

---

## PART I - ADMINISTRATIVE

### Section 1. General administrative information

#### Title of project

Protect & Enhance Wildlife Habitats In The Squaw Creek Watershed.

---

**BPA project number:** 9506001  
**Contract renewal date (mm/yyyy):** 7/2000  **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:

<b>Name</b>	<u>Eric J. Quaempts</u>
<b>Mailing Address</b>	<u>PO Box 638</u>
<b>City, ST Zip</b>	<u>Pendleton, OR 97801</u>
<b>Phone</b>	<u>541-278-7621</u>
<b>Fax</b>	<u>541-278-7673</u>
<b>Email address</b>	<u>wildlife@ucinet.com</u>

**NPPC Program Measure Number(s) which this project addresses**  
7.6A, 7.6C, 7.7, 7.8E, 11.2, 11.3C, 11.3D

---

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

---

#### Other planning document references

Wy Kan Ush Me Wa Kush Wit - Volume 1, Hypothesis 3, Watershed Restoration, Habitat: Tributary, Problem Statement, second paragraph, pages 5B-12 and 5B-13 and Hypothesis, page 5B-13.

Wy Kan Ush Me Wa Kush Wit - Volume 2, Umatilla River, Recommended Actions For The Umatilla River, III. Watershed Management, page 44.

Umatilla River Drainage Anadromous Fish Habitat Improvement Implementation Plan, Fishery Characteristics -Limiting Factors, last paragraph of page 6 through page 9 and APPENDIX B, Riparian Habitat Inventory Summaries - by Subbasin and Stream

The Umatilla River Subbasin Salmon and Steelhead Production Plan, Part II. HABITAT PROTECTION NEEDS, History and Status of Habitat, pages 27 - 28.

---

Umatilla Basin Natural Production Monitoring and Evaluation Annual Progress Reports - Physical Habitat Survey Data and Biological Survey Data: 1992 - 1993, Appendixes D and E; 1993 - 1994, Appendixes D and E; 1995, Appendixes D and E; 1996 Appendixes B and D.

**Short description**

This project proposes operations and maintenance for protecting and enhancing habitats for selected HEP target species in the Squaw Creek Watershed. It is a continuation of a 1998 watershed project that provides dual benefits for fish and wildlife.

**Target species**

Western meadowlark, black-capped chickadee, mink, blue grouse, great blue heron, downy woodpecker, mule deer.

**Section 2. Sorting and evaluation**

**Subbasin**

Umatilla

**Evaluation Process Sort**

<b>CBFWA caucus</b>	<b>Special evaluation process</b>	<b>ISRP project type</b>
Mark one or more caucus	If your project fits either of these processes, mark one or both	Mark one or more categories
<input type="checkbox"/> Anadromous fish <input type="checkbox"/> Resident fish <input checked="" type="checkbox"/> Wildlife	<input type="checkbox"/> Multi-year (milestone-based evaluation) <input 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 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.

<b>Project #</b>	<b>Project title/description</b>

**Other dependent or critically-related projects**

<b>Project #</b>	<b>Project title/description</b>	<b>Nature of relationship</b>
8710001	Umatilla Basin Habitat Enhancement	Project incorporates Squaw Creek due to its critical contribution of summer steelhead spawning/rearing habitat to the Umatilla Basin. Opportunities exist to share personnel, vehicles, and equipment to minimize project expense.

**Section 4. Objectives, tasks and schedules**

**Past accomplishments**

<b>Year</b>	<b>Accomplishment</b>	<b>Met biological objectives?</b>
1988	The Umatilla Drainage Fish Habitat Improvement Plan identified and prioritized 7 miles of riparian/stream habitat in Squaw Creek for improvement.	Determined and prioritized habitat limiting factors and provided goals and objectives for addressing the factors.
1994	Ten miles of fish habitat in Squaw Creek were surveyed. Fish surveys and population estimates were also completed.	Confirmed and detailed the habitat limiting factors identified in 1988. Provided baseline for riparian/fish habitat improvement needs.
1995	The Squaw Creek Watershed Project was identified and prioritized in both the anadromous and wildlife caucuses for joint funding.	Identification and prioritization of project area.
1997	Approximately 5,536 acres of land were purchased to form the nucleus of the Squaw Creek Watershed Project. Additionally, 1005 acres of BIA administered trust lands were incorporated into for mitigation purposes.	Acquisition lands provided an estimated minimum 3,832 Habitat Units (HU's) of protection credit. Trust lands an estimated minimum of 221 HU's of enhancement credit by year 2008.
1998	An additional 320 acres of fee lands, consisting primarily of coniferous forest and grassland cover types was purchased.	Provided an estimated minimum 128 HU's of protection credit. Final baseline and enhancement HU's for the acquisitions will be provided in a complete HEP analysis in 1999.
1998	Two BIA-administered grazing allotments, totalling approximately 20,000 acres and 1,056 AUM's were leased.	Provided an estimated minimum of 588 HU's units by leasing and resting from use. Enhancements resulting from rest, seeding/planting

		are estimated to provide 4,114 HU's by 2008.
1998	HEP analysis initiated, field surveys completed for riparian and grassland cover types.	Inter-agency HEP Team selects target species for project. Field surveys provide means of quantifying/qualifying habitat conditions for selected target species.
1998	Management planning process initiated. Scoping notices provided in local media, inter-agency HEP team.	Initiate public/stakeholder involvement, received review/support of management plan elements with inter-agency HEP team.
1999	Field surveys for timber cover types completed. HEP analysis for all cover types and target species completed.	HEP analysis provides quantification/qualification of cover types, provides basis for developing and initiating enhancements.
1999	Completed comprehensive management plan, including HEP.	Management plan to be completed consistent with NPPC Program. HEP provides measured HU's and futures analysis. Habitat enhancement initiated.
2000	Implementation of management plan, including protection, enhancements/restoration, and operations/maintenance.	To be determined in final management plan. FY2000 funds to be utilized for habitat protection, enhancement, and operations and maintenance.

**Objectives and tasks**

<b>Obj 1,2,3</b>	<b>Objective</b>	<b>Task a,b,c</b>	<b>Task</b>
1	Administer management plan to provide 3,832 Habitat Units of protection credit for selected target species. Protection will also be provided for T/E/S species and long-term ecosystem/species diversity.	a	Administer access and travel management component of management plan; -maintain kiosks, signs, and information -provide on-site presence to provide information & enforce regulations.
1		b	Purchase leases for two grazing allotments (20,000 acres, 1,056 AUM's).
1		c	Monitor/prevent livestock trespass, illegal dumping, other illegal uses.
1		d	Re-construct range infrastructure

			including - fences - gates.
2	Maintain habitat values for selectet target species and T/E/S species.	a	Conduct noxious weed control including; - prevention (limit vectors), - manual control (hand pulling), - implement sub-contract for herbicide application.
		b	Conduct range infrastructure maintenance including; - fences - cattleguards - spring developments.
3	Implement management plan enhancement strategies to provide 5,554 HU's of enhancement credit by the year 2008.	a	Collect and propogate native shrubs and grasses.
4	Monitor & Evaluate protection, maintenance, and enhancement activities.	a	Implement M&E program; - monitor access and travel management compliance.
4		b	Biological monitoring - incorporate results of wildlife surveys conducted under other projects/funding sources.
4		c	Noxious weed monitoring - compare current year infestation levels to previous surveys.
4		d	Continue to utilize existing photopoints.

**Objective schedules and costs**

Obj #	Start date mm/yyyy	End date mm/yyyy	Measureable biological objective(s)	Milestone	FY2000 Cost %
1	7/1999	6/2000	Provide 3,832 HU's of protection credit.	-Mgmt. plan/property admin, Habitat protection.	75.00%
2	7/1999	6/2000	Maintain 3,832 HU's of	- Range	15.00%

			protection credit.	infrastructure maintenance. - Noxious weed control.	
3	4/1999	10/2000	Contribute towards objective of 5,554 HU's of enhancement credit by 2,004.	Native plant collection and propagation.	5.00%
4	7/1999	6/2000	Administrative/Biological/habitat/ monitoring.	-ATM, public use compliance, - photopoints -incorporate biological monit. from other projects/funding sources. - Monitor success of noxious weed treatment.	5.00%
				<b>Total</b>	100.00%

**Schedule constraints**

Collection of native plant materials will be dependent on plant growth and seed production, which may vary from growing season to growing season. Poor production may result in a delay of collection/propagation & carryover of funds.

**Completion date**

Operations and maintenance will be covered under the NPPC Wildlife Program which requires BPA to provide adequate O&M funding to sustain the project as long as the hydrosystem operates (FWP Measure 11.2.C.1).

**Section 5. Budget**

**FY99 project budget (BPA obligated):**

***FY2000 budget by line item***

<b>Item</b>	<b>Note</b>	<b>% of total</b>	<b>FY2000</b>
Personnel	Includes staff for administration, maintenance, and enhancements.	% 25	50,823
Fringe benefits	@28%	% 7	14,230
Supplies, materials, non-expendable property		% 7	14,700

Operations & maintenance	O&M incorporated in personnel, subcontractors, and materials/repairs portion of supplies.	%0	
Capital acquisitions or improvements (e.g. land, buildings, major equip.)	Purchase of two grazing leases (approximately 20,000 acres and 1,056 AUM's)	%5	10,700
NEPA costs	NEPA requirements already covered under existing programmatic EIS/ROD and project management plan.	%0	
Construction-related support	Inspection duties of fence construction contract incorporated into personnel.	%0	
PIT tags	# of tags:	%0	
Travel		%3	5,220
Indirect costs	@ 34%	%14	28,891
Subcontractor	Umatilla County Weed Control	%5	11,025
Subcontractor	Unidentified fence construction contractor	%30	60,000
Subcontractor	Unidentified nursery contractor	%2	5,000
Subcontractor		%0	
Other		%0	
<b>TOTAL BPA FY2000 BUDGET REQUEST</b>			<b>\$200,589</b>

**Cost sharing**

Organization	Item or service provided	% total project cost (incl. BPA)	Amount (\$)
Bureau of Indian Affairs.	Undetermined amount of materials for fence and spring construction/maintenance.	%0	
other/undetermined	Opportunities to be developed in management plan (1999).	%0	
		%0	
		%0	
<b>Total project cost (including BPA portion)</b>			<b>\$200,589</b>

**Outyear costs**

	FY2001	FY02	FY03	FY04
<b>Total budget</b>	\$220,655	\$242,180	\$229,240	\$211,400

## Section 6. References

Watershed?	Reference
<input type="checkbox"/>	Confederated Tribes of the Umatilla Indian Reservation (CTUIR). 1996. Wildlife Mitigation Plan for the John Day and McNary Dams, Columbia River Basin.
<input type="checkbox"/>	Moore, Kelly M.S., Jones, Kim, K. Dambacher, Jeffery M. 1993. Methods for stream habitat surveys: Oregon Department of Fish and Wildlife, Aquatic Inventory Project. Corvallis, OR 97330.
<input type="checkbox"/>	Northwest Power Planning Council. 1994. Columbia River Basin Fish and Wildlife Program.
<input type="checkbox"/>	Oregon Trust Agreement Planning Project, October 1993, U.S. Department of Energy, Bonneville Power Administration, Division of Fish and Wildlife, Oregon Department of Fish and Wildlife, Confederated Tribes of the Umatilla Indian Reservation.
<input type="checkbox"/>	Prose, B., Farmer, A., and Olson, R. 1986. Cost-effectiveness of easement and fee title acquisition for mitigating wildlife habitat losses. USDI, Fish and Wildlife Service, National Ecology Center, Fort Collins, CO, 61 pp.
<input type="checkbox"/>	Rasmussen, L. and P. Wright. 1990d. Draft wildlife impact assessment, McNary Project, Oregon and Washington. U.S. Fish and Wildl. Serv., Portland Ore., 28 pp.
<input type="checkbox"/>	Umatilla Drainage Fish Habitat Improvement Plan. 1988. U.S. Department of Energy, Bonneville Power Administration, Division of Fish and Wildlife, Oregon Department of Fish and Wildlife, Confederated Tribes of the Umatilla Indian Reservation.
<input type="checkbox"/>	U.S. Department of Interior, Fish and Wildlife Service. 1980. Habitat Evaluation Procedures (HEP). Ecol. Serv. Manual 102. Div. Ecol. Servi., Washington D.C.

---

## PART II - NARRATIVE

### Section 7. Abstract

*Key Words: protect, enhance, mitigate, Target Species, habitat units, T/E/S species, dual benefits, objectives, methods, monitoring.*

The CTUIR are proposing to continue protecting, enhancing, and mitigating wildlife and wildlife habitat in the Squaw Creek Watershed. The project provides partial mitigation for habitats impacted by the construction of the McNary and John Day Hydroelectric Power Projects. In-kind habitats and cover types provided by the project include riparian shrub and hardwood, sand/gravel/cobble/mud, and grasslands. Out-of-kind cover types include coniferous forest. Primary HEP species selected to represent these habitats include the downy woodpecker (*Picoides pubescens*), yellow warbler (*Dendroica petechia*), great blue heron (*Ardea herodias*), mink (*Mustela vison*),

Western meadowlark (*Sturnella neglecta*), black-capped chickadee (*Parus atricopillus*), blue grouse (*Dendragapus obscurus*), and mule deer (*Odocoileus hemionus*). In a preliminary HEP analysis, Squaw Creek was estimated to provide 3,832 Habitat Units (HU's) of protection credit for and opportunities to provide 5,554 HU's of enhancement credit. Field surveys have been completed for grassland and riparian cover types and a full HEP analysis will be completed in 1999.

The project area provides suitable habitat for threatened, endangered, and sensitive species including the threatened northern bald eagle (*Haliaeetus leucocephalus*), bull trout (*Salvelinus confluentus*), and the proposed threatened summer steelhead (*Onchorynchus mykiss*).

The subbasin contains approximately 23 miles of anadromous and resident fish habitat and over 50 miles riverine habitat, providing dual benefits for fish and wildlife. Spring chinook and coho salmon, summer steelhead, and native redband and bull trout are supported by the subbasin. The area also supports a wide variety of wildlife including Rocky Mountain elk, mule deer, white-tailed deer, black bear, cougar, numerous birds of prey, beaver, primary and secondary cavity excavators and various other forest ecosystem species.

Key objectives of the operations and maintenance activities are to:

1. Maintain over 3,832 HU's of protection credit;
2. Implement management activities which will contribute towards the generation of 5,554 HU's of enhancement credit by the year 2008;
3. protect and maintain high quality native habitats;
4. provide, protect, and maintain riparian habitats which will benefit both fish and wildlife;
5. protect natural ecosystems and species diversity including T/E/S species;

Proposal goals and objectives for wildlife and wildlife habitat protection are achieved by the following methods; 1) administration of the access and travel management (ATM) plan, 2) leasing and resting two BIA administered range units within subbasin (encompassing approximately 20,000 acres), and 3) re-constructing allotment fencing. Habitat maintenance objectives are obtained through; 1) noxious weed control and 2) maintenance of range allotment fencing. Enhancements are obtained through native shrub and grass collection, propagation, and planting.

Results of project activities will be monitored and evaluated in 7 – 8 years utilizing USFWS HEP protocols for the above listed target species. Photo monitoring will be used to record near and long-term results. Big game surveys, conducted in cooperation with the Oregon Department of Fish and Wildlife utilizing Bureau of Indian Affairs funds, will be used to complement HEP modeling for deer.

## **Section 8. Project description**

### **a. Technical and/or scientific background**

## **PROBLEM IDENTIFICATION**

The development of dams for hydropower, navigation, flood control, and irrigation in the Columbia River Basin resulted in widespread inundation of riparian, riverine, and upland wildlife habitats (NPPC 1994; BPA et. al., 1993). The 1980 Power Act established and charged the Northwest Power Planning Council with the task of developing a comprehensive fish and wildlife mitigation program to protect, mitigate, and enhance fish and wildlife habitat in the Columbia Basin (Power Act 1980, Section 4 (H)(1)(A), page 12; NPPC 1994, Section 2, page 2-1). This program, initially adopted in 1982, was amended in 1984, 1987, 1991-1993, and 1994. Consistent with Section 1003(7) of the Power Council Fish and Wildlife Program, BPA is authorized and obligated to fund implementation of projects that will help reach the Power Council wildlife mitigation goals and objectives.

The *Wildlife Impact Assessments for the John Day and McNary Projects* (Rasmussen and Wright, 1990b and d), provide estimated losses of 36,555 and 23,545 Habitat Units resulting from the John Day and McNary Hydroelectric facilities, respectively. Habitat losses included mainland, island, and river habitats. Mainland habitats, totaling an estimated 20,858 acres for the John Day facility and 12,898 acres for the McNary facility, consisted of shrub/steppe grassland, riparian hardwood, riparian shrub, riparian herb, emergent wetland, sand dune, sand/gravel/cobble/mud, disturbed/bare/riprap, and open water cover types. Approximately 6,708 acres of island habitats associated with the John Day facility and 2,741 acres associated with the McNary facility were impacted.

The Squaw Creek Wildlife Project was developed by the CTUIR to offset habitat losses related to the John Day and McNary hydroelectric projects. The project area is located outside the Columbia River corridor, and therefore provides off-site mitigation. However individual habitat types and species impacted by hydroelectric development will be addressed by this project, therefore in-kind mitigation will be provided.

The project area encompasses nearly the entire Squaw Creek watershed, excepting corporate timberlands outside the diminished Reservation boundary, and adjoins the Umatilla National Forest on the east boundary of the project area. Within the Umatilla Indian Reservation boundary, the property contains approximately and 958 acres of floodplain riparian habitat, 8,042 acres of grasslands, 4,898 of forested environments, and 1,409 acres of upland shrub. Other minor cover types include agricultural lands, rock outcroppings, and talus slope.

Target wildlife mitigation species include great blue heron, yellow warbler, mink, Western meadowlark, black-capped chickadee, and downy woodpecker. Suitable target species also included in the habitat evaluation as recommended by the inter-agency HEP team include mule deer and blue grouse. An estimated 3,832 baseline Habitat Units (HU's) for target wildlife species were protected through acquisition. An additional estimated 5,554 HU's could be achieved through habitat enhancements developed in the management plan. Estimated total benefit of the project expressed through HU's is 9,386 units.

The CTUIR are currently conducting a baseline study using the Habitat Evaluation Procedures or HEP (USFWS 1980) on wildlife habitat in the Squaw Creek project area. This analysis will establish existing habitat conditions for target wildlife mitigation species and estimate future habitat conditions resulting from management and enhancement activities. Grassland and riparian surveys are complete, and timber cover type surveys are expected to be complete by mid summer 1999. The HEP study is planned for completion in mid summer 1999, and will then be incorporated into the comprehensive management plan. Existing habitat values, expressed in HU's, will be credited as protection credits per CTUIR-BPA MOA. Habitat Units developed under the management plan through habitat enhancements will also be credited to BPA.

Operations and Maintenance on the property is necessary to; 1) protect and maintain existing habitat values, and 2) maintain enhanced habitat values. The following sections describe in detail specific project objectives and associated tasks as well as project budgetary requirements.

#### **b. Rationale and significance to Regional Programs**

The Squaw Creek Wildlife Mitigation Project contributes to the 1994 Fish and Wildlife Program goals and objectives of achieving and *sustaining levels of habitat and species productivity* as a means of fully mitigating wildlife losses caused by construction and operation of the federal and non-federal hydroelectric system (11.1). Northwest Power Planning Council program measures 7.6.A, 7.6B, 7.6C, 7.6D, 11.3A, and 11.3D are addressed by this project. More specifically, the project area addresses the following goals and principles listed in FWP Section 11.2D.1, which states, "In developing wildlife mitigation plans and projects, demonstrate to the extent to which the plans/projects comply with the following principles:"

- **Are the least-costly way to achieve the biological objective.**  
Perpetual protection of the habitat types (riparian/wetland, native grassland, and coniferous forest) provided by the Squaw Creek project has been accomplished primarily through fee title acquisition. In a study comparing various mitigation methods (i.e., fee title acquisition and easements), Prose et. al. (1986) concluded that "Fee title land acquisition and subsequent management is generally more cost-effective than easements." Similarly, wildlife agency acquisition specialists have also consistently found fee title acquisition to purchase land for wildlife mitigation is usually more economical in the long-term compared with the purchase of easements (Oregon Trust Agreement Planning Project, BPA et al. 1993).
- **Have measurable objectives, such as the restoration of a given number of habitat units.**  
Management objectives for target wildlife mitigation species are based on the U.S. Fish and Wildlife Service Habitat Evaluation Procedures (USFWS, 1980).

Habitat surveys are currently underway to assess baseline conditions. Under the CTUIR-BPA MOA, the CTUIR has identified an estimated baseline of 3,832 habitat units. An estimated 5,554 HU's can be developed through habitat enhancements for a total project benefit of 9,386 habitat units.

- **Protect high quality native or other habitat or species of special concern, whether at the project site or not, including endangered, threatened, or sensitive species.**

The project area provides suitable habitat for the species listed as 'threatened,' including the northern bald eagle and the bull trout, as well as proposed threatened summer steelhead. Squaw Creek provides critical summer steelhead spawning and rearing habitat in the Umatilla Basin. Based on redd surveys conducted by CTUIR fisheries staff over the last nine years, approximately 25% of the summer steelhead production in the Umatilla Basin occurs in Squaw Creek.
- **Provide riparian or other habitat that can benefit both fish and wildlife.**

The project was originally prioritized in large part because of its ability to provide dual benefits for fish and wildlife. The 23 miles of anadromous and resident fish habitat and 50 miles of riverine habitat in the Squaw Creek Subbasin support spring chinook and coho salmon, summer steelhead, and native redband and bull trout. Recent land acquisitions and current and proposed protection measures (leasing of grazing allotments, planting of native shrubs and grasses), provide benefits for both fish and wildlife habitat and directly address recommendations of the Umatilla Drainage Fish Habitat Implementation Plan (see Section 8d, Project history) for improving fish habitat in the Squaw Creek subbasin.
- **Where practical, mitigate losses in-place, in-kind.**

The Squaw Creek Wildlife Area was prioritized and developed by the CTUIR because of the size of the project (watershed scale) and its ability to achieve dual benefits for both fish and wildlife. Although the project area is located offsite, it is located within about 36 air miles of Lake Wallula on the Columbia River and provides in-kind grassland, riparian hardwood and shrub, and sand/gravel/cobble/mud cover types. Habitat units for five John Day and McNary target wildlife species are provided by the project.
- **Help protect or enhance natural ecosystems and species diversity over the long term.**

By virtue of its size, the Squaw Creek project area lends itself to the protection and enhancement of biological diversity and ecological integrity in the Umatilla River basin. The property contains 4,898 acres of forested environments, which benefit target wildlife mitigation species such as the downy woodpecker, black-capped chickadee, mule deer and blue grouse. The area also supports a wide variety of wildlife including Rocky Mountain elk, mule deer, white-tailed deer, black bear, cougar, numerous birds of prey, beaver, primary and secondary cavity excavators and various other forest ecosystem species. Approximately 8,042 acres of native grasslands provide suitable habitat for target species such as

western meadowlark. In addition, 958 acres of riparian/floodplain cover types provide habitat for the yellow warbler, great blue heron, and mink. The inter-agency HEP team supported the incorporation of mule deer and blue grouse into the analysis in order to address native upland and forested environments of the watershed. Because of its size and location adjacent to National Forest System lands, the property will contribute to the protection and enhancement Blue Mountain ecosystems.

- **Complement the activities of the region's state and federal wildlife agencies and Indian tribes.**

The location of the Squaw Creek area and its management for resident and migratory wildlife and anadromous fish and water quality directly complements federal and state land manager efforts to manage and protect resources region. The property adjoins Umatilla National Forest system lands on the east and is located within the diminished boundary of the Umatilla Indian Reservation. Its location therefore provides opportunities to complement resource management on lands administered by the USDA Forest Service and USDOJ Bureau of Indian Affairs (BIA). The BIA-administered Trust lands (Tribal trust lands, individual Tribal allotments, and grazing leases) within the project area were included in the 1998 Squaw Creek watershed proposal and will provide an estimated 4,335 enhancement credits for this project.

Habitat protection and enhancement of the property also meets CTUIR goals of protecting, restoring, and enhancing key wildlife habitat (CTUIR Wildlife Mitigation Plan for the John Day and McNary Dams, Columbia River Basin, 1997). Furthermore, it promotes other key Tribal goals and activities including: 1) increasing opportunities for tribal members to exercise treaty rights reserved in the Treaty of 1855; 2) developing and promoting Tribal co-management and cooperative agreements with other federal, state, and tribal agencies for the benefit of biological and cultural resources in the Columbia Basin; 3) promoting regional/landscape biological diversity; 4) maintaining consistency with the Power Council Fish and Wildlife Program; 5) assisting BPA in meeting their wildlife mitigation obligations in a cost-efficient manner; 6) minimizing expenditures on mitigation planning and maximizing on-the-ground mitigation, enhancement, and protection of wildlife habitats.

- **Encourage the formation of partnerships with other persons or entities, which would reduce project costs, increase benefits and/or eliminate duplicative activities.**

Because of its location adjacent to the Umatilla National Forest and within the Umatilla Indian Reservation Boundary, Squaw Creek offers a variety of co-operative project opportunities with the Umatilla National Forest and Bureau of Indian Affairs. As is provides year round range for white-tailed deer and mule deer, and winter range for Rocky Mountain elk, co-operative project opportunities are also available with the Oregon Department of Fish and Wildlife and Rocky

Mountain Elk Foundation. Primary project opportunities include forage enhancement and range improvements such as spring developments.

**c. Relationships to other projects**

The restoration of fisheries resources in the Umatilla Basin has been a coordinated effort between Tribal, local, state and federal agencies and the agricultural community. CTUIR's cooperators include Umatilla County, ODFW, NRCS, USFWS, and the Umatilla Basin Watershed Council and numerous private landowners. Examples of project cooperation include the Umatilla Basin Project, the Umatilla River Subbasin Salmon and Steelhead Production Plan, and the Umatilla Basin Anadromous Fish Habitat Enhancement Project and the Umatilla Hatchery and associated artificial production plans. This coordination has continued and expanded through public scoping meetings formed to identify issues and develop creative solutions to land use problems in the basin. CTUIR intends to continue these coordination efforts in implementation of the Squaw Creek Watershed Project.

Opportunities for cooperation through cost sharing have also been emphasized in the Umatilla Basin. Entities providing funding for stream/watershed habitat enhancement include BPA, CTUIR, UPRR, EPA, and USFWS.

Close cooperation is maintained between various entities (CTUIR, ODFW, County, and NRCS) implementing habitat protection and enhancement actions to facilitate sharing of equipment, techniques, success and failures. Project implementers also collaborate with DSL, US Army COE, and Tribal fill and removal permitting processes in order to accomplish work.

The following are CTUIR or CTUIR Collaborative planning documents that are also related to Squaw Creek Watershed Project Mitigation efforts:

CTUIR. 1994. Non-point Sources of Water Pollution Assessment and Management Plan. EPA Region 10 Publication, Seattle, WA. page 37.

ODFW, USDA Forest Service, CTUIR. 1988. Umatilla Drainage Fish Habitat Improvement Implementation Plan. page 32.

**d. Project history (for ongoing projects)**

The Squaw Creek Watershed project was identified through development of the Umatilla River Basin Anadromous Fish Habitat Enhancement Project, the Umatilla Drainage Fish Habitat Improvement Implementation Plan (ODFW, USFS and CTUIR, 1988), and the CTUIR's Wildlife Mitigation Plan (October, 1997). The Umatilla River Basin Anadromous Fish Habitat Enhancement Project was developed in 1988 to address in-stream and riparian habitat deficiencies on private lands within Umatilla Indian Reservation Boundaries.

## 1988

The Umatilla Drainage Fish Habitat Improvement Implementation Plan identified approximately 66.9 stream miles of anadromous fisheries habitat in the Umatilla River Basin requiring restoration or protection measures. All areas identified are higher quality watersheds supporting some level of anadromous fish populations at various life stages, supporting functional ecosystems, containing large continuous blocks of critical habitat and are the most cost effective drainages in which to implement habitat improvements. The Umatilla Drainage Fish Habitat Implementation Plan recommended that CTUIR implement improvements on eighteen miles of the 66.9 miles of stream habitat identified as deficient over a five year period. Physical limiting factors in the Umatilla Subbasin associated with instream and riparian habitat degradation identified in the plan included the following:

- 1) High summer water temperatures;
- 2) Low or intermittent summer flows;
- 3) Poor quality riparian areas;
- 4) Poor fish habitat diversity;
- 5) Unstable stream channels; and
- 6) Winter icing.

The above factors were applied to each stream in the subbasin and ranked as critical, important, contributing, or nonfactors. For Squaw Creek, low/intermittent summer flows and poor quality riparian areas (low shade density) were identified as critical factors. High summer water temperatures, unstable stream channels, and winter icing were identified as important factors, and poor fish habitat diversity was identified as a contributing factor.

Desired future conditions, and goals and objectives were developed for addressing these causative factors and included the following:

- 1) High summer water temperatures - Improve stream shading by overhanging riparian vegetation to reduce summer water temperatures. The objective is to reach a minimum of 70% stream surface shade where potential exists with water temperatures of no more than 68F within 20 years of project completion.
- 2) Low or intermittent summer flows - Reduce domestic livestock utilization of riparian areas to facilitate riparian vegetation recovery. As riparian vegetation recovers and vegetation root quantity increases, soil will again be able to absorb a larger quantity of water and retain it for a longer time period, thereby redistributing some late winter and spring run-offs and increasing summer flows. The objective is to eliminate areas of no summer surface flows.
- 3) Poor quality riparian area - The quantity and quality of riparian vegetation will be increased using three methods: a) fencing of riparian areas to eliminate/reduce livestock utilization, b) seed grasses and legumes in appropriate areas to expedite soil buildup and vegetative recovery, c) plant appropriate shrubs and trees to expedite riparian vegetation recovery,
- 4) Poor fish habitat diversity - Increase habitat diversity through use of instream

structures, streambank stabilization and/or additions of large woody debris. Additional habitat diversity will be provided as riparian vegetation increases and streambanks become stable. Limiting factors for each stream will be assessed to determine what type, amount, and design is implemented.

- 5) Unstable stream channels - Streambank stability work will be undertaken only in areas where unstable banks prove to be creating problems or are potential problems for fish. Streambank stability work may be in the form of structures, boulders, and in some cases rock and/or vegetative rip-rapping. Whenever possible, streambanks will be stabilized through a medium of vegetation re-growth and livestock management. The objective of these projects is to reach a maximum of 15% actively eroding streambanks.
- 6) Winter icing - Reduce freezing of streams by increasing the vegetative thermal canopy, and by encouraging the narrowing and deepening of stream channels. As stream corridors are protected from over utilization by domestic livestock and supplemental planting is done, it is expected that riparian vegetation will increase, thereby providing a thermal canopy and encouraging the narrowing and deepening of the stream channel.

Seven miles of stream habitat within the Squaw Creek Watershed were identified for improvement and application of the above goals and objectives.

### **1991**

In 1991, a cultural resources inventory was conducted for 14 spring sites as a precursor to spring development and protection efforts. Additionally, fish habitat surveys and baseline water quality data were collected under this effort. Physical and biological surveys (Juvenile abundance/distribution, pre-spawning surveys and redd counts) were conducted under the Umatilla Basin Natural Production Research Project to document natural production success and related habitat conditions in the sub-watershed.

### **1993**

In 1993, the anadromous fish project shifted emphasis to a comprehensive watershed approach and began to identify upland and riparian watershed-wide causative factors impacting wildlife and fisheries habitat and natural production capabilities throughout the Umatilla River Watershed. Scoping meetings were conducted to encourage public involvement, assist in identifying detrimental land use practices and to cooperatively develop long-term solutions to improving practices impacting fisheries habitat. Basin-wide physical surveys began to be conducted in coordination with the CTUIR Umatilla Basin Natural Production and Evaluation Project and with ODFW. GIS database development began for past and present land use practices, ecotypes and habitat inventory data in subwatersheds of concern.

### **1994**

In 1994, Fish habitat surveys were completed in Squaw Creek that detailed poor conditions and limiting factors identified in the 1988 Umatilla Drainage Fish Habitat Implementation Plan. Approximately 10 stream miles were surveyed from June to August using "Methods for Stream Habitat Surveys" (Moore et al. 1993). Survey results

indicated that riffle habitat comprised 50.4% of the area while scour and backwater pools comprised 29.9% of the area surveyed. Fastwater habitats totaled 60% of the wetted area surveyed. The active channel width was found to be 3.1 times greater than wetted channel width. Approximately 18% of the streambank length was actively eroding. Water depth averaged only .23 meters, and the maximum water temperatures were recorded at 22 C. Large woody debris occurred at rate of only 3.4 pieces per 100 meters.

Primary impacts to stream habitat quality were attributed to grazing and secondary impacts to a natural surface road, which extended the entire length of the survey area. The road lies immediately adjacent to the stream and has adversely affected channel morphology and degraded the quality of numerous lateral springs. At the mouth of Squaw Creek, tertiary impacts to channel morphology were attributed to railway and highway dikes and bridges.

Fish surveys were conducted during the same time period for the same ten river miles. In 189 sampling units, 3,464 natural rainbow/steelhead, 105 chinook, and 5 natural coho were captured. The expanded population estimate was 37,611 total salmonids. Mean salmonid densities were .97 per square meter for all slow water habitat types (40% of the survey area) and .53 per square meter for fastwater habitat types (60 of the survey area).

Additionally, the Nonpoint Sources of Water Pollution Assessment and Management Program Plan was completed for the Umatilla River Basin (CTUIR, 1994). The plan identified pasture and animal holding as nonpoint sources of water pollution for the Squaw Creek Watershed. To address this source, the plan recommended coordination with the Bureau of Indian Affairs to improve land management for protection and restoration of water quality. One method identified for achieving this was through lease arrangements for livestock allotments and subsequent changes in management.

## **1995**

The Squaw Creek Watershed Project was initially identified in 1995 to pool the multiple, basin-wide efforts together into a single, coordinated effort to plan and implement a watershed project. Funding is provided under the Northwest Power Planning Council's Columbia River Basin Fish and Wildlife Program as partial mitigation for hydroelectric dam construction and the subsequent losses of wildlife habitat and anadromous fish throughout the Columbia River Basin. The goal of this project is to enhance natural production of existing summer steelhead and re-introduced chinook and coho salmon in the Umatilla River Basin and restore and maintain wildlife habitats to benefit HEP target species of wildlife.

Also in 1995, the CTUIR implemented a co-operative big game forage enhancement project with the Oregon Department of Fish and Wildlife and the Rocky Mountain Elk Foundation. The project included aerial application of fertilizer and distribution of salt to improve big game distribution and alleviate private land damage. In severe winters, this portion of the Umatilla Indian Reservation is home to several hundred elk which summer on adjacent USFS lands.

## **1996**

In 1996, two springs were developed in co-operation with the BIA to provide water for big and upland game and improve future opportunities for improved livestock distribution. The springs were fenced to ensure protection of the developments and water quality.

## **1997**

In November of 1997, 5,536 acres of land were purchased from one of the primary landowners in the Squaw Creek Watershed. These lands included forested, grassland and riparian habitats and form the nucleus for watershed restoration efforts.

## **1998**

To help achieve habitat protection objectives, grazing leases for two BIA-administered grazing allotments were procured in 1998. These allotments contain nearly 20,000 acres and constitute approximately 1,056 animal unit months (AUMs). The allotments were rested from use.

To increase habitat protection, a sub-contract for range riding services was implemented. Tasks performed by the sub-contractor included locating, documenting, and removing trespass livestock in co-operation with the Bureau of Indian Affairs and adjacent allotment leasees, mapping and recording spring sites, recording infrastructure repair needs, and documenting any other forms of trespass.

A sub-contract was implemented with Umatilla County Weed control for survey and control of noxious weeds in the Project Area. Surveys resulted in the identification of six undesirable plant species within the area. Most infestations were considered minor and were found to be associated with roadways in the floodplain. Control efforts were implemented and priority areas for treatment were identified for the 1999 growing season.

Road systems, water drainage devices, and range infrastructure features were surveyed with a global positioning system. Data collected regarding conditions of these features were converted into maps and themes in Arcview. The data is being used in the development of the management plan to identify conditions and uses that may be negatively affecting fish and wildlife habitats, and to prioritize range infrastructure improvement needs that will insure protection and maintenance of existing habitat values.

Three additional tracts of property, totaling 320 acres were purchased to provide protection of wildlife and wildlife habitat. The properties consist of coniferous forests and grassland cover types, with riparian inclusions providing benefits for resident and anadromous fish.

An analysis of potential acquisition costs for available corporate fee lands within the watershed was prepared. Fourteen tracts totaling 3,236 acres were identified within the analysis. Value of the properties was estimated at 4.1 million dollars. The analysis provides a means of prioritizing tracts for acquisition based on their physical location within the watershed and their costs, and also provides the basis for development of future acquisition funding requests.

A HEP analysis was initiated, with grassland and riparian surveys completed by October. Baseline HU's and futures analysis for grassland and riparian associated species are to be completed by March of 1999. Field surveys for forested habitats will be completed in the 1999 field season with a HEP update to follow.

## **1999**

Key activities include completion of the management plan and the HEP analysis, including timber cover types. The management plan will contain the following elements:

1. Access & Travel Management Plan;
2. Public Use Opportunities;
3. Habitat Protection Elements;
4. Habitat Enhancement and Restoration;
5. Operations & Maintenance;
6. Monitoring & Evaluation;

Conduct any necessary environmental review (NEPA/Checklist) with BPA under Wildlife Program EIS.

Plant community based modeling will complement the management plan and HEP analysis. The modeling will establish an estimated historical range of variability for species composition and size class distribution for riparian, grassland, and timber plant communities. This information will further refine HEP modeling, which in its current form is based primarily on vegetation structure, and provide a community-based measure of watershed health and condition.

Leases for the two BIA-Administered grazing allotments will have again been purchased to protect existing habitat values. Habitat improvements resulting from range rest will contribute towards enhancement objectives for 2008.

Maintenance of range infrastructure, primarily fences, will continue in 1999.

To increase habitat protection, additional acquisitions will be made as fee lands become available. Fee lands will be prioritized based on location within the watershed, habitat values, costs, and available funding.

### **e. Proposal objectives**

Objective 1 – Administer management plan to provide a minimum of 3,832 Habitat Units of protection credit for 7 target species. Protection will also be provided Federal T/E/S species and long-term ecosystem/species diversity.

Objective 2 – Maintain habitat values for selected target species, Category 2 species and T/E/S species.

Objective 3 – Initiate management plan enhancements to contribute towards the development of 5,554 Habitat Units of enhancement credits by the year 2008.

Objective 4 – Monitor & evaluate protection, maintenance, and enhancement activities.

**f. Methods**

**Objective 1, Task a – Administer access and travel management component of management plan; maintain kiosks, signs, and public information.**

**Methods** – Vehicular access is restricted to administrative use throughout the year. Staff patrol project boundaries and interior, inform visitors of regulations, and maintain kiosks/signs through repair, painting, and placement/replacement of laminated signs or informational bulletins.

**Objective 1, Task b – Purchase leases for two grazing allotments.**

**Methods** – The Squaw Creek watershed contains two BIA-administered grazing allotments, which provide 1,056 AUM's on approximately 20,000 acres. Grazing permits for the allotments are purchased from the BIA and the allotments are rested from livestock use.

**Objective 1, Task c – Monitor/prevent livestock trespass, illegal dumping, other illegal uses.**

**Methods** - Project staff administer access management by actively patrolling project boundaries and interior and inspecting for livestock or evidence of livestock trespass, illegal dumping, or other trespass. Livestock removal, if needed, is coordinated with adjacent landowners. Illegal dumping is reported to County law enforcement and staff coordinate removal of illegal dumping with County law enforcement and/or dispose of waste materials independently if possible (i.e. non-hazardous materials that do not pose safety hazards).

**Objective 1, Task d – Reconstruct range infrastructure, including fences and gates.**

**Methods** - Fencing, typically four-strand barbwire, is used to protect upland and wetland habitats from livestock trespass and to regulate visitor access. Maintenance typically consists of repairing support structures, splicing wire, tightening wires, and replacing stays.

**Objective 2, Task a – Implement noxious weed control including prevention, manual control, and herbicide application.**

**Methods** - Sub-contracts are developed annually with Umatilla County Weed Control for survey and control of noxious weeds. Weed Control Staff conduct surveys at the start of each growing season (determined by weather, plant phenology) for Canada thistle, bull thistle, knapweeds, and yellowstar thistle. Herbicides utilized include Curtail and Vanquish. Herbicide applications may be made 2 - 3 times per growing season depending on the target species life cycle and growth habit, and success of initial application. Application equipment includes backpack, All Terrain Vehicles, and Tractor mounted spray units.

**Objective 2, Task b – Conduct range infrastructure maintenance, including fences, cattleguards, and spring developments.**

**Method(s)** – Fence maintenance typically consists of reviewing fence condition, tightening and/or splicing wires where necessary, and replacing/repairing stays, posts, and support structures (h-braces, etc.). Cattleguards are cleaned of soil accumulations as necessary to maintain their effectiveness. Spring developments (fence, pipe, and trough) are repaired and maintained as needed to protect the water source and water quality.

**Objective 3, Task a – Collect and propagate native shrubs and grasses for out-year planting projects.**

**Method(s):** Planting stock are collected on site and propagated at the CTUIR Native Plant Nursery. Grasses are seeded with a harrow or broadcast seeder. Indigenous trees and shrubs are planted as cuttings or bareroot stock.

**Objective 4, Task a – Monitor access and travel management compliance.**

**Method(s)** - Project staff administer access management by actively patrolling project boundaries and interior and inspecting for livestock or evidence of livestock trespass, illegal dumping, or other trespass.

**Objective 4, Task b – Biological monitoring.**

**Method(s)** – The project location within the Reservation results in overlap of BIA funded big game surveys onto the project area. Results of those surveys will be incorporated to supplement HEP modeling. Surveys are conducted from a helicopter in November and February to estimate big game herd composition and populations. Data from the surveys will be partitioned out for the Squaw Creek project to monitor deer use of the project area. Deer use is expected to increase as habitat suitability increases as a result of protection (reduced disturbance due to access management) and enhancement activities (improvements in forage quantity and quality).

**Objective 4, Task c – Noxious weed monitoring.**

**Method(s)** – The number of noxious weed species and their infestation levels (acres) will be measured each year and compared to previous year's data to monitor the success of treatment methods. This monitoring will provide for adaptive management in that it allows for identification of new/additional vectors, re-prioritizes areas and species for treatment if necessary, and indicates when changes in treatment methods are needed.

**Objective 4, Task d – Continue to utilize existing photo-points.**

**Method(s)** - Photopoints have been established to photo-document improvements in riparian upland habitats resulting from protection activities (livestock exclusion) and enhancements (plantings). Permanent photo-points are established a Global Positioning System unit. Photos are taken with a 35mm camera.

**g. Facilities and equipment**

As a full service Tribal Government, the CTUIR possesses a full range of support facilities and services, including both technical and administrative staff. Tribal government offices have been consolidated in recent years within a series of buildings in the Tribal Government Complex near the Umatilla Reservation center where other community facilities are located. The Tribal Wildlife Program is located in an office complex with the Tribal Fisheries Program. Our building contains sufficient private and shared office space for both existing and future professional and management staff, a fully equipped secretarial services center, a conference/meeting room, library, and supply storage space.

Tribal offices are electronically interconnected through a LAN network, and feature modern Pentium computer workstations for each existing staff member. Current software capabilities include extensive word processing, spreadsheet, database, and GIS (ArcView) capabilities. In addition, several General Service Administration (GSA) vehicles (primarily 4X4 trucks) and All Terrain Vehicles and trailers are available to Wildlife Program staff. Field and sampling equipment has previously been secured to conduct HEP evaluations and monitoring and evaluation.

Heavy equipment needs for project maintenance such as tracked excavators/backhoes and similar equipment will generally be contracted. Government surplus equipment such as water pumps, etc will be pursued to limited program expenses.

**h. Budget**

Out-year costs estimated in Section 5 are based on calculations that incorporate a maximum 5% merit increase for permanent personnel and a 3%, maximum annual cost of living increase associated with inflation. The inflation rate was applied to materials and supplies, travel, and contracting. Following is a summary of activities planned under each major budget line item.

Personnel:

Funding for personnel includes necessary staffing to administer, plan, and implement operations and maintenance of the property. Key staff includes: administrative oversight provided by an administrative/program manager, project manager (project biologist), onsite caretaker, biological technicians, and limited GIS/Cartographic support.

The majority of personnel funding is identified for the project manager, onsite caretaker, and biological technician staff. Individuals funded under these positions will be responsible for administration of the management plan, implementation of project area maintenance, design and implementation of resource specific maintenance, and monitoring and evaluation. In addition, these staff will perform as contracting officers for subcontracts developed for various project activities. The project manager will accomplish the majority of public involvement/scoping, management plan updates,

design, layout, and contracting for habitat maintenance and enhancement, and scheduling for monitoring and evaluation.

Fringe Benefits:

Fringe incorporated at standard rate of 28% per CTUIR personnel department.

Services, Supplies, Materials, Non-Expendable Property:

Included under this line item of budget are materials such as fence material, signs, film; office supplies (pens, paper, et. al.); printing/duplication, office equipment rental (fax, copy machine); communications (cellular service); advertising (public notices); postage and freight (newsletters, etc.).

Travel:

Travel expenses include GSA vehicles, mileage, per diem, and limited travel to Portland to coordinate project management with BPA.

Indirect Costs:

Indirect costs incorporated at rate of 35% per CTUIR administrative department.

Subcontractor:

Contracting includes equipment rental contracts to conduct road maintenance and habitat maintenance/enhancement activities. In addition, labor crews are included under contracting to accomplish habitat maintenance and enhancement activities such as plant collection/propagation, seeding, planting, and noxious weed control.

## **Section 9. Key personnel**

All CTUIR Department of Natural Resource staff funded under this project are professionally trained and meet standard job descriptions (professional and technical grade and series requirements) established under the CTUIR Policy and Procedures Manual (under current revision, 1998). Technical staff involved in implementing the work identified under this proposal includes biological and administrative staff.

Name: Carl Scheeler

Title: Wildlife Program Manager

Education: BS Wildlife 1985 Oregon State University

Experience: 16 years fisheries/wildlife experience; last 12 years CTUIR Program Manager; experience in multi-project development, coordination, and oversight.

Name: Eric Quaempts

Title: Wildlife Biologist

Months funded this project: 4

Education: BS Wildlife Science 1990, Oregon State University, Corvallis OR.

17 Graduate level credits from Colorado State University, Ft. Collins, Co. in Technical Fire Management Training, 1993. Washington Institute, Duvall, WA.

Experience: 12 years wildlife experience

Biological Technician

Education: High School Diploma

Experience: 6 years wildlife technician experience

## **Section 10. Information/technology transfer**

Information transfer/exchange will be accomplished for this project through several means. First and foremost, the comprehensive management plan will be published and distributed to regional wildlife managers, project advisory committee, and other participants as well as made publicly available through local libraries and/or on the CTUIR Homepage via Internet. Likewise, the HEP Evaluation, workplan updates, etc will be made publicly available. Information exchange on the project will also occur through open public forums such as an open house and through media such as local newspapers, articles, and public announcements.

Restoration strategies employed on the project area can and will be presented to professional organization such as the Wildlife Society and Fisheries Society.

**Congratulations!**