
PART I - ADMINISTRATIVE

Section 1. General administrative information

Title of project

Walla Walla Basin Fish Habitat Enhancement

BPA project number: 9604601
Contract renewal date (mm/yyyy): 2/2000 **Multiple actions?**

Business name of agency, institution or organization requesting funding
Confederated Tribes of the Umatilla Indian Reservation

Business acronym (if appropriate) CTUIR

Proposal contact person or principal investigator:

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NPPC Program Measure Number(s) which this project addresses
7.6-7.8

FWS/NMFS Biological Opinion Number(s) which this project addresses
NA

Other planning document references

Wy-Kan-Ush-Mi, Wa-Kish-Wit, Volume II, Page 52;

Walla Walla River Watershed Assessment Upper Walla Walla Subbasin Umatilla County, Oregon, Bureau of Reclamation, 1997, pages 13 and 22;

Walla Walla River Production Plan, Confederated Tribes of the Umatilla Indian Reservation, et al. 1990, page 23;

Initial Watershed Assessment Water Resources Inventory Area 32 Walla Walla River Watershed Report Number 95-11, Pacific Groundwater Group, et al 1995;

Guidelines for Watershed Restoration In the Walla Walla River, Confederated Tribes of the Umatilla Indian Reservation, et. al (draft);

The condition of Salmon stocks in the John Day, Umatilla, Walla Walla, Grande Ronde and Imnaha Rivers, Van Cleave and Ting, 1960;

Traditional Fisheries of the Walla Walla, Cayuse and Umatilla, Lane and Lane 1979; CTUIR habitat surveys (NEOH), 1993;

Walla Walla River Watershed Reconnaissance Report, Corps of Engineers, 1997.

Short description

Protect and enhance riparian habitat with particular emphasis on the holding, spawning, and rearing areas of salmonid fishes, thus improving water quality and quantity and promoting natural ecological functions.

Target species

Specifically, summer steelhead, bull trout, and redband trout. Spring chinook salmon will also benefit once reintroduced. Various non-game fish species, and a multitude of wildlife species also benefit directly from these efforts.

Section 2. Sorting and evaluation

Subbasin

Walla Walla

Evaluation Process Sort

CBFWA caucus	Special evaluation process	ISRP project type
Mark one or more caucus	If your project fits either of these processes, mark one or both	Mark one or more categories
<input checked="" type="checkbox"/> Anadromous fish <input type="checkbox"/> Resident fish <input type="checkbox"/> Wildlife	<input type="checkbox"/> Multi-year (milestone-based evaluation) <input checked="" type="checkbox"/> Watershed project evaluation	<input type="checkbox"/> Watershed councils/model watersheds <input type="checkbox"/> Information dissemination <input checked="" type="checkbox"/> Operation & maintenance <input type="checkbox"/> New construction <input type="checkbox"/> Research & monitoring <input checked="" type="checkbox"/> Implementation & management <input type="checkbox"/> Wildlife habitat acquisitions

Section 3. Relationships to other Bonneville projects

Umbrella / sub-proposal relationships. List umbrella project first.

Project #	Project title/description
	Walla Walla Habitat/Watershed Enhancement
9604601	Walla Walla Fish Habitat Enhancement (subject sub-proposal)

Other dependent or critically-related projects

Project #	Project title/description	Nature of relationship
870001	Umatilla Basin Anadromous Fish Habitat Enhancement Project	To minimize cost, this project shares personnel, vehicles, and equipment with the Umatilla Basin Fish Habitat Enhancement Project.
9608300	Grande Ronde Basin Habitat Enhancement	To minimize cost, this project shares personnel, vehicles, and equipment with the Grande Ronde Basin Habitat Enhancement Project.
9601100	Walla Walla Juvenile Fish Screens	Improved fish passage will increase survival to and from natural production areas.
9601200	Walla Walla Adult Fish Passage	Improved fish passage for adults will

	Improvements	increase numbers of adults successfully reaching natural production areas.
new	Rainwater Wildlife Area	This will project will provide some FY 2000 funding toward restoration and protection of this area.
new	Design and Construct New NEOH Hatchery-S. Fork Walla Walla River	Hatchery will reintroduce spring chinook and increase summer steelhead utilization in areas enhanced by this project.

Section 4. Objectives, tasks and schedules

Past accomplishments

Year	Accomplishment	Met biological objectives?
1997	Developed long-term leases with landowners on Blue Creek and Couse Creek	yes, consistent with FWP objectives on private lands
1997	Obtained archeological clearances, obtained instream work permits	yes, consistent with FWP objectives for federal guidelines
1997	Developed project design	yes, consistent with FWP objectives
1997	Develop subcontracts for weed control, planting, heavy equipment rental, fencing, rock and tree supply	yes, consistent with FWP objectives
1997	Implemented two adjacent projects on Blue Creek	yes, consistent with FWP objectives on private lands
1997	Implemented project on Couse Creek	yes, consistent with FWP objectives on private lands
1997	Collected pre and post project monitoring data: photo points, transects, water temperatures, population densities	yes, consistent with FWP objectives for establishing monitoring plan
1997	Identified habitat limited sites within basin, prioritized sites, selected projects for potential restoration in 1998.	yes, consistent with FWP objectives for site selection
1998	Secured cost-share funding for WSU watershed assessment for Walla Walla Basin	yes, consistent with FWP for using watershed assessment and cost share
1998	Developed long-term leases with landowners on Couse Creek and mainstem Walla Walla River	yes, consistent with FWP objectives on private lands
1998	Obtained archeological clearances, obtained instream work permits	yes, consistent with FWP objectives for federal guidelines
1998	Developed project design	yes, consistent with FWP objectives
1998	Develop subcontracts for weed control, planting, heavy equipment rental, fencing, rock and tree supply	yes, consistent with FWP objectives
1998	Implemented projects on Couse Creek, and mainstem Walla Walla River	yes, consistent with FWP objectives on private lands
1998	Continued operation and maintenance on project sites on Couse Creek and Blue Creek	yes, consistent with FWP objectives on private lands
1998	Collected pre and post project monitoring data: photo points, transects, water temperatures, population densities	yes, consistent with FWP objectives for establishing monitoring plan
1998	Identified habitat limited sites within basin, prioritized sites, selected projects for potential restoration in 1999	yes, consistent with FWP objectives for site selection

Objectives and tasks

Obj 1,2,3	Objective	Task a,b,c	Task
1	Document existing habitat conditions within basin, identify habitat-limited areas, prioritize and select project sites.	a	Review watershed assessment, literature search, and physical/biological surveys. Conduct public outreach, interagency communication.
		b	Conduct on-site visits, evaluate site potential for restoration (access, landowner participation, likelihood of success, benefit to salmonid species).
		c	Select high priority sites for future restoration efforts.
2	Implement and maintain riparian habitat enhancement projects in the Walla Walla River Basin.	a	Develop grants, proposals, and coordinate with local, state, and federal agencies to develop cost-share projects. Recruit project volunteers, including local students, watershed council, and summer youth.
		b	Develop long-term or perpetual easements.
		c	Obtain archeological clearances
		d	Develop project design
		e	Secure instream work permits: COE-404, DSL-removal/fill, WDFW-HPA
		f	Develop subcontracts for weed control, planting, heavy equipment rental, fencing, rock and tree supply
		g	Establish pre-project monitoring program: permanent photo-points, transects, population assessments, etc.
		h	Implement project: planting, fencing, instream structures, cabling rocks, etc.
		i	Continue communication with landowners
3	Conduct long-term monitoring techniques and evaluate success of implemented projects	a	Post-project monitoring-photo points, fish population assessments, transects, percent shade
		b	Evaluate post-project success and if necessary implement adaptive management. Parameters might include: analysis of long-term monitoring data, on-site visits, comparison to other approaches, interagency discussion.

Objective schedules and costs

Obj #	Start date mm/yyyy	End date mm/yyyy	Measureable biological objective(s)	Milestone	FY2000 Cost %
1	2/2000	1/2001	salmonid utilization in project areas;	increased annual utilization trends;	80.00%

1	2/2000	1/2001	native plant species abundance and survival	increased annual native vegetation recovery trends	
2	2/2000	1/2001	NA		20.00%
				Total	100.00%

Schedule constraints

Potential constraints include: (1) the cooperation of private landowners; (2) the timely processing of instream work permits by the DSL, COE and WDFW.

Completion date

Current habitat enhancement needs far exceed current available manpower and funding. Therefore, project need is continuous and ongoing in the foreseeable future.

Section 5. Budget

FY99 project budget (BPA obligated):

FY2000 budget by line item

Item	Note	% of total	FY2000
Personnel	Includes one month for GIS, cultural tech (archeological surveys), hydrologist	%29	80,491
Fringe benefits	28 percent of personnel services	%8	22,537
Supplies, materials, non-expendable property		%17	46,549
Operations & maintenance		%4	10,436
Capital acquisitions or improvements (e.g. land, buildings, major equip.)		%0	0
NEPA costs		%0	0
Construction-related support		%0	0
PIT tags	# of tags:	%0	0
Travel		%6	15,674
Indirect costs		%22	59,733
Subcontractor		%14	39,580
Other		%0	0
TOTAL BPA FY2000 BUDGET REQUEST			\$275,000

Cost sharing

Organization	Item or service provided	% total project cost (incl. BPA)	Amount (\$)
CTUIR	salary for project leader	%15	48,776
Bureau of Indian Affairs	vehicle lease and insurance	%1	2,000
Bureau of Indian Affairs	training/perdeum	%0	500
CTUIR	Summer Youth Bio-Aid	%1	3,600
Total project cost (including BPA portion)			\$329,876

Outyear costs

	FY2001	FY02	FY03	FY04
Total budget	\$285,000	\$295,000	\$305,000	\$315,000

Section 6. References

Watershed?	Reference
<input type="checkbox"/>	Lane., and Lane. 1979. Traditional fisheries of the Walla Walla, Cayuse, and Umatilla.
<input type="checkbox"/>	Mudd, D. R., Touchet River Study: Part 1, Wildlife, Washington Department of Game Bulletin No. 4 (1975).
<input type="checkbox"/>	Swindell, E.G. 1942. Report on resource, nature and extent of the fishing, hunting, and miscellaneous rights of certain Indian Tribes in Washington and Oregon etc. Office of Indian Affairs, Division of Forestry and Grazing, Los Angeles, CA.
<input type="checkbox"/>	Water Resources Commission., 1988. Region Water Plan-Umatilla Basin Subsection, Water Resources Commission, Portland Oregon.
<input type="checkbox"/>	Reeve, Randy. 1988. A low maintenance fence from groundwork. Wasco County Soil and Water Conservation District Newsletter.

PART II - NARRATIVE

Section 7. Abstract

Efforts have begun to enhance remnant populations of summer steelhead and reintroduce spring chinook salmon in the Walla Walla River Basin. Ongoing and completed projects include a new hatchery, dam removal, new ladders and screens, and instream flow enhancement. This project will integrate with ongoing efforts described above. Specifically, the project goal is to protect and restore habitat critical to the recovery of weak or reintroduced populations of salmonid fish within the Walla Walla River Basin. It is expected that over time, critical salmonid spawning and rearing areas will be regained, naturally spawning populations of salmonids elevated, and juvenile outmigration increased.

This project focuses on areas within the basin that are expected to provide the greatest benefit to salmonids, specifically areas that provide spawning and rearing potential. Project areas will be selected by referencing a watershed assessment to be completed by Washington State University in January of 2000 and also through literature search, public outreach, physical and biological surveys, and interagency communication.

All projects begin with archeological clearances and long-term or perpetual easements with private landowners. Consistent with council goals, natural riparian healing approaches are taken whenever possible. More aggressive approaches are reserved for areas that fail to respond otherwise. Only native vegetation is used for all project areas. Plants are obtained through the CTUIR Native Plant Nursery or collected at or near the project site as cuttings. Native grass seed is obtained from Grassland West, Clarkston Washington.

Pre and post project monitoring and evaluation (transects, photo-points, population surveys, and percent shade) are included for all projects. Results are provided in quarterly and annual reports to BPA and exchanged and presented to cooperating agencies so that further education and adaptive management may be incorporated.

This project is consistent with measures 7.6, 7.7, and 7.8 of the 1994 Columbia Basin Fish and Wildlife Program. The project will strive to follow guidelines outlined in these measures and only practice sound scientific principles that provide positive results for salmonid fishes in the Walla Walla River Basin.

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Section 8. Project description

a. Technical and/or scientific background

Historically, runs of spring and fall chinook, chum, coho, and sockeye salmon are believed to have inhabited the Walla Walla River Basin. Swindell (1942) and Lane and Lane (1979) described fishing sites in the Walla Walla River where chum, coho, and steelhead were harvested. Today, all species of salmon are extinct. Only summer steelhead, bull trout, mountain whitefish, western brook lamprey, and possibly pacific lamprey exist.

Overappropriation of water, inadequate passage facilities, and habitat destruction are largely responsible for the loss of fish in the Walla Walla River Basin. Forest practices, livestock grazing, and cropland practices have greatly reduced riparian vegetation. Mudd, 1975 estimated that only about 37 percent of the Touchet River riparian zone is currently vegetated. Along the Oregon portion of the Walla Walla River, 70 percent of the existing riparian zone is in poor condition (Water Resources Commission, 1988). Lack of riparian vegetation has resulted in unstable, eroding stream banks, degraded water quality, elevated stream temperatures, reduced or eliminated critical fish holding and rearing areas, and diminished summer instream flows.

Efforts to protect and restore salmonid populations to the Walla Walla River Basin have begun. The Corps of Engineers and CTUIR cooperatively removed an upstream barrier in 1997, finalized plans to construct a new fish ladder in 1999, and finalized a reconnaissance study to evaluate instream enhancement opportunities. A comprehensive watershed assessment, being conducted by Washington State University, is scheduled for completion in January of 2000. Other ongoing BPA funded projects include a new hatchery (completed in 1997) which is expected to provide out-migrants for Walla Walla spring Chinook salmon and summer steelhead by 2000, and new ladders and screens scheduled for 1997 through 1999. Additional projects are either complete or ongoing in the Washington portion of the basin by WDFW and others.

b. Rationale and significance to Regional Programs

Consistent with the 1994 FWP, this project will work as a logical component of ongoing efforts (projects include a new hatchery, dam removal, new ladders and screens, and instream flow enhancement). The project mitigates for out of place, in-kind enhancement efforts. The primary objective of the project is to protect and restore habitat critical to the recovery of weak or extinct populations of salmonid

fish within the Walla Walla River Basin. In meeting this objective, this project will further the goals set forth in the 1994 FWP by: (1) protecting existing high quality habitat; (2) prioritizing restoration projects through the use of watershed assessment; (3) giving priority to restoration actions that maximize the desired result per dollar spent; (4) implementing proven habitat restoration methods, particularly natural healing techniques; (5) seeking cost-share and encouraging the investment of volunteers; (6) coordinating data collection, analysis and reporting, and adaptive management to monitor project progress; (7) implementing riparian easements of sufficient width to improve and maintain salmon and steelhead production in privately owned riparian areas and adjacent lands.

c. Relationships to other projects

Within the Walla Walla River Basin, four critical components are being addressed to meet the successful enhancement of salmonid fish populations. These include artificial production, removal of passage impediments, instream flow enhancement opportunities, and habitat restoration/protection. Specific examples funded entirely or in part by the FWP include the removal of Marie Dorian Dam (1997), the construction of Burlingame fish ladder and screens, (1998), Nursery Bridge fish ladder (1999), development of a watershed assessment (1998-2000), and the construction of a new fish hatchery (2000).

This project is relevant and complimentary to the projects specified above in that it addresses the protection of critical habitat necessary for the survival of salmonid fishes in the basin. In the absence of habitat protection, all other efforts toward restoration will fail. On a broader scale, within the Columbia Basin, its expected that by elevating juvenile outmigration numbers in the Walla Walla River Basin, through habitat restoration and protection, adult escapement goals established for the Columbia Basin will be increased. Its also felt that projects throughout the Columbia Basin, including this project, are interdependent because of the migratory behavior of anadromous fishes. If we are to be successful at restoring salmonid populations, we must recognize that all aspects of the salmon life cycle are dependent on one another. Thus all habitats, headwater to ocean, must meet requirements necessary for the survival of the species. This approach is reflected within the FWP in section 7.6C, which states that a “such restoration activities, to be successful, must be coordinated across many jurisdictional and ownership boundaries. And, “failure to integrate (projects) will put each action at risk of being undermined by uncoordinated actions downstream, upstream or upslope”.

This project specifically relies on the support of the Umatilla Habitat Enhancement Project (#870001) and also the Grande Ronde Habitat Enhancement Project (5507000) in the cooperative use of certain field gear and personnel. Some examples include the sharing of four-wheelers, temperature data, planting tools, and personnel during peak periods, such as the spring and fall planting periods.

This project requires interaction between State, Federal, Tribal, and local interests. Habitat projects require permitting through the Division of State Lands, Oregon Department of Fish and Wildlife, Corps of Engineers, and the United States Fish and Wildlife Service. In some cases, the Natural Resource Conservation Service provides design criteria for instream structures, and the Farm Service Agency assists in developing CRP/CREP easements that work concurrently with CTUIR lease agreements. Locally, this project works with the Walla Walla Watershed Council. The council seeks dollars for cost-sharing projects, assists in the identification of project sites, and provides valuable volunteer support.

d. Project history (for ongoing projects)

Funding for this project began in August of 1997. Past annual project costs requested from BPA for the project have ranged from \$190,856 in 1997 to \$240,000 in 1999 with an average annual cost of \$215,285. Since 1997, approximately four miles of critical salmonid habitat has been secured for restoration/protection under this project (accomplishments/approaches taken are listed below). It should be noted that this project focuses only on priority areas of the basin. Specifically areas that afford spawning

and rearing potential and with landowners that are agreeable to providing sufficient riparian corridor width. It's felt that this approach is necessary to meet the goals of this project and ultimately the goals established by the FWP. In some instances, project sites were not accepted by the CTUIR because they failed to meet these criteria.

The CTUIR only considers the use of instream structures when all other approaches fail to meet or provide desired objectives. Large portions of the Walla Walla Basin are privately owned and cannot be ignored if we are to successfully protect and restore salmonid fish populations and meet goals within the FWP. This project relies on voluntary participation of private landowners and thus obligates compromise by both the CTUIR and the landowner. Private land-holdings within the Walla Walla River Basin are often fragmented and girdled by various constraining types of development. Examples include, houses, barns, roads, railroads, pastures, croplands, etc. Under these circumstances, landowners will not, and often cannot, allow the stream channel to shift without substantial monetary losses.

To protect the above investments, landowners typically push gravel on an annual basis or rip-rap long sections of the stream shoreline. This ultimately eliminates stream diversity, channel stability, increases stream velocities, and completely destroys all current or potential riparian vegetation. It is in these cases, that the CTUIR considers the use of instream structures such as barbs and vortex weirs, the best alternative. In our experience, these types of structures are seldom necessary, particularly if project sites are carefully chosen. And, many sites will respond better to alternative methods such as rootwad revetments. However, there are occasions when the use of hard structures best meets the landowner/CTUIR compromise and the best alternative for salmonid fishes within the basin.

The following is a list of major accomplishments made during the 1997 and 1998 funding periods:

Stream miles protected	4	
Easements secured		4
Rootwad revetments		1
Log revetments	4	
Log V-Weirs		3
Rock Vortex Weirs		3
Rock Barbs		4
Native plants (rooted)		10,800
Native plants (cuttings)	4,300	
Native seed		600lbs (30 acres)
Thermographs		4

In addition to the above list of accomplishments, all projects include pre and post project monitoring. This includes photo-points, transects, fish population assessments, temperature data, and percent shade (densiometer) measurements. Also, the CTUIR has worked closely with Washington State University in the development of watershed assessment and with the local watershed council in identifying project sites. The project leader spent significant amounts of time on the development of BPA proposals, heavy machinery and landowner easement contracts, purchasing procedures (bid letters, bid tours, and contracts), landowner meetings, and clearance and permitting issues. This project produces quarterly reports, annual reports, and as necessary presentations with cooperating agencies. This provides CTUIR with the potential to exchange project information with others and to inject adaptive management where needed.

As this proposal is being written, CTUIR is beginning pre-project planning for a recently obtained project area on upper Couse Creek. The riparian corridor encompasses the entire floodplain and includes nearly three miles of stream. The project area has been heavily impacted by past grazing activities to the point of where virtually no vegetation is present. CTUIR is working closely with the CTUIR Native Plant Nursery in identifying plant species and planting strategies that will maximize success of the reintroduction of vegetation to the project site. The project is being cost-shared through the Federal/State CREP program. It should also be mentioned that the upstream adjacent landowner has expressed interest in participating with

the CTUIR Habitat Program. This would add an additional three miles of stream corridor for a total six miles, all within the headwaters of the drainage.

In 1998, the CTUIR wildlife program, successfully acquired 8,441 acres off land on the South Fork of the Touchet River, which includes approximately 8 miles of anadromous spawning and rearing habitat. This project is working closely with the wildlife program in developing long-term restoration plans for the area. Plans will likely include pre-project surveys and monitoring, fisheries assessment, sediment control measures, noxious weed control, road obliteration, native grass seeding, riparian vegetation restoration, large woody debris placement, and forest management. This project will provide a portion of the BPA 2000 funding toward the recovery and protection of this vital portion of the Walla Walla River Basin.

e. Proposal objectives

Objective 1: Document existing habitat conditions within basin, identify habitat-limited areas, prioritize and select project sites.

1. Develop project prioritization list-will be developed from completed Walla Walla River Basin Watershed Assessment, physical and biological surveys, literature search, interagency discussion, public outreach.
2. Project selection-high priority project areas will be selected for implementation.

Objective 2: Implement and maintain riparian habitat enhancement projects in the Walla Walla River Basin.

1. Cost-share funds-grant applications (GWEB, USFWS Partner's for Wildlife, etc.), will be completed to seek additional cost-share opportunities.
2. Fifteen-year riparian easements-approximately three to four agreements will be secured on private lands, dependant on length of project areas.
3. Cultural/Archeological clearances-will be completed for proposed construction projects by CTUIR Cultural Resource Staff (Section 106 compliance).
4. Develop project design-projects are typically designed by the CTUIR habitat biologist, hydrologist, and native plant nursery specialist. In some cases, NRCS or private bio-engineering consultants may be involved.
5. Instream fill and removal permits-will be renewed in existing enhancement areas where structural maintenance is required and in new projects as necessary.
6. Subcontracts-will be developed and awarded to the lowest bidder for noxious weed control, fence construction, heavy equipment rental, and tree planting.
7. In-stream enhancements-large woody debris will be placed and existing stream bank stabilization structures maintained as needed.
8. Fence construction-approximately one to five miles of stream corridor will be fenced in new project areas. Fences are built only after alternate methods of riparian protection are exhausted.
9. Vegetation-approximately 1000 pounds of native grass seed and 25,000 native trees and shrubs will be planted into existing and new project areas.
10. Noxious weed treatment-noxious weeds as indicated on the Counties Noxious "A" Weed List will be controlled in existing project areas.

Objective 3: Conduct long-term monitoring techniques and evaluate success of implemented projects

1. Project monitoring-conduct post-project monitoring including photo points, transects, fish population assessments, and percent shade measurements.
2. Evaluate post-project success-project areas will be evaluated through the analysis of long-term monitoring data, on-site visual inspections, comparison to other

approaches, and interagency discussion. This exercise is done to more effectively approach various obstacles and inject adaptive management techniques.

3. Public tours, workshops, presentations and meetings-local outreach efforts will continue to be conducted. This allows the discussion of various approaches, restoration techniques, successes, failures, and ultimately adaptive management.

f. Methods

Objective 1: Document existing habitat conditions within basin, identify habitat-limited areas, prioritize and select project sites.

1. Priority areas for restoration in the basin are identified by referring to watershed analysis, water quality limited areas listed on the 303d list, literature search, public outreach, physical and biological surveys (conducted by CTUIR, USFS, and others), and interagency communication. Project emphasis is on areas of the basin that are expected to provide spawning and rearing potential. It is felt that these areas provide the greatest potential for meeting the goal of this project and ultimately the goals set forth by the FWP.
2. Following the above effort, on-site visits are conducted. This is a visual evaluation of habitat conditions, which provides a measurement of the habitat needs, potential for restoration, access, landowner participation and likelihood of success. Projects are then selected based on these parameters and a priority project list is developed.

Objective 2: Implement and maintain riparian habitat enhancement projects in the Walla Walla River Basin.

1. Cost-share funds are generally secured by CTUIR (USFWS, GWEB, etc.)
2. Riparian easements are developed internally by CTUIR Fisheries Staff and Tribal Attorneys. Riparian corridor widths, length of agreement, number of livestock watering gaps, and other terms are coordinated with the landowner(s).
3. CTUIR's cultural resource staff conduct file and literature searches, pedestrian surveys and/or archeological excavations in proposed habitat enhancement areas to determine if cultural resources potentially eligible for inclusion to the National Register of Historic Places are present on the site. Final reports documenting their findings are prepared and submitted to the BIA Umatilla Agency Real Property Management Office and to the State Historic Preservation Office. All cultural clearances are obtained in compliance with Section 106 of the National Historic Preservation Act.
4. Project design-most projects are jointly designed by the desires of the landowner, the project biologist, and the CTUIR Native Plant Nursery Specialist. Where more aggressive approaches are necessary, such as the use of hydrological controls, the CTUIR hydrologist or other bioengineering consultants are utilized.
4. U.S. Army Corps of Engineers, Oregon Division of State Lands and WDFW Hydraulic Project Applications, are applied for and renewed in compliance with section 401 and 404 of the Clean Water Act.

- All in-stream work is completed during the designated in-stream work window.
5. Letters are mailed to perspective contractors requesting participation in pre-bid tours and submission of bids. A subcontract is awarded and notice to proceed issued to the contractor with the lowest bid.
 6. The project leader and CTUIR hydrologist jointly develop project designs. In-stream placement of large woody debris continues to be a high priority due to low natural wood recruitment and habitat diversity in the basin. Hydrological controls (rock vortex weirs, barbs, and sediment retention structures) are used sparingly and restricted to stream that fail to respond otherwise. Most costly bioengineering approaches are reserved for areas that will not recover in a timely or natural manner.
 7. Both smooth-wire high tensile fencing and barbed wire fencing are constructed to restrict cattle from the riparian corridors. The use of high tensile fencing has proven to be the most effective when livestock are distributed over a vast area and where tree blow-down is frequent. High tensile fence has a breaking strength and stretching point nearly twice that of barbed wire (Reeves, 1988) and the fluidity of the fence prevents wildlife/livestock entanglement.
 8. Native grass seed mixes have been developed by Grassland West Seed Company based on historical vegetation, soil types and project elevation. Project sites are seeded with a harrow or broadcast seeder. Indigenous trees and shrubs are planted as cuttings or bare-root stock. Bare-root trees are subbasin specific trees produced from seed or cuttings at the CTUIR Native Plant Nursery. Tree mortality has dropped dramatically with the Tribal nursery's trees in the Umatilla River Basin. It's expected that similar survival rates will the Walla Walla River Basin.
 9. Umatilla or Walla Walla County Weed Control chemically treats noxious weeds in project areas three times a year. Only level one noxious weeds on the list are treated. CTUIR is experimenting with other methods of control such as control burning, weed protection blankets, and spot spraying.

Objective 3: Conduct long-term monitoring techniques and evaluate success of implemented projects

1. Summer stream temperatures are monitored with thermographs manufactured by Onset Corporation. Thermographs collect maximum, minimum, and mean daily temperatures from May 1 through October. In some cases, winter temperatures are monitored also. Temperature data is useful in demonstrating changes within project areas as well as identifying habitat-limited areas. Photo-points are taken with a 35-mm camera and a standard 50-mm lens. Photos are taken facing upstream in the spring and fall of each year. A photo-point binder containing slides of riparian recovery is maintained at the CTUIR Fisheries Office. Fish population assessments are made once per year, typically September or October, through the use of a backpack

electroshocker. Methods are those adopted by ODFW. Percent shade measurements are taken once per year with a spherical densiometer. Measurements are taken mid-channel at 10-meter increments.

2. Individual project success is evaluated through analysis of long-term monitoring data (photo points, transect, population assessments, percent shade), on-site visual inspections, comparison to other projects implemented by CTUIR and others (ODFW, WDFW, NRCS, etc.) literature review, and interagency discussion. Communication with landowners is also part of this process. This exercise allows CTUIR to analyze current habitat restoration approaches that can then be applied to future obstacles. This process directs CTUIR habitat efforts toward techniques that provide the greatest potential for meeting the objectives of the project.

g. Facilities and equipment

This project shares all BPA purchased equipment with the Umatilla Habitat Enhancement Project. Following is a condensed list of equipment available to this project:

Office supplies include: two desks, two computer stands, two chairs, one file cabinet, one locking storage cabinet, and one Dell Pentium P90 computer.

Vehicles include: (shared with Umatilla Habitat Enhancement) one 4x4 flat-bed GMC pickup, one 4x4 Ford standard cab pickup, and for six months of the year one 2x2 ford extended cab pickup.

Field Equipment includes: one 4x4 and trailer, one smaller trailer with 25 gallon spray tank, one flat bed trailer, several Hilti Drills and bits, cable, fence posts, and fence wire and planting tools.

Cameras and instruments include: one digital Panasonic Camera, one 8mm video camera, one VHS video camera, one manual 35mm still camera, four Onset thermographs, and one spherical densiometer, tape measures, and slide projector.

Subcontractor equipment includes: All subcontractors (heavy machinery work, planting, etc.) are expected to provide equipment capable of meeting requirements of task.

h. Budget

CTUIR funding request for FY 2000 includes 2.38 FTE employees. Of this total, the project manager is funded for one month, the project leader for five months, and two habitat technicians for a total of 17.5 months. Also funded under personnel is one month for the fisheries office manager, GIS analyst, hydrologist, and cultural technician. Construction materials are used primarily for the purchase of native plants, grass seed, fencing materials and rock. Subcontract dollars are used for the hiring of outside personnel for planting, operation/rental of heavy equipment, fence construction, and noxious weed control. Funding requested for FY 1999 is 240,000 dollars. A total of 275,000 dollars is requested for FY 2000. Cost-sharing contributions by CTUIR and BIA totals 54,876 dollars. The increased funding request is largely because of the annual expenses associated with project maintenance and new implementation. Some increase is also a result of personnel pay increases and cost of living adjustments. Indirect and fringe rates are standard CTUIR rates.

Following is a more detailed budget report:

Personnel:

Personnel funded under this project include:

Fisheries Program Manager-1month
Fisheries Project Leader-5 months
Fish Habitat Lead Technician-6 months
Fish Habitat Technician-11.5 months
Fish Office Manager-1 month
GIS Project Analyst-1 month
Cultural Technician-1 month
Hydrologist—1 month

*CTUIR and BIA as outlined in table above will provide cost share funds.

Supplies, materials, non-expendable property funded under this project include:

Construction materials-trees, grass seed, fencing and rock
Field materials-tools, waders, field gear, sampling equipment, etc.
Repairs and maintenance-repair and maintenance of existing property
Communications-telephone services
Office Supplies-paper, pens, etc.
Duplication/printing-photo processing, photo copies, color copies, etc.
Non-capital equipment-thermographs, electrical tools, etc.
Subscriptions-professional journals, habitat restoration technique literature, etc.

Travel:

Vehicles-monthly lease of GSA vehicles
Mileage-fuel expenses
Vehicle Insurance
Per Diem-personnel travel reimbursement
Training-personnel participation at workshops, meetings, etc.

Subcontract work:

Operated heavy equipment rental-excavators, bulldozers, etc.
Fence construction-construction of riparian corridor fencing
Noxious weed control-chemical treatment of noxious weeds in enhancement areas
Tree planting-planting cuttings, bare-root trees and tublings in project areas

Section 9. Key personnel

Name: Gary James
Title: Fisheries Program Manager
Months funded this project: 1(.08 FTE)
Education: BS Fisheries 1979 Oregon State University
Experience: 22 years fisheries experience; last 17 years CTUIR Program Manager; expertise in multi-project development, coordination, and oversight.

Name: Jed Volkman
Title: Fisheries Habitat Biologist
Months funded this project: 5 (.41 FTE)
Education: BS Fisheries 1990 University of Idaho; Technical Degree Plant Science 1984, Walla Walla Community College.

Experience:

University of Idaho-1987-89; duties included the feeding, maintenance, and care for experimentally held rainbow trout. Responsibility also included various data collection processes.

University of Idaho-1989-1991; primary responsibilities included the installation, operation, and maintenance of radio telemetry equipment for an adult passage evaluation on the Snake River. Duties also included the operation of adult salmonid trap at Ice Harbor Dam on the Snake River, handling and use of anesthesia (MS222), and various tagging operations including passive integrated transmitters (PIT), radio transmitters, coded wire tags, spaghetti tags.

Confederated Tribes of the Umatilla Indian Reservation-1991-present;

Adult Passage Evaluation-four years as project leader/passage biologist-primary responsibility to evaluate movements of adult salmonids past five diversion dams on the Umatilla River through the use of radio telemetry. Project responsibilities included project design, equipment operation/installation, implementation, data collection and analysis, report writing, budget, and supervision of employees.

Hanford Reach Project-six years (1 month per year, concurrently with the adult passage project described above) as project leader-duties include: project planning, equipment acquisition/operation and implementation of project on the Hanford Reach of the Columbia River. Goal of the project is to capture of 200,000 juvenile fall chinook for coded wire tagging. Capture of juveniles is accomplished through the operation of jet boat, beach seines and stick seines. Responsibilities also include data collection and analysis, report writing, SOW/budget, and supervision of four employees.

Habitat Restoration in Walla Walla River Basin-three years as project leader/habitat biologist. Project duties include but not limited to: BPA proposals, annual and quarterly reports of progress, development of statement of work/budget, landowner easements, equipment contracts, instream work permits, interagency communication, landowner communication, project design and implementation, and supervision of three employees.

Recent publications include:

Author of 1992-1996 Umatilla River Adult Passage Evaluation Annual reports of progress.

Author of 1997 Walla Walla River Basin Fish Habitat Enhancement.

Recent job completions:

BPA Proposals, Annual Report of Progress, development of long-term easement for landowner on Couse Creek, development of contract for planting of 10,000 native trees/shrubs.

Section 10. Information/technology transfer

Annual and quarterly reports of progress are produced by this project. Project personnel participate in field tours and interagency presentations to discuss past accomplishments, challenges, methodologies, strategies, and information exchange. Project personnel are also involved with local public forums (workshops, classrooms, clubs, etc.).

All entities involved in stream habitat alterations (proponents and permitting agencies) conduct pre and post implementation tours annually to discuss project needs/recommendations and project successes/failures.

Congratulations!