance site.

Project Summary:

The Five Mile Creek Fence Maintenance site is located approximately 15 miles west of Ukiah, Oregon. Approximately 20 years ago the UNF secured BPA funding to construct riparian exclusion fence along 80 miles of stream channel to protect habitat used by Summer Steelhead trout or above barriers that prohibited passage the species but contained sensitive populations of Redband trout. While the fences have been maintained by allotment permittees with oversight by Range Conservationists wear and tear is beginning to show. Conversation between the UNF and the Project identified a use of existing staff personnel and equipment that would reduce maintenance costs for both parties. During 2012 Project staff completed maintenance on five miles of fence line in the Taylor Creek basin with materials supplied by the UNF (Table 30). Asimilar, although more extensive effort has been included within the 'Edit Deliverables > Deliverables' tab for the 2013-18 period. Maintenance of the refurbished fence shall continue to be overseen by UNF Range Conservationists.

Assessments

More details about assessments of this project are available in the Assessments area.

Review: FY07-09 Solicitation Review

Independent Scientific Review Panel Assessment:

Completed Date:	8/31/2006
Final Round ISRP Date:	<none>
Final Round ISRP Rating:	Meets Scientific Review Criteria

Council Recommendation:

Completed Date:	10/23/2006
Recommendation:	Fund

Response to past ISRP and Council comments and recommendations:
As a result of the 2007 ISRP review the Project investigated and identified monitoring methods to improve the understanding of efforts effectiveness and adapt to new implementation and monitoring techniques and refine implementation methods. Additionally, professional development classes have been taken by all staff to improve their understanding of physical processes, monitoring and design techniques, and gain a better understanding of permit requirements. This has allowed staff to identify and address physical processes while discussing potential efforts with landowners, ask better questions, and improve permit applications. An example is the Project's enhanced understanding of physical processes used when undertaking the Camas Creek Levee Assessment and related brief to explain findings to the local community; many of which don't have a technical background in physical processes. The finding in this brief will guide future efforts related to addressing sediment deposition including additional data needs, potential options for treatments, and reconciling the various opinions and concerns of area residents.

Adaptive Management

Management Changes:
The CTUIR Fisheries Habitat Program continues to gain and improve knowledge in floodplain and riverine processes and has applied that knowledge to this Project resulting in improved administration, planning, design, implementation, and monitoring. Restoration actions implemented by CTUIR and supported by the Umatilla Rivervision (Jones et.al. 2008) promote a dynamic river and floodplain with natural variability, address ecological processes rather than physical results of poorly functioning systems, and approach project planning at a watershed scale (Wohl et.al. 2005). We recognize that stability in a riverine floodplain must be considered at geomorphic temporal and spatial scales in order for natural ecological processes to occur and restoration actions to be considered successful. Actions that only address symptoms of non-functioning systems have results that are ineffective at meeting restoration goals (Kondolf et.al. 2003). And, the interconnection between physical, chemical and biological processes within a watershed must be considered at multiple scales of time and space.
The CTUIR Fish Habitat Program develops restoration projects through what we define as the Riverine Planning Approach that includes an adaptive management mechanism at several stages. The approach includes the 5 basic stages of scoping, assessment; monitoring, implementation, and reporting (please see the following figure). The results of reporting are then available to provide input to additional assessment, evaluation of project objectives, input to monitoring plans, and input to project development. Results from one project also provide information to the planning process of future projects and project in other subbasins.
The CTUIR Fish Habitat Program is currently in development of a physical habitat monitoring strategy (being developed under BPA#2000-031-00 Enhance Habitat in the North Fork John Day River) that will provide project leaders direction and information for developing individual restoration project monitoring plans. This strategy will link project objectives with physical habitat metrics and monitoring methods that are consistent and accepted within the region. By developing a monitoring plan through this strategy, project

specific data will be comparable across projects and subbasins. Monitoring information and results from individual plans will be used as adaptive management input for CTUIR projects and could be coordinated with other monitoring efforts.
At a subbasin and a ceded area scale, CTUIR Fish Habitat projects also rely on biological data collected and analyzed through the CTUIR Fisheries Monitoring and Evaluation Program. Specifically, project BPA#2009-014-00 Biomonitoring of Fish Habitat Enhancement has been developed to investigate the effectiveness of habitat actions on anadromous fish populations. Information gathered and reported through this project in combination with other outputs from the M&E Program have provided and will continue to provide important information to the Habitat Program for restoration action prioritization and development.
Past project development and implementation has fostered experience and lessons with regard to practical issues of administration, organization, and successful project completion. Specific issues have included unclear project goals and objectives, poorly developed design team roles and responsibilities, inadequate data collection and information for various project stages, and delayed or extended permitting and consultation processes. To remedy these issues and improve future project development the following solutions have been applied:
1. Develop clear project goals and measurable objectives that address Primary Limiting Factors (Ecological Concerns) and drive the development of project actions and effectiveness monitoring plans through the Riverine Planning Process.
2. Develop integrated and organized planning teams to utilize the Riverine Planning Process. The basic team would be led by a CTUIR project leader with a formation of interdisciplinary members. Disciplines not represented by CTUIR staff or partners would be made available as necessary to the team through subcontract. Roles and responsibilities would be outlined and clearly understood. Develop a timeline and schedule for the planning process up front so that contract amendments and changes are minimized.
3. Adequate data and final design information is collected and provided. The level and detail of site data and information collected needs to meet or exceed the intended use.
4. Detail final plans to an accurate level based on updated site information. A final design plan should be agreed upon and understood by all team members before moving into the implementation phase.
5. Coordinate and communicate early and often with regulatory agencies. Make sure permitting agencies are aware of decision changes in a timely, official, and detailed manner.

These practices are similar to those the project use and are described in the 'Edit Work Type Details > Large Programs page. Generally speaking the Projects works with cooperators where possible to improves design, planning and implementation through additional scrutiny thereby improving the efforts effectiveness.

Project Documents & Reports

Public Attachments in Pisces

ID	Title	Type	Period	Contract	Uploaded
P124949	NORTH FORK JOHN DAY RIVER BASIN ANADROMOUS FISH HABITAT ENHANCEMENT PROJECT Annual Report for April 2010 – January 2011	Progress (Annual) Report	2/2010 - 1/2011	51701	2/1/12
P117094	North Fork John Day River Basin Anadromous Fish Habitat Enhancement Project	Progress (Annual) Report	2/2009 - 1/2010	46079	7/13/10
P113864	North Fork John Day River Anadromous Fish Habitat	Progress (Annual) Report	4/2008 - 3/2009	42947	10/20/09
P107268	NORTH FORK JOHN DAY RIVER BASIN ANADROMOUS FISH HABITAT ENHANCEMENT PROJECT Annual Report for April 2007 – March 2008	Progress (Annual) Report	4/2007 - 3/2008	37318	7/14/08
P103004	NORTH FORK JOHN DAY RIVER BASIN ANADROMOUS FISH HABITAT ENHANCMENT PROJECT ANNUAL REPORT	Progress (Annual) Report	4/2004 - 3/2007	32946	8/2/07
00006613-2	North Fork John Day River Basin Anadromous Fish Enhancement Project	Progress (Annual) Report	10/2000 - 9/2001	6613	3/1/03
00006613-1	North Fork John Day River Basin Anadromous Fish Enhancement Project	Progress (Annual) Report	10/1999 - 9/2000	6613	3/1/03

Other Project Documents on the Web

<none>

Project Relationships

The Project Relationships tracked automatically in cbfish.org provide a history of how work and budgets move between projects. The terms "Merged" and "Split" describe the transfer of some or all of the Work and budgets from one or more source projects to one or more target projects. For example, some of one project's budget may be split from it and merged into a different project. Project relationships change for a variety of reasons including the creation of efficiency gains.

Project Relationships: <none>

Additional Relationships Explanation:

Geographic Region – The Project is not related to an organized NFJD subbasin effort. However, the Project has and will continue to work with subbasin cooperators beyond private landowners and citizens when the opportunities arise. This has included the Umatilla (UNF), Wallowa-Whitman (WNF), and Malheur (MNF) National Forests, NFJDWC, Grant SWCD, Monument SWCD, Oregon Department of Fish and Wildlife (ODFW), and The Nature Conservancy (TNC). During the 2013-18 period the Project will continue cooperating with these and other interested parties including the Confederated Tribes of the Warm Springs Reservation (CTWSR) and other interested parties where possible.

Over the past several years the Project has coordinated with the UNF, WNF, and MNF and the NFJDWC on many projects which have primarily been related to fencing, passage barrier projects, and noxious weed control efforts. These coordinated efforts alone have improved the Projects ability to address limiting factors in and outside of focus basins and where the Projects may not otherwise have access. This is in large part due to available resources, staff technical expertise, local community relationships and planning capacity across multiple years. The CTUIR have previously identified a need to develop trust within small rural communities of the NFJD subbasin. To this end the CTUIR holds a designated seat on the NFJDWC which has proven effective in promoting awareness, public participation, improved the Projects ability to utilize qualified local contractors. Local contractors reduce the cost of implementing habitat improvements and support the small subbasin communities. As the general public becomes more aware of the CTUIR's presence and gains comfortability through partnerships, CTUIR's local involvement and project opportunites shall increase.

The Project has been and will continue to address limiting factors through cooperative efforts which have and may continue to include programs sponsored by the U.S. Department of Agriculture (USDA), Oregon Watershed Enhancement Board (OWEB), Bureau of Reclamation, the Corps of Engineers and other private or public funding sources. Cost share from these and other entities shall be utilized to reduce annual BPA project implementation expenditures. For example, the CTUIR has partnered with NRCS and FSA to obtain Wildlife Habitat Incentive Program (WHIP) funds and merge CTUIR Riparian Easements with CREP Agreements. These same resources shall also be used to extend existing landowner agreements where possible.

This project shares office space or equipment with the following BPA funded projects which result in significant cost savings to the Project:

- BPA Project #198710001; CTUIR's Umatilla River Basin Anadromous Fish Habitat Enhancement Project
- BPA Project #199604601; CTUIR's Walla Walla Basin Habitat Enhancement Project
- BPA Project #199608300; CTUIR's Grande Ronde Basin Habitat Enhancement Project
- BPA Project #199608300; CTUIR's Protect and Restore Tucannon Watershed
- BPA Project # 200901400 CTUIR's BioMonitoring of Fish Habitat Enhancement

Similar Work – Complimentary restoration efforts funded by BPA within the NFJD subbasin include;

- BPA Project #198402100; ODFW's John Day River Subbasin Fish Habitat Enhancement Project
- BPA Project #199137; CTWSR's John Day Watershed Restoration Project
- BPA Project #199801600: ODFW's Escapement and Productivity of Spring Chinook and Steelhead

The projects listed above address similar limiting factors and work to monitor aquatic populations in different portions of the subbasin or in cooperation with the Project. This does not prevent overlap where private landowners may prefer to work with one cooperator over another and where possible, cooperative efforts do occur. For example, CTUIR has provided materials to a joint fencing effort between the TNC and CTWSR along the Middle Fork John Day River to contain cattle and previously proposed efforts that were not implemented have included coordination with ODFW.

Cumulative Effects - The Project shall also continue integrate existing and proposed efforts into a comprehensive watershed management approach, consistent with subbasin plan strategies and objectives. This approach will result in reach-level habitat recovery and complement other riparian and upland habitat restoration and conservation efforts within high priority GA's, as identified in the subbasin plan and where the greatest benefits can be achieved in the shortest amount of time. Cooperative efforts outside of these areas will consider and treat similar limiting factors and concentrate efforts to the greatest extent possible. This is consistent with the NPPC's 1994 FWP, which states, "prioritize actions that maximize the desired result per dollar spent". An example of this during the 2013-18 period will be prioritized, and cooperative efforts within the Upper Granite Creek subbasin to remove passage barriers, restore and improve in-stream, off-channel, riparian, and floodplain habitats used by Spring Chinook salmon, Mid-Columbia steelhead trout, bull trout, and rainbow trout, increase floodplain connectivity, improve sediment routing and large woody debris occurrence, restore riparian vegetation, and improve water quality.

Focal Species

Primary Focal Species
Chinook (O. tshawytscha) - Mid-Columbia River Spring ESU
Steelhead (O. mykiss) - Middle Columbia River DPS (threatened)
Trout, Bull (S. confluentus) (threatened)
Trout, Interior Redband (O. mykiss gairdnerii)
Trout, Rainbow (Oncorhynchus mykiss)

Secondary Focal Species
Wildlife

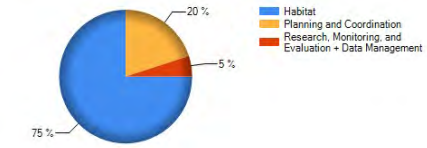
Emerging Limiting Factors
Climate change, non-native species, increased predation, and toxics are conditions addressed through past, existing, and future efforts. The expectation that climate will become warmer and wetter during the winter and dryer and hotter during the summer (OCAR, 2010) does not devalue the NFJD Subbasins relative health when to compared surrounding lower elevations and basins and its future potential role in providing refuge and high quality water. This does not ignore the posibility that climate change could have significant effects on Columbia and Snake River systems in terms of runoff timing, water quantity and temperature. Changes in regional snowpack and river flows due to climate change could profoundly influence the success of restoration efforts and the status of Columbia Basin fish and wildlife populations. To the extent that climate change may further adversely affect fish and wildlife affected by the Federal hydrosystem, land use, and development, it is appropriate for managers to seek the best available scientific knowledge regarding the effects of climate change and to consider that scientific data when recommending Program strategies and implementation measures.

Climate change could alter environmental conditions across the entire life cycle for all life stages of cold water fish although there remains considerable uncertainty about the magnitude of loss and degradation of habitat resulting from climate change. The magnitude of environmental change will vary considerable across ecoregions and differentially influence salmon and steelhead population viability. In general, habitats at lower elevations east of the Cascade Mountains in the southern portion of the Columbia River basin likley see the greatest change will experience the greatest level of change. Changes often ued to describe cjhanges to aquatic populations include: elevated temperatures, less snow and more rain, and/or a shift fromm snpw to rain dominated precipitation leading to altered hydrographs and more frequent stochastic events.The end result may well reflect suggestions by Battin et al. (2007) that small streams may initiate further down slope, incrementally reducing headwater habitat availability and lower elevation rivers to warm in near synchrony to air temperatures; essentially compressing suitable habitat and suggesting that efforts in GAs such as Granite Creek contain considerable value. Although historic placer mining severely disrupted large portions of in-stream, riparian, and floodplain habitats returning these habitats a dynamically stable form given historic management practices will at least partially natural processes and bolster population fitness. Thus enabling populations to shift down into the adjacent wilderness area should available habitat become compressed.

As previously noted, efforts to address limiting factors will continue within focus GAs and during cooperative efforts outside these areas. Given existing subbasin attributes such as numerous high elevation meadows, relatively healthy stream channels, riparian, and floodplain habitats, existing populations of listed and non-listed species with little hatchery influence, many efforts do not require the resources demanded in more intensively and extensively disturbed areas. Non-native species present within the basin have and will be considered with regard to their influence upon existing native populations. CTUIR will continue to improve native vegetation using plantings and herbicide and biological controls and toxics related to hardrock mining will be addressed through cooperative efforts. Given historic, current, and future management practices problems with other toxics are not expected. The Project collects monitoring data where six conservation agreements exist and on three other independent sites to identify base line conditions and site stability and trends. Data include descriptions of channel, riparian, and floodplain form and function, air and water temperature, focal species spawning, and vegetation. Data are specific to point locations and their geographic distribution can be used in conjunction with other data to track changes across the watershed. Climate change models are not currently consulted during planning and design efforts.

Types of Work

Work Classes



Work Elements

Habitat:
Habitat work elements typically address the known limiting factors of each location defined for each deliverable. Details about each deliverable's locations, limiting factors and work elements are found under the Deliverables sections.

26. Investigate Trespass
29. Increase Instream Habitat Complexity and Stabilization
30. Realign, Connect, and/or Create Channel
40. Install Fence
47. Plant Vegetation
52. Remove Mine Tailings
184. Install Fish Passage Structure

Planning and Coordination:
99. Outreach and Education
114. Identify and Select Projects
175. Produce Design and/or Specifications

RM & E and Data Management:
157. Collect/Generate/Validate Field and Lab Data
160. Create/Manage/Maintain Database
161. Disseminate Raw/Summary Data and Results
162. Analyze/Interpret Data

Resident Fish

Please describe which opportunities have been explored to restore or reintroduce resident native fish and their habitats?
Opportunities to enhance resident species and their habitat are identified, prioritized, and implemented with every effort using the 'Solicitation > Review > Selection' process noted under the 'Large Habitat Programs' section below. Due to species overlap and spatial distributions, addressing limiting factors for anadromous species typically address requisite conditions necessary for resident species although in some instances the individual effort may not be able to address larger scale factors such as elevated water temperatures. Efforts to address limiting factors for Mid-Columbia Steelhead trout and Chinook salmon inherently address limiting factors for rainbow trout and non-game species such as dace, scuplin, and others such as amphibians not previously noted. With regard to Redband trout and threatened bull trout, these species inhabit specific portions of the NFJD subbasin and as such, not all efforts directly address their habitats or populations. Redband trout are often within higher elevation streams reaches with limited or no access while critical habitat for bull trout occur has been designated across many reaches of the focal GAs although the actual use may be seasonal at best as in the case of lower elevation habitat where overwintering habitat has been identified.

In several locations barriers prevent access by anadromous species or protect more desirable species from those with less value. In these instances efforts to improve conditions for those resident species continues with the expectation improved water quality will benefit anadromous species as well. An example of this would be WEs K, L, & M in the 2010 Statement of Work where installed riparian fencing protects habitat frequented by Redband trout above a natural barrier blocking Summer Steelhead trout and Spring Chinook salmon. A second example is WE N in the 2010 Statement of Work where a culvert replacement opened up exiting high quality cold water habitat for opportunistic Bull trout. Additionally, all work in the higher elevation areas stands a change of improving downstream water quality for all species.

Has a loss assessment been completed for your particular subbasin/or province?
No

Describe how the project addresses the loss assessment. If a loss assessment is in progress or being proposed, describe the status and scope of that work.
Unaware of any loss assessment produced or in production.

If you are using non-native fish species to achieve mitigation, have you completed an environmental risk assessment of potential negative impacts to native resident fish?
No

Please describe: for the production of non-native fish, what are the potential impacts on native fish populations, including predation, competition, genetic impacts, and food web implications?
Non-native species are not used for mitigation and those that exist within the subbasin primarily consist of warm water species relegated to the mainstream NFJD where environmental conditions are more conducive to such species. Anadromous and resident species of primary concern inhabit the upper NFJD and upper elevation tributaries of the NFJD subbasin. In these environments, existing environmental conditions prohibit access by warm water species and efforts undertaken to address limiting factors decrease the likelihood for undesirable intrusions. Where undesirable cold water species such as brook trout do exist efforts focus on improving habitat for focal species and thereby population fitness. Addressing limiting factors within the NFJD subbasin will maintain and improve habitat conditions and native populations by improving habitat and in effect downstream water quality. Actively culling undesirable species has not been undertaken by the Project and will not likely be undertaken.

Does your proposed work support or implement a production goal identified in a USFWS Bull Trout Recovery Plan?
Yes

Please explain.
Seven local populations within the NFJD subbasin have been identified (USFWS, 2002) including Upper Granite Creek and Desolation Creek with critical habitat identified in Camas Creek and documented spawning activity occurring in Upper Granite Creek tributaries. Once prevalent throughout the NFJD subbasin bull trout are now relegated to have been restricted to these isolated areas through land and river management techniques to include; dams and declining anadromous species populations a source of prey and nutrients for bull trout and their habitat; forest practices resulting in altered fire regimes, loss of streamside shade and in-stream complexity, and sediment inputs to stream channels from timber removal and transportation; grazing management resulting in compromised stream channel, riparian, and floodplain form and habitat as well as elevated water temperatures; mining activities which have severely disturbed reaches of the NFJD subbasin to include a complete loss of or greatly simplified of in-stream, riparian, and floodplain habitats and degraded water quality; recreation influencing in-stream, riparian, and floodplain habitats; fisheries

management to include the introduction of brook trout and historic bull trout harvest; and isolated populations limited by their ability to pass through disturbed areas due to barriers formed through poor habitat, structures, and temperature. To accomplish the goal of bull trout recovery in the John Day Recovery Unit several objectives have been developed to include; maintaining current distributions and restore to historic distributions; maintain stable or increasing trends in adult abundance; restore suitable habitat for all life stages; and conserve genetic diversity.

Efforts toward recovery in the NFDJ subbasin began no later than 1995 with CTUIR's contribution to the development of WY-KAN-USH-MI WA-KISH-WIT or Spirit of the salmon, the Columbia River anadromous fish restoration plan of the Nez Perce, Umatilla, Warm Springs and Yakima Tribes (Columbia River Inter-Tribal Fish Commission 1995). Over the last seven years the Project has actively contributed to their recovery through restoration actions within and along Granite, Desolation and Camas Creeks. During the 2013-18 period actions further contribute toward recovery by addressing Project objectives of preserving existing habitat, improving passage, increasing in-stream morphological diversity, complexity, and function, juvenile rearing, sediment sorting and routing, side channel length, floodplain connectivity and riparian function and extent, and improving water quality and quantity. Although the Project cannot directly address bull trout populations throughout the basin efforts to improve habitat conditions within focus basins which align with existing populations and/or critical habitat between 2013 and 2018. Efforts to address these conditions outlined in the 'Edit Deliverables and Budget' Section include coordinated efforts noted below in addition to efforts not yet identified.

Upper Granite Creek - remove passage barriers, redistribute and remove excess mine tailings, restore channel
complexity and floodplain connectivity, increase streamside shade by restoring native vegetation,
increase shallow ground water storage, reduce maximum stream temperatures using previously
noted means
Desolation Creek - Remove passage barriers, increase channel, riparian, and floodplain complexity, increase floodplain
connectivity, prohibiting cattle access to sensitive areas, improve water quality using previously noted
means
Camas Creek - Increasing channel, riparian, and floodplain complexity, increasing floodplain connectivity, improve water
quality using previously noted means

Data Management

What tools (e.g., guidance material, technologies, decision support models) are you creating and using that support data management and sharing?
The CTUIR's Department of Information Technologies houses a significant amount of data for the CTUIR Department of Natural Resource programs. Efforts are currently underway, through an on-site data coordinator, to standardize and better document many sets of data that are used throughout Habitat related projects. Once fully established, this system will improve our ability to will store, query, and share data. Currently all data are kept in a MS SQL database using sing a format conducive to existing reporting needs. These data are available at any time and are downloadable in MS Excel format at http://data.umatilla.nsn.us/waterquality/Default.aspx

Describe the process used to facilitate receiving and sharing of data, such as standardizing data entry format through a template or data steward, including data exchange templates that describe the data collection methods, and the provision of an interface that makes data electronically accessible.
To date data has been passed on in its raw format or in one conducive to the user. Once CTUIR's Department of Information Technologies has established the database noted above the project will use the common protocols and formats established for this database and related queries.

Please describe the sources from which you are compiling data, as well as what proportion of data is from the primary source versus secondary or other sources?
Data used by the project to design efforts and track status and trend for efforts developed in-house or in cooperation with others is collected and tabulated by staff personnel. Data used for reports is obtained directly from the entity possessing the data such as spawner survey data from ODFW.

What type of data are you collecting and how are you documenting supporting metadata?
The Project collects pre and post implementation data for efforts without cooperators and where feasible when working with cooperators. Collected data is use for baseline assessments, status and trend monitoring, and as part of a before-after monitoring design. All metrics are linked directly to project objectives, designed to measure responses of limiting factors to a particular effort, and generally consists of geomorphological, biological, or physical data. Similar data are typically collected to identify pre and post-implementation conditions or trends. Meta data has been saves within .txt files on the Projects computers describing the effort in general and any monitoring efforts which were specific to that effort. Monitoring data include;

- Longitudinal and cross sectional profiles and topographical data (using a Trimble R8 GPS, or Total Station): Data collected are points (X, Y, and Z coordinates) in coordinate system State Plane, NAD83, 3601 North, in International feet or a laser level, stadia rod, and tape using methods outlined by Harrelson, C. C. et al. (1994), and Rosgen, D. L. (1998). Data are used in to build surfaces, plot plan view of existing channel conditions, calculate width/depth ratio's, calculate pool/riffle ratio's, and build stream cross sections prior to development of restoration actions.

- Sediment size and distributions following methods outlined by Wolman, M. G. (1954) or Reid and Dunne, (1996) to identify substrate composition at various cross sections in centimeters and provide information on the particle size (D50, D85) within the existing channel.

- Vegetative associations and cover using 'greenline' surveys, transects leading from the channel on to the floodplain, or densitometers to enumerate pieces of wood/mile of stream, species composition, cover, or effective shade from vegetation within the riparian and floodplain areas.

- Surface water or hyporheic flows measured with Hobo© Pendant data loggers set to record Degrees Centigrade at 1-hour intervals above and below the site or bracketed to capture influence of side channels or cold water seeps.

- Juvenile presence/absence and baseline snorkel surveys beginning in 2013 using methods using methods noted in the (Edit Protocols tab).

- Qualitative descriptions of site recovery using photo-points.

- Summer Steelhead trout and Spring Chinook salmon spawner surveys in cooperation with ODFW as opportunities arise in focus basins.

Although these methods are fairly well defined in current literature CTUIR's Department of Natural Resources Fishery Research and Habitat programs have or are in the process of developing standardized monitoring protocols for both aquatic species and habitat. The intent the CTUIR's DNR specific plans are not to replace the numerous recovery, planning, and monitoring documents currently in place but to reconcile in-house concerns and needs for research, monitoring, and habitat efforts with the smaller and larger scale protocols and plans already in place such as CHaMP (2011). In fact, documents and plans developed by CTUIR reconcile CTUIR's culture with existing management and restoration efforts undertaken by employees with the documents just listed.

In 2008, CTUIR initiated a planning project to independently defend the CTUIR's Accords effort and address the effects of habitat restoration on fish population, survival, abundance or conditions and more specifically, to determine the effect of habitat improvement/restoration actions on fish population characteristics. That is; identify the effects of the habitat improvement/restoration actions on fish abundance and distribution at multiple scales and the particular habitat restoration action(s) have had a positive effect on species of concern? The goal of this plan is to implement a multi-year Biomonitoring program (BPA Project ???????) to assess the effectiveness of CTUIR habitat improvements/restoration actions each of the five CTUIR sub basins intentionally focusing on the effectiveness of CTUIR-based restoration projects not currently evaluated by other comprehensive monitoring programs. Objectives center on detecting measurable changes in biotic conditions, specifically changes to growth, survival and abundance of various salmon life stages including;

- Quantify the biotic outcome of specific restoration actions on the population abundance, distribution and productivity for spring Chinook salmon, summer steelhead and bull trout.
- Discriminate the effects of alternative restoration actions on target species, to better understand the individual or combination of actions that yield the most significant population response.
- Quantify the degree of correlation between a given action or suite of actions and their effect(s) on limiting life stages for each the three focal species.
- Extrapolate the results of CTUIR biomonitoring to guide future restoration actions in other parts of the five subbasins, to the extent that this can be done on the basis of monitoring data alone.

Final selection of project objectives and biological responses were guided by NOAA's Viable Salmonid Population (VSP) parameters for determining the long-term viability of salmonid populations–abundance, productivity, spatial structure and diversity (McElhany et al. 2000).

The experimental design consists of a two part approach including field-based surveys to generate reach, segment and watershed-scale empirical data and a life-cycle model to simulate watershed and subbasin-scale response to restoration actions. Sampling shall occur at least one site within each sub-basin with one or more species of interests and on the availability of a suitable control. Detailed sampling protocols will be implemented by CTUIR's DNR M&E programs (i.e. Umatilla, Walla Walla, and Grande Ronde BPA projects) with WEs integrated into existing projects using a BACI design in the NFJD Subbasin. Data analysis and reporting of findings for the Biomonitoring sites will be consolidated into separate and independent report and address a range of spatial scales of restoration effectiveness: (1) the reach scale (a short length of channel, usually defined by homogenous gradient and riffle/pool sequence, <102m), (2) the segment scale (homogenous segment of second or third order tributary within a watershed e.g. Meacham Creek), (3) the watershed scale (e.g., major forks or tributaries John Day River), and (4) the subbasin scale (e.g., the mainstem rivers and catchment areas of the Umatilla, Walla Walla, Grande Ronde rivers).

Although the scope of this biomonitoring plan does not include the direct measurement of the nature or persistence of habitat improvements, the benefits of systematically collecting habitat data in conjunction with the biological data generated in this study is needed in order to gain the greatest understanding of mechanistic relationships of restoration actions.

Because of this, development of a Physical Habitat Monitoring Plan began in 2012 (2012 SOW WE ????) to standardize monitoring practices within CTUIR's DNR Fishery Habitat Program within the ceded areas. This plan will be completed in 2013 and identify a suite of reach scale monitoring protocols to be used by fishery habitat projects.

Describe the accessibility of the data and what the requirements are to access them?
Data are stored on the Projects computers at this time and are backed up as changes are made with metadata stored in text files. Data are available upon request, available for use within the Department of Natural Resources, and are reported to BPA through annual reports uploaded to Pisces and quarterly reports. The Department of Information Technologies has recently employed a data coordinator who is designing a storage/upload database for all Department of Natural Resource programs to house the data they collect and coordinate the types of data collected to ensure consistency with the methods used. This data base will also improve the Projects data sharing capabilities.

RM&E

What type(s) of RM&E will you be doing?
Project Implementation/Compliance Monitoring
Status and Trend Monitoring

Where will you post or publish the data your project generates?
BPA Pisces
CTUIR GIS Program Databases

Large Habitat Programs

Describe the process to solicit for, review and select projects; and include the criteria by which projects are rated and selected.

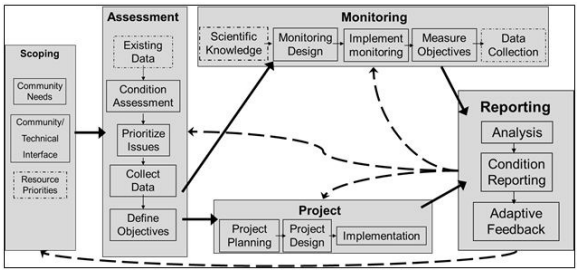
The CTUIR Fisheries Habitat Program goal is to protect, enhance and restore floodplain, channel and watershed processes for the purpose of protecting and restoring fisheries and aquatic species important to the Umatilla Tribes. This Project has the ability to freely develop projects within the geographic boundary of the Subbasin to meet this goal and must prioritize and select restoration action types and locations based on scientifically defensible strategies and the best available scientific information. Within the organization of this Project, the selection process for actions must consider several important criteria that include key species habitat needs, ecological conditions and processes within a watershed context, impediments to proper functioning conditions, coordination with other agency and stakeholders goals within the Subbasin and region, and action agency goals and objectives. In addition, there are practical considerations of property access and economic feasibility. In order to consider these criteria the Project must complete a review and prioritization of actions internally and then in coordination with other Subbasin implementers.

The process for action selection begins with the Umatilla River Vision, developed under guidance of the Umatilla Tribe's First Foods Concept. This Vision defines a functional river as a dynamic environment that incorporates and expresses ecological processes that continue the natural production of First Foods used by the Tribal community. The River Vision provides direction for restoration by focusing on the five touchstones of hydrology, geomorphology, connectivity, riparian vegetation, and aquatic biota. Operating under this guidance, CTUIR fish habitat projects are planned, designed, implemented, and monitored across the usual and accustomed harvesting areas to achieve fish habitat restoration goals.

Our Project planning process then intersect those criteria with Primary Limiting Factors from the 2008 Fish Accords MOA, Steelhead Recovery Planning documents, the NPCC Subbasin Plans, TMDL reports, and local assessments and strategies. We focus on designated high priority areas, with a preference for ecologically connected or contiguous project locations.

The 2008 Columbia Basin Fish Accords MOA affords larger-scale project planning and scheduling flexibility that focusses recovery efforts on addressing primary limiting factors. With this agreement for extended funding in place, the Project has been able to develop process-based restoration actions and strategies at a watershed scale in a more holistic fashion. Based on concepts promoted through the River Vision and analysis results from Subbasin specific assessments, such as Subbasin plans, species specific recovery plans and TMDL's, project locations and actions are prioritized and refined to address limiting factors.

The Fisheries Habitat Program addresses channel and floodplain function and aquatic habitat deficiencies through a systematic, holistic watershed planning approach termed the Riverine Ecosystem Planning Approach (see figure below). This approach includes the prioritization of focal areas and management practices based on key species limiting factors with a mechanism for adaptive management that utilizes scientifically defensible techniques. The approach includes the 5 basic stages of scoping, assessment, monitoring, implementation, and reporting. Scoping allows for the interface of community needs and issues with resource priorities. The issues and concerns developed from scoping can direct the needs defined for assessment. Using existing and collected data, assessments are developed with the intent to prioritize issues, identify limiting factors, and define project objectives. Monitoring plans that utilize scientific knowledge and accepted methodology are then developed to measure achievement of project objectives. During the implementation stage, project actions are designed to address limiting factors through means that restore natural channel and floodplain processes. The final stage of reporting provides an opportunity to summarize monitoring and project actions and evaluate results. Project changes can be made based on the outcomes or the approach to future project work can be improved.



In addition to the strategies and techniques noted above the Project identified three focal Geographic Areas based upon 5th Field HUCs for the 2006 ISRP Proposal in which to undertake efforts with the intent that these focused efforts will improve both the individual and cumulative influence of efforts. Within these focal areas the Project coordinates and works with cooperators to identify single or multiple prioritized efforts and reconciling using documents such as the Granite Creek Action Plan, Bull Run Creek Action Plan, or Draft Desolation Creek Action Plan (USDA, 2008, USDA, 2012, USDA, 2009 respectively) with the documents noted above. Coordination may include annual meetings with cooperators or meetings in reaction to deadlines related to funding cycles, or fiscal years with cooperators such as the NFJDWC, UNF, WNF, MNF, or SWCDs, in addition to attendance at city or county government meetings.

Although the Project does not have a formula or clear identification and prioritization criteria within the focal areas there are several strategies which weed out weaker efforts including;

- When working with private landowner the project discusses land management strategies and landowner objectives with constraints imposed by the Projects objectives, technical feasibility, and funding or permitting constraints; this is followed by one or more visits to the proposed site. Once information has been gathered from discussions with landowners and site visits notes are reconciled with geomorphic, geologic, climactic, or other constraints and Project produces a document for the landowner outlining the efforts feasibility providing rough sketches and or information to justify undertaking or declining the effort. Beyond this point design, permitting, implementation activities depend upon the landowner's priorities and funding or permitting constraints.

- With public entities such as the UNF, WNF, MNF the project works within the focus basins which all have the previously noted action plans. From this suite of identified tasks the Project works to complete actions in as short a time period as possible or where this is not possible reconcile limiting factors with available funding.

- When working with groups such as the NFJDWC or SWCDs the Project considers where efforts are to be undertaken and the number of cooperators relative to cost, location and the roles of potential cooperators and prioritizes those efforts with otherefforts that have been identified for a performance period.

- The Project has undertaken efforts to work with local communities and address limiting factors which are larger than one or several landowners. An example of this is the Camas Creek Levee Assessment (History > Results tab) for which the project conducted an assessment in response to landowner concerns and will be further developing consensus within the community to address limiting factors instead of addressing the symptom of sediment deposition. While efforts such as this have clearly definable limiting factors and objectives the greater good may come from outreach and education to bring awareness to the relationship between land management practices and benefits or loss to wildlife populations. Such issues

are not easily dealt with and therefore take a considerable amount of time to develop and implement. As such the prioritization for this type of effort must consider a number of social and political issues not addressed during a 'typical' channel modification on a single owner parcel.

A number of different outreach efforts have been used including letters, calls, and stopping by to various levels of success. The project has moved more toward calls and offers to meet to discuss prospective efforts although several opportunities have arisen through discussions between individuals who then ask for assistance from Project staff. The Project lead considers and reconciles input from cooperators to make the final decision on which efforts will be undertaken. The Fisheries Program Supervisor is made aware of efforts selected for implementation and kept apprised of progress.

The project has and will continue to prioritize efforts on private lands above those managed by public entities. However, due to land ownership in the Subbasin and the influence of historic land management practices the Project has and will continue to undertake efforts within all tributaries of the focal areas to provide the greatest benefit to tributary habitat. As noted in the 'Objectives > Problem Statement' tab these tributary habitats will provide the greatest benefit for resident and anadromous salmonids with respect to population productivity.

Location

Name (Identifier)	Area Type	Source for Limiting Factor Information Type of Location	Count
North Fork John Day (17070202)	HUC 4	EDT (Ecosystem Diagnosis and Treatment)	453
Granite Creek (1707020202)	HUC 5	EDT (Ecosystem Diagnosis and Treatment)	51
Cottonwood Creek (1707020209)	HUC 5	EDT (Ecosystem Diagnosis and Treatment)	34
Upper Camas Creek (1707020205)	HUC 5	EDT (Ecosystem Diagnosis and Treatment)	42
Desolation Creek (1707020204)	HUC 5	EDT (Ecosystem Diagnosis and Treatment)	38
Lower Camas Creek (1707020206)	HUC 5	EDT (Ecosystem Diagnosis and Treatment)	50
Potamus Creek-North Fork John Day River (1707020207)	HUC 5	EDT (Ecosystem Diagnosis and Treatment)	72
Bull Run Creek (170702020202)	HUC 6	EDT (Ecosystem Diagnosis and Treatment)	7
Upper Fox Creek (170702020901)	HUC 6	EDT (Ecosystem Diagnosis and Treatment)	12
McHaley Creek (170702020903)	HUC 6	EDT (Ecosystem Diagnosis and Treatment)	3
Hidaway Creek (170702020503)	HUC 6	EDT (Ecosystem Diagnosis and Treatment)	10
Upper Desolation Creek (170702020402)	HUC 6	EDT (Ecosystem Diagnosis and Treatment)	12
Middle Desolation Creek (170702020403)	HUC 6	EDT (Ecosystem Diagnosis and Treatment)	16
Clear Creek (170702020204)	HUC 6	EDT (Ecosystem Diagnosis and Treatment)	16
Headwaters Desolation Creek (170702020401)	HUC 6	EDT (Ecosystem Diagnosis and Treatment)	3
Lower Granite Creek (170702020206)	HUC 6	EDT (Ecosystem Diagnosis and Treatment)	15
Wilkins Creek-Camas Creek (170702020606)	HUC 6	EDT (Ecosystem Diagnosis and Treatment)	11

Project Deliverables

Manage and Administer Project (DELV-27)

Manage and deliver CTUIR NFJD Subbasin Restoration Project. Work element deliverables include but are not limited to project administration, producing deliverables, identifying and selecting efforts, producing annual and status reports, and producing environmental compliance documentation. More specifically this envelops annual work plan and budget development, personnel administration, management and development, project planning and design, coordination, project selection, and negotiation of conservation easements and working with private landowners to develop project opportunities, and participation in watershed planning efforts.

Types of Work:

Work Class	Work Elements
Planning and Coordination	114. Identify and Select Projects
Research, Monitoring, and Evaluation + Data Management	157. Collect/Generate/Validate Field and Lab Data 160. Create/Manage/Maintain Database 161. Disseminate Raw/Summary Data and Results 162. Analyze/Interpret Data

Outreach and Education (DELV-21)

Participate in public outreach and education activities to increase awareness and knowledge about watershed restoration activities and watershed resources, management, and NFJD Subbasin salmon and steelhead habitat and status. Work includes conducting annual outreach and education activities, typically with local outdoor school education programs. The Project's staffs have participated in this and similar programs annual for several years and typically manage outdoor stations that provide hands on opportunities for students to survey habitat and learn about their watershed and that habitats they provide and the importance of protecting the resource for future generations.

Types of Work:

Work Class	Work Elements
Planning and Coordination	99. Outreach and Education

Maintain Structures and Native Vegetation (DELV-22)

Maintain structures constructed by the Project and in coordination with cooperators as needed to ensure function and adequacy of use. This may include maintenance on fences, buildings, gates, wells, spring developments, water gaps, or ponds constructed by the Project and maintained under Conservation Agreements. Methods and actions will be dependent upon the type of fence and treatment and will include regular surveys through the grazing season. These activities will also include investigating and correcting trespass.

Additionally this Deliverable will include noxious weed control efforts and native vegetation planting where they occur. Treatments may consist of biological controls or herbicide treatments as the application and opportunities dictate. Treatment for panted native vegetation shall include but may not be limited to watering and maintenance for protective devices to reduce mortality.

Types of Work:

Work Class	Work Elements
Research, Monitoring, and Evaluation + Data Management	157. Collect/Generate/Validate Field and Lab Data 160. Create/Manage/Maintain Database 161. Disseminate Raw/Summary Data and Results 162. Analyze/Interpret Data

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Collect/Generate/Validate Field Data (DELV-25)

Using guidance under development by CTUIR and other sources such as published literature or guidance by regional programs implement a structured monitoring program on all sites where Conservation Agreement exist and in cooperation with others. Methods used will to some extent vary according to site conditions and available equipment. However, typical methods will employ cross-sections, longitudinal profiles, measures of sediment, photopoints and thermistors. Other methods such as topographic surveys may be used in design efforts as well and new techniques will be considered with available time and funding constraints in mind. The Project will continue to work with CTUIR's Fishery Research Program and ODFW to provide biological monitoring to the extent possible.
Data will be primarily be used to identify baseline conditions for design efforts and status and trend monitoring with collected data entered into CTUIR's database once on line and used to develop annual reports.

Types of Work:

Work Class	Work Elements
Research, Monitoring, and Evaluation + Data Management	157. Collect/Generate/Validate Field and Lab Data 160. Create/Manage/Maintain Database 161. Disseminate Raw/Summary Data and Results 162. Analyze/Interpret Data

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Fox Creek (DELV-11)

In response to landowner concerns about the state and function of Fox Creek flowing through their properties, the North Fork John Day Watershed Council conducted an assessment along 20 miles of Fox Creek in 2009 resulting in a list of potential actions addressing hydrologic, geomorphic, and land management concerns. The Project contributed toward this effort, participated in the 'agency' prioritization meeting, and provided funding during 2011 and 2012 for implementation efforts. Overall the combined efforts will address all the River Vision Touchstones save passage barriers by addressing compromised channel complexity, a lack of large woody debris, reduced floodplain connectivity, elevated water temperatures and decreased baseflow discharges, fine sediment entrainment from eroding streambanks, and compromised riparian and floodplain conditions. Limiting factors addressed by this effort and identified in the NFJD Subbasin Plan include ihannel stability, habitat diversity, fine sediment, high temperature, and riparian condition. The landowner's objectives were the primary purposes of the project include restoring degraded riparian and floodplain habitat, improving instream habitat diversity, and improving water quality for adult and juvenile summer steelhead and spring Chinook salmon by addressing key limiting factors including channel stability, habitat diversity, fine sediment, high temperature, and riparian condition.

Thus far, 0.6 miles of channel have received treatments resulting in 14 LWD structures placed during 2011 and 19 constructed riffles built during 2012 to reduce preferential flow through a channel created during the 1960's to capture and pass high flows. The constructed channel captured most of Fox Creek's flows and as a result eroded to the point where the natural channel was abandoned. Efforts during 2013 will reduce streambank erosion with large wood and reconnect an irrigation diversion.

A total of 16 reaches have been identified for treatment with both funding and permits secured for the next reach as others are finished. While the NFJDWC acts as the coordinating agency for these tasks the Project and others have secured permits and provided funding to supplement those from competitive grants. Contributed toward reaches are finished and others are started. Both permits and funding are secured as individual channel reaches are finished and another started with funding for these and future efforts coming from a variety of sources including competitive grants.

Types of Work:

Work Class	Work Elements
Habitat	29. Increase Instream Habitat Complexity and Stabilization

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Bull Run Creek Mine Tailing Removal (DELV-1)

Historic placer mining severely disturbed native habitat for Summer Steelhead trout, Spring Chinook salmon, Rainbow trout, and Bull trout along this portion of Bull Run Creek throughout much of the stream channel and riparian/floodplain areas and left tailing piles in place. These piles effectively constrained Bull Run Creek's lateral connectivity with the remnants of floodplain and completely reset in-stream habitat, complexity, channel morphology, and sediment sorting and routing. Although this effort will not directly address stream channel morphology it will restore floodplain connectivity along up to two miles of stream channel allowing high stream flows to be distributed across the reestablished floodplain promoting sediment and debris deposition; thereby improving conditions for riparian and floodplain vegetation which has been influenced by the tailing piles. This task was identified as an action in the Bull Run Creek Action Plan (USFS, 2012) and discussed during coordination meeting between the WNF, NFJDWC, and the Project. The effort addresses River Vision Touchstones of connectivity (habitat diversity), hydrology (high temperature, sediment), riparian vegetation (riparian / floodplain), and geomorphology (in-channel characteristics). Although the creeks historic potential likely resembled that of a narrow and relatively sinuous channel, past disturbances and current channel form suggest the channels potential at this point is somewhat less sinuous with stronger pool-riffle sequences. This should not suggest the effort is unworthy of undertaking it only recognizes a reset of conditions given the extent of past disturbances. Tailings will be removed from the site or recontoured to the extent possible with the Bull Run Wood Placement Deliverable providing floodplain structure after tailing removal and improvements in channel habitat and morphology occurring through natural processes increasing habitat complexity for target species. Planning and Design –During April of 2013 WNF and Project staff will conduct a topographic survey with design efforts to follow later this year with the tailing removal beginning in 2014. Secure Funding – Thus far, funds beyond those identified here have not been identified save those to support WNF personnel during design efforts. Once a final design has been secured implementation will likely occur over several years as funding through competitive grants and the WNF are secured. Environmental Compliance – At this point permits for the effort have not been secured although the WNF will take the lead on those with assistance from the project where possible beginning in 2013. Construction Subcontracting - Construction contracting cannot be completed without acceptable designs which will not be available until mid to late 2013. However, given the experience of WNF staff an equipment rental will likely be secured for this effort and utilize a local contractor if at all possible. Staking and site preparation activates will be jointly completed by WNF and Project staff. Project Construction and Inspection – WNF and Project staff will jointly provide onsite oversight and grade check during implementation to monitor compliance of subcontractor with all terms and conditions associated with the construction subcontract environmental compliance requirements are being met. Inspection efforts will help ensure that the project is constructed as designed. In addition to construction inspection, typically large construction projects require daily presence of cultural resource observers. Monitoring and Evaluation – Following completion of construction activities, ongoing M&E efforts will continue to collect post-construction data to evaluate results and trends associated with the effort. For additional information, refer to sections in this proposal pertaining to planning M&E activates. Key Project Staff: John Zakrajsek will assist with design efforts with Delbert Jones assisting during implementation.

Types of Work:

Work Class	Work Elements
Habitat	52. Remove Mine Tailings
Planning and Coordination	175. Produce Design and/or Specifications
Research, Monitoring, and Evaluation + Data Management	157. Collect/Generate/Validate Field and Lab Data 162. Analyze/Interpret Data

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Granite Creek In-stream Restoration (DELV-8)

Historic placer mining severely disturbed native habitat for Summer Steelhead trout, Spring Chinook salmon, Rainbow trout, and Bull trout along this portion of Granit Creek. This effort follows up on a 2013 effort along a 0.35 mile reach of Granite Creek and is representative of actions the Project becomes involved in within focus a GA (Granite Creek) in cooperation with private landowners to address River Vision Touchstones geomorphology (in-channel characteristics), connectivity (habitat diversity), hydrology (high temperature, sediment), and riparian vegetation (riparian / floodplain). The efforts primary objectives include stabilizing degraded riparian and floodplain habitat, improving in-stream habitat diversity and channel function, and improving water quality for adult and juvenile summer steelhead, Spring Chinook salmon, Rainbow trout, and Bull trout. Although the channels historic potential likely resembled that of a narrow and relatively sinuous channel, past disturbances and current channel form suggest the channels potential at this point is somewhat less sinuous with stronger pool-riffle sequences. This should not suggest the effort is unworthy of undertaking it only recognizes a reset of conditions given the extent of past disturbances. Channel reconstruction tied to large wood complexes and cross veins will be installed to enhance large pool habitat increase chnanel complexity, and reduce streambank erosion. While the recognizes the primary channel form is a single-threaded plan form, increasing access to floodplain micro habitats such as active side channels will increasing habitat complexity for target fish species and to some extent be allowed to evolve naturally. Project implementation includes the following major categories of activities necessary to complete the project: Planning and Design – Thus far the Project has met with the landowner, completed baseline surveys and monitoring, collected topographic and channel morphology data, and developed design criteria, concept, and overview plan sets to address streambank erosion in five locations on the property with implementation planned for 2013. The design process follows natural channel design concepts developed by Rosgen, 1996 and others. This second effort will be discussed with the landowner later this spring with design efforts to follow including further refinement of hydrologic and hydraulic modeling results to assess existing hydraulic conditions, evaluate design criteria and concept designs, and finalized the project design. The design process follows natural channel design concepts developed by Rosgen, 1996 and others. Secure Funding- Funding for this effort have not been secured although given the location combined with those of the Project additional funding should be available through competitive grants and supplemented by cost-share from the landowner. Environmental Compliance/Permits – Permits related to cultural resources will be secured through consultation with SHPO and ESA compliance will be completed through BPA's programmatic HIPIII process. A 404 permit application will be submitted upon completion of the 30% project design. Construction Subcontracting Preparation – Activities shall include construction site layout and staking, preparation of construction subcontract preparations (development of solicitation, advertising, site showing, review of bids and selection of subcontractor, preparation of subcontract documentation, and award by the Project. Project Construction and Inspection – Project staff will provide onsite inspection, oversight, and grade checking during project construction activities to monitor compliance of subcontractor with all terms and conditions associated with the construction subcontract and environmental compliance requirements are being met. Inspection efforts will help ensure that the project is constructed as designed. In addition to construction inspection, typically large construction project require daily presence of cultural resource observers. Monitoring and Evaluation – Following completion of construction activities, ongoing M&E efforts will continue to collect post-construction data to evaluate results and trends associated with the project. For additional information, refer to sections in this proposal pertaining to planning M&E activates. Key Project Staff: John Zakrajsek will be the lead project designer with assistance from Jim Webster; Delbert Jones assisting with all project activities.

Types of Work:

Work Class	Work Elements
Habitat	29. Increase Instream Habitat Complexity and Stabilization 47. Plant Vegetation
Planning and Coordination	175. Produce Design and/or Specifications
Research, Monitoring, and Evaluation + Data Management	157. Collect/Generate/Validate Field and Lab Data 160. Create/Manage/Maintain Database 161. Disseminate Raw/Summary Data and Results 162. Analyze/Interpret Data

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Mud Creek Grazing Plan (DELV-13)

For the Mud Creek effort the Project has met with the landowner and will construct a riparian exclusion fence during 2013 on the property protecting one mile of stream channel and 16 acres of riparian, floodplain, and upland habitats. Conversation with the landowner has led to a Conservation Agreement and the previously noted fence and has more recently included the completion of a grazing management plan for the property which shall be further discussed later this year. Although not yet designed this efforts represents the Projects desire to holistically address land management practices on private property in a focus GA (Camas Creek) and RiverVison Touchstones geomorphology (in-channel characteristics), hydrology (high temperature, sediment), and riparian vegetation (riparian / floodplain) to the extent possible with additional efforts in upland areas to the extent possible. In this instance the landowner also has an interest in educational opportunities for Native American children which the Project will facilitate. Project planning, design, and permitting will occur later this year in preparation to initiate construction during summer 2014 with completion scheduled that year. The primary purpose of this effort is to improve grazing management practices in upland areas to maximize forage while maximizing native vegetative populations. The landowner has aloe cooperated with ODFW to construct and maintain riparian fencing and with CTUIR to improve native Camas populations. Project implementation includes the following major categories of activities necessary to complete the project: Planning and Design – Planning will begin later this year and consist of efforts between the land owner and the project and may include consultation with cooperators such as NRCS. Secure Funding- Cost and in effect funding for this source has not yet been identified although previous efforts on another property provide guidance for total cost. Opportunities beyond the Projects BPA funds include programs through NRCS such as EQUIP which will be investigated once an agreement with the landowner has been reached. Environmental Compliance/Permits – Permits will be secured as needed although this effort should be minimal given the activity. Construction Subcontracting Preparation – The Project will secure a qualified contractor or coordinate with the NRCS as necessary depending on the landowners desires Project Construction and Inspection – The Project will administer or work with cooperators to secure an appropriate management plan for the property and work with the landowner to make necessary changes to comply with the final plan. Monitoring and Evaluation – In addition to monitoring activities currently in place along Mud Creek the project will work with the landowner to monitor efforts undertaken in response to the final grazing plan to the extent possible. Key Project Staff: John Zakrajsek and Delbert Jones.

Types of Work:

Work Class	Work Elements
Research, Monitoring, and Evaluation + Data Management	157. Collect/Generate/Validate Field and Lab Data 162. Analyze/Interpret Data

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Junkins Creek Culvert I (DELV-14)

The Junkins Creek Culvert replacement will remove a known passage barrier to adult and juvenile Summer Steelhead restricting passage to approximately six miles of available high quality and cold water habitat. This item is representative of actions the Project becomes involved within focus GAs and where an action is identifed in a Draft Action Plan (USFS, 2009) to address acknowledged priority issues. The effort will directly address River Vision Touchstones bio-connectivity (passage barriers / rntrainment), geomorphology (in-channel characteristics, and hydrology (sediment) with the primary objectives of restoring passage, channel stability and morphology and sediemt transport. The reaches potential condition is a higher gradient step-pool channel below pool-riffle habitats. In addition to the culvert replacement channel grade will need to be adjusted with rock due to sediment deposition above the culvert. Project implementation shall include the following major categories of activities necessary to complete the project: Planning and Design – This effort provides an example of those previously undertaken and will undertake between 2013 and 2018. Discussions between the UNF and the Project have identified this and several other culverts for replacement with survey and design work scheduled to begin during 2013. The project will likely assist with the topographic survey with design work completed by UNF engineers in. Secure Funding- Funding sources have not been identified beyond those included in this proposal to be used for implementation. The UNF will provide funding to support design efforts as noted and will provide cost-share in securing permits and securing and administering a construction contract. Additional funding from competitive grants or yet unnamed cooperators will be secured before contracting begins in early 2014. Environmental Compliance/Permits – As previously noted the UNF will complete NEPA documentation and utilize available programmatic permits for this effort. Construction Subcontracting Preparation – The UNF will secure and administer an implementation contract. Project Construction and Inspection – CTUIR staff will support UNF provide onsite inspection, oversight, and grade checking during project construction activities to monitor compliance of subcontractor with all terms and conditions and environmental compliance requirements are being met. Inspection efforts will help ensure that the project is constructed as designed. Monitoring and Evaluation – Following completion of construction activities, ongoing M&E efforts will be conducted by the Project in the form of spawner surveys as outlined under the 'Edit Work Details > M&E' tab in addition to surveys conducted by UNF biologists and hydrologists during regular habitat and population surveys and UNF engineers during regular road and culvert stability surveys. Key Project Staff: John Zakrajsek and Delbert Jones.

Types of Work:

Work Class	Work Elements
Habitat	29. Increase Instream Habitat Complexity and Stabilization 184. Install Fish Passage Structure

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Desolation In-stream (DELV-15)

The Desolation Creek In-stream effort will address channel instability along a 0.3 mile reach influenced by grazing management practices. The site lies within a privately owned 13,000 acre parcel the owner of which has discussed efforts with the Project on other sites. This item is representative of actions the Project becomes involved in where private lands lie within focus GAs and will address unstable channel conditions where grazing management is being addressed by the grazing allotment permittee and ODFW. The effort will directly address River Vision Touchstones geomorphology (in-channel characteristics), habitat diversity connectivity (habitat diversity), hydrology (high temperature, sediment), and riparian vegetation (riparian / floodplain) with the primary restoring degraded riparian and floodplain habitat, improving in-stream habitat diversity, and improving water quality for adult and juvenile summer steelhead and spring Chinook salmon. The reaches potential condition is a meandering riffle-pool dominated stream type within a moderately sized riparian floodplain. Large wood complexes would be installed to enhance large pool habitat and reduce streambank erosion and while it is recognized that the primary channel form is a single-threaded plan form, existing floodplain micro habitats such as active side channels will increasing habitat complexity for target fish species and be allowed to evolve naturally. Conceptual designs include two 'toe-wood' structures, three LLWD structures within the channel, and several constructed riffles or boulder grade control structures. Project implementation shall include the following major categories of activities necessary to complete the project: Planning and Design – The Project has completed baseline surveys to identify baseline site conditions and base conceptual designs upon. Additional work will require topographic and channel morphology data to develop design criteria, concept, and overview plan sets followed by hydrologic and hydraulic modeling to assess existing hydraulic conditions, evaluate design criteria and concept designs, and finalized the project design. The design process follows natural channel design concepts developed by Rosgen, 1996 and others. Secure Funding- Funding beyond that noted in this proposal has not been identified save during conversations with ODFW (BPA Project #198402100) who will be installing riparian enclosures in cooperation with the grazing allotment permittee. Additional funding will be secured through competitive grants, cooperators yet unnamed, or the landowner Environmental Compliance/Permits – In addition to securing requisite permits through SHPO the Project will obtain ESA compliance through BPA's HIP III programmatic and the 404 permit application will be completed upon completion of 30% project designs. Construction Subcontracting Preparation – Activities include construction site layout and staking, preparation of construction subcontract preparations (development of solicitation, advertising, site showing, review of bids and selection of subcontractor, preparation of subcontract documentation, and award. Project Construction and Inspection – Project staff will coordinate with and provide onsite inspection, oversight, and grade checking during project construction activities to monitor compliance of subcontractor with all terms and conditions associated with the construction subcontract and that environmental compliance requirements are being met. Inspection efforts will ensure that the project is constructed as designed. Monitoring and Evaluation – Following completion of construction activities, ongoing M&E efforts will continue to collect post-construction data to evaluate results and trends associated with the project. For additional information, refer to sections in this proposal pertaining to planning M&E activates. Key Project Staff: John Zakrajsek will be the lead project designer. Delbert Jones will assist in all project activities.

Types of Work:

Work Class	Work Elements
Habitat	29. Increase Instream Habitat Complexity and Stabilization 47. Plant Vegetation
Planning and Coordination	175. Produce Design and/or Specifications
Research, Monitoring, and Evaluation + Data Management	157. Collect/Generate/Validate Field and Lab Data 162. Analyze/Interpret Data

Limiting Factors in addition to the Known Limiting Factors:
For information about the known limiting factors in this project deliverable's location, go to Appendix: Limiting Factors.

Limiting Factor: 8.1: Water Quality: Temperature
Explanation: Desolation Creek is listed as a temperature limited stream (ODEQ, 2010)

Bull Run Culvert (DELV-16)

Historic placer mining severely disturbed native habitat for Summer Steelhead trout, Spring Chinook salmon, Rainbow trout, and Bull trout along this portion of Bull Run Creek. This effort will allow access on up to 10 miles of existing high quality habitat for adult and juvenile Summer Steelhead trout, Bull trout, and Rainbow trout and follows up on a 2013 effort to remove a partial passage barrier, is loosely tied to the Bull Run Creek Mine Tailing Redistribution above, and representative of actions the Project becomes involved in within focus a GA (Granite Creek) in cooperation with cooperators and where an action plan (USFS, 2012) has prioritized multiple actions throughout a subbasin to address limiting factors. This effort addresses River Vision Touchstones bio-connectivity (passage barriers / entrainment), geomorphology (in-channel characteristics), connectivity (habitat diversity), hydrology (high temperature, sediment), and riparian vegetation (riparian / floodplain) through barrier removal and adjusting channel grade to produce a stable form capable of passing sediment now captured by the existing structure. The efforts primary objectives include removing the barrier, improving in-stream habitat diversity and channel function, and stabilizing degraded riparian and floodplain habitat. The channels historic potential likely resembled that of a narrow step pool or pool-riffle channel which differs from its current steep pool-riffle sequences highly constrained by tailings. Project implementation includes the following major categories of activities necessary to complete the project: Planning and Design – This effort provides an example of those previously undertaken and will undertake between 2013 and 2018. Discussions between the UNF and the Project have identified this

and several other culverts for replacement with survey and design work scheduled to begin during 2013. The project will likely assist with the topographic survey with design work completed by UNF engineers in. Secure Funding- Funding sources have not been identified beyond those included in this proposal to be used for implementation. The UNF will provide funding to support design efforts as noted and will provide cost-share in securing permits and securing and administering a construction contract. Additional funding from competitive grants or yet unnamed cooperators will be secured before contracting begins in early 2014. Environmental Compliance/Permits – As previously noted the UNF will complete NEPA documentation and utilize available programmatic permits for this effort. Construction Subcontracting Preparation – The UNF will secure and administer an implementation contract. Project Construction and Inspection – CTUIR staff will support UNF provide onsite inspection, oversight, and grade checking during project construction activities to monitor compliance of subcontractor with all terms and conditions and environmental compliance requirements are being met. Inspection efforts will help ensure that the project is constructed as designed. Monitoring and Evaluation – Following completion of construction activities, ongoing M&E efforts will be conducted by the Project in the form of spawner surveys as outlined under the 'Edit Work Details > M&E' tab in addition to surveys conducted by UNF biologists and hydrologists during regular habitat and population surveys and UNF engineers during regular road and culvert stability surveys. Key Project Staff: John Zakrajsek and Delbert Jones.

Types of Work:

Work Class	Work Elements
Habitat	29. Increase Instream Habitat Complexity and Stabilization
	184. Install Fish Passage Structure

Camas Creek In-stream Adjustment (DELV-9)

The Camas Creek In-stream effort will address channel instability along a 4.0 mile reach influenced by grazing management practices. The site lies within a privately owned parcel and represents actions the Project becomes involved in where private lands lie within focus GAs and will address unstable channel conditions and grazing management to directly address River Vision Touchstones geomorphology (in-channel characteristics), connectivity (habitat diversity), hydrology (high temperature, sediment), and riparian vegetation (riparian / floodplain) with the primary objective of restoring degraded riparian and floodplain habitat, improving in-stream habitat diversity, and improving water quality for adult and juvenile Summer Steelhead trout, Spring Chinook salmon, Bull trout, and rainbow trout. The Project will be working with the landowner to improve upland stock watering opportunities and rotational grazing management; however, this task will address existing conditions resulting from historic management practices that have severely over widened the stream channel and decreased base flow depths and left little in-stream, riparian, or floodplain complexity. The objectives of this effort include improving hyporheic complexity, riparian and floodplain complexity, water quality, sediment routing and sorting, and stream channel complexity and morphology. While the reaches historic potential condition was a likely a moderately sinuous single thread pool-riffle channel with extensive off channel habitat a state highway will reduce the extent of off-channel habitat that can be developed. Large wood complexes and constructed riffles will be installed to enhance large pool habitat, in-stream habitat, and increase riparian/floodplain complexity. Project implementation shall include the following major categories of activities necessary to complete the project: Planning and Design – The Project has completed baseline surveys to identify baseline site conditions and base conceptual designs upon. Additional work will require topographic and channel morphology data to develop design criteria, concept, and overview plan sets followed by hydrologic and hydraulic modeling to assess existing hydraulic conditions, evaluate design criteria and concept designs, and finalized the project design. The design process follows natural channel design concepts developed by Rosgen, 1996 and others. Secure Funding- Funding beyond that noted in this proposal has not been identified save during conversations with ODFW (BPA Project #198402100) who will be installing riparian enclosures in cooperation with the grazing allotment permittee. Additional funding will be secured through competitive grants, cooperators yet unnamed, or the landowner Environmental Compliance/Permits – In addition to securing requisite permits through SHPO the Project will obtain ESA compliance through BPA's HIP III programmatic and the 404 permit application will be completed upon completion of 30% project designs. Construction Subcontracting Preparation – Activities include construction site layout and staking, preparation of construction subcontract preparations (development of solicitation, advertising, site showing, review of bids and selection of subcontractor, preparation of subcontract documentation, and award. Project Construction and Inspection – Project staff will coordinate with and provide onsite inspection, oversight, and grade checking during project construction activities to monitor compliance of subcontractor with all terms and conditions associated with the construction subcontract and that environmental compliance requirements are being met. Inspection efforts will ensure that the project is constructed as designed. Monitoring and Evaluation – Following completion of construction activities, ongoing M&E efforts will continue to collect post-construction data to evaluate results and trends associated with the project. For additional information, refer to sections in this proposal pertaining to planning M&E activates. Key Project Staff: John Zakrajsek will be the lead project designer. Delbert Jones will assist in all project activities.

Types of Work:

Work Class	Work Elements	
Habitat	29. Increase Instream Habitat Complexity and Stabilization	
	40. Install Fence	
	47. Plant Vegetation	
	26. Investigate Trespass	See note and explanation below *
Planning and Coordination	175. Produce Design and/or Specifications	
Research, Monitoring, and Evaluation + Data Management	157. Collect/Generate/Validate Field and Lab Data	
	162. Analyze/Interpret Data	

*** Note for habitat work elements that are not associated with limiting factors which are known to be within this deliverable's location.**

Explanation: Investigate Trespass has been listed here due to its relationship with structure maintenance and stream channel, riparian and floodplain habitats. Sensitive areas are reserved to protect or restore/stabilize them from what are often the same type of disturbances that contributed to the issues at hand, that includes limiting factors identified within a particular site or across subbasins.

Bull Run Wood Placement (DELV-33)

Historic placer mining severely disturbed native habitat for Summer Steelhead trout, Spring Chinook salmon, Rainbow trout, and Bull trout along this portion of Bull Run Creek throughout much of the stream channel and riparian/floodplain areas and left tailing piles in place. These piles effectively constrained Bull Run Creek's lateral connectivity with the remnants of floodplain and completely reset in-stream habitat, complexity, channel morphology, and sediment sorting and routing. Although this effort will not directly address stream channel morphology it is directly tied to the Bull Run Mine Tailing Redistribution Deliverable, will provide floodplain structure, and in all likelihood plantings to jumpstart native hardwood populations on the freshly grades surface. importing extensive amounts of topsoil would be cost prohibitive and although the tailing piles contain some finer materials the volume won't be terrible significant. As such, placement of large wood will provide floodplain structure and promote sediment and debris deposition on the floodplain while protecting planted vegetation during high flows. This item was identified as an action in the Bull Run Creek Action Plan (USFS, 2012) and discussed during coordination meeting between the WNF, NFJDWC, and the Project. The effort addresses River Vision Touchstones of riparian vegetation (riparian / floodplain), hydrology (high temperature, sediment), and geomorphology (in-channel characteristics). Planning and Design – Once removal has been completed large wood shall be placed on the floodplain in such a manner as to promote deposition and protect any planting that may occur. Given the size and discharge of Bull Run Creek the placements should remain stable. Secure Funding – Thus far, funds beyond those identified here have not been identified save those to support WNF personnel during design efforts. Once a final design has been secured implementation will likely occur over several years as funding through competitive grants and the WNF are secured. Environmental Compliance – At this point permits for the effort have not been secured although the WNF will take the lead on those with assistance from the project where possible beginning in 2013. Construction Subcontracting - Construction contracting cannot be completed without acceptable designs which will not be available until mid to late 2013. Staking and site preparation activates will be jointly completed by WNF and Project staff. Project Construction and Inspection – WNF and Project staff will jointly provide onsite oversight and grade check during implementation to monitor compliance of subcontractor with all terms and conditions associated with the construction subcontract environmental compliance requirements are being met. Inspection efforts will help ensure that the project is constructed as designed. In addition to construction inspection, typically large construction projects require daily presence of cultural resource observers. Monitoring and Evaluation – Following completion of construction activities, ongoing M&E efforts will continue to collect post-construction data to evaluate results and trends associated with the effort. For additional information, refer to sections in this proposal pertaining to planning M&E activates. Key Project Staff: John Zakrajsek will assist with design efforts with Delbert Jones assisting during implementation.

Types of Work:

Work Class	Work Elements
Habitat	47. Plant Vegetation
Research, Monitoring, and Evaluation + Data Management	157. Collect/Generate/Validate Field and Lab Data
	162. Analyze/Interpret Data

Junkins Creek Culvert II (DELV-17)

The Junkins Creek Culvert replacement will remove a known passage barrier to adult and juvenile Summer Steelhead trout restricting passage to approximately six miles of available high quality and cold water habitat. This item is representative of actions the Project becomes involved within focus a GA (Desolation Creek) and where an action is identified in a draft Action Plan (USFS, 2009) to address acknowledged priority issues. The effort will directly address River Vision Touchstones bio-connectivity (passage barriers / entrainment), geomorphology (in-channel characteristics, and hydrology (sediment) with the primary objectives of restoring passage, channel stability and morphology and sediemt transport. The reaches potential condition is a higher gradient step-pool channel below pool-riffle habitats. In addition to the culvert replacement channel grade will need to be adjusted with rock due to sediment deposition above the culvert. Project implementation shall include the following major categories of activities necessary to complete the project: Planning and Design – This effort provides an example of those previously undertaken and will undertake between 2013 and 2018. Discussions between the UNF and the Project have identified this and several other culverts for replacement with survey and design work scheduled to begin during 2013. The project will likely assist with the topographic survey with design work completed by UNF engineers in. Secure Funding- Funding sources have not been identified beyond those included in this proposal to be used for implementation. The UNF will provide funding to support design efforts as noted and will provide cost-share in securing permits and securing and administering a construction contract. Additional funding from competitive grants or yet unnamed cooperators will be secured before contracting begins in early 2014. Environmental Compliance/Permits – As previously noted the UNF will complete NEPA documentation and utilize available programmatic permits for this effort. Construction Subcontracting Preparation – The UNF will secure and administer an implementation contract. Project Construction and Inspection – CTUIR staff will support UNF provide onsite inspection, oversight, and grade checking during project construction activities to monitor compliance of subcontractor with all terms and conditions and environmental compliance requirements are being met. Inspection efforts will help ensure that the project is constructed as designed. Monitoring and Evaluation – Following completion of construction activities, ongoing M&E efforts will be conducted by the Project in the form of spawner surveys as outlined under the 'Edit Work Details > M&E' tab in addition to surveys conducted by UNF biologists and hydrologists during regular habitat and population surveys and UNF engineers during regular road and culvert stability surveys. Key Project Staff: John Zakrajsek and Delbert Jones.

Types of Work:

Work Class	Work Elements
Habitat	29. Increase Instream Habitat Complexity and Stabilization
	184. Install Fish Passage Structure

Sponge Creek Culvert (DELV-5)

The Sponge Creek Culvert replacement will remove a known passage barrier to adult and juvenile Summer Steelhead trout restricting passage to approximately five miles of available high quality and cold water habitat. This item was detailed in the 2011 Statement of Work but dropped due to unexpected cost increases and priority ranking of another culvert replacement. This effort is representative of actions the Project becomes involved within focus a GA (Desolation Creek) and where an action is identified in a Draft Action Plan (USFS, 2009) to address acknowledged priority issues. The effort will directly address River Vision Touchstones bio-connectivity (passage barriers / entrainment), geomorphology (in-channel characteristics, and hydrology (sediment) with the primary objectives of restoring passage, channel stability and morphology and sediment transport. The reaches potential condition is a higher gradient step-pool channel below pool-riffle habitats. In addition to the culvert replacement channel grade will need to be adjusted with rock due to sediment deposition above the culvert. Project implementation shall include the following major categories of activities necessary to complete the project: Planning and Design – This effort provides an example of those previously undertaken and will undertake between 2013 and 2018. Discussions between the UNF and the Project have identified this and several other culverts for replacement with survey and design work scheduled to begin during 2013. The project will likely assist with the topographic survey with design work completed by UNF engineers in. Secure Funding- Funding sources have not been identified beyond those included in this proposal to be used for implementation. The UNF will provide funding to support design efforts as noted and will provide cost-share in securing permits and securing and administering a construction contract. Additional funding from competitive grants or yet unnamed cooperators will be secured before contracting begins in early 2014. Environmental Compliance/Permits – As previously noted the UNF will complete NEPA documentation and utilize available programmatic permits for this effort. Construction Subcontracting Preparation – The UNF will secure and administer an implementation contract. Project Construction and Inspection – CTUIR staff will support UNF provide onsite inspection, oversight, and grade checking during project construction activities to monitor compliance of subcontractor with all terms and conditions and environmental compliance requirements are being met. Inspection efforts will help ensure that the project is constructed as designed. Monitoring and Evaluation – Following completion of construction activities, ongoing M&E efforts will be conducted by the Project in the form of spawner surveys as outlined under the 'Edit Work Details > M&E' tab in addition to surveys conducted by UNF biologists and hydrologists during regular habitat and population surveys and UNF engineers during regular road and culvert stability surveys. Key Project Staff: John Zakrajsek and Delbert Jones.

Types of Work:

Work Class	Work Elements
Habitat	29. Increase Instream Habitat Complexity and Stabilization
	184. Install Fish Passage Structure

Desolation & Clear Creek Wood Placement (DELV-7)

The Desolation and Clear Creek Wood Placement effort will address riparian and floodplain complexity along a three mile reach of Desolation Creek and a two mile reach of Clear Creek influenced by historic grazing management and mining practices. The sits lies within UNF managed lands represent actions the Project becomes involved in where private lands lie within focus GAs (Desolation and Granite Creeks respectively) and will address River Vision Touchstones riparian vegetation (riparian / floodplain) with the primary objective of increasing riparian and floodplain roughness to improve sediment and debris deposition and protect planted and existing native vegetation. These efforts will indirectly improve habitat for adult and juvenile Summer Steelhead trout, Spring Chinook salmon, Bull trout, and rainbow trout and in the case of Clear Creek support past efforts noted in 'History > Results > Clear Creek Mine Tailing, Clear Creek Native Vegetation, and Granite/Clear Creek Noxious Weed Control'. Large wood shall be placed (root ball and bole) and not buried within the riparian and floodplain areas in such a manner to sediment and debris using wood made available through various UNF projects to supplement those purchased. Project implementation shall include the following major categories of activities necessary to complete the project: Planning and Design – The Project will coordinate with UNF biologists and hydrologists to select wood source and the location of deposition. Secure Funding- Funding beyond that noted in this proposal has not been identified at this point although due to the extent of expected proposed efforts funds provided by the Project and the UNF should be adequate. Environmental Compliance/Permits – The UNF will need to secure NEPA documentation although past conversations suggest they will be minimal. Construction Subcontracting Preparation – Activities shall include access preparation and site selection to be completed compatibly by participants. Project Construction and Inspection – Contracts not yet identified will be cooperatively managed by effort participants. Monitoring and Evaluation – Following completion of the effort the Project shall monitor wood stability. Key Project Staff: John Zakrajsek and Delbert Jones will assist in all project activities.

Types of Work:

Work Class	Work Elements
Habitat	29. Increase Instream Habitat Complexity and Stabilization
Planning and Coordination	175. Produce Design and/or Specifications
Research, Monitoring, and Evaluation + Data Management	157. Collect/Generate/Validate Field and Lab Data

Deep Creek Culvert 1 (DELV-3)

The Deep Creek Culvert replacement will remove a known passage barrier to adult and juvenile Summer Steelhead trout and Bull trout restricting passage to approximately two miles of available high quality and cold water habitat. This item is representative of actions the Project becomes involved within focus a GA (Granite Creek) and where an action is identified in an Action Plan (USGS, 2012) to address acknowledged priority issues. The effort will directly address River Vision Touchstones bio-connectivity (passage barriers / entrainment), geomorphology (in-channel characteristics, and hydrology (sediment) with the primary objectives of restoring passage, channel stability and morphology and sediemt transport. The reaches potential condition is a higher gradient step-pool channel below pool-riffle habitats. In addition to the culvert replacement channel grade will need to be adjusted with rock due to sediment deposition above the culvert. Project implementation shall include the following major categories of activities necessary to complete the project: Planning and Design – This effort provides an example of those previously undertaken and will undertake between 2013 and 2018. Discussions between the UNF and the Project have identified this and several other culverts for replacement. The project will likely assist with the topographic survey with design work completed by UNF engineers in. Secure Funding- Funding sources have not been identified beyond those included in this proposal to be used for implementation. The UNF will provide funding to support design efforts as noted and will provide cost-share in securing permits and securing and administering a construction contract. Additional funding from competitive grants or yet unnamed cooperators will be secured before contracting begins in early 2014. Environmental Compliance/Permits – As previously noted the UNF will complete NEPA documentation and utilize available programmatic permits for this effort. Construction Subcontracting Preparation – The UNF will secure and administer an implementation contract. Project Construction and Inspection – CTUIR staff will support UNF provide onsite inspection, oversight, and grade checking during project construction activities to monitor compliance of subcontractor with all terms and conditions and environmental compliance requirements are being met. Inspection efforts will help ensure that the project is constructed as designed. Monitoring and Evaluation – Following completion of construction activities, ongoing M&E efforts will be conducted by the Project in the form of spawner surveys as outlined under the 'Edit Work Details > M&E' tab in addition to surveys conducted by UNF biologists and hydrologists during regular habitat and population surveys and UNF engineers during regular road and culvert stability surveys. Key Project Staff: John Zakrajsek and Delbert Jones.

Types of Work:

Work Class	Work Elements
Habitat	29. Increase Instream Habitat Complexity and Stabilization
	184. Install Fish Passage Structure

Deep Creek Culvert II (DELV-4)

The Deep Creek Culvert replacement will remove a known passage barrier to adult and juvenile Summer Steelhead trout and Bull trout restricting passage to approximately one mile of available high quality and cold water habitat. This item is representative of actions the Project becomes involved within focus a GA (Granite Creek) and where an action is identified in an Action Plan (USFS, 2012) to address acknowledged priority issues. The effort will directly address River Vision Touchstones bio-connectivity (passage barriers / entrainment), geomorphology iIn-channel characteristics, and hydrology (sediment) with the primary objectives of restoring passage, channel stability and morphology and sediemt transport. The reaches potential condition is a higher gradient step-pool channel below pool-riffle habitats. In addition to the culvert replacement channel grade will need to be adjusted with rock due to sediment deposition above the culvert. Project implementation shall include the following major categories of activities necessary to complete the project: Planning and Design – This effort provides an example of those previously undertaken and will undertake between 2013 and 2018. Discussions between the UNF and the Project have identified this and several other culverts for replacement with the project likely assisting with the topographic survey with design work completed by UNF engineers in. Secure Funding- Funding sources have not been identified beyond those included in this proposal to be used for implementation. The UNF will provide funding to support design efforts as noted and will provide cost-share in securing permits and securing and administering a construction contract. Additional funding from competitive grants or yet unnamed cooperators will be secured before contracting begins in early 2014. Environmental Compliance/Permits – As previously noted the UNF will complete NEPA documentation and utilize available programmatic permits for this effort. Construction Subcontracting Preparation – The UNF will secure and administer an implementation contract. Project Construction and Inspection – CTUIR staff will support UNF provide onsite inspection, oversight, and grade checking during project construction activities to monitor compliance of subcontractor with all terms and conditions and environmental compliance requirements are being met. Inspection efforts will help ensure that the project is constructed as designed. Monitoring and Evaluation – Following completion of construction activities, ongoing M&E efforts will be conducted by the Project in the form of spawner surveys as outlined under the 'Edit Work Details > M&E' tab in addition to surveys conducted by UNF biologists and hydrologists during regular habitat and population surveys and UNF engineers during regular road and culvert stability surveys. Key Project Staff: John Zakrajsek and Delbert Jones.

Types of Work:

Work Class	Work Elements
Habitat	29. Increase Instream Habitat Complexity and Stabilization
	184. Install Fish Passage Structure

Deep Creek Wood Placement (DELV-29)

The Deep Creek Wood Placement will provide stability and roughness to an obliterated road and riparian area adjacent to the two Deep Creek Culvert Replacement noted in this proposal. This action will reduce the volume of sediment entering Deep Creek while providing stability through the LWD placements and native hardwood plantings along 0.5 miles of stream channel used as spawning ande rearing habitat by Bull trout restricting passage to approximately one mile of available high quality and cold water habitat. This item is representative of actions the Project becomes involved within focus a GA (Granite Creek) and where an action is identified in an Action Plan (USFS, 2012) to address acknowledged priority issues. The effort will directly address River Vision Touchstones geomorphology (in-channel characteristics, riparian/floodplain, and hydrology (sediment) with the primary objectives of restoring channel stability and morphology, and riparian/floodplain complexity. The reaches potential condition is a higher gradient step-pool channel below pool-riffle habitats. Project implementation shall include the following major categories of activities necessary to complete the project: Planning and Design –Discussions between the UNF and the Project have identified this and several other actions which will address multiple factors in a short period of time. The Project will likely assist with the topographic survey with design work completed by UNF engineers. Secure Funding- Funding sources have not been identified beyond those included in this proposal to be used for implementation. The UNF will provide funding to support design efforts as noted and will provide cost-share in securing permits and securing and administering a construction contract. Additional funding from competitive grants

or yet unnamed cooperators will be secured before contracting begins. Environmental Compliance/Permits – As previously noted the UNF will complete NEPA documentation and utilize available programmatic permits for this effort. Construction Subcontracting Preparation – The UNF will secure and administer an implementation contract. Project Construction and Inspection – CTUIR staff will support UNF provide onsite inspection, oversight, and grade checking during project construction activities to monitor compliance of subcontractor with all terms and conditions and environmental compliance requirements are being met. Inspection efforts will help ensure that the project is constructed as designed. Monitoring and Evaluation – Following completion of construction activities, ongoing M&E efforts will be conducted by the Project in the form of spawner surveys as outlined under the 'Edit Work Details > M&E' tab in addition to surveys conducted by UNF biologists and hydrologists during regular habitat and population surveys and UNF engineers during regular road and culvert stability surveys. Key Project Staff: John Zakrajsek and Delbert Jones.

Types of Work:

Work Class	Work Elements
Habitat	29. Increase Instream Habitat Complexity and Stabilization
Research, Monitoring, and Evaluation + Data Management	157. Collect/Generate/Validate Field and Lab Data 162. Analyze/Interpret Data

UNF Fence Maintenance (DELV-32)

On UNF approximately 80 miles of riparian areas about critical habitat for Summer Steelhead trout constructed approximately 20 years ago which is now in need of repair. This task will support a prioritized approach based on the age of fences and the resource benefit by exclude cattle to implement heavy maintenance and reconstruction where necessary using UNF and Project staff and/or local contractors as the application allows. The Deliverable addresses RiverVision Touchstones riparian vegetation/floodplain, hydrology (temperature and sediment), and geomorphology (in-channel characteristics) and limiting factors addressed by this effort and identified in the NFJD Subbasin Plan include riparian condition, temperature, channel stability, habitat diversity, and fine sediment. Planning and Design – Fences have been identified and once funds are available prioritized areas identified by maximum benefit to aquatic species reconstruction will occur with staff from cooperators where possible or contractors as constraints demand. Secure Funding – Thus far, funds beyond those identified here have not been identified. Environmental Compliance – At this point permits for the effort have not been secured although the UNF will take the lead on those with assistance from the project where possible. Construction Subcontracting - Construction contracting will occur on an as needed basis using local contractors. Project Construction and Inspection – UNF and Project staff will jointly provide onsite oversight and grade check during implementation to monitor compliance of subcontractor with all terms and conditions associated with the construction subcontract environmental compliance requirements are being met. Inspection efforts will help ensure that the project is constructed as designed. Monitoring and Evaluation – Fence maintenance and monitoring will occur jointly between the grazing permittee with oversight by the UNF Range Conservationist. Key Project Staff: John Zakrajsek and Delbert Jones will assist UNF staff during implementation.

Types of Work:

Work Class	Work Elements
Habitat	40. Install Fence
Planning and Coordination	114. Identify and Select Projects

Objectives & Project Deliverables

Objective: **Preserve and Maintain Existing Habitat (OBJ-1)**

Project Deliverables	*How the project deliverables help meet this objective**
Manage and Administer Project (DELV-27)	Work Element Deliverable includes: project administration (indirect) and direct expenses related to development of annual work plans, scopes of work, budgets, Pisces SOW/budget/property, personnel and fringe benefits, travel, training, and vehicles, materials, supplies, and services, personnel management, project planning and design, coordination, project selection, negotiation of conservation easements and working with private landowners to develop project opportunities, participation in watershed planning efforts. Although the Primary Objective for this Deliverable has been identified as 'Preserve and Maintain Existing Habitat' primary and/or secondary objectives include all those identified above although the primary Objective for a particular effort may change somewhat depending on 'Ecological Concerns' and 'Limiting Factors' (History > Results Table I) identified for an individual effort.
Outreach and Education (DELV-21)	Work Element Deliverable includes: increasing public knowledge of the Project and its activities and knowledge related to increasing public knowledge and recognition of our watersheds and their processes and functions, clean water, healthy wildlife populations. This occurs through presentations, discussions, educational opportunities with local schools, and interaction with the public during discussions and tours. Although the Primary Objective for this Deliverable has been identified as 'Preserve and Maintain Existing Habitat' primary and/or secondary objectives include all those identified above although the primary Objective for a particular effort may change somewhat depending on 'Ecological Concerns' and 'Limiting Factors' (History > Results Table I) identified for an individual effort.

Objective: **Improve Passage to Existing High Quality Habitats (OBJ-2)**

Project Deliverables	*How the project deliverables help meet this objective**
Junkins Creek Culvert I (DELV-14)	Work Element Deliverable includes: addressing the influence of several passage barriers that have been identified in the Draft Desolation Creek Action Plan (USFS, 2012) including this one. This barrier reduces effective habitat for Summer Steelhead trout by limiting access to existing high quality cold water habitat. Additionally this culvert was installed on an old logging road now used as an ATV trail and was not designed to pass sediments which have built up behind the culvert with significant scour occurring below. Given Desolations listing as a temperature limited stream providing access to these habitats in a responsible action that will be undertaken in cooperation with the UNF and other cooperators as they are identified. The objective for this effort will primarily be to improve passage to and between available habitats and populations, however, given sediment and channel conditions about the culvert channel grade will need to be addressed and therefore improvements to stream channel complexity and morphology and sediment routing and sorting have been identified as secondary objectives.
Bull Run Culvert (DELV-16)	Work Element Deliverable includes: addressing the influence of several passage barriers that have been identified in the Bull Run Creek Action Plan (USFS, 2012) including this one. This barrier reduces effective habitat for Summer Steelhead trout and Bull trout by limiting access to existing high quality cold water habitat. Additional this culvert was installed on an old logging road and Bull Run Creeks riparian/floodplain areas have suffered from historic placer mining. As such the culvert was not designed to pass sediments which have built up behind the culvert with scour occurring below. Given the Bull Run Creek's listing as a temperature limited stream providing access to existing high quality habitat identified as spawning and rearing habitat for Bull trout while improving road stability is a responsible action that will be undertaken in cooperation with the UNF and other cooperators as they are identified. The objective for this effort will primarily be to improve passage to and between available habitats and populations, however, given sediment and channel conditions about the culvert channel grade will need to be addressed and therefore improvements to stream channel complexity and morphology and sediment routing and sorting have been identified as secondary objectives.
Junkins Creek Culvert II (DELV-17)	Work Element Deliverable includes: addressing the influence of several passage barriers that have been identified in the Draft Desolation Creek Action Plan (USFS, 2009) including this one. This barrier reduces effective habitat for Summer Steelhead trout by limiting access to existing high quality cold water habitat. Additional this culvert was installed on an old logging road was not designed to pass sediments which have built up behind the culvert with significant scour occurring below. Given Desolations listing as a temperature limited stream providing access to these habitats in a responsible action that will be undertaken in cooperation with the UNF and other cooperators as they are identified. The objective for this effort will primarily be to improve passage to and between available habitats and populations, however, given sediment and channel conditions about the culvert channel grade will need to be addressed and therefore improvements to stream channel complexity and morphology and sediment routing and sorting have been identified as secondary objectives.
Sponge Creek Culvert (DELV-5)	Work Element Deliverable includes: addressing the influence of several passage barriers that have been identified in the Draft Desolation Creek Action Plan (USFS, 2009) including this one. This barrier reduces effective habitat for Summer Steelhead trout by limiting access to existing high quality cold water habitat under the main road along Desolation Creek. The culvert was designed to pass water and therefore possess passage issue during spring runoff and baseflows. This barrier had been scheduled to be replaced during 2010, however, a shortfall in funding and priority work on the Bruin Creek Culvert (History > Results tab) left this culvert with a partially finished design. Given Desolations listing as a temperature limited stream providing access to these habitats in a responsible action that will be undertaken in cooperation with the UNF and other cooperators as they are identified. The objective for this effort will primarily be to improve passage to and between available habitats and populations, however, given sediment and channel conditions about the culvert channel grade will need to be addressed and therefore improvements to stream channel complexity and morphology and sediment routing and sorting have been identified as secondary objectives.

Deep Creek Culvert 1 (DELV-3)	Work Element Deliverable includes: this culvert is one of two high priority barriers to passage identified in the Bull Run Action Plan (USFS, 2012) prohibiting access to existing high quality spawning and rearing habitat for Bull trout. Replacement of this and the other identified as Deep Creek Culvert II are expected to occur along with the Deep Creek Wood Placement at once. This follows the Projects past actions in replacing multiple barriers and improving conditions within a single subbasin in as short a time as possible to reduce costs. Given the Bull Run Creek's listing as a temperature limited stream improving access to and passage within its tributaries (of which Deep Creek is one) is a responsible action that will be undertaken in cooperation with the WNF and other cooperators as they are identified. The objective for this effort will primarily be to improve passage to and between available habitats and populations.
Deep Creek Culvert II (DELV-4)	Work Element Deliverable includes: this culvert is one of two high priority barriers to passage identified in the Bull Run Action Plan (USFS, 2012) prohibiting access to existing high quality spawning and rearing habitat for Bull trout. Replacement of this and the other identified as Deep Creek Culvert I are expected to occur along with the Deep Creek Wood Placement at once. This follows the Projects past actions in replacing multiple barriers and improving conditions within a single subbasin in as short a time as possible to reduce costs. Given the Bull Run Creek's listing as a temperature limited stream improving access to and passage within its tributaries (of which Deep Creek is one) is a responsible action that will be undertaken in cooperation with the WNF and other cooperators as they are identified. The objective for this effort will primarily be to improve passage to and between available habitats and populations.

Objective: **Improve Floodplain Connectivity (OBJ-3)**

Project Deliverables	*How the project deliverables help meet this objective**
Bull Run Creek Mine Tailing Removal (DELV-1)	Work Element Deliverable includes: addressing the influence of historic placer mining which greatly disturbed most of the floodplain and historic channel of Bull Run Creek leaving extensive tailing piles across the floodplain consisting of well sorted rock. These piles have artificially confined the stream channel and as a result compromised stream channel complexity and morphology. The primary objective of this effort will be to improve floodplain connectivity by recountouring and removing excess tailings. As mining disrupted the entire floodplain and stream channel secondary objectives improve or preserve water quality, improve riparian and floodplain complexity, stream channel complexity and morphology,sediment routing and sorting, and hyporheic complexity.
Granite Creek In-stream Restoration (DELV-8)	Work Element Deliverable includes: addressing the influence of historic placer mining which greatly disturbed most of the floodplain and historic channel of Bull Run Creek leaving extensive tailing piles across the floodplain consisting of well sorted rock. These piles artificially confined the stream channel and as a result compromised stream channel complexity and morphology. The primary objective of this effort will be to 'Improve Floodplain Connectivity' by recountouring and removing excess tailings. As mining disrupted the entire floodplain and stream channel secondary objectives improving water quality, riparian and floodplain complexity, stream channel complexity and morphology, sediment routing and sorting, and hyporheic complexity.

Objective: **Improve or Preserve Water Quality (OBJ-4)**

Project Deliverables	*How the project deliverables help meet this objective**

Objective: **Improve Riparian and Floodplain Complexity (OBJ-5)**

Project Deliverables	*How the project deliverables help meet this objective**
Maintain Structures and Native Vegetation (DELV-22)	Work Element Deliverable includes: Operating and maintaining stock water developments implemented to decrease disturbances of sensitive areas. Structures may include ponds, water gaps, or well or spring developments in floodplain or upland settings and are often associated with one or several actions to address channel, riparian, and floodplain conditions. This Deliverable is often associated wit 'Operating and Maintaining Fences'. Although the Primary Objective for this Deliverable has been identified as 'Improve Riparian and Floodplain Complexity' primary and/or secondary objectives include all those identified above although the primary Objective for a particular effort may change somewhat depending on 'Ecological Concerns' and 'Limiting Factors' (History > Results Table I) identified for an individual effort.
Mud Creek Grazing Plan (DELV-13)	Work Element Deliverable includes: efforts to address historic forestry and grazing management practices which have resulted in a loss of in-stream structure and riparian vegetation and the construction of weak levees. A riparian enclosure will be constructed during 2013 to prohibit cattle access to the stream channel and riparian/floodplain areas letting natural processes improve channel conditions for the moment. The greater emphasis will be to improve grazing management through the development of a grazing management plan which will in all likelihood lead to a stockwater development to further improve upland grazing opportunities. As such, the primary Objective this Deliverable will be to improve riparian and floodplain complexity by addressing upland grazing with a secondary emphasis on 'improving stream channel complexity once grazing management has been addressed.
Bull Run Wood Placement (DELV-33)	Work Element Deliverable includes: addressing the influence of historic placer mining which greatly disturbed most of the floodplain and historic channel of Bull Run Creek leaving extensive tailing piles across the floodplain consisting of well sorted rock. These piles have artificially confined the stream channel and as a result compromised stream channel complexity and morphology. The previously noted Deliverable for 'Bull Run Mine Tailing Removal' will occur prior to this action regardless if the removal is a stepwise effort which will be the likely approach, or not. Given mine tailings consistency and lack of ability to grow native vegetation effectively large wood will be placed within the treated floodplain to help capture and maintain sediment and debris and protection for planted native hardwoods which will in all likelihood occur in tandem with this effort. Although a definitive approach cannot be identified for this action at this time placements will not likely include excavation into the floodplain as the primary objective of improving riparian and floodplain complexity can occur without the additional cost. Additional objectives include improving water quality and improving sediment routing.
Desolation & Clear Creek Wood Placement (DELV-7)	Work Element Deliverable includes: historic grazing management practices (Desolation Creek) and placer mining (Clear Creek effectively reduced in-stream and riparian/floodplain complexity. The Clear Creek site has been identified in the Granite Creek Action Plan (USFS, 2008) a while the Desolation Creek site has been the focus of studies to identify appropriate treatments to address the influence of historic grazing management. These sites are both near existing high quality cold water habitat and channel conditions in both locations have been addressed to some extent through bar construction on Desolation Creek and tailing recontour along Clear Creek. However, riparian/floodplain roughness has not been addressed to a great extent. Bothe reaches provide habitat for Summer Steelhead trout and Bull trout and given their access to nearby meadow complexes improving riparian/floodplain habitat will benefit in-stream areas. AddThus the objective for this effort will be to riparian and floodplain complexity with a secondary objective albeit passive to improve stream channel complexity and morphology.
UNF Fence Maintenance (DELV-32)	Work Element Deliverable includes: within lands managed by the UNF approximately 311 miles of fences exclude cattle from over 80 miles of Designated Critical Habitat and other streams above Summer Steelhead trout habitat. Many of these fences were constructed over 20 years ago with funding from BPA and are now in need of replacement and/or heavy maintenance. The Project has been cooperating with the UNF to address fencing concerns (History > Results tab) including the construction of new fence and cooperating to improve existing fence lines. This Deliverable will use staff personell from both entites and contractors to improve the effectiveness and the longevity of the fences. The objective for this effort primarly lois with preserving and maintaining existing habitat followd closely by improving riparian and floodplain complexity from the influence of historic grazing management practices, preserving water quality and improving channel complexity and morphology and sediment routing and sorting by default.

Objective: **Improve Stream Channel Complexity and Morphology (OBJ-6)**

Project Deliverables	*How the project deliverables help meet this objective**
Collect/Generate/Validate Field Data	Work Element Deliverable includes: Literature searches, monitoring method developemnt, and

(DELV-25)	data collection, tabulation, and analysis to provide information to identify baseline conditions, base design and permitting efforts upon, and complete status and trend monitoring. Although the Primary Objective for this Deliverable has been identified as 'Improve Stream Channel Riparian and Floodplain Complexity' primary and/or secondary objectives include all those identified above although the primary Objective for a particular effort may change somewhat depending on 'Ecological Concerns' and 'Limiting Factors' (History > Results Table I) identified for an individual effort.
Fox Creek (DELV-11)	Work Element Deliverable includes: continued efforts on two additional reaches of Fox Creek with the primary objective of addressing a lack of channel complexity which has resulted in reduced in-stream habitat and localized channelization and in part, channel incision. This condition is the result of several factors and as such secondary objectives improving floodplain connectivity, water quality, riparian and floodplain complexity, and floodplain storage resulting from channel incision, channelization, and grazing practices within in-stream and riparian areas which increased bank cutting and the loss of native hardwoods.
Desolation In-stream (DELV-15)	Work Element Deliverable includes: efforts to address historic forestry and grazing management practices which have resulted in a loss of in-stream structure and riparian vegetation. This loss has resulted in a over widened plain-bed channel with unstable streambanks. As such, the primary Objective this Deliverable will be to 'improve Stream Channel Complexity and Morphology' using rock and wood structures to create and maintain scour. Grazing practices have contributed streambank cutting, loss of riparian vegetation, and water quality deficiencies secondary objectives include improving water quality, riparian and floodplain complexity, and hyporheic complexity.
Camas Creek In-stream Adjustment (DELV-9)	Work Element Deliverable includes: historic land management practices related to grazing management and transportation infrastructure have severely restricted Camas creek's floodplain tin many locations and contributed to excessive over-widening, localized head cutting, loss of in-stream structure, and free access by cattle. Additionally, the 1964 flooding events resulted in levee construction which further compromised channel, riparian, and floodplain processes, morphology, and complexity. Although a return to historic conditions will not likely occur with the given constraints much can be done within those constraints to improve conditions for Summer Steelhead trout, Spring Chinook salmon, and Bull trout. At this time sediments are transported through the reach and without and structure such as LWD to create and maintain scour or capture sediments habitat for aquatic species is limited. Low summer baseflows and high water temperatures also limit habitat use by the previously noted species. A combination of exclusion fencing and in-stream work will improve complexity across the floodplain with the primary objective being to improve stream channel complexity and morphology closely followed by improving riparian and floodplain complexity, sediment routing and sorting, and water quality.
Deep Creek Wood Placement (DELV-29)	Work Element Deliverable includes: this site lies between the Deep Creek I & II culverts and has been identified as a desired action in the Bull Run Action Plan (USFS, 2012) to improve channel complexity by placing large wood in select location to create and maintain localized scour. Removing the barriers surrounding the site as previously noted follows up on past efforts undertaken by the project to focus treatments to provide the greatest benefit at the least cost. Given the Bull Run Creek's listing as a temperature limited stream improving access to and passage within its tributaries (of which Deep Creek is one) is a responsible action that will be undertaken in cooperation with the WNF and other cooperators as they are identified. The objective for this effort will primarily be to, stream channel complexity and morphology with treatments also improving water quality and improving sediment routing.

Objective: **Improve Sediment Routing and Sorting (OBJ-7)**

Project Deliverables	*How the project deliverables help meet this objective**

Objective: **Improve Hyporheic Complexity (OBJ-8)**

Project Deliverables	*How the project deliverables help meet this objective**

Objective: **Increase Floodplain Storage (OBJ-9)**

Project Deliverables	*How the project deliverables help meet this objective**

Objective: **Reduce the Influence of Toxic Sources (OBJ-10)**

Project Deliverables	*How the project deliverables help meet this objective**

*This section was not available on proposals submitted prior to 9/1/2011

RM&E Protocols and Methods

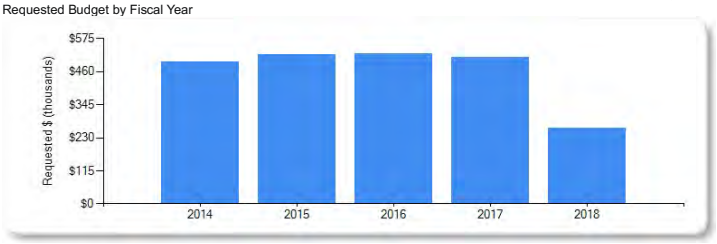
RM&E Protocol	Deliverable	Method Name and Citation
Protocol for Snorkel Surveys of Fish Densities	Collect/Generate/Validate Field Data (DELV-25)	Basic Snorkel Survey Procedures (O'Neal, J.S. 2007)
Umatilla Subbasin Fish Habitat Restoration Monitoring Plan	Collect/Generate/Validate Field Data (DELV-25)	Benthic Macroinvertebrates (Peck, D.V., Herlihy, A.T., Hill, B.H., Hughes, R.M., Kaufmann, P.R., Klemm, D.J., Lazorchak, J.M., McCormick, F.H., Peterson, S.A., Ringold, P.L., Magee, T., & Cappaert, M.R. 2006) Aquatic Vertebrates (Peck, D.V., Herlihy, A.T., Hill, B.H., Hughes, R.M., Kaufmann, P.R., Klemm, D.J., Lazorchak, J.M., McCormick, F.H., Peterson, S.A., Ringold, P.L., Magee, T., & Cappaert, M.R. 2006) Determining Macro-Invertebrate Species Assemblages (Crawford, B.A., & Arnett, J. 2011) Discharge-USGS gauges (Hall, J. 2008) Taxonomic Levels and Specific taxa (Northwest Biological Assessment Workgroup 2007) Water Temperature (Casey Justice, Seth White, and Dale McCullough 2010) CHaMP - Channel Units (Bouwes, N., J. Moberg, N. Weber, B. Bouwes, S. Bennett, C. Beasley, C.E. Jordan, P. Nelle, M. Polino, S. Rentmeester, B. Semmens, C. Volk, M.B. Ward, and J. White. 2011) CHaMP - Fish Cover Elements (Bouwes, N., J. Moberg, N. Weber, B. Bouwes, S. Bennett, C. Beasley, C.E. Jordan, P. Nelle, M. Polino, S. Rentmeester, B. Semmens, C. Volk, M.B. Ward, and J. White. 2011) CHaMP - Large Woody Debris (2011) (Bouwes, N., J. Moberg, N. Weber, B. Bouwes, S. Bennett, C. Beasley, C.E. Jordan, P. Nelle, M. Polino, S. Rentmeester, B. Semmens, C. Volk, M.B. Ward, and J. White. 2011) CHaMP - Riparian Structure (Bouwes, N., J. Moberg, N. Weber, B. Bouwes, S. Bennett, C. Beasley, C.E. Jordan, P. Nelle, M. Polino, S. Rentmeester, B. Semmens, C. Volk, M.B. Ward, and J. White. 2011) CHaMP - Water Temperature (Bouwes, N., J. Moberg, N. Weber, B. Bouwes, S. Bennett, C. Beasley, C.E. Jordan, P. Nelle, M. Polino, S. Rentmeester, B. Semmens, C. Volk, M.B. Ward, and J. White. 2011)

		CHaMP - Water Chemistry (Bouwes, N., J. Moberg, N. Weber, B. Bouwes, S. Bennett, C. Beasley, C.E. Jordan, P. Nelle, M. Polino, S. Rentmeester, B. Semmens, C. Volk, M.B. Ward, and J. White. 2011) Channel Substrate Survey: Wolman Pebble Counts RBT - Site Sinuosity Calculation RBT - Habitat Units Calculation RBT - Bankfull Width Profile Calculation CTUIR-Umatilla Basin Photo Points (Keith Karoglanian) CTUIR-ISCO field procedures (Marty King, Keith Karoglanian) Groundwater Surface Elevation Measurement CTUIR Simplified Revegetation Survival Surveys (Keith Karoglanian)
ODFW Grande Ronde Fish Habitat M&E	Collect/Generate/Validate Field Data (DELV-25)	Stream Discharge - Velocity-area method & alternates (Peck, D.V., Herlihy, A.T., Hill, B.H., Hughes, R.M., Kaufmann, P.R., Klemm, D.J., Lazorchak, J.M., McCormick, F.H., Peterson, S.A., Ringold, P.L., Magee, T., & Cappaert, M.R. 2006) Redd Count Survey (Gallagher, S.P., Hahn, P.K., & Johnson, D.H. 2007) Estimating Instream Juvenile Salmonid Abundance Using Electrofishing (Crawford, B.A. 2011) Measurement of Stage (Rantz, S.E., et al. 1982) Backpack electrofishing Channel Substrate Survey: Wolman Pebble Counts Aerial photo review Streambank Stability (Bauer, S.B.,& Burton, T.A. 1993) Solar Heat Inputs Using the Solar Pathfinder (Bauer, S.B.,& Burton, T.A. 1993) Channel Geomorphology and General Ground Feature Surverying. (Winston Morton) Project Photopoints (Winston Morton) ODFW Methods for Stream Habitat Survey (Aquatic Inventory Project) (Moore, K., Jones, K., Dambacher, J. Stein, C., et al. 2010) Groundwater Well Surveys (McGown, V.R., and Morton, W.H. 2008) Permanent Transect Methods and Guidlines for Monitoring Riparian Habitat (Reece, A. 1988) Continual Water and Air Temperature Data Collection (McGowan, V.R. 2001)

Project Deliverables & Budget

Project Deliverable	Start	End	Budget
Manage and Administer Project (DELV-27)	2014	2018	$480,000
Outreach and Education (DELV-21)	2014	2018	$20,000
Maintain Structures and Native Vegetation (DELV-22)	2014	2018	$644,000
Collect/Generate/Validate Field Data (DELV-25)	2014	2018	$108,000
Fox Creek (DELV-11)	2014	2014	$40,000
Bull Run Creek Mine Tailing Removal (DELV-1)	2014	2016	$120,000
Granite Creek In-stream Restoration (DELV-8)	2014	2014	$105,000
Mud Creek Grazing Plan (DELV-13)	2014	2014	$10,000
Junkins Creek Culvert I (DELV-14)	2014	2014	$50,000
Desolation In-stream (DELV-15)	2015	2015	$50,000
Bull Run Culvert (DELV-16)	2015	2015	$75,000
Camas Creek In-stream Adjustment (DELV-9)	2015	2016	$180,000
Bull Run Wood Placement (DELV-33)	2016	2016	$20,000
Junkins Creek Culvert II (DELV-17)	2016	2016	$85,000
Sponge Creek Culvert (DELV-5)	2017	2017	$80,000
Desolation & Clear Creek Wood Placement (DELV-7)	2016	2016	$25,000
Deep Creek Culvert 1 (DELV-3)	2017	2017	$75,000
Deep Creek Culvert II (DELV-4)	2017	2017	$75,000
Deep Creek Wood Placement (DELV-29)	2017	2017	$15,000
UNF Fence Maintenance (DELV-32)	2015	2018	$49,884
		Total	**$2,306,884**

Requested Budget by Fiscal Year



Fiscal Year	Actual Request	Explanation
2014	$495,400	
2015	$517,871	
2016	$522,871	
2017	$507,871	
2018	$262,871	
Total	**$2,306,884**	

Item	Notes	FY 2014	FY 2015	FY 2016	FY 2017	FY 2018
Personnel	Habitat Supervisor, Project Lead, Project Technician, Cultural Resources, Database Manager	$136,800	$136,800	$136,800	$136,800	$136,800
Travel	Cultural Resources, Two Symposiums, and One Class	$3,200	$3,200	$3,200	$3,200	$3,200
Prof. Meetings & Training	Two Symposiums, and Two Classes	$2,080	$2,080	$2,080	$2,080	$2,080
Vehicles	Two Project Vehicles and Fuel, Fuel for Equipment	$16,800	$16,800	$16,800	$16,800	$16,800
Facilities/Equipment	(See explanation below)	$12,000	$12,000	$12,000	$12,000	$12,000
Rent/Utilities	Storage Rental & Lower Owens Creek Power	$1,120	$1,120	$1,120	$1,120	$1,120
Capital Equipment		$0	$0	$0	$0	$0
Overhead/Indirect	Rate is currently 0.435	$78,400	$78,400	$78,400	$78,400	$78,400

Other	Subcontracts	$245,000	$267,471	$272,471	$257,471	$12,471
PIT Tags		$0	$0	$0	$0	$0
Total		**$495,400**	**$517,871**	**$522,871**	**$507,871**	**$262,871**

Major Facilities and Equipment explanation:
Facilties and equipment includes office and storage space, services and supplies necessary to complete project activities such as field materials, office supplies, books/journals, computer leases (replaced every five years), communications (cell phones), postage/freight, subscriptions to professional journals, equipment rental, and printing/duplicaiton. Included is also services and supplies associated with project activities including permits/license fees, repairs and maintenance of project equipments, and advertisement of contractual services. These items did not fit within the format of the budget and we did not want to include them with line item other in keeping subcontracts and professional services separate from other budgeted items.n this case Indirect supports office facilities and related items and storage rental in has been included in the Rent/Utilities line. Existing equipment is adaquate given the curent and expected needs of the Project. The Project has the capability to operate rented heavy equipment such as excavators which reduces effort cost; however, this action is dependent upon the needs of a specific effort and therefore was not included in this budget.

Cost Share

Source / Organization	Fiscal Year	Proposed Amount	Type	Description
US Forest Service (USFS)	2015	$3,000	In-Kind	Staff labor and materials. Funding is relativly secure as implementation can occur with only a few people.
US Forest Service (USFS)	2016	$3,000	In-Kind	Staff labor and materials. Funding is relativly secure as implementation can occur with only a few people.
US Forest Service (USFS)	2017	$3,000	In-Kind	Staff labor and materials. Funding is relativly secure as implementation can occur with only a few people.
US Forest Service (USFS)	2014	$55,000	In-Kind	Cost share toward the Bull Run Mine Tailing Redistrubituin design and permitting efforts.
US Forest Service (USFS)	2015	$55,000	Cash	Cost share toward the Bull Run Mine Tailing Redistrubituin to support implementation contracts. Proposed contribution dependent upon federal budget.
US Forest Service (USFS)	2016	$55,000	Cash	Cost share toward the Bull Run Mine Tailing Redistrubituin to support implementation contracts. Proposed contribution dependent upon federal budget.

Project References or Citations

Accords, 2008, 2008 Columbia Basin Fish Accords Memorandum of Agreement between the Three Treaty Tribes and FCRPS Action Agencies

Barnes & Associates, Inc. May 2003. Finding of No Significant Impact and Final Programmatic Environmental Assessment for Implementation of Action 149 Fish Habitat Improvement Measures from the December 2000 National Marine Fisheries Service Biological Opinion of the Federal Columbia River Power System in Three John Day Subbasins in the Mid-Columbia River Steelhead Evolutionary Significant Unit in Central Oregon. U.S. Bureau of Reclamation.

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USFWS. 2002. Bull Trout Draft Recovery Plan. U. S. Fish and Wildlife Service. Paged by section. Available from http://ecos.fws.gov/docs/recovery_plans/2002/021129.pdf

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Rosgen, D., 1996 Applied river morphology. Wildland Hydrology, Pagosa Springs, Colorado.

USFWS, 2002. Chapter 9, John Day River Recovery Unit, Oregon. 82 p. In: U.S. Fish and Wildlife Service, Bull Trout (Salvelinus confluentus) Draft Recovery Plan, Portland, Oregon.

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Key Personnel

James Webster

CTUIR Fishery Habitat Program Supervisor, Expected input for all Fishery Habitat Projects = 40 hours/week. This includes:

- Supervise the CTUIR Fisheries Habitat Program and lead a team of biologists, hydrologists, and watershed science professionals in identifying project priorities and developing, implementing, and monitoring floodplain and watershed restoration projects supportive of the CTUIR First Foods Approach and the River Vision in tributary subbasins of the mid-

Columbia River and lower Snake River across northeast Oregon and southeast Washington.

- Provide technical expertise as an interdisciplinary planning team member to scope, develop, and implement restoration project designs and monitoring plans including the collection and analysis of project specific site data.

- Coordinate and ensure consistency across project subbasins in addressing permit and ESA consultation requirements.

- Coordinate with the CTUIR Fisheries Monitoring and Evaluation Program to develop and maintain defensible monitoring methods and reporting.

- Identify, prioritize, and pursue opportunities to diversify habitat restoration project funding.

- Implement the CTUIR Ceded Land Culvert and Passage Implementation project through development of project actions and outyear workplans and coordination with ongoing restoration projects.

Education;

Pending thesis completion, M.S, Oregon State University, Corvallis, OR, Forest Engineering (Wildland Hydrology)

1992, B.S., Eastern Oregon Sate College, La Grande, OR, Biology

Short Courses;

Modeling of Groundwater Flow for Contaminant Assessment and Remediation

Integrated Mining and Land Rec. IV

Applied Fluvial Geomorphology

River Morphology and Applications

River Assessment and Monitoring

PFC - Bureau of Land Management

Creeks and Communities: Strategy to Accelerate Cooperative Riparian Restoration and Management

PFC Train the Trainer Monitoring Habitat Restoration in Interior Watersheds

USFS R6 Stream & Watershed Restoration Design & Implementation Workshop (NR20)

Contracting Officer Representative Training I, II, and III

Employment;

April 2006 – present, Fish **Habitat Program Supervisor.** CTUIR, DNR, Fisheries, Mission, OR

April 1998 – March 2006, Hydrologist**.** CTUIR, DNR, EPRP, Mission, OR

June 1996 – March 2006, Hydrologist **Consultant.** Webflow Hydrology, Pendleton, OR

March 1992 – March 1998, District **Hydrologist.** U.S.D.A. Forest Service, La Grande, OR

Sept. 1992 - Dec. 1995, Graduate **Research Assistant.** Oregon State University, Corvallis, OR

June 1989 - March 1992, Biological **Technician.** U.S.D.A. Forest Service, La Grande, OR

Associations;

Umatilla Basin Watershed Council technical team member

Grande Ronde Model Watershed Program technical team member

Snake River Salmon Recovery Board Regional Technical Team

OWEB Region 6 Technical Review Team member

Oregon Cadre member for Proper Functioning Condition

American Water Resources Association

American Fisheries Society

American Geophysical Union

John Zakrajsek

CTUIR NFJD Habitat Biologist, Expected input for the NFJD Habitat Project = 40 hours/week

- Responsible for leading the CTUIR Fisheries Habitat Project for the North Fork John Day River Basin and project support to other basin projects within the CTUIR ceded area in an interdisciplinary planning process.

- Lead all aspects of restoration project planning, implementation and monitoring including project development and administration. This includes;

- **Project Development and Implementation:** within the CTUIR ceded area based on the ecological requirements of associated native fish communities and applicable planning documents. Incorporate research information regarding floodplain/riverine processes and native aquatic communities into habitat project planning including technologies and methods that improve habitat program efficiency.

- **Project Administration:** Developing annual work plans and budgets for project implementation, subcontract specifications and manage a competitive selection process for hiring subcontractors and consultants to complete tasks as necessary. Complete environmental and cultural permitting requirements and clearances as necessary and identify and pursue funding and cost-share opportunities to support permitting, design, and implementation work.

- **Data Collection, Analysis, and Management:** Develop and implement a coordinated monitoring effort including coordination with others to utilize multiple scales of measure and maximize efficiency. Apply appropriate and current analysis techniques to collected data that are consistent with QA/QC requirements.

- **Supervision:** Supervise, evaluate, train, and direct 1 to 3 full time employees to implement maintain and monitor project actions. Complete annual work plans and performance reviews that include identifying staff training needs.

- **Coordination:** Develop and maintain cooperative relationships with agency personnel, landowners, and stakeholders.

- **Reporting & Outreach:** Prepare and present project results in reports and public forums in order to foster a productive educational exchange and promote Fish Habitat Program success. Complete quarterly, semi-annual, and annual reports in a timely manner that is consistent with funding agency requirements.

Education;

1991, A.S., Hocking Technical College, Nelsonville, OH, Fish & Wildlife Management

1995, B.S., University of Idaho, Moscow, ID, Fisheries Management

2007, M.S., University of Idaho, Moscow, ID, Hydrology

Short Courses

Wildlands Hydrology Level I, II, III

USGS Sediment Collection Techniques

Introduction to Engineered Log Jams

Employment;

May 2007 – Present, **Habitat Biologist III,** CTUIR, DNR Fisheries, Mission, OR

January 2004 – December 2007, **Graduate Research Assistant**, University of Idaho, Moscow, ID

June 2001 – January 2004, **Fishery Biologist I**, Nez Perce Tribe, DNR, Fisheries, Orofino, ID

April 2000 – June 2001, **Student**, University of Idaho, Moscow, ID

December 1998 – April 2000 – **Fishery Biologist I**, Nez Perce Tribe, DNR, Fisheries, Orofino, ID

1996 & 1998, Seasonal **Fishery Biologist**, NWO Inc., Sisters, OR

May 1993 – December 1998, **Fishery Bio-Aide & Fishery Technician Seasonal**, IDFW, Ahsahka, ID

Specialty;

Combined education and work experience has provided a solid background in fishery research, fishery management, and hydrology. Primary interests at this point pertain to physical attributes of watersheds including but not limited to climate, geology, geomorphology, soils, and forestry and quantitative relationships with aquatic species.

Delbert Jones

CTUIR Fishery Habitat Technician, Expected input for the NFJD Habitat Project = 40 hours/week

Assist the North Fork John Day Fish Habitat Project Leader in implementing/maintaining fish habitat improvements and monitoring water quality/habitat conditions on private lands within the North Fork John Day River Basin consistent with CTUIR treaty reserved rights and interests. This includes;

- Plan and implement fish habitat enhancement and restoration projects Including coordinating and cooperating with landowners, agencies, and other entities for purpose of developing conservation agreements and new projects.

- Implement and maintain existing projects and collect and manage monitoring data.

- Operate heavy equipment, small machinery, and hand tools as needed and initiate purchasing process.

Education;

1973, Diploma, Ukiah High School

Short Courses

Wildlands Hydrology Level I, II, III

Employment;

CTUIR Fisheries Technician, Pendleton, Oregon, 10 years

Heavy Equipment Operator, 20 years

Carpenter, 4 years

Rock Crusher, 3 years

Fence Construction, 2 years

Oregon Department of Foresty, Fire Fighter, 6 Seasons

Specialty;

Born and raised in Ukiah, Oregon Delbert's strength is his familiarity with the NFJD and its residents. Combined with previous experience in logging, construction, and heavy equipment operation Delbert maintains constructed fence lines and water developments and actively participates in implementation efforts which have allowed projects to be completed in-house. Delbert works to increase his knowledge base by participating in available training opportunities.

Contractors and the like have not been identified for future projects and therefore cannot be listed here.

Notes

<none>

Data current as of: 2/28/2013 10:54 PM

Replies to ISRP's request for response are listed below. Comments by ISRP are in Blue and response by CTUIR in Black. The 'Project' refers to CTUIR's N. F. John Day Fishery Habitat Enhancement Project.

1) The status and direction of the RME program needs clarification. Are the sponsors modifying the program and, if so, how? What changes will be made and why? What is the status of data analysis? Is data analysis ongoing and, if so, when can results be expected? What is the relationship between this project's RME and CTUIR's Bio-Monitoring Plan and Fisheries Habitat Management Plan? How is the RME for this project similar to and different from these plans? If the sponsors are modifying their RME, what specific elements of the two plans will be incorporated?

The Project has not developed a RME program nor does it propose to develop a RME program. In response to these comments and comments from the 2006 ISRP proposal '*No direct monitoring of fish use of habitat. The sponsors should coordinate with ODFW so that fish monitoring occurs and can be tied to habitat improvements*.' efforts to coordinate with CTUIR RM&E and ODFW to improve monitoring data collection have occurred and include;

a) Collection of physical habitat monitoring data for the purpose of measuring physical conditions and change began in 2007 and occurs where CTUIR holds a Conservation Agreement and as part of cooperative efforts outside those sites. Data collected are related to measuring specific project objectives and may include, but is not limited to, physical data such as photopoints, cross sections, longitudinal profiles, pebble counts, water temperatures, vegetative composition, coverage, and survival and surface and groundwater surface elevation where appropriate. Although early efforts did not include collecting pre-implementation monitoring data, this has changed and now all efforts which involve a Conservation Agreement include pre-implementation data collection consisting of the methods noted above at the very least. The data is used in implementation design, permitting, and long term monitoring efforts. Implementation sites are/will be monitored annually for five years following implementation after which time monitoring shall occur every three years or after a significant site disturbance. This method should allow the Project to track initial stability while reducing long term monitoring expenditures (a concern of BPA).

Most cooperative restoration efforts have been and are/will be monitored by either the Project or their cooperators although the duration, frequency, and methods of monitoring may reflect cooperator funding levels, capabilities, or methods. At this time, passage barrier replacements are monitored through short term spawner surveys collected by the Project and periodic habitat, aquatic inventory, and road stability surveys conducted by the USFS; channel or irrigation diversion modifications are monitored by the Project or the NFJDWC using photopoints or vegetative assessments and stream channel profiles; weed control and planting efforts are monitored by the NFJDWC or the USFS; and the USFS monitors riparian fences and associated habitat condition associated with grazing permits. Future of monitoring restoration actions and objectives will depend upon efforts undertaken although all actions will have some form of related monitoring.

b) To identify a biological response the Project has been working with ODFW's District Fish Biologist since 2008 to complete spawner surveys as part of ODFW's annual N. F. John Day Basin spawner surveys in the Projects previously identified Focus Basins of Camas, Desolation, and Granite Creeks. Additionally, the Project has and will continue to complete spawner surveys above passage barrier replacements for two years following replacement. Surveys completed solely by the Project are in locations not covered by the ODFW surveys and are related directly to a specific actions effectiveness. Additionally, the future use of snorkel surveys to identify juvenile habitat use identified in the proposal will be specific to individual habitat enhancement efforts and qualitative in nature although the surveys will use accepted protocols; that is, presence/absence data will only be collected. While intensive and quantitative spawner and snorkel surveys would be best they are beyond the purview of the Project given the nature of Project funding and constraints imposed by BPA.

Given the development of, interest in, and coordinated monitoring efforts across BPA projects the CTUIR has developed and begun developing both biologically based (BioMonitoring Plan, BPA Project #2009-014-00) and CTUIR's Fisheries Habitat Physically Based Monitoring Strategy. The development of these two plans essentially reconciles CTUIR's Fishery Research and Habitat efforts funded by BPA with one another and provide a quantitative assessment of efforts undertaken by CTUIR as well as an assessment of CTUIR's strategies.

The BioMonitoring Plan recently developed seeks to ascertain the biological response to implemented efforts. This differs from previously collected biological data in that this will be a site specific and intensive effort to understand the implemented actions upon a single site within the N. F. John Day Basin. This effort will be repeated within each of the CTUIR's Fishery Habitat basins (Grande Rhonde, Umatilla, Walla Walla, Tucannon,

and N. F. John Day) at a single site. While the Project has worked with ODFW to show a biological response to efforts the BioMonitoring Plan will consist of intensive and quantitative efforts to develop an understanding of juvenile rearing and escapement and adult return relations to the implemented actions which have not been undertaken to date by the Project. This effort will include participation by the Project, however, responsibility for implementing the BioMonitoring Plan will fall upon CTUIR's DNR Fishery RM&E staff who are not part of the Fisheries Habitat Program. This BioMonitoring plan does not preclude coordination with others entities within the basin and such, coordination will continue on a case by case basis.

The Project continues to participate in the development of and will adopt the CTUIR's Physical Habitat Monitoring Strategy which will standardize monitoring protocols and objectives within the Fisheries Habitat Program. The plan will essentially be a list of monitoring methods including protocols identified in CHaMP which may differ slightly from those currently adopted by the Project or those detailed on MonitoringMethods.org suggesting there is a potential need to 'reconcile' or modify the Projects existing methods with others to obtain the best information available. Monitoring methods identified in Physical Habitat Monitoring Strategy shall be linked to common objectives adopted by CTUIR's Fisheries Habitat Program from which a Project Lead can choose to determine the response to site specific actions. Single or multiple objectives and associated monitoring practices can be selected to reflect the nature of individual efforts undertaken. This document intends to reconcile site specific monitoring practices identified in CHaMPS, reach scale efforts commonly undertaken by CTUIR and their multiple scale approach to restoration, and broader scale monitoring plans such as MERRS until such time as everyone is on the same page. This should not suggest the Projects methods were developed and adopted in a vacuum without review of past and current literature.

c) For data analysis See Response 5

d) Comment provided to CTUIR by BPA in response to ISRP comments on multiple proposals regarding RME developed in response to ISRP's Preliminary review (ISRP 2013-4) suggests the Projects proposal is consistent with ISRP review of the BPA Programmatic AEM approach (ISRP 2013-2) and also the Council's recommendation for implementation on June 17, 2013. **"Consistent with the BPA Programmatic Action Effectiveness Monitoring (AEM) program reviewed by the ISRP (ISRP 2013-2) and recommended for implementation by the Council on June 17, 2013, it is not the responsibility of this project to provide data or document protocols of other projects for RM&E as part of this proposal. Although this project is not tasked with implementing AEM, it does align with the Programmatic AEM approach. Project monitoring will be carried out by other projects focused on collecting data to support the Programmatic AEM approach. The known RM&E projects associated with this project are referenced in the "Relationship to Other Projects" section in the proposal form, or were referenced as part of the programmatic processes previously provided to the ISRP and ISAB by BPA for review of the Programmatic AEM approach. However, this project will continue to work with BPA and Council staff to identity whether restoration actions proposed under this project may be candidates for use in the AEM program. In accordance with the ISRP and Council recommendation, BPA will provide the ISRP updates on the ISEMP (IMWs fish and habitat relationships), CHaMP (Status and Trends) and the AEM program (with updated list of actions and related projects that contribute to the AEM program)".**

2) The goal of the project was not clearly stated. For example, in the Executive Summary the goal/purpose of the project varies in three separate paragraphs. In the first instance, it is stated as "This project protects, enhances, and restores functional floodplain, channel and watershed processes to provide sustainable and healthy habitat and water quality for aquatic species in the John Day River Subbasin." In the second instance it is stated as "The purpose of this project is to protect and enhance habitat for improved natural production of indigenous, Mid-Columbia River (MCR) Evolutionary Significant Unit (ESU) summer steelhead (*Oncorhynchus mykiss*), listed as threatened under the Federal Endangered Species Act (ESA), and spring Chinook salmon (*Oncorhynchus tshawytscha*) within the North Fork of the John Day River Basin." In the third instance it is stated as "The goal of the CTUIR North Fork John Day Habitat Enhancement Project (the Project) is to protect, enhance, and restore channel, riparian, and floodplain function and function relating these locations to upland adjacent upland areas using a 'ridge top to ridge top' approach to provide sustainable and healthy habitat and water quality for aquatic species in the North Fork John Day River Subbasin." Although related in spirit, these are not the same. As such, it was very difficult to equate objectives and evaluate activities in the proposal to the stated goal.

Goal = The project protects, enhances, and restores functional floodplain, channel and watershed processes to provide sustainable and healthy habitat and water quality for aquatic species in the John Day River Subbasin.

The other two statements noted above are inherently contained within this goal.

3) Ten Objectives are provided but, for several, there are no deliverables (OBJ 4, 7, 8, 9, and 10). The topics related to the Objectives are discussed in the text, and they are listed as important concerns, but it is not clear how they will be addressed.

Given proposal complexity, time constraints, and having to project four years out one primary Objective was identified for each Deliverable in the proposal. In reality, each Deliverable encompasses multiple Objectives as suggested by Tables 2 – 30 in under the 'Summarize History - Results: Reporting, Accomplishments and Impact' tab of the proposal. Objectives proposed for 2014 – 2018 efforts are listed below although details such as treatments, cooperators, and funding sources are not yet entirely available beyond those noted as detailed planning efforts for these efforts have yet to occur.

The Project realizes the ambitiousness of the proposal. Efforts identified below all rely upon participation of and or funding from cooperators be they private landowners or public land management agencies as BPA funds cannot fully fund all alone. That said, scheduling should not be an issue provided landowners show continued interest and the arrival of permits or funding do not hinder the process.

Objective	Title	Explanation
OBJ-1	Preserve and Maintain Existing Habitat	Develop and implement conservation programs associated with active and passive restoration to protect and maintain physical, ecological, and biological processes that form and provide diverse and dynamically stable habitat. Techniques to achieve the objective include: establishment of conservation easements, including CTUIR riparian easements, coordinating with landowners to enroll projects under various FSA Farm bill programs (CREP, EQUIP, and WRP), and easement/land acquisition through the CTUIR-BPA Accord land acquisition funding.
OBJ-2	Improve Passage to Existing High Quality Habitats	Improved passage through removal of man-made barriers be they the result of structures or the result of a land management action which compromises in-stream, riparian, or floodplain habitat thereby preventing passage.
OBJ-3	Improve Floodplain Connectivity	Reconnect channels with riparian or floodplain habitat or historic channels where appropriate and feasible. Remove or relocate channel confinement structures such as road prisms, levees where appropriate.
OBJ-4	Improve or Preserve Water Quality	Improve or preserve surface water and ground water quality to include consideration of temperature, toxics, or sediment as limiting factors dictate.
OBJ-5	Improve Riparian and Floodplain Complexity	Protect and enhance riparian and wetland habitats to promote dynamic stability and natural function for riparian and wetland dependent fish and wildlife (Salmon, beaver, river otter, neotropical migrants). In degraded habitats, improve the density, seral condition, species diversity, and composition of hydrophytic and macrophyte plant communities through improved agricultural, grazing, and forest management practices, planting and seeding as necessary to facilitate recovery, and encouragement in the participation in agricultural and farm programs (CREP, EQUIP, WRP). Increase riparian and floodplain habitats to include wetlands and side channel habitat and relocate developed recreational facilities, where appropriate, from riparian areas to upland sites.
OBJ-6	Improve Stream Channel Complexity and Morphology	Where feasible and appropriate construct a dynamically stable and complex channel with appropriate floodplain connectivity during high flow events, and/ or enhance existing channel to reduce limiting factors and meet project objectives. Improve channel structural complexity (LWD, Pools, Boulders, Bank overhang, Cover, Substrate stability, and Habitat diversity) to benefit focal species.
OBJ-7	Improve Sediment Routing and Sorting	Address channel, riparian, and floodplain structure and morphology to reduce the influence of sediment entrainment or deposition as appropriate given the influence of subbasin processes.
OBJ-8	Improve Hyporheic Complexity	Improve Channel structure and morphology to promote or regain complex hyporheic flows and interaction with the stream channel and peripheral habitats.
OBJ-9	Increase Floodplain Storage	Restore channel, riparian, and floodplain processes and conditions to the extent possible to improve floodplain storage.
OBJ-10	Reduce the Influence of Toxic Sources	Reduce the influence of toxic sources upon stream channels and riparian and floodplain habitats.

Deliverable	Objective	Explanation	Tentative Participants - Funding Sources
None	10	Although there has not been a specific Deliverable identified for this Objective for the 2014-18 period the Project has contributed to efforts involving this Objective with the potential for continued cooperation to address the effects of historic hard rock mining. That said, this Objective can be dropped without an associated Deliverable identified for the 2014-18 period.	None
Fox Creek	1	Riparian fencing shall be used in conjunction with modifications to grazing management to restrict cattle access to Fox Creek and adjacent riparian areas. An assessment identified potential efforts along eight miles of Fox Creek.	CTUIR, NFJDWC – BPA, OWEB, Competitive Grants
	3	The existing channel has incised as a result of unrestricted cattle access, restricted lateral channel migration, and a loss of riparian vegetation which would otherwise reduce near bank shear stress along approximately eight miles of Fox Creek. A combination of grade control structures, large wood placements, and native plantings will elevate the wetted channel to equal that of a typical 'bankfull' event thereby improving floodplain connectivity.	
	4	A loss of floodplain storage and floodplain/riparian vegetation have reduced water quality in Fox Creek including water temperatures and summer stream flows as a result of lost floodplain storage. By increasing in-stream complexity, using a combination of grade control structures, large wood, and native plantings heat flux into Fox Creek shall improve and floodplain storage shall increase.	
	5	The loss of riparian and floodplain vegetation as a result of intensive cattle grazing has effectively reduced floodplain complexity. While historic complexity cannot be regained given the existing land management practices this effort will remove cattle from areas adjacent to the channel or access will be restricted by altered grazing practices. Additionally native vegetation shall be planted in association with large woody debris thereby improving riparian complexity and durability during high flow periods.	
	9	As previously noted the existing channel has incised as a result of unrestricted cattle access, restricted lateral channel migration, and a loss of riparian vegetation which would otherwise reduce near bank shear stress. Grade control structures will elevate the wetted channel to equal that of a typical 'bankfull' event thereby improving floodplain storage and the reaches ability to temper summer water temperatures.	
Bull Run Creek Mine Tailing Removal	3	Historic placer mining without associated restoration has effectively restricted or precluded floodplain connectivity throughout much of the Bull Run Creek basin. Removing the tailings to other sites or redistributing the tailings on site to a calculated 'bankfull' elevation shall dramatically improve floodplain connectivity.	CTUIR, Wallowa Whitman National Forest (WWNF), NFJDWC – BPA, USFS, Competitive Grants
	4	Water quality has been limited by a number of factors including altered floodplain/riparian vegetation, a lack of access to off-channel habitats, and in some location localized headcuts. The removal of mine tailings and the associated 'Bull Run Wood Placement' which will include native plantings shall reduce heat flux into Bull Run Creek and access to off-channel habitats.	
	5	At this time Floodplain complexity is essentially non-existent due to a lack of access and existing tailing piles. Removing or redistributing tailings and the associated 'Bull Run Wood Placement' shall dramatically elevate effective riparian and floodplain complexity along two miles of Bull Run Creek.	
	6	The existing channel between tailing piles is typically over steepened, excessively narrow, or incised in specific locations with little to no structure provided by native vegetation of large wood. The combination of removed or redistributed tailings, large wood additions, and native plantings will allow natural processes to build upon specific actions not identified at this time thereby increasing stream channel complexity and morphology.	
	7	The existing channel between tailing piles is generally over steepened, excessively narrow, or incised in specific locations with little to no structure provided by native vegetation or large wood. Channel character and a lack of access to floodplain areas have effectively concentrated stream energy, reduced sediment entrainment, or once entrained, sediments appear to be carried excessively long distances downstream and deposited in over widened portions of the channel.	
	8	Although hyporheic flows and complexity likely still exist they differ from past conditions as a direct result of placer mining disturbances. A complete restoration would be cost prohibitive, however, improved channel morphology, floodplain conditions, and native vegetation shall improve sediment routing and sorting; thereby improving opportunities for aquatic species spawning and rearing.	
	9	Access to off-channel habitats and in specific locations reduction of localized head cuts will improve floodplain storage and access to/from off-channel habitats/storage.	
Bull Run Wood Placement	4	Improved floodplain connectivity from the 'Bull Run Mine Tailing Removal' above, large woody debris placements, and native planting will present conditions necessary for debris capture during high flows resulting in reduced heat flux into Bull Run Creek and off-channel habitats used by aquatic species. Resulting improvements in floodplain and channel conditions will further bolster water quality improvements.	CTUIR, WWNF – BPA, USFS, Competitive

	5	Improved floodplain connectivity from the 'Bull Run Mine Tailing Removal' above, large woody debris placements, and native planting will present conditions necessary for debris capture during high flows improving access to and the condition of off-channel habitats used by aquatic species as compared to existing (largely non-existent) condition along two miles of Bull Run Creek.	Grants
	6	Large wood placements and native plantings will improve in-stream conditions and channel morphology by introducing localized complexity and forcing factors which currently do not exist throughout most of the stream channel.	
	7	The 'Bull Run Mine Tailing Removal' alone will result in improved floodplain connectivity. The placement of large woody debris and native vegetation within and adjacent to Bull Run Creek shall further reintroduce complexity and localized scour and in turn sediment routing and sorting resembling that of a dynamically stable stream channel and floodplain. Given that the cost of a complete site restoration is prohibitive releasing the stream channel and placing localized control will allow effective restoration through natural processes.	
Granite Creek In-stream Restoration	1	This objective follows an initial effort to stabilize streambanks. A Conservation Agreement has been secured by CTUIR and will be used to undertake and maintain restoration actions and the site to benefit the landowner and listed and non-listed species along 0.4 miles of Granite Creek.	CTUIR, Landowner – BPA, Competitive Grants
	3	This site has suffered from historic placer mining and in turn restricted floodplain connectivity do to remaining tailing piles. The removal of tailings from the site or their redistribution shall improve both floodplain connectivity and access to off-channel habitats shall be improved above existing levels.	
	4	As a result of historic placer mining native vegetative populations have been severely disrupted and are largely non-existent along the creek or in the floodplain resulting in TMDLs identified for both temperature and sediment Channel modifications will improve sediment routing and delivery to the extent possible and reconcile larger scale sediment routing and sorting to create a dynamically stable channel. Native planting associated with channel and off-channel improvements will reduce heat flux into the stream channel to the extent possible.	
	5	Improvements to floodplain complexity will occur through a combination of tailing removal or redistribution, off-channel habitat improvements, or creation and the placement and planting of large wood debris and native vegetation planting. These will be further supplemented by natural debris sorting and routing.	
	6	Channel complexity and morphology will be improved through a combination of tailing removal or redistribution, streambank stabilization structures, improving habitat sequences, elevating baseflow width to depth ratios slightly, and modifications to channel slope. The use of off-channel habitats shall also be incorporated during base flow through 100 year events.	
	7	As previously noted, tailing piles influence sediment routing and sorting which is further complicated by the confluence of two creeks at the sites upper end. At this time, the site can be divided by channel slope and in turn sediment distributions. A combination of channel slope, habitat sequences, channel morphology, and hydrology shall be reconciled to enhance channel morphology and complexity to bring about a dynamically stable channel form. Excessively high sediment loads from one creek entering the site will need to be considered.	
Mud Creek Grazing Plan	1	CTUIR has secured a Conservation Agreement to protect approximately 1.0 miles of Mud Creek and associated riparian area with exclusion fencing. Additional efforts such as this grazing plan development to better utilize available forage outside of the exclusion areas thereby improving land management practices.	CTUIR, Landowner – BPA
	5	Although this action does not directly influence riparian and floodplain connectivity it continues efforts to improve stock management and resource use as an extension of the exclusion fencing restricting access to one mile of Mud Creek.	
	6	Although this action does not directly influence channel condition and morphology it continues efforts to improve stock management and resource use as an extension of the exclusion fencing.	
Junkins Creek Culvert I	2	This culvert has been identified as a priority barrier for replacement within the Draft Desolation Creek Action Plan (USFS, 2009). Replacement will improve passage for Threatened Steelhead and Bull trout.	CTUIR, Umatilla National Forest (UNF), NFJDWC – BPA, USFS, Competitive Grants
	6	Channel complexity currently suffers as the existing culverts restrict downstream sediment and debris movement there by influencing channel form both above and below the culvert. An open bottom structure shall replace the existing round culvert.	
	7	Sediment sorting and routing currently suffers as the existing culvert restricts downstream sediment and debris movement above and below the culvert. An open bottom structure using natural channel design shall replace the existing round culvert.	
Junkins Creek Culvert II	2	This culvert has been identified as a priority barrier for replacement within the Draft Desolation Creek Action Plan (USFS, 2009). Replacement will improve passage for Threatened Steelhead and Bull trout.	CTUIR, UNF, NFJDWC – BPA, USFS, Competitive Grants
	6	Channel complexity currently suffers as the existing culverts restrict downstream sediment and debris movement there by influencing channel form both above and below the culvert. An open bottom structure utilizing natural channel design protocols shall replace the existing round culvert.	
	7	Sediment sorting and routing currently suffers as the existing culvert restricts downstream sediment and debris movement above and below the culvert. An open bottom structure using natural channel design protocols shall replace the existing round culvert.	
Desolation In-stream	1	This effort will complement another by ODFW who will be securing a Conservation Agreement to complete riparian fencing to protect existing Threatened Steelhead habitat.	CTUIR, Landowner –

	3	In one portion of the site an over widened and slightly incised channel has reduced floodplain connectivity. Improving channel width to depth rations will improve floodplain connectivity beyond bankfull flows.	BPA, Competitive Grants
	4	The existing stream channel is dramatically over-widened and lacks native woody vegetation along the streambank and portions of the associated riparian area. While increasing width to depth ratios and improving native vegetation will not in and of itself improve water quality, the combined efforts of cooperating partners will be a step in that direction.	
	5	As previously noted native vegetation is lacking in distinct locations. Additionally, streambank erosion is eliminating the possibility of natural reintroduction. A combination of streambank stability structures and native plantings along 0.3 miles of stream channel shall increase riparian/floodplain complexity.	
	6	As previously noted the current channel is over-widened resulting in excessively high baseflow width to depth rations and a plain-bed armored channel with little complexity or habitat. Treatments developed for this site may include streambank stabilization structures, rock grade control structures, and large wood structures to decrease width to depth rations, increase habitat complexity, and create and maintain localized scour. Thereby improving habitat for aquatic species and reducing potential damage to a nearby road.	
	7	The existing over widened and shallow stream channel in and of itself influences sediment migration and sorting.	
Bull Run Culvert	2	This culvert has been identified as a priority barrier for replacement within the Bull Run Creek Action Plan (USFS, 2012). Replacement will improve passage for Threatened Steelhead and Bull trout.	CTUIR, WWNF, NFJDWC – BPA, USFS, Competitive Grants
	6	Channel complexity currently suffers as the existing culvert restricts downstream sediment and debris movement there by influencing channel form both above and below the culvert. An open bottom structure utilizing natural channel design protocols shall replace the existing round culvert.	
	7	Sediment sorting and routing currently suffers as the existing culverts restricts downstream sediment and debris movement above and below the culvert. An open bottom structure utilizing natural channel design protocols shall replace the existing round culvert.	
Camas Creek In-stream Adjustment	1	A Conservation Agreement shall be secured before efforts begin to improve upland grazing and protect approximately four miles of Camas Creek including the associated floodplain. Although existing habitat has suffered greatly from past land management practices the document will allow for the improvement and protection of implemented measures and resulting habitat.	CTUIR, Landowner – BPA, Competitive Grants
	3	In its current condition, floodplain connectivity has significantly decreased from historic levels as a result of channel over widening and in specific locations localized incision. Floodplain connectivity will be improved through a combination of stream channel treatments to improve/build an inset floodplain within the existing channel and/or reactivate the historic floodplain where appropriate.	
	4	Water quality (temperature) suffers greatly from past grazing practices and transportation infrastructure developments resulting in extremely high baseflow width to depth ratios, loss of riparian and floodplain vegetation, channel migration and confinement. Although transportation infrastructure cannot be dealt with treatments to the floodplain and stream channel shall remove cattle to improve native vegetation populations and stream shade while channel modifications will reduce width to depth ratios and improve channel complexity to reduce heat flux into the stream channel.	
	5	Intensive grazing practices have effectively reduced riparian and floodplain vegetative communities and roughness which has been compounded by a lack of floodplain connectivity. Treatments shall remove the influence of cattle grazing, bolster native vegetation through plantings and increase floodplain connectivity and in effect sediment and debris deposition through channel modifications.	
	6	The existing over widened, armored, and plain-bed stream channel has evolved dramatically from its historic condition through a combination of detrimental land management practices and transportation infrastructure developments. Although the transportation infrastructure cannot be changed at this point, modifications to the channel can be supplemented with natural processes to reduce baseflow width to depth ratios, increase channel complexity, reintroduce structure to create and maintain localized scour, reintroduce pool/riffle/run sequences, and improve conditions for long term large woody debris entrainment using a variety of large wood and/or rock structures and native plantings.	
	7	Although this reach has in all likelihood always been a transport reach the temporary capture and release of sediments is no longer possible due to the existing channel form. Treatments to narrow the existing channel shall again afford the possibility of sediment capture and maintenance thereby reinforcing pool/riffle/run sequences, shallow hyporheic cycling, and improving spawning and rearing opportunities for Spring Chinook salmon and threatened Steelhead and Bull trout.	
	8	Although this reach has in all likelihood always been a transport reach the capture and maintenance of sediments would have reinforced shallow hyporheic cycles which the existing armored and plainbed channel are not necessarily capable of sustaining. Alterations to the stream channel morphology and processes shall directly influence shallow hyporheic cycling by creating and maintaining localized scour and pool/riffle/run sequences.	
Sponge Creek Culvert	2	This culvert has been identified as a priority barrier for replacement within the Granite Creek Action Plan (USFS, 2009). Replacement will improve passage for Threatened Steelhead trout.	CTUIR, UNF, NFJDWC – BPA,

	6	Replacement of the existing round culvert with an open bottom design will improve the passage of both aquatic species and debris thereby allowing for natural process to improve upon the natural channel design to be used for this culvert.	USFS, Competitive Grants
	7	Sediment sorting and routing currently suffers as the existing culverts restricts downstream sediment and debris movement above and below the culvert. An open bottom structure using natural channel design shall replace the existing round culvert.	
Desolation & Clear Creek Wood Placement	4	Both of these sites hold great potential for improved water quality. The placement of woody debris and what will in all likelihood native vegetation plantings shall improve water quality in the long term through vegetative growth to improve streamside shading.	CTUIR, UNF – BPA, USFS
	5	The placement of floodplain wood and native vegetation plantings shall improve floodplain roughness by capturing sediment and debris during high flows and protecting native plantings.	
	6	Channel complexity shall be improved in time through the introduction of available woody debris from adjacent riparian and floodplain areas.	
Deep Creek Culvert 1	2	This culvert has been identified as a priority barrier for replacement within the Bull Run Creek Action Plan (USFS, 2012). Replacement will improve passage for Threatened Steelhead and Bull trout.	CTUIR, WWNF, NFJDWC – BPA, USFS, Competitive Grants
	6	Channel complexity currently suffers as the existing culvert restricts downstream sediment and debris movement there by influencing channel form both above and below the culvert. An open bottom structure utilizing natural channel design protocols shall replace the existing round culvert.	
	7	Sediment sorting and routing currently suffers as the existing culverts restricts downstream sediment and debris movement above and below the culvert. An open bottom structure utilizing natural channel design protocols shall replace the existing round culvert.	
Deep Creek Culvert II	2	This culvert has been identified as a priority barrier for replacement within the Bull Run Creek Action Plan (USFS, 2012). Replacement will improve passage for Threatened Steelhead and Bull trout.	CTUIR, WWNF, NFJDWC – BPA, USFS, Competitive Grants
	6	Channel complexity currently suffers as the existing culvert restricts downstream sediment and debris movement there by influencing channel form both above and below the culvert. An open bottom structure utilizing natural channel design protocols shall replace the existing round culvert.	
	7	Sediment sorting and routing currently suffers as the existing culverts restricts downstream sediment and debris movement above and below the culvert. An open bottom structure utilizing natural channel design protocols shall replace the existing round culvert.	
Deep Creek Wood Placement	6	The addition of large wood completed in association with Deep Creek Culverts Replacements I & II shall improve in-stream conditions for Threatened Steelhead and Bull trout by increasing channel complexity through the placement of large wood and associated creation and maintenance of localized scour.	CTUIR, WWNF, NFJDWC – BPA, USFS, Competitive Grants
	7	The creation of localized scour will improve sediment sorting and routing.	
UNF Fence Maintenance	4	Heavy maintenance on existing fences will allow continued protection of sensitive riparian areas about stream channels containing Steelhead and Redband trout by restricting cattle access to these areas.	CTUIR, UNF – BPA, USFS
	5	Without protective fencing, riparian and floodplain areas will return to the extremely poor condition they were prior to fence construction in the 1980's. As one might expect, cattle loiter and concentrate in these areas without restriction over grazing both grass and woody vegetation and reducing the riparian and floodplain areas ability to withstand erosive flows during spring runoff.	
	6	Without protective fencing, the stream channel and its banks will return to the extremely poor condition they were prior to fence construction in the 1980's. As one might expect, cattle loiter and concentrate in these areas without restriction over grazing both grass and woody vegetation, cutting streambanks by accessing the channel, reducing the opportunity for large wood input to the channel by removing or hindering the growth of native vegetative species, and reducing the streams banks' ability to withstand erosive flows during spring runoff.	
	7	Without protective fencing, the stream channel and its banks will return to the extremely poor condition they were prior to fence construction in the 1980's. As one might expect, cattle loiter and concentrate in these areas without restriction over grazing both grass and woody vegetation, cutting streambanks by accessing the channel, removing or hindering the growth of native vegetative species, and reducing the streams banks' ability to withstand erosive flows during spring runoff. The combined effects results in excessive sediment input to the channel and eventual channel over-widening and or down cutting as sediments are entrained.	

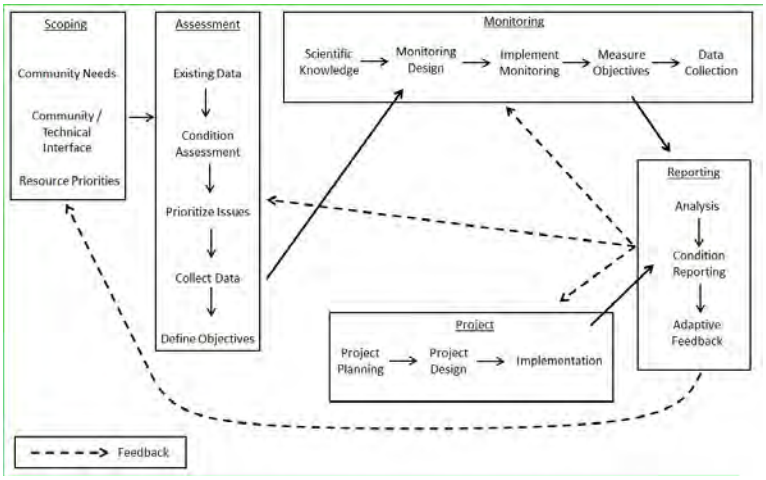
4) There is no overarching model or form of Structured Decision Making to guide the activities or set priorities, and this hampers taking a comprehensive approach to restoration. The activities, while individually important, are not treated as an integrated network of sites and actions chosen for their effectiveness at meeting clearly stated goals. Further, many sites are not monitored to determine if the actions have been effective, thereby undermining the Adaptive Management process.

A coherent discussion of the strategy for selecting and prioritizing restoration sites would have improved the proposal. In particular, since the NFJD supports significant areas of high quality habitat, it would be helpful to know how the project sites are located relative to these habitats and whether the location of these areas is considered in site selection.

There is an expectation that a specific 'Structured Decision Making protocol' referred to above may occur in multiple forms and as such the Project uses several tools to identify and prioritize efforts (Structured Decision Making). The Project was developed to address CTUIR's interests in ceded lands/Usual and Accustomed Lands and identifies Goals and Objectives independent of other entities. Since the Projects origin in 2001 groups such as the Warm Springs Tribe, Grant SWCD, Monument SWCD, and N. F. John Day Watershed Council have also identified focal areas or niches which continue to reflect restoration internal their needs or policy. The CTUIR chooses to collaborate with other partners in the subbasin to identify priority areas and actions.

The Projects basic tools for strategy and prioritization within the NFJD Subbasin are the John Day Subbasin Plan (NPCC 2005), the Middle Columbia Steelhead ESA Recovery Plan (NMFS 2009, and the John Day River Basin TMDL and WQMP (ODEQ, 2010). For the 2006 ISRP proposal three Focus Basins were identified and approved for the Project based upon existing and potential resources identified in the John Day Subbasin Plan and recovery documents which have been retained for the 2013 ISRP round. More recent tools (post 2006 ISRP Review) developed by CTUIR are utilized when prioritizing proposed actions including the Riverine Planning Process outlined in the 'Edit Work Type Details – Large Habitat Programs' section of the proposal. The process for action selection begins with the Umatilla River Vision, developed under guidance of the Umatilla Tribe's First Foods Concept. This Vision defines a functional river as a dynamic environment that incorporates and expresses ecological processes that continue the natural production of First Foods used by the Tribal community. The River Vision provides direction for restoration by focusing on the five touchstones of hydrology, geomorphology, connectivity, riparian vegetation, and aquatic biota. With this guidance, CTUIR fish habitat projects are planned, designed, implemented, and monitored across the usual and accustomed harvesting areas to achieve fish habitat restoration goals.

CTUIR's Fisheries Habitat Program addresses channel and floodplain function and aquatic habitat deficiencies through a systematic, holistic watershed planning approach termed the Riverine Ecosystem Planning Approach (see figure below). This approach includes the prioritization of focal areas and management practices based on key species limiting factors with a mechanism for adaptive management that utilizes scientifically defensible techniques. The approach includes the 5 basic stages of scoping, assessment, monitoring, implementation, and reporting. Scoping allows for the interface of community needs and issues with resource priorities directing the needs defined for assessment. Using existing and collected data, assessments are developed with the intent to prioritize issues, identify limiting factors, and define project objectives. Monitoring plans that utilize scientific knowledge and accepted methodology are then developed to measure achievement of project objectives. During the implementation stage, project actions are designed to address limiting factors through means that restore natural channel and floodplain processes.



Within the Projects three Focus Basins prospective actions are considered by ranking limiting factors as identified in the John Day Subbasin Plan, the Middle Columbia Steelhead ESA Recovery Plan and the John Day River Basin TMDL and WQMP and basin specific and prioritized action plans developed by cooperators (USFS, 2008, 2009, 2012). Efforts are made to develop broad based efforts to address larger scale issues where multiple landowners are concerned and basin actions plans have not been developed.

Additionally, a concerted effort has and will continue to be made to complete actions within a single subbasin in as short a time period and as efficiently as possible such as the Ten Cent Creek replacement noted in the 'Summarize History - Results: Reporting, Accomplishments and Impact' tab. These practices do not preclude cooperating with others to complete their priority actions outside of the Projects three Focal Basins if opportunities arise and they are evaluated through the Riverine Ecosystem Planning Approach. The Project acknowledges that critical spawning and rearing habitat or 'significant areas of high quality habitat' exists throughout the N. F. John Day River Basin mid to higher elevation tributaries.

The final stage of Riverine Ecosystem Planning Approach includes reporting and summarizing monitoring and project actions and evaluating results through Adaptive Management (Summarize History – Adaptive Management tab). That is, the Project recognizes that dynamically stable upland, floodplain, riparian area, and stream channel habitats must be considered at geomorphic temporal and spatial scales in order for natural ecological processes to occur and restoration actions to be considered successful. The Reporting box in the diagram containing Analysis, Condition Reporting, and Adaptive Feed Back require monitoring data collection and analysis and the incorporation of altered/improved methods and treatments in future actions. Reported results strengthen future actions by comparing original condition, current status, and/or trends over time to ascertain the effectiveness of structural designs, implementation methods, and treatments. Additionally, adopted measures may need to change as climate change occurs and better models are adopted and the cumulative restoration actions influence aquatic populations, their habitats, and land management practices within a single or across multiple basins

5) During the 12-year project history, A number of habitat enhancement projects have been initiated in the North Fork John Day since the project's inception. While the sponsors summarized habitat enhancement actions for a number of projects, discussed the outcomes of these actions to date, and provided pre-and post-project photographs, few quantitative results were presented. Has the monitoring data been analyzed and, if not, what are the plans for data analysis? The project needs to establish a comprehensive model or institute Structured Decision Making, as well as monitoring, to guide actions and evaluate outcomes.

Monitoring data prior to 2007 was not collected and therefore the influence of many actions cannot be accurately identified or estimated. Beginning in 2007, monitoring data were collected where Conservation Agreements exist and the Project began working to identify suitable means by which monitoring data could be collected for cooperative efforts. Tabulated monitoring data has been included in annual reports with the first run at analyzing available data in 2010 after three years of data collection using descriptive statistics. Thus far, monitoring has largely been restricted to status and trend monitoring using qualitative measures such as photopoints or spawner surveys associated with passage barrier replacements and quantitative descriptive assessments of physical data collected in the field or the results of ODFW spawner surveys. Given appropriate efforts the use of aerial imagery or remote sensing methods

may be used. As the Project secures new Conservation Agreements and associated projects come online detailed pre-implementation monitoring data will be collected upon which designs and future monitoring efforts will be based. Due to monitoring schedules, resources, and capabilities of cooperators shall be collected and reported to the extent possible.

See Response 4 for Structured Decision Making and Adaptive Management

6) Due to the lack of consistent monitoring, it is not clear that the individual or collective actions are having positive effects on focal species or environmental concerns. Further, without a general model or Structured Decision Making, it is not clear that the efforts are targeted at sites with a strong potential for aiding species' recovery or ameliorating environmental concerns.

See Response 1, 4, and 5

7) Several topics, which the ISRP suspects are locally important, are only lightly touched upon in the proposal. These are invasive non-native plants in riparian areas, impacts of non-native fishes on native populations, use of agricultural chemicals (toxics), browsing by native ungulates in restored areas, and strategies concerning beaver. These should be addressed in a substantive way in the proposed actions.

The considerations listed above are deliberated during all relevant actions during an efforts selection and planning process. The Project includes annual weed treatments where Conservation Agreements exist and has cooperated with others in efforts specifically designed to reduce infestations of noxious weeds in riparian and upland areas within and outside of Focus Basins (see the 'Summarize History - Results: Reporting, Accomplishments and Impact'). Efforts outside of Conservation Agreements will continue as opportunities are identified or developed.

Infestations of species such as brook trout do exist in specific locations within 'significant areas of high quality habitat, that is, the headwater areas. All actions undertaken by the Project include the identification of non-naïve species populations through consultation with cooperators and the potential for influencing native species and populations through the introduction of non-natives.

Within the N. F. John Day Basin and especially Focal Basins the applications of agricultural chemicals is much less a concern then in other areas due to land management largely consisting of grazing management on private lands and multidisciplinary management and related difficulties on public lands. This does not preclude its consideration when actions are undertaken within and outside these areas although the 'toxics' used are often herbicide treatments of noxious weeds. Noxious weed treatments by CTUIR or their cooperators coincide with restrictions upon chemicals and treatments outlined by BPA's HIP III.

Many of the efforts undertaken by the Project in the past (see the Summarize History - Results: Reporting, Accomplishments and Impact tab) have directly addressed grazing management and proposed Objectives in Response 3 and will continue to do so. Maintenance of fences and water developments and investigating trespass under Conservation Agreements or grazing leases occurs to prevent or reduce 'browsing by native ungulates in restored areas'.

The Project works to improve conditions for beaver through efforts related to meadow/low gradient stream reach habitats which would typically provide suitable habitat. In many locations where beaver would be effective suitable vegetative populations capable of supporting beaver do not exist or channel conditions have changed significantly as a result of land management practices and are no longer able to maintain dams and dam complexes. The Project works in all instances to improve conditions within the constraints imposed by landowners although efforts may only improve native vegetative populations used by transient beaver.

8) The ISRP is surprised and concerned that climate change models and scenarios are not consulted when planning activities. After all, on-the-ground activities need to be resilient to future environmental changes; there are several "user friendly" techniques available.

The Projects efforts directly address climate change scenarios suggesting winters will become wetter and summers dryer with the increased potential for large or more dramatic weather events. That is, as noted in the 'Edit Objectives – Emerging Limiting Factors' tab, the Project has and will continue to improve floodplain connection and storage, vegetative populations across riparian and floodplain habitats, streamside shade, water quality, stream channel

morphology, in-stream and off-channel habitats, land management practices, and educate private landowners and citizens where possible. While the chances of the N. F. John Day Basin returning to pre-European condition are not significant improvements are being made by the Project and their cooperators to improve the buffering capacity of stream channels, riparian areas, and floodplain areas and the long term condition of habitat to benefit listed and non-listed species. This includes work in Focus Basins identified by habitat potential and existing condition and working in higher elevation areas containing significant meadow habitats which will continue to provide significant benefit to listed and non-listed species in the face of climate change as noted in the 'Edit Objectives – Emerging Limiting Factors' tab.

Adaptive Management (Summarize history – Adaptive Management tab of the proposal) will improve the Projects ability to address climate change as estimates of its influence and forecast models reflect a greater understanding of coming changes. The Project will continue to address processes as opposed to the symptoms of compromised habitat across multiple scales to the extent possible thereby minimizing the potential for ineffective actions in the face of climate change.

9) The sponsors could have provided a more detailed discussion of the relationship between their project and others that are ongoing in the North Fork John Day. For example, how are fish monitoring data collected by Project 1998-016-00: "Escapement and Productivity of Spring Chinook and Steelhead" used to evaluate the effectiveness of the habitat projects? In addition, the sponsors could have discussed in more detail the coordination with ODFW's John Day Habitat Enhancement project (1984-021-00). For example, what sort of collaboration between the projects is occurring? Are sites being selected in a complementary way so as to optimize the potential benefits of habitat enhancement actions?

As previously noted in Response 4 the Project was developed to supplement ODFW efforts to restore habitat in the basins northern reaches which were not as well served due to the distance from John Day, Oregon. The ODFW's Grande Rhonde Habitat Project supplemented restoration efforts to some extent by working outside of their basin where they continue efforts where Conservation Agreements exist. The Projects three Focus Basins in part reflect this division of efforts in an extremely large basin to improve BPA's expenditures and the ecological benefits they involve. This does NOT suggest that coordination between ODFW's Habitat Project and the Project has and will not continue to occur. Previous conversations have included efforts within the Desolation and Camas Creek focal Areas that have not come to fruition, a coordinated effort with the NFJDWC on Fox Creek to improve stream channel and floodplain conditions while improving an irrigation diversion, and potential efforts in the Camas Creek Focal Area currently under discussion.

The Project has had conversations with ODFW's Escapement and Productivity Project although perhaps not to the extent possible. The use of data collected by the ODFW Project has been somewhat limited given the scope of their efforts and the site specific needs of the Project which are rarely similar.

10) The status of the RM&E program, especially of effectiveness monitoring, and whether there are plans to modify the program, as the proposal implies, needs clarification. A concise overview of the M&E plan would be helpful including whether data collection at project sites and data analysis is currently being undertaken. The sponsors state that they will "reconcile" their monitoring plan with other habitat monitoring plans such as CTUIR's Fisheries Habitat Monitoring Plan, CHaMP and ISEMP but it is not clear what they mean by "reconcile." The sponsors present a lengthy discussion of CTUIR's Biomonitoring Plan. How does this Plan relate to current project monitoring? Will elements of the Biomonitoring Plan be incorporated into a revised M&E plan for this project? Clarification of the status and direction of the project's monitoring program is needed.

As noted in Response 1 above the Project has not nor does it propose to develop a RME program. Biological monitoring efforts carried out by the Project beyond barrier related spawner surveys and presence/absence snorkel surveys are/will only qualitative in nature and implementation site specific. For data analyses see Response 5.

11) The sponsors recognize climate, non-native plants, predation, and toxic chemicals as emerging limiting factors – and this is good to see. However, in reality, these are not emerging limiting factors but ones that are already present at significant levels. As such, they should be addressed directly by program actions.

The evolution of conditions resulting from climate change and/or the cumulative habitat restoration actions can in fact be identified as emerging limiting factors as treatments by the Project, their cooperators, and others noted by the ISRP in Comment 12 evolve. The factors noted above have and will continue to be addressed by the Project during

singular and cooperative efforts. Changing conditions will be addressed through Adaptive Management noted in Response 4 above.

12) There are ongoing program relationships with landowners, the U.S. Forest Service, local counties, and others. It is a small community, and the ISRP suspects there is ongoing communication at several levels. Our deeper concern is at a larger spatial scale. There are several other entities in the region proposing similar restoration actions. Efforts should be made by all entities, and coordinated by the Council, BPA and other funding agencies, to see that working relationships are established at the larger spatial scale. This will encourage local learning and build regional adaptive capacity.

    Noted

13) Although the sponsors refer to monitoring methods and metrics in MonitoringMethods.org, the extent of this project's monitoring in the North Fork, especially effectiveness monitoring, is unclear.

    Links to Monitoring Morthods.org were required by ISRP and provided. The methods referred to on that site will be replaced by the Physical Habitat Monitoring Plan currently under development.

    See Response 5 & 1

14) There are no deliverables for 5 of the 10 Objectives; this is mentioned above. The Objectives need to be recast as quantitative statements to identify specifically and quantitatively what will be achieved and provide realistic timelines. The deliverables need to reflect this quantitative approach.

    See Response 3

15) Many of the deliverables, as stated, are generally fine. However, there are numerous specific questions about details of cost-sharing, who will do the work among the partners, and timelines for completion.

    See Response 3

16) Data management: It appears that there is some in-house data management and perhaps some cooperation with partners, but the levels of sophistication and analyses are far from clear. These aspects should be fully articulated in a revision to this proposal.

    See Response 5

Confederated Tribes *of the*
Umatilla Indian Reservation

DNR Fish & Wildlife Programs

46411 Timíne Way
Pendleton, OR 97801

www.ctuir.org email: info@ctuir.org
Phone 541-276-3447

Northwest Power and Conservation Council
851 S.W. Sixth Avenue, Suite 1100
Portland, Oregon 97204

19 February 2014

RE: Response to ISRP

To Whom it may Concern,

In response to ISRP's request for proposals in early 2013 the Confederated Tribes of the Umatilla Indian Reservation's North Fork John Day Fishery Habitat Enhancement Project (The Project) submitted a proposal in February; in response, ISRP requested a response to 16 questions. The response to these questions by The Project resulted in a request for answers to another nine questions.

The final review document produced by ISRP resulted in a "Met scientific criteria although qualified 'Implement with condition through FY 2014: Sponsor to provide a revised proposal addressing ISRP qualifications, for ISRP review by 31 December 2013. Implementation beyond FY 2014 is conditioned on ISRP review and Council recommendation'" The submission date for responses was later changed to 1 May 2014.

Given that both response requests were similar with respect to the information solicited and/or were unclear as to what was being asked or how to respond appropriately The Project decided re-write the proposal after consultation with others for the sake of clarity. Although much of the information contained within the second proposal resides within the first, arguments have been rephrased or bolstered in an attempt to reduce uncertainty or confusion created by the first proposal.

If you have any comments or questions please let me know at your convenience.

Sincerely,

John Zakrajsek
NFJD Habitat Biologist
CTUIR Fisheries
Ag Service Center
10507 North McAlister Rd
La Grande, OR 97850
541 429-7943

Proposal Summary

This page provides a read-only view of a Proposal. The sections below are organized to help review teams quickly and accurately review a proposal and therefore may not be in the same order as the proposal information is entered.

Proposal INDREV14-2000-031-00 - Enhance Habitat in the North Fork John Day River
Project Number: 2000-031-00

Proposal History

Date	Time	Type	From	To	By	Archive
11/14/2013	4:49 PM	Status		Draft	John Zakrajsek	
11/14/2013	4:49 PM	Status		Draft	John Zakrajsek	
2/18/2014	3:43 PM	Status	Draft	ISRP - Pending First Review	John Zakrajsek	Download
3/3/2014	1:33 PM	Status	ISRP - Pending First Review	Draft	Lawrence Preston-McBride	
3/4/2014	1:59 PM	Status	Draft	ISRP - Pending First Review	John Zakrajsek	Download

Basics

Proposal Number:	INDREV14-2000-031-00
Proposal Status:	ISRP - Pending First Review
Review:	2014 Individual Review
Portfolio:	2014 Individual Review
Type:	Existing Project: 2000-031-00
Primary Contact:	John Zakrajsek
Created:	11/14/2013 by John Zakrajsek
Proponent Organizations:	Umatilla Confederated Tribes (CTUIR)

Project Title: Enhance Habitat in the North Fork John Day River

Proposal Short Description: The CTUIR's North Fork John Day Fisheries Enhancement Project works to protect, enhance, and restore functional floodplain, channel, and watershed processes by improving aquatic and terrestrial habitats in the North Fork John Day River Basin. This is achieved by efforts addressing biological objectives, strategies, and limiting factors contained within John Day River Subbasin Plan, recovery documents, and FCRPS BiOp using the CTUIR's First Foods framework and Umatilla River Vision.

Proposal Executive Summary:

The CTUIR propose ongoing fish habitat protection, enhancement, maintenance, and monitoring under the North Fork John Day Fishery Habitat Enhancement Project (2000-031-00) (The Project) to mitigate for effects of the FCRPS. Efforts to achieve the vision, goals, and objectives in the CTUIR Columbia Basin Salmon Policy (CTUIR, 1995) River Vision (Jones, et. al., 2008), Wykan-Ush-Me Wa Kush, Spirit of the Salmon (CRITFC, 1995), John Day Subbasin Plan (NPPC, 2005), Mid-Columbia Steelhead Recovery (NMFS, 2008), Bull Trout Recovery Plan (USFWS, 2002) and the FCRPS BiOp, (MOA, 2008) are identified through annual Statements of Work developed by The Project for the Bonneville Power Administration.

The Subbasin historically supported viable and harvestable populations of spring and summer Chinook salmon (Oncorhynchus tshawytscha), summer steelhead trout (Oncorhynchus mykiss), Pacific lamprey (Entosphenus tridentatus), bull trout (Salvelinus confluentus), rainbow/redband (Oncorhynchus mykiss sp.), and mountain whitefish (Prosopium williamsoni) which are paramount to tribal cultures, economies, and the region (CBFWA, 1990 and CRITFC, 1995). Beginning in the late 1800's, fish populations began to decline to where the abundance of Chinook salmon, summer steelhead and bull trout, and other fish species are now dramatically reduced (NPCC, 2005). With declining fish populations, Tribal governments and State agencies eliminated or significantly reduced subsistence and sport fisheries by the mid 1970's followed by 'Threatened' listings for bull trout (USFWS, 2002), and Mid-Columbia steelhead trout (NMFS, 2008). Other native fish, including Pacific lamprey populations and redband trout are also highly suppressed or are considered sensitive by cooperators.

The primary goal of The Project is to restore viable habitat to support harvestable native anadromous and resident species. The CTUIR retain aboriginal and treaty rights related to fishing, hunting, pasturing livestock, and gathering traditional plants within their ceded lands, including the NFJD basin which are used for ceremony and subsistence, including hunting, fishing, livestock grazing and gathering. To support of tribal culture the CTUIR's Department of Natural Resources (DNR) developed a First Foods organization and approach to ecosystem management based on the cultural traditions and practices of the Longhouse. The First Foods are considered to be the minimum ecological products necessary to sustain CTUIR culture. Organization follows the serving order of food and conceptually "Extends the Table" to manage for sustainability within ceded lands. The order is watershed-based beginning with water and progressing to salmon, deer, cous, and huckleberry. Treaty rights provide a mechanism for sustaining and enhancing the First Foods and in turn protecting tribal culture and are implemented through the Umatilla River Vision (Jones et al. 2008). The document outlines an approach to identify benchmarks, processes, and conditions needed to sustain the First Foods, potential inter and intra specific implications resulting from their management, and sets direction and goals relating to the communities' culture. In other words, the Umatilla River Vision is the mechanism for active management and restoration of the first foods through the use of five key touchstones; hydrology, geomorphology, connectivity, riparian vegetation, and aquatic biota. These healthy watershed processes and functions are the fundamental elements creating diversity, resiliency, and the ability of our river systems to provide sustenance and natural resources to support tribal culture and heritage.

Funding for The Project increased from $104,129 (FY 2001) to a contracted amount of $307,958 (FY 2008) and further increased to a contracted amount of $549,699 (FY 2012) under the 2008 3 Treaty Tribes-Action Agency Agreement (MOA, 2008). Under the Memorandum of Agreement with the FCRPS Action Agencies (BPA, BOR, and USCOE) the CTUIR's Fishery Habitat Program expects to implement multiple actions on Columbia River tributary habitat to facilitate listed species recovery through a combination of land/easement acquisition, improvement in stream flow, and habitat enhancements. Elevated funding levels have improved The Project's ability to undertake more complex tasks and plan for out-year efforts to better utilize cooperator and in-house capacities. A new office established in La Grande, Oregon directly resulted from an increase in long term funding from BPA is shared by several CTUIR projects within the Oregon State University Agriculture Service Center and is more centrally located than the CTUIR's Pendleton, Oregon office with respect to the NFJD.

The Project participates in basin planning activities and works cooperatively with organizations within the

NFJD to enhance existing resources, improve land management strategies, and develop strategic approaches to watershed management and fish habitat enhancement activities prioritized by limiting factors and basin. Although these efforts are largely completed within The Projects three Focal GAs (Camas, Granite, and Desolation Creeks), contributions are made to other actions outside of these basins where sufficient cooperators exist and significant limiting factors are addressed. The Project's staff collaborates and cooperates with multiple basin partners, including Bonneville Power Administration staff, Umatilla and Wallowa Whitman National Forests, North Fork John Day Watershed Council, Soil and Water Conservation districts, Oregon Department of Fish and Wildlife, Natural Resource Conservation Service, and Farm Services Agency to plan, prioritize, fund, and implement projects. The Project's lead biologist also serves as a NFJDWC board member and participates in monthly meetings of cooperators when possible.

During the 2001–2012 performance periods The Project secured seven conservation agreements along 15.7 Km of stream channel with treatments occurring on 748 riparian acres, and 850 upland acres. In fulfilment of the conservation agreements 30 Km of riparian fence, 22 water gaps, 28 stock water developments were constructed in addition to stream channel manipulation on one mile of Camas Creek. Additionally, 37,400 native plantings have been planted by The Project or their cooperators. These efforts were designed to improve land management strategies, reduce disturbance to sensitive habitats, improve stream channel complexity and morphology, and stabilize stream banks.

In addition to efforts where conservation agreements exist The Project also cooperated with others to implement projects along 9 Km of stream channel with treatments occurring on 260 riparian acres, and 500 upland acres. These efforts resulted in 18 Km of riparian fence, 6 passage barrier replacements returning access to approximately 52 Km of existing high quality habitat, improving complexity within one mile of stream channel, 13,000 native plantings, and noxious weed control within the Camas, Granite, Desolation, and Fox Creek basins and on the NFJD near Monument, Oregon.

In support of CTUIR's DNR First Foods and River Vision, the John Day Subbasin Plan, and recovery documents The Project identified an aggressive scope of work for FY 2013-2018, encompassing 15 major projects to be implemented by the CTUIR and cooperators. Proposed FY 2013-2018 work will improve the dynamic stability of in-stream, riparian, and floodplain habitats by eliminating passage barriers, redistributing mine tailings, streambank stabilization, large wood placements, native vegetation plantings, riparian fencing, and addressing grazing management.

Past reviews by ISRP acknowledged the validity of past and proposed work although the 2007 review did identify monitoring as a weak point and recommended cooperation with ODFW to ascertain the effectiveness of implemented actions. Since then, a suite of methods has been adopted to identify and track progress toward meeting objectives which will be adapted to those within the CTUIR DNR Fishery Habitat Physical Habitat Monitoring Plan now under development. Generally speaking, objectives and metrics will be standardized for the Fisheries Habitat Program under this document. Data collected by The Project are used only for design efforts and Status and Trend monitoring to track general site conditions and gross habitat conditions over time with the scope of inference confined to the project area. If necessary, the design of a specific structure may be evaluated.

Monitoring research, and evaluation efforts to identify progress toward biological objectives and the response of aquatic species will be completed by the CTUIR's DNR Fishery Research under a recently developed bio-monitoring plan (BPA Project #2008-014-00) utilizing existing resources and coordinate with The Project although monitoring data will be collected by the bio-monitoring project's crew and results presented in bio-monitoring plan's annual reports. Combined, the Physical Habitat Monitoring Plan and the bio-monitoring plan will improve consistency throughout all CTUIR Fisheries Habitat Projects.

Monitoring for cooperative implementation efforts outside of conservation agreements will be implemented and refined as available funding and capacities of cooperators dictate. Unfortunately, entities operating on grant funding do not have the capacity to develop and undertake long term intensive monitoring plans. In all cases progress toward meeting objectives will be detailed within annual and progress reports contained within Pisces or Taurus include data related to physical habitat response and biological response to the extent possible.

Purpose:	Habitat
Emphasis:	Restoration/Protection
Species Benefit:	Anadromous: 90.0% Resident: 10.0% Wildlife: 0.0%
Supports 2009 NPCC Program:	Yes
Subbasin Plan:	John Day
Fish Accords:	Fish Accord - LRT - Umatilla
Biological Opinions:	FCRPS 2008 (RPA 35.1, ~~RPA 34~~, ~~RPA 35~~)

Contacts

Contacts:

John Zakrajsek (Project Lead)
Rosemary Mazaika (Supervisor)
Jenna Peterson (Env. Compliance Lead)
Sean Welch (Interested Party)
Jamie Swan (Project Manager)
David Roberts

Project Significance & Problem Statement

Objectives

Objectives:

Protect and Conserve Habitat and Ecological Processes Supporting Native Fish Population Viability (OBJ-1)

Undertake and coordinate with others during the course of peripheral and overarching duties to administer, identify, prioritize, and select specific implementation actions, and associated activities such as outreach, maintenance, monitoring, and reporting efforts in support of design and implementation tasks. This also includes establishing conservation easements where appropriate to support implementation actions and coordination with cooperators. Success will be determined through the development of and progress toward achieving tasks established in annual Statements of Work and reporting requirements and the development of conservation agreements to protect habitat including the maintenance of structures protecting these habitats and treatments for noxious weeds.

Improve Passage to Existing High Quality Habitats (OBJ-2)

Improve Stream Channel Complexity and Morphology (OBJ-6)

Construct appropriately complex stream channels and structures capable of withstanding high flow events (100 year) while providing adequate and effective channel morphology and structure during baseflows to support priority species. Success will be determined by gross habitat stability and persistence (dynamic stability), maintenance of stream channel morphology accepting dynamic stability, and functional habitat use by primary and secondary target species.

Improve Sediment Routing and Sorting (OBJ-7)

Address site channel, riparian, and floodplain structure

Improve Passage to Existing High Quality Habitats (OBJ-2)

Improve or restore passage through removal of barriers created by structures or the result of a land management practices compromising in-stream, riparian, or floodplain habitat. Treatment designs will use natural channel design protocols and be capable of passing calculated or measured 100 year flows without damaging the structure. Success will be identified through the presence of spring Chinook salmon, summer steelhead trout, or bull trout after barrier replacements which were not previously documented above a barrier prior to replacement and a stable structure and stream channel two years after replacement.

Improve or Preserve Water Quality (OBJ-3)

Improve or preserve surface and ground water quality as limiting factors dictate. Success will be identified through an increase in stream shade and reintroduction of natural stream channel morphology similar to that called for under the NFJD TMDL. Ideally this will result reduced water temperature mean values or signal amplitude or phase shift or appropriate sediment deposition and mobilization for a given channel type accepting larger scale influences.

Improve Floodplain Connectivity (OBJ-4)

Reconnect stream channels with historic riparian, floodplain, or stream channel habitats where appropriate and feasible and where this is not feasible create an inset floodplain. This will include but may not be limited to removing or relocating structures confining stream channels such as road prisms or levees where appropriate. Success will be identified by floodplain inundation and debris deposition following project completion for streamflows greater then a bankfull event.

Improve Riparian and Floodplain Complexity (OBJ-5)

Enhance floodplain, riparian, and wetland habitats to promote complexity, dynamic stability, and natural function of habitats for dependent fish and wildlife species including wetlands and side channel habitats within floodplain and riparian areas. Efforts shall actively address the composition and stability of existing and developed habitats and the role of native vegetative and plant community health through active or passive restoration techniques. Success will be determined by gross habitat stability and persistence (dynamic stability), habitat use by primary and secondary target species, and the health of native vegetative communities.

and morphology to reduce the detrimental influence of sediment given larger scale basin wide processes. Depending upon the qualities of an individual project, sediment size, entrainment or deposition, and spatial scale relative to sediment sources and sinks will dictate how objectives are addressed. Success will be determined through appropriate sediment deposition and mobilization for a given stream channel type accepting larger scale influences and the relative spatial distribution of sediment sources and sinks.

Improve Hyporheic Complexity (OBJ-8)

Improve stream channel structure and morphology to promote or restore scale dependent complex hyporheic flows and interactions with the stream channel and peripheral habitats. Success may be determined through an increase in hyporheic flows as measured by decreased water temperatures or direct measures of head across a structure or grossly measured though an improvement in water quality accepting potential influences of other treatments.

Increase Floodplain Storage (OBJ-9)

Restore stream channel, riparian, and floodplain processes and conditions to improve and promote floodplain storage. This objective is often although not always directly tied to addressing conditions creating channel incision and improving floodplain connectivity. Success will be determined through elevated shallow groundwater water elevations.

Project History

Financials

Summary of Budgets

To view all expenditures for all fiscal years, click "Project Exp. by FY"

Expense	SOY Budget	Working Budget	Contracted Amount	Modified Contract Amount	Expenditures *
FY2008	$200,000	$307,958	$307,958	$307,958	$249,520
Fish Accord - LRT - Umatilla		$307,958	$307,958	$307,958	$249,520
FY2009	$510,450	$386,824	$386,824	$386,824	$326,469
Fish Accord - LRT - Umatilla		$386,824	$386,824	$386,824	$326,469
FY2010	$523,211	$446,110	$446,110	$446,110	$597,344
Fish Accord - LRT - Umatilla		$446,110	$446,110	$446,110	$597,344
FY2011	$525,531	$450,526	$450,526	$450,526	$539,244
Fish Accord - LRT - Umatilla		$450,526	$450,526	$450,526	$539,244
FY2012	$549,699	$678,436	$678,436	$678,436	$474,163
Fish Accord - LRT - Umatilla		$678,436	$678,436	$678,436	$474,163
FY2013	$330,197	$698,105	$698,105	$698,105	$712,742
Fish Accord - LRT - Umatilla		$698,105	$698,105	$698,105	$712,742
FY2014	$558,757	$788,757	$670,072	$670,072	$117,843
Fish Accord - LRT - Umatilla		$788,757	$670,072	$670,072	$117,843

* Expenditures data includes accruals and are based on data through 28-Feb-2014

Project Cost Share: FY2013 0 % FY2012 20 % FY2011 19 % FY2010 13 % FY2009 19 % FY2008 32 % FY2007 24 %

Fiscal Year	Cost Share Partner	Total Proposed Contribution	Total Confirmed Contribution
FY2012	(Unspecified Org)		$86,200
FY2012	City of Ukiah		$750
FY2012	National Fish and Wildlife Foundation		$25,000
FY2012	North Fork John Day Watershed Council		$10,000
FY2012	US Forest Service (USFS)		$35,850
FY2012	US Geological Survey (USGS)		$17,000

Explanation of Recent Financial Performance:

Additional funding provided by the 2008 Accords resulted in restoration projects that are typically larger in scope, more complex in terms of design and desired outcomes, and provide greater challenges related to permitting, landowner negotiations, and implementation. Variance across annual budgets is primarily related

to one or more issues including; delays from unsecured permits or cost share, loss of landowner interest, or changing cooperator roles. In years where the Project is involved with planning, assessment, design, and permitting expenditures are reduced. During years of construction the expenditures expand considerably because of the costs associated with purchasing materials and hiring heavy equipment. FY 12 provides an example of this where delays related to permitting requirements pushed back in-stream work on Upper Camas Creek resulting in the need to reschedule funds to cover implementation the following year. Some differences between working budgets, contracted amounts, and expenditures are a result of when invoices were paid and the ability to shift funds between performance periods.

Cost share funding has always been a priority for the Project and leverages BPA dollars while improving design efforts through additional scrutiny. As part of a passage barrier removal in 2012 the North Fork John Day Watershed Council (NFJDWC) secured $82,000 to supplement $91,000 from the Project and $17,000 plus survey and design efforts by the Umatilla National Forest (UNF). Other previous efforts have included cost share through competitive grants and in-kind in the form of materials and supplies.

Explanation of Financial History:
Funding rose from $104,129 in 2001 to $249,000 in 2007 with performance period funding amounts of $221,205 in 2002, $188,726 in 2003, $261,468 in 2004, $244,544 in 2005, and $238,774 in 2006. Funding between 2000 and 2005 totaled $885,827 with funding for 2007 through 2009 identified above.

Accounting and management practices have evolved since The Projects inception, originating in a 'running' contract with annual allotments into a three year budget cycle, to the existing system under the Accords (MOA, 2008). Along with these practices, implementation tactics and cost share development have also changed. For the 2002 ISRP review proposal CTUIR's NFJD Habitat project largely worked with landowners on passive restoration work constructing riparian enclosures and introducing or bolstering existing native vegetation in conjunction with the landowner's participation in programs under the Natural Resource Conservation Service (NRCS) or Farm Services Agency (FSA). With expanded funding and funding duration during the 2007-2009 cycle the CTUIR was able to undertake larger and more complicated work and develop strategic plans for structured implementation projects. Examples include active modifications to stream channels, contributions to larger multi-participant efforts addressing mine tailing issues, and progress toward removing passage barriers; all of which required increased technical capability and working across annual performance periods.

Coordination among cooperators has improved over time, increasing opportunities for landowners, their advocates, and agencies to develop projects and provide cost-share. However, landowners must be receptive to cooperative efforts and in several instances have later decided against participation. This change of opinion and a lack of cost share when grant applications were not approved have influenced the CTUIR's ability to complete projects over the past several years and resulted in transferring funds between years. As previously noted, the primary sources for cost-share in the 2002 ISRP Proposal were contributions by the landowner and NRCS or FSA. Dependence upon cost-share has not decreased. In fact, due to the scope of many projects the need has increased and may now include funding and in-kind from entities such as the North Fork John Day Watershed Council through competitive grants, the technical capabilities of SWCDs or agency staff, competitive grants secured by CTUIR, or contributions by landowners.

Reporting & Contracted Deliverables Performance

Annual Progress Reports

Expected (since FY2004):	10
Completed:	6
On time:	6

Status Reports

Completed:	38
On time:	18
Avg Days Late:	7

Earliest Contract	Subsequent Contract(s)	Title	Contractor	Start	End	Status	Accepted Reports	Count of Contract Deliverables: Complete	Green	Yellow	Red	Total	% Green and Complete	Canceled
6613	22616, 27391, 32946, 37318, 42947, 46079, 51701, 56226, 60597	2000-031-00 EXP N FORK JOHN DAY FISH HABITAT ENHANCEMENT	Umatilla Confederated Tribes (CTUIR)	09/2001	01/2015	Approved	36	165	0	0	45	210	78.57%	9
46273 REL 56		2000-031-00 EXP ENHANCE N. FORK JOHN DAY RIVER - NOAA	National Oceanic and Atmospheric Administration	01/2013	06/2013	Closed	2	2	0	0	0	2	100.00%	0
						Project Totals	**38**	**167**	**0**	**0**	**45**	**212**	**78.77%**	**9**

Elevated Contracted Deliverables in Pisces (2004 to present)

The contracted deliverables listed below have been selected by the proponent as demonstrative of this project's major accomplishments.

Contract	WE Ref	Contracted Deliverable Title	Due	Completed
37318	I: 186	Improve 2007 Upland Stock Watering Ponds on Fletcher Property	12/31/2008	12/31/2008
42947	R: 84	Remove Neal Pushup Dam	1/31/2010	1/31/2010
46079	S: 175	Upper West Fork Ten Cent Creek Surveys	5/31/2010	5/31/2010
51701	X: 115	Lower Camas Creek Assessment	11/30/2011	11/30/2011
51701	R: 154	Prater Water Right Certification	1/31/2012	1/31/2012
56226	O: 29	Fox Creek Channel Realignment	8/15/2012	8/15/2012
56226	J: 184	Lower Ten Cent Creek Culvert Replacement	9/14/2012	9/14/2012
56226	K: 184	Middle Ten Cent Creek Culvert Replacement	9/14/2012	9/14/2012
56226	L: 184	Upper Ten Cent Creek Culvert Replacement	9/14/2012	9/14/2012
56226	P: 40	Butcherknife Creek Fence Construction	12/31/2012	12/31/2012

View full Project Summary report (lists all Contracted Deliverables and Quantitative Metrics)

Explanation of Performance:
Restoration projects implemented by The Project go through several phases beginning with assessment and planning, design, permitting, implementation, reporting, and monitoring. Each phase includes multiple

steps that must be fulfilled and if any part of the process is significantly delayed then a red deliverable will show up in Pisces. We have reviewed past Pisces status reports and found that the majority of "red" deliverables fall into these five categories:

- Change in landowner priorities – All project restoration work is done in cooperation with private and public landowners. Planning, design, and implementation may require several years to complete. Landowners have decided against cooperating with The Project after initially agreeing to do so for any number of reasons. An example would be the 2011 WEs V and W where the landowner began to consider selling the land resulting in six red marks on the final Status Report.

- Environmental permit delays – Before implementation can occur, permits must be secured from the Fish and Wildlife Service (USFWS), the National Oceanic and Atmospheric Administration (NOAA), the State Fish and Wildlife and environmental quality agencies, the city or county, and state and tribal cultural resource agencies. Although projects such as riparian fencing may require minimal permits those for more complex work may require a year or longer. In these instances, red marks result from unsecured permits, additional findings, or comments that require additional design work. An example of this would be the 2010 WE Q where comment related to cultural resource permitting resulted in redesign efforts delaying implementation and nine red marks for the performance period and 2011 WE M where a Biological Opinion did not arrive in time to begin implementation resulting in eight red marks for the performance period.

- Cost-share funding-projects are designed and implemented over several fiscal years and typically involve multiple funding agencies and sources. It can very difficult to juggle several funding sources that may be on different award schedules. A delay in funding may result in an altered project scope and/or schedule. An example of this happened in in 2008 WE K where funding from a competitive grant did not arrive in time to install riparian exclusion fencing resulting in four red marks for the performance period.

- Shifting Cooperator Roles – As projects evolve, changes in staffing, cost share, or the scope of an effort may change cooperator roles creating a delay in implementation. An example of which occurred during the 2012 performance period (WE T) where the UNF took on culvert design work resulting in six red marks for the performance period.

- Amendments to Contracts – As new opportunities arise during performance periods and funding is available contract modifications have been completed to allow for permitting or implementation efforts. Unfortunately the process may delay task completion such as WEs Z where weather prohibited implementation after the amendment arrived.

Although efforts are made to identify and reconcile resources for available projects prior to submitting a Statement of Work for the following performance period, mid-year contract amendments have been used in response to new or modified restoration work. To reduce time spent on mid-year contract modifications proposed work that appears reasonable and likely are included in Statements of Work without assigned funding amounts. While this increases the potential for 'Red Deliverables' it does streamline mid-year amendments and shows that efforts are being made to work with local cooperators. Incomplete WEs may be shifted into the following performance period or conversations continue to modify the scope or conditions of individual efforts. In several cases, primarily with public organizations, several attempts have been required to identify and settle issues related to the roles of each party.

Results: Reporting, Accomplishments, and Impact

All Proposals: Umbrella Proposals:

CTUIR North Fork John Day Project History 2001 to 2012

For the 2007 ISRP Proposal The Project identified four Focal GA based upon priority restoration GA rankings within the Subbasin Plan; those being the Upper and Lower Camas, Granite, and Desolation Creek GAs. Twenty eight efforts were implemented during the 2001 – 2012 performance periods (Figure 1) within Focal GAs and other areas where a combination of limiting factors, available cooperators, and funding and permits could be secured. These were primarily cooperative efforts with others such as the Oregon Department of Wildlife (ODFW), Umatilla and Wallowa-Whitman National Forests (UNF, WNF), North Fork John Day Watershed Council (NFJDWC), The Nature Conservancy, Soil and Water Conservation Districts (SWCD), and the Natural Conservation Service (NRCS). Projects prior to 2007 generally used passive techniques to treat stream channel instabilities combined with NRCS programs to construct riparian fencing, plant native vegetation, and develop upland stock watering opportunities. With the 2008 Accords signing funding increased to where the Project could provide significant cost share toward competitive grants secured by cooperator to better utilize the and skillsets of cooperators, The Project's staff, and CTUIR's Fishery Habitat Program to facilitate more complex projects. That is, implemented efforts and those discussed with landowners have shifted toward active stream channel stabilization techniques with riparian fencing and plantings as a component of the larger effort. Prospective actions are assessed in a stepwise process to implement those on private lands before public lands and within Focal Basins and in a single subbasin and/or contiguous stream channel reach within the shortest period of time. For instance, three culverts were replaced in the Upper Granite GA during 2012 performance period to reduce implement costs and return passage to six miles of Ten Cent Creek within a single year as opposed to limiting access to the lower two or three miles by replacing one at a time over multiple years.

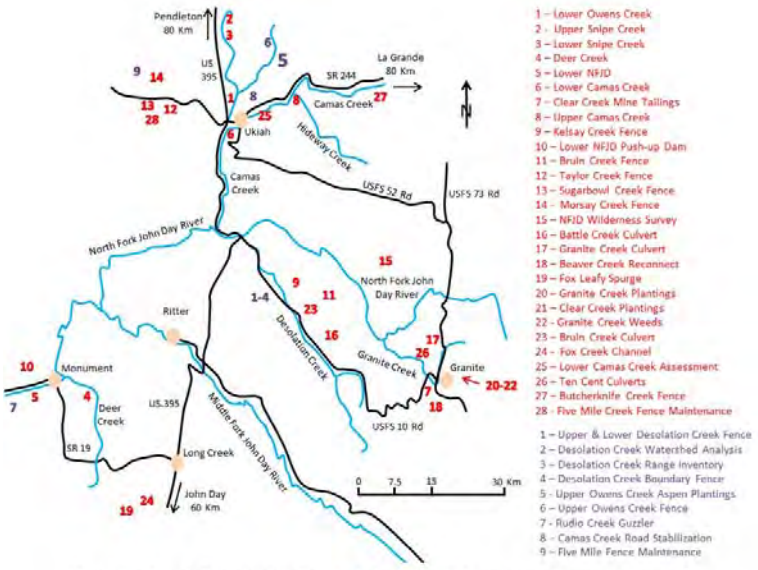


Figure1. Locations of efforts undertaken (red lettering) and those which were proposed in annual statements of work which were not implemented (purple lettering) between 2001 and 2012.

Efforts toward developing projects that weren't implemented (Figure 1) include fence construction, a watershed analysis, and a range inventory in the Desolation GA, aspen plantings with associated fencing along Upper Owens Creek (Lower Camas Creek GA), guzzler development above Rudio Creek, and road stabilization above Ukiah, Oregon (Lower Camas Creek GA) where landowners decided against cooperating and one boundary fence and culvert replacement in the Desolation Creek GA dropped due to a shortfall in available funding. Annual and progress reports developed by The Project's lead biologist and available in Pisces describe progress toward habitat recovery and include monitoring

data and/or analysis of that data for each performance period. Relationships between the ecological concerns developed for individual implementation efforts and limiting factors identified in the John Day Subbasin Plan (NPPC, 2005), and the Accords (MOA, 2008) are shown in Table 1 with relationships to River Vision Touchstones portrayed in project descriptions. Actions undertaken during the 2001 and 2012 performance periods are discussed below and grouped according to their primary objective using those identified later in the "Objectives" section of this proposal.

Ecological Concerns	Ecological Concerns ID	Ecological Concern Subcategory	NFJD Subbasin Plan Limiting Factors (pg. 138)	Accords Limiting Factors (pg. G-34)
Multiple	1.0	Existing Habitat	Habitat Quality Habitat Diversity Riparian Condition Barriers Predation Channel Stability	In-channel Characteristics Floodplain / Riparian Passage / Entrainment
	1.1	Stock Water Opportunities		
	1.2	Altered Primary Productivity		
	1.3	Reduced Genetic Adaptability		
Habitat Quantity	2.0	Anthropogenic Barriers	Barriers Channel Stability Habitat Diversity	Passage / Entrainment In-channel Characteristics Riparian / Floodplain Temperature
Channel Structure and Form	3.0	Bed and Channel Form	Channel Stability Sediment Load Riparian Condition Habitat Diversity	In-channel Characteristics Sediment Riparian / Floodplain
	3.1	In-stream Structural Complexity		
Sediment Conditions	4.0	Decreased Sediment Quantity	Channel Stability Sediment Load	Sediment In-channel Characteristics Floodplain / Riparian
	4.1	Increased Sediment Quantity		
Peripheral and Transitional Habitats	5.0	Side Channel and Wetland Conditions	Riparian Conditions Temperature Habitat Quality Habitat Diversity	Floodplain / Riparian Temperature
	5.1	Floodplain Condition		
	5.2	Riparian Condition		
	5.3	LWD Recruitment		
Water Quality	6.0	Temperature	Temperature Sediment Channel Stability Flow	Temperature, Sediment In-channel Characteristics
	6.1	Toxics		
Water Quantity	7.0	Increased Water Quantity	Flow Channel Stability Riparian Condition	Not Identified for the NFJD
	7.1	Decreased Water Quantity		

Table 1. Relationship between Ecological Concerns identified for individual efforts and their relation to limiting factors identified in the John Day Subbasin Plan (NPPC, 2005) and Accords (MOA, 2008).

Objective – Protect and Conserve Habitat and Ecological Processes Supporting Native Fish Population Viability

Effort & Year	GA	Ecological Concern ID	Species	CTUIR River Vision Touchstones								Outputs
				Biota-Connectivity	Geomorphology	Connectivity		Hydrology			Riparian Vegetation	
				Passage Barriers/ Entrainment	In-channel Characteristics	Habitat Diversity (LWD)	Floodplain Confinement	High Temps	Sediment	Low Flows	Riparian/ Floodplain	
Owens Creek Conservation Agreement 2001-16	Lower Camas Creek	1.0, 1.1, 3.0, 3.1, 4.0, 5.2, 6.0	STS RB CHK		X			X	X		X	- 5.2 riparian acres protected by 481 meters of 4-strand barbed wire riparian fence. - One stock watering well developed with two associated troughs. - Structure maintenance and noxious weed treatments for the life of the agreement.
Upper Snipe Creek Conservation Agreement 2001-16	Lower Camas Creek	1.0, 1.1, 3.0, 3.1, 4.0, 5.2, 5.3, 6.0	STS RB		X	X		X	X		X	- 34 riparian acres of protected by 2,218 meters of 4-strand barbed wire riparian fence. - Two spring developments constructed. - Structure maintenance for the life of the agreement. - 1.3 Kilometers of stream channel of stream channel improved through natural processes.
Lower Snipe Creek Conservation Agreement 2001-16	Lower Camas Creek	1.0, 1.1, 3.0, 3.1, 4.0, 5.2, 5.3, 6.0, 7.0	STS RB		X	X		X	X		X	- 54 riparian acres protected 4,237 meters 4-strand barbed wire riparian fence. - Two stock watering wells developed. - 7,000 native hardwoods planted. - Structure maintenance and noxious weed control for the life of the agreement. - 1.3 Kilometers of stream channel of stream channel improved through natural processes.
Deer Creek Conservation Agreement 2003-18	Deer Creek	1.0, 1.1, 3.0, 3.1, 4.0, 5.2, 5.3, 6.0	STS RB		X	X		X	X		X	- 219 riparian, floodplain, and upland habitat protected 2,736 meters of new and 2,889 meters of refurbished 4-strand barbed wire fence with 11 associated water gaps and 8 spring developments. - Approximately 7,500 native hardwoods planted. - Approximately 7.7 Kilometers of stream channel improved through natural processes.
NFJD Conservation Agreement 2005-20	Lower NFJD	1.0, 1.1, 4.0, 5.2	STS CHK RB					X	X		X	- 6 riparian acres of riparian protected by 1,287 meters of 4-strand barbed wire riparian fence. - One stock watering well developed with solar pump and panels. - 3,700 native hardwoods planted. - Structure maintenance and noxious weed treatments for the life of the agreement
NFJD Wilderness Survey 2010	Upper NFJD	1.0, 5.1, 5.2	STS CHK RB								X	- Survey of noxious weeds along 217 Kilometers of trail within the NFJD Wilderness area. - Information passed on the UNF.

Table 2. Efforts undertaken during the 2001 – 2012 performance periods with the primary objective of preserving and maintaining habitat.

Lower Owens Creek Site

Project Summary: The Lower Owens Creek site is located approximately two kilometers west of Ukiah, Oregon. Conversations between the landowner and The Project resulted in a 15 year conservation agreement with the primary intent of protecting existing resources and improving stream channel and riparian conditions to the extent possible through passive techniques along 0.5 kilometers of Owens Creek (Table 2 and Figure 2). The project used passive techniques to improve riparian habitat, function, and diversity and channel simplification (lack of channel complexity, pools, LWD, etc.). Historic grazing management practices and transportation infrastructure changed what was likely a narrow and highly sinuous channel within a broad valley into a much less sinuous and wider inset channel with greatly simplified habitat.

To address these issues The Project constructed 481 meters of 4-strand barbed wire riparian exclusion fencing surrounding 5.2 acres with one water gap. Lost stock watering opportunities from Owens Creek were replaced by the development of one well and placement of two troughs distributed to enhance forage use. The Conservation Agreement provided noxious weed treatments and structure maintenance for the life of the agreement. Monitoring efforts began with photopoints collected in 2004 and cross-sections in 2008.

Figure 2. Aerial imagery from 1996 and 2013 with the locations of developments implemented under the conservation agreement.

Ecological Outcomes: Pre-implementation data is not available for this site. To date, streambanks have stabilized without on-going bank cutting by grazing cattle and native vegetation in the form of grasses have provided protection against annual high flow events. The channel and riparian/floodplain areas have remained stable although without active channel modifications in-stream complexity has not increased to a significant degree (Figure 3). Native hardwoods have been slow to regenerate. Noxious weed treatments have improved conditions for native grasses.

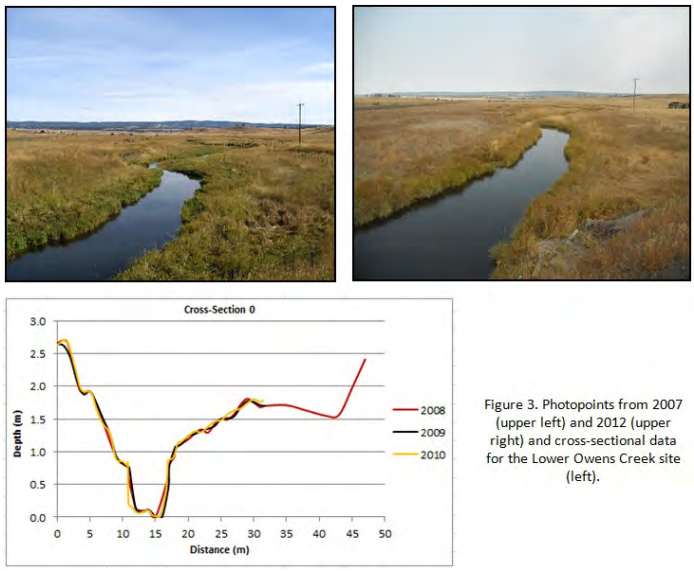


Figure 3. Photopoints from 2007 (upper left) and 2012 (upper right) and cross-sectional data for the Lower Owens Creek site (left).

Given conditions and The Projects capacity, little would be done differently without working with the adjacent up-stream landowner. The sites low gradient makes work on such a small piece of Owens Creek difficult, especially considering the presence of a low clearance bridge for SR 244 immediately below the site. The bridges low clearance effectively restricts modifications to water surface elevations and placing structure that could contribute to plugging the bridge is not acceptable.

Upper Snipe Creek Site

Project Summary: The Upper Snipe Creek site is located approximately 16 kilometers north of Ukiah, Oregon. Conversations between the landowner and The Project resulted in a 15 year conservation agreement with the primary intent being to protect existing habitat and improve riparian and floodplain complexity and stream channel complexity and morphology through passive means along 1.3 kilometers of Snipe Creek (Table 2 and Figure 4). Historic grazing management reduced effective riparian vegetation and simplified the stream channel although the steeper and narrower valley type help reduce the influence of cattle compared to the Lower Snipe Creek site. To address these issues The Project constructed 2,218 meters of 4-strand barbed wire riparian fence riparian exclusion fencing surrounding 34 acres with three water gaps. To supplement stock watering opportunities and encourage the use of upland forage two upland spring developments were constructed. The conservation agreement provided structure maintenance for the life of the agreement. Monitoring began in 2004 consisting of photopoints with longitudinal and cross-sectional profiles and water temperatures following in 2007.

Figure 4. Aerial imagery from 1996 and 2013 with the locations of developments implemented under the conservation agreement.

Ecological Outcomes: To date, treatments have benefited the site. Riparian fence construction and maintenance and associated upland stock water developments have restricted cattle access while improving upland forage use. Longitudinal profiles collected from 2007 through 2010 suggest that riffle habitat constituted between 38 to 68 percent of gross habitat, between 35 and 55 percent habitat was classified as runs, and scour pools composed between 2 and 7 percent of habitat. Although it is generally accepted the individual habitats are relatively stable and will typically not change dramatically over time surveys were conducted between June and October depending upon workload. As such, differences in streamflow influenced survey results as well as skills of The Projects staff which improved through training and experience. Estimates of streambank stability using visual evidence of erosion and the presence of stabilizing vegetation suggest that stability is still somewhat variable although it is generally improving over time with more of the streambanks and inset floodplains becoming vegetated. Ocular estimates of sediment composition (Table 3) within habitats are relatively consistent across years with larger portions of sand and gravels composing riffles, larger proportions of organics and sand in runs, and more variable materials in scour pools. Potential sources of finer sediments and more energetic streamflows include localized streambank erosion within the site which may be partially influenced by off-site logging that has the potential to influence runoff and sediment loading. Creating a flow curve would be useful in tracking changes in streamflow and timing to piece out the influence of land management practices influencing the site, however, this has not occurred to date.

Cross-sectional data collected at cross-section 91 (upstream) and 29 (downstream) (Figure 5) show changes in the stream channel profile between 2007 and 2010 which suggest a level of dynamic stability has been established by minor annual adjustments to the active stream channel although there does appear to be some sampling error present in cross-section 29 between 2008 and 2009/10 which cannot be explained. Vegetative shade, sediment composition, and streambank stability estimates reflect those of the longitudinal profile. The growth of native vegetation at cross-sections has largely shaded the stream channel to where 90% of the overhead space above cross-section 29 is occupied by canopy and 50% of the overhead space above cross-section 91 is covered by canopy and both sediment composition and streambank stability suggest dynamic stability has returned to the site. Also an inset floodplain partially visible in Figure 6 that likely formed in response to historic grazing is vegetated and stable. Summer steelhead trout were documented each year sampling occurred.

		% Organics	% Silt	% Sand	% Gravel	% Cobble	% Rubble	% Boulder	% Bed Rock
2007	Riffle	17	7	25	29	20	2	0	0
2008		13	11	27	33	11	5	0	0
2009		14	7	43	24	10	2	0	0
2010		23	3	34	23	13	3	1	0
2007	Run	4	27	34	29	4	2	0	0
2008		13	39	15	14	15	3	1	0
2009		5	30	42	18	4	1	0	0
2010		6	17	54	16	6	0	1	0
2007	Scour Pool	2	37	25	18	15	3	0	0
2008		0	20	15	55	10	0	0	0
2009		5	35	50	10	0	0	0	0
2010		0	0	60	40	0	0	0	0

Table 3. Cumulative ocular sediment composition estimates collected for longitudinal profiles and profiles from cross-sections 29 (left) and 91 (center) for the Upper Snipe Creek site.

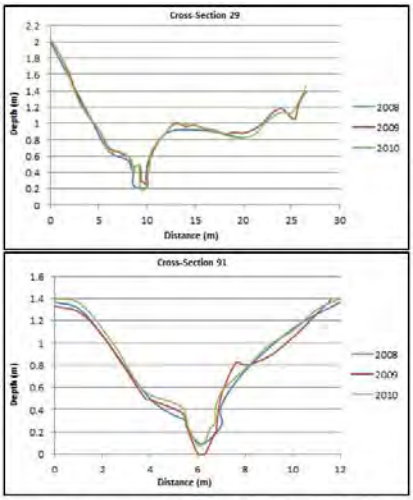


Figure 5. Cross-sectional data form 2008 through 2011 for the Upper Snipe Creek site.

Figure 6. Photopoints collected in 2004 (upper left), 2012 (upper right), and 2013 (left) at a location just upstream from cross-section 29. Inset floodplain and Snipe Creek are on the right side of pictures

Given the results of this project little would be done differently although additional structure placed within the stream channel may have been beneficial. However, disturbances related to wood placement relative to site recovery without the expense may not have been necessary or worth the cost and may have been better spent on the Lower Snipe Creek site.

Lower Snipe Creek Site

Project Summary: The Lower Snipe Creek site is located approximately 16 kilometers north of Ukiah, Oregon. Conversations between the landowner and The Project resulted in a 15 year conservation agreement with the primary intent of protecting existing habitat and improve riparian and floodplain complexity and stream channel complexity and morphology through passive means along 1.3 kilometers of Snipe Creek (Table 2 and Figure 7). Historic grazing management changed a once highly sinuous and narrow stream channel into a much less sinuous and deeper stream channel with a greatly reduced channel complexity and native hardwood populations. Although grasses reduce erosion related to spring runoff and stochastic events the stream channel has incised progressively from the sites lower limit to upper end. To address these issues the Project constructed 4,237 meters of 4-strand barbed wire riparian fence riparian exclusion fencing surrounding 54 acres with two water gaps constructed. A total of 7,000 native hard and softwoods were also planted in 2006. To replace lost stock watering opportunities two well developments and associated troughs were placed to enhance upland forage use. Additionally, the landowner entered the riparian enclosure into a Farm Services Agency's CREP Program. The conservation agreement provided noxious weed treatments and structure maintenance for the life of the agreement. Monitoring efforts began in 2007 consisting of permanent longitudinal and cross-sectional profiles, photopoints, and water temperature data.

Figure 7. Aerial imagery from 1996 and 2013 with the locations of developments implemented under the conservation agreement.

Ecological Outcomes: Pre-implementation data is not available for this site. As a result of historic grazing management stream channel incision at the sites lower boundary has reached 1.5 meters in depth. Although not ideal, the passive techniques implemented appear to have allowed some form of dynamic stability to return. Riparian fencing has restricted cattle access to the stream channel and a portion of the floodplain adjacent to the stream channel and stock water developments have been maintained over time save one that dried up since constructed. In response, the landowner drilled a deeper well.

Longitudinal profiles between 2007 and 2010 suggest that riffle habitat constituted between 9 to 45 percent of gross habitat and between 55 and 91 percent habitat was classified as runs with a dry stream channel in 2007. Although it is generally accepted the individual habitats are relatively stable and will typically not change dramatically over time surveys were conducted between June and October depending upon workload. As such, differences in streamflow influenced survey results as well as skills of The Projects staff which improved through training and experience. Estimates of streambank stability using visual evidence of erosion and the presence of stabilizing vegetation suggest that stability has improved over time in response to undercut banks collapsing into the stream channel and vegetation within the clumps providing stability. In many portions of the stream channel incision has reached a layer of clay in portions of the reach approximately 1.0 meters below the rooting depth which has resisted erosion although it provides little in the way of habitat. Course sediments noted at the Upper Snipe Creek site are either not transported to this reach or are transported through although given stream channel gradient and

morphology above and below the site sediment transport through the reach appears likely. Sediments present within the reach (Table 4) are quite variable and largely consist of gravel sized material or smaller. Shade to the stream channel is composed of grasses and/or streambanks along with native alder in the sites upper portions where there is less channel incision and sparsely spaced willows within the channel where incision is more exaggerate. The sparseness of willows and therefore shade outside of alder is in all likelihood a response to a lack of water during the summer within the soil profile and the clay layer which would make vegetative growth difficult. The collapse of undercut streambanks is slowly creating a 'F' type stream channel in the lower portions of the site.

		% Organics	% Silt	% Sand	% Gravel	% Cobble	% Rubble	% Boulder	% Bed Rock
2007	Riffle	Dry	Dry	Dry	Dry	Dry	Dry	Dry	Dry
2008		21	39	38	2	0	0	0	0
2009		14	7	44	23	10	2	0	0
2010		50	0	50	0	0	0	0	0
2007	Run	Dry	Dry	Dry	Dry	Dry	Dry	Dry	Dry
2008		21	61	12	5	1	0	0	0
2009		19	61	17	3	0	0	0	0
2010		15	0	85	0	0	0	0	0
2007	Scour Pool	Dry	Dry	Dry	Dry	Dry	Dry	Dry	Dry
2008		0	20	15	55	10	0	0	0
2009		5	35	50	10	0	0	0	0
2010		0	60	40	0	0	0	0	0

Table 4. Ocular estimates of sediment composition collected for the Lower Snipe Creek site between 2007 and 2010.

Profiles from cross-sections (Figure 8) 32 and 54 reflect stream channel metamorphosis noted above although some sampling error may exist. Both cross-sections 32 and 54 show a stable inset floodplain resulting from historic grazing practices as well as channel widening, and incision at the sites lower end. Below this property cattle have free access to the stream channel which exacerbates channel incision regardless of the sites protecting the stream channel.

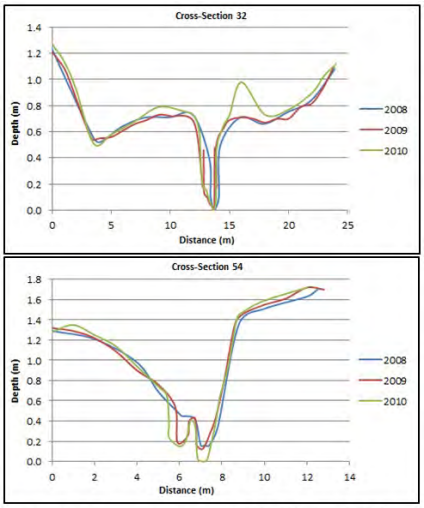


Figure 8. Cross-sectional profiles collected for 2007 through 2010 at the Lower Snipe Creek site.

Native hardwood plantings in the floodplain have not fared well due to a lack of access to water during the summer months. Planting and natural recruitment of Ponderosa pine (Figure 9) have proven most successful even though they would not have historically grown in this location due to protracted seasonal flooding. This site would have been historically much more conducive to species such as Quaking Aspen (*Populus tremuloides)* and camas (*Camassia quamash*). Although noxious weed treatments have improved conditions for native grasses adjacent seed sources require annual treatments.

Figure 9. Photopoints collected in 2004 (upper left), 2005 (upper right), and 2010 (bottom left) and 2013 (bottom right) looking up-stream from cross-section 32.

Stream temperature data collected between 2007 and 2012 (Table 5) suggests treatment have not successfully moderated water temperatures as indicated by mean temperatures and standard errors. The combination of increasing mean temperatures, standard errors, temperature range, and maximum temperature and the potential for a dry channel suggest this is a losing reach and there won't be any significant to water quality without modifications to the stream channel. That is, as Snipe Creek enters the broad valley streamflows are lost as the shallow groundwater table drops making flows left in the stream channel more reactive to thermal flux. Historic land management practices on the landowner's property and more importantly downstream contributed to excessive stream channel incision along approximately 5.6 kilometers of Snipe Creek above a geomorphic knick point formed by a geologic fault. Without treating the larger scale channel incision significant improvements to water quality, channel complexity or morphology, or floodplain connectivity and complexity cannot be realized. The riparian enclosure has been entered into a CREP contract restricting The Projects ability to actively modify channel morphology.

	2007		2008		2009		2010		2011		2012	
	Upper	Lower	Upper	Lower	Upper	Lower	Upper	Lower	Upper	Lower	Upper	Lower
Mean	10.87	15.40	10.33	0	11.1225	14.09	10.67	13.17	10.53	13.40	0	0
Standard Error	0.0527	0.1334	0.0521	0	0.0392	0.0770	0.0396	0.0693	0.0351	0.0494	0	0
Sample Variance	7.9280	23.9100	7.7492	0	4.3944	17.3821	4.4723	14.0644	3.5129	7.0192	0	0
Range	15.20	29.60	23.10	0	12.38	32.08	10.61	31.70	18.11	21.53	0	0
Minimum	2.60	6.30	3.80	0	4.62	4.00	5.24	1.00	3.37	5.45	0	0
Maximum	17.80	35.90	26.90	0	17.00	36.08	15.86	32.70	21.47	26.98	0	0
95% Confidence Level	0.1033	0.2618	0.1021	0	0.0769	0.1511	0.0776	0.1359	0.0688	0.0970	0	0

Table 5. Descriptive statistics for stream temperature data collected at one hour intervals between June and the end of October at the Lower Snipe Creek site between 2007 and 2012.

Save extensive channel modifications which were beyond The Projects capacity at the time, little could be done differently. The most productive results would arise from treating channel incision above the geomorphic knick point and 5.6 Kilometers of stream channel above. The Project will attempt to discuss potential projects addressing this issue with landowners in the future.

Deer Creek Site

Project Summary: The Deer Creek site is located approximately three kilometers east of Monument, Oregon. Conversations between the landowner and The Project resulted in a 15 year conservation agreement with the primary intent of protecting existing habitat and improving riparian and floodplain complexity and stream channel complexity and morphology through passive means along 7.7 kilometers of Deer Creek (Table 2 and Figure 10). Historic management practices which included heavy over-winter pasturing of cattle severely disrupted riparian and stream channel conditions resulting in a less sinuous and over widened channel with a greatly reduced channel complexity, bank stability, and native hardwood populations. To address these issues The Project constructed 2,736 meters of 4-strand barbed wire riparian fence riparian exclusion fencing and refurbished another 2,889 meters surrounding 219 riparian, floodplain, and upland acres with 11 water gaps, 8 spring developments, and 7,500 native hardwoods planted. The conservation agreement provides noxious weed treatments and structure maintenance for the life of the agreement. Monitoring efforts began in 2007 consisting of permanent longitudinal and cross-sectional profiles, photopoints, and water temperature data.

Figure 10. Aerial imagery from 1994 and 2013 with the locations of cross-sections identified above.

Ecological Outcomes: Pre-implementation data is not available for this site. To date, reaction to the selected treatments has been extremely positive. Riparian vegetation has recovered extremely well and stabilized the stream channel enough that summer steelhead trout were present during monitoring efforts and beaver have returned to the property. Other than regular spring and fence maintenance work has primarily been limited to removing large wood from water gaps when necessary.

Riparian fence and upland stock water developments have significantly reduced disturbances to Deer Creeks channel and riparian areas and vegetation from cattle. Longitudinal profiles from 2007 through 2010 suggest that riffle habitat constituted between 26 to 35 percent of gross habitat, between 35 and 45 percent habitat was classified as runs, with side channels, back waters, and beaver ponds composing the balance of habitat. Although it is generally accepted the individual habitats are relatively stable and will typically not change dramatically over time surveys were conducted between June and October depending upon workload. As such, differences in streamflows influence survey results as well as skills of The Projects staff which improved through training and experience. Visual estimates of streambank stability vegetation presence suggest that stability has improved over time with more of the streambanks and inset floodplains becoming more vegetated. Visual estimates of channel substrate (Table 6) are variable across years for most habitats suggesting ocular estimates are inconsistent or channel substrate delivered to the sampled stream channel is heavily dependent upon streamflows and weather events.

		% Organics	% Silt	% Sand	% Gravel	% Cobble	% Rubble	% Boulder	% Bed Rock
2007	Riffle	25	10	10	20	30	5	0	0
2008		14	0	48	33	5	0	0	0
2009		50	0	0	5	35	10	0	0
2010		18	0	60	20	2	0	0	0
2007	Run	0	0	0	0	0	0	0	0
2008		10	90	0	0	0	0	0	0
2009		25	60	0	10	5	0	0	0
2010		10	43	0	42	5	0	0	0
2007	Side Channel	20	30	0	30	20	0	0	0
2008		0	20	15	55	10	0	0	0
2009		50	0	0	5	40	5	0	0
2010		30	50	0	15	5	0	0	0
2007	Dry Channel	15	75	0	10	0	0	0	0
2008		40	15	0	28	10	7	0	0
2009		90	0	0	10	0	0	0	0
2010		0	0	0	0	0	0	0	0
2007	Beaver Pond	10	90	0	0	0	0	0	0
2008		0	90	0	10	0	0	0	0
2009		0	0	0	0	0	0	0	0
2010		0	0	0	0	0	0	0	0
2007	Back Water	0	0	0	0	0	0	0	0
2008		0	0	0	0	0	0	0	0
2009		50	45	0	5	0	0	0	0
2010		20	50	0	15	15	0	0	0
2007	Scour Pool	0	0	0	0	0	0	0	0
2008		0	0	0	0	0	0	0	0
2009		0	0	0	0	0	0	0	0
2010		10	65	0	25	0	0	0	0

Table 6. Ocular estimates of sediment composition collected for the Deer Creek site between 2007 and 2010.

Data collected at cross-section 28 (Figure 11) supports the restoration of dynamic stability within the stream channel and floodplain areas as estimates of channel substrate, streambank stability, and vegetative shade reflect those values contained within the longitudinal profile. Riparian and floodplain grasses have done well and with deer, elk, and waterfowl regularly using the site. Although noxious weed treatments have improved conditions for native grasses adjacent seed sources require annual treatments.

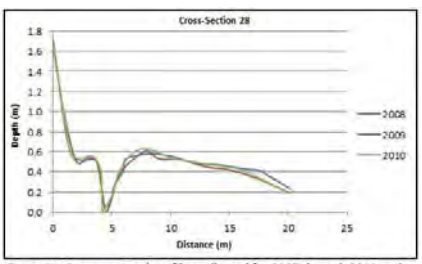


Figure 11. Cross-sectional profiles collected for 2007 through 2010 at the Deer Creek site.

Stream temperature data collected between 2007 and 2012 suggests treatments have not influenced water quality to a great extent as values contained within Table 7 generally increase within years and do not show a decreasing trend across years. While this is disappointing, two factors beyond The Projects ability to influence stream temperatures may be present. The first is vegetative recovery (Figure 12); while the site has improved significantly over initial conditions woody vegetation growth beyond grasses may take more

time then what has lapsed. Second, the site lies in a lower elevation canyon and arid environment with summer temperatures often in excess of 90 degrees Celsius. Additionally, wildlife disturbance of data loggers or decreasing streamflows may be influencing recorded temperatures as suggested by the maximum temperature recorded in 2009 at the lower location. Comparisons to air temperatures may improve The Projects ability to better define the effectiveness of treatments.

	2007		2008		2009		2010		2011		2012	
	Upper	Lower	Upper	Lower	Upper	Lower	Upper	Lower	Upper	Lower	Upper	Lower
Mean	15.86	17.21	14.63	16.08	15.84	17.90	14.50	15.82	14.70	16.12	15.37	0
Standard Error	0.0731	0.0808	0.0695	0.0821	0.0599	0.0917	0.0580	0.0649	0.0549	0.0674	0.0627	0
Sample Variance	15.2460	18.6666	13.7961	19.2348	10.2332	23.9949	9.6178	12.0377	8.6125	12.9747	11.2354	0
Range	21.50	23.70	20.60	24.20	18.34	34.06	14.75	17.52	23.26	25.23	16.39	0
Minimum	5.60	5.10	5.80	4.80	6.98	4.21	7.58	8.68	4.21	4.52	7.48	0
Maximum	27.10	28.80	26.40	29.00	25.32	38.27	22.33	26.20	27.47	29.75	23.87	0
95% Confidence Level	0.1433	0.1585	0.1363	0.1609	0.1174	0.1797	0.1138	0.1273	0.1077	0.1322	0.1230	0

Table 7. Descriptive statistics for stream temperature data collected at one hour intervals between June and the end of October at the Deer Creek site between 2007 and 2012. Data from the lower logger could not be retrieved during 2012.

Figure 12. Photopoint collected in 2010 (left) and 2013 (right) at the Deer Creek Site.

Without baseline data it's difficult to identify how the project may have been improved. The Projects resources at the time this may have been the best solution. That said, given appropriate baseline data and resources addressing sever channel incision may have been a worthwhile exercise. Placing large native vegetation such as Black Cottonwood (*Populus trichocarpa*or) or Quaking aspen may be the best treatment to improve water quality at this time.

NFJD Site

Project Summary: The NFJD site is located approximately 13 kilometers west of Monument, Oregon. Conversations between the landowner and The Project resulted in a 15 year conservation agreement with the primary objective being to improve riparian and floodplain complexity through passive means along 0.8 Kilometers of the NFJD (Table 2). Historic grazing management allowed cattle and sheep access to the river within the sites entire reach compromising riparian vegetation and contributing sediment to the river. To address these issues The Project constructed 1,287 meters of 4-strand barbed wire riparian fence riparian exclusion fencing to protect six riparian, floodplain, and upland acres with one stock water development constructed to replace lost access to the NFJD. A total of 3,700 native hardwoods were planted with the Conservation Agreement providing noxious weed treatments and structure maintenance for the life of the agreement. Monitoring efforts have consisted of photopoints.

Ecological Outcomes: Pre-implementation data is not available for this site. To date, reaction to the selected treatments has been mixed. Although the fence and stock water development have been maintained native vegetation plantings have not fared well (Figure 13). More frequent watering may have improved survival; however, several factors make this difficult. The first and foremost is a 2.4 meter depth to the NFJD's baseflow water surface also reflected in the stock well which makes long term vegetative survival beyond grasses and sagebrush difficult on the floodplain. Although there is a small inset floodplain seasonal inundation, depth to water, and soil/rock composition makes planting there difficult. In one location there appears to be some groundwater present as evidenced by reed canary grass (*Phalarisarundinacea)* however, plantings maintained within the grass have failed as well. The first planting consisted of multiple species within 10 cubic inch plugs and 10 foot wide matting, the second consisted multiple species from one gallons pots with associated three foot mats, and the last of 30 Black cottonwood with roots balls approximately 0.15 by 0.5 meters with individual mats planted such that a central pivot system would provide adequate water. Tree protectors used have included 0.5 meter tree cones, 1.3 meter cones, and horse fence cages. The cages have proven to be the most effective although damage to the tree roots continues by rodents or the like. Although noxious weed treatments have improved conditions for native grasses adjacent seed sources require annual treatments.

Figure 13. Photopoint collected in 2010 (left) and 2013 (right) at the NFJD site within the riparian enclosure (fence on right of pictures).

This is a difficult project in that the floodplain sits high and dry above the stream channel and the inset floodplain is inundated for extended periods of time during spring runoff. Given the limitations of this site the only lesson The Project can take is to avoid similar efforts in the future if there is an expectation beyond reducing streambank disturbance by cattle.

NFJD Wilderness Weed Survey

Project Summary: Discussions with the UNF and NFJDWC indicated there was a need to provide baseline information regarding noxious weed distributions within the NFJD Wilderness Area as surveys of this area had not previously occurred. Significant use of the wilderness the potential for isolated infestations and their expansion into areas difficult to treat were of significant to the UNF. A total of 217 Kilometers of trail were surveyed with the results passed on to the UNF. The NFJDWC and the UNF have identified a need to resurvey portions of those areas previously surveyed and will be working to identify funding in the near future.

Objective - Improve Passage to Existing High Quality Habitats

Effort & Year	GA	Ecological Concern ID	Species	CTUIR River Vision Touchstones/ Habitat Limiting Factors								Outputs
				Biota-Connectivity	Geomorphology	Connectivity		Hydrology			Riparian Vegetation	
				Passage Barriers/ Entrainment	In-channel Characteristics	Habitat Diversity (LWD)	Floodplain Confinement	High Temps	Sediment	Low Flows	Riparian/ Floodplain	
Battle Creek Culvert Replacement 2010	Desolation Creek	2.0, 3.0, 4.0	STS & RB Opportunistic CHK & BT	X	X				X		X	- Return access to 13.7 Kilometers of existing high quality habitat using an open bottom culvert - Replaced existing 2.7x3 meter oval culvert with a bottomless 4.8x3 meter bottomless arch. - Maintenance by UNF engineers.
Granite Creek Culvert Replacement 2010	Granite Creek	2.0, 3.0, 4.0	STS BT RB	X	X				X		X	- Return access to 4.3 Kilometers of existing high quality habitat using an open bottom culvert - Replaced existing 0.4 meter round culvert with a 3.1x1 meter bottomless arch. - Maintenance by UNF engineers.
Bruin Creek Culvert Replacement 2011	Desolation Creek	2.0, 3.0, 3.1	STS & RB Opportunistic CHK & BT	X	X				X		X	- Return access to 8.5 Kilometers of existing high quality habitat using an open bottom culvert - Replaced existing 1.2 meter round culvert with a 4.8x3 meter bottomless arch. - Maintenance by UNF engineers.
Beaver Creek Reconnect 2010/11	Granite Creek	2.0,3.0	STS CHK BT RB	X	X					X	X	- Restore summer baseflows to 183 meters of channel using approximately 535 cubic meters of nearby native clay and a Bentonite blanket combined with native rock. - Reshape channel to reduce incision and increase complexity with native rock including removing 5 log drops installed in the 1980's. - Approximately 5000 native hardwoods were planted by the UNF in adjacent riparian and floodplain areas with survival primarily adjacent to the stream channel.
Ten Cent Creek Culvert Replacements 2011	Desolation Creek	2.0, 3.0, 3.1	STS & RB Opportunistic CHK & BT	X	X				X		X	- Return access to 9.6 Kilometers of existing high quality habitat using an open bottom culvert - Replaced three existing round culverts with two bottomless arch culverts and one pre-cast concrete bridge. - Maintenance by UNF engineers.

Table 8. Efforts undertaken during the 2001 – 2012 performance periods with the primary objective of improving passage to existing high quality habitats.

Battle Creek Culvert Replacement

Project Summary: The Battle Creek site (Table 8) is located south of Ukiah, Oregon and is a tributary of Desolation Creek. Discussions between the UNF, NFJDWC, and The Project led to the proposed replacement of a 2.7 x 3 meter oval culvert with a bottomless 4.8 x 3 meter culvert which formed a partial passage barrier was included in the Projects 2007 ISRP Review Proposal. The barrier was identified in the draft action plan for Desolation Creek (USDA, 2009) as a priority for replacement and designed natural channel design practices. Implementation costs totaled $134,267 with contributions from the UNF, NFJDWC, and The Project in the form of in-kind supporting survey, design, and contracting efforts. Monitoring is completed by UNF biologists who track in-stream habitat and fish populations through regular surveys, UNF engineers assessing road and culvert stability during regular surveys, and The Project who conducted Summer Steelhead trout spawner surveys for two years following implementation. Spawner surveys conducted by The Project identified spawning activity after replacement.

Ecological Outcomes: The replacement (Figure 14) improved passage to approximately 8.5 miles of existing high quality habitat for summer steelhead trout. The previous culvert was incapable of passing sediment effectively resulting in an excessive build–up of sediments at the culverts up-stream end creating several abrupt drops without a jump pool below which may have prevented adult passage prior to replacement. The natural channel design for this culvert replacement did not adequately identify sediment size distribution for material within the culvert. As such, streamflows enter the substrate above and within the culvert resorting channel substrate and leaving an impression upon Kathy Ramsey (Kathy Ramsey, personal communication) (Figure 15) that passage was impassible for juveniles at the flow stage present during her assessment "due to sheet flow, no low-flow thalwag, interlocked angular/subangular boulders and cobbles". After implementation adjustments to the stream channel were made to improve low flow passage; however, it has become evident that more intensive adjustments are necessary. To this end the UNF has discussed several options. Future designs will be completed by UNF staff with knowledge of the structure and responsibility for establishing baseline conditions in cooperation with The Project.

Figure 14. Photopoints and cross-sectional data related to the Battle Creek site Before (left) and after (right) construction.

Figure 15. Photographs of the Battle Creek culvert at the up-stream inlet (left), down-stream outlet (right and center). Pictures by Kathy Ramsey (UNF).

Granite Creek Culvert Replacement

Project Summary: The Granite Creek effort (Table 8) is located approximately 8 kilometers north of Granite, Oregon. Discussions between the UNF, NFJDWC, and The Project led to the proposed replacement of this 0.5 meter round culvert presenting a passage barrier to adult summer steelhead trout with a 3.1 x 1 meter open bottom culvert. This action was included in The Projects 2007 ISRP Review Proposal. Additionally, this complete barrier was identified in the draft action plan for Granite Creek (USDA, 2008) as a priority for replacement and designed using natural channel design practices. Implementation costs totaled $72,835 with contributions from all cooperators in the form of in-kind supporting survey, design, and contracting efforts. Monitoring is completed by UNF biologists who track in-stream habitat and fish populations through regular surveys, UNF engineers assessing road and culvert stability during regular surveys, and The Project who conducted Summer Steelhead trout spawner surveys for two years following implementation. The UNF documented adult summer steelhead above the culvert after replacement.

Ecological Outcomes: The replacement (Figure 16) allowed passage to approximately 4.3 kilometers of existing high quality. Surveys have not identified stability issues with the new culvert and the UNF plans on completing an assessment of the structure during 2014. There are no recommendations to be made.

Figure 16. Photopoints and cross-sectional data related to the Granite Creek site Before (left) and after (right) construction. Left Photograph by Kathy Ramsey.

Bruin Creek Culvert Replacement

Project Summary: The Bruin Creek site (Table 8) is located south of Ukiah, Oregon and is a tributary of Desolation Creek. Discussions between the UNF and The Project led to the proposed replacement of this partial barrier to passage identified in the draft action plan for Desolation Creek (USDA, 2009) as a priority for replacement. Fortunately, planning for the new structure began prior to noting significant erosion around the culvert that caused cracking and tilting of the upper orifice. Debris plugged this end resulting in complete loss of the structure and much of the road prism prior to replacement. As such, the accepted design was amended to create a smaller road prism and the replacement occurred without any complicating issues. To address these issues the UNF, NFJDWC, and The Project replaced a 1.2 meter round culvert with a 4.8 x 3 meter bottomless culvert designed with natural channel design practices. Additionally, the UNF and The Project planted native hardwoods below the culvert. Implementation costs totaled $215,942 with contributions from the UNF, NFJDWC, and The Project in the form of in-kind supporting survey, design, and contracting efforts or cash match. Monitoring is completed by UNF biologists who track in-stream habitat and fish populations through regular surveys, UNF engineers assessing road and culvert stability during regular surveys, and The Project who conducted spawner surveys fir summer steelhead trout. No spawning activity was identified during the surveys.

Ecological Outcomes: The replacement (Figure 17) has improved passage to approximately 8.5 kilometers of existing high quality habitat. A qualitative effectiveness survey completed by the UNF indicates the structure has maintained its integrity. The natural channel design has maintained a well-defined low and high flow channel with appropriate flow depths, widths, and velocities to afford passage although there are potential issues of concern. The first detailed in an assessment by the UNF concerned a cut-bank above the culvert and erosion logs being undercut by the channel which may reflect channel adjustments to the previously input limited culvert. The previous culvert was incapable of passing sediment effectively resulting in a build–up of sediments at the culverts up-stream end and although natural-channel design considered this, the final grade may have been slightly off. Below the culvert the stream channel is still recovering from the previous culverts influence and road prism erosion prior to replacement resulting in excessive sediment deposition below the road. Fine sediments are still present (Figure 18) and being mobilized from the site; however, the stream channel has not yet fully recovered as the UNF chose to let natural forces recover the stream channel will take several years. Removing a portion of deposited sediment below the culvert would have helped jump start the development of a defined channel without creating a significant disturbance.

Figure 17. Photographs of the Bruin Creek Culvert Replacement site with photographs showing pre-implementation (left) and post-implementation (right) culverts at the lower end.

Figure 18. Photographs of the Bruin Creek culvert at the up-stream inlet (upper left), down-stream outlet (upper right), and downstream blowout influenced channel (left). Pictures by Kathy Ramsey (UNF).

Beaver Creek Reconnect

Project Summary: The Beaver Creek Reconnect site (Table 8) is located approximately 11.3 kilometers southwest of Granite, Oregon. Historic placer mining severely disturbed or obliterated much of the stream channel and riparian/floodplain habitats throughout the Granite Creek Basin including Beaver Creek. Large mobile dredges left well sorted tailing piles up to 7.6 meters in height which severely confined streamflows in a new channel where they remained leaving little effective habitat for fluvial and anadromous species. During the 1980's the WNF began working to restore in-channel baseflows which would often dry out as a direct result of fine material being lost from the channel substrate during dredging operations. Although these methods were largely successful attempts to restore baseflows in Beaver Creek were not entirely successful and the channel would often be left during late summer within a 183 meter reach.

During 2010 cooperators including the WNF, UNF, Grant SWCD, NFJDWC, and The Project contributed approximately $47,000 and in-kind to return passage through this reach by sealing the stream channels substrate. Cooperators excavated the existing stream channel and placed 535 cubic meters of native clay and rock and a Bentonite blanket to seal the channel bottom. Funding for the project came from BPA Project #2008-201-00 created to replace passage barriers, the WWF who completed NEPA documentation, the UNF who provided funding for the bentonite blanket, the NFJDWC who assisted in coordination and the Project in the form of staff time. Adjustments were required during 2011 to address scour in one small location which exposed the bentonite blanket. Additionally, UNF planted native hardwood vegetation and placed LWD adjacent to the treated reach. Monitoring efforts have included permanent cross-sections conducted by The Project and summer steelhead spawner surveys surveyed by ODFW with assistance from The Project. Future efforts may include juvenile spring Chinook salmon population sampling and spring Chinook salmon spawner surveys in Olive Creek although only initial conversation have occurred to date.

Ecological Outcomes: Cooperative efforts have thus far proven successful although as one would expect the channel has adjusted somewhat to its new form. The removal of four log drops on the reaches lower end and channel adjustments have reduced channel width by 10 meters at cross-section 1 and increased channel depth by 0.6 meters (Figure 19). Cross-section 4 shows an increase in channel depth of 0.15 meters due to natural channel adjustments after log drop removal and channel reconstruction while cross-section 5 which lies above the treated portion of this reach increased in depth by 0.18 meters as channel form changed in response to natural processess and streambank erosion. Although pebble counts have not occurred, empirical evidence suggests channel substrate has coarsened slightly since 2010 with larger material creating localized scour, increasing channel roughness, and maintaining adequate flow depth and velocities to afford juvenile passage during summer base flows.

Summer steelhead trout spawner surveys suggest the adjusted channel has improved passage for adults to basins above the site (Jeff Neal, personal communication). Although summer steelhead trout spawner surveys did not occur for Olive Creek in 2009 and 2011 and Beaver Creek during 2006, 2011, 2013 due to high water or spawning time relative to survey counts spawning activity has increased above previous years (Table 9) although this may be related to a positive trend visible in the estimated John Day basin population and counts over Bonneville Dam. Another estimate of improved connectivity may be juvenile spring Chinook salmon surveys. Although ODFW has sampled juvenile populations in the past they did not occur above or within the adjusted channel. Neither The Project nor its cooperators have witnessed a dry summer baseflow channel since implementation was completed. Potential changes to the effort may have been larger excavations during implementation to decrease potential scour and bank cutting which would compromise site stability.

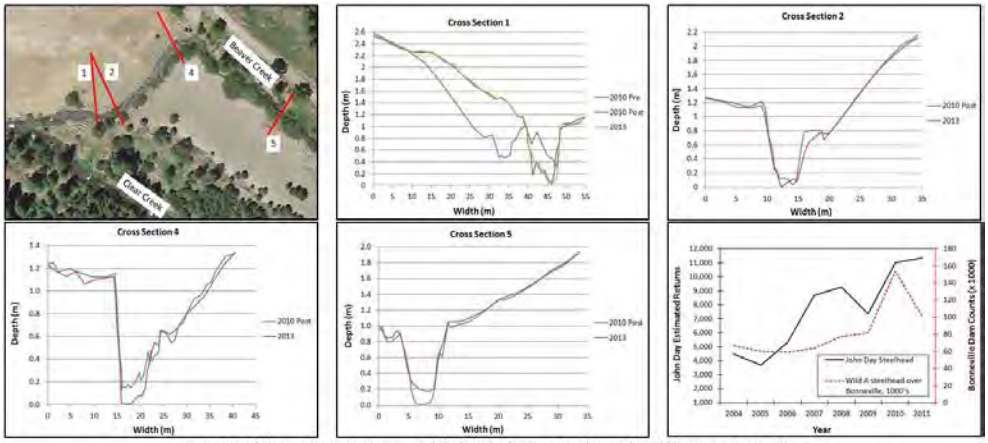


Figure 19. Aerial photograph using 2013 imagery with the location of cross sections shown with available cross-section data shown.

Year	Olive Creek Redds	Beaver Creek Redds	Basin Average per Mile
2001	7	5	5.1
2001	10	7	8.4
2003	2	7	4.7
2004	3	2	3.1
2005	5	2	1.8
2006	3	0	1.5
2007	10	6	5.2
2008	2	2	1.7
2009	0	4	2.6
2010	6	6	4.8
2011	0	0	2.0
2012	19	2	4.2
2013	18	0	5.8

Table 9. Results of spawner surveys completed by ODFW and calculated densities per mile. (courtesy of Jeff Neal ODFW, John Day office)

Ten Cent Creek Culvert Replacements

Project Summary: The Ten Cent Creek Culvert site (Table 8 and Figure 20) is located 4.8 kilometers west of Granite Oregon and is a tributary of Granite Creek. Discussions between the UNF and The Project led to the proposed replacement of two partial barriers and one complete barrier to passage identified in the action plan for Granite Creek (USDA, 2012) as a priority for replacement. To address these issues the UNF, NFJDWC, and The Project installed two bottomless culverts and one precast concrete bridge designed with natural channel design practices. Given that three barriers were identified in a single basin all culverts were replaced under a single contract to reduce costs. Implementation costs totaled $284,197 with in-kind contributions supporting surveys, designs, and contracting efforts. Monitoring efforts occur by UNF biologists who track in-stream habitat and fish populations through regular surveys, UNF engineers assessing road and culvert stability during regular surveys, and the Project who will conduct Summer Steelhead trout spawner surveys until 2014.

Figure 20. Photographs of the Ten Cent Creek culverts with pre-implementation on top and post-implementation below. Pictures are displayed from higher elevation (left) to lowest elevation (right).

Ecological Outcomes: The replacement of all three barriers improved passage to 9.6 kilometers of existing high quality habitat. Spawner surveys conducted in 2013 by The Project did not identify any summer steelhead trout spawning above the upper barrier although this may be due to flow timing as ODFW reported summer steelhead trout in Beaver Creek spawned a month earlier than normal during 2013. Surveys by the UNF (Allison Johnson, personal communication) indicate barrier 1 did have juvenile spring Chinook salmon above the structure although similar surveys were not completed for barriers 2 and 3. A qualitative effectiveness survey completed by the UNF indicates all three structures have maintained their structural integrity and passage for juvenile and adult aquatic species. The natural channel design has maintained a well-defined low and high flow channel with appropriate low flow depths, widths, and velocities to afford passage (Figure 21). High flow velocities have been adequate to effectively sort sediments by clearing out finer materials resulting from implementation and pass nearby available woody material.

Figure 21. Photos of the new Upper Ten Cent Creek culvert at the upstream end (left), within the culvert (center), and lower end (right) during baseflow. Pictures by Kathy Ramsey (UNF).

Objective - Improve Floodplain Connectivity

Effort & Year	GA	Ecological Concern	Species	CTUIR River Vision Touchstones/ Habitat Limiting Factors								Outputs
				Biota-Connectivity	Geomorphology	Connectivity		Hydrology			Riparian Vegetation	
				Passage Barriers/ Entrainment	In-channel Characteristics	Habitat Diversity (LWD)	Floodplain Confinement	High Temps	Sediment	Low Flows	Riparian/ Floodplain	
Clear Creek Mine Tailing Redistribution 2006/07	Granite Creek	2.0, 3.0, 3.1, 4.0, 5.0, 5.1, 5.2, 5.3,	STS CHK BT BB		X	X	X	X	X		X	- Recontoured 211,506 cubic meters of mine tailings along 3.8 Kilometers of stream channel. - Established an inset floodplain to promote floodplain connectivity and sediment / debris deposition. - Native hardwood plantings and LWD placement on the floodplain have occurred by the UNF with future cooperative efforts between the UNF and the Project to place additional large wood
Lower Camas Creek Conservation Agreement 2006-18	Lower Camas Creek	1.0, 1.1, 3.0, 3.1, 5.0, 5.1, 5.2, 5.3, 6.0	STS CHK BT BB		X	X	X	X	X		X	- 388 acres of riparian and floodplain enrolled into CREP contracted including 1.6 Kilometers of stream channel and protected by 2,097 meters 4-strand barbed wire riparian fence. - 335 meters of levees removed. - 5 J-hook structures installed, 2 LWD structures installed, and 213 meters of stream channel regraded. - 3 upland stock water ponds created, one existing upland stock water pond improved, and one spring development created. - Approximately 16,500 native plantings and 45 kilograms of native grasses applied. - Structure maintenance and noxious weed treatments for the life of the agreement.

Table 10. Efforts undertaken during the 2001 – 2012 performance periods with the primary objective of improving floodplain connectivity.

Clear Creek Mine Tailing Redistribution

Project Summary: The Clear Creek Mine Tailing site (Table 10) is located approximately 11 kilometers southwest of Granite, Oregon. Historic placer mining severely disturbed or obliterated much of the stream channel, riparian, and floodplain habitats throughout the Granite Creek Basin including Clear Creek. Large mobile dredges left well sorted tailing piles up to 7.6 meters in height severely confining streamflows within a new channel where they remained often with little to no access to off channel habitats or quality habitat for fluvial or anadromous species. During the 1980's the WNF began working to restore in-channel baseflows in remnant stream channels which would often dry out as a direct result of fine material being lost during dredging operations. These methods were largely successful although they did not address tailing piles (Figure 22). The WNF, UNF, Grant SWCD, OWEB, and The Project provided $441,191 and in-kind to increase floodplain connectivity and secondarily improving stream channel complexity and morphology by recontouring tailings to the extent possible and creating a functional floodplain to the extent possible. Limiting factors identified for this site included compromised floodplain connectivity and resulting channel simplification (lack of channel complexity, pools, LWD, etc) in addition to addressing sediment and water temperature issues. Cooperators re-contoured 211,506

cubic meters of mine tailings along 3.8 kilometers of Clear creek establishing an inset floodplain, planted native hardwoods, and placed LWD within the new floodplain. Future efforts between the UNF and the Project will place additional LWD to further promote sediment ad debris deposition. Monitoring efforts through this reach include annual spawner survey counts by ODFW.

Ecological Outcomes: To date, the effort remains as it was after the tailing redistribution with continued sediment and debris deposition on the floodplain (Figure 22). Large wood placed on the floodplain by the UNF has been moved to an extent by high water and smaller sediments have been captured and maintained in lower velocity areas on the floodplain. Plantings have only been successful adjacent to Clear Creek where adequate water and fine material is available. Future manipulation of tailings outside of the stream channel may not occur due in part due to the sheer volume of material, lack of space to place removed tailings, and the cost of trucking the material from the area which is in and of itself cost prohibitive at this point. Additional work to extensively modify the stream channel and floodplain are limited due to the potential for loosing streamflows outside of the sealed channel as a direct result of placer mining activities. As such, future efforts will only increase floodplain roughness through large wood placements and related plantings allowing natural processes to seal the floodplain and stream channel as changes occur. There are no recommendations regarding this effort when considering constraints imposed upon the project.

Figure 22. Photopoints related to the Clear Creek Mine tailing site before redistribution (left) and after (right).

Lower Camas Creek Conservation Agreement

Project Summary: The Lower Camas Creek site (Table 10 and Figure 23) is located approximately 0.8 kilometers south of Ukiah, Oregon. Conversations between the landowner and The Project resulted in a 15 year conservation agreement with the primary objective being to improve floodplain connectivity closely followed by maintaining and improving existing habitat, hyporheic complexity, riparian and floodplain complexity, water quality, and channel complexity and morphology through riparian through active measures along 1.6 kilometers of Camas Creek. Flood control levees were constructed on the properties upper end to protect the farm house and outbuildings. Although one stock pond existed watering opportunities across the upland pasture were extremely limited. Riparian and floodplain hardwood vegetation populations were depressed as a result of past grazing management and use by wildlife throughout the year, especially during the winter months.

To address these issues The Project constructed 2,097 meters of 4-strand barbed wire riparian exclusion fencing to isolate 388 stream channel, riparian, and floodplain acres from cattle grazing (enrolled in a Farm Services Agency CREP Program by the landowner), removed 335 meters of levee and installed five J-hook structures and two LWD structures in 213 meters of stream channel, created three upland stock ponds, refurbished another, and completed one spring development, and applied 45 kilograms of native grasses. The CREP contract required planting approximately 16,000 trees completed under a contract between the landowner and contractor. The conservation agreement provided for noxious weed treatments and structure maintenance for the life of the agreement. Monitoring efforts began in 2007 with of cross-sectional and longitudinal profiles, pebble counts, water temperatures, and photopoints.

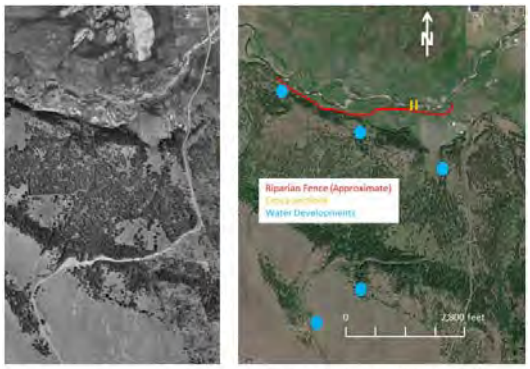


Figure 23. Aerial imagery from 1996 and 2013 with the locations of developments implemented under the conservation agreement.

Ecological Outcomes: To date, treatments have been positive save native vegetative planting which suffered high mortality. The removal of 335 meters of levee and placement of J-hook structures and LWD have successfully improved in-stream complexity and increased floodplain connectivity while riparian fencing and stock water developments have successfully improved upland grazing opportunities with minimal maintenance required on all structures. Improved floodplain connectivity is most dominant in the lower portion of the old levee where access to paleo-channels is more readily gained. Without the levee, streambank erosion has shifted the channel slightly to the south in one location (Figure 24) in part due to scour created by a J-hook structure, a lower elevation portion of the streambank, and an off-channel paleo-channel active during high flow events. Of the five constructed J-hook structures three are still active. The two upper structures have been covered by deposited sediments and the lower three have maintained scour pools immediately below. Longitudinal profiles collected between 2007 and 2011 suggest that riffle habitat constituted between 22 to 38 percent of gross habitat, between 52 and 65 percent habitat was classified as runs, scour pool composed between 3 and 8 percent of habitat, and 9 to 10 percent of habitat were classified as backwater areas. Although it is generally accepted the individual habitats are relatively stable and will typically not change dramatically over time surveys were conducted between June and October depending upon workload. As such, differences in streamflow influenced survey results as well as skills of The Projects staff which improved through training and experience. Estimates of streambank stability using visual evidence of erosion and the presence of stabilizing vegetation suggest that stability has improved over time across the site with streambanks and inset floodplains becoming more vegetated although in select locations streambank erosion continues to a limited extent. Bank stability and streamside shade resulting from willow plantings within the stream channel have suffered significantly from beaver predation.

Figure 24. One impoundment created to improve upland stock water opportunities after access to Camas Creek was restricted by a riparian fence (upper left) and J-hook structures and large wood installed to increase stream channel complexity (upper right). Localized streambank erosion occurred where floodplain flows extend to the right and into paleo-channels below a portion of a removed levee visible in the lower picture.

Cross-sectional data collected at cross-sections 39.6 (upstream) and 150 (downstream) (Figure 25) show changes in the stream channel profile between 2007 and 2012. Two processes evident in the upper cross-section are sediment deposition on river left and streambank erosion on river right. Deposition is in all likelihood caused the cross-sectional area of the stream channel after levee removal or the shifting stream channel above the site. With regard to the stream channel area after levee removal limited funding and a need to implement the effort before the property was entered into a CREP contract restricts The Projects ability to increase channel complexity and decrease cross-sectional area. The site lies just below the confluence of two stream channels maintained by Camas Creek which are active to various degrees in response to sediment, debris, and flows from above. Since 2007 the southern channel has become more active exaggerate a meander and eroding the sites upper river right streambank. The most significant influence upon Camas Creek within, below, and above the site through Ukiah, Oregon is the mobilization of sediments from upstream sources and subsequent deposition within and below Ukiah. Sediment deposition is likely caused by a change in stream gradient as Camas Creek leaves a weak alluvial fan and enters lower gradient wet meadows. This has been discussed with the local community as concerns with flooding grow. The Projects efforts to this end resulted in the "Lower Camas Creek Assessment" with coordination efforts identified for 2014 and beyond to develop an understanding of relevant process and the root cause and its symptoms. Pebble counts collected between 2007 and 2012 do suggest a gradual coarsening of deposited sediments and stream channel substrate likely resulting from the establishment of dynamic stability after implementation and in response to sediment deposition from upstream sources. Greater variability evident across years in D_{100} values reflects the presence of larger and less frequently sampled material.

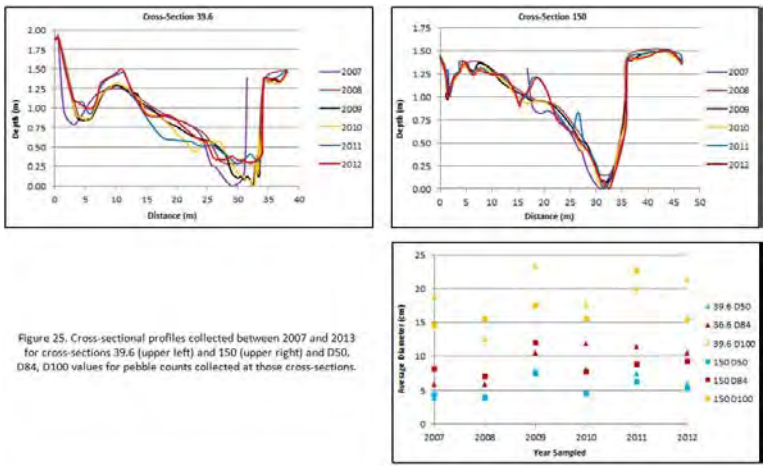


Figure 25. Cross-sectional profiles collected between 2007 and 2013 for cross-sections 39.6 (upper left) and 150 (upper right) and D50, D84, D100 values for pebble counts collected at those cross-sections.

Riparian and floodplain grasses have done extremely well and with deer, elk, and waterfowl regularly present, especially at the sites lower end away from human interaction. Hard and softwood plantings (Figure 26) have not fared so well though. While the plantings met their required survival rate for CREP the shifting stream channel and predation by wildlife have greatly increased mortality and removed matting. To reduce mortality wire horse fence cages were installed on select trees, have proven successful, and are now used in other projects. Unfortunately, these wire cages are not inexpensive so once plantings have grown above the browse line cages will be shifted to another location to reduce costs.

Figure 26. Photopoint collected in 2007 (upper left), 2011 (upper right) and 2013 (left) at the Lower Camas Creek site. Pictures are taken looking downstream within the area levees were removed on both river left and right.

Although there generally appears to be a cooling effect between the sites upper and lower boundary as suggested by mean stream temperatures and standard errors (Table 11) temperatures range, maximum temperature, and minimum are more confusing. Data indicates maximum and mean stream temperatures exceed those satisfactory for bull trout and steelhead trout. Possible explanations for excessive temperatures other than thermal flux includes loggers removed from the stream by passing wildlife which occurred or the influence of decreasing or low stream flows; the truth appears to contain a combination of the two. In several instances, passing wildlife has displaced loggers leaving then outside of stream flows or the channel itself. 2011 data for the upper location contains temperatures reaching the 35 degrees Celsius for a brief period during early to mid-July of 2011. With decreasing temperatures after this period The Project assumes the logger was temporarily removed from the water or moved to shallower waters. Streamflows during 2007 were low in many portions of the Camas Creek GA during 2007 with flows dropping below 0.1 cms by mid-July at USGS Gage 14042500 (ODWR, 2014) approximately 11.3 Kilometers above the site and leaving the Lower Snipe Creeks site stream channel dry. The mean temperature values for 2007 reflect this when compared to other years. Vegetative growth in the form of black cottonwood and other tall species would significantly benefit water quality especially when considering robust groundwater intrusions into Camas

Creek in this location. The comparison of air temperatures to water temperatures may help to ascertain the effectiveness of treatments.

	2007		2008		2009		2010		2011		2012	
	Upper	Lower	Upper	Lower	Upper	Lower	Upper	Lower	Upper	Lower	Upper	Lower
Mean	17.16	16.60	13.54	15.48	15.12	0.000	14.42	15.24	14.24	15.08	14.67	0
Standard Error	0.0961	0.0810	0.1126	0.0837	0.0564	0	0.0592	0.0719	0.0723	0.0698	0.0592	0
Sample Variance	26.7947	19.0701	36.8260	20.3636	9.2493	0	9.6905	15.0210	15.1798	14.0016	10.1611	0
Range	27.10	22.30	30.50	23.50	15.21	0	14.92	16.95	33.90	21.34	15.23	0
Minimum	3.20	5.10	-0.70	5.40	7.98	0	8.08	7.88	1.11	5.35	7.68	0
Maximum	30.30	27.40	29.80	28.90	23.20	0	23.00	24.84	35.01	26.68	22.91	0
95% Confidence Level	0.1883	0.1589	0.2208	0.1642	0.1107	0	0.1162	0.1410	0.1418	0.1369	0.1160	0

Table 11. Descriptive statistics for stream temperature data collected at one hour intervals between June and the end of October at the Lower Camas Creek site between 2007 and 2012. Data from the lower logger could not be retrieved during 2012 and due to a temporary data disturbance the lower 2009 data are not presented here.

Additional treatments to both the stream channel and floodplain areas aimed at improving stream channel and floodplain dynamic stability or complexity are severely restricted under the terms of the landowners CREP contract although future efforts will continue to improve vegetative survival. Discussions between the landowner, FSA, and The Project will begin in 2014 to identify and plan actions designed to improve vegetative population health under the conservation agreement and CREP agreement with implementation occurring in 2015. The Projects current lead biologist walked into this project after in-stream work had been completed, after stock water pond locations were identified, and four months before native vegetation was planted. Changes to planning and implementation considering this would have included greater discussion to pond location to reduce maintenance, and changes native planting survival.

Objective - Improve or Preserve Water Quality

Effort & Year	GA	Ecological Concern	Species	CTUIR River Vision Touchstones/ Habitat Limiting Factors								Outputs
				Biota-Connectivity	Geomorphology	Connectivity		Hydrology			Riparian Vegetation	
				Passage Barriers/ Entrainment	In-channel Characteristics	Habitat Diversity (LWD)	Floodplain Confinement	High Temps	Sediment	Low Flows	Riparian/ Floodplain	
Kelsay Creek Riparian Fence 2008/09	Desolation Creek	3.0, 3.1, 5.0, 5.1, 5.2, 6.0	STS RB		X	X		X	X		X	- 100 acres of riparian and floodplain protected by 4,425 meters 4-strand barbed wire fence and one water gap along 1.6 stream Kilometers. - Maintenance by grazing permittee with oversight by UNF Range Conservationist
Taylor Creek Riparian Fence 2010	Lower Camas Creek	3.0, 3.1, 4.0, 5.0, 5.2, 6.0	RdB		X	X		X	X		X	- 48 riparian and upland acres protected by 3,200 meters of 4-strand barbed wire fence protecting 1.6 Kilometers of stream channel. - Maintenance by grazing permitte with oversight by UNF Range Conservationist.
Sugarbowl Creek Riparian Fence 2010	Lower Camas Creek	3.0, 3.1, 4.0, 5.0, 5.2, 6.0	RdB		X	X		X	X		X	- 18 riparian and upland acres protected by 1,600 meters of 4-strand barbed wire fence along 1.6 Kilometers of stream channel. - Maintenance by grazing permitte with oversight by UNF Range Conservationist.
Morsay Creek Riparian Fence 2010	Lower Camas Creek	3.0, 3.1, 4.0, 5.0, 5.2, 6.0	RdB		X	X		X	X		X	- 100 riparian and floodplain acres protected by 11,747 meters of 4-strand barbed wire fence along 3.2 Kilometers of stream channel. - Maintenance by grazing permitte with oversight by UNF Range Conservationist.
Bruin Creek Riparian Fence 2010	Desolation Creek	3.0, 3.1, 4.0, 5.0, 5.2, 6.0	STS & RB Opportunistic CHK & BT		X	X		X	X		X	- 19 riparian acres protected with 695 meters of three strand 'New Zealand' fence along 0.8 Kilometers of stream channel. - Maintenance by grazing permitte with oversight by UNF Range Conservationist.
Butcherknife Creek Riparian Fence 2012	Desolation Creek	3.0, 3.1, 4.0, 5.0, 5.2, 6.0	STS RB		X			X	X		X	- 3,621 meters of four strand barbed wire fence constructed to protect approximately 1,200 acres of in-stream, riparian, floodplain, and upland habitat along 2.4 Kilometers of stream channel. - Maintenance by grazing permitte with oversight by UNF Range Conservationist.
Five Mile Fence Maintenance 2012	Lower Camas Creek	3.0, 3.1, 4.0, 5.0, 5.2, 6.0	RdB	X	X				X		X	- Heavy maintenance along 8 Kilometers of riparian exclusion fencing. - Continued maintenance by grazing permitte with oversight by UNF Range Conservationist.

Table 12. Efforts undertaken during the 2001 – 2012 performance periods with the primary objective of improving or preserving water quality.

Kelsay Creek Riparian Fence

Project Summary: The Kelsay Creek site (Table 12) is located south of Ukiah, Oregon and is a tributary of Desolation Creek. Discussions with the UNF indicated there was a need to follow up on a 2006 effort to protect existing in-stream and adjacent riparian and floodplain habitats from grazing cattle where temporary electric fences were proving inadequate. This reach of Kelsay Creek as with many others in the Desolation GA consist of high quality stringer meadows important for maintaining and restoring water quality in lower elevation areas. To address these issues the UNF, NFJDWC, and The Project contributed approximately $27,000 and in-kind to construct 4,425 meters of 3-strand New Zealand style riparian exclusion fencing isolating 100 acres from cattle grazing with one water gap. Monitoring efforts began in 2009 with the establishment of permanent photopoints collected by the NFJDWC and installation of data loggers recording water temperatures. Population estimates for aquatic juvenile or adult species were not tracked nor were metrics related to stream channel morphology or vegetation although they would be useful.

Ecological Outcomes: Fence construction has successfully restricted cattle access to sensitive areas improving in-stream, riparian, and floodplain conditions and habitat while reducing sediment entrainment due bank cutting. Range Conservationists for the UNF have continued to manage grazing within the adjacent allotments with maintenance completed by grazing permittees. Pre and post-implementation photopoint data for the enclosure (Figure 27) shows quick recovery of grasses. Native hardwoods have not grown as well as softwoods although this not troublesome as the hardwoods were influenced by cattle to a greater degree. Long term native hardwood recovery is however, expected.

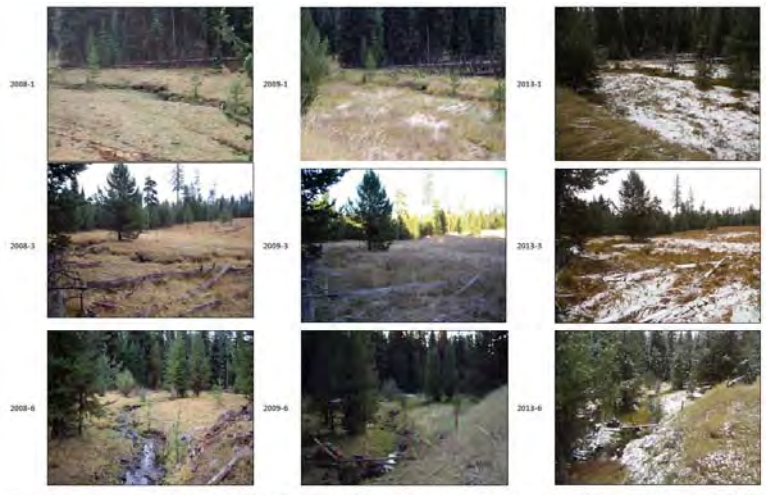


Figure 27. Photopoints from 2008, 2009, and 2013 showing recovery of the site due to riparian fence construction which occurred during the fall of 2008 after grazing and 2009 prior to grazing. Photopoint 1 is located just above the sites lower boundary, photopoint 3 is located approximately half way up the site, and photopoint 6 is located just below the sites upper boundary.

Descriptive statistics (Table 13) for stream temperatures generally decrease as flows progress downstream within years. While implementation occurred in the late fall of 2008 and early 2009 mean temperatures, sample variance, sample range, and sample maximum temperatures do not suggest there is a relationship between the treatment and stream temperatures across years at this time. Variability across multiple years cannot be accounted for with the available data; however, differences may be due to air temperature. Grasses constituent the most evident vegetative recovery and while it may take some time for woody vegetation to recover and a response to be identified tracking air temperatures and shade may provide useful information.

While fencing may not be the ideal solution for protecting water quality and sensitive habitats from damage by cattle it has been shown to be effective. As such, The Project will continue to work with land managers and permittees to implement similar projects until such a time as a suitable alternative has been identified. This sentiment is transferable to all projects for this and subsequent proposals.

	2008		2009		2010		2011		2012	
	Upper	Lower	Upper	Lower	Upper	Lower	Upper	Lower	Upper	Lower
Mean	12.10	11.62	13.35	12.60	12.17	11.69	12.24	11.80	0	0
Standard Error	0.0758	0.0608	0.0670	0.0482	0.0676	0.0837	0.0779	0.0693	0	0
Sample Variance	16.4113	10.5490	12.8357	6.6328	13.0448	20.0088	17.3338	13.7316	0	0
Range	19.90	16.00	19.74	13.86	18.49	22.80	25.70	26.41	0	0
Minimum	2.50	3.10	4.52	6.47	4.52	2.52	1.76	1.55	0	0
Maximum	22.40	19.10	24.26	20.33	23.00	25.32	27.47	27.96	0	0
95% Confidence Level	0.1486	0.1192	0.1315	0.0945	0.1325	0.1641	0.1528	0.1360	0	0

Table 13. Descriptive statistics of stream temperatures for the upper and lower Kelsay Creek logger locations. Data for 2012 was corrupted and therefore lost.

Taylor Creek Riparian Fence

Project Summary: The Taylor Creek site (Table 12) is located approximately 24 kilometers west of Ukiah, Oregon. Discussions with the UNF indicated there was a need to address stream channel and riparian disturbances from grazing cattle along Taylor Creek where temporary electric fences were proving inadequate. To this end, The Project worked with the UNF and NFJDWC to secure approximately $10,000 and in-kind to passively improve channel stability, habitat diversity, sediment entrainment, water quality, and riparian condition within stream channel and riparian habitats. Approximately 3,200 meters of four strand barbed wire exclusion fencing were constructed isolating 46 acres from grazing cattle. UNF Range Conservationists administer grazing permits on this allotment and who are responsible for fence maintenance. The Project has established a photopoint to track progress in habitat recovery.

Ecological Outcomes: Fence construction has successfully restricted cattle access to sensitive areas improving in-stream, riparian, and floodplain conditions and habitat while reducing sediment entrainment during all flows. Figure 28 shows the effectiveness of the riparian fence in restricting cattle intrusions and vegetative growth. UNF Range Conservationists administer grazing permits on this allotment and are responsible for oversight of fence maintenance completed by grazing permites.

Figure 28. 2013 photograph showing the effectiveness in restricting cattle access to Taylor Creek's riparian area and vegetative growth within the enclosure as compared to grazed areas

Sugarbowl Creek Riparian Fence

Project Summary: The Sugarbowl Creek site (Table 12) is located approximately 24 kilometers west of Ukiah, Oregon. Discussions with the UNF indicated there was a need to address stream channel and riparian disturbances from grazing cattle along Sugarbowl Creek where temporary electric fences were proving inadequate. To this end The Project worked with the UNF and NFJDWC to secure approximately $5,000 and in-kind to improve channel stability, habitat diversity, sediment entrainment, water quality, and riparian condition within stream channel and riparian habitats. Approximately 1,600 meters of four strand barbed wire exclusion fencing were constructed isolating 18 acres from grazing cattle.UNF Range Conservationists administer grazing permits on this allotment and who are responsible for fence maintenance. The Project has established a photopoint to track progress in habitat recovery.

Ecological Outcomes: Fence construction has successfully restricted cattle access to sensitive areas improving in-stream, riparian, and floodplain conditions and habitat while reducing sediment entrainment during all flows. Figure 29 shows the effectiveness of the riparian fence in restricting cattle intrusions and vegetative growth. UNF Range Conservationists administer grazing permits on this allotment and are responsible for oversight of fence maintenance completed by grazing permites.

Figure 29. 2013 photograph showing the effectiveness in restricting cattle access to Sugarbowl Creek's riparian area and vegetative growth within the enclosure as compared to grazed areas.

Morsey Creek Riparian Fence

Project Summary: The Morsay Creek effort (Table 12) is located approximately 24 kilometers west of Ukiah, Oregon. Discussions with the UNF indicated there was a need to address stream channel and riparian disturbances from grazing cattle along Taylor Creek where temporary electric fences were proving inadequate. To this end The Project worked with the UNF and NFJDWC to secure approximately $31,000 and in-kind to passively improve channel stability, habitat diversity, sediment entrainment, water quality, and riparian condition within stream channel and riparian habitats. Approximately 11,747 meters of four strand barbed wire exclusion fencing were constructed isolating 100 acres from grazing cattle.

Ecological Outcomes: Fence construction has successfully restricted cattle access to sensitive areas improving in-stream, riparian, and floodplain conditions and habitat while reducing sediment entrainment during all flows. Figure 30 shows the effectiveness of the riparian fence in restricting cattle intrusions and vegetative growth. UNF Range Conservationists administer grazing permits on this allotment and are responsible for oversight of fence maintenance completed by grazing permites. The Project has established this photopoint to track habitat recovery.

Figure 30. 2013 photograph showing the effectiveness in restricting cattle access to Morsay Creek's riparian area and vegetative growth within the enclosure as compared to grazed areas.

Bruin Creek Riparian Fence

Project Summary: The Bruin Creek site (Table 12) is located south of Ukiah, Oregon and is a tributary of Desolation Creek. Discussions with the UNF indicated there was a need to address stream channel and riparian disturbances from grazing cattle on a 0.8 kilometer reach of Bruin Creek. To this end The Project worked with the UNF and NFJDWC to secure approximately $7,000 and in-kind to passively improve channel stability, habitat diversity, sediment entrainment, water quality, and riparian condition within stream channel and riparian habitats.Approximately 675 meters of 3-strand New Zealand style riparian exclusion fencing were constructed isolating 19 acres from grazing cattle. UNF

Range Conservationists administer grazing permits on this allotment and who are responsible for fence maintenance. The Project has established a photopoint to track habitat recovery.

Ecological Outcomes: Fence construction has successfully restricted cattle access to sensitive areas improving in-stream, riparian, and floodplain conditions and habitat while reducing sediment entrainment during all flows. Figure 31 shows the effectiveness of the riparian fence in restricting cattle intrusions and vegetative growth. UNF Range Conservationists administer grazing permits on this allotment and are responsible for oversight of fence maintenance completed by grazing permites.

Figure 31. Photographs and cross-sectional data related to the Bruin Creek Fencing site showing the constructed fence (left) and protected area within the fence after construction (right).

Butcherknife Creek Riparian Fence

Project Summary: The Butcherknife Creek site (Table 12) is located approximately 32 Kilometers east of Ukiah, Oregon. Discussions with the UNF indicated there was a need to address stream channel and riparian disturbances from grazing cattle along Butcherknife Creek. A natural terrain trap would funnel cattle down into the riparian area where cattle would congregate. Although riders had been used in the past the method proved unacceptable to both the permite and the UNF. The Project worked with the UNF and NFJDWC to secure approximately $15,000 and in-kind to passively improve channel stability, habitat diversity, sediment entrainment, water quality, and riparian condition within stream channel and riparian habitats. To address these issues 3,621 meters of four strand barbed wire exclusion fencing were constructed isolating 1,200 acres of stream channel, riparian, and floodplain areas from grazing cattle.UNF Range Conservationists administer grazing permits on this allotment and who are responsible for fence maintenance. The Project has established a photopoint to track habitat recovery.

Ecological Outcomes: Fence construction has successfully restricted cattle access to sensitive areas improving in-stream, riparian, and floodplain conditions and habitat while reducing sediment entrainment during all flows. Unfortunately, photographs were corrupted and are not available.

Five Mile Creek Fence Maintenance

Project Summary: The Five Mile Creek Fence Maintenance effort (Table 12) is located 24 kilometers west of Ukiah, Oregon. Approximately 20 years ago the UNF secured BPA funding to construct riparian exclusion fence along 129 kilometers of stream channel protecting habitat used by summer steelhead trout or above barriers that prohibited passage but contained sensitive populations of redband trout in high elevation meadows important for maintaining water quality. While fences have been maintained by allotment permites with oversight by Range Conservationists wear and tear is beginning to show. Conversation between the UNF and The Project identified the feasibility of using existing personnel, equipment, and materials to reduce maintenance costs for both parties. During 2012 Project staff completed maintenance on five miles of fence line in the Taylor Creek basin with materials supplied by the UNF. A similar, although more extensive, effort has been included within the 'Deliverables" portion of this proposal for the 2014 – 2018 period within the Camas and Desolation Creek GAs.

Ecological Outcomes: Fence construction has successfully restricted cattle access to sensitive areas improving in-stream, riparian, and floodplain conditions and habitat while reducing sediment entrainment during all flows within the fenced areas of Five Mile Creek (Figure 32). As an example of the long term effectiveness of this treatment in reestablishing native vegetation and reducing streambank erosion the UNF has provided photopoints of a similar action on Smith Creek completed in 1987 adjacent to where The Project cooperated to construct additional riparian fencing in 2013. Figure 32 shows progressive vegetative recovery since the 1987 construction which can be expected for all the efforts undertaken to improve or recover water quality where riparian fences are used and cattle intrusions are regulated.

Figure 32. Photopoints taken along Smith Creek during 1987, 1997, 2004, 2010 from top to bottom and left to right. Photographs from Brad Lathrop (UNF).

Objective - Improve Riparian and Floodplain Complexity

Effort & Year	GA	Ecological Concern	Species	CTUIR River Vision Touchstones/ Habitat Limiting Factors								Outputs
				Biota-Connectivity	Geomorphology	Connectivity		Hydrology			Riparian Vegetation	
				Passage Barriers/ Entrainment	In-channel Characteristics	Habitat Diversity (LWD)	Floodplain Confinement	High Temps	Sediment	Low Flows	Riparian/ Floodplain	
Fox Creek Leafy Spurge Control 2010/12	Fox / Cottonwood Creek	5.1, 5.2	STS CHK BT RB								X	- Approximately 215 acres treated with herbicide and biological controls. - 345 acres survey for infestations and tracking the progress of previous treatment.
Granite Creek Native Vegetation Plantings 2010	Granite Creek	5.1, 5. 5.32	STS CHK BT RB			X					X	- Planted 8,400 native hardwoods in floodplain and riparian areas.
Clear Creek Native Vegetation Plantings 2010	Granite Creek	5.1, 5. 5.32	STS CHK BT RB			X					X	- Planted 5,040 native hardwoods in floodplain and riparian areas.
Granite Creek Noxious Weed Control 2010	Granite Creek	5.1, 5.2	STS CHK BT RB								X	- 40 acres of riparian and floodplain habitats surveyed for noxious weeds. - 28.5 acres of riparian and floodplain areas treated with herbicides for noxious weeds

Table 14. Efforts undertaken during the 2001 – 2012 performance periods with the primary objective of improving riparian and floodplain complexity.

Fox Creek Leafy Spurge Control

Project Summary: The Fox Creek Leafy Spurge sites (Table 14) took place along approximately 64 kilometers of Fox/Cottonwood Creek from roughly Monument, Oregon to

above Fox, Oregon. The project was led and implemented by the NFJDWC with funding from competitive grants and The Project. Leafy Spurge introduced in the 1970's has become an issue for local ranchers interested in working to knock back and if possible eliminate the plant from the subbasin. NFJDWC staff and contractors surveyed 345 acres and treated 215 acres with a combination of biologic controls and herbicide treatments over three years. Monitoring indicates (Figure 33) that although both biological and herbicide treatments were successful leafy spurge remains widely distributed in untreated areas where targeted mapping was conducted. As such the NFJDWC has continued work directed at treating infestations with available funding through competitive grants.

Figure 33. Treated area in 2010 (upper left), the same area during 2011 (upper right), and successful biological controls from 2010 noted in 2012 (lower left).

Granite and Clear Creek Native Vegetation

Project Summary: The Granite Creek Native Vegetation sites (Table 14 and Figure 34) is located approximately 3.2 kilometers southwest of Granite, Oregon. During 2009 the UNF obliterated several roads in the Ten Cent Creek subbasin, a tributary of Granite Creek. In cooperation with the UNF and NFJDWC, The Project planted native hard and softwood species on the obliterated road beds to improve stability of the recontoured mine tailing surfaces (Figure 34). Although different than The Projects previous actions this task was identified as a necessary part of priority road obliterations completed by the UNF and identified in the Granite Creek Action Plan (USDA, 2008) the project addressed potential sediment issues above culverts which were in line for replacement within several years. Cooperators provided materials and supplies to install a mix of 8,400 species selected to match those existing on site with labor funded by The Project.

Although quantitate estimates of survival were not calculated, survival appears belter on obliterated roads and adjacent to water where sufficient soil depths and moisture can be maintained. Re-contoured mine tailings suffer from a lack of soil or sufficient fine material and unless adjacent to the stream channel or preferential flow paths, they lack sufficient water for survival through the summer. As such native softwoods planted nearthe stream channel have had better survival then hardwoods planted on higher elevation tailings. It may well take 30 or 40 years for limited recovery by softwoods as it did after mining activities ceased.

Figure 34. Map of the Granite and Clear Creek tailing planting sites (left) and a photograph of planting located near the Beaver Creek Reconnect effort (right).

Granite Creek Noxious Weed Control

Project Summary: The Granite Creek Noxious Weed Control site (Table 14) is located approximately 11 kilometers southwest of Granite, Oregon. Previously noted disturbances to Clear Creek's in-stream, riparian, and floodplain habitats by historic placer mining have been partially addressed through the Clear Creek Mine Tailing Removal, and the Beaver Creek Reconnect. This task was originally designed to treat all noxious weeds on recontoured mine tailings along Clear Creek and Granite Creek, however, a legal challenge to the UNF's treatment strategy prevented actions on their lands resulting in treatments only on nearby private properties. Cooperators included the UNF, NFJDWC, and The Project with the NFJDWC conducting pre-treatment surveys and contracting with a qualified sprayer to apply herbicides over 28.5 acres of yellow toadflax, Canada thistle, bull thistle, and spotted knapweed. Follow-up surveys and treatments the next year were less extensive although species composition was similar. The NFJDWC continues to treat weeds on private lands to the extent possible with available grant funding.

Objective - Improve Stream Channel Complexity and Morphology

Effort &Year	GA	Ecological Concern	Species	CTUIR River Vision Touchstones/ Habitat Limiting Factors								Outputs
				Biota-Connectivity	Geomorphology	Connectivity		Hydrology			Riparian Vegetation	
				Passage Barriers/ Entrainment	In-channel Characteristics	Habitat Diversity (LWD)	Floodplain Confinement	High Temps	Sediment	Low Flows	Riparian/ Floodplain	
Upper Camas Creek Conservation Agreement 2009/12	Upper Camas Creek	Upper Camas Creek	STS CHK BT RB		X	X		X	X		X	- 6 riparian acres and 1.3 Kilometers of stream channel protected by 2,450 meters of 4-strand barbed wire riparian fence and 3 water gaps. - 250 acres of upland pasture subdivided by 3,090 meters of 4-strand barbed wire fence associated with a well development and associated solar pump and panels to provide water to two troughs. - Structure maintenance and noxious weed treatments for the life of the agreement.
NFID Push-up Dam Removal and Water Right Certification 2009/10	Lower NFJD.	1.0, 3.0, 3.1	STS RB		X				X			- One irrigation point moved approximately 152 meters moved to a permanent scour hole. - 80 acres of floodplain once watered by wheel line now watered by central pivot pump. - One water gap removed. - Water right POD change completed. - Maintenance of equipment by landowner.
Fox Creek Channel Enhancement 2012	Fox / Cottonwood Creek	1.0, 3.0, 3.1, 4.0, 5.0, 5.1, 5.2, 5.3, 7.0	STS RB		X	X			X		X	- Restore flow to 701 meters of historic channel - Restricted flow access to 701 meters of excavated channel - Prevented channel incision and restored floodplain storage

Table 15. Efforts undertaken during the 2001 – 2012 performance periods with the primary objective of improving stream channel complexity and morphology.

Upper Camas Creek Conservation Agreement

Project Summary: The Upper Camas Creek site (Table 15 and Figure 35) is located approximately 11 kilometers east of Ukiah, Oregon. Conversations between the landowner and the Project resulted in a 15 year conservation agreement to address the influence of historic grazing management in a 40 acre floodplain pasture. Concerns of the landowner prevented reestablishing historic floodplain connectivity and as such, the primary objective became to improve channel structure and morphology by decreasing baseflow width to depth ratios and increasing channel complexity in addition to improving upland stock watering opportunities. To address these issues the Project constructed 3,090 meters of 4-strand barbed wire fence upland cross fence with eight gates and one stock watering well with associated solar pump panels, and troughs in a 250 acre pasture followed by the

construction of 2,450 meters of 4-strand barbed wire riparian exclusion fencing isolating six riparian acres from cattle grazing with three water gaps. The conservation agreement provided for noxious weed treatments and structure maintenance for the life of the agreement. Monitoring efforts began in 2009 with the establishment of permanent cross-sectional and longitudinal profiles in the stream channel in addition to water temperature data at locations above and below the site.

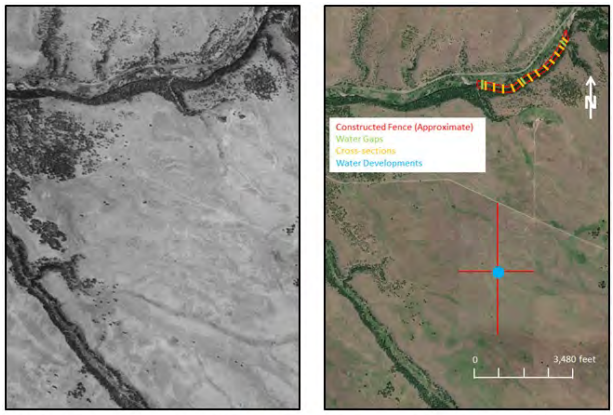


Figure 35. Aerial imagery from 2001 and 2013 with the locations of developed structures and cross-sections identified above.

Ecological Outcomes: The construction of the upland structures significantly increased the landowner's ability use available forage during the summer months after existing ponds went dry and once the riparian fence was installed (Figure 36) simply removing cattle from the stream channel significantly improved vegetative growth within the channel itself. Unfortunately, a disagreement between the landowner and The Project ended cooperative efforts before channel modifications could be completed. Neither the riparian fence or water gaps appeared to be maintained during 2013 thereby allowing cattle full access to Camas Creek.

Figure 36. Photopoints 2009 (left) and 2010 (right) for the Upper Camas Creek site looking up-stream from the lowest water gap on Camas Creek. The 2009 photograph was collected during fence construction.

NFJD Push-up Dam Removal and Water Right Certification

Project Summary: The NFJD Push-up Dam site (Table 15) is located approximately 12 kilometers west of Monument Oregon. Discussions with the NFJDWC who had been working with landowners led to the Projects participation in this effort. Two diversions for irrigation pumps drawing from the NFJD were moved approximately 152 meters upstream to permanent scour holes thereby eliminating the need for dam maintenance. The NFJDWC supported the diversion relocation on the right side of the NFJD while The Project supported relocation of the left diversion. Additionally, the landowner cooperating with The Project secured the necessary permits and information to support the replacement of a wheel line irrigation system with a central pivot system installed the following year improving irrigation efficiency on over 80 acres used for growing crops. A decision to not actively alter the diversion dam was made during implementation and thus far modifications have only occurred through natural processes. Monitoring for this effort includes permanent cross sections sampled every five years, Greenline surveys every three years, and annual photopoints provided to the NFJDWC by The Project.

Ecological Outcomes: To date, cross-section data was collected at four locations in 2009 (Figure 37) from which little can be said beyond conditions at that point in time. While the historic river channel may have been similar to that of a C4 channel prior to manipulation, at this point, it resembles a more incised C4 channel. Channel bank full widths across the four cross averaged 65 meters width bank full width to depth ratios averaging 38.3 and the calculated entrenchment ratio still falls within the range of a C4 channel by the sake of an inset floodplain. Pebble counts (Table 16) and cross-sections indicate side channel habitats maintain gravel sized sediment which differs from the cobble dominated main channel. Visual estimates suggest this is still the case although 2014 survey data will provide a quantifiable check. Greenline surveys (Table 17) suggest vegetation is beginning to shift away from a reed canary grass dominated vegetation type to one containing more woody species and rock. However, a marked increase in rock suggests there may have been some error in the survey itself; regardless the 2012 survey did contain more willow of larger size then that of 2009.

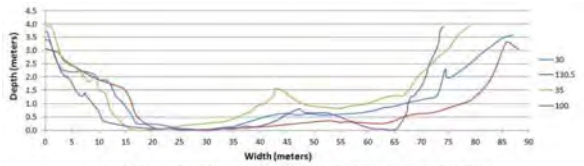


Figure 37. Cross-sectional profiles collected in 2009 which are scheduled for sampling again in 2014.

Transect	D50	D85
30	8.5	13.4
100 N	3.8	5.9
100 S	7.8	12.3
35 N	4.8	6.8
35 S	10.9	14.3
131	8.9	12.4

Table 16. D50 and D85 values from 2009 pebble counts.

	2009	2012
Channel Left		
Reed Canary Grass	84%	63%
Sedge	13%	2%
Dirt	2%	0%
Rock	0%	23%
Willow	0%	11%
Alder	0%	1%
	Willow - 2 sprouts, 10 young, 4 mature	Willow - 21 sprouts, 31 young, 18 mature
Channel Right		
Reed Canary Grass	74%	100%
Sedge	26%	0%
	Willow - 1 sprout Russian Olive - 1 young	

Table 17. Greenline survey data in the form of % cover and individual species counts for 2009 and 2012

Fox Creek Channel Enhancement

Project Summary: The Fox Creek site (Table 15) is located just south of Fox, Oregon. In response to landowner concerns about the condition and function of Fox Creek flowing through their properties, the NFJDWC completed an assessment along 32 kilometers of Fox Creek in 2009 resulting in a list of potential actions addressing hydrologic, geomorphic, and land management issues. The Project contributed toward this effort, participated in the 'agency' prioritization meeting, and provided funding during 2011 and 2012 to install LWD in the historic channel to create and maintain scour and used plug and pond methods to restrict flows through a flood control channel created during the 1960's. The constructed channel captured enough flow that the original channel was essentially abandoned and severe erosion of the excavated channel reduced floodplain connectivity even farther. To address these issues the cooperators installed 50 pieces of large wood creating 14 structures to create and maintain scour and 19 riffles to control channel grade and over time fill the excavated channel with sediment, debris, and native vegetation. Monitoring will include annual photopoints collected by the NFJDWC.

Ecological Outcomes: The work (Figure 38) improved channel complexity and morphology in 701 meters of stream channel and has reduced channel instability. 2013 photographs were not available for this proposal.

Figure 38. Photographs of the Fox Creek Channel Enhancement showing LWD installed in 2011 (left) and a finished 'plug' in 2012 (right).

Objective - Improve Sediment Routing and Sorting

Effort & Area	GA	Ecological Concern	Species	CTUIR River Vision Touchstones/ Habitat Limiting Factors								Outputs
				Biota-Connectivity	Geomorphology	Connectivity		Hydrology			Riparian Vegetation	
				Passage Barriers/ Entrainment	In-channel Characteristics	Habitat Diversity (LWD)	Floodplain Confinement	High Temps	Sediment	Low Flows	Riparian/ Floodplain	
Lower Camas Creek Assessment 2011	Lower Camas Creek	2.0, 3.0, 3.1, 4.1, 5.1, 5.2, 7.0	STS CHK RB	X	X				X		X	Completed and distributed findings of the survey to local citizens and gave presentations to the City of Ukiah

Table 18. Efforts undertaken during the 2001 – 2012 performance periods with the primary objective of improving sediment routing and sorting.

Lower Camas Creek Assessment

Project Summary: The Lower Camas Creek Assessment (Table 18) resulted from questions by local landowners and residents of Ukiah, Oregon concerned about sediment deposition within levees above, below, and within the City of Ukiah. Prior to levee construction citizens would channelize Camas Creek through town every year to address sediment deposition. After the 1964 floods hardened levees were constructed to protect private property. Since then, maintenance has not been completed to any reasonable extent. Although The Project had a desire to assist in identifying a solution there did not appear to be any information related to past and current conditions beyond qualitative descriptions of events and conditions. To establish some form of baseline condition, identify relevant processes, and future data needs The Project conducted a survey along three miles of Camas Creek collecting longitudinal and cross-sectional profiles and sediment data (Figure 39). The brief was submitted to local residents and the City of Ukiah resulting in several presentations at the City of Ukiah's council meetings and a WE in the 2013 SOW to identify and implement reasonable treatments with willing landowners. Thus far, the NFJDWC and The Project have conducted interviews of landowners owning property along Camas Creek and scheduled an initial coordination meeting to begin establishing goals satisfactory to all. The extent to which coordination can continue in 2014 and beyond has yet to be determined.

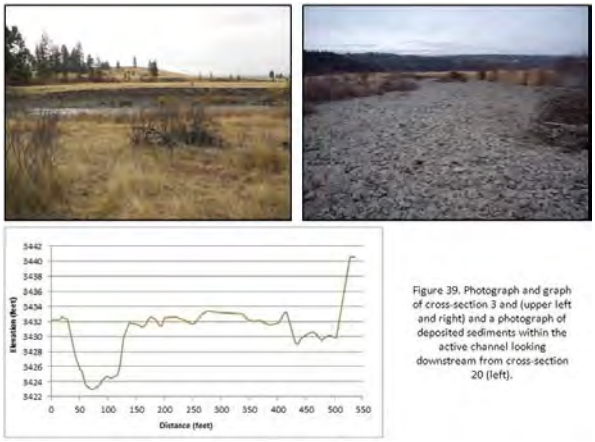


Figure 39. Photograph and graph of cross-section 3 and (upper left and right) and a photograph of deposited sediments within the active channel looking downstream from cross-section 20 (left).

Assessments

Review: 2013 Geographic Category Review

Independent Scientific Review Panel Assessment

Assessment Number:	2000-031-00-ISRP-20130610
Project:	2000-031-00 - Enhance Habitat in the North Fork John Day River
Review:	2013 Geographic Category Review
Proposal Number:	GEOREV-2000-031-00
Completed Date:	9/26/2013
Final Round ISRP Date:	8/15/2013
Final Round ISRP Rating:	Meets Scientific Review Criteria (Qualified)
Final Round ISRP Comment:	

There are potentially many good aspects to the proposal, but the proposal's narrative and the responses to several of the ISRP's qualifications are unclear. The main qualifications are that the sponsors need to better explain the proposal rationale and to enlist the collaboration of specialists to aid in project implementation and evaluation. It is also important that relevant RM&E efforts outside this project are well coordinated with project activities listed in this proposal. More specifically, the sponsors need to address several issues that arose from their responses to the ISRP's questions on the original proposal: see qualifications.

Responses to these qualifications should be submitted for ISRP review by the end of 2013.

Qualification #1 - Response No. 2
The goal is much broader than the stated objectives of the project. The goal should be revised to

reflect a balance with the objectives, or vice versa. As presented the objectives are not comprehensive enough to attain the goal.

Qualification #2 - Response No. 3
The objectives should be stated in quantitative terms and time lines provided. As stated, the Deliverables are generally fine, but since the Objectives are not stated quantitatively, these need to be so. Quantitatively recasting the deliverables as environmental benefits or improvements expected to be realized after the individual projects are completed is essential to evaluate the project success.

Qualification #3 - Response No. 5
The ISRP would still like to see the monitoring results collected since 2007. Please provide appropriate metrics and data to show that the restoration actions are making progress.

Qualification #4 - Response No. 7
What is being done to control or eradicate non-native fishes? If this is an important issue with respect to the recovery of native salmonids, as it seems to be, it should be a program component.

Qualification #5 - Response No. 9
The response does not address the question about how fish monitoring data are used to evaluate the effectiveness of habitat projects and only partially addresses specific collaborations between projects. The ISRP needs more fully developed responses to these questions in order to evaluate the proposal. As well, the ISRP expects that considerable ongoing collaboration will occur among the various programs.

Qualification #6 - Response No. 10
The ISRP would appreciate clarification to the following issue: The sponsors state that they will reconcile their monitoring plan with other habitat monitoring plans such as CTUIR's Fisheries Habitat Monitoring Plan, CHaMP and ISEMP, but more description is needed on what will be done.

Qualification #7 - Response No. 11
The ISRP is unsure what the response to No. 11 means. Please provide a revised response for consideration by the ISRP.

Qualification #8 - Response No. 15
The details of cost-sharing, who will do the work among the partners, and timelines for completion, are not provided under Response No. 3. Please provide them.

Qualification #9 - Response No. 16
Issues of data management, as requested in the ISRP qualification, are not addressed under Response No. 5. They should be described in a response.

First Round ISRP Date: 6/10/2013

First Round ISRP Rating: Response Requested

First Round ISRP Comment:

This is a very ambitious project that should proceed in prioritized stages or program phases. CTUIR should prioritize actions and implement them as a means to develop expertise and better achieve success. Further, the sponsors should consider establishing a scientific advisory committee to assist with the staging of project phases and prioritization of activities.

The sponsors need to address the following issues in a response:

The status and direction of the RME program needs clarification. Are the sponsors modifying the program and, if so, how? What changes will be made and why? What is the status of data analysis? Is data analysis ongoing and, if so, when can results be expected? What is the relationship between this project's RME and CTUIR's Biomonitoring Plan and Fisheries Habitat Management Plan? How is the RME for this project similar to and different from these plans? If the sponsors are modifying their RME, what specific elements of the two plans will be incorporated?

1. Purpose: Significance to Regional Programs, Technical Background, and Objectives

The project is consistent with a number of regional plans including the John Day Subbasin Plan, the Mid-Columbia Steelhead Recovery Plan, the FCRPS BiOp, and the Fish Accords Agreement. The North Fork John Day supports the largest populations of ESA-listed spring Chinook salmon and summer steelhead, and maintains some of the highest quality habitat in the subbasin. In general, the technical background adequately reviews limiting factors and fish population abundances in the study area.

Nevertheless, this was a difficult proposal to understand and evaluate, for three main reasons:

The proposal was poorly written in terms of clarity of ideas and actions, extensive use of vague words to describe outcomes, and use of acronyms without definition. Proofreading was also needed. The document should be carefully edited. In a number of instances statements in the same paragraph appear to contradict each other.

The goal of the project was not clearly stated. For example, in the Executive Summary the goal/purpose of the project varies in three separate paragraphs. In the first instance, it is stated as "This project protects, enhances, and restores functional floodplain, channel and watershed processes to provide sustainable and healthy habitat and water quality for aquatic species in the John Day River Subbasin." In the second instance it is stated as "The purpose of this project is to protect and enhance habitat for improved natural production of indigenous, Mid-Columbia River (MCR) Evolutionary Significant Unit (ESU) summer steelhead (*Oncorhynchus mykiss*), listed as threatened under the Federal Endangered Species Act (ESA), and spring Chinook salmon (*Oncorhynchus tshawytscha*) within the North Fork of the John Day River Basin." In the third instance it is stated as "The goal of the CTUIR North Fork John Day Habitat Enhancement Project (the Project) is to protect, enhance, and restore channel, riparian, and floodplain function and function relating these locations to upland adjacent upland areas using a 'ridge top to ridge top' approach to provide sustainable and healthy habitat and water quality for aquatic species in the North Fork John Day River Subbasin." Although related in spirit, these are not the same. As such, it was very difficult to equate objectives and evaluate activities in the proposal to the stated goal.

Ten Objectives are provided but, for several, there are no deliverables (OBJ 4, 7, 8, 9, and 10). The topics related to the Objectives are discussed in the text, and they are listed as important concerns, but it is not clear how they will be addressed.

There is no overarching model or form of Structured Decision Making to guide the activities or set priorities, and this hampers taking a comprehensive approach to restoration. The activities, while individually important, are not treated as an integrated network of sites and actions chosen for their effectiveness at meeting clearly stated goals. Further, many sites are not monitored to determine if the actions have been effective, thereby undermining the Adaptive Management process.

A coherent discussion of the strategy for selecting and prioritizing restoration sites would have improved the proposal. In particular, since the NFJD supports significant areas of high quality habitat, it would be helpful to know how the project sites are located relative to these habitats and whether the location of these areas is considered in site selection.

The objectives appear sufficient to address the major limiting factors in the North Fork John Day.

2. History: Accomplishments, Results, and Adaptive Management (Evaluation of Results)

A number of habitat enhancement projects have been initiated in the North Fork John Day since the project's inception. While the sponsors summarized habitat enhancement actions for a number of projects, discussed the outcomes of these actions to date, and provided pre-and post-project photographs, few quantitative results were presented. Has the monitoring data been analyzed and, if not, what are the plans for data analysis? The project needs to establish a comprehensive model or institute Structured Decision Making, as well as monitoring, to guide actions and evaluate outcomes.

During the 12-year project history, the CTUIR has helped administer and implement 29 efforts, developed 26 stock water sites to help protect 9.7 miles of stream channel, and entered 1600 acres of riparian, floodplain, and upland areas into Conservation Agreements. Additional cooperative work constructed 24.75 miles of riparian exclusion fence outside of the Conservation Agreements, replaced 5 passage barriers, provided weed control on over 300 acres, and redistributed 276,640 cubic yards of mine tailings. Additional work to develop efforts which did not mature included a fence construction, a watershed analysis, and a range inventory in the Desolation GA, aspen plantings with associated fencing along Upper Owens Creek (Lower Camas Creek GA), guzzler development above Rudio Creek (Lower NFJD GA), and road stabilization above Ukiah, Oregon (Lower Camas Creek GA) where landowners backed off of cooperative efforts, and one boundary fence and culvert replacement in the Desolation Creek GA dropped due to a shortfall in available funding. This equates to ~2.4 efforts annually, ~3 miles of stream protection, and ~133 acres of conservation.

Due to the lack of consistent monitoring, it is not clear that the individual or collective actions are having positive effects on focal species or environmental concerns. Further, without a general model or Structured Decision Making, it is not clear that the efforts are targeted at sites with a strong potential for aiding species' recovery or ameliorating environmental concerns.

Several topics, which the ISRP suspects are locally important, are only lightly touched upon in the proposal. These are invasive non-native plants in riparian areas, impacts of non-native fishes on native populations, use of agricultural chemicals (toxics), browsing by native ungulates in restored areas, and strategies concerning beaver. These should be addressed in a substantive way in the proposed actions.

The ISRP is surprised and concerned that climate change models and scenarios are not consulted when planning activities. After all, on-the-ground activities need to be

resilient to future environmental changes; there are several "user friendly" techniques available.

3. Project Relationships, Emerging Limiting Factors, and Tailored Questions

The sponsors could have provided a more detailed discussion of the relationship between their project and others that are ongoing in the North Fork John Day. For example, how are fish monitoring data collected by Project 1998-016-00: "Escapement and Productivity of Spring Chinook and Steelhead" used to evaluate the effectiveness of the habitat projects? In addition, the sponsors could have discussed in more detail the coordination with ODFW's John Day Habitat Enhancement project (1984-021-00). For example, what sort of collaboration between the projects is occurring? Are sites being selected in a complementary way so as to optimize the potential benefits of habitat enhancement actions?

The status of the RM&E program, especially of effectiveness monitoring, and whether there are plans to modify the program, as the proposal implies, needs clarification. A concise overview of the M&E plan would be helpful including whether data collection at project sites and data analysis is currently being undertaken. The sponsors state that they will "reconcile" their monitoring plan with other habitat monitoring plans such as CTUIR's Fisheries Habitat Monitoring Plan, CHaMP and ISEMP but it is not clear what they mean by "reconcile." The sponsors present a lengthy discussion of CTUIR's Biomonitoring Plan. How does this Plan relate to current project monitoring? Will elements of the Biomonitoring Plan be incorporated into a revised M&E plan for this project? Clarification of the status and direction of the project's monitoring program is needed.

The sponsors recognize climate, non-native plants, predation, and toxic chemicals as emerging limiting factors – and this is good to see. However, in reality, these are not emerging limiting factors but ones that are already present at significant levels. As such, they should be addressed directly by program actions.

There are ongoing program relationships with landowners, the U.S. Forest Service, local counties, and others. It is a small community, and the ISRP suspects there is ongoing communication at several levels. Our deeper concern is at a larger spatial scale. There are several other entities in the region proposing similar restoration actions. Efforts should be made by all entities, and coordinated by the Council, BPA and other funding agencies, to see that working relationships are established at the larger spatial scale. This will encourage local learning and build regional adaptive capacity.

4. Deliverables, Work Elements, Metrics, and Methods

Although the sponsors refer to monitoring methods and metrics in MonitoringMethods.org, the extent of this project's monitoring in the North Fork, especially effectiveness monitoring, is unclear.

There are no deliverables for 5 of the 10 Objectives; this is mentioned above. The Objectives need to be recast as quantitative statements to identify specifically and quantitatively what will be achieved and provide realistic timelines. The deliverables need to reflect this quantitative approach.

Many of the deliverables, as stated, are generally fine. However, there are numerous specific questions about details of cost-sharing, who will do the work among the partners, and timelines for completion.

Data management: It appears that there is some in-house data management and perhaps some cooperation with partners, but the levels of sophistication and analyses are far from clear. These aspects should be fully articulated in a revision to this proposal.

Specific comments on protocols and methods described in MonitoringMethods.org

No comments at this time.

Modified by Dal Marsters on 9/26/2013 2:02:02 PM.
Documentation Links: Proponent Response (7/8/2013)

Council Recommendation

Assessment Number:	2000-031-00-NPCC-20131125
Project:	2000-031-00 - Enhance Habitat in the North Fork John Day River
Review:	2013 Geographic Category Review
Proposal:	GEOREV-2000-031-00
Proposal State:	Proposal Vetted
Approved Date:	11/5/2013
Recommendation:	Implement with Conditions
Comments:	Implement with condition through FY 2014: Sponsor to provide a revised proposal addressing ISRP qualifications, for ISRP review by May 1, 2014. Implementation beyond FY 2014 is conditioned on ISRP review and Council recommendation.

BPA Response: Agree **Publish Date: 02/14/2014**

Conditions:

Council Condition #1 Sponsor to provide a revised proposal addressing ISRP qualifications, for ISRP review by May 1, 2014.

BPA Response to Council Condition #1: Accept <no comment>

Review: FY07-09 Solicitation Review

Independent Scientific Review Panel Assessment

Assessment Number:	2000-031-00-ISRP-20060831
Project:	2000-031-00 - Enhance Habitat in the North Fork John Day River
Review:	FY07-09 Solicitation Review
Completed Date:	8/31/2006
Final Round ISRP Date:	(None)
Final Round ISRP Rating:	Meets Scientific Review Criteria

Final Round ISRP Comment:

Chinook Mid-Columbia ESU steelhead, Mid-Columbia ESU bull trout and interior redband trout should all realize long-term benefits from the habitat improvements proposed. This project is well planned, and the objectives and methods have been thought through. Clear ties are made to the Fish and Wildlife Program, the BPA Watershed Management Program, the BiOp RPAs, Wy-Kan-Ush-Mi Wa-Kish-Wit, and the Subbasin Plan. There are many complementarities between this project and others in the subbasin, with clear descriptions of who does what, how they are related, and presentation of the role of CTUIR in the communities and watershed council.

This project proposes tributary habitat improvements in priority areas identified in the Subbasin Plan and tied to EDT results. Habitat limiting factors are linked with strategies and restoration activities. Detailed descriptions of habitat problems and activities to date are provided by geographic area. There is a clear description of project history and actions, but little evaluation of project outcomes and impacts. A table lays out the rationale for proposed actions. Objectives are specific to location, expressed in measurable units and relate actions to time lags for discerning measurable effects. Work elements are similarly specific, with milestones and dates. M&E will be done through collection of well-described, pre- and-post implementation data on channel hydrology and vegetative response. No direct monitoring of fish use of habitat. The sponsors should coordinate with ODFW so that fish monitoring occurs and can be tied to habitat improvements. Information transfer is accomplished through outreach and education activities, watershed council participation, landowner collaborations, and periodic reporting.

Documentation Links:

Council Recommendation

Assessment Number:	2000-031-00-NPCC-20090924
Project:	2000-031-00 - Enhance Habitat in the North Fork John Day River
Review:	FY07-09 Solicitation Review
Approved Date:	10/23/2006

Recommendation: Fund
Comments:

Response to past ISRP and Council comments and recommendations:
As a result of the 2007 ISRP review the Project investigated and identified monitoring methods to improve the understanding of an actions effectiveness and adapt to new implementation and monitoring techniques to refine implementation methods. Additionally, professional development classes have been taken by all staff to improve their understanding of physical processes, monitoring and design techniques, and gain a better understanding of permit requirements. This has allowed staff to identify and address physical processes while discussing potential projects with landowners, ask better questions, and improve permit applications. An example is the Project's enhanced understanding of physical processes used when undertaking the Camas Creek Levee Assessment and related brief to explain findings to the local community; many of which don't have a technical background in physical or biological processes. Information contained within this brief will guide future efforts related to addressing sediment deposition including additional data needs, potential options for treatments, and reconciling the various opinions and concerns of area residents.

Adaptive Management

Management Changes:
The Project has and will continue to employ an adaptive management strategy to all project planning within the basin. Although this most often occurs after reporting the adaption of new and modified restoration and monitoring techniques will be based upon past experiences and those of cooperators, reviews of literature, reviews of and adaption to evolving plans and strategies such as standardized monitoring protocols, consultation with other professionals, and attendance at classes and seminars conducted by other professionals through the region. The CTUIR Fisheries Habitat Program continues to gain and improve knowledge in floodplain and riverine processes and has applied that knowledge to this Project resulting in improved administration, planning, design, implementation, and monitoring. Restoration actions implemented by CTUIR and supported by the Umatilla River Vision (Jones et.al. 2008) promote dynamic river and floodplain habitats with natural variability, address ecological processes rather than physical results of poorly functioning systems, and approach project planning at a watershed scale (Wohl et.al. 2005).

The CTUIR Fish Habitat Program develops restoration projects through what we refer to as the Riverine Planning Approach that includes an adaptive management mechanism at several stages. The approach includes 5 basic stages: scoping, assessment; monitoring, implementation, and reporting. Lessons learned through the process and more importantly those identified during data analysis and reporting are fed back into earlier processes (see Large Habitat Program Section) to improve all efforts undertaken by The Project. This includes valuable input to adjust assessments, evaluations of project objectives, input to monitoring plans, and input to project development. The Projects success has been and will be quantified by monitoring metrics specific to the restoration goals and objectives designed to measure changes in the limiting factors within each stream reach. The Project recognizes that stability in a riverine system must be considered at appropriate geomorphic, temporal, and spatial scales for natural ecological processes to occur and restoration efforts considered successful. Only addressing the symptoms of non-functioning systems cannot address restoration goals related to interconnected physical, chemical and biological processes. Past project development and implementation has fostered experience and lessons with regard to practical issues of administration, organization, and successful project completion. Specific issues have included unclear project goals and objectives, poorly developed design team roles and responsibilities, inadequate data collection and information for various project stages, and delayed or protracted permitting and consultation processes. To remedy these issues and improve future project development the following solutions have been applied:

1. Develop clear project goals and measurable objectives that address primary limiting factors (Ecological Concerns) and drive the development of project actions and effectiveness monitoring plans through the Riverine Planning Process.
2. Develop integrated and organized planning teams to utilize the Riverine Planning Process. The basic team would be led by a CTUIR project lead with a team of interdisciplinary members. Disciplines not represented by CTUIR staff or partners would be made available as necessary to the team through subcontract. Roles and responsibilities would be outlined and clearly understood. Develop a timeline and schedule for the planning process up front so that contract amendments and changes are minimized.
3. Adequate data and final design information is collected and provided. The level and detail of site data and information collected needs to meet or exceed the intended use.
4. Detail final plans to an accurate level based on updated site information. A final design plan should be agreed upon and understood by all team members before moving into the implementation phase.
5. Coordinate and communicate early and often with regulatory agencies. Make sure permitting agencies are aware of decision changes in a timely, official, and detailed manner.

The CTUIR Fish Habitat Program is currently developing a Physical Habitat Monitoring Strategy as part of The Projects 2013 Statement of Work that will link project objectives with physical habitat metrics and monitoring methods accepted by the program which are also consistent with those used within the region. By developing a monitoring plan through this strategy, project specific data will be comparable across projects and subbasins. Monitoring information and results from individual plans will be used as adaptive management input for CTUIR projects and could be coordinated with other monitoring efforts.

Within each Fishery Habitat Program subbasin biological data collected and analyzed through the CTUIR Fisheries Monitoring and Evaluation Program will be used to guide habitat restoration efforts. The Bio-Monitoring of Fish Habitat Enhancement (BPA Project #2009-014-00) has been developed to investigate the effectiveness of habitat actions on anadromous fish populations. Information gathered and reported through this project in combination with other outputs from the M&E Program have provided and will continue to provide important information to the Habitat Program for restoration action prioritization and development.

Project Documents & Reports

Public Attachments in Pisces

ID	Title	Type	Period	Contract	Uploaded
P130429	North Fork John Day River Basin Anadromous Fish Habitat Enhancement Project Annual Report for February 2011 – January 2012	Progress (Annual) Report	2/2011 - 1/2012	56226	1/30/13
P124949	NORTH FORK JOHN DAY RIVER BASIN ANADROMOUS FISH HABITAT ENHANCEMENT PROJECT Annual Report for April 2010 – January 2011	Progress (Annual) Report	2/2010 - 1/2011	51701	2/1/12
P117094	North Fork John Day River Basin Anadromous Fish Habitat Enhancement Project	Progress (Annual) Report	2/2009 - 1/2010	46079	7/13/10
P113864	North Fork John Day River Anadromous Fish Habitat	Progress (Annual)	4/2008 - 3/2009	42947	10/20/09

		Report			
P107268	NORTH FORK JOHN DAY RIVER BASIN ANADROMOUS FISH HABITAT ENHANCEMENT PROJECT Annual Report for April 2007 – March 2008	Progress (Annual) Report	4/2007 - 3/2008	37318	7/14/08
P103004	NORTH FORK JOHN DAY RIVER BASIN ANADROMOUS FISH HABITAT ENHANCMENT PROJECT ANNUAL REPORT	Progress (Annual) Report	4/2004 - 3/2007	32946	8/2/07
00006613-2	North Fork John Day River Basin Anadromous Fish Enhancement Project	Progress (Annual) Report	10/2000 - 9/2001	6613	3/1/03
00006613-1	North Fork John Day River Basin Anadromous Fish Enhancement Project	Progress (Annual) Report	10/1999 - 9/2000	6613	3/1/03

Other Project Documents on the Web

(None)

Project Relationships

The Project Relationships tracked automatically in cbfish.org provide a history of how work and budgets move between projects. The terms “Merged” and “Split” describe the transfer of some or all of the Work and budgets from one or more source projects to one or more target projects. For example, some of one project’s budget may be split from it and merged into a different project. Project relationships change for a variety of reasons including the creation of efficiency gains.

Project Relationships: (None)

Additional Relationships Explanation:

The CTUIR’s DNR Fisheries Habitat Program consists of BPA-funded programs in the Grande Ronde River basin (BPA Project #199608300), Umatilla River basin (BPA Project #198710001), Walla Walla River basin (BPA Project #199604601), Tucannon River basin (BPA Project #200820200), and North Fork John Day River basin (BPA Project #20003100). The CTUIR’s DNR Wildlife Management Program also manages three wildlife mitigation projects including the Rainwater Wildlife Area (BPA Project #200002600) in the Walla Walla River basin and the Iskuupla Wildlife Area (BPA Project #199506001) and Wanaket Wildlife Area (BPA Project #199009200) in the Umatilla River basin. CTUIR fish habitat programs are coordinated by the Fishery Habitat Program Lead with similar methodologies, techniques, and strategies adopted by all. Staff members associated with these projects are located in Mission, Oregon in the Umatilla Indian Reservation’s DNR Fish and Wildlife Program office complex and satellite offices in La Grande Oregon (Grande Ronde and North Fork John Day River Habitat Projects) and Walla Walla (Walla and Tucannon River Habitat Projects). Staff is interconnected through an integrated network system that supports regular communication and sharing of information. Equipment, vehicles, occasionally staff, and technology are all exchanged to maximize cost efficiency and resource benefit in the five basins.

The Project has and will continue to work with private landowners and citizens as well as the UNF, WNF, and MNF, NFJDWC, Grant SWCD, Monument SWCD, ODFW, NRCS, FSA, and The Nature Conservancy (TNC). Over the past several years The Project has coordinated with many of these entities and improved its ability to address limiting factors in and outside of Focal GAs and where access may have otherwise not been available. This is in large part due to entity specific resources and capabilities, staff technical expertise, ability to secure funding, local community relationships, and planning capacity across time. The Project has contributed to basin specific action plans and participates in regular coordination meetings with the UNF, WNF, and NFJDWC. The CTUIR previously identified a need to develop trust within small rural communities of the NFJD and to this end worked to secure a seat on the NFJDWC’s Board. The position is currently held by The Projects lead biologist who is currently an executive member of the board. This position has proven effective in promoting public awareness of the CTUIR's presence and has resulted in implementation of cooperative projects efforts.

The Project was in part developed to fill a gap in coverage of the NFJD as ODFW (BPA Project #198402100 & #199801600) and CTWSRO BPA Project #19913700) are primarily located in the southern and lower portions of the subbasin. ODFW works throughout this area and primarily completes riparian fencing efforts while the CTWSRO are concentrated in the Middle Fork of the John Day River where they maintain the Oxbow Conservation Area and near Prairie City with the Forest Conservation Area. The Projects concentration of its efforts within the Focal GAs provides for a natural division of labor in a rather large basin. This ‘division of labor’ does not preclude cooperative efforts between these entities. The Project and CTWSRO both work around Monument, Oregon as opportunities arise and The Project has coordinated with ODFW since at least 2007, although our efforts have not been rewarded as landowners decided against participation. More recently, semi-annual coordination meetings between all of the John Day Subbasin cooperators have been sponsored by BPA to improve communication and cooperation.

Focal Species

Primary Focal Species
Chinook (O. tshawytscha) - Mid-Columbia River Spring ESU
Steelhead (O. mykiss) - Middle Columbia River DPS (threatened)
Trout, Bull (S. confluentus) (threatened)
Trout, Interior Redband (O. mykiss gairdnerii)
Trout, Rainbow (Oncorhynchus mykiss)

Secondary Focal Species
Wildlife

Emerging Limiting Factors:
Climate will likely become warmer and wetter in winter and dryer and hotter during the summer (OCAR, 2010) and as such it’s appropriate for managers to seek the best available scientific knowledge regarding the effects of climate change and to consider such scientific data when recommending strategies and implementation measures.

Climate change may alter environmental conditions throughout cold water fish life cycles although considerable uncertainty about the magnitude of loss or degradation of habitat resulting from climate change remains. Magnitudes of change may differentially influence population viability with lower elevation habitats east of the Cascade Mountains with the southern portion of the Columbia River basin likely experiencing the greatest change. Climactic trends have the capacity to influence aquatic populations through elevated air and stream temperatures, reduced snow pack and shifts in dominant precipitation, altered hydrographs, more frequent extreme storm events, increased drought, changing ocean temperatures and current patterns, and more altered fire regimes. The end result may well force the initiation of streams further down slope, incrementally reducing headwater habitat availability and warming air and river temperatures; thereby compressing suitable habitat for salmonids. Given what will likely be a complex habitat response to climate change, managers must confront the task of planning habitat for cold water communities with few tools. Alluvial floodplains represent areas of high ecological importance due to their habitat and biotic diversity and that water temperature regimes suggest efforts within mid-elevation meadow habitats contain considerable value (such as the Granite Creek GA).

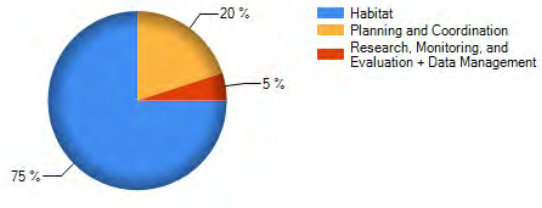
Efforts to influence water quality and fisheries habitat given long term changes will continue during identification, prioritization, and development efforts with large scale and/or interconnected projects prioritized. Existing NFJD attributes such as multiple use management on valuable higher elevation tributary habitat, a lack of large impoundments, and no direct hatchery influence the NFJD is in relatively good shape. The vast majority of land management practices are related to cattle grazing and contribute toxics in the form of pesticides used for weed control and cattle feces. The Project follows restrictions required by HIP II when treating noxious weeds and riparian fencing and/or stock water developments are used to restrict cattle access to sensitive habitats.

With regard to non-native aquatic species, those within the NFJD are largely limited to warm-water species within the mainstem NFJD and in higher elevations where brook trout were planted in the past. These areas are largely outside of The Projects focal GA’s although where the do exist they have and will continue to be considered relative to a proposed actions influence upon non-desirable species and consecutively, desirable species. The chances of the NFJD returning to pre-European conditions are small although projects are undertaken to improve priority habitat condition and to benefit listed and non-listed species. This includes work in the Focal GAs identified by habitat potential and

existing condition and working in higher elevation areas containing significant meadow habitats which will continue to provide significant benefit to listed and non-listed species in the face of climate change. Given this, The Project can identify two potential approaches to addressing non-native aquatic species, including: 1) The Project is controlling non-native fish through the manipulation of habitat used by priority species and coordination with others such as the CTUIR's DNR Pacific Lamprey Research and Restoration Project (BPA Project #1994-026-00). Monitoring by the CTUIR to identify changes within specific reaches must be reconciled with BPA funding guidelines, the projects goal, proposed future efforts, and the location of focal GAs, past, and proposed actions relative to infestations. In other words establishing a monitoring network solely to track conditions suitable for non-native species lies beyond The Project's existing scope and has not been considered for the 2014-17 ISRP proposal, 2) cooperate with others to actively manage non-native species in the basin. While an argument has been made that we are in-effect contributing to fisheries management through restoration efforts in specific locations, "fisheries management" lies beyond the purview of the project. Bounties on non-native species lies beyond The Project's capabilities and treatments such as weirs to specifically trap non-natives for removal would require a change to proposed efforts and coordination and staffing the Project haven't been considered for the 2014-17 ISRP proposal. That said, conversations with ODFW may identify a mechanism by which this can be implemented if allowed by funding entities.

Types of Work

Work Classes



Work Elements

Habitat:
Habitat work elements typically address the known limiting factors of each location defined for each deliverable. Details about each deliverable's locations, limiting factors and work elements are found under the Deliverables sections.

26. Investigate Trespass
29. Increase Instream Habitat Complexity and Stabilization
30. Realign, Connect, and/or Create Channel
40. Install Fence
47. Plant Vegetation
52. Remove Mine Tailings
184. Install Fish Passage Structure

Planning and Coordination:
99. Outreach and Education
114. Identify and Select Projects
175. Produce Design and/or Specifications

RM & E and Data Management:
157. Collect/Generate/Validate Field and Lab Data
161. Disseminate Raw/Summary Data and Results
162. Analyze/Interpret Data

Resident Fish

Please describe which opportunities have been explored to restore or reintroduce resident native fish and their habitats?
The Projects scope does not include active restoration or reintroduction efforts to specifically restore native resident fish populations and their habitats. Restoration of habitat for resident species will occur as a result of efforts undertaken to improve habitat for anadromous species. Due to species overlap and spatial distributions, addressing limiting factors for anadromous species typically addresses conditions necessary for resident species such as rainbow, redband, and bull trout and non-game species such as Pacific lamprey, mussels, dace, and scuplin, and amphibians.

Has a loss assessment been completed for your particular subbasin/or province?
No

Describe how the project addresses the loss assessment. If a loss assessment is in progress or being proposed, describe the status and scope of that work.
Unaware of any loss assessment produced or in production.

If you are using non-native fish species to achieve mitigation, have you completed an environmental risk assessment of potential negative impacts to native resident fish?
No

Please describe: for the production of non-native fish, what are the potential impacts on native fish populations, including predation, competition, genetic impacts, and food web implications?
N/A

Does your proposed work support or implement a production goal identified in a USFWS Bull Trout Recovery Plan?
Yes

Please explain.
The Project supports the 2002 Bull Trout Recovery Plan's goal of "Restore and maintain suitable habitat conditions for all bull trout life history stages and forms." Seven local populations within the NFJD including those within The Project's Focal GAs of the Upper Granite Creek and Desolation Creek with critical habitat identified in Camas. Once prevalent throughout the NFJD bull trout are now relegated to isolated areas due to land and river management practices that reduce habitat quality and quantity and declining anadromous species populations (source of prey and nutrients). To accomplish the goal of bull trout recovery in the John Day Recovery Unit several objectives were identified in the Bull Trout Plan including; maintaining current distributions and restore to historic distributions; maintain stable or increasing trends in adult abundance; restore suitable habitat for all life stages; and conserve genetic diversity.

Efforts toward recovery of NFJD population began no later than 1995 with CTUIR's contribution to the development of WY-KAN-USH-MI WA-KISH-WIT or Spirit of the salmon (CRITFC, 1995), and Columbia River anadromous fish restoration plans of the Nez Perce, Umatilla, Warm Springs and Yakima Tribes. Over the last seven years the Project has contributed to bull trout recovery through restoration actions within and along Granite, Desolation and Camas Creeks. Although The Project cannot directly address bull trout populations throughout the basin efforts to improve habitat conditions within Focal GAs which align with existing populations and/or critical habitat will be undertaken. Past and future work to address conditions include coordinated projects noted below in addition to efforts not yet identified.

- Upper Granite Creek - remove passage barriers, redistribute or remove excess mine tailings, restore channel complexity and floodplain connectivity, increase streamside shade by restoring native vegetation, increase shallow ground water storage, reduce maximum stream temperatures using previously noted means
- Desolation Creek - Remove passage barriers, increase channel, riparian, and floodplain complexity, increase floodplain connectivity, prohibiting cattle access to sensitive areas, improve water quality using previously noted means
- Camas Creek - Increase channel, riparian, and floodplain complexity, increase floodplain connectivity, improve water quality using previously noted means

Data Management

What type of data are you collecting and how are you documenting supporting metadata?

The Project collects pre and post-implementation data for projects, and where feasible when working with cooperators. Data are used for baseline assessments, design, and permitting efforts, Status and Trend monitoring, and to understand the effectiveness of a particular structure or channel habitat form designand linked to Fisheries Habitat Program standardized objectives. Similar data are typically collected to identify both pre and post-implementation conditions or trends. Metadata have been saved within #.txt files on the Projects computers describing the effort in general and any monitoring efforts which were specific to that project.

Baseline Assessments include:
- Longitudinal and cross sectional profiles and topographical data (using a Trimble R8 GPS, or Total Station) include point data collected (X, Y, and Z coordinates) in the State Plane, NAD83, 3601 North coordinate system, in International feet or distance and depth with a laser level, stadia rod, and tape using methods outlined by Harrelson, (1994), and Rosgen, (1998). Data are used to build surfaces, plot plan view of existing channel conditions, calculate width/depth ratio's, calculate pool/riffle ratio's, and build stream cross sections prior to development of restoration actions. Benchmark data and field data is managed through Trimble Business Software TBC) with QA/QC to evaluate x,y,z accuracy and removal/edit of errant data points. Data is then stored or used in *.txt or spreadsheets, HEC RAS, WinXS Pro, ArcMap and AutoCad Civil 3D software to construct topographic surfaces, breaklines, profiles, cross sections, plot plan view and 2D views of existing channel conditions, calculate width to depth ratio, slope, bankfull cross section, and other morphological calculations used to assess existing conditions, develop design criteria, and develop concept and design plan sets for habitat enhancement activities. Data are used in a before-after comparison and trend analysis.

- Sediment size and distribution following methods outlined by Wolman, M. G. (1954) or Reid and Dunne, (1996) to identify substrate composition at various cross sections and provide information on the particle size (D50, D85) and distribution within the existing channel. Data are used in a before-after comparisons and trend analysis.

- Vegetative associations and cover using 'greenline' surveys (Winward, 2000) or transects extended off the stream channel on to the floodplain, or densitometers to enumerate pieces of wood/mile of stream, species composition, cover, or effective shade within riparian and floodplain areas.

- Surface water or hyporheic flows are measured with Hobo© Pendant data loggers set to record Degrees Centigrade at 1-hour intervals above and below the site or bracketed to capture influence of side channels or cold water seeps. Data are used in a before-after comparison and during trend analysis.

- Qualitative descriptions of site recovery using photo-points.

- Spawner surveys for summer steelhead trout and spring Chinook salmon in cooperation with ODFW within Focal GAs and in conjunction with passage barrier removal by The Project for two years following the removal where ODFW spawner surveys do not occur. These data are used in a before-after comparison as well as during trend analysis.

Status and Trend Monitoring includes:
Amounts and type of monitoring varies by a project objectives and age. Minimum monitoring efforts may consist of photo-points while a more comprehensive plan may include photo-points, water temperature, groundwater measurements, longitudinal profiles, cross-sections, spawning surveys, and vegetation survival surveys. Status and trend monitoring is an important component in the CTUIR's adaptive management strategy as it provides information on the success or failure of an action in meeting objectives. Annual assessment of these data can highlight deficiencies within a projects scope or provide an early warning of an undesirable effect which can be adaptively applied to correct deficiencies and/or incorporate the knowledge gained into future project planning.

Although these methods are fairly well defined in current literature, CTUIR's Department of Natural Resources Fishery Habitat program is in the process of developing standardized monitoring protocols many of which are outlined above for habitat. The intent is to complement in-house concerns and needs for research and monitoring efforts for the Fishery Habitat and Research Programs with the 'bottom up' and 'top down' approaches of Monitoring Methods.org and CHaMP, MERR, and the like.

The Projects existing physical habitat monitoring protocols were identified and implemented in 2007. To standardize physical habitat monitoring practices within the CTUIR's Fishery Habitat Program, The Project has been participating in development of the Physical Habitat Monitoring Strategy (PHAMS) for reach-scale restoration actions. At this time, the final document is expected to be completed in 2014 following a final draft which wasn't completed as of this proposals submission (2 February 2014). To date, project leaders have selected monitoring metrics and protocols for assessing restoration effectiveness from top down protocols such as CHAMP or EMAP or bottom up methods such as monitoringmethods. org (monitoring methods, 2013). None of these resources, however, treat scale as an explicit factor in the design, collection, and analysis of effectiveness data. PHAM has been developed to address a key limitation of site-scale metrics and protocols to monitor reach-scale restoration efforts where monitoring efforts may miss key physical responses to large scale restoration which are not limited to;

- Focusing largely on the main channel and not capturing side channels, bars, spring channels and other important active channel and floodplain features in semi-arid rivers.
- Collecting data at the site-scale and at many sites to describe the overall range of site conditions at the watershed scale to draw valid conclusions. While basin wide information is valuable for use in implementation design and identifying limiting factors or conditions influencing reach scale factors monitoring on this scale is beyond the purview of the CTUIR's Fishery Habitat Program although their participation with others may prove useful.
- Site scale methods do not account for possible time lags in physical responses to restoration actions and have prescribed sampling frequencies and intervals that are not driven by process time scales. That is, riparian restoration may take decades to achieve desired conditions and it is important to understand time scales of restored processes to establish appropriate monitoring intervals. Where slow recovery is expected less frequent monitoring may occur over long period of time. With rapid recovery, monitoring is generally more frequent and of shorter duration.

Upon completion of the PHAMS, the document will be adopted by the CTUIR's DNR Fishery Habitat Program. In essence, lead biologists will choose from the laundry list of standardized objectives selected to reflect those of the individual projects and associated monitoring protocols for 'Status and Trend'.

Research, Monitoring, and Evaluation Monitoring:
As previously noted all Research, Monitoring, and Evaluation efforts will be conducted under the Fisheries Research Program's Bio-Monitoring Project (BPA Project# 2008-014-00) within Fishery Habitat Program basins by the bio-monitoring projects staff with results reported in their annual reports. During 2014, two sites within the NFJD will be monitored by the bio-monitoring project with the number of sites monitored growing as projects are undertaken and where pre and post-implementation monitoring data exists.

In 2008, CTUIR began working to independently defend the CTUIR's Accords efforts and address the effects of habitat restoration on fish population, survival, abundance or conditions, and othe characteristics. That is, the Bio-Monitoring Project will answer two questions guiding the development of objectives and associated hypothesis for spring Chinook salmon, summer steelhead and bull trout populations: 1) What are the effects of the habitat improvement/restoration actions on fish abundance and distribution at multiple scales? 2) What particular habitat restoration action(s) have had a positive effect on species of concern?

A conceptual design was presented during the RME/AP Categorical review and received a "Meets Scientific Criteria (Qualified)" with an additional review of the final and completed plan requested. A final draft was completed in 2012 and submitted for ISRP/Council review and recommendation (ISRP 2012-17). CTUIR is now preparing to present final plans to the ISRP during the upcoming Geographic Review with implementation expected to begin in 2013.

The plan aims to detect measurable changes in biotic conditions, specifically changes to growth, survival, and abundance of various salmonid life stages. Biotic conditions were guided by NOAA's Viable Salmonid Population (VSP) parameters to determine long-term population viability, abundance, productivity, spatial structure, and diversity (McElhany et al. 2000). Objectives identified for the plan include:
- Quantifying biotic outcomes of specific restoration actions on population abundance, distribution and productivity for spring chinook salmon, summer steelhead, and bull trout.
- Discriminate effects of alternative restoration actions on target species, to better understand individual or cumulative actions yielding the most significant population response.
- Quantify correlation between individual or cumulative actions and their effect(s) upon limiting life stages of focal species.
- Extrapolate bio-monitoring results to guide future restoration actions to the extent possible given monitoring data alone.

Describe the accessibility of the data and what the requirements are to access them?
Efforts are currently underway through the CTUIR's Information Technology and an on-site data coordinator to standardize and improve data storage and documentation practices. Once fully established, this system will improve our ability to will store, query, and share data. In the past, water temperature data was submitted to the NOAA database, however, once fully established data will be submitted to this database annually. Data sharing occurs through direct requests to the Project.

RM&E

What type(s) of RM&E will you be doing?
Project Implementation/Compliance Monitoring
Status and Trend Monitoring

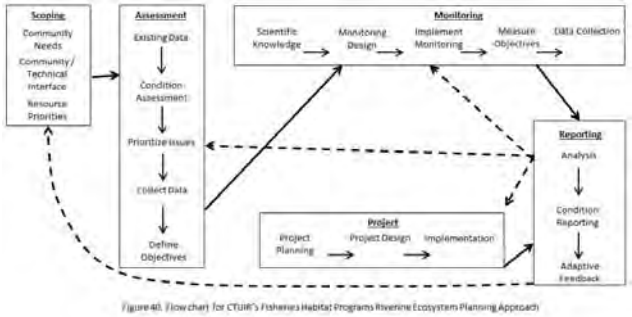
Where will you post or publish the data your project generates?
CTUIR GIS Program Databases

Large Habitat Programs

Large Habitat Programs:
The CTUIR Fisheries Habitat Program goal is to protect, enhance and restore floodplain, channel and watershed processes for the purpose of protecting and restoring fisheries and aquatic species important to the Umatilla Tribes. The process for action selection begins with the Umatilla River Vision, developed under guidance of the Umatilla Tribe's First Foods Concept. The vision defines a functional river as a dynamic environment that incorporates and expresses ecological processes continuing the natural production of First Foods used by the Tribal community. The River Vision provides direction for restoration by focusing on the five touchstones of hydrology, geomorphology, connectivity, riparian vegetation, and aquatic biota. Operating under this guidance, CTUIR's Fishery Habitat Program projects are planned, designed, implemented, and monitored across the usual and accustomed harvesting areas to achieve fish habitat restoration goals.

The Project intersects these criteria with Primary Limiting Factors from the 2008 Fish Accords MOA, Steelhead Recovery Planning documents, the John Day Subbasin Plan, recovery documents, TMDL reports, and local assessments and strategies such as the Granite, Desolation, and Bull Run Creek Actions plans (USFS, 2008, 2009, 2012). The 2008 Columbia Basin Fish Accords MOA affords larger-scale project planning and scheduling flexibility that focusses recovery efforts on addressing primary limiting factors. With this agreement for extended funding in place, CTUIR's Fishery Habitat Program has been better able to develop process-based restoration actions and strategies at a watershed scale in a more holistic fashion.

CTUIR's First Foods policy and Umatilla River Vision combined with the Fisheries Habitat Programs Riverine Ecosystem Planning Approach (Figure 40) provide a systematic, holistic watershed planning approach to restoration efforts. This approach includes the prioritization of focal areas and management practices based on key species limiting factors with a mechanism for adaptive management that utilizes scientifically defensible techniques using 5 basic stages of scoping, assessment, monitoring, implementation, and reporting. Scoping allows for the interface of community needs and issues with resource priorities. Issues and concerns developed through scoping help direct the needs defined for assessment. Using existing and collected data, assessments are developed with the intent to prioritize issues, identify limiting factors, and define project objectives. Monitoring plans that utilize scientific knowledge and accepted methodology are then developed to measure achievement of project objectives. During the planning and design, actions are designed to address limiting factors through means that restore natural channel and floodplain processes. The final stage of reporting provides an opportunity to summarize monitoring and project actions and evaluate results after which time changes can be made based on outcomes and approaches to future project work can be improved.



(Figure 40. Flow chart for CTUIR's Fisheries Habitat Programs Riverine Ecosystem Planning Approach)

This Project has the ability to freely develop projects within the geographic boundary of the NFJD to meet its goal and must prioritize and select restoration action types and locations based on scientifically defensible strategies and the best available scientific information. Given the NFJD's size and spatial distribution of other entities working within the Focal GAs were identified through the Fisheries Habitat Programs Riverine Ecosystem Planning Approach for the Projects 2007 ISRP Proposal based upon 5th field HUC limiting factors and priorities listed in the Subbasin Plan have been maintained. Focus areas of other BPA funded cooperators noted in the "project Relationships" tab largely work in the southern and western portions of the NFJD outside of the Projects Focal GAs allowing The Project and their cooperators to improve conditions more holistically then a 'competitive scattergun' approach would allow. Within the Focal GAs distinct efforts to coordinate and prioritize efforts and develop work plans will continue and are helped along by the development of documents such as actions plans (USFS, 2008, 2009, 2012) largely on public lands which encompass most of the tributary habitat supporting aquatic populations of concern. On privately owned land The Project and/or cooperators such as the NFJDWC and Monument SWCD work to build consensus among local communities where the potential for efforts across multiple properties exist. These approaches don't preclude The Projects undertaking an effort in response to the interests of a single landowner or working outside of Focal GAs where cooperators and significant limiting factors exist. In either case The Projects 'ridge top to ridge top' approach to implementation improves the cumulative effect of implemented actions.

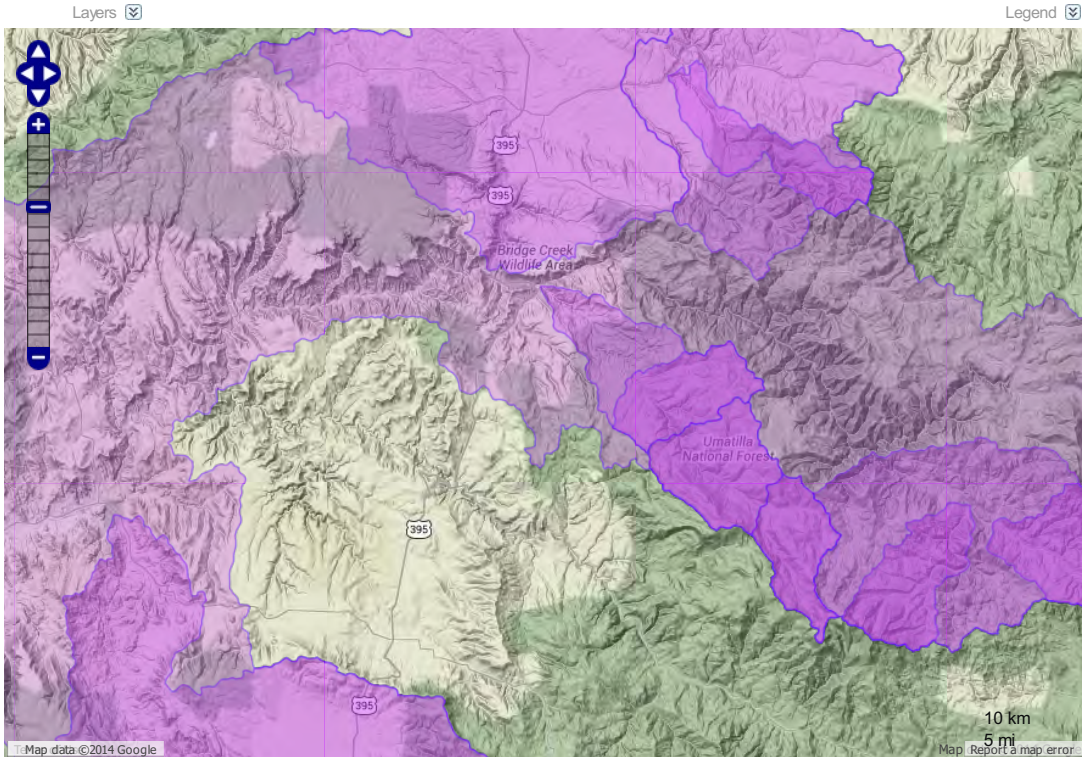
Project selection for annual Statements of Work begin with the previously noted Riverine Ecosystem Planning Approach to consider ecological factors of concern and technical, permitting, and funding feasibility, relative cost/benefit comparisons among potential efforts, and the capacities of potential cooperators. A number of different outreach efforts have been used including letters, calls, and stopping by to various levels of success. The Project has moved more toward calls and offers to meet to discuss prospective efforts although several opportunities have arisen through discussions between individuals who then ask for assistance from The Project's staff. Projects undertaken within Focal GAs are prioritized over those outside of these areas and on private property over those on public lands with consideration of limiting factors and known or potential cooperators. During an efforts development The Project discusses land management strategies and landowner objectives followed by one or more visits to the proposed site. Once information has been gathered from discussions with landowners and notes from site visits are compared to geomorphic, geologic, climactic, or other data The Project produces a document for the landowner outlining the projects feasibility providing rough sketches and or information to justify undertaking or declining the project. In instances where The Project cooperates

with public land management entities watershed actions plans are used to prioritize individual priority actions with selection depending upon design, permitting, and funding constraints. Final selection for individual annual performance periods relies upon The Projects lead biologist factoring practical considerations of property access, economic and permitting feasibility, internal policies, and successful coordination with cooperators during an efforts development. That is, The Projects lead biologist makes the final decision on which tasks will be undertaken through the development of annual Statements of Work and budgets.

Conflicts of interest are avoided through coordination between cooperators and contributions from each entity being secured and managed by that cooperator. If cost share is to be transferred between cooperators, cooperative agreements are signed by each party outlining contributions, roles of each party, and other requisite details.

Current scientific information is incorporated through the adaptive management and data collection and monitoring processes to refine implementation methods and monitoring practices. Attendance at professional development courses or symposiums supplements the adaptive management process.

Location



Name (Identifier)	Area Type	Source for Limiting Factor Information Type of Location	Count
North Fork John Day (17070202)	HUC 4	EDT (Ecosystem Diagnosis and Treatment)	453
Lower Camas Creek (1707020206)	HUC 5	EDT (Ecosystem Diagnosis and Treatment)	50
Desolation Creek (1707020204)	HUC 5	EDT (Ecosystem Diagnosis and Treatment)	38
Upper Camas Creek (1707020205)	HUC 5	EDT (Ecosystem Diagnosis and Treatment)	42
Cottonwood Creek (1707020209)	HUC 5	EDT (Ecosystem Diagnosis and Treatment)	34
Granite Creek (1707020202)	HUC 5	EDT (Ecosystem Diagnosis and Treatment)	51
Middle Desolation Creek (170702020403)	HUC 6	EDT (Ecosystem Diagnosis and Treatment)	16
Bull Run Creek (170702020202)	HUC 6	EDT (Ecosystem Diagnosis and Treatment)	7
Upper Desolation Creek (170702020402)	HUC 6	EDT (Ecosystem Diagnosis and Treatment)	12
Clear Creek (170702020204)	HUC 6	EDT (Ecosystem Diagnosis and Treatment)	16
Headwaters Desolation Creek (170702020401)	HUC 6	EDT (Ecosystem Diagnosis and Treatment)	3
Hidaway Creek (170702020503)	HUC 6	EDT (Ecosystem Diagnosis and Treatment)	10

Project Deliverables

Project Deliverables:

Manage and Administer The Project (DELV-1)

Management and administrative functions associated with habitat program provide the infrastructure, staff, coordination and resources to achieve objectives identified in this proposal. While individual deliverables constitute progress toward meeting physical habitat constraints the project shall work toward the end goal of restoring viable habitat for species of concern in concert with other entities and specialists within the NFJD from 2013 through 2018.

Types of Work:

Work Class	Work Elements
Planning and Coordination	114. Identify and Select Projects

*** Note for habitat work elements that are not associated with limiting factors which are known to be within this deliverable's location.**

Explanation: Where conservation agreements which include riparian fences exist regular inspections of tresspass during structure maintenance are required to protect sensitive areas.

Undertake Outreach (DELV-2)

Participate in public outreach and educational activities to increase awareness and knowledge about The Projects watershed restoration activities, and watershed resources and management. This includes but is not limited to conducting tours, presenting information at local government and group meetings, attending local fairs and participating in educational opportunities.

Types of Work:

Work Class	Work Elements
Planning and Coordination	99. Outreach and Education

Maintain Structures and Native Vegetation (DELV-3)

Maintain structures constructed by the Project and in coordination with cooperators to ensure function and adequacy of use. This may include maintenance of fences, buildings, gates, wells, spring developments, water gaps, or ponds constructed by the Project and maintained under conservation agreements. Methods and actions will be dependent upon the type of structure or treatment and will include regular surveys through the grazing season. Surveys will also identify and rectify trespass.

This deliverable will also include noxious weed control and native vegetation planting/maintenance where they occur. Treatments may consist of biological controls or herbicide treatments as the application and opportunities dictate. Treatments for planted native vegetation may include watering and maintenance for protective devices to reduce mortality.

Types of Work:

Work Class	Work Elements	
	26. Investigate Trespass	See note and explanation below *

*** Note for habitat work elements that are not associated with limiting factors which are known to be within this deliverable's location.**

Explanation: Maintaining the protection of sensitive areas identified by The Project and propagating desirable attributes of these areas requires not only regular inspection and repair of structures or developments and treatment of noxious weeds but determining the source of disrepair. This disrepair often results from cattle trespass into sensitive areas and repair without removing the cause is self-defeating.

Develop Designs, Permits, and Funding Opportunities Necessary to Undertake Implementation Efforts (DELV-4)

Develop active and passive implementation actions to be undertaken by The Project and their cooperators. Design practices and implementation methods will reflect the landowners and The Projects concerns and priorities, site conditions, and limiting factors. Design efforts will typically employ cross-sections, longitudinal profiles, topographic surveys, measures of sediment, photopoints and thermistors to identify existing site conditions and develop designs in CAD, HEC RAS, or other software. Designs may be created by The Project or by qualified contractors depending upon project complexity and risk. Designs and information use to develop them will be used for permitting and funding efforts to justify the technical feasibility and the preferred option developed for each action.

Types of Work:

Work Class	Work Elements
Planning and Coordination	175. Produce Design and/or Specifications

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Improve Stream Channel Morphology and Complexity along 1.1 Km of Fox Creek (DELV-5)

This Deliverable addresses the connectivity (habitat diversity), hydrology (temperature), riparian vegetation (riparian / floodplain), and geomorphology (sediment) River Vision touchstones.

In response to landowner concerns about the state and function of Fox Creek flowing through their properties, the North Fork John Day Watershed Council conducted an assessment along 32.2 Km of Fox Creek in 2009 resulting in a list of potential actions addressing hydrologic, geomorphic, and land management concerns. The Project contributed toward this effort, participated in the 'agency' prioritization meetings, and provided funding during 2012 for implementation actions. Limiting factors addressed by this effort and identified in the Subbasin Plan include channel stability, habitat diversity, fine sediment, high temperature, and riparian condition. Summer steelhead trout will benefit by restoring degraded riparian and floodplain habitats and improving water quality.

Thus far, 1.0 Km of channel have received treatments resulting in 14 LWD structures placed during 2011 and 19 constructed riffles to reduce preferential flow through a channel created during the 1960's to capture and pass high flows. The constructed channel captured most of Fox Creek's flows and as a result eroded to the point where the natural channel was abandoned. Efforts during 2013 will reduce streambank erosion with large wood and reconnect an irrigation diversion.

Without further work, detailed design and implementation costs cannot be determined for the proposed efforts beyond an initial total estimated total cost of $240,000 based upon previous and similar work.

Implementation includes the following primary categories of activities necessary to complete the project: Planning and Design – During 2014 NFJDWC shall contract the design of this reach and The Project will provide design input. Environmental Compliance – At this point permits for the project have not been secured although work toward this end will likely be a cooperative effort between the NFJDWC and The Project. Construction Subcontracting - Construction contracting will begin in early to mid-2014 once designs and funding have been secured. The NFJDWC will secure and administer the implementation contract, The Project will provide technical support during implementation, and the design engineer will complete staking and site preparation. Project Construction and Inspection – The NFJDWC and The Project will jointly monitor subcontractor compliance for the construction subcontract during the 15 July to 30 August in-stream work window and insure that environmental compliance requirements are being met. Inspection efforts will help ensure that the project is constructed as designed. Monitoring and Evaluation – Monitoring will likely consist of photopoints collected by the NFJDWC. Key Project Staff: John Zakrajsek will assist with design with Delbert Jones assisting during implementation.

Types of Work:

Work Class	Work Elements
Habitat	29. Increase Instream Habitat Complexity and Stabilization
	47. Plant Vegetation

Remove or Redistribute Mine Tailings along 3.2 Km of Bull Run Creek (DELV-6)

This Deliverable addresses the connectivity (habitat diversity), hydrology (temperature), riparian vegetation (riparian / floodplain), and geomorphology (sediment) River Vision touchstones.

Historic placer mining severely disturbed native habitat for summer steelhead trout, spring chinook salmon, rainbow trout, and bull trout along approximately 3.2 Km of Bull Run Creek throughout much of the stream channel and riparian/floodplain areas and left tailing piles in place. Tailings have effectively constrained Bull Run Creek's lateral connectivity to remnant of floodplain habitats, altered sediment routing and sorting, and reset in-stream habitat, complexity, and channel morphology. Although this project may not alter channel morphology directly it will at the very least restore floodplain connectivity allowing high stream flows to be distributed across the reestablished floodplain promoting more natural sediment and debris mobilization and deposition. This task was identified as an action in the Bull Run Creek Action Plan (USFS, 2012) and discussed during coordination meetings between the WNF, NFJDWC, and the Project.

Although the creeks historic potential likely resembled that of a narrow and relatively sinuous channel, past disturbances and current channel form suggest the channels potential at this point is somewhat less sinuous with weak pool-riffle sequences. Tailings will be removed from the site or recontoured to the extent possible with Deliverable 8 providing floodplain structure and supplementing natural processes and increasing habitat complexity for target species. Species benefiting from this action include summer steelhead trout, spring Chinook salmon, and bull trout. Without further work, detailed design and implementation costs cannot be determined beyond an initial total estimated total cost of $470,000 based upon previous and similar work.

Implementation includes the following primary categories of activities necessary to complete the project: Planning and Design – During 2014 the WNF and The Project's staff will conduct a topographic survey with cooperative design efforts to follow in 2015. Secure Funding – Thus far, funds beyond those identified here have not been outlined save those available through the WNF and The Project to support an implementation design. Environmental Compliance – Permits have not yet been secured although the WNF will take the lead on those with assistance from The Project to the extent possible. Construction Subcontracting - Construction contracting cannot be completed without acceptable designs which will not be available until mid to late 2015. However, given the experience of WNF staff an equipment rental contract will likely be used. Staking and site preparation activates will be jointly completed by WNF and The Project's staff. Project Construction and Inspection – WNF and Project staff will jointly provide onsite oversight and grade check during implementation to monitor compliance of subcontractor with all terms and conditions associated with the construction subcontract and environmental compliance requirements during the 15 July to 15 August in-stream work window. Inspection will help ensure that the project is constructed as designed. Monitoring and Evaluation – Following completion of construction activities, monitoring will collect post-construction data to evaluate results and trends. The roles of cooperators and specific metrics used to monitoring data collection have not yet been identified. Key Project Staff: John Zakrajsek will assist with design efforts with Delbert Jones assisting during implementation.

Types of Work:

Work Class	Work Elements
Habitat	47. Plant Vegetation
	52. Remove Mine Tailings

Improve Stream Channel Complexity Along 0.6 Km of Granite Creek (DELV-7)

This Deliverable addresses the geomorphology (in-channel characteristics), connectivity (habitat diversity), hydrology (high temperature, sediment), and riparian vegetation (riparian / floodplain) River Vision touchstones.

Historic placer mining severely disturbed native habitat for summer steelhead trout, spring Chinook salmon, rainbow trout, and bull trout along this portion of Granit Creek. This project follows up on a 2013 effort along a 0.6 Km reach of Granite Creek and is representative of actions the Project becomes involved in within Focal GA (Granite Creek) in cooperation with private landowners. Although the channels historic potential likely resembled that of a narrow and relatively sinuous channel, past disturbances and current channel form suggest the channels potential at this point is somewhat less sinuous with stronger pool-riffle sequences. This should not suggest the project is unworthy of undertaking, it only recognizes reset conditions given the extent of past disturbances. Channel reconstruction tied to large wood complexes and cross veins will be installed to enhance large pool habitat increase channel complexity, and reduce streambank erosion. While The Project recognizes the desirability of a single thread channel form increasing access to floodplain micro habitats such as seasonally active side channels and wetlands will increasing habitat complexity for target fish. Without further work, detailed design and implementation costs cannot be determined beyond an initial total estimated total cost of $150,000 based upon previous and similar work.

Implementation includes the following primary categories of activities necessary to complete the project: Planning and Design – Thus far the Project has met with the landowner, completed baseline surveys, collected topographic and channel morphology data, and will develop implementation designs in 2014. Secure Funding- Funding will be in large part if not completely sourced through BPA. Other potential sources shall be identified and secured as time allows. Environmental Compliance/Permits – Permits related to cultural resources will be secured through consultation with SHPO and ESA compliance will be completed through BPA's cultural resource program. Programmatics used for implementation will include BPA's HIP III or the UNF's ARBA II. Construction Subcontracting Preparation – The project shall secure and administer an implementation contract complete construction site layout and staking in 2014. Project Construction and Inspection – The Project's staff will provide onsite inspection, oversight, and grade checking during project construction activities between 15 July and 15 August to monitor compliance of subcontractor with all terms and conditions associated with the construction subcontract and environmental compliance requirements are being met. Inspections will help ensure that the project is constructed as designed. Monitoring and Evaluation – Following completion of construction activities, monitoring will continue to collect post-construction data to evaluate results and trends associated with the project. For additional information, refer to sections in this proposal pertaining to planning M&E activates. Key Project Staff: John Zakrajsek will be the lead project designer; Delbert Jones assisting with all project activities.

Types of Work:

Work Class	Work Elements
Habitat	29. Increase Instream Habitat Complexity and Stabilization
	47. Plant Vegetation
	52. Remove Mine Tailings
Planning and Coordination	175. Produce Design and/or Specifications

*** Note for habitat work elements that are not associated with limiting factors which are known to be within this deliverable's location.**

Explanation: Investigate Trespass has been listed here due to its relationship with structure maintenance and stream channel, riparian and floodplain habitats. Sensitive areas are reserved to protect or restore/stabilize them from what are often the same type of disturbances that contributed to the issues at hand, that includes limiting factors identified within a particular site or across subbasins.

Develop a Grazing Management Plan for Pasture Surrounding 1.6 Km of Mud Creek (DELV-8)

This Deliverable addresses the connectivity (habitat diversity), vegetation (riparian & floodplain), hydrology (temperature) River Vision touchstones.

The primary purpose of this project is to improve grazing management practices in upland areas after Mud Creek's channel and riparian areas are no longer available to grazing cattle. The Project has met with the landowner and will construct a riparian exclusion fence during 2013 on the property protecting 1.6 Km of stream channel and 16 acres of riparian, floodplain, and upland habitats. Conversation with the landowner has more recently included the completion of a grazing management plan for the property which shall be further discussed later this year. This project represents The Projects desire to holistically address land management practices on private property in a Focal GA (Camas Creek) to the extent possible. In this instance, the landowner also has an interest in educational opportunities for Native American children which the Project will facilitate.

The landowner has also cooperated with ODFW to construct and maintain riparian fencing and with CTUIR to improve native summer steelhead trout populations. Estimated costs for the stock water development are estimated to be approximately $10,000 based upon previous and similar work with costs for the grazing management plan unknown at this time.

Implementation includes the following primary categories of activities necessary to complete the project: Planning and Design – Planning will begin during late 2013 with efforts concentrated upon locating a stock watering well to developed by The Project during 2014. During this period the landowner will begin speaking with NRCS and/or the Umatilla Basin Watershed Council about developing a grazing management plan for the property once the stock well has been completed. Secure Funding- Funding for the stock well will be provided by The Project. Potential funding beyond BPA funds may include programs through NRCS. Environmental Compliance/Permits – Permits will be secured as needed although permitting will be minimal. Construction Subcontracting Preparation – The Project will secure a qualified contractor to complete the stock water well and work with the landowner to coordinate with the NRCS as necessary. Construction and Inspection – The Project will administer stock watering well development and work with the landowner during 2014 to secure a grazing management plan. Monitoring and Evaluation – Monitoring activities shall consist of photopoints to identify progress toward vegetative recovery within the 2013 riparian enclosure.. Key Project Staff: John Zakrajsek and Delbert Jones.

Types of Work:

Work Class	Work Elements
Planning and Coordination	175. Produce Design and/or Specifications

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Replace the Junkins Creek Culvert I (DELV-9)

This Deliverable will address connectivity (passage barriers), geomorphology (in-channel characteristics), and hydrology (sediment) River Vision touchstones.

Replacement of the Junkins Creek Culvert II will remove a priority barrier to adult and juvenile summer steelhead and bull trout restricting passage to approximately 4.0 Km of available high quality and cold water habitat. This represents actions undertaken by The Project within Focal GAs and where an action is identified in a Draft Action Plan (USFS, 2009) to address acknowledged priority issues. The reaches potential condition is a higher gradient step-pool channel below pool-riffle habitats. In addition to the culvert replacement channel grade will need to be adjusted with rock due to sediment deposition above the culvert. Without further work, detailed design and implementation costs cannot be determined beyond an initial total estimated replacement cost of $125,000 based upon previous and similar work.

Implementation shall include the following primary categories of activities necessary to complete the project: Planning and Design – Designs surveys were completed by the UNF and The Project in 2013 and will be followed by UNF design in 2014/14. Secure Funding- Implementation funding sources have not been identified beyond those included in this proposal from The Project. Additional funding from competitive grants may be secured by the NFJDWC. Environmental Compliance/Permits – The UNF will complete NEPA documentation and utilize available programmatic permits for this effort. Construction Subcontracting Preparation – The UNF will secure and administer an implementation contract during early 2014. Project Construction and Inspection – Implementation will occur during the 15 July to 15 August in-stream work window. CTUIR staff will support UNF provide onsite inspection, oversight, and grade checking during project construction activities to monitor compliance of subcontractor with all terms and conditions and environmental compliance requirements are being met. Inspection efforts will help ensure that the project is constructed as designed. Monitoring and Evaluation – Following completion of construction activities WNF engineers and biologists will assess conditions during regular road and culvert stability surveys and habitat or aquatic surveys. Key Project Staff: John Zakrajsek and Delbert Jones.

Types of Work:

Work Class	Work Elements
Habitat	29. Increase Instream Habitat Complexity and Stabilization
	184. Install Fish Passage Structure

Restore Stream Channel Complexity Along 0.5 Km of Desolation Creek (DELV-10)

This Deliverable will address vegetation (riparian & floodplain), geomorphology (in-channel characteristics) and hydrology (sediment) River Vision touchstones.

The Desolation Creek In-stream project will address channel instability along a 0.5 Km reach influenced by grazing management practices. The site lies within a privately owned 13,000 acre parcel the owner of which has discussed other potential actions with The Project. This is representative of cooperative actions The Project becomes involved in where private lands lie within Focal GAs to treat unstable channel conditions and grazing management being addressed by the grazing allotment permittee and ODFW. Species of primary concern are juvenile and adult summer steelhead, spring Chinook salmon, and bull trout. The reaches potential condition is a meandering riffle-pool dominated stream type within a moderately sized riparian floodplain. Large wood complexes would be installed to enhance large pool habitat and reduce streambank erosion and while it is recognized that the primary channel is a single-threaded plan form, existing floodplain micro habitats such as active side channels will be used to increasing habitat complexity for target fish species and allowed to evolve naturally. Conceptual designs include two 'toe-wood' structures, three LWD structures within the channel, and several constructed riffles or boulder grade control structures. Total estimated total costs will be approximately $125,000 based upon previous and similar work with a final treatments and costs determined during design efforts and after implementation bids are secured.

Implementation shall include the following primary categories of activities necessary to complete the project: Planning and Design – The Project has completed baseline surveys to develop a conceptual design. Once a conservation agreement has been secured The Project will complete a detailed topographic survey, collect other data, and model hydrologic processes to base a design upon during 2014. Secure Funding- Funding beyond that noted in this proposal has not been identified save during conversations with ODFW (BPA Project #198402100) who will be installing riparian enclosures in cooperation with the grazing allotment permittee. Additional funding will be secured through competitive grants, cooperators (likely the NFJDWC). The landowner may provide materials if an agreement can be reached. Environmental Compliance/Permits – In addition to securing requisite permits through SHPO the Project will obtain ESA compliance through BPA's HIP III programmatic. Construction Subcontracting Preparation – An implementation contract shall be secured and administered by The Project who will also complete site layout and staking. Project Construction and Inspection – The Project's staff in conjunction with cooperators will provide onsite inspection, oversight, and grade checking during the 15 July to 15 August in-stream work window construction activities to monitor compliance of subcontractor with all terms and conditions associated with the construction subcontract and that environmental compliance requirements are being met. Inspection will ensure that the project is constructed as designed. Monitoring and Evaluation – Following completion of construction activities, monitoring will collect post-construction data to determine effort status and trends associated with the effort. Key Project Staff: John Zakrajsek will be the lead project designer. Delbert Jones will assist in all project activities.

Types of Work:

Work Class	Work Elements
Habitat	29. Increase Instream Habitat Complexity and Stabilization
	47. Plant Vegetation
Planning and Coordination	175. Produce Design and/or Specifications

Limiting Factors in addition to the Known Limiting Factors:
For information about the known limiting factors in this project deliverable's location, go to Appendix: Limiting Factors.

Limiting Factor: 8.1: Water Quality: Temperature
Explanation: Desolation Creek is listed as a temperature limited stream (ODEQ, 2010)

Replace the Bull Run Creek Culvert (DELV-11)

This Deliverable will address connectivity (passage barriers), geomorphology (in-channel characteristics), and hydrology (sediment) River Vision touchstones.

This project will return access to approximately 16.1 Km of existing high quality habitat for adult and juvenile summer steelhead trout and bull trout, and rainbow trout following a 2013 effort to remove a partial passage barrier. This action is representative of actions undertaken by The Project within a Focal GA (Granite Creek) in cooperation with the WNF and others and where an action plan (USFS, 2012) has prioritized multiple actions throughout a subbasin addressing limiting factors. The channels historic potential likely resembled that of a narrow step pool or pool-riffle channel which differs from its current steep pool-riffle sequences highly constrained by placer mine tailings. Design efforts are currently underway. Without further work, detailed design and implementation costs cannot be determined beyond an initial total estimated replacement cost of $150,000 based upon previous and similar work. A detailed list of treatments and costs will be determined after the final

design has been completed and implementation bids are secured. Cost share contributions from cooperators have not yet been identified.

Implementation includes the following primary categories of activities necessary to complete the project: Planning and Design – Design surveys and designs were completed by then during 2013. Secure Funding- The WNF has secured funding in support of this effort and the NFJDWC has applied for Grant finding in support of this action. Additional funding will be provided by The Project. Environmental Compliance/Permits – The WNF will complete all NEPA documentation and utilize available programmatic permits. Construction Subcontracting Preparation – The WNF will secure and administer an implementation contract. Project Construction and Inspection – The Projects staff will support the WNF staff in providing onsite inspection, oversight, and grade checking during the 15 July to 15 August in-stream work window to monitor compliance of subcontractor with all terms and conditions and environmental compliance requirements are being met. Inspection will help ensure that the project is constructed as designed. Monitoring and Evaluation – Following completion of construction activities WNF engineers and biologists will assess conditions during regular road and culvert stability surveys and habitat or aquatic surveys. Key Project Staff: John Zakrajsek and Delbert Jones.

Types of Work:

Work Class	Work Elements
Habitat	29. Increase Instream Habitat Complexity and Stabilization
	184. Install Fish Passage Structure
Planning and Coordination	175. Produce Design and/or Specifications

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Restore Stream Channel Complexity Along 5.6 Km of Camas Creek (DELV-12)

This Deliverable will address geomorphology (in-channel characteristics), connectivity (habitat diversity), hydrology (high temperature, sediment), and riparian vegetation (riparian / floodplain) River Vision touchstones.

This Deliverable will address channel instability along a 5.6 Km reach of Camas Creek strongly influenced by grazing management practices and the construction of Oregon State Route 244. The property is privately owned and represents actions The Project undertaken within Focal GAs to address unstable channel conditions and grazing management. The Project will be working with the landowner to improve upland stock watering opportunities and rotational grazing management and restrict cattle presence in the stream channel and floodplain areas. The Project actively address existing conditions resulting from historic management practices that have resulted in the current over-widened plain bed high gradient and continuous riffle habitat and simplified stream channel and floodplain habitats. While the reaches historic potential condition was a likely a moderately sinuous single thread pool-riffle channel with extensive off channel habitat a SR 244 will reduce the extent of off-channel habitat development. Large wood and/or rock structures will increase baseflow width to depth ratios by inducing appropriate sediment deposition and enhancing regular habitat sequences to create a much more complex stream channel and improve floodplain connectivity and access to off-channel habitats. Species benefiting from this action include adult and juvenile summer steelhead trout, spring Chinook salmon, and bull trout. Without further work, detailed design and implementation costs cannot be determined beyond an initial total estimated total cost of $350,000 based upon previous and similar work. A detailed list of treatments and costs will be determined after the final design have been completed and implementation bids are secured. Cost share contributions from cooperators have not yet been identified.

Project implementation shall include the following primary categories of activities necessary to complete the project: Planning and Design – The Project will complete baseline surveys in 2015 to identify stream channel and floodplain conditions upon which to base designs. Surveys shall identify specific conditions across the floodplain and stream channel to develop design criteria, conceptual designs, and final design criteria which will include hydrologic and hydraulic modeling to assess hydraulic parameters, and evaluate design criteria. Design will occur later that year by The Project or a qualified and yet unnamed design contractor. Secure Funding- Funding beyond that noted in this proposal has not been identified although potential cooperators include the NFJDWC and ODFW's John Day Habitat Enhancement Project (BPA Project #198402100) and others not yet named. Additional requisite funding will be secured through competitive grants by The Project and/or cooperators. Environmental Compliance/Permits – Cultural resource surveys will in all likelihood be completed by BPA's Cultural Resource staff with the balance of covered by BPA's HIPIII Programmatic permit. Construction Subcontracting Preparation – At this time The Project will likely secure and administer an implementation contract with construction site layout and staking completed by The Project or design contractor. Project Construction and Inspection – The Project's staff will complete or coordinate with design engineer selected during the 2015 and 2016 15 July to 15 August in-stream work window to provide onsite inspection, oversight, and grade checking during implementation activities to monitor compliance of subcontractor with all terms and conditions associated with the construction subcontract and that environmental compliance requirements are being met. Inspection will ensure the project is constructed as designed. Monitoring and Evaluation – Following completion of construction activities, monitoring efforts will collect post-construction data to complete as-built designs, status of the effort, and long term trends not associated with RM&E efforts. Key Project Staff: John Zakrajsek will be the lead project designer. Delbert Jones will assist in all project activities.

Types of Work:

Work Class	Work Elements
Habitat	29. Increase Instream Habitat Complexity and Stabilization
	30. Realign, Connect, and/or Create Channel
	47. Plant Vegetation
Planning and Coordination	175. Produce Design and/or Specifications

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Place Large Wood along Approximately 3.2 Km of Bull Run Creek (DELV-13)

This Deliverable will address vegetation/floodplain, hydrology (temperature and sediment), and geomorphology (channel stability) River Vision touchstones.

Historic placer mining severely disturbed native habitat for summer Steelhead trout, spring Chinook salmon, rainbow trout, and bull trout across this portion of Bull Run Creek's floodplain where placer mine tailing piles were left in place. These piles effectively constraine Bull Run Creek's lateral connectivity with the remnants of floodplain and completely reset in-stream habitat, complexity, channel morphology, and sediment sorting and routing. Although this project will not directly address stream channel morphology it is directly tied to the Bull Run Mine Tailing Redistribution Deliverable and will provide floodplain structure and plantings to jumpstart native vegetative populations on freshly graded surfaces. Importing extensive amounts of topsoil would be cost prohibitive and although tailing piles contain some finer materials the volume aren't significant enough to hold water through the summer. As such, placement of large wood will provide floodplain structure and promote sediment and debris deposition on the floodplain while protecting planted vegetation during high flows. This item was identified as an action in the Bull Run Creek Action Plan (USFS, 2012) and has been discussed during a coordination meeting between the WNF, NFJDWC, and the Project. Total labor costs have been estimated to be approximately $480,000 based upon previous and similar work. A detailed list of treatments and costs will be determined after the final design is completed and implementation bids are secured.

Implementation shall include the following primary categories of activities necessary to complete the project: Planning and Design – Thus far coordination beyond initial discussions have only outlined a survey of the site planned for 2015 with design and implementation to follow in 2016 and 2017. Secure Funding – Thus far, funds beyond those identified here have not been identified save those to support WNF personnel during survey and design. Once a final design has been secured implementation will occur over several years as additional funding through competitive grants and the WNF are secured. Environmental Compliance – At this point permits have not been secured although the WNF will take the lead through their NEPA process. Construction Subcontracting - Construction contracting cannot be completed without acceptable designs and will likely consist of equipment rental or volumetric rates through a qualified contractor. Staking and site preparation activates will be jointly completed by WNF and Project staff. Project Construction and Inspection – WNF and Project staff will jointly provide onsite oversight and grade check during implementation to monitor compliance of subcontractor with all terms and conditions associated with the construction subcontract environmental compliance requirements are being met. Inspection will help ensure that the project is constructed as designed. In addition to construction inspection, typically large construction projects require daily presence of cultural resource observers. Monitoring and Evaluation – Following completion of construction activities monitoring will likely consist of photopoints although discussions have not yet identified final metrics or the roles of cooperators. Key Project Staff: John Zakrajsek will assist with design with Delbert Jones assisting during implementation.

Types of Work:

Work Class	Work Elements
Habitat	47. Plant Vegetation

Planning and Coordination	175. Produce Design and/or Specifications

Replace the Junkins Creek Culvert II (DELV-14)

This Deliverable will address bio-connectivity (passage barriers), geomorphology (in-channel characteristics), and hydrology (sediment) River Vision touchstones.

Replacement of the Junkins Creek Culvert II will remove a known barrier to adult and juvenile summer steelhead and bull trout restricting passage to approximately 3.7 Km of available high quality cold water habitat. This item is representative of actions The Project becomes involved within Focal GAs and where an action is identified in a Draft Action Plan (USFS, 2009) to address acknowledged priority issues. In addition to the culvert replacement channel grade will be adjusted with rock or wood structures due to excessive sediment deposition above the culvert and scour below. Species benefiting from this action include summer steelhead trout and bull trout. Without further work, detailed design and implementation costs cannot be determined beyond an initial estimated replacement cost of $150,000 based upon previous and similar work.

Project implementation shall include the following major categories of activities necessary to complete the project: Planning and Design – Designs surveys are expected to be completed during 2015 by the UNF and The Project followed by a UNF design later that year. Secure Funding- Implementation funding sources have not been identified beyond those included in this proposal from The Project. Additional funding from competitive grants may be secured by the NFJDWC. Environmental Compliance/Permits – The UNF will complete NEPA documentation and utilize available programmatic permits. Construction Subcontracting Preparation – The UNF will secure and administer an implementation contract during early 2014. Project Construction and Inspection – Implementation will occur during the 15 July to 15 August in-stream work window. CTUIR staff will support UNF provide onsite inspection, oversight, and grade checking during project construction activities to monitor compliance of subcontractor with all terms and conditions and environmental compliance requirements are being met. Inspection efforts will help ensure that the project is constructed as designed. Monitoring and Evaluation – Following completion of construction activities WNF engineers and biologists will assess conditions during regular road and culvert stability surveys and habitat or aquatic surveys. Key Project Staff: John Zakrajsek and Delbert Jones.

Types of Work:

Work Class	Work Elements
Habitat	29. Increase Instream Habitat Complexity and Stabilization
	184. Install Fish Passage Structure

Place Large Wood within the Floodplains of Desolation and Clear Creeks (DELV-15)

This Deliverable will address riparian vegetation (riparian / floodplain) and geomorphology River Vision touchstones.

The Desolation and Clear Creek Wood Placement will address riparian and floodplain complexity along a 4.8 Km reach of Desolation Creek and a 3.2 Km reach of Clear Creek influenced by historic grazing management and mining practices. The sites lie within UNF managed lands and represents actions the Project becomes involved within Focal GAs (Desolation and Granite Creeks respectively). This will indirectly improve habitat for adult and juvenile summer steelhead trout, spring Chinook salmon, bull trout, and rainbow trout. Large wood shall be placed (root ball and bole), not buried, within the riparian and floodplain areas to promote sediment and debris deposition using wood made available through various UNF projects. Native vegetative plantings associated with these placements will be protected from browse and high stream flows by the large wood itself. Without further work, detailed design and implementation costs cannot be determined beyond an initial estimated cost of $30,000 based upon previous and similar work. Final costs will be determined after the final design and implementation bids are secured.

Implementation shall include the following primary categories of activities necessary to complete the project: Planning and Design – The Project will coordinate with UNF biologists and hydrologists to identify specific locations. Thus far, conversations between cooperators have begun to identify conceptual designs with final designs expected in 2015. Secure Funding- Funding beyond that noted in this proposal has not been identified to date although due to the extent of the proposed efforts funds provided by the Project should be adequate. Environmental Compliance/Permits – The UNF will secure NEPA documentation. Construction Subcontracting Preparation – Contracts will likely be secured and administered by The Project with implementation occurring in 2016. Final implementation approval shall be granted by the UNF and The Project. Project Construction and Inspection – Activities shall include access preparation and site selection to be completed by cooperators. Monitoring and Evaluation – Monitoring will in all likelihood consist of photopoints. Key Project Staff: John Zakrajsek and Delbert Jones will assist in all project activities.

Types of Work:

Work Class	Work Elements
Habitat	47. Plant Vegetation
Planning and Coordination	175. Produce Design and/or Specifications

Replace the Sponge Creek Culvert (DELV-16)

This Deliverable will address bio-connectivity (passage barriers / entrainment), geomorphology (in-channel characteristics), and hydrology (sediment) River Vision touchstones.

Replacement of the Sponge Creek Culvert will remove a known priority barrier for adult and juvenile summer steelhead trout and opportunistic bull trout restricting passage to approximately 8.0 Km of available high quality cold water habitat. This item was detailed in the 2011 Statement of Work but dropped due to unexpected cost increases of another barrier replacement. This represents actions The Project becomes involved within Focal a GA (Desolation Creek) and where an action is identified in a Draft Action Plan (USFS, 2009) to address acknowledged priority issues. The reaches potential condition is a higher gradient step-pool channel below pool-riffle habitats. As such, in addition to the culvert replacement channel gradient will need to be adjusted as the existing culvert is input limited with respect to streamflow and sediment. Without further work, detailed design and implementation costs cannot be determined beyond an initial total estimated replacement cost of $155,000 based upon previous and similar work. A detailed list of treatments and costs will be presented after the final design and implementation bids are secured.

Implementation shall include the following primary categories of activities necessary to complete the project: Planning and Design –Discussions between the UNF and the Project have identified this and several other barriers for replacement. Survey and design work will begin in 2016 through a cooperative effort between the UNF, NFJDWC, and The Project. The Project will likely assist with the topographic survey with design work completed by UNF engineers with additional funding provided by the NFJDWC through competitive grants. Secure Funding- Funding sources have not yet been identified beyond those from The Project here to be used for implementation. The UNF will provide funding to support during design. Additional funding from competitive grants will likely be secured by the NFJDWC. Environmental Compliance/Permits – The UNF will complete NEPA documentation and utilize available programmatic permits for this effort. Construction Subcontracting Preparation – The UNF will secure and administer an implementation contract. Project Construction and Inspection – The Project's staff will support UNF efforts to provide onsite inspection, oversight, and grade checking during project construction activities during the 15 July through 15 August 2017 in-stream work window to monitor compliance of subcontractor with all terms and conditions and environmental compliance requirements are being met. Inspection will help ensure that the project is constructed as designed. Monitoring and Evaluation – Following completion of construction activities WNF engineers and biologists will assess conditions during regular road and culvert stability surveys and habitat or aquatic surveys. Key Project Staff: John Zakrajsek and Delbert Jones.

Types of Work:

Work Class	Work Elements
Habitat	29. Increase Instream Habitat Complexity and Stabilization
	184. Install Fish Passage Structure

Replace the Deep Creek Culvert I (DELV-17)

This Deliverable will address bio-connectivity (passage barriers / entrainment), geomorphology (in-channel characteristics), and hydrology (sediment) River Vision touchstones.

Replacement of the Deep Creek I barrier removes a known passage barrier preventing access to approximately 1.6 Km of available high quality cold water habitat acceptable to adult and juvenile summer steelhead trout and bull trout. This item is representative of actions The Project becomes involved within Focal GA (Granite Creek) and where an action is identified in an Action Plan (USGS, 2012) to address acknowledged priority issues. Without further work, detailed design and implementation costs cannot be determined beyond an initial total estimated replacement cost of $175,000 based upon previous and similar work. A detailed list of treatments and costs will be determined after the final design and implementation bids are secured.

Implementation shall include the following primary categories of activities necessary to complete the project: Planning and Design – Discussions between the WNF, NFJDWC, and The Project have identified this and several other culverts for replacement. Design surveys and designs shall be completed by UNF engineers in 2016. Secure Funding- Funding sources have not been identified beyond those from the Project included in this proposal to be used for implementation. The UNF will likely provide funding to support design and to an extent implementation activities. The balance will be secured by the NFJDWC through yet to be named competitive grant applications. Environmental Compliance/Permits – The WNF will complete NEPA documentation and utilize available programmatic permits. Construction Subcontracting Preparation – The UNF will secure and administer an implementation contract. Project Construction and Inspection – The Projects staff will support WNF staff during the 2017 15 July to 15 August in-stream work window to provide onsite inspection, oversight, and grade checking during project construction activities and monitor compliance of subcontractor with all terms and conditions and environmental compliance requirements are being met. Inspection efforts will help ensure that the project is constructed as designed. Monitoring and Evaluation – Following completion of construction activities WNF engineers and biologists will assess conditions during regular road and culvert stability surveys and habitat or aquatic surveys. Key Project Staff: John Zakrajsek and Delbert Jones.

Types of Work:

Work Class	Work Elements
Habitat	29. Increase Instream Habitat Complexity and Stabilization
	184. Install Fish Passage Structure

Replace the Deep Creek Culvert II (DELV-18)

This Deliverable will address bio-connectivity (passage barriers / entrainment), geomorphology (in-channel characteristics), and hydrology (sediment) River Vision touchstones.

Replacement of the Deep Creek II barrier remove a known priority barrier preventing access to approximately 3.2 Km of available high quality cold water habitat for adult and juvenile summer steelhead trout and bull trout. This item is representative of actions The Project becomes involved within Focal GA (Granite Creek) and where a project is identified in an Action Plan (USGS, 2012) to address acknowledged priority issues. Without further work, detailed design and implementation costs cannot be determined beyond an initial total estimated replacement cost of $175,000 based upon previous and similar work. A detailed list of treatments and costs will be determined after the final design and implementation bids are secured.

Implementation shall include the following major categories of activities necessary to complete the project: Planning and Design – This effort provides an example of those previously undertaken and will undertake between 2013 and 2018. Discussions between the WNF, NFJDWC, and The Project have identified this and several other culverts for replacement. Design surveys and designs shall be completed by UNF engineers in 2016. Secure Funding- Funding sources have not been identified beyond those from The Project included in this proposal to be used for implementation. The UNF will likely provide funding to support design efforts and to an extent implementation efforts. The balance will be secured by the NFJDWC through yet to be named competitive grant applications. Environmental Compliance/Permits – The WNF will complete NEPA documentation and utilize available programmatic permits for this effort. Construction Subcontracting Preparation – The UNF will secure and administer an implementation contract. Project Construction and Inspection – The Projects staff will support WNF staff during the 2017 15 July to 15 August in-stream work window to provide onsite inspection, oversight, and grade checking during project construction activities and monitor compliance of subcontractor with all terms and conditions and environmental compliance requirements are being met. Inspection efforts will help ensure that the project is constructed as designed. Monitoring and Evaluation – Following completion of construction activities WNF engineers and biologists will assess conditions during regular road and culvert stability surveys and habitat or aquatic surveys. Key Project Staff: John Zakrajsek and Delbert Jones.

Types of Work:

Work Class	Work Elements
Habitat	29. Increase Instream Habitat Complexity and Stabilization
	184. Install Fish Passage Structure

Place Large Wood along 0.5 Miles of Deep Creek (DELV-19)

This Deliverable will address geomorphology (in-channel characteristics), riparian/floodplain and hydrology (sediment) River Vision touchstones.

This project will provide stability and roughness adjacent to the two Deep Creek I & II Culvert Replacements previously discussed. This action will reduce sediment entrainment by improving streambank stability through LWD placements and native hardwood plantings along 0.8 Km of stream channel used by summer steelhead and bull trout for spawning and rearing. This item is representative of actions The Project becomes involved within Focal GA (Granite Creek) and where an action is identified in an Action Plan (USFS, 2012) to address acknowledged priority issues. The reaches potential condition is a higher gradient step-pool channel below pool-riffle habitats. Without further work, detailed design and implementation costs cannot be determined beyond an initial total estimated total cost of $87,000 based upon previous and similar work for both the Bull Run Creek and Deep Creep wood placements. A detailed list of treatments and costs will be determined after the final design and implementation bids are secured.

Implementation shall include the following Primary categories of activities necessary to complete the project: Planning and Design –Discussions between the WNF, NFJDWC, and The Project have identified this and several other actions which will address multiple factors in a short period of time. The WNF shall complete design surveys with design work occurring through a cooperative effort between the WNF and The Project during 2016. Secure Funding- Funding sources have not been identified beyond those included in this proposal from the Project. The UNF will provide funding to support design efforts to an extent and cooperators such as the NFJDWC will contribute funds secured through yet unnamed competitive grants. Environmental Compliance/Permits – The WNF will complete NEPA documentation and utilize available programmatic permits for this effort. Construction Subcontracting Preparation – The UNF will secure and administer an implementation contract. Project Construction and Inspection – The Projects staff will support WNF staff's implementation efforts within the 2017 15 July to 15 August in-stream work window for onsite inspections, oversight, and grade checking during implementation to monitor compliance of subcontractor with all terms and conditions and environmental compliance requirements are being met. Inspection efforts will help ensure that the project is constructed as designed. Monitoring and Evaluation – Following completion of construction activities, monitoring will likely consist of photopoints collected by The Project although discussions have not determined the roles of cooperators to this extent. Key Project Staff: John Zakrajsek and Delbert Jones.

Types of Work:

Work Class	Work Elements
Habitat	47. Plant Vegetation
Planning and Coordination	175. Produce Design and/or Specifications

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Complete Heavy Maintenance on Approximately 128.7 Km of Riparian Fence. (DELV-20)

This Deliverable will address riparian vegetation/floodplain, hydrology (temperature and sediment), and geomorphology (in-channel characteristics) River Vision touchstones.

On UNF approximately 128.7 Km of riparian areas about critical habitat for Summer Steelhead trout constructed approximately 20 years ago which is now in need of repair. This task will support a prioritized approach based on the age of fences and the resource benefit by exclude cattle to implement heavy maintenance and reconstruction where necessary using UNF and The Project's existing staff and/or local contractors as applications dictate. Limiting factors addressed include riparian condition, temperature, channel stability, habitat diversity, and

fine sediment. Total labor costs have been estimated to be approximately $40,000 per year based upon previous and similar work for three years with cost share from the UNF in the form of all necessary materials (final material cost dependent upon required maintenance).

Implementation shall include the following primary categories of activities necessary to complete the project: Planning and Design – Fences have been identified by UNF Range Conservationists and will be prioritized annually based upon grazing schedules and existing fence conditions relative to maximum benefit to aquatic species. To date approximately 30 miles of fence have been identified within the Camas Creek GA for reconstruction during 2015. Secure Funding – Thus far, funding to include those noted here from The Project supporting labor and materials to be supplied by the UNF have been identified. No other funding is expected or required. Environmental Compliance – The UNF will secure permits through their NEPA process. Construction Subcontracting – Contractors shall be secured by the UNF depending on the needs of reconstruction. More difficult fence repair will likely require their services. Construction and Inspection – UNF and The Project's supervisory staff will jointly provide onsite oversight and grade check during implementation to monitor compliance of subcontractor with all terms and conditions associated with the construction subcontract environmental compliance requirements are being met. Inspection will help ensure that the project is constructed as designed. Monitoring and Evaluation – The UNF has and will maintain photopoint monitoring efforts for this endeavor. Fence maintenance will be completed by grazing permittees. Key Project Staff: John Zakrajsek and Delbert Jones will assist UNF staff during implementation.

Types of Work:

Work Class	Work Elements
Habitat	40. Install Fence

Objectives & Project Deliverables

Objective: **Protect and Conserve Habitat and Ecological Processes Supporting Native Fish Population Viability (OBJ-1)**

Project Deliverables	*How the project deliverables help meet this objective**
Manage and Administer The Project (DELV-1)	Complete peripheral and overarching duties such as, management and administration, coordination with cooperators, and reporting efforts in fulfillment of annual statements of work and reporting requirements.
Undertake Outreach (DELV-2)	Complete peripheral and overarching duties related to effort management and development through outreach and education efforts not directly related to a specific restoration action undertaken by The Project.
Maintain Structures and Native Vegetation (DELV-3)	Maintain developed structures to ensure their effectiveness and longer term tasks to eradicate noxious weed infestations requiring multiple treatments over time.
Develop Designs, Permits, and Funding Opportunities Necessary to Undertake Implementation Efforts (DELV-4)	Collect data necessary to develop, permit, and fund implementation efforts in fulfillment of annual statements of work.
Improve Stream Channel Morphology and Complexity along 1.1 Km of Fox Creek (DELV-5)	Riparian fencing and adjustments to grazing management shall be used in conjunction with modifications to grazing management to restrict cattle access to Fox Creek and adjacent riparian areas. An assessment identified potential efforts along eight miles of Fox Creek.
Improve Stream Channel Complexity Along 0.6 Km of Granite Creek (DELV-7)	A conservation agreement will be secured to ensure proposed efforts will maintained over ten years. Treatments shall improve or maintain in-stream, riparian, and floodplain habitats within the conservation agreements boundaries.
Develop a Grazing Management Plan for Pasture Surrounding 1.6 Km of Mud Creek (DELV-8)	A conservation agreement will be secured to ensure proposed efforts will maintained over the next ten years along one mile (~100 acres) of Mud Creek. Treatments shall improve or maintain in-stream, riparian, and floodplain habitats within the conservation agreements boundaries.
Restore Stream Channel Complexity Along 0.5 Km of Desolation Creek (DELV-10)	This effort will complement another by ODFW who will secure a conservation agreement with the landowner to complete a riparian fence to protect existing summer steelhead trout habitat.
Restore Stream Channel Complexity Along 5.6 Km of Camas Creek (DELV-12)	A conservation agreement shall be secured before efforts begin to improve upland grazing and protect approximately four miles of Camas Creek including the associated floodplain. Although existing habitat has suffered greatly from past land management practices the document will improve and protect implemented measures and resulting habitat.
Complete Heavy Maintenance on Approximately 128.7 Km of Riparian Fence. (DELV-20)	The construction of these riparian fences in the 1980s has effectively protected stream channel and floodplain habitats and improved water quality. This action will allow for the continued use of these fence lines and therefore protection of water quality.

Objective: **Improve Passage to Existing High Quality Habitats (OBJ-2)**

Project Deliverables	*How the project deliverables help meet this objective**
Replace the Junkins Creek Culvert I (DELV-9)	Passage shall be improved by the removal and replacement of the existing round culvert with an open bottom culvert or pre-cast concrete style structure. Surveys supporting design work have not occurred and therefore final designs cannot be determined.
Replace the Bull Run Creek Culvert (DELV-11)	Passage shall be improved by the removal and replacement of the existing round culvert with an open bottom culvert or pre-cast concrete style structure. Surveys supporting design work have not occurred and therefore final designs cannot be determined.
Replace the Junkins Creek Culvert II (DELV-14)	Passage shall be improved by the removal and replacement of the existing round culvert with an open bottom culvert or pre-cast concrete style structure. Surveys supporting design work have not occurred and therefore final designs cannot be determined.
Replace the Sponge Creek Culvert (DELV-16)	Passage shall be improved by the removal and replacement of the existing round culvert with an open bottom culvert or pre-cast concrete style structure. Surveys supporting design work have not occurred and therefore final designs cannot be determined.
Replace the Deep Creek Culvert I (DELV-17)	Passage shall be improved by the removal and replacement of the existing round culvert with an open bottom culvert or pre-cast concrete style structure. Surveys supporting design work have not occurred and therefore final designs cannot be determined.
Replace the Deep Creek Culvert II	Passage shall be improved by the removal and replacement of the existing round culvert with

(DELV-18)	an open bottom culvert or pre-cast concrete style structure. Surveys supporting design work have not occurred and therefore final designs cannot be determined.

Objective: **Improve or Preserve Water Quality (OBJ-3)**

Project Deliverables	*How the project deliverables help meet this objective**
Improve Stream Channel Morphology and Complexity along 1.1 Km of Fox Creek (DELV-5)	A loss of floodplain storage and floodplain/riparian vegetation have reduced water quality in Fox Creek including water temperatures and summer stream flows as a result of decreased floodplain storage. By increasing in-stream complexity through the use of grade control structures, large wood, and native plantings heat flux into Fox Creek shall improve and floodplain storage.
Remove or Redistribute Mine Tailings along 3.2 Km of Bull Run Creek (DELV-6)	As a result of historic placer mining effective stream channel morphology, off channel habitat, connectivity between habitats, hyporheic complexity, and native vegetation necessary to maintain high water quality have been compromised. The result has been in Bull Run Creek's inability to meet TMDLs for temperature.
Restore Stream Channel Complexity Along 5.6 Km of Camas Creek (DELV-12)	In its current for the over widened plain bed stream channel provides for excessive thermal flux into Camas Creek. Additionally, the lack of localized scour prohibits complex hyporheic flows and their benefit to improving water quality. As a result of these factors and severely compromised riparian vegetation Camas Creek has been identified as a temperature limited stream by established TMDLs.
Complete Heavy Maintenance on Approximately 128.7 Km of Riparian Fence. (DELV-20)	Maintain the protection and recovery of water quality afforded by the prevention of cattle grazing and loitering in sensitive stream channel, riparian, and floodplain habitats.

Objective: **Improve Floodplain Connectivity (OBJ-4)**

Project Deliverables	*How the project deliverables help meet this objective**
Improve Stream Channel Morphology and Complexity along 1.1 Km of Fox Creek (DELV-5)	The existing channel has incised as a result of unrestricted cattle access, restricted lateral channel migration, and a loss of stream channel complexity and riparian vegetation which would otherwise reduce near bank shear stress. A combination of grade control structures, large wood placements, and native plantings will elevate the wetted channel to equal that of a typical 'bankfull' event thereby improving floodplain connectivity.
Remove or Redistribute Mine Tailings along 3.2 Km of Bull Run Creek (DELV-6)	Historic placer mining without associated restoration has effectively restricted or precluded floodplain connectivity throughout much of the Bull Run Creek basin through the presence of tailing piles immediately adjacent to the stream channel in many locations. Removing or redistributing tailings to a calculated 'bankfull' elevation shall dramatically improve floodplain connectivity.
Improve Stream Channel Complexity Along 0.6 Km of Granite Creek (DELV-7)	This site has suffered from historic placer mining and in turn restricted floodplain connectivity do to remaining tailing piles. The removal of tailings from the site or their redistribution shall improve both floodplain connectivity and access to off-channel habitats above existing levels to restore dynamically stable floodplain connectivity across approximately six acres of floodplain habitat.
Restore Stream Channel Complexity Along 0.5 Km of Desolation Creek (DELV-10)	The existing over widened channel shall be narrowed with appropriately placed structures to return dynamical stability and appropriate bankfull width to depth ratios to the stream channel and effective floodplain connectivity above a calculated bank-full event.
Restore Stream Channel Complexity Along 5.6 Km of Camas Creek (DELV-12)	In its current condition, floodplain connectivity has significantly decreased from historic levels as a result of channel over widening and in specific locations localized incision. Floodplain connectivity will be improved through a combination of stream channel treatments to improve/build an inset floodplain within the existing channel.

Objective: **Improve Riparian and Floodplain Complexity (OBJ-5)**

Project Deliverables	*How the project deliverables help meet this objective**
Improve Stream Channel Morphology and Complexity along 1.1 Km of Fox Creek (DELV-5)	The loss of riparian and floodplain vegetation as a result of intensive cattle grazing has effectively reduced floodplain complexity. While historic complexity cannot be regained given existing land management practices this effort will remove cattle from areas adjacent to the channel or access will be restricted by altered grazing practices. Additionally native vegetation shall be planted in association with large woody debris thereby improving riparian complexity and durability during high flow periods.
Remove or Redistribute Mine Tailings along 3.2 Km of Bull Run Creek (DELV-6)	Existing tailing piles across much of the historic floodplain have essentially precluded the growth of healthy native floodplain vegetative communities, maintenance of off-channel habitats, and appropriate stream channel process influencing these habitats. Removing mine tailings and the associated 'Bull Run Wood Placement' will restore floodplain habitats to allow and maintain native vegetative growth (stream shade) and dynamically stable floodplain, riparian, and stream channel habitats and processes.
Improve Stream Channel Complexity Along 0.6 Km of Granite Creek (DELV-7)	As a result of historic placer mining native vegetative populations have been severely disrupted and are largely non-existent along the creek or in the floodplain. Treatments may include large wood or rock placement or structures and native vegetative plantings within the riparian and floodplain areas to increase complexity and improve shall address sediment capture and long term debris recruitment.
Develop a Grazing Management Plan for Pasture Surrounding 1.6 Km of Mud Creek (DELV-8)	Although this action does not directly influence riparian and floodplain complexity it continues efforts to improve stock management and resource use as an extension of the exclusion fencing restricting access to one mile of Mud Creek.
Restore Stream Channel Complexity Along 0.5 Km of Desolation Creek (DELV-10)	Native vegetation is lacking in distinct locations and streambank erosion is eliminating the possibility of natural recruitment. A combination of streambank stability structures and native plantings along 0.3 miles of stream channel shall increase riparian/floodplain complexity.

Restore Stream Channel Complexity Along 5.6 Km of Camas Creek (DELV-12)	In its current condition, compromised stream channel morphology and processes and floodplain vegetative associations resulting from grazing management practices have effectively simplified much of the available floodplain habitat. Treatments to the floodplain and stream channel will remove cattle and improve native vegetative populations providing for long term woody debris entrainment and stream channel modifications will improve seasonal floodplain inundation.
Place Large Wood along Approximately 3.2 Km of Bull Run Creek (DELV-13)	Large wood and associated plantings will increase floodplain complexity by creating short term floodplain complexity while improving native vegetation growth to provide a long term woody debris source.
Place Large Wood within the Floodplains of Desolation and Clear Creeks (DELV-15)	Associated native vegetative plantings shall improve streamside shade and promote debris deposition upon the floodplain thereby promoting future vegetative recruitment and floodplain health.
Place Large Wood along 0.5 Miles of Deep Creek (DELV-19)	Large wood and associated plantings will increase floodplain complexity by creating short term floodplain complexity while improving native vegetation growth to provide a long term woody debris source.
Complete Heavy Maintenance on Approximately 128.7 Km of Riparian Fence. (DELV-20)	Without protective fencing, riparian and floodplain areas will return to the extremely poor condition they were prior to fence construction in the 1980's. As one might expect, cattle loiter and concentrate in these areas without restriction over grazing both grass and woody vegetation and reducing the riparian and floodplain areas ability to withstand erosive flows during spring runoff.

Objective: **Improve Stream Channel Complexity and Morphology (OBJ-6)**

Project Deliverables	*How the project deliverables help meet this objective**
Remove or Redistribute Mine Tailings along 3.2 Km of Bull Run Creek (DELV-6)	The existing channel between tailing piles is typically over steepened, excessively narrow, or incised in specific locations with little to no structure provided by native vegetation of large wood. The combination of tailing removal or redistribution, large wood additions, and native plantings will allow natural processes to build upon specific actions not identified at this time thereby increasing stream channel complexity and morphology and therefore restore proper channel function.
Improve Stream Channel Complexity Along 0.6 Km of Granite Creek (DELV-7)	Channel complexities and morphology will be improved through a combination of tailing removal or redistribution, rock and/or wood structure development, and native vegetative plantings to increase floodplain roughness and dynamic stability of features beyond the bare tailings which currently exist. This may include improving access to existing off-channel habitat.
Develop a Grazing Management Plan for Pasture Surrounding 1.6 Km of Mud Creek (DELV-8)	Although this action does not directly influence channel condition and morphology it continues efforts to improve stock management and resource use as an extension of the exclusion fencing.
Replace the Junkins Creek Culvert I (DELV-9)	Replacement of the existing structure shall improve stream channel complexity and morphology by reestablishing appropriate stream gradient and form. The existing culvert is undersized and unable to adequately pass bankfull flows without reducing the passage of aquatic species, sediment or debris as witnessed by sediment and debris deposition above the culvert and excessive scour below. The new structure shall be designed using natural channel design to pass bank-full events unrestricted and capable of passing 100 events without damage to the road prism or structure.
Restore Stream Channel Complexity Along 0.5 Km of Desolation Creek (DELV-10)	The existing channel is over-widened resulting in excessively low baseflow width to depth rations and a plain-bed armored channel with little complexity or habitat. Treatments developed for this site may include streambank stabilization structures, rock grade control structures, and large wood structures to increase width to depth rations, increase habitat complexity, and create and maintain localized scour. The effort will also reduce potential damage to a nearby road.
Replace the Bull Run Creek Culvert (DELV-11)	Replacement of the existing structure shall improve stream channel complexity and morphology by reestablishing appropriate stream gradient and form. The existing culvert is undersized and unable to adequately pass bankfull flows without reducing the passage of aquatic species, sediment or debris as witnessed by sediment and debris deposition above the culvert and excessive scour below. The new structure shall be designed using natural channel design to pass bank-full events unrestricted and capable of passing 100 events without damage to the road prism or structure.
Restore Stream Channel Complexity Along 5.6 Km of Camas Creek (DELV-12)	The existing over widened plane-bed channel largely consisting of continuous high gradient riffle habitat shall be modified through the judicious use of wood and or rock structure to create a dynamically stable channel with appropriately spaced and maintained habitats and width/depth ratios. Longer term stability shall be reinforced through riparian and floodplain native vegetation plantings to create a source for long term woody debris entrainment.
Place Large Wood along Approximately 3.2 Km of Bull Run Creek (DELV-13)	Large wood and associated native vegetative plantings shall be used to create and maintain floodplain and off-channel habitat complexity and roughness.
Replace the Junkins Creek Culvert II (DELV-14)	Replacement of the existing structure shall improve stream channel complexity and morphology by reestablishing appropriate stream gradient and form. The existing culvert is undersized and unable to adequately pass bankfull flows without reducing the passage of aquatic species, sediment or debris as witnessed by sediment and debris deposition above the culvert and excessive scour below. The new structure shall be designed using natural channel design to pass bank-full events unrestricted and capable of passing 100 events without damage to the road prism or structure.
Place Large Wood within the Floodplains of Desolation and Clear Creeks (DELV-15)	Large wood placements in conjunction with native vegetative plantings shall promote long term woody debris entrainment into the stream channel thereby improving channel complexity through natural processes.
Replace the Sponge Creek Culvert (DELV-16)	Replacement of the existing structure shall improve stream channel complexity and morphology by reestablishing appropriate stream gradient and form. The existing culvert is undersized and unable to adequately pass bankfull flows without reducing the passage of aquatic species, sediment or debris as witnessed by sediment and debris deposition above

	the culvert and excessive scour below. The new structure shall be designed using natural channel design to pass bank-full events unrestricted and capable of passing 100 events without damage to the road prism or structure.
Replace the Deep Creek Culvert I (DELV-17)	Replacement of the existing structure shall improve stream channel complexity and morphology by reestablishing appropriate stream gradient and form. The existing culvert is undersized and unable to adequately pass bankfull flows without reducing the passage of aquatic species, sediment or debris as witnessed by sediment and debris deposition above the culvert and excessive scour below. The new structure shall be designed using natural channel design to pass bank-full events unrestricted and capable of passing 100 events without damage to the road prism or structure.
Replace the Deep Creek Culvert II (DELV-18)	Replacement of the existing structure shall improve stream channel complexity and morphology by reestablishing appropriate stream gradient and form. The existing culvert is undersized and unable to adequately pass bankfull flows without reducing the passage of aquatic species, sediment or debris as witnessed by sediment and debris deposition above the culvert and excessive scour below. The new structure shall be designed using natural channel design to pass bank-full events unrestricted and capable of passing 100 events without damage to the road prism or structure.
Place Large Wood along 0.5 Miles of Deep Creek (DELV-19)	Large wood and associated native vegetative plantings shall be used to create and maintain floodplain and off-channel habitat complexity and roughness.
Complete Heavy Maintenance on Approximately 128.7 Km of Riparian Fence. (DELV-20)	Without protective fencing, the stream channel and its banks will return to the extremely poor condition they were prior to fence construction in the 1980's. As one might expect, cattle loiter and concentrate in these areas without restriction, cutting streambanks when accessing the channel, reducing the opportunity for large wood input to the channel by removing or hindering the growth of native vegetative species, and reducing the streams banks' ability to withstand erosive flows during spring runoff.

Objective: **Improve Sediment Routing and Sorting (OBJ-7)**

Project Deliverables	*How the project deliverables help meet this objective**
Remove or Redistribute Mine Tailings along 3.2 Km of Bull Run Creek (DELV-6)	The existing channel between tailing piles is generally over steepened, excessively narrow, or incised in specific locations with little to no structure provided by native vegetation or large wood. Channel character and a lack of access to floodplain areas have effectively concentrated stream energy, influenced sediment entrainment and deposition. Removal or recontouring the tailings will improve floodplain connectivity and allow appropriate sediment routing by reducing available sediment and stream energy during high flows.
Improve Stream Channel Complexity Along 0.6 Km of Granite Creek (DELV-7)	As previously noted, tailing piles influence sediment routing and sorting which is further complicated by the confluence of two creeks at the sites upper end. At this time, the site can be divided in half according to channel slope and in turn sediment distributions. Large wood and native planting shall provide for dynamically stable sediment routing and the maintenance of in-stream habitat types by providing necessary structure. Excessively high sediment loads from Clear Creek entering the site will need to be considered.
Replace the Junkins Creek Culvert I (DELV-9)	As noted above the existing culvert is incapable of passing sediment and debris as witnessed by sediment and debris deposition above the culvert. The new structure designed through natural channel methods will be capable of passing sediment and debris during bankfull and 100 year events.
Restore Stream Channel Complexity Along 0.5 Km of Desolation Creek (DELV-10)	The existing channel has at the very least influenced sediment routing allowing the deposition of smaller sediments within the active channel. Increasing width to depth ratios and stream channel complexity will help restore appropriate sediment deposition and scour.
Replace the Bull Run Creek Culvert (DELV-11)	As noted above the existing culvert is incapable of passing sediment and debris as witnessed by sediment and debris deposition above the culvert. The new structure designed through natural channel methods will be capable of passing sediment and debris during bankfull and 100 year events.
Restore Stream Channel Complexity Along 5.6 Km of Camas Creek (DELV-12)	Although this reach has in all likelihood always been a transport reach the temporary capture and release of sediments is no longer possible due to the existing channel form. Treatments to increase stream channel width to depth ratios shall again afford the possibility of sediment capture and maintenance thereby reinforcing pool/riffle/run sequences, shallow hyporheic cycling, and improving spawning and rearing opportunities for spring Chinook salmon and threatened steelhead and bull trout.
Replace the Junkins Creek Culvert II (DELV-14)	As noted above the existing culvert is incapable of passing sediment and debris as witnessed by sediment and debris deposition above the culvert. The new structure designed through natural channel methods will be capable of passing sediment and debris during bankfull and 100 year events.
Replace the Sponge Creek Culvert (DELV-16)	As noted above the existing culvert is incapable of passing sediment and debris as witnessed by sediment and debris deposition above the culvert. The new structure designed through natural channel methods will be capable of passing sediment and debris during bankfull and 100 year events.
Replace the Deep Creek Culvert I (DELV-17)	As noted above the existing culvert is incapable of passing sediment and debris as witnessed by sediment and debris deposition above the culvert. The new structure designed through natural channel methods will be capable of passing sediment and debris during bankfull and 100 year events.
Replace the Deep Creek Culvert II (DELV-18)	As noted above the existing culvert is incapable of passing sediment and debris as witnessed by sediment and debris deposition above the culvert. The new structure designed through natural channel methods will be capable of passing sediment and debris during bankfull and 100 year events.
Complete Heavy Maintenance on Approximately 128.7 Km of Riparian Fence. (DELV-20)	Without protective fencing, the stream channel and its banks will return to the extremely poor condition they were prior to fence construction in the 1980's. As one might expect, cattle loiter and concentrate in these areas without restriction over grazing both grass and woody vegetation, cutting streambanks by accessing the channel, and reducing the streams banks' ability to withstand erosive flows during spring runoff. The combined effects results in excessive sediment entrainment to the channel and eventual channel over-widening and or

down cutting as sediments are entrained.

Objective: **Improve Hyporheic Complexity (OBJ-8)**

Project Deliverables	*How the project deliverables help meet this objective**
Remove or Redistribute Mine Tailings along 3.2 Km of Bull Run Creek (DELV-6)	Although hyporheic flows and complexity likely still exist they differ from past conditions as a direct result of placer mining disturbances. A complete restoration would be cost prohibitive, however, improved channel morphology, floodplain conditions, and native vegetation shall improve sediment routing and sorting; thereby improving opportunities for aquatic species spawning and rearing.
Restore Stream Channel Complexity Along 0.5 Km of Desolation Creek (DELV-10)	The existing plain-bed channel does not appear to contain significant substrate complexity to support well developed hyporheic flows. Given the presence of high quality stringer meadows above this site improving the hyporheic complexity of Desolations Creek's mainstem will help improve water quality and build upon existing resources. Constructed structures will improve localized scour and deposition thereby improving hyporheic complexity.
Restore Stream Channel Complexity Along 5.6 Km of Camas Creek (DELV-12)	Although this has in all likelihood always been a transport reach the capture and maintenance of sediments would have reinforced shallow hyporheic cycles which the existing armored and plainbed channel is incapable of creating and sustaining. Alterations to the stream channel morphology and processes shall directly influence shallow hyporheic cycling by creating and maintaining localized scour and pool/riffle/run sequences.

Objective: **Increase Floodplain Storage (OBJ-9)**

Project Deliverables	*How the project deliverables help meet this objective**
Improve Stream Channel Morphology and Complexity along 1.1 Km of Fox Creek (DELV-5)	As previously noted the existing channel has incised as a result of unrestricted cattle access, restricted lateral channel migration, and a loss of riparian vegetation which would otherwise reduce near bank shear stress. Grade control structures will elevate the wetted channel to equal that of a typical 'bankfull' event thereby improving floodplain storage and the reaches ability to temper summer water temperatures.
Remove or Redistribute Mine Tailings along 3.2 Km of Bull Run Creek (DELV-6)	Addressing localized head cuts will improve floodplain storage and access to/from off-channel habitats/storage.
Restore Stream Channel Complexity Along 5.6 Km of Camas Creek (DELV-12)	Where localized head-cuts exist or where the over widened stream channel has incised, rock and/or large wood structures will reduce stream channel incision increase baseflow width to depth ratios to restore a dynamically stable bank-full elevation. This will improve floodplain connectivity to either the historic or a constructed in-set floodplain allowing for the natural deposition of sediment and debris, access to off channel habitats, and maintenance of existing or created off-channel habitats.

*This section was not available on proposals submitted prior to 9/1/2011

RM&E Protocols and Methods

RM&E Protocol	Deliverable	Method Name and Citation
Umatilla Subbasin Fish Habitat Restoration Monitoring Plan v1.0	Improve Stream Channel Morphology and Complexity along 1.1 Km of Fox Creek (DELV-5) Remove or Redistribute Mine Tailings along 3.2 Km of Bull Run Creek (DELV-6) Improve Stream Channel Complexity Along 0.6 Km of Granite Creek (DELV-7) Restore Stream Channel Complexity Along 0.5 Km of Desolation Creek (DELV-10) Restore Stream Channel Complexity Along 5.6 Km of Camas Creek (DELV-12) Place Large Wood along Approximately 3.2 Km of Bull Run Creek (DELV-13) Place Large Wood within the Floodplains of Desolation and Clear Creeks (DELV-15) Place Large Wood along 0.5 Miles of Deep Creek (DELV-19) Complete Heavy Maintenance on Approximately 128.7 Km of Riparian Fence. (DELV-20)	Benthic Macroinvertebrates v1.0 (Peck, D.V., Herlihy, A.T., Hill, B.H., Hughes, R.M., Kaufmann, P.R., Klemm, D.J., Lazorchak, J.M., McCormick, F.H., Peterson, S.A., Ringold, P.L., Magee, T., & Cappaert, M.R. 2006) Aquatic Vertebrates v1.0 (Peck, D.V., Herlihy, A.T., Hill, B.H., Hughes, R.M., Kaufmann, P.R., Klemm, D.J., Lazorchak, J.M., McCormick, F.H., Peterson, S.A., Ringold, P.L., Magee, T., & Cappaert, M.R. 2006) Laboratory Methods for Benthic Macroinvertebrate Data v1.0 (Northwest Biological Assessment Workgroup 2007) Determining Macro-Invertebrate Species Assemblages v1.0 (Crawford, B.A., & Arnett, J. 2011) Download of surface water data collected at streamgaging stations from NWIS v1.0 (Carol Volk 2013) Water Temperature v1.0 (Casey Justice, Seth White, and Dale McCullough 2010) Riparian Structure v1.0 (Bouwes, N., J. Moberg, N. Weber, B. Bouwes, S. Bennett, C. Beasley, C.E. Jordan, P. Nelle, M. Polino, S. Rentmeester, B. Semmens, C. Volk, M.B. Ward, and J. White. 2011) Water Temperature Probe Installation v1.0 (Bouwes, N., J. Moberg, N. Weber, B. Bouwes, S. Bennett, C. Beasley, C.E. Jordan, P. Nelle, M. Polino, S. Rentmeester, B. Semmens, C. Volk, M.B. Ward, and J. White. 2011) Water Chemistry - Conductivity and Alkalinity v1.0 (Bouwes, N., J. Moberg, N. Weber, B. Bouwes, S. Bennett, C. Beasley, C.E. Jordan, P. Nelle, M. Polino, S. Rentmeester, B. Semmens, C. Volk, M.B. Ward, and J. White. 2011) Channel Substrate Survey: Wolman Pebble Counts v1.0 RBT - Site Sinuosity Calculation v1.0

RBT - Habitat Units Calculation v1.0
RBT - Bankfull Width Profile Calculation v1.0
Umatilla Basin Photo Points v1.0 (Keith Karoglanian)
ISCO field procedures v1.0 (Marty King, Keith Karoglanian)
Groundwater Surface Elevation Measurement v1.0
Simplified Revegetation Survival Surveys v1.0 (Keith Karoglanian)

Project Deliverables & Budget

Project Deliverable	Start	End	Budget
Manage and Administer The Project (DELV-1)	2014	2018	$628,000
Undertake Outreach (DELV-2)	2014	2018	$20,000
Maintain Structures and Native Vegetation (DELV-3)	2014	2018	$464,000
Develop Designs, Permits, and Funding Opportunities Necessary to Undertake Implementation Efforts (DELV-4)	2014	2018	$140,000
Improve Stream Channel Morphology and Complexity along 1.1 Km of Fox Creek (DELV-5)	2014	2014	$40,000
Remove or Redistribute Mine Tailings along 3.2 Km of Bull Run Creek (DELV-6)	2014	2016	$120,000
Improve Stream Channel Complexity Along 0.6 Km of Granite Creek (DELV-7)	2014	2014	$105,000
Develop a Grazing Management Plan for Pasture Surrounding 1.6 Km of Mud Creek (DELV-8)	2014	2014	$10,000
Replace the Junkins Creek Culvert I (DELV-9)	2014	2014	$50,000
Restore Stream Channel Complexity Along 0.5 Km of Desolation Creek (DELV-10)	2015	2015	$50,000
Replace the Bull Run Creek Culvert (DELV-11)	2015	2015	$75,000
Restore Stream Channel Complexity Along 5.6 Km of Camas Creek (DELV-12)	2015	2016	$180,000
Place Large Wood along Approximately 3.2 Km of Bull Run Creek (DELV-13)	2016	2016	$20,000
Replace the Junkins Creek Culvert II (DELV-14)	2016	2016	$85,000
Place Large Wood within the Floodplains of Desolation and Clear Creeks (DELV-15)	2016	2016	$25,000
Replace the Sponge Creek Culvert (DELV-16)	2017	2017	$80,000
Replace the Deep Creek Culvert I (DELV-17)	2017	2017	$75,000
Replace the Deep Creek Culvert II (DELV-18)	2017	2017	$75,000
Place Large Wood along 0.5 Miles of Deep Creek (DELV-19)	2017	2017	$15,000
Complete Heavy Maintenance on Approximately 128.7 Km of Riparian Fence. (DELV-20)	2015	2017	$49,890
		Total	**$2,306,890**

Requested Budget by Fiscal Year

Fiscal Year	Actual Request	Explanation
2014	$495,400	
2015	$522,030	
2016	$527,030	
2017	$512,030	
2018	$250,400	
Total	**$2,306,890**	

Item	Notes	FY2014	FY2015	FY2016	FY2017	FY2018
Personnel	Habitat Supervisor, Habitat Biologist, Habitat Technician, Data Manager & Coordinator	$136,800	$136,800	$136,800	$136,800	$136,800
Travel	cutlural resources, two symposiums and one class	$3,200	$3,200	$3,200	$3,200	$3,200
Prof. Meetings & Training	two symposiums & one class	$2,080	$2,080	$2,080	$2,080	$2,080
Vehicles	two vehicles, insurance for vehicles, fuel for vehicles and equipment	$16,800	$16,800	$16,800	$16,800	$16,800
Facilities/Equipment	(See explanation below)	$12,000	$12,000	$12,000	$12,000	$12,000
Rent/Utilities	equipment storage in Ukiah, OR & Lower Owens Creek power bill	$1,120	$1,120	$1,120	$1,120	$1,120
Capital Equipment		$0	$0	$0	$0	$0
Overhead/Indirect	Rate is currently 0.435	$78,400	$78,400	$78,400	$78,400	$78,400
Other	Subcontracts	$245,000	$271,630	$276,630	$261,630	$0
PIT Tags		$0	$0	$0	$0	$0
Total		**$495,400**	**$522,030**	**$527,030**	**$512,030**	**$250,400**

Major Facilities and Equipment explanation:
Faculties and equipment includes office and storage space, services and supplies necessary to complete project activities such as field materials, office supplies, books, computer leases (replaced every five years), communications (cell phones), postage and freight, equipment rental, and printing and duplication. This also includes services and supplies associated with project activities including permits and license fees, repairs and maintenance of project equipment, and advertisement of contractual services. These items are contained within the budget for Objective 1 or other objectives with which they can be associated. Indirect supports office facilities and related items and storage rental in have also been included in Objective 1. Existing equipment is adequate given the current and expected needs of the Project. The Project has the capability to operate rented heavy equipment such as excavators which reduces effort cost; however, this action is dependent upon the needs of a specific effort and therefore was not specifically identified within the budget.

Cost Share

Source / Organization	Fiscal Year	Proposed Amount	Type	Description
US Forest Service (USFS)	2015	$3,000	In-Kind	Staff labor and materials. Funding is relativly secure as implementation can occur with only a few people.
US Forest Service (USFS)	2016	$3,000	In-Kind	Staff labor and materials. Funding is relativly secure as implementation can occur with only a few people.
US Forest Service (USFS)	2017	$3,000	In-Kind	Staff labor and materials. Funding is relativly secure as implementation can occur with only a few people.
US Forest Service (USFS)	2014	$55,000	In-Kind	Cost share toward the Bull Run Mine Tailing Redistrubituin design and permitting efforts.
US Forest Service (USFS)	2015	$55,000	Cash	Cost share toward the Bull Run Mine Tailing Redistrubituin to support implementation contracts. Proposed contribution dependent upon federal budget.
US Forest Service (USFS)	2016	$55,000	Cash	Cost share toward the Bull Run Mine Tailing Redistrubituin to support implementation contracts. Proposed contribution dependent upon federal budget.

Project References or Citations

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Key Personnel

John Zakrajsek

CTUIR NFJD Habitat Biologist, Expected input for the NFJD Habitat Project = 40 hours/week

- Responsible for leading the CTUIR Fisheries Habitat Project for the North Fork John Day River Basin and project support to other basin projects within the CTUIR ceded area in an interdisciplinary planning process.

- Lead all aspects of restoration project planning, implementation and monitoring including project development and administration. This includes;

- **Project Development and Implementation:** within the CTUIR ceded area based on the ecological requirements of associated native fish communities and applicable planning documents. Incorporate research information regarding floodplain/riverine processes and native aquatic communities into habitat project planning including technologies and methods that improve habitat program efficiency.

- **Project Administration:** Developing annual work plans and budgets for project implementation, subcontract specifications and manage a competitive selection process for hiring subcontractors and consultants to complete tasks as necessary. Complete environmental and cultural permitting requirements and clearances as necessary and identify and pursue funding and cost-share opportunities to support permitting, design, and implementation work.

- **Data Collection, Analysis, and Management:** Develop and implement a coordinated monitoring effort including coordination with others to utilize multiple scales of measure and maximize efficiency. Apply appropriate and current analysis techniques to collected data that are consistent with QA/QC requirements.

- **Supervision:** Supervise, evaluate, train, and direct 1 to 3 full time employees to implement maintain and monitor project actions. Complete annual work plans and performance reviews that include identifying staff training needs.

- **Coordination:** Develop and maintain cooperative relationships with agency personnel, landowners, and stakeholders.

- **Reporting & Outreach:** Prepare and present project results in reports and public forums in order to foster a productive educational exchange and promote Fish Habitat Program success. Complete quarterly, semi-annual, and annual reports in a timely manner that is consistent with funding agency requirements.

Education;

1991, A.S., Hocking Technical College, Nelsonville, OH, Fish & Wildlife Management

1995, B.S., University of Idaho, Moscow, ID, Fisheries Management

2007, M.S., University of Idaho, Moscow, ID, Hydrology

Short Courses

Wildlands Hydrology Level I, II, III

USGS Sediment Collection Techniques

Introduction to Engineered Log Jams

Employment;

May 2007 – Present, **Habitat Biologist III,** CTUIR, DNR Fisheries, Mission, OR

January 2004 – December 2007, **Graduate Research Assistant**, University of Idaho, Moscow, ID

June 2001 – January 2004, **Fishery Biologist I**, Nez Perce Tribe, DNR, Fisheries, Orofino, ID

April 2000 – June 2001, **Student**, University of Idaho, Moscow, ID

December 1998 – April 2000 – **Fishery Biologist I**, Nez Perce Tribe, DNR, Fisheries, Orofino, ID

1996 & 1998, Seasonal **Fishery Biologist**, NWO Inc., Sisters, OR

May 1993 – December 1998, **Fishery Bio-Aide & Fishery Technician Seasonal**, IDFW, Ahsahka, ID

Specialty;

Combined education and work experience has provided a solid background in fishery research, fishery management, and hydrology. Primary interests at this point pertain to physical attributes of watersheds including but not limited to climate, geology, geomorphology, soils, and forestry and quantitative relationships with aquatic species.

Delbert Jones

CTUIR Fishery Habitat Technician, Expected input for the NFJD Habitat Project = 40 hours/week

Assist the North Fork John Day Fish Habitat Project Leader in implementing/maintaining fish habitat improvements and monitoring water quality/habitat conditions on private lands within the North Fork John Day River Basin consistent with CTUIR treaty reserved rights and interests. This includes;

- Plan and implement fish habitat enhancement and restoration projects Including coordinating and cooperating with landowners, agencies, and other entities for purpose of developing conservation agreements and new projects.

- Implement and maintain existing projects and collect and manage monitoring data.

- Operate heavy equipment, small machinery, and hand tools as needed and initiate purchasing process.

Education;

1973, Diploma, Ukiah High School

Short Courses

Wildlands Hydrology Level I, II, III

Employment;

CTUIR Fisheries Technician, Pendleton, Oregon, 10 years

Heavy Equipment Operator, 20 years

Carpenter, 4 years

Rock Crusher, 3 years

Fence Construction, 2 years

Oregon Department of Foresty, Fire Fighter, 6 Seasons

Specialty;

Born and raised in Ukiah, Oregon Delbert's strength is his familiarity with the NFJD and its residents. Combined with previous experience in logging, construction, and heavy equipment operation Delbert maintains constructed fence lines and water developments and actively participates in implementation efforts which have allowed projects to be completed in-house. Delbert works to increase his knowledge base by participating in available training opportunities.

Contractors and the like have not been identified for future projects and therefore cannot be listed here.

Notes

Data current as of: 3/4/2014 2:01 PM

2013 Geographic Review

Response to the Independent Scientific Review Panel Qualifications of April 2014

CTUIR Department of Natural Resources Fisheries Habitat Program
North Fork John Day Fisheries Habitat Project
Project Number 2000-031-00

February 2015

Introduction

The Confederated Tribes of the Umatilla Indian Reservation (CTUIR) Fisheries Habitat Program North Fork John Day Fishery Habitat Enhancement Project (NFJD Project) (BPA Project #2001-00-031) provided its first Geographic Review proposal submitted on 18 February 2013, responded to the first round of 16 Qualifications from the Independent Scientific Review Panel (ISRP) on 7 August 2013, submitted a revised second proposal in March of 2014 reviewed by the ISRP on 7 April 2014, provided ISRP a second proposal in March of 2014 leading to ISRP's published final recommendations in August 2013 (ISRP 2014(-11)). This report responds ISRP's request to provide a strategic framework by the end of 2014 by addressing the 6 remaining ISRP Qualifications. This response will serve as the requested report in three of the six ISRP Qualifications contained below. Bonneville Power Administration (BPA) and the CTUIR cooperated to provide this joint response to address ISRP's concerns given the relevancy of both entities efforts with respect to a strategic framework for restoration actions, past restoration actions undertaken and those proposed for the 2014-2018 period, action effectiveness, project feasibility, and development monitoring efforts and protocols, project data management, and the roles of the NFJD Project and cooperators.

The NFJD Project has worked independently and with cooperators to restore habitat necessary to perpetuate the CTUIR's First Foods using guidance provided by planning and recovery documents, and with the CTUIR River Vision's multidisciplinary watershed scale approach to restoration. The NFJD Project has evolved in a variety of ways since its creation in 2000 in response to changing roles and capacities of the NFJD Project and its cooperators, improved opportunities to implement restoration actions, and acceptance of lessons learned through a riverine planning process. Early on, restoration efforts were generally opportunistic until educational and outreach efforts introduced the NFJD Project to the local populace. With staff persistence and public outreach, increased technical and financial capacities of the project and cooperators, maturing coordination mechanisms, the NFJD Project has shifted from this opportunistic approach to the systematic and holistic landscape based approach to restoration detailed in the Umatilla River Vision. The NFJD Project has also progressively moved toward prioritizing specific subbasins or areas within previously defined focus basins.

To improve capacity and conform to a landscape based restoration approach the NFJD Project has worked along with cooperators to begin prioritizing restoration actions within focal basins. This now occurs through two separate mechanisms depending on ownership. On public lands the NFJD Project has worked with the USFS or used their process to prioritize restoration actions using existing subbasin specific action plans developed upon a subbasin's geomorphic, hydrologic and biotic qualities relative to a potential natural condition. Once all tasks within an action plan have been completed another action plan is developed for another high priority subbasin. On private lands the NFJD Project is now beginning to develop multiple property or single large property restoration actions with an emphasis of reconnecting restored habitat from public lands downstream to build upon larger scale physical and biological response. This tactic helps develop a holistic approach with use of local assessments and action plans with multiple strategic actions for effectively addressing larger scale processes.

There has been conflicting direction from BPA and ISRP with respect to data collection and the purpose of monitoring efforts. Prior to the development of recent programmatic monitoring strategies, restoration monitoring by the NFJD Project evaluated physical, environmental, or biological conditions necessary to develop, design, and permit an action in data limited project areas. In other words data, collection occurred for the purpose of Project Implementation and Compliance Monitoring and/or Project Feasibility and Development Monitoring as they are currently defined in the project management software 'Pisces'. While data collected by the NFJD Project has been adequate for baseline project pre-project assessment and compliance monitoring, it is not capable of supporting analysis acceptable for research design and publication. However, all monitoring data will now be incorporated into the newly developed CTUIR database managed by CTUIR's GIS/ITS Program for integrated CTUIR and public use. RM&E data developed, analyzed, and reported on under BPA's Action Effectiveness Monitoring Program will align the effectiveness of NFJD Project actions with protocols developed under the Columbia Habitat and Monitoring Project (CHaMP) (BPA Project # 2011-006-00), the Integrated Status and Effectiveness Monitoring

Program (ISEMP) (BPA Project #2003-017-00). The following section provides the six ISRP qualifications from their latest evaluation, followed by CTUIR responses.

CTUIR's Response to the ISRP Qualifications of April 2014

1) **Provide a report that clearly describes future Project monitoring and evaluation actions, and provide a time line for integration with CHaMP and ISEMP and other ongoing monitoring and evaluation programs. Currently, there is discussion of project level implementation and effectiveness monitoring, and discussion of a CTUIR Fishery Habitat Program's Physical Habitat Monitoring Plan and CTUIR's Fishery Research Bio-Monitoring Plan developed to mesh with larger scale plans and protocols in place or under development (CHaMP, ISEMP and EMAP). However, there is no clear summary of anticipated monitoring and evaluation actions that will be used for this project and little detail on the specifics of future actions. A strategic framework should address plans for project scale implementation and effectiveness monitoring and evaluation and specific actions and timelines for integration with other ongoing monitoring programs, especially CHaMP and ISEMP but also some discussion of other programs such as PIBO and EMAP. (Note: it is understood that this final element may require assistance from the broader CTUIR Restoration program managers).**

The Confederated Tribes of the Umatilla Indian Reservation's (CTUIR) North Fork John Day Fisheries Habitat Improvement Project (NFJD Project) began participating in BPA's Programmatic Action Effectiveness Monitoring (AEM) program in 2013. When feasible, restoration projects may be selected to be monitored if they meet criteria established in the AEM program as submitted to the Independent Scientific Advisory Board (ISAB) and Northwest Power and Planning Council (Council). Monitoring will occur under the AEM by the CTUIR's Bio-monitoring of Fish Habitat Enhancement (Project# 2009-014-00[Bio-monitoring Project]) and their protocols for CTUIR restoration actions in the North Fork of the John Day River (NFJD). Thus, it's not within the scope of the NFJD Project to determine which, if any, actions may be monitored in the NFJD. Nor is it in the scope of the NFJD Project to report to the ISRP on schedules for CHaMP and ISEMP. ISEMP, CHaMP and the AEM program projects will be reporting back to the ISRP/ISAB in the spring of 2015 in accordance with the schedule requested by the Council. ISEMP and CHaMP will continue to produce annual reports that the NFJD Project may consider to inform restoration, on an annual basis. With regard to the need for a "Strategic Framework", BPA has submitted the "*Columbia Basin Tributary Habitat Improvement: A Framework for Research, Monitoring and Evaluation*" (BPA, 2013) to the ISAB/ISRP to address issues of integration, which was part of the Tributary Habitat programmatic response to the Council and ISRP which incorporates the AEM program. Given this, all action effectiveness monitoring has been removed from the NFJD Project to align with the AEM programmatic approach.

The Bio-monitoring Project's efforts will also complement those of other regional RM&E efforts such as the USFS's PACFISH/INFISH Biological Opinion (PIBO, 2012(I)&(II)), Oregon Department of Fish & Wildlife's (ODFW) Escapement and Productivity of Spring Chinook and Steelhead (BPA Project # 1998-016-00), Status and Effectiveness Monitoring Program (ISEMP) Project Number: 2003-017-00, and cooperators of the Middle Fork John Day River's Intensively Monitored Watershed Program. During the 2014 sampling season, the ISEMP team collaborated with ODFW to ensure that the sampling efforts of both groups covered critical areas that can be used to inform fish-habitat relationships as well as life cycle models that are being developed as part of the NOAA Fisheries' Adaptive Management Implementation Plan (AMIP) and "*Columbia Basin Tributary Habitat Improvement: A Framework for Research, Monitoring and Evaluation*" (BPA 2013). The ISEMP and CHaMP programs are also working closely with the PIBO program to share much of the habitat data in a common database that will allow for the integrated data analysis of many parameters. Data collected by ODFW using EMAP site selection methodologies are available upon request and will be incorporated into The Project's Riverine Ecosystem Planning Approach (Qualification 3). These coordination efforts amongst the RM&E programs around the Columbia Basin will benefit habitat restoration efforts by ensuring all available and useful data is brought into decision making processes and to inform habitat work in specific locations.

The NFJD Project will continue to work with BPA and CTUIR RM&E leads to incorporate integrated findings of AEM and the CTUIR Bio-monitoring Project, CHaMP and ISEMP projects to guide restoration, but is not responsible for providing this broader scale framework to the ISRP. If this qualification persists, further

discussion with the Council, BPA's Fish and Wildlife Program and project leads from the CTUIR Bio-monitoring Project should be initiated. This response is consistent with additional responses to the ISRP for similar qualifications, which have been since approved for related projects, such as "Habitat Restoration Planning/Design/Implementation within boundaries of Confederated Tribes of the Warm Springs Indian Reservation (Warm Springs), Lower Deschutes River (BPA Project #2008-301-00), the ODFW John Day Fish Habitat Enhancement Program (BPA Project #1984-021-00) and the Upper Columbia Habitat Restoration (BPA Project #2009-003-00). In fact, ISRP's third qualification to ODFW's 2013 John Day Fish Enhancement Program proposal stated "They should identify plans to cooperate with BPA's Action Effectiveness Monitoring program" (http://www.cbfish.org/Project.mvc/Display/1984-021-00).

As an intermediate step prior to the pending ISRP/ISAB review of the AEM program in 2015 the NFJD Project is already participating by supporting the evaluation of a Barrier and Bank Stabilization and Passage Barrier Removal treatments (Table 1) conducted under the AEM program. Data developed and analyzed by the Bio-monitoring Project will be shared with the NFJD Project through direct communication or internal CTUIR reports and incorporated into the planning approach noted in Qualification 3. Monitoring for all restoration actions not brought into the AEM process has and will continue to occur through project implementation and compliance monitoring under BPA contracting protocols including their Pisces program. This does not preclude the potential use of project implementation and compliance monitoring data for RM&E monitoring such as topographic survey data, cross sections and longitudinal profiles, and sediment data in RM&E efforts when appropriate. However, this information will be analyzed and reported on under the Bio- monitoring Project.

Table 1. Monitoring occurring as of 2014 under the BPA's AEM Program.

Site	6th Field HUC	Type of Action	Year Implemented	Programmatic
Ten Cent Creek	170702020206	Passage Barrier Removal	2012	AEM
Granite Creek	170702020206	Streambank Stabilization	2013	AEM

2) Provide a report that summarizes the results of past project and major findings from implementation and effectiveness monitoring of completed projects (with appropriate statistical analyses). This report should focus on information provided in the individual project "Result reports" in the proposal. The summary should include a listing of major findings and lessons learned over the 10+ years of restoration work and a discussion of how the lessons are being used to improve future habitat restoration in the North Fork John Day River (NFJD).

Since its inception, the NFJD Project's restoration activities have been developed to address known limiting factors impacting water quality and fish production. Actions undertaken and their objectives, accomplishments, and general descriptions of outcomes relative to limiting factors contained within the John Day Subbasin Plan (NPCC, 2005) are detailed in Appendix I. Prior to recent study designs to programmatically evaluate project action effectiveness monitoring, project level monitoring evaluated several physical, environmental, or biological conditions associated with project development or post-project evaluation, and the data although technically sound, wasn't adequately collected at a scale necessary to incorporate within a research design to provide additional statistical analysis above descriptive statistics. Thus, data developed for the purpose of RM&E monitoring isn't available. Due in part to funding restrictions by BPA, a failed effort by NFJD cooperators to develop a basin wide RM&E monitoring effort, and the gradual development of AEM.

As discussed in Qualification 1, future RM&E monitoring will occur under the AEM program through the Bio-monitoring Project in cooperation with the NFJD Project. Site selection for RM&E monitoring beyond that noted in Table 1 will depend on site selection criteria contained within protocols established under the Bio-monitoring Project, future restoration opportunities, and the Bio-monitoring Project's capacities. The NFJD Project will also coordinate with those collecting RM&E data not necessarily limited to ODFW's Escapement and Productivity of Spring Chinook and Steelhead (BPA Project #1998-016-00), the ODFW Regional Fish Biologist and their staff, the UNF and WNF (data developed from their P.I.B.O process), and cooperators of the Middle Fork John Day River's Intensively Monitored Watershed Program to improve action effectiveness through the Riverine Ecosystem Planning Approach.

Data collection by/for the NFJD Project for project implementation and compliance monitoring under BPA contracting protocols began in 2007 for sites which had previously received restoration treatments and where control sites had not been identified. Data collected during these monitoring efforts typically included cross sections, longitudinal profiles, pebble counts, vegetation data, photopoints, and stream temperatures or similar data necessary to develop restoration actions. More recently, topographic information and LIDAR have been or will be incorporated when developing designing, and permitting restoration actions. The use of this data by the Bio-monitoring Project under AEM will not be prohibited by the NFJD Project. Future data collection outside of that just noted by the NFJD Project will include annual photopoints and water quality data (temperatures). The NFJD Project has been investigating the use of a generalized linear model to track changes in water temperature and will also begin collecting site specific atmospheric data to correlate with water temperatures.

The NFJD Project's first and second 2013 Geographic Review proposal presented available data and analysis for consideration, and referenced monitoring results to reflect how projects have responded following implementation. Information contained within the discussion below presents this information in an effort to summarize the areas affected by restoration actions, metrics, monitoring undertaken, a summary of actions, and presenting available data and analysis to the extent possible with regard to lessons learned. Several prominent factors hinder our analysis including; 1) a lack of monitoring data prior to 2007 after most of the existing conservation agreements were in place and implemented, 2) a lack of pre-implementation data in response to the previous comment and landowner or cooperator demand/need to implement as soon as possible, and 3) the duration of implementation or monitoring. Factors such as vegetative growth and water temperature improvements may take decades or need extensive efforts over large areas to show a result. This is especially true in higher elevation areas such as the NFJD.

Through the Riverine Ecosystem Planning Approach (Qualification 3) the NFJD Project has and continues to incorporate lessons learned which can be split into categories of restoration action prioritization and implementation. Through this planning approach the NFJD Project has or will adopt two new strategies; 1) regarding the prioritization of future restoration actions and 2) the improvement of native vegetation planting techniques. With respect to prioritizing restoration actions, the proposal accepted by ISRP during the 2006 Geographic Review was completed shortly before the current lead biologist's arrival and although not explicitly stated as such, the 'refugia' approach (Beechie et al, 2008) contained within was carried forward. Given that the NFJD generally contains the best habitat within the John Day Subbasin, a strategy of protecting, in cooperation with others, a subset of the best first remains a valid approach. However, the limitations of past restoration actions and developing strategies by the CTUIR and others led to the NFJD Project to progressively adopt a holistic approach to restoration and some form of a 'Decision Support System' such as those presented in Beechie et al (2008).

Restoration Action Prioritization Lessons Learned

The progression toward strategic prioritization is the result of two factors, including limited participation by individual local landowners, and the results of monitoring efforts. Regarding landowner participation, their hesitance is generally due to a need for additional education and outreach by the NFJD Project and a 'traditional' unwillingness to cooperate with a tribal entity or any form of government. The NFJD Project has deliberately provided education and outreach to private land owners which appears, along with implemented restoration actions, to have led to increased level of interest within the broader community and with individuals. Although successful given their spatial extent, early treatments were unable to address larger scale limiting factors such as channel stability, extensive channel incision, and channel complexity. Two examples of this are the Lower Snipe Creek and Lower Camas Creek sites.

<u>Lower Snipe Creek:</u>

Treatments at the Lower Snipe Creek site included riparian fencing, stock water developments, and riparian plantings intended to passively stabilize the stream channel by restricting cattle access and improving long term woody debris entrainment to Snipe Creek at the lower end of the property. Given the NFJD Project's capacity (staff capabilities, landowner support, and funding levels) passive restoration tactics such as these were 'the measure of the day'. Riparian fencing was completed in 2001 with stock water developments

constructed in 2002 followed by riparian plantings. Pre-implementation monitoring data isn't available and data collection didn't begin until 2007. Data collected included cross sections, longitudinal profiles, water temperatures, vegetation survival counts, and a photopoint.

Cross section data (Figure 3) indicates that between 2008 and 2010 the stream channel widened (7%) at cross section 32 while widening (45%) and deepening (5%) at cross section 54. The transition from what was most likely an 'E' type stream channel as suggested by valley type and paleo channels toward an 'F' channel type likely due to two notable factors not evident in the available cross sections. These include a measure of channel straightening visible in aerial photographs (Figure 3) beginning approximately half way between the two cross sections that appears to continue downstream approximately 4.8 Kilometers in aerial photographs to a geologic knickpoint. The survival of native plantings discussed later in this document has been minimal and natural vegetative recruitment low. As such, the only structure in the stream channel has been and largely remains collapsed streambanks. The stream channel has gradually widened as streambanks are undercut as the channel works to reestablish meanders while a thick clay layer through most of the site has resisted vertical erosion to some extent. An artifact of this channel incision and the subsequent of shallow aquifer storage appear to be a complete loss of stream flows during the 2008 baseflow period.

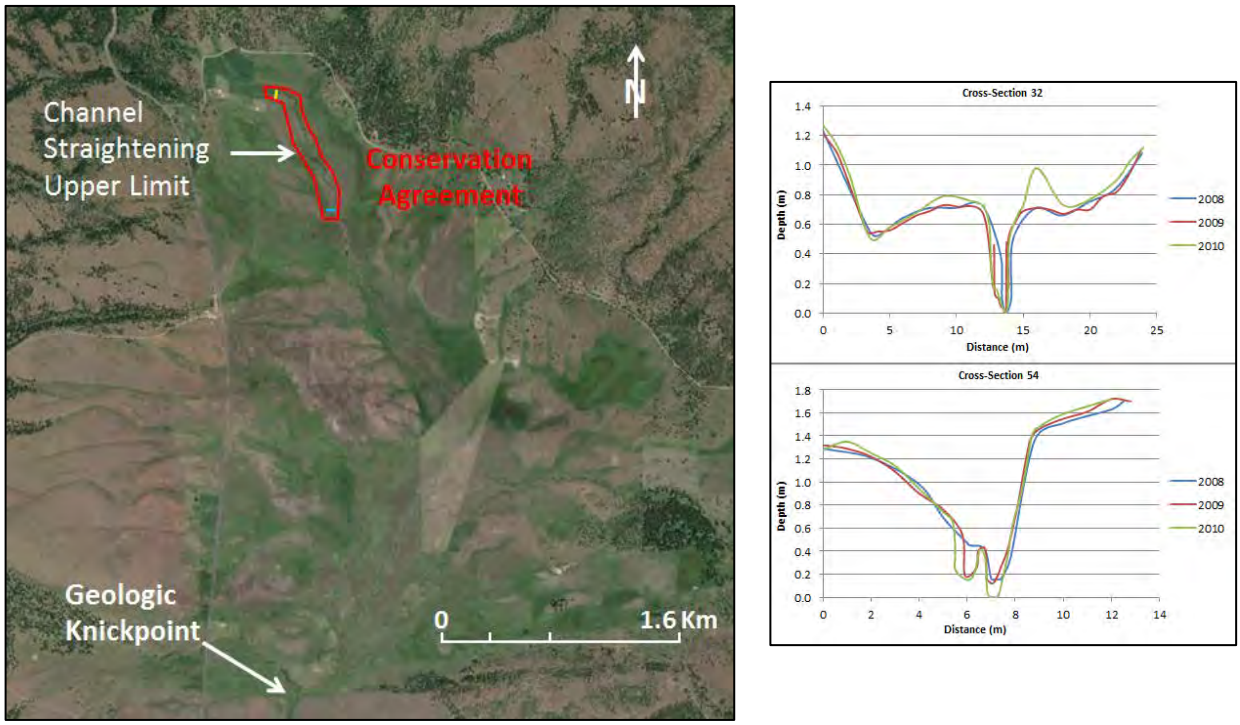


Figure 3. Cross sections collected at the Lower Snipe Creek site (left) and an aerial view of the site. The red boundary indicates the riparian fence line, the yellow bar XS 32, and the blue bar XS 54. The arrow denoting channel straightening reflects a visible change in channel form where the channel above appears more sinuous although unquantified. Streamflows are from the top of the photograph to the bottom of the photograph. Image from Google Maps.

The combined effect of channel simplification and incision within and below the site, and a lack of woody vegetation along the channel may have set the conditions suitable for elevated water temperatures (Figure 4) within the Lower Snipe Creek site. However, this cannot be determined with the data shown here as two years of data does not indicate a trend. While loggers were deployed annually data from 2007 is only available for half the season (data logger failed) and the 2012 data file was corrupted and isn't available. Graphed data shows a separation of the temperature signal through a portion of the data for both 2009 and 2011. Seasonal cycling is visible in both signals although it's more strongly presented in the 2011 data. Both mean and maximum values for the raw data (Table 3) show temperatures increase through the site. The

temperature spike between 26 July 2009 and 7 August 2009 was created by wildlife removing the data logger from Snipe Creek influences the data; however, both the average and maximum temperatures remain elevated at the sites lower end with the data removed. Ignoring the data spike, temperatures did not exceed the 25° Celsius upper incipient lethal limit for Chinook salmon as cited by McCullough (1999), although they did exceed the 19.1° Celsius limit at which feeding ceases for Chinook salmon (McCullough, 1999) during 2009 and 2011 (Table 3). Temperatures within the 10-15.6° Celsius temperature range preferred by juvenile Chinook salmon (referred to in Yankee et al., 2007) decreased during 2009 by 14.3% and by 6% during 2011. Mean daily temperatures above the Oregon Department of Environmental Qualities 17.8° Celsius standard only occurred during 2009 and 2011 at the sites lower end.

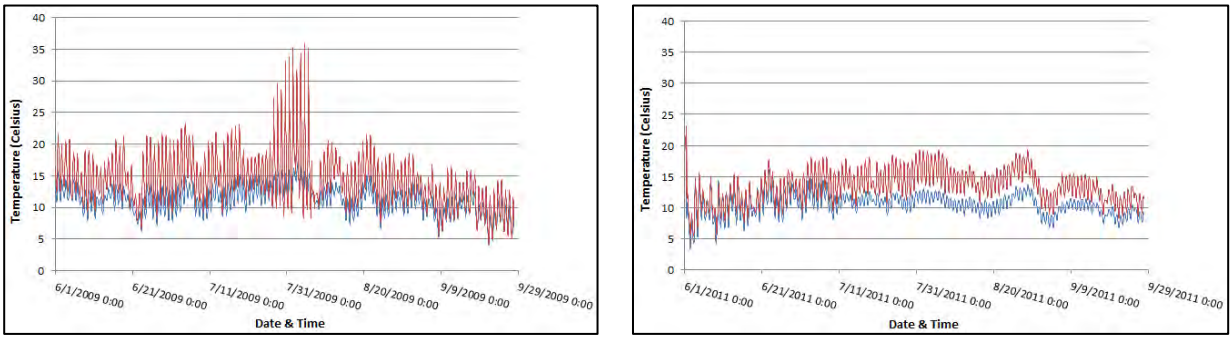


Figure 4. Stream temperature data collected during 2009 and 2011 at two locations within the Lower Snipe Creek site. Graphs show raw data collected between 2 June and 27 September during 2009 (left) and 2011 (right). Temperatures from the upper data logger are represented in blue and those from the lower data logger are in red. The rise in temperature data between 30 July 2009 and 7 August 2009 (left plot) was due to a logger being kicked out of the water by wildlife.

Decreased percentages of temperatures over 19.1° Celsius and larger portions of time within the preferred range during 2011 as compared to 2009 cannot effectively develop an understanding of the data without further analysis. As such, the NFJD Project will begin using a Generalized Linear Model to analyze categorized data in Table 3 (Columns 6-9) across years and complement descriptive statistics developed from raw data. Data collection will continue for the life of conservation agreements (typically 15 years) and may not determine the actions effectiveness as stream temperature is typically one of the last things to recover. These metrics have been chosen over the ODEQ seven day moving average in an attempt to better describe the influence of restoration actions over a one to three mile reach. While restoration on this scale may not alter mean water temperatures significantly they may reduce the signals diurnal amplitude or alter its phase. Given that, the NFJD Project will rely upon cumulative actions to change mean water temperatures. Additionally, site specific air temperatures are now collected for use in the analysis.

Table 3. Metrics developed from raw data and daily averages.

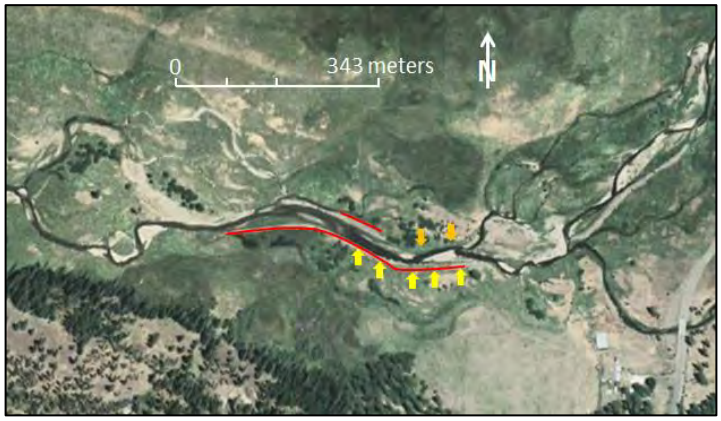
Stream	Start Date	End Date	Days Deployed	Hours Deployed	Hours >=25° Celsius	Hours >=19.1° Celsius	Hours 10-15.6° Celsius	⌅ Daily Temp >=17.8 (# days)	Max Temp Celsius	Mean Temp Celsius
Up Snipe Creek	2-Jun-09	27-Sep-09	118	2833	0	0	1965	0	17.0	11.12
Lo Snipe Creek	2-Jun-09	27-Sep-09	118	2833	41	293	1559	8	36.08	14.09
Up Snipe Creek	2-Jun-11	27-Sep-11	118	2833	0	0	1779	0	21.47	10.53
Lo Snipe Creek	2-Jun-11	27-Sep-11	118	2833	0	7	1946	1	26.98	13.4

While the data presented here suggests the stream channel is transiting from a deep narrow cut to a “F” type channel form and will in time establish an inset floodplain this analysis cannot determine the extent of change with respect to pre-implementation conditions, if stream temperatures are responding to the restoration actions undertaken, or differing climactic conditions. The Snipe Creek’s channel will not return to an ‘E’ channel form on the property without significant efforts to address channel conditions on two

downstream properties above a geologic knickpoint approximately 4.8 Kilometers downstream. Aerial photographs are the only tool available to the NFJD Project to determine both channel condition on these properties and faulting has created the knickpoint and is controlling upstream channel gradient. Unrestricted cattle grazing of the stream channel, loss of riparian vegetation, and active and passive stream channelization and simplification on these downstream properties appears to have created a migrating headcut moving into the restoration site resulting in a an inset floodplain below the site and potential loss of significant shallow groundwater storage; assuming the channel form at cross section 54 is any indication of the downstream channel form.

Lower Camas Creek:

On the Lower Camas Creek site 1,100 feet of levees were removed and five J-hook structures installed in 2006 (Figure 5) to enhance floodplain connectivity and channel complexity as the NFJD Project's capacity had increased to where active stream channel restoration actions were feasible. A control site was not established for this effort which will be corrected at other sites through future RM&E monitoring. The treatments were initially effective, however, after the first spring runoff the uppermost J-hook was buried by deposited gravels and since then channel migration and sediment deposition has buried all but the lower two J-hook structures. Since the levees removal Camas Creek's floodplain has been inundated during spring runoff; unfortunately, records of inundation events weren't kept. Monitoring data for two transects (Figure 5) shows the stream channel widening at cross section 39.6 by 2.7 meters between 2007 and 2008 in a northerly direction and remaining relatively stable over the next five years. During this period however, the thalweg elevation both rose and fell, while the gravel bar generally aggraded.



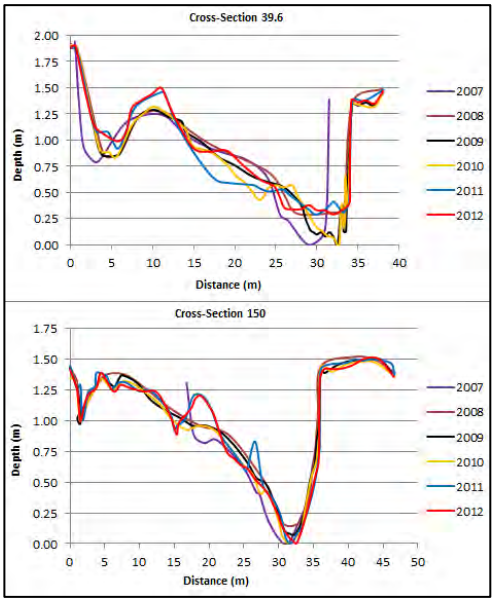


Figure 5. Aerial view of 2006 Lower Camas Creek site showing the approximate location of levee removals (red) and J-hook structures (yellow) (above) and cross sections noted in orange on the map with cross section 39.6 being the farthest right in the aerial. Data for cross sections 39.6 and 150 are displayed to the left. Streamflows in the aerial photograph are from right to left. Image from Google Maps.

The number of pools and riffle run sequences prior to implementation cannot be determined without pre-implementation data although aerial imagery (Figure 5) suggested it primarily consisted of long runs and short riffles. The J-hook structures did create and maintain scour pools in the short term. Pool to riffle ratios calculated discrete measurements of habitat surface area (Figure 6) for 2007 and 2011 suggest the action improved these ratios from 0.095 to 0.35; however, it should be noted that while scour pool habitat increased 3.95 percent, riffle habitat decreased by 9.7 percent and run habitat increased by 5.8 percent. J-hooks are placed to stabilize streambanks, reduce lateral migration, and to lesser extent increase pool depth. The structures form a hard point on the outside of meander bends and create scour thereby reducing near-bank shear stress and in turn reducing bank erosion. Unfortunately, the structures are getting flanked by bank erosion and a more complex and extensive structure may have been a better approach. Cross

sections are able to show the 2.7 meter shift to the north at cross section 39.6 but are unable to show the southerly shift below cross section 150 (Figure 6).

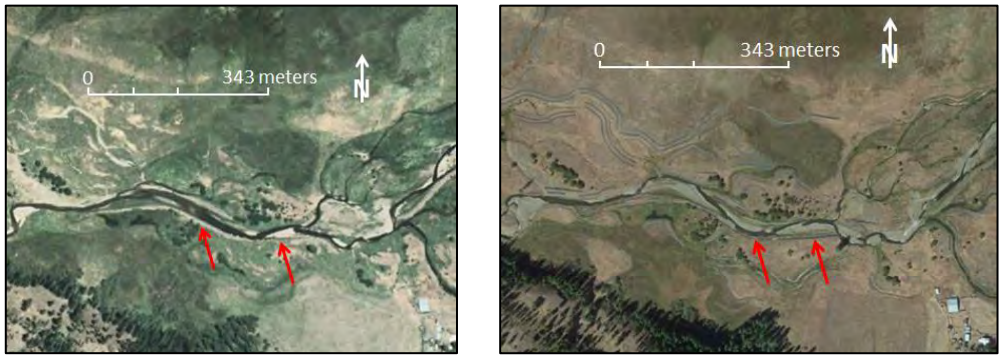


Figure 6. Aerial imagery from August of 2006 (left) prior to implementation and 2013 (right). Arrows show where Camas Creek is moving laterally to the south. Aerial imagery is from Google Maps.

Sediment composition (Figure 7) for both cross sections remained stable across the sampled years and may reflect differences in annual stream discharge which aren't available. The interesting year is 2010 which shows a coarsening of the D50 and D84 sediments at cross section 39.6 and a drop in the D100. Unfortunately, streamflow data which may speak to the influence of annual runoff has not been identified and without pre-implementation data little can be said beyond substrate composition at this time. Empirical evidence of sediment deposition from an unknown source occurs through the site and more severely upstream. An effort which began with the Camas Creek Assessment contained within this document will attempt to develop an understanding of sediment mobilization and deposition and the sediment's source.

Habitat	% of Habitat in 2007	% of Habitat in 2011
Riffle	28.9	19.2
Run	68.3	74.1
Scour Pool	2.75	6.7

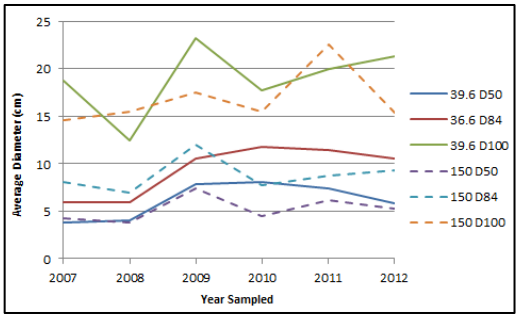


Figure 7. The results from pebble counts at cross sections 39.6 and 150 (left) and habitat by percentage for longitudinal profiles in 2007 and 2011 (right).

Water temperature data have been collected annually since 2007. Wildlife removing the data loggers from Camas Creek or corrupt files has limited the effectiveness of some of the data. Data collected during 2007 and 2011 do not present a clear picture of the treatments influence upon water quality (Figure 8) due to the short time duration. Graphed data suggests some influence of seasonal temperature cycling, a decrease in temperatures across the site during a portion of 2007, and signals tracking one another during 2011 with greater diurnal fluctuation in the lower data. The data spike between 3 July and 11 July 2011 resulted from the logger being pulled from the stream. Mean and maximum values for the raw data (Table 4) show a slight decrease in temperature values during 2007 and a slight rise in the mean temperature across the site during 2011. When the 2011 data spike is removed the mean data value increases to 14.4^{o} Celsius while the maximum temperature drops to 22.5^{o} Celsius resulting of an increase of less than one degree Celsius at the sites lower end. Temperatures exceeded the 25^{o} Celsius upper incipient lethal limit for Chinook salmon (as cited by McCullough, 1999), at both sites although the percentage of time at these limits decreased from 7% at the upper end of the site to 2% on the lower end during 2007 and from 2% to 0% on the lower end during 2011. The percentage of time temperatures exceeded the 19.1^{o} Celsius limit at which feeding ceases for Chinook salmon (as cited by McCullough, 1999) decreased during

2007 by 5.5% and rose during 2011 across the site by 4.3% (Table 4). Temperatures within the 10-15.6° Celsius temperature range preferred by juvenile Chinook salmon (Yankee et al, 2007) rose by 4.25% during 2007 and decreased by 9.1% in 2011. Mean daily temperatures above the Oregon Department of Environmental Qualities 17.8° Celsius standard decreased during 2007 across the site while they rose in 2011.

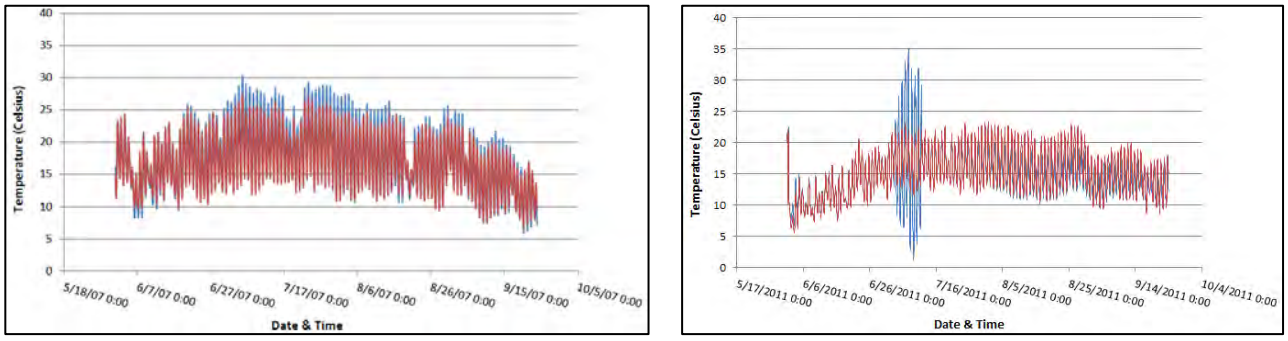


Figure 8. Stream temperatures collected for the Lower Camas Creek site between 1 June and 23 September during 2007 (left) and 2011 (right). Temperatures from the upper data logger are represented in blue and those from the lower data logger are in red. The rise in temperature data from 4 July 2011 to 10 July 2011 (right) was due to a logger being kicked out of the water by wildlife.

Table 4. Metrics developed from raw data and daily averages collected from 1 June and 23 September during 2007 and at the Lower Camas Creek site.

Stream	Start Date	End Date	Days Deployed	Hours Deployed	Hours >=25° Celsius	Hours >=19.1° Celsius	Hours 10-15.6° Celsius	x̄ Daily Temp >=17.8 (# days)	Max Temp Celsius	Mean Temp Celsius
Up Camas Creek	1-Jun-07	23-Sep-07	115	2760	212	875	913	65	30.3	17.598
Lo Camas Creek	1-Jun-07	23-Sep-07	115	2760	57	723	1107	46	27.4	16.911
Up Camas Creek	1-Jun-11	23-Sep-11	115	2760	59	248	1580	3	35.009	14.346
Lo Camas Creek	1-Jun-11	23-Sep-11	115	2760	0	366	1329	6	23.338	15.149

The data presented here suggests there may have been some improvements over time based upon fewer elevated temperatures, a decrease in average daily temperatures exceeding 17.8° Celsius, and an increase in the percent of data within the preferred range. However, this analysis cannot determine if this was due to the restoration actions undertaken, groundwater inputs which appear to occur throughout the site or differing annual climate conditions. As such, the NFJD Project will begin using a Generalized Linear Model and Poisson distribution to analyze categorized data (Table 4 Columns 6-9) to analyze data across years and complement descriptive statistics developed from raw data. These metrics have been chosen over the ODEQ seven day moving average in an attempt to better describe the influence of restoration actions over a one to three mile reach. While restoration on this scale may not alter mean water temperatures significantly they may reduce diurnal amplitude or alter its phase. Given that, the NFJD Project will rely upon cumulative actions to change mean water temperatures. Additionally, site specific air temperatures are now collected for use in the analysis.

Implementation Lessons Learned

With regard to lessons learned related to implementation, methods used to plant native vegetation have contributed to low survival rates and impaired the success of past restoration actions. Monitoring utilized either a direct count of survival or the 'Greenline' method identified in Winward (2000) depending upon the restoration site.

Native vegetation planting at the Lower Snipe Creek site occurred on two occasions; the first in 2001 when 5,000 Ponderosa pine were planted by a contractor using 10 in^3 plugs, 1 meter square weed mats, and 0.5" mesh tree protectors. Regardless of watering the following year, survival was only about 1% due to poor

planting location (perched floodplain), and predation by small animals. The second planting occurred in 2003 consisting of 5,300 ponderosa pine, 4,750 willow, 1,700 dogwood, 820 quaking aspen, 580 alder, 500 mock orange, 400 rose, 200 current, and 100 choke cherry in 10 in^3 plugs or cuttings where placed in the stream channel. NFJD Project and Tribal Native Nursery staff again used 3'x3' weed mats and 18" mesh tree protectors. Watering occurred the following year resulting in 845 surviving ponderosa pine (16%). Aspen, willows and dogwood planted within the stream channel (3%, 10%, 2% survival respectively) have suffered from streambank erosion and collapse and beaver predation. Survival outside of the stream channel appears to have been limited by predation and over competition from native grasses and the compromised shallow groundwater aquifer.

At the Lower Camas Creek site plantings were completed by a contractor hired by the landowner to fulfill obligations toward a Conservation Reserve Enhancement Program contract. Plowed areas along Camas Creek and spring channels were covered by 4.5 meter wide matting and planted with 10 in^3 plugs of approximately 400 ponderosa pine, 3,600 black cottonwood, 400 aspen, 600 choke cherry, 200 black hawthorn, 600 rose, 400 golden current, 800 elderberry, 600 willow, and 400 thinleaf alder along with 24" cuttings of willow (12,000) and black cottonwood (2,000). Plant spacing varied between 1.5 and four meters depending upon species and mesh tree protectors 0.5" in height were used with planting completed following USDA's NRCS planting specifications. Watering occurred during the first two summers to the extent possible as terrain and the number of plants making this effort difficult. Plantings met the two year 50% requirement necessary to certify the action under CREP. However, survival to date has been much less. Our 2013 count identified 11 ponderosa pine (2.7% survival), 1 black cottonwood (< 1% survival), 5 black hawthorn (2.5% survival), I rose (< 1% survival), and 187 choke cherry (3.1% survival).

Several reasons for low survival rates include predation by wildlife (deer, elk, and beaver), removal of mats, tree protectors, and plantings by the shifting stream channel or overland flows, and inappropriate planting locations. Regarding predation by wildlife, beaver consumed cuttings within and directly adjacent to the stream channel and associated side channels shortly after planting. In response, the NRCS placed willow cuttings near a den during the early fall following implementation which were consumed during that time. The following year the resident beaver moved and transient beaver began culling new growth annually which continues to this day. The removal of cattle has not addressed deer and elk regularly holding along Camas Creek throughout much of the winter and the remainder of the year to a more limited extent. Their presence initially resulted in plantings being 'plucked' after which the NFJD Project placed 1.5 meter tall solid protectors which helped although predation now continues on taller trees. The use of predator urine to scare away ungulates was considered, however, while scaring away wildlife may be advantageous in the short term, it's generally contrary to restoration goals and labor intensive. Continued predation led the NFJD Project to try 2 meter tall horse fence cages supported by T-posts around individual trees. This proved to be the most effective way of reducing predation although it's expensive and as with the solid 1.5 meter protectors they catch debris during high flows when the floodplain has become inundated and may still suffer damage or are washed downstream.

The second cause of low survival is the result of geomorphic and hydrologic processes (i.e. natural channel movement coinciding with runoff in a snow dominated system). While Camas Creek appears to maintain some level of dynamic stability based upon cross sections data (see Figure 4) and gross channel form (see Figure 6), mats and plantings placed adjacent to the channel have all suffered damage or more often been removed entirely. This is a direct result of streambank erosion removing soils beneath the mats or overland flows across the floodplain becoming trapped underneath mats. Eventually erosion along the mats edges freeing them from their ties resulting in the loss of all or a portion of the mat and plantings it protects. Flows also stack debris against tree protectors pushing them over and often downstream. Soil erosion beneath the mats in lower elevation floodplain habitats during floodplain inundation has also removed or damaged many plantings. The NFJD Project has been removing displaced mats annually.

The third cause of mortality can be attributed to plantings being placed in areas that were either to dry or wet. While dry in November during planting, many parts of the site are inundated for extended periods

during late winter through early summer. The presence of hummocks and cold water inputs to the stream channel suggests that deep ground water upwelling occurs within and along this portion of Camas Creek compounding the effect of a snow dominated system. During the spring and early summer months the NFJD Project staff is only able to access some plantings by walking atop of spongy mats. In these locations plantings were visibly distressed while other locations, dry in November, were even dryer the following summer.

As a result of these lessons learned at both the Lower Snipe Creek and Lower Camas Creek sites future plantings will follow the example of several cooperators. The use of cuttings will continue largely due to access to local stock, ease of planting (i.e. trenching with an excavator), or local conditions which reduce the survival of potted plants. An example of this would be mine tailings where survival is at best difficult due to the historic loss of fine materials and low soil moistures. The NFJD has learned from contractors working under the CTUIR's Protect and Restore Tucannon Watershed (BPA Project #2008-202-00) that stinging trees or excavating a hole down to the water table in floodplain areas can improve the survival of species such as Black Cottonwood or willow when working to reestablish vegetative populations. Pots one gallon or larger with a more robust root mass then 10 in^3 plugs will be used in an effort to provide plantings an advantage over surrounding vegetation by maximizing their ability to take advantage of watering efforts by the NFJD Project. Site selection will consider floodplain inundation based upon flow modeling and avoid placing anything but cuttings in frequently watered areas. This will rely on professional opinion to some extent as planting in floodplain and riparian areas along Lower Camas Creek may suffer differently than a site with more floodplain complexity and/or floodplain connectivity. Additionally, plantings will be grouped and protected by mesh fencing 2 meters in height supported by green treated posts or T-posts. These protective structures have been effectively used by the Warm Springs Oxbow Conservation Area (BPA Project #2000-015-00 and will require careful thought before their construction to reduce the potential for capturing debris and being damaged or removed entirely during high flows.

3) Provide a report that clearly articulates the strategy for restoration activities in the four priority Watersheds (Geographic Areas – GA's). A strategic framework is immediately needed that draws upon available information, partner knowledge, and past project experiences to guide and prioritize future tasks associated with watershed-scale restoration. Additional detail is needed to fully develop this framework for action. As noted in the 2013 ISRP review, "*The activities, while individually important, are not treated as an integrated network of sites and actions chosen for their effectiveness at meeting clearly stated goals.*" In developing the strategy, the sponsors should consider:

- **3.1 Focusing efforts in high priority areas**
- **3.2 Using integrated, larger scale projects to increase chances of creating restoration impacts big enough to measure their collective effectiveness**
- **3.3 Additional narrowing of geographic focus of work (e.g. using 1-2 subwatersheds within the current group of 4 priority watersheds)**
- **3.4 Incorporating priority protection and passive restoration actions on public lands**
- **3.5 The importance of controlling non-native fish and vegetative species in achieving restoration goals and appropriate actions needed**
- **3.6 A phased restoration approach which emphasizes habitat reconnection as a dominant early activity (as suggested in the 2013 ISRP report)**
- **3.7 Description of specific measures to ensure relevant RM&E efforts outside this project are well-coordinated with project activities listed in this proposal.**
- **3.8 Discussion of specific measures to enhance technical capacity of the project including possible formation of a science advisory group or technical support team and other approaches to enlist the collaboration of specialists to aid in project implementation and evaluation.**

Our response below provides an overview of our strategic framework for prioritizing and restoring habitat in the NFJD Project area, followed by detailed responses to the individual bullets noted above.

Strategic Framework for Restoration Activities:

Our CTUIR Fisheries Habitat Program's hierarchical approach to stream restoration planning and project development is supported by the Umatilla River Vision (Jones et al. 2008), and local and regional plans and assessments in 1) protecting high functioning habitat, 2) removal of fish migration barriers, 3) restoration of watershed processes, and 4) enhancement of in-stream habitat. Roni et al. (2002) supports this broadly applicable approach to sequencing stream and watershed restoration projects. Beechie et al. (2008) expanded on Roni et al.'s (2002) approach, incorporating it into a "General Protocol for Identifying and Prioritizing Restoration Actions", which includes:

Step 1: Define the restoration goal
Step 2: Choose prioritization approach
Step 3: Assess problems and identify restoration actions
Step 4: Prioritize restoration actions

The CTUIR Fisheries Habitat Program and project supported goal is to protect, enhance and restore floodplain, channel and watershed processes for the purpose of protecting and restoring fisheries and aquatic species important to the Umatilla Tribes. The NFJD Project has the ability to freely develop projects within the geographic boundary of the subbasin to meet this goal and must prioritize and select restoration action types and locations based on scientifically defensible strategies and the best available scientific information. Within the organization of the NFJD Project, the selection process for actions must consider several important criteria that include key species habitat needs, ecological conditions and processes within a watershed context, impediments to proper functioning conditions, project constraints such as landowner willingness, coordination with other agency and stakeholders goals within the subbasin and region, and action agency goals and objectives. In addition, there are practical considerations of property access and economic feasibility. To consider these criteria the project must complete a review and prioritization of actions internally and then in coordination with other subbasin implementers.

The process for action selection begins with the Umatilla River Vision, developed under guidance of the Umatilla Tribe's First Foods Concept. This River Vision defines a functional river as a dynamic environment that incorporates and expresses ecological processes that continue the natural production of First Foods used by the Tribal community. The River Vision is a literature rich document that provides direction for restoration by focusing on the five touchstones of hydrology, geomorphology, connectivity, riparian vegetation, and aquatic biota. Operating under this guidance, CTUIR fish habitat projects are planned, designed, implemented, and monitored across the usual and accustomed harvesting areas to achieve fish habitat restoration goals.

Our planning process then integrates these criteria with Primary Limiting Factors from the 2008 Fish Accords MOA (FCRPS, 2008), Steelhead Recovery Planning documents, the NPCC Subbasin Plans, TMDL reports, and local assessments and strategies. Designated high priority areas, with a preference for ecologically connected or contiguous project locations are the focus of the Fisheries Habitat Program, which addresses channel and floodplain function and aquatic habitat deficiencies through a systematic, holistic watershed planning approach termed the Riverine Ecosystem Planning Approach (Figure 9). This includes the prioritization of focal areas and management practices based on key species utilization of existing and historic available habitat, and limiting factors with a mechanism for riverine planning that utilizes scientifically defensible techniques. Five basic stages have been identified to develop lists of prioritized restoration actions including scoping, assessment, monitoring, implementation, and reporting. Scoping allows for the interface of community needs and issues with resource priorities. The issues and concerns developed from scoping can direct the needs defined for assessment. Using existing and collected data, assessments are developed with the intent to prioritize work locations identify limiting factors, and define project objectives. Monitoring data in its various forms is collected utilizing scientific knowledge and accepted methodology to determine historic and baseline conditions, determine the effectiveness of treatments, and determine the actions ability to address objectives and limiting factors. During the implementation stage, restoration actions are designed to address limiting factors through means that restore natural channel and floodplain processes. The final stage of reporting provides an opportunity to summarize monitoring and project actions and evaluate results. Based on the findings of reporting efforts all

phases of future actions are modified and improved through lessons learned and new information provided by cooperators or outlined in professional literature.

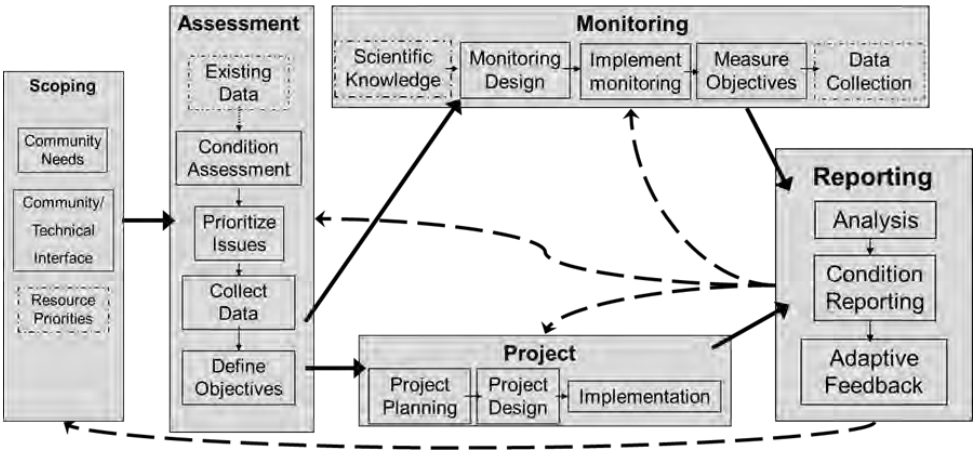


Figure 9. Riverine Ecosystem Planning Approach.

Interdisciplinary teams are an integral part of project development when planning projects both internally with CTUIR and with other agencies when projects span multiple ownership boundaries. Restoration work today requires a knowledge base in many scientific disciplines and engineering. The CTUIR personnel listed have a scientific knowledge base including geomorphic processes, hydrology, fish biology, ecology, and have an experience base from implementing small to large scale projects in fluvial systems. The CTUIR managed native plant nursery staff participate in project planning with trained botanists that participate in project planning activities. The CTUIR NFJD Project has worked with the Umatilla National Forest (UNF) on project planning on floodplain/channel and passage restoration projects. These projects entail stream restoration and floodplain enhancement on land managed by the UNF. In an effort to create a project that satisfies all federal, state and tribal laws and statues and accomplishes project goals, the CTUIR has worked with UNF fisheries biologist, wildlife biologist, plant ecologist, hydrologist, engineers, endangered species act consultation biologist and district rangers during all phases of restoration planning, monitoring, and implementation.

When expertise is needed outside the CTUIR Umatilla Fisheries Habitat Program or other restoration partners, contractors are solicited for technical expertise for a variety of project types. Past project contracts have included work associated with riparian fence installation, invasive weed removal, fish passage consultation, fish passage design, floodplain and in-stream restoration project design, floodplain and in-stream restoration implementation, riparian revegetation, and habitat monitoring and watershed assessment.

CTUIR responses to individual related comments are presented below:

3.1 Focusing efforts in high priority areas

The NFJD Project's 2006 Geographical Review project proposal selected four 5th field HUCS in three focal subbasins based upon their existing physical and ecological function and benefits to aquatic wildlife. Currently the NFJD Project continues to base all restoration actions upon priorities, strategies and limiting factors for focal basins in the John Day Subbasin Plan (NPPC, 2005) as shown in Table 5, along other recovery documents including the Mid-Columbia Steelhead Trout Recovery Plan (NMFS, 2008), the Bull Trout Recovery Pan (USFWS, 2002), and local watershed assessments or action plans, as previously noted in the CTUIR Fisheries Habitat Program's strategic framework. The NFJD John Day River supports ESA-listed Mid-Columbia River steelhead and Columbia River bull trout as well as biologically and culturally significant populations of spring Chinook salmon, Pacific lamprey, freshwater mussels, trout and other resident fish. The NFJD Project's habitat restoration efforts fit within a holistic watershed approach with strategies on both public and private lands supporting capacity building and long-term progress towards ESA delisting of Columbia River bull trout and middle Columbia River

steelhead, restore physical and ecological watershed processes to ensure continued viability of aquatic and terrestrial species and their habitat, and address water quality limiting factors per the Clean Water Act 303d list.

Table 5. Restoration priorities and strategies for the NFJD Project focal watersheds modified from the John Day Subbasin Plan (NPPC, 2005).

		STRATEGY RANKS: 1=Low 2=Moderate 3=High 4=Very High					
5th Field HUC by Rank	**Restoration Priority Ranking (1 is Highest)**	**Passage**	**In-stream Activities**	**Riparian Habitat Improvements**	**Protect Existing Habitat**	**Upland Improvements**	**Education and Outreach**
Granite Creek	1	4	3	3	3	2	3
Upper Camas Creek	2	3	3	3	3	2	2
Lower Camas Creek	2	3	2	4	2	4	3
Desolation Creek	3	3	3	3	3	2	2

The NFJD Project has progressively refined techniques and approaches to habitat restoration actions and project site and geographic area selection and prioritization criteria in the NFJD by focal basin. Early efforts of the project were slowed by the difficulty in attaining buy in from agricultural and forestry based small communities hesitant to work with any form of government to restore floodplain/channel processes through changes in land management strategies. Institutional project knowledge gained, along with now long-standing relationships with partners and communities since project inception have helped formalized local efforts and our ability to refine existing prioritized implementation strategies within previously defined focus basins.

The NFJD Project's 2006 Geographical Review proposal's focal basins, along with the adaptation of concepts from Roni et al. (2002) and Beechie et al. (2008) formed a basis for prioritized implementation strategies that will be further refined through continued use of guidance from planning and recovery documents and subbasin specific prioritization schedules; be they the use of cooperator derived action plans, or prioritization schedules developed by the NFJD Project. Simply put, NFJD Project will implement the strategy for prioritizing actions detailed in Roni et al. (2002) in focal basins including:

Granite Creek

Restoration actions by the NFJD Project did not begin in the Granite Creek subbasin until 2006 when the NFJD Project partnered with the USFS to level mine tailings on Clear Creek. This action was identified by the UNF as a high priority effort and included in the 2008 Granite Creek Action Plan (USFS, 2008). Building on successful partnerships with the USFS, the NFJD Project assisted in strategically removing highly ranked passage barriers identified in the Granite Creek Action Plan (USFS, 2008). In 2010 another passage barrier was removed in Granite Creek as identified in the NFJD Project 2006 Geographic Review proposal. Since 2010, four additional high priority barriers were removed within the tributaries of the Granite Creek subbasin (Beaver Creek - one barrier in 2010, Ten Cent Creek – 3 barriers in 2012). With the development of the Bull Run Creek Action Plan (USFS, 2012) under guidance of the USFS Watershed Condition Framework (USFS, 2011), the NFJD Project was able to coordinate with cooperators and select prioritized restoration actions within a specific subbasin of Granite Creek. As a result of this document three passage barriers have been removed, two more will be removed in 2015, and planning efforts will begin to address mine tailings affecting floodplain, riparian, and stream channel processes, large wood placements, and two other passage barrier removals. Once all actions identified in the Bull Run Creek Action Plan are completed another 6th Field HUC will be chosen using the same 2011 Watershed Condition framework applied to Bull Run Creek. In essence, this process developed by the USFS to maximize their efforts falls directly in line with the NFJD Project's restoration strategy for the NFJD.

In addition to working with the USFS on priority passage and floodplain/channel restoration projects in the Granite Creek subbasin, the NFJD Project has continued outreach and education efforts to local landowners

and where possible implement restoration actions adjacent to treated USFS properties with the intent of extending and connecting treated reaches further downstream. However, public sentiment towards government interaction or lack of interest in working for aquatic restoration benefits may hinder abilities to complete restoration on private property in a manner that is advantageous for sequencing restoration actions to maximize aquatic or environmental response. It is therefore difficult to identify how long term restoration efforts on these private lands may occur in the future.

Desolation Creek

There are primarily two landowners in the Desolation Creek subbasin (the UNF and one private) creating conditions ideal for developing restoration priorities throughout the subbasin. Desolation Creek was identified along with Granite Creek under the USFS's 2009 region wide USFS 5th field HUC prioritization effort although it was a slightly lower priority. The UNF will focus their efforts in Desolation Creek once work has been completed in Granite Creek using the Watershed Condition Framework strategy. In conjunction with the USFS efforts on public lands, the NFJD Project has begun working with a large private landowner and NFJD cooperators in lower Desolation Creek to change land management practices and cooperatively restore floodplain processes. The 13,000 acre property includes 17.7 Kilometers of mainstem Desolation Creek along with another 17.7 Kilometers of ephemeral or perennial tributaries (approximately 8 kilometers of the tributary habitat are used by anadromous fish species). The first step by the NFJD Project will be the development of a geomorphic assessment along with a prioritized implementation strategy for both the UNF and private properties if possible. The geomorphic assessment will complement ongoing efforts by the private landowner completing a range assessment followed by the development of a range management plan which may consider grazing management on both private lands and the adjoining public lands. Stream corridor buffers and off-channel livestock water developments in conjunction with future floodplain/channel restoration priorities identified in the planned geomorphic assessment will also be considered. This type of focused assessment and prioritized implementation strategy is what the NFJD Project intends to adopt in the future.

Upper and Lower Camas Creek

As with all the NFJD Projects focal basins the upper elevations are managed for multiple uses by the UNF or Wallowa-Whitman National Forest (WNF) with private lands located in the mid to lower elevation portions of the basin often along streams. Thus, early actions were tied specifically to private lands in mid to lower elevation areas in an opportunistic fashion. Given the limited influence of these actions upon larger scale limiting factors and more importantly, processes, the NFJD Project has worked to coordinate larger scale projects requiring the participation of multiple landowners. Over the course of the past several years the NFJD Project completed a preliminary assessment to describe conditions using readily available data and rapidly sampled geomorphic data. We provided copies of the assessment to local landowners and the City of Ukiah, made several presentations at Ukiah council meetings, interviewed individual landowners and facilitated three coordination meetings after assisting the NFJDWC develop a successful OWEB Technical Assistance Grant application to assist in project facilitation. These actions have led to community support for a geomorphic assessment and action plan resulting in;

a) Sediment budget for Camas Creek.
b) Explanation of historic and current conditions within the primary assessment area.
c) Identify the cause of floodplain, riparian, and stream channel disturbances and instabilities.
d) Development of 'typical' restoration treatments aimed to address limiting factors.

With this baseline information the local community will be able to implement treatments to address physical and biologic limiting factors to increase floodplain/channel function and aquatic habitat. This assessment will primarily concern itself with restoration actions in Lower Camas Creek while considering influencing factors from Upper Camas Creek. The assessment was initiated in 2014 and is scheduled for completion in 2016.

3.2 Using integrated, larger scale projects to increase chances of creating restoration impacts big enough to measure their collective effectiveness

The NFJD Project agrees with the ISRP on the importance of integrating larger multi-reach level habitat restoration at a scale that has measurable collective effectiveness. As a first step to adopt such a tactic the CTUIR Department of Natural Resources (DNR) restructured itself around the Tribal First Foods and released the *Umatilla River Vision* (Jones et al. 2008). The Umatilla River Vision highlights the dynamic interactions between hydrology, geomorphology, habitat connectivity, riparian vegetation, and aquatic biota necessary to restore processes important to the sustainability of aquatic biota and culturally significant resources. This approach inherently considers larger scale when combined with restoration of process as opposed to restoration to a fixed endpoint. Additionally, the restoration of process is more likely to address causes of river ecosystem degradation, whereas restoration toward a fixed endpoint addresses only symptomatic metrics. To successfully restore stream functions, it is necessary to understand how these different functions work together and which restoration techniques influence a given function (Harman et al. 2012). This approach effectively addresses limiting factors laid out in multiple regional and local planning documents including the 2008 Fish Accords, Mid-Columbia Steelhead Recovery Plan (NMFS, 2008), the John Day Subbasin Plan (NPPC, 2005), TMDL reports, and local assessments and strategies (e.g. Granite Creek Action Plan (USFS, 2008) more effectively. Implementation of integrated, larger scale projects will occur through two mechanisms depending on land ownership (public or private) as identified in Qualification 3.3.

The NFJD Project has and will continue to use UNF and WNF's 2011 Watershed Condition Framework (USFS, 2011) to prioritize 5th Field HUCs and restoration actions within. This approach will result in multiple actions within the Bull Run Creek watershed actions such as the Bull Run Creek Mine Tailing Redistribution (Deliverable 6 in the second 2013 ISRP Proposal) and associated large wood placement (Deliverable 13 in the second 2013 ISRP Proposal), passage barrier replacements to return access to viable habitat (Deliverables 9, 11, 14, 16, 18 in the second 2013 ISRP Proposal), and large wood placement associated with road maintenance and culvert removal on Deep Creek (Deliverable 13 in the second 2013 ISRP Proposal). Additionally The NFJD Project will complete heavy maintenance on riparian pastures protecting sensitive summer steelhead trout habitat in grazing units along Camas Creek (Deliverable 20 in the second 2013 ISRP Proposal) which complements cooperative fence construction efforts from 2008 to 2013. Efforts will be made to extend restoration efforts on public lands onto adjoining or adjacent public lands where possible.

As previously noted, the cooperation of private landowners early on was difficult to secure. However, through outreach and education, building relationships with local UNF staff and in turn with their permittees who are typically local landowners, active participation as a member of the NFJDWC's board, and working with local residents to explain their ties to the basins culture and history, the NFJD Project has gained traction. Through implemented actions and improved capacities of local cooperators, such as the NFJDWC who are typically more connected to the local community, the potential for larger scale and more comprehensive actions is growing. While not implemented actions themselves the Camas Creek and Desolation Creek Geomorphic Assessments are developing the groundwork for future restoration actions. The Camas Creek effort will include the participation of multiple landowners to address sediment deposition and channel form and function along approximately 9.0 Kilometers of Camas Creek while the Desolation Creek effort will address stream channel conditions along approximately 33 Kilometers of stream channel and grazing management on approximately 13,00 acres of upland, floodplain, and riparian habitats.

3.3 Additional narrowing of geographic focus of work (e.g. using 1-2 subwatersheds within the current group of 4 priority watersheds)

The NFJD Project has been progressively narrowing its geographic focus through the continued use of previously identified focal basins and refining strategic priorities within upon 5th Field HUCS or smaller areas through a bifurcated process treating publicly and privately owned properties separately. This tact has become necessary due to the difficulty of completing restoration work on large tracts of private land in the NFJD although recent progress has been made toward that end.

Public Lands

Properties are managed under the authority of the UNF and WNF who have cooperated with the NFJD Project by providing cost share funding from regional directives or through securing permits, creating designs, managing contracts, and prioritizing restorations actions. Management strategies, adopted tools, technical staff, and limited resources relative to the potential need provide a convenient avenue for focusing upon specific areas such as 5th Field HUCS. Cooperative efforts complementing the NFJD Projects goals and objectives began with the 2006 leveling of mine tailings on Clear Creek followed by the strategic removal of priority passage barriers within the subbasin. These actions were eventually included as priority actions within the USFS's 2009 region wide 5th Field HUC prioritization effort which identified Granite and Desolation Creeks as priority subbasins for restoration with Granite Creek ranking as a higher priority over Desolation Creek. Based upon these designations the Granite Creek Action Plan (USFS, 2008) and the Draft Desolation Creek Action Plan (USFS, 2009) were developed to identify and prioritize restoration actions within the subbasin. Thus far, four additional priority barriers identified in the Granite Creek Action Plan have been removed in Granite and Ten Cent Creeks expanding access to about 14 Kilometers of habitat for threatened summer steelhead trout and bull trout. Once all treatments in the Granite Creek subbasin are completed work will begin in Desolation Creek.

This 5th Field HUC ranking was followed by another under the USFS's 2011 Watershed Condition Framework using "geomorphic, hydrologic and biotic integrity" relative to "potential natural condition" criteria. This ranking refined the 2009 effort by identifying 6th Field HUCS of Clear Creek (UNF) and Bull Run Creek (WNF) as priority subbasins for restoration and resulting in the Bull Run Creek Action Plan (USFS, 2012). The NFJD Project and its cooperators have used this action plan to identify and implement priority restoration actions since its development. Under this document one barrier has been removed in the Clear Creek subbasin and two barriers have been removed on Bull Run Creek and another on Deep Creek (tributary of Bull Run Creek) returning access to approximately 20.9 Kilometers of existing habitat used by threatened summer steelhead trout and bull trout. Another two barriers in the Bull Run Creek basin will be removed in 2015 and planning efforts will begin to address priority mine tailings affecting floodplain, riparian, and stream channel processes, priority road obliterations, and large wood placements. Once all identified priority tasks in the Bull Run Creek Subbasin Action Plan have been addressed the same criteria will be applied to another subbasin. The Watershed Condition Framework is similar to the 'Decision Support System' with a multi-species influence identified by Beechie et al (2008).

Private Lands

Private lands are the primary focus of the NFJD Projects efforts. As The NFJD Project's ability to work with private landowners changes over time, restoration action selection criteria have become more refined. This evolution occurred through a need to effectively address larger scale processes and to work toward a fixed endpoint or restoration of process instead of addressing only symptoms. While early actions were largely opportunistic in nature the NFJD Projects education and outreach efforts in their various forms have improved our capacity to focus upon specific areas within focal subbasins. Along with guidance provided by recovery and planning documents and the Umatilla River Vision, the Accords have improved the NFJD Project's ability to provide better technical and financial support to cooperators and increased the quality of restoration actions on private lands. More recent efforts by the NFJD Project have been made to work with multiple private landowners across larger spatial areas (Camas Creek Assessment and Action Plan) or with private landowners adjacent to or downstream of actions taken on public lands (Desolation Creek Assessment). These tactics in and of themselves restrict our efforts to smaller subbasins within the NFJD Project's four focal watersheds as suggested by ISRP. That said, landowner opinion can influence the NFJD Projects ability to undertake a priority action and we must therefore consider working with a nearby (non-adjacent) landowner concentrating restoration actions to the extent possible so technically sound treatments addressing limiting factors may be implemented and cumulative restoration impacts are large enough to measure their collective effectiveness.

While acknowledging the progress that has been made on private lands since 2000 the NFJD Project may have to consider minimizing its efforts in these areas if landowner cooperation does not continue to improve. Should this occur, a greater emphasis would be placed upon public lands.

3.4 Incorporating priority protection and passive restoration actions on public lands

Publicly owned properties are treated differently from private holdings in large part due to existing multidisciplinary land management practices and plans which are already in place or the capacity to develop them. In 2009 the USFS identified focus watersheds based upon 5th field HUCs resulting in the Granite Creek Action Plan and the more recent Draft Desolation Creek Action Plan. These documents identified lists of priority actions to be undertaken to address aquatic habitat in these basins. This was followed by the 2011 development of the USFS Watershed Condition Framework to consistently and proactively implement integrated restoration on priority watersheds (6th Field HUCs) on national forests and grasslands within the previous prioritization effort including the Bull Run and Clear Creek basins of Granite Creek. Actions contained within the Bull Run Creek Action Plan and the yet to be developed Clear Creek Action Plan largely contain active priority treatments although their development doesn't preclude the adoption of passive restoration treatments to address limiting factors.

Through these documents or direct conversation between the UNF or WNF and the NFJD Project multiple strategies to incorporate priority protections and passive restoration actions on public lands have been implemented. Some of these include:

- Working with UNF and potentially WNF Range Conservationists to improve grazing management in the Camas and Desolation Creek subbasins. The construction or maintenance of riparian enclosures on UNF grazing allotments are prioritized by several criteria including not limited to the presence of listed species, need to protect floodplain, riparian, or stream channel habitats, water quality demands, existing and proposed grazing management strategies, or available cooperators. Given that fence construction over the past several years has met the UNF's current needs there now appears to be more value in intensive maintenance on existing fencelines. In these areas the benefit of riparian fences has been documented by the UNF (Bradley Lathrop personnel communication 2013) and as such, the NFJD included Deliverable 20 in our second proposal to ISRP for the 2013 Geographic Review cycle.

- Although not typically described as a passive restoration treatment, the NFJD Project has made a concerted effort to remove priority passage barriers. Complete removal of a structure or replacement of known barriers with another structure designed using ODFW criteria (ODFW, 2014) have or will continue to occur in tributary (headwater) areas of focal basins where high quality spawning and rearing habitat exists above a known barrier. All actions influence multiple species, stream channel processes or morphology, and/or water quality and have a positive influence upon stream channel processes. In one instance riparian fencing treatments occurred in conjunction with passage barrier removals.

The NFJD Project has and will continue to review scoping letters and documents produced by public agencies such as the UNF and WNF in support of the National Environmental Policy Act. This has and will include reviews of information not limited to mining, range, timber management, proposed restoration actions, and forest planning. While The NFJD Project does not necessarily become directly involved in all issues (i.e. timber management is beyond the purview of the NFJD Project) they all have bearing upon the CTUIR First Foods and ceded lands.

3.5 The importance of controlling non-native fish and vegetative species in achieving restoration goals and appropriate actions needed

Controlling non-native invasive species is an extremely important part of restoring functional native species populations which can be undertaken through a variety of means including active removal or restoring native species appropriate habitat. As the NFJD Project has been funded to restore habitat for native species in support of the CTUIR's First Foods with funding from BPA the active eradication of aquatic non-natives lies beyond our purview. However, passive (as in the case of upland stock water developments) or active (as in the case of floodplain, riparian, stream channel alteration, or noxious weed treatments) habitat restoration actions are

undertaken with the specific objective of addressing a limiting factor with the goal of improving the fitness of desirable populations and a reduction of a non-native populations fitness and in turn their demise.

3.6 A phased restoration approach which emphasizes habitat reconnection as a dominant early activity (as suggested in the 2013 ISRP report)

The 'phased restoration approach' referred to in Qualification 3.6 could not be located; however, a 'landscape approach' noted in ISRP (2013) referring to a process of engaging stakeholders to build socioeconomic support, developing a comprehensive strategic approach, developing collaborative mechanism, and incorporating a productive feedback loop to understand the effectiveness of actions undertaken (ISAB, 2011-4). As such, the NFJD Project assumes ISRP's 'phased restoration approach' consists of 1) strategically addressing highest restoration priorities first by adopting a landscape approach to restoration, 2) thoughtful and comprehensive coordination, 3) adaptive management which includes a feedback mechanism to incorporate lessons learned. The NFJD Project has adopted this process through deliberate coordination with NFJD cooperators, has incorporated lessons learned through its 'Riverine Ecosystem Planning Approach', and worked to deliberately address priority actions. This occurred through the use of a landscape scale approach for restoration actions and the acceptance and incorporation of a prioritization schedule as identified in Qualifications 3.1, 3.2, 3.3, 3.4.

With respect to 'emphasizing habitat reconnection' the NFJD Project has worked with cooperators to strategically remove passage barriers within two of the NFJD Project three focus subbasins. This tactic was selected for the simple reason of improving cost to benefit ratios with the replacement of a single or multiple structures within a single subbasin and returning access to existing high quality headwater habitats where spawning and rearing occurs. This also reinforces our approach to building upon existing refugia and undertaking restoration in a step-wise process working from the headwaters downstream. This approach also prevents the NFJD Project from undertaking isolated and expensive actions such as full channel restorations which may only address the symptoms of an unbalanced system. The NFJD Project accepts that restoration actions are improved by increasing the focus on watershed processes at larger spatial scales and on land use management over longer time frames. Actions undertaken to improve conditions for one desirable species will benefit other desirable aquatic and terrestrial species within that geographic area and potentially regional populations.

3.7 Description of specific measures to ensure relevant RM&E efforts outside this project are well-coordinated with project activities listed in this proposal.

As discussed in detail in response to Qualification 1, RM&E monitoring activities are completed under the BPA's AEM Program are designed and implemented to evaluate restoration action effectiveness between in-stream restoration efforts and physical and ecological/fish responses. These efforts occur with the cooperation of the NFJD Project engaged in identifying project restoration actions that fit within the study design for action effectiveness monitoring implemented by assigned BPA's AEM sponsors as discussed in the response to Qualification 1. Coordination also includes but is not limited to scheduling sampling activities, periodic conversations related to future work, and the inclusion of analyzed data into the NFJD Project's Riverine Ecosystem Planning Approach. For additional explanation see the responses to Qualifications 1 & 4.

3.8 Discussion of specific measures to enhance technical capacity of the project including possible formation of a science advisory group or technical support team and other approaches to enlist the collaboration of specialists to aid in project implementation and evaluation.

Interdisciplinary teams are an integral part of project development when planning projects both internally within CTUIR and with other agencies when projects span ownership boundaries. Restoration work today requires a knowledge base in many scientific disciplines and engineering. The NFJD Project's lead directs or participates in these teams for all restoration actions. However; that is not to say a dedicated overarching science advisory group has been identified. The CTUIR personnel listed in the NFJD Project's 2013 Proposal have a scientific knowledge base including geomorphic processes, hydrology, fish biology, ecology, and experience based in

implementing small to large scale projects in fluvial systems. CTUIR staff that actively providing technical and non-technical advice that weren't included in the NFJD Project's original 2013 ISRP Proposal are listed in Appendix II. The CTUIR's technical specialists in timber, range, botany, wildlife management, fisheries research, fisheries habitat, water resources, and cultural resources have been and will continue to be consulted during action development, design, permitting and implementation actions. These specialists work under guidance provided by the Umatilla River Vision and are able to provide input upon request. The NFJD Project's leads or participates in technical review teams composed of CTUIR staff across assigned project basins, staff from cooperators as needed, and if necessary contractors with defined roles and responsibilities.

Additional cooperators such as the NFJDWC, SWCD's, and NRCS have also provided technical review of designs, permits, and grant applications (see the response to Qualification 4 for additional detail). Other cooperator resources include but are not limited to BPA's Program Engineer, NFJDWC staff, ODFW staff, UNF and WNF staff engineers and permitting specialists, grazing managers, fisheries and wildlife biologists, and hydrologists. When expertise is needed outside the capabilities of CTUIR Fisheries Habitat Program or these cooperators, contractors are solicited for technical expertise for a variety of project types. Past contracts have included work associated with riparian fence installation, invasive weed removal, fish passage consultation, fish passage design, floodplain and in-stream restoration project design, floodplain and in-stream restoration implementation, riparian re-vegetation, and habitat monitoring and watershed assessment.

BPA staff has begun organizing semi-annual coordination meetings for all sponsors in the John Day River Basin. Sponsors present information related to their expected projects and to the extent possible attempt to share resources and coordinate actions. These meetings have thus far improved coordination between the UNF, NFJDWC, ODFW Screen Shop and the NFJD Project with respect to restoration activities.

4) Provide a more complete discussion and definition of responsibilities and roles of various entities involved in North Fork John Day restoration, including the CTUIR Department of Natural Resources. This is particularly important in the areas of technical capacity and support, data management, and monitoring and evaluation. This could be included in the strategy framework requested in Qualification No. 3.

Cooperators within the NFJD have made significant progress in developing relationships and defining mechanisms required for cooperative actions as well as securing staff or contractors with the appropriate technical background to provide technical support in undertaking proposed actions. The NFJD Project has implemented actions with a vast amount of support (technical design, permitting, monitoring, funding and in-kind) from CTUIR or NFJD entities such as the CTUIR's Departments of Natural Resources or Geographic Information System/Information Technology (GIS/IT), UNF, WNF, Grant SWCD, NFJDWC, BPA, and NRCS.

A formal method of identifying specific priority restoration actions and project support for cooperative actions between cooperators and the NFJD Project has yet to be developed or adopted and is largely dependent upon the resources and or management and technical expertise of individual entities. For example, cooperators such as the NFJDWC and Monument SWCD have limited technical capacity; however, they do have close ties to landowners and local communities and are capable of securing funding in support of cooperative actions or assisting with qualitative monitoring efforts. Conversely, the UNF and WNF, Grant SCWD, and ODFW have technical staff capable of contributing to or completing technical assessments and/or engineering designs, permit development, and/or monitoring efforts. Cooperators or implementing agencies such as The NFJD Project and other implementers such as the Warm Springs Tribe have capacities somewhere between these two extremes depending on the technical capacity of agency staffing. Each maintains some level of technical capacity (design and assess), ability to provide or secure funding or provide in-kind, complete permit applications, access to BPA engineering and permitting resources, and the ability to monitor. These differing capacities allow for a natural division of labor while not precluding any cooperator from participating in all discussions pertinent to a single or multiple planning or implementation efforts. Meanwhile BPA has begun coordinating with sponsors through semi-annual meetings. These meeting allow BPA's sponsors to discuss between each other and with BPA directly expected restoration coordination and implementation efforts for the coming year and beyond.

More recent and broader scale cooperative and coordinated efforts are a direct result of funding or potential funding opportunities such as the 2008 Accords and others such as OWEB. The ability to plan across multiple years and develop relationships and mechanisms supporting technical capacity, data management, and monitoring has proven invaluable to developing a comprehensive and coordinated approach to restoration However, an additional level of coordination and assessment of cooperator skillsets will be required in response to funding opportunities such as the Oregon Watershed Enhancement Board's 2014 Focused Investment Partnership Plan (OWEB 2014) (FIP), that will require strategic action plans in order to obtain implementation funding. In all likelihood the assets and capabilities of individual cooperators will continue to determine their participation and perpetuate the healthy division of coordinated effort which has thus far made restoration successful. However, such a large and diverse basin may at the same time require changes in cooperator structure or skillsets which have yet to be identified; especially when larger scale coordination such as that required by OWEB's FIP become available and are developed. At this time The NFJD Project cannot specify what the final decision making structure may look like although at the very least a decision making body and a consulting technical review team both composed of cooperators and if needed contractors may be required.

With Respect to RM&E, the role of AEM and the Bio-monitoring Project are detailed in Qualification 1. Outside of that the NFJD Project will communicate with other entities such as ODFW's Escapement and Productivity of Spring Chinook and Steelhead (BPA Project #1998-016-00), the Integrated Status and Effectiveness Monitoring Program (ISEMP) (BPA Project #2003-017-00), the ODFW Regional Fish Biologist and their staff, the UNF and WNF (data developed from their P.I.B.O process), and cooperators of the Middle Fork John Day River's Intensively Monitored Watershed Program. Applicable data or findings resulting from these RM&E efforts will be incorporated to improve the NFJD Project's restoration actions during prioritization efforts and implementation development, design, and implementation. In some instances such as Camas Creek CHAMP sites within the basin may prove useful for inclusion into the Bio-monitoring Project's monitoring efforts.

Resources contained within the CTUIR's Department of Natural resources (DNR) are activated as needed. During the 2008 to 2013 period discussions between the NFJD Project and the CTUIR's Range and Forestry occurred as part of a larger conversation with a landowner to develop potential assessments and management plans and included discussions with NRCS representative within the DNR to develop funding for these actions. The Project has also worked with the CTUIR Fisheries research Freshwater Mussel Research and Restoration (BPA Project #2002-037-00) and the Pacific Lamprey Research and Restoration Project (BPA Project #1994-026-00) to develop an understanding of mussel and lamprey distributions and their habitat to avoid inadvertent disturbances during data collection and implementation efforts. The CTUIR DNR's Cultural Resource program has worked with the NFJD Project when BPA's cultural resources staff was unable to complete surveys or monitoring activities. The NFJD Project has cooperated with the CTUIR's Wildlife Program in sharing resources and while discussion potential land acquisitions. The role of CTUIR's GIS/ITS Department is detailed in Qualification 6. All these relationships and efforts will be further developed as necessary in the future to improve both habitat restoration efforts and improve habitat conditions and population fitness of the CTUIR First Foods.

5) **Provide expected outputs/accomplishments for Deliverables 1, 2, 3, and 4. There are no expected outputs/accomplishments for Deliverable 1, 2, 3, and 4. These constitute more than 50% of the requested budget for 2014-2018. There need to be <u>quantitative</u> estimates of expected outputs/accomplishments for these deliverables. One suggestion would be to develop a couple of peer-reviewed professional publications. This would be a good way for the sponsors to undertake a self-assessment, clarify progress and shortcomings, and consider plans for future activities.**

Deliverables 1-4 were placed in the 2013 ISRP Proposal to encompass duties the NFJD Project must perform which are not directly associated with the remaining deliverables. These efforts include but are not limited to reporting, developing annual statements of work and related budgets, general coordination activities, outreach, maintaining structures developed under conservation agreements, and collecting design and permit related data to develop new restoration projects. As such, outputs of these deliverables can only be identified in a very general sense at this time and may not accurately reflect all outputs outlined in Table 6 below for the 2014-18 performance periods.

Table 6. Deliverables 1 – 4 and associated outputs.	
Deliverable	**Output**
Manage and Administer The Project	– Submit four Pisces progress reports annually – Submit one annual report annually – Develop annual draft Statements of Work and associated budgets to be submitted to BPA – Identify and attend one educational class or symposium/annual meeting (one opportunity each performance period (both project staff)
Undertake Outreach	– Attend and participate in 8 – 10 NFJDWC meetings each performance period – Contribute to annual educational opportunities planned for the Mud Creek project site
Maintain Structures and Native Vegetation	– Investigate trespass weekly during the grazing season where seven conservation agreements exist – Maintain 18 water developments during the grazing season under seven conservation agreements – Maintain 30 Kilometers of fence line weekly during the grazing season under seven conservation agreements – Treat noxious weeds on 537 acres under seven conservation agreements – Work with cooperators to treat noxious weeds on approximately 40 acres where cooperative opportunities exist outside of the seven existing conservation agreements
Develop Designs, Permits, and Funding Opportunities Necessary to Undertake Implementation Efforts	– Attend semi–annual coordination meetings conducted by BPA – Attend annual coordination meetings with the USFS and other cooperators to identify and prioritize restoration efforts – Collect necessary site data to support the successful design, permitting, and funding efforts associated with each opportunity including those which may have not yet been identified and those which have been identified in this proposal

With respect to the first four Deliverables proportion of the budget these costs do not appear to be out of line. The CTUIR's Grande Ronde Subbasin Restoration Project's (BPA Project #199608300) (Grande Ronde Project) approved 2013 proposal identifies costs for Manage and Administer Project, Produce Environmental Compliance Documentation, and Outreach and Education Deliverables that constitute 57% of their budget. This differs from the NFJD Projects 34% for similar Deliverables. Differences appear largely related to how the individual projects broke out costs. For instance, the first four deliverables within the Grande Ronde Project contain a Deliverable to 'Identify and Select Projects' which was included within the NFJD Projects 'Manage and Administer Projects' Deliverable while the 'Maintain Structures and Native Vegetation' Deliverable for the NFJD project was contained within other Deliverables for the Grande Ronde Project. In the future, The NFJD Project will use Pisces Work Elements to develop ISRP proposals in an effort to avoid this type of confusion.

While a peer-reviewed article would be beneficial to the NFJD Project and staff, funding is prioritized for developing and implementing habitat restoration actions. However, project staff will consider such an endeavor for future proposals. Cooperative actions undertaken by the NFJD Project have and will continue to provide a mechanism for distributing information among restoration professionals and the general NFJD community through local and professional presentations of planning, learned experiences, and monitoring data at various forums.

6) **Provide information on data management that is responsive to the previous ISRP requests. It is stated, "*…. efforts are underway through CTUIR Information Technology and on-site data coordinator to standardize and improve data storage and documentation practices.*" Unfortunately, the revised proposal offers little additional detail as to what is actually planned, when this work is to occur and who is taking the lead (Project personnel or the CTUIR Info Technology group). There is no information regarding responsibility and capacity for data analysis and reporting. The sponsors did not meet the ISRP request that "*these elements should be fully articulated in a revision to this proposal.*"**

The CTUIR Geographic Information System/Information Technology (GIS/IT) Program has established a 'Centralized Data Management System' (CDMS) in which all information related to the NFJD Project and associated restoration projects will be stored. To implement this policy a data management coordinator has been hired with funding from the DNR Fisheries Program and the Columbia Inter-Tribal Fisheries Commission to work with data collectors, data managers, database administrators, and policy analysts with the primary responsibility of ensuring that CTUIR DNR data are collected, stored, and distributed in a way that meets the needs of CTUIR Government, as well as the larger community. The CMDS utilizes a backed-up centralized SQL server with web based tools for data entry, QA/QC, reporting and data retrieval. The end goal is to provide

decision makers within CTUIR, as well as the public and related agencies, access to information through the web. At present, project summaries, photographs, relevant documents, and data files are available for internal CTUIR use and are being stored on site with a backed-up server. Information is available to the public or other agencies by request to the project lead.

The GIS/IT Program is taking a systematic approach to working with each project within the Dept. of Natural Resources at CTUIR. Through these working groups, standardized protocols for data collection, QA/QC protocols, and summarizing and reporting of information have been or will be created. In some cases query driven summaries or analysis are being incorporated into the developed system for easy outputs for project and program management. For example, water temperature sampling protocols and the database were standardized in 2014 for meeting CTUIR programmatic needs and to meet increased data sharing needs with entities such as ODEQ, EPA, and PIBO. Water temperature protocols were developed by the GIS/IT with input by CTUIR Fisheries and Water Resources Programs project staff collecting water temperature data whereas staff outlined standardized methods to collect and control the quality of data. This approach will be used to develop the balance of all standard CTUIR Department of Natural resources data sets (geospatial, topographic, environmental, harvest, fish escapement, abundance, production, etc.) and will be made available for public sharing. Modules will be completed one at a time and while a date for final completion of data sets and related protocols have not been identified by the GIS/IT Department, CTUIR expects to have the entire system on line before the end of 2018. Completed data sets, such as the water temperature, will be available to the public as each is brought online.

The final data management products will allow CTUIR staff to query and analyze resource data for riverine planning, presentation in progress reports, and documenting efforts. Data presented in annual reports for each of BPA's sponsor projects will contain monitoring data specific to the sponsor's project while the database will increase the ability of biologists to access and integrate related data from other CTUIR biologists and managers. The extent and type of analysis undertaken by biologists will depend upon the capacity and reporting requirements of an individual project and project biologist or manager, the objectives of a particular action, the extent of an individual action, and the roles of cooperators.

Currently all data that is collected and housed by CTUIR and CTUIR staff to be shared must go through a data sharing agreement with specific details on how the data is to be used and translated to meet the business need of the DNR department. GIS/IT has developed a data management strategy that will help guide DNR policies by facilitating access to data necessary for the decision making process. CTUIR's data management strategy has six components including; describing current data collection, analysis and reporting processes, integrate data collected from regional offices, maintain that data on our centralized database, assure data quality, archive our data, and develop an information system. This strategy creates pathways for data to flow to decision makers for policy creation and a feedback loop to refine data collections.

This strategy outlines CTUIR's vision of exchanging information between collectors, analysts, and end users for the purposes of effective evaluation of the tribal salmonid resource and progress toward the recovery of listed anadromous salmonids. The strategy outlines an approach that will ensure data and information can be shared in a timely, efficient, and collaborative manner. CTUIR will implement a data sharing strategy which includes creating a data sharing policy, establishing a common trust environment, advancing data discovery and retrieval, and developing the tools necessary for data sharing.

CTUIR will collaborate with our co-managers to ensure data sharing becomes a common business practice and making available population level data for the three Viable Salmonid Population (VSP) indicators (Natural Origin Spawning Abundance, Smolt to Adult Return Ratios, and Recruits per Spawner Ratios). CTUIR is willing to adopt a common data exchange template accepting that this template will not infringe on CTUIR's tribal sovereignty rights. This includes the ability to house all raw data pertaining to resources in CTUIR's traditional use areas. These data must be available in a format that supports query, synthesis, and analysis in support of policy development.

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APPENDIX I

Limiting Factors[1/]	Code	Objectives	Code
Habitat Diversity	HD	Preserve and maintain existing habitat	1
Key Habitat	KH	Improve riparian and floodplain complexity	2
Harassment	HD	Improve sediment routing and sorting	3
Sediment Load	SL	Improve stream channel complexity and morphology	4
Temperature	T	Improve or preserve water quality	5
Obstruction	O	Improve floodplain connectivity	6
		Improve passage to existing high quality habitats	7

[1/] Limiting factors for the North fork John Day subbasin are from NPCC (2005), pages 24--243.

Site	Limit. Fact.	Obj.	Year Implem.	Years Treat.	Stream Km. Affected	Acres Leased / Affected	Cntl. Site Id'd.	Metrics	Phys. Monitoring	Bio. Monitoring
Owens Creek Conservation Agreement	HD, KH, H, SL	1, 2, 3,	2001	12	0.5	5.2	no	- 481 meters of 4-strand barbed wire riparian fence constructed. - One stock well developed and with associated troughs. - Structure maintenance and noxious weed treatments for the life of the agreement.	2 cross sections 1 photopoint	none
Upper Snipe Creek Conservation Agreement	HD, KH, H, SL, T	1, 2, 3, 4, 5	2001	12	1.3	34	no	- 2,218 meters of 4-strand barbed wire riparian fence constructed. - Two spring developments constructed. - Structure maintenance for the life of the agreement.	2 cross sections 2 longitudinal profiles 1 photopoint	2 cross sections
Lower Snipe Creek Conservation Agreement	HD, KH, H, SL, T	1, 2, 3, 4,	2001	12	1.3	54	no	- 4,237 meters 4-strand barbed wire riparian fence constructed. - Three stock wells developed. - 7,000 native hardwoods planted. - Structure maintenance and noxious weed treatments for the life of the agreement.	2 cross sections 2 longitudinal profiles 2 thermistors 1 photopoint	2 cross sections - vegetative survival count
Deer Creek Conservation Agreement 2003-18	HD, KH, H, SL, T	1, 2, 3, 4, 5	2003	10	3.8	219	no	- 2,736 meters of 4-strand barbed wire fence constructed and 2,889 meters of fence refurbished. - 11 spring developments constructed. - Approximately 7,500 native hardwoods planted. - Structure maintenance and noxious weed treatments for the life of the agreement.	2 cross sections 2 longitudinal profiles 2 thermistors 1 photopoint	2 cross sections
Upper Camas Creek Conservation Agreement	HD, KH, H, SL, T	1, 3, 4, 5	2009	3	1.3	256	no	- 2,450 meters of 4-strand barbed wire riparian fence and 3 water gaps constructed. - 3,090 meters of upland 4-strand barbed wire fence constructed. - One upland well developed. - Structure maintenance and noxious weed treatments for the life of the agreement.	12 cross-sections 1 longitudinal profile 2 thermistors	3 cross sections
NFJD Wilderness Survey 2010	HD, KH	1	2010	1	0	0	no	- Surveyed of noxious weeds along 217 Kilometers of trail within the NFJD Wilderness area.	none	none
Battle Creek Culvert Replacement	O, SL	3, 7	2010	3	13.7	0	no	- Removed complete barrier to high quality summer steelhead trout habitat.	UNF road inspections	Spawner surveys for 2 years following replacement by the NFJD Project

Site	Limit. Fact.	Obj.	Year Implem.	Years Treat.	Stream Km. Affected	Acres Leased / Affected	Cntl. Site Id'd.	Metrics	Phys. Monitoring	Bio. Monitoring
Granite Creek Culvert Replacement	O	7	2010	3	4.3	0	no	- Removed partial barrier to high quality summer steelhead trout habitat.	UNF road inspections	Spawner surveys for 2 years following replacement by the NFJD Project
Bruin Creek Culvert Replacement	O, SL	3,7	2011	2	8.5	0	no	- Removed partial barrier to high quality summer steelhead trout habitat.	UNF road inspections	Spawner surveys for 2 years following replacement by the NFJD Project
Beaver Creek Reconnect	O	7	2010	3	0.18	1	no	- Removed 5 log drops, sealed the stream channel with bentonite, and reshaped the stream channel.	3 cross sections 1 longitudinal profile	ODFW annual spring spawner surveys
Ten Cent Creek Culvert Replacements	O	7	2011	2	9.6	0	no	- Removed partial barrier to high quality summer steelhead trout habitat.	UNF PIBO & road inspections	Spawner surveys for 2 years following replacement by the NFJD Project
Clear Creek Mine Tailing Redistribution	HD, KH, SL	2, 3, 6	2006	7	3.8	45	no	- Recontoured approximately 276,000 cubic meters of mine tailings. - Reestablished an inset floodplain to promote floodplain connectivity and sediment / debris deposition.	none	none
Kelsay Creek Riparian Fence	HD, KD, H, SL, T	1, 2, 3, 5	2008	5	1.6	100	No	- 4,425 meters 'New Zealand' and one water gap along constructed.	4 photopoints 2 thermistors	none
Taylor Creek Riparian Fence	HD, KD, H, SL, T	1, 2, 3, 5	2010	3	1.6	46	no	- 3,200 meters of 4-strand barbed wire fence constructed.	photopoint	none
Sugarbowl Creek Riparian Fence	HD, KD, H, SL, T	1, 2, 3, 5	2010	3	0.8	18	no	- 1,600 meters of 4-strand barbed wire fence constructed.	photopoint	none
Morsay Creek Riparian Fence	HD, KD, H, SL, T	1, 2, 3, 5	2010	3	3.2	100	no	- 11,747 meters of 4-strand barbed wire fence constructed.	photopoint	none
Bruin Creek Riparian Fence	HD, KD, H, SL, T	1, 2, 3, 5	2010	3	0.8	19	no	- 695 meters of three strand 'New Zealand' fence constructed.	photopoint	none
Butcherknife Creek Riparian Fence	HD, KD, H, SL, T	1, 2, 3, 5	2012	1	1.5	1200	no	- 3,621 meters of four strand barbed wire fence constructed.	UNF PIBO	none
Five Mile Creek Fence Maintenance	T	5	2012	1	2.5	90	no	- Heavy maintenance on 8 Kilometers of riparian exclusion fencing.	photopoint	none
Fox Creek Leafy Spurge Control	HD, KH	2	2010	3	65	260	no	- Approximately 215 acres treated with herbicide and biological controls. - 45 acres survey for infestations and tracking the progress of previous treatment.	none	visual surveys of selected areas 2 transects
Granite Creek Native Vegetation Plantings	HD, KH	2	2010	3	0	24.5	no	- Planted 8,400 native hardwoods in floodplain and riparian areas.	none	visual surveys of selected areas
Clear Creek Native Vegetation Plantings	HD, KH	2	2010	3	2	4	no	- Planted 5,040 native hardwoods in floodplain and riparian areas.	none	visual surveys of selected areas
Granite Creek Noxious Weed Control	HD, KH	2	2010	3	4.8	40	No	- 40 acres of riparian and floodplain habitats surveyed for noxious weeds. - 28.5 acres of riparian and floodplain areas treated with herbicides for noxious weeds	none	visual surveys of selected areas

Site	Limit. Fact.	Obj.	Year Implem.	Years Treat.	Stream Km. Affected	Acres Leased / Affected	Cntl. Site Id'd.	Metrics	Phys. Monitoring	Bio. Monitoring
NFJD River Push-up Dam Removal and Water Right Certification	SL	3	2009	4	0.15	80	no	- One irrigation point of diversion moved approximately 152 meters to a permanent scour hole. - One water gap removed. - Water right POD change completed.	4 cross sections 4 pebble counts	Greenline survey
Fox Creek Channel Enhancement	HD, KH, T	2, 4, 5, 6	2011	2	0.6	8	No	- Placed 25 pieces of large wood in the original stream channel. - 20 plugs restricting flow through 700 meters of the Corps channel.	photopoint	none
Lower Camas Creek Assessment	HD, KH, SL	4, 5	2011	2	9	1,000	no	- Completed brief detailing past and existing conditions, possible influences of existing geomorphology, and a strategy for developing appropriate treatments.	nothing established to date beyond cross-sections and pebble count data collected as baseline information	none

APPENDIX II

MICHAEL LAMBERT-Fish Habitat Program Supervisor, Partial Project Involvement

Roles and Responsibilities within the Program

- Program oversight
- Project review
- Design review
- Interagency coordination

EDUCATION

Western Oregon State University, Monmouth, Oregon -Bachelor of Science in Biology, June 1992 Minor: Business Administration

Portland State University – River Restoration Professional Certificate: completed specific course work specific to the science of river restoration.

Portland State University – Certificate of training using HEC-RAS

PROFESSIONAL EXPERIENCE

Fisheries Habitat Program Supervisor, Confederated Tribes of the Umatilla Indian Reservation, Mission, OR; March 2014 – Present.

Roles and Responsibilities within the Program

Develop strategy and direction for the Fisheries Habitat Program. Supervise and direct five (5) fish habitat biologists in the development, implementation, and administration of protection and restoration activities that benefit floodplain processes and associated native aquatic communities within the Umatilla, John Day, Grande Ronde, Walla Walla and Tucannon River Basins in Northeast Oregon and Southeast Washington. Program Supervisor will operate directly under the Fisheries Program Manager to provide effective and efficient coordination and implementation of these habitat program functions including:

- Supervise the CTUIR Fisheries Habitat Program and lead a team of biologists, hydrologists, and watershed science professionals in identifying project priorities and developing, implementing, and monitoring floodplain and watershed restoration projects supportive of the CTUIR First Foods Approach and the River Vision in tributary subbasins of the mid-Columbia River and lower Snake River across northeast Oregon and southeast Washington.
- Provide technical expertise as an interdisciplinary planning team member to scope, develop, and implement restoration project designs and monitoring plans including the collection and analysis of project specific site data.
- Coordinate and ensure consistency across project subbasins in addressing permit and ESA consultation requirements.
- Coordinate with the CTUIR Fisheries Monitoring and Evaluation Program to develop and maintain defensible monitoring methods and reporting.
- Identify, prioritize, and pursue opportunities to diversify habitat restoration project funding.
- Implement the CTUIR Ceded Land Culvert and Passage Implementation project through development of project actions and out-year work plans and coordination with ongoing restoration projects.

PERTANINT EMPLOYMENT HISTORY

Confederated Tribes of the Umatilla Indian Reservation - Mission, OR; June 2009 to February 2014

Fish Habitat Biologist III - Umatilla River Subbasin – Responsible for planning, development of action plans and strategies, design and implementation projects, environmental compliance, development of work plans and budgets, grant solicitations, and coordination of programmatic monitoring relevant to project actions and watershed fish recovery.

Confederated Tribes of the Umatilla Indian Reservation – Pendleton, OR - 6/2003 to 5/2009

Fisheries Research Field Biologist - Restoration and monitoring of juvenile and adult anadromous fish population abundance, distribution, timing and survival

Native Village of Eyak - Cordova, AK - 10/2001 to 6/2004

Program Tribal Biologist - Management and expansion of natural resource related projects, including implementing several subsistence fisheries research projects on the Copper River

Confederated Tribes of the Warm Springs Reservation of Oregon - The Dalles, OR - 3/1995 to 10/2003

Fisheries Project Leader (Hood River Production Program - Restoration and monitoring of juvenile and adult anadromous fish population abundance, distribution, timing and survival. Managed and implemented habitat restoration projects targeting fish passage barriers, floodplain, riparian and channel function and habitat complexity. Developed the Habitat program currently in the Hood River Basin

Oregon Department of Fish and Wildlife - Hermiston, Tillamook and Port Orford, La Grande and Pendleton, OR - 6/1989 to 2/199

Experimental Biological Aid V - Salmonid life cycle monitoring, fish passage research, creel monitoring habitat restoration and report writing

Pacific State Marine Fisheries Commission - La Grande, OR - 3/1994 to 7/199R

Biological Assistant - Monitoring and evaluating natural and hatchery salmonid production in the Grande Ronde Subbasin

Lambert & Bean Consulting Agency - Pendleton, OR - 5/41991 to 1/1994

Manager and Partner - Specialized in Hankin and Reeves stream and riparian surveys, completed over 322 Kilometers of surveys and reported on findings relevant to habitat conditions and enhancement

SELECTED PUBLICATIONS AND PROJECTS

- Coccoli H. and M.B. Lambert, CTWSRO. 2000. Hood river production program. Hood River Fish Habitat Protection, Restoration, and Monitoring Plan (Projects 1988-053-03 and 1998-021-00; Contracts DE-BI79-89BP00631 and 98BI-08334) to BPA, Portland, Oregon.
- Lambert, M.B., J. McCanna, M. Jennings, CTWSRO. December 2001. Hood River and Pelton Ladder Evaluation Studies and Hood River Fish Habitat Project. Annual Progress Report 1999 and 2000 (projects 1988-053-03, 1998-021; contracts DE-BI79-89BP00631, 98BI-08334) of the CTWSRO to BPA, Portland, Oregon.
- Smith, J.J., M. R. Link, and M.B. Lambert. 2003. Feasibility of using fishwheels for long-term monitoring of Chinook salmon escapement on the Copper River. USFWS Office of Subsistence Management, Fisheries Resource Monitoring Program, Annual Report No. FIS01-020-2.
- Confederated Tribes of the Umatilla Indian Reservation. 2012. Meacham Creek Floodplain Restoration and In-stream Enhancement Project Completion Report. Published by Tetra Tech Inc., Bothel Washington, December 2003.
- Project Selection: Project Manager of the Meacham Creek Levee Removal Project RM 5-6 2009, Meacham Creek Floodplain Restoration and In-stream Enhancement Phase I Project RM 6-7.1 2011-2012 and Phase II Project RM 6-8.5 2013-2014. The Phase I Project received attention throughout the region and country for its success. In April 2012, Mike Lambert received the national “Rise to the Future” award from the Forest Service for “Collaborative/Integrated Aquatic Stewardship.”

SCOTT O'DANIEL-Research Geographer, Partial Project Involvement

Roles and Responsibilities within the Program

- Review and comment on project design, Effectiveness monitoring design and development, Data analysis
- Project research, Project site selection review and analysis

EDUCATION

University of California, Santa Barbara Masters of Science in Geography 2002-2005

Washington State University Bachelors of Science in Landscape Architecture 1992-1995

THESIS WORK - Hyporheic flow as a mechanism for variation in stream temperature in the Umatilla River, Oregon, Advisor Dr. Leal Mertes

RESEARCH INTERESTS

Remote sensing and fluvial geomorphology in riverine landscapes: development and applications of statistical and physical models in floodplain environments; use of scientific research in decision-making.

WORK HISTORY

Research Geographer, Confederated Tribes of the Umatilla Indian Reservation, 1997-present

GIS Analyst, USFS Region 6, Remote Sensing Lab (RSL) 1995-1996

GIS Analyst, Washington State University, 1995

HONORS AND AWARDS

Dissertation research support grant, UCSB Geography Department, 2005

GIS Program "Program of the Year", CTUIR, 2001

Award for service, Intertribal GIS Council, 2001

Employee of the Year, CTUIR, 1998

GRANTS RECIEVED

Data Rich Decision Environment for the Development of Water Temperature Standards and TMDLS in the Pacific Northwest [DRDiSE], Funding Agency: NASA. (Principle Investigator), Amount $1,997,290, 10/01/2001-9/30/2005.

Habitat Diversity in Alluvial Rivers, Funding Agency: Bonneville Power Administration, Innovative Grants (Principle Investigator), Amount $314,000, 10/1/2001-12/30/2003.

SELECTED PUBLICATIONS AND PROJECTS

Jones, K.L., Poole, G.C., Woessner, W.W., Vitale, M.V., Boer, B.R., O'Daniels, S.J., Thomasill, S.A., and Geffen, B.A., 2007, Geomorphology, Hydrology, and Aquatic Vegetation Drive Seasonal Hyporheic Flow Patterns Across a Gravel-Dominated Floodplain, *Hydrol. Process*, 10.1002/hyp.

Jones, K.L., Poole, G.C., O'Daniel, S.J., Mertes, L.A.K, Stanford, J.A., 2008, Surface Hydrology of Low-Relief Landscapes: Assessing Surface Water Flow Impedance Using LIDAR-Derived Digital Elevation Models, Remote Sensing of Environment, Remote Sensing of Environment, 112 (11), 4148–4158.

COLETTE COINER-Data Management Coordinator

Roles and Responsibilities within the Program

- Creation of Data Standards
- Data Organization
- Interagency Coordination

EDUCATION

Oregon State University, Corvallis, Oregon - Masters of Agriculture in Agricultural and Resource Economics, February 2000 Minors: Soil Science and Systems in Horticulture (GIS)
Thesis: Economic and environmental implications of alternative landscape designs in the Walnut Creek Watershed of Iowa. Dr. JunJie Wu, chair

Oregon State University, La Grande, Oregon - Bachelor of Science in Agricultural and Resource Economics, June 1997 Minor: Soil Science

Blue Mountain Community College, Pendleton, Oregon - Associates of Science in Business Agriculture, March 1994

PROFESSIONAL EXPERIENCE

Data Management Coordinator, Confederated Tribes of the Umatilla Indian Reservation, Mission, OR; August 2012 – Present.

Roles and Responsibilities within the Program

Provide efficient strategies for data management which meet the needs of CTUIR. Coordinate the delivery of information to decision makers within CTUIR with the approach of integrating the vision of First Foods while utilizing available software applications and the enterprise technology system. Facilitate the understanding of integrated data management and coordinate the development of such strategies for projects proposed by DNR.

- Coordinate the development of data collection standards for DNR staff, as well as ensuring that those standards are followed
- Coordinate with GIS and DNR staff to conduct systematic needs assessments for all data flows identified in DNR. This includes identifying and interviewing all data collectors, data consumers, and other stakeholders in order to identify and prioritize needs.
- Work with Database Developers to design user interfaces to meet the needs outlined in assessments. This would include mocking up conceptual designs and conducting QA/QC testing of user interfaces as they are produced by technical staff. This would also include working with end-users to ensure that the systems are meeting their needs.
- Work with DNR staff to ensure that their data are being updated in centralized data systems in a timely fashion, and ensuring that basic QA/QC standards are being met.
- Be heavily involved in the development of any proposals for outside funding that have a data collection of consumption component to ensure that resource allocation is adequate to meet data management standards.
- Coordinate and collaborate with outside agencies (such as other Tribes, other Governments (federal, state, and local), and any other stakeholders (CRITFC, EcoTrust, Watershed Groups… etc.) to ensure that CTUIR data are available to be used in a mutually beneficial way. This may include the execution and enforcement of data sharing agreements.

PERTANINT EMPLOYMENT HISTORY

Confederated Tribes of the Umatilla Indian Reservation - Mission, OR; August 2011 to August 2012
Air Quality Technician 4 - Responsible for Air Quality Monitoring, coordinate data for the burn program management, GIS map conduct the EPA-Emissions Inventory for the Reservation

Oregon State University-Eastern Oregon Agricultural Research Station – Union, OR - 11/2004 to 3/2011

Faculty Research Assistance (GIS/Network Specialist) - Coordinated with researchers (local, state and federal) in the development and deployment of research projects. Designed, created, and maintained databases gathered from field work, online database sources, and relevant literature. Manipulated databases to extract relevant data. Perform and evaluate statistical analysis using SAS. Assisted in writing and editing peer reviewed articles and further grant proposals. Designed figures, tables, and graphs for publication and presentations

United States Department of Agriculture- State College, PA - 07/2000 to 10/2004.

Agronomist/Modeling Specialist – Work with NRCS and Watershed Mangers to organize comprehensive list of interviewees from private producers, equipment supply companies, fertilizer and chemical companies, and researchers in both the private sector and academia. Model potential effects of farm management practices on nutrient losses and economics for Northeastern US farms using the IFSM. Collect data for model simulations of farm management practices by developing and conducting interviews via telephone and in person. Design, create, and maintain database records to be used in model. Coordinate with local, state, and federal personnel to verify results of modeling efforts (Watershed managers, NRCS). Assist in the writing, editing and publishing of efforts in peer reviewed articles, reports, and bulletins (see Publications)

Oregon State University - Corvallis, OR - 09/1997 to 04/2000

Graduate Research Assistant - Design and implement surveys to interviewed private producers, county extension agents, state officials, and university professors for data relating to research. Design, create and maintain large database records for use with the Integrated Environmental Policy Impact Calculator (I_EPIC). Develop visual maps to project changes in profitability, erosion rates, and nitrogen loss of a watershed reported in I_EPIC using ArcView. Perform extensive literature reviews on sustainable agriculture and conservation tillage. Perform data reductions and statistical analysis, and created presentations. Write, edit and publish results in a peer reviewed article and a book chapter (see Publications). Taught classes in Precision Agriculture and Systems in Horticulture to undergraduate and graduate students and local producers that covered hands-on use of Global Positioning Units as well as other computer programs for field mapping farming practices

United States Department of Agriculture-Agricultural Research Service - Pendleton, OR - 05/1995 to 01/1997

Biological Science Aide 03 - Assist with research in long-term sustainable wheat production. Assign work to and trained new employees. Rouge noxious weeds, burnt wheat stubble, gathered plant population data, and assisted with plot layout. Use combines, hand held sickles, and electric trimmers to collect plant samples. Collect soil samples using a hydraulic probe. Prepare samples for laboratory analysis (i.e. weighed, measured, and ground).

SELECTED PUBLICATIONS AND PROJECTS

- Coiner, C.U., Wu, J.J., Polasky, S., Santelmann, M.V. 2007. Economic implications. In: Nassauer, J.I., Santelmann, M.V., and Scavia, D. (Eds.) From the Corn Belt to the Gulf: Societal and Environmental Implications of Alternative Agricultural Futures. Resources for the Future, Washington, D.C. pp.56-66.
- Santelmann, M.V., White, D., Freemark, K., Nassauer, J.I., Eilers, J.M., Vache, K.B., Danielson, B.J., Corry, R.C., Clark, M.E., Polasky, S., Cruse, R.M., Sinfeos, J., Rustigan, H., Coiner, C.U., Wu, J.J., and Debinski, D. 2004. Assessing Alternative Futures for Agriculture in Iowa, USA. Landscape Ecology 19:357-374.
- Rotz, C.A., Coiner, C.U., and Soder, K.J. 2003. Automatic milking systems, farm size, and milk production. Journal of Dairy Science. 86:4167-4177.
- Rotz, C.A. and Coiner, C.U. 2004. Integrated Farm System Model, Reference Manual. http://pswmru.arsup.psu.edu/software/ifsm.htm

- Rotz, C.A., Coiner, C.U., and Soder, K.J. 2002. Economic Impact of Automatic Milking Systems on Dairy Farms. Paper No. 023114, ASAE, St. Joseph, MI.
- Coiner, C.U., Wu, J.J., and Polasky, S. 2001. Economic and environmental implications of alternative landscape designs in the Walnut Creek Watershed of Iowa. Ecological Economics. 38:119-139.
- Rotz, C.A., Coiner, C.U., and Soder, K.J. 2001. Economics of robotic milking on a dairy farm in the United States. In: Juliszewski, T. (Ed.), Farm Work Science. Facing the Challenges of the XXI Century. Proc. XXIX CIOSTA-CIGR V Congress. June 25-27, Krakow, Poland. Wageningen Pers, Wageningen, The Netherlands. pp.115-122
- Rotz, C.A. and Coiner, C.U. 2001. Dairy Forage System Model, Reference Manual. Updated to the Integrated Farm System Model. http://pswmru.arsup.psu.edu/software/ifsm.htm
- Coiner, C.U. and Wu, J.J. 2000. Economic Implications of Alternative Landscape Designs in the Walnut Creek Watershed of Iowa. Poster presented at the AAEA Annual Meeting in Orlando, Florida. July 30-August 2.
- Coiner, C.U. and **Wu, J.J.** 1999. Economic Implications of Alternative Landscape Designs in the Walnut Creek Watershed of Iowa. Paper and Poster presented at the 5th US-IALE World Congress. July 29 - August 3. Snowmass, Colorado.

Confederated Tribes *of the*
Umatilla Indian Reservation

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Northwest Power and Conservation Council
851 S.W. Sixth Avenue, Suite 1100
Portland, Oregon 97204

23 February 2015

RE: Response to ISRP

To Whom it may Concern,

In response to ISRP's request for proposals in early 2013 the Confederated Tribes of the Umatilla Indian Reservation's North Fork John Day Fishery Habitat Enhancement Project (Project #2000-031-00) submitted a proposal in February of 2014, responded to the first round of 16 Qualifications from the Independent Scientific Review Panel (ISRP) on 7 August 2013, and submitted a revised second proposal in March of 2014 reviewed by the ISRP on 7 April 2014 leading to ISRP's published final recommendations in August 2013 (ISRP 2014(-11)). The enclosed report titled "2013 Geographic Review - Response to the Independent Scientific Review Panel Qualifications of April 2014" contains our response to ISRP's latest request to provide a strategic framework addressing the 6 remaining qualifications remaining from the 2013 Geographical review process.

If you have any comments or questions please let me know at your convenience.

Sincerely,

John Zakrajsek
NFJD Habitat Biologist
CTUIR Fisheries
Ag Service Center
10507 North McAlister Rd
La Grande, OR 97850
541 429-7943

Independent Scientific Review Panel
for the Northwest Power & Conservation Council
851 SW 6th Avenue, Suite 1100
Portland, Oregon 97204
www.nwcouncil.org/fw/isrp

Memorandum (ISRP 2015-4) **April 16, 2015**

To: Phil Rockefeller, Chair, Northwest Power and Conservation Council

From: Greg Ruggerone, ISRP Chair

Subject: Follow-up review of project #2000-031-00, Enhance Habitat in the North Fork John Day River

Background

At the Northwest Power and Conservation's February 24, 2015 request, the ISRP reviewed a response from the Confederated Tribes of the Umatilla Indian Reservation (CTUIR) to the ISRP's April 2014 review of a revised proposal (ISRP 2014-3) for Project #2000-031-00, *Enhance Habitat in the North Fork John Day River*. The proposal was revised in 2014 to address the Council's recommendation and the ISRP's qualifications from the Geographic Review (ISRP 2013-11; August 15, 2013) which asked the project proponent to develop a strategic framework to guide the restoration project. The ISRP provided six specific issues for the proponent to address in developing the strategic plan. The proponent's 2015 response and the ISRP's review are organized by these six issues.

This project's purpose is to protect, enhance, and restore functional floodplain, channel, and watershed processes to provide sustainable and healthy habitat and water quality for aquatic species in the North Fork John Day River subbasin.

Recommendation

Meets Scientific Review Criteria (Qualified)

The ISRP was greatly pleased to see significant progress in development of a strategic framework for the CTUIR North Fork John Day Project (NFJD). Restoration is a complex business, both ecologically and socially. The proponent recognizes this and has crafted a strategic framework that may work well in their situation. Social components, at the core of the strategic framework, acknowledge the daunting challenges for meeting on-the-ground

restoration actions while maintaining the effectiveness of those actions. A particularly positive note is the effort to coordinate and utilize a strategic approach for restoration on public lands.

The proponent provides forthright and comprehensive responses to the six qualifications. While there has been significant progress in responding to the previous ISRP Qualifications, additional clarifications are needed for Qualification 2 (major findings and lessons learned from past projects), Qualification 4 (roles and responsibilities of various entities), and Qualification 6 (data management). Responses to the Qualifications detailed below should be incorporated into the project's annual progress reports to BPA. The ISRP will review this documentation as part of the next Council/ISRP review process (i.e., the next version of the Geographic Review).The ISRP is confident that the project is on the right path, and the proponent should move forward with activities while the qualifications are being addressed.

Qualifications:

1. **Lessons Learned:** The proponent is requested to provide a more comprehensive summary of lessons learned. This documentation should be provided in annual project reports to BPA.

2. **Roles and Responsibilities:** Given the scope and complexity of the NFJD project, additional emphasis on coordination is likely to reduce project costs and to make the best use of the wide array of skills available to the project—both within the subbasin and from the region. It would be particularly useful to have a written, initial framework that identifies broad roles and responsibilities among key partners and players. It could start by addressing the CTUIR organization, with a focus on Natural Resources, and then progress through discussions/agreements with key partners. These discussions should be useful for the long term success of the project. Documentation does not need to be detailed but should be sufficient to capture major agreements and responsibilities among participants. It should be included in the next annual progress report to BPA.

3. **Data Management:** The primary concern is how data will be managed during the 2-3 years while development of the CTUIR data management system is being completed. Additionally, it does not appear that there are contingency plans to deal with possible delays in full implementation of the data management system. Does the completion of the data management system by 2018 mean that temporal analyses cannot occur before then? Is there a priority list for bringing modules on line? These are important concerns from the perspective of program effectiveness. A written response to these concerns should be included as part of the project's next annual report to BPA.

While several of the responses to the previous qualifications continue to raise concerns with the ISRP (e.g., removal of monitoring from the NFJD program by BPA, a lack of monitoring and analyses prior to 2007, no reference sites), the responses were forthright—and that is greatly

appreciated. It seems that little can be done by the NFJD program to rectify prior oversights, nor to ameliorate the monitoring constraints. The focus should be on the future, and this research team appears to have the necessary components in place to move forward in a positive manner.

Comments on CTUIR response to the ISRP's Six Qualifications from 2014 Review

1. **2014 Review: Provide a report that clearly describes future Project monitoring and evaluation actions, and provide a time line for integration with CHaMP and ISEMP and other ongoing monitoring and evaluation programs**.

The proponent provides a satisfactory response to this qualification. Nevertheless, it is particularly troubling—but not unexpected—that the proponent feels "*There has been conflicting direction from BPA and ISRP with respect to data collection and the purpose of monitoring efforts.*" The ISRP will be reviewing the progress of ISEMP, CHaMP, AEM, and the regional approach to habitat RM&E beginning in May 2015. This review will include discussion of what level of local M&E might be needed to determine if local actions are meeting their quantitative objectives. The ISRP suggests that the project proponent stay informed of the ISEMP, CHaMP, and AEM progress reports and the subsequent ISRP review and Council recommendations.

With respect to the NFJD program, the response that monitoring will occur under BPA's AEM program seems reasonable. Although it is fair to ask how monitoring will occur, the large number of monitoring programs and their various stages of ongoing development make it a full time job to adapt monitoring to changes and advances in the various programs. The NFJD approach to "*continue to work with BPA and the CTUIR biomonitoring project [funded by BPA], CHaMP and ISEMP projects to guide restoration…*" seems like a realistic and defensible approach.

It remains less clear which approach will be used for future compliance and implementation monitoring for the project. For instance, on page 3 the proponent states: "*Monitoring for all restoration actions not brought into the AEM process has and will continue to occur through project implementation and compliance monitoring under BPA contracting protocols including their Pisces program. This does not preclude the potential use of project implementation and compliance monitoring data for RM&E monitoring such as topographic survey data, cross sections and longitudinal profiles, and sediment data in RM&E efforts when appropriate. However, this information will be analyzed and reported on under the Bio-monitoring Project."* Later, on page 6 where the proponent discusses implementation and compliance monitoring: *"Several prominent factors hinder our analysis including; 1) a lack of monitoring data prior to 2007 after most of the existing conservation agreements were in place and implemented, 2) a lack of pre-implementation data in response to the previous comment and landowner or cooperator demand/need to implement as soon as possible, and 3) the duration of implementation or monitoring."* The juxtaposition of these statements was confusing to the

ISRP as to future strategies for monitoring and analyses. Is there a clear path forward that will be effective?

Given the stated limitations for past compliance, implementation, and effectiveness monitoring to assess project performance, it appears that a revised, more formalized program is needed. If the program is revised, it should include a summary of adjustments that have been incorporated to respond to past limitations. This summary would enhance the ability to identify major findings and lessons learned from a wider variety of treatment types and provide additional insights into effectiveness of various treatments given specific site conditions. This type of information is particularly important in long-term projects for maintaining continuity when changes in personnel occur. Realizing that this is a "work in progress," an update on the M&E program should be provided in the annual report to BPA for evaluation in the next major project review by the ISRP.

2. **2014 Review: Provide a report that summarizes the results of past project and major findings from implementation and effectiveness monitoring of completed projects (with appropriate statistical analyses).**

The ISRP felt that the proponent's response was an honest and objective assessment of progress in some areas. It was quite complete and insightful in some aspects but lacking in others. The response was an interesting description of lessons learned for two general areas (project prioritization and vegetation planting) from the implementation of two projects, Lower Snipe Creek and Lower Camas Creek. The discussion was comprehensive and demonstrates critical review and application of new tools and approaches for continuing project activities.

However, for a project that has been active for more than a decade, assessment of a wider range of implementations and outcomes from a broader range of project types and elements would have been more in line with the ISRP request. A broader assessment would also likely be more useful for personnel in the long term, especially as new personnel join the NFJD project. Even in the absence of statistical analyses, it seems that many lessons have been learned and that adjustments have been made in areas such as project location, design, implementation/contract administration and post project maintenance. A more comprehensive summary of lessons learned could be organized around operational project components (scoping, planning and design, implementation/contracting and administration and post project modification/maintenance) and treatment types (fencing, riparian planting, noxious weed eradication, bank stabilization, and so forth). Discussion items could be formatted into a quick summary lay out and complemented with maps and photos. Such a summary would serve as a living record and should be maintained for all multi-year projects.

The ISRP appreciates that the timeframe and natural, inter-annual variations make assessment of progress difficult to interpret (e.g., temperature changes in Lower Camas Creek). Nevertheless, while statistical analyses are not provided, it is unclear if adequate data are

available in specific instances for a rigorous analysis. A list of instances where data are available would be useful. That said, the response indicated that the onsite biologists are engaged and knowledgeable of what is occurring, at least as indicated by their observations and assessments of probable causes of success or lack of it. For example, they seem to understand why plantings have been largely unsuccessful; hopefully they can use this knowledge moving forward.

3. **2014 Review: Provide a report that clearly articulates the strategy for restoration activities in the four priority Watersheds (Geographic Areas – GA's).**

   In developing the strategy, the sponsors should consider:
   - **focusing efforts in high priority areas**
   - **using integrated, larger scale projects to increase chances of creating restoration impacts big enough to measure their collective effectiveness**
   - **additional narrowing of geographic focus of work (e.g., using 1-2 sub-watersheds within the current group of 4 priority watersheds)**
   - **incorporating priority protection and passive restoration actions on public lands**
   - **the importance of controlling non-native fish and vegetative species in achieving restoration goals and appropriate actions needed**
   - **a phased restoration approach which emphasizes habitat reconnection as a dominant early activity (as suggested in the 2013 ISRP report)**
   - **description of specific measures to ensure relevant RM&E efforts outside this project are well-coordinated with project activities listed in this proposal, and**
   - **discussion of specific measures to enhance technical capacity of the project including possible formation of a science advisory group or technical support team and other approaches to enlist the collaboration of specialists to aid in project implementation and evaluation.**

The proponent has provided a satisfactory response to this qualification. The Riverine Ecosystem Planning Approach appears to be a good framework—as long as the social aspects, which are required to make it work, are effective.

Coordination of the operational strategy with that used for watershed-scale restoration on public lands is a sound approach. It employs designated, high priority areas (priority watersheds) with an emphasis on restoring and expanding ecologically connected or contiguous project locations in focal sub-watersheds. Given that nearly 2/3rd of the subbasin is in public ownership and the fact that much of the best remaining habitat is on these lands, a coordinated approach for protection and restoration is a sound investment and more likely to provide integrated and sustainable results at a watershed scale.

It is encouraging to see efforts being made to develop broader community interest and ownership in the restoration of the NFJD. A good example of this is described on page 17, "*The NFJD Project has continued outreach and education efforts to local landowners and where possible implement restoration actions adjacent to treated USFS properties with the intent of*

extending and connecting treated reaches further downstream." It is also positive that these outreach efforts are leading to landowner participation in identification and development of projects. Completion of this assessment is scheduled for 2016, and the ISRP would be interested to learn the general results of this promising effort in the next major project review.

One area of the CTUIR strategic approach, for which the ISRP would like more clarification, is the establishment of relative priorities for treatment of public versus private land. On page 19, it states that, *"Private lands are the primary focus of the NFJD Projects efforts"* and that *"While acknowledging the progress that has been made on private lands since 2000 the NFJD Project may have to consider minimizing its efforts in these areas if landowner cooperation does not continue to improve. Should this occur, a greater emphasis would be placed upon public lands."* This seems to contradict previous statements that restoration would be focused on stronghold areas on public land and then be expanded to downstream private land to further enlarge/connect the total restored area.

There is documentation and discussion regarding protection and passive restoration actions on public lands (Consideration 4). Efforts have focused on working with Forest Service personnel and permit holders to improve grazing practices and to participate in the review of planning documents and project plans on a variety of resource management activities. A major omission, however, is the potential for CTUIR involvement in Forest Plan revision on National Forests in the NFJD. This revision is currently ongoing and offers a major opportunity to influence land management. Opportunities include influencing land allocations important for fish and aquatic habitat (e.g., Key Watersheds: fish and water emphasis areas), influencing actions on Aquatic and Riparian Management areas, and influencing proposed management direction for a variety of resource activities including forest, watershed, and aquatic habitat restoration. The revised Plan will guide management for the next 10-15 years. Participation in the Plan revision process is likely a primary role for CTUIR Resource Department personnel; however, input from NFJD project personnel would be beneficial.

For Consideration 6 (a phased restoration approach emphasizing habitat reconnection), it seems that the ISRP's intention was not clearly communicated (p. 21). The ISRP description of a phased approach for restoration refers to a sequence that (1) emphasizes protecting and removing threats to fully-functioning watershed/aquatic habitat areas, (2) provides for reconnection of habitat areas, and (3) restores other adjacent sites in a way that expands the effective, contiguous area of fully-functioning watershed/habitat areas. Fortunately, it appears that these three elements have been generally incorporated into the proponent's approach for watershed-scale restoration.

There is ample discussion regarding the availability of CTUIR technical skills and other measures taken to enhance technical capacity for project activities (Item 3.8, p. 21). Although a formal, technical advisory group has not been formed, other approaches have been used to broaden the scope of expertise available. An interdisciplinary team and technical expertise from other groups and agencies (NFJDWC, SWCD's, NRCS, and others) are being used to review designs, permits, and grant applications. Additionally, it is noted that other cooperator resources

include, but are not limited to, BPA's Program Engineer, NFJDWC staff, ODFW staff, UNF and WNF staff engineers and permitting specialists, grazing managers, fisheries and wildlife biologists, and hydrologists. It seems that the next logical step would be to capture the impressive array of expertise into a more formal advisory group. This would help to ensure consistent use and most efficient application of relatively scarce resources.

4. Provide a more complete discussion and definition of responsibilities and roles of various entities involved in North Fork John Day restoration, including the CTUIR Department of Natural Resources.

The proponent's response summarizes some of the possibilities for mobilizing technical expertise needed for the project but falls short of actually indicating which linkages, if any, are in place and which are not. It is hoped that the BPA planning meeting, mentioned in the response, will result in effective linkages being established. While staffing resumes in the appendix are helpful, the proponent has not identified responsibilities and roles in the project organization or operational activities (i.e., a matrix of which person is response for each activity). It appears that there has been some improvement in defining some roles and responsibilities within CTUIR Natural Resources, particularly around monitoring and data management, and a general increase in coordination among the many restoration and management entities. As noted in the response (p. 22): "*A formal method of identifying specific priority restoration actions and project support for cooperative actions between cooperators and the NFJD Project has yet to be developed or adopted*…" Also, "*differing capacities allow for a natural division of labor while not precluding any cooperator from participating in all discussions pertinent to a single or multiple planning or implementation efforts."* Finally, the proponent offers (p. 22): "*Cooperators within the NFJD have made significant progress in developing relationships and defining mechanisms required for cooperative actions as well as securing staff or contractors with the appropriate technical background to provide technical support in undertaking proposed action.*"

5. Provide expected outputs/accomplishments for Deliverables 1, 2, 3, and 4.

The proponent has provided a satisfactory response to this qualification. Regarding development of outputs for Deliverables 1 through 4, the proponent provides some additional details regarding specific planned activities and outputs. The proponent, however, continues to maintain that it is not possible or reasonable to be more specific or quantitative regarding these items. The ISRP continues to advise that it is possible to improve the descriptions of expected outputs and that the improved accountability is important for a variety of reasons, especially given the relatively large share of project funding involved.

6. Provide information on data management that is responsive to the previous ISRP requests.

It is reassuring to learn that "*The GIS/IT Program is taking a systematic approach to working with each project within the Dept. of Natural Resources at CTUIR. Through these working groups, standardized protocols for data collection, QA/QC protocols, and summarizing and reporting of information have been or will be created. ….. Modules will be completed one at a time and while a date for final completion of data sets and related protocols have not been identified by the GIS/IT Department, CTUIR expects to have the entire system on line before the end of 2018. Completed data sets, such as the water temperature, will be available to the public as each is brought online."*

In general, the discussion regarding data management is responsive to the ISRP request. The ISRP notes that "*efforts are underway through CTUIR Information Technology and on-site data coordinator to standardize and improve data storage and documentation practices*" (p. 21) and that a data coordinator has been hired recently. There is a six part data management strategy and the full system will be on line in 2018.

The ISRP requests clarification on the term "completed" in reference to data sets. By a "completed data set" do the proponents mean the end of acquisition as well as the establishment of the data on the web server?