

**Bonneville Power Administration
Fish and Wildlife Program FY98 Watershed Proposal Form**

Section 1. General administrative information

Title **Acquisition Of Water And Floodplain Fisheries Habitat In The Yakima Basin**

Bonneville project number, if an ongoing project 8067

Business name of agency, institution or organization requesting funding
Yakama Indian Nation

Business acronym (if appropriate) YIN

Proposal contact person or principal investigator:

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Subcontractors.

Organization	Mailing Address	City, ST Zip	Contact Name
Bureau of Reclamation	Box 1749	Yakima, WA 98907-1749	Jim Esget, YRBWEP Program Manager

NPPC Program Measure Number(s) which this project addresses.
2.1, 7.6C.5, 7.6D, 7.7, 7.8G, 7.8H, 7.11.C

NMFS Biological Opinion Number(s) which this project addresses.
N/A

Other planning document references.
Wy Kan Ush Me Wa Kush Wit, Vol. II-Subbasin Plans, Recommended Actions for the Yakima River System-1, 3, 4, 5; U.S. Bureau of Reclamation, Draft Basin Conservation

Plan for the Yakima River Basin Water Conservation Program, Sections 4.6, 5.1.3, 5.5; Yakima River Watershed Council, A 20/20 Vision, Section V.F.3; YIN, WDF, WDW, Yakima River Subbasin Salmon and Steelhead Plan, Recommended Strategies.

Subbasin.

Yakima River

Short description.

Protect riparian and floodplain fisheries habitat through land acquisition; increase instream flows by purchase of water rights and transfer to instream uses, protect and restore floodplain ecological functions

Section 2. Key words

Mark	Programmatic Categories	Mark	Activities	Mark	Project Types
X	Anadromous fish		Construction	X	Watershed
+	Resident fish		O & M		Biodiversity/genetics
+	Wildlife		Production		Population dynamics
	Oceans/estuaries		Research	+	Ecosystems
	Climate		Monitoring/eval.		Flow/survival
	Other	+	Resource mgmt		Fish disease
			Planning/admin.		Supplementation
			Enforcement	+	Wildlife habitat en-
		X	Acquisitions		hancement/restoration

Other keywords.

Instream flows, riparian habitat acquisition, floodplain habitat acquisition, floodplain ecological functions

Section 3. Relationships to other Bonneville projects

Project #	Project title/description	Nature of relationship

Section 4. Objectives, tasks and schedules

Objectives and tasks

Obj 1,2,3	Objective	Task a,b,c	Task
1	Identify critical riparian and floodplan habitat most in danger of development or further degradation.	a	Consultation with fisheries biologist from WDFW, USFWS, BOR, and specialist from county planning departments, NRCS, and other appropriate entities.
2	Purchase highest priority riparian and floodplan habitat parcels.	a	Contact appropriate real estate entities and/or private landowners.
2		b	Conduct negotiations with appropriate real estate entities and/or private landowners.
2		c	If land purchase also includes water rights, transfer water right to instream flows.
3	Identify water rights that may be available for purchase.	a	Consultation with appropriate staff from BOR, WDOE, irrigation districts, and other.
3		b	Negotiate purchase and transfer water right to instream flows.

Objective schedules and costs

Objective #	Start Date mm/yyyy	End Date mm/yyyy	Cost %
1	4/1998	7/1998	5.00%
2	4/1998	9/1998	60.00%
3	4/1998	9/1998	35.00%
			TOTAL 100.00%

Schedule constraints.

The major constraint is the amount of land/water that may be available for purchase. Exact parcels of land/water available will not be known until acquisition program is able to approach real estate entities or private parties.

Completion date.

2010

Section 5. Budget

FY99 budget by line item

Item	Note	FY98
Personnel		
Fringe benefits		
Supplies, materials, non-expendable property		
Operations & maintenance		
Capital acquisitions or improvements (e.g. land, buildings, major equip.)		
PIT tags	# of tags:	
Travel		
Indirect costs		
Subcontracts	Due to their land/water purchase program and expertise, this project will be subcontracted to BOR	\$5,000,000
Other		
TOTAL		\$5,000,000

Outyear costs

Outyear costs	FY99	FY00	FY01	FY02
Total budget	\$5,000,000	\$5,000,000	\$5,000,000	\$5,000,000
O&M as % of total	0.00%	0.00%	0.00%	0.00%

Section 6. Abstract

a. This proposal addresses the acquisition of water for instream flows, and the acquisition of riparian and floodplain fisheries habitat in order to protect and restore the ecological functions of riverine ecosystems, and thereby support natural populations of salmon and steelhead.

b. The goal of this project is to protect/restore riparian and floodplain habitat in the Yakima Basin through land acquisition, and the increase of instream flows through the purchase of water rights and the transfer of purchased water to instream flows. The ultimate goal is to increase natural salmon and steelhead production by restoring floodplain ecological functions as discussed in Return to the River.

c. This project supports the concept of restoring natural production through the protection/restoration of riverine habitats required by various states of salmon during the life history. Specific F-W Program elements include 7.6C.5 and 7.6D, which deal with

protection and re-establishment of natural ecological functions, and the entire range of habitat objectives.

d. This program is based on the premise that one of the primary means to protect riparian and floodplain habitats and increase instream flows is the purchase of land/water. Such an approach offers permanent protection for the habitat and ultimately for the fisheries resources.

e. This program will allow the purchase of land/water which will be permanently dedicated to natural fisheries production.

f. Initial results will be measured in terms of acres of habitat purchased and acre/feet of water purchased and transfer to instream flows. Ultimately, results will be measured in terms of fish production as determined by on-going monitoring in the Yakima Basin.

Section 7. Project description

a. Technical and/or scientific background.

The Yakima River, located in south-central Washington State, flows for over 200 miles from the foot of Keechelus Dam to its confluence with the Columbia River, at Richland. Principal tributary streams include the Naches, Teanaway, Cle Elum, and Kachess Rivers. The Yakima River Basin covers over 6,000 square miles and is the largest river basin entirely within the state of Washington.

The Yakima River Basin is interrupted by a number of east-west tending anticlinal ridges, which form a series of intervening valleys: Kittitas, Wenas, Naches, Upper Yakima, lower Yakima. Prior to Euroamerican development, the Yakima River Basin contained all of the necessary habitat components to produce large runs of anadromous salmonids. Historic salmon and steelhead runs have been estimated to total 790,000 returning adults annually (YIN, WDF, WDW, 1990).

Over the past 150 years, the Yakima Basin has undergone a dramatic transformation. While this transformation has produced a world-famous agricultural area that sends its products to national and international markets, it has also resulted in the alteration of salmonid habitat to the extent that the once-abundant salmon runs are now reduced to very low levels. Native runs of sockeye, summer chinook, and coho are extinct in the Yakima Basin. Spring chinook number as few as 645 returning fish in 1995. Fall chinook number in the low thousands. Yakima Basin summer steelhead are a “candidate species” for listing under the Endangered Species Act of 1973.

The fate of salmon and their habitats in the Yakima Basin since the mid-1800’s is similar to other subbasins in the Columbia Basin. The storage, release, and diversion of water for irrigation has drastically altered the natural hydrograph. The construction of storage dams has blocked access to spawning and rearing habitat. Agricultural activities, highway

construction, levee and dike construction, urbanization, and other human actions have simplified or eliminated the natural hydrological and ecological functions of the floodplain and riparian zones. Salmonid habitat has been simplified or eliminated (YIN, WDF, WDW, 1990; Northwest Power Planning Council, 1986; Lichatowich, et al., 1995; Lichatowich and Mobrand, 1995) The lower Yakima River and a number of tributaries have been listed on the May 1996 Washington State Clean Water Act Section 303(d) list for temperature, deficient instream flows, and a number of pollutants (Yakima River Basin Conservation Advisory Group, 1997).

Restoration of Yakima Basin salmon and steelhead populations has figured prominently in the Northwest Power Planning Council's Fish and Wildlife Program since the initial program was adopted in 1982 (Northwest Power Planning Council, 1982). The construction of fish passage facilities in the basin and the Cle Elum Supplementation Facility are the most prominent accomplishments of this effort. The 1994 Fish and Wildlife Program gives greater attention to habitat issues on a watershed-scale and ecosystem functions as the foundation for salmon and steelhead restoration (Northwest Power Planning Council, 1994). (See Sections 7.6, 7.7, 7.8, 7.11) The key over-arching goal is stated in Section 2.1: "The Council system goal is a healthy Columbia Basin, one that supports both human settlement and the long-term sustainability of native fish and wildlife species in native habitats where possible, while recognizing that where impacts have irrevocably changed the ecosystem, we must protect and enhance the ecosystem that remains. To implement this goal, the program will deal with the Columbia Basin as a system..." The purpose of this proposal is precisely to "protect and enhance the ecosystem that remains" in the Yakima Basin in order to support to natural salmon and steelhead production.

This project is a logical component of a basin-wide approach to salmon and steelhead restoration. It is supportive of and integrates well with other measures in the 1994 Fish and Wildlife Program, including construction of fish passage facilities and the construction of the Cle Elum Supplementation Facility. In addition, purchase of land/water for fisheries habitat and instream flows is a prime component of Title XII, P.L. 103-434, commonly referred to as the Yakima River Basin Water Enhancement Project (YRBWEP). This legislation authorizes the purchase of land/water by BOR for fisheries habitat and instream flows (Draft Basin Conservation Plan for the Yakima River Basin Water Conservation Program, 1997). Water/land purchase for instream flows and fisheries habitat is also a key element in the draft plan produced by the Yakima River Watershed Council, A 20/20 Vision (1997).

Implementation of YRBWEP (Title XII) by BOR has included a pilot project to purchase land/water for fisheries habitat and instream flows. To date, this has resulted in the leasing of water during the 1996 and 1997 irrigation and the transfer of this water for instream flows in the Teanaway River. In addition to water purchase/lease in 1998, BOR is expected to proceed on the purchase of one or two parcels of existing or former wetlands/floodplain habitat along the Teanaway River for fisheries habitat.

This proposal is founded on the basis that to restore salmon populations, riparian and floodplain hydrologic and ecological functions must be protected or restored. It is these functions that support the healthy ecosystem that in turn supports natural salmon and steelhead populations. This approach is imbedded in the ISG Report, Return to the River (1996), and is based on a growing body of scientific literature: Stanford and Ward, 1993; Stanford, Hauer, and Ward, 1988; Poff, et al., 1997.

References:

Independent Scientific Group. 1996. Return to the River. Portland, Oregon.

Lichatowich, J. A., and L. E. Mobrand. 1995. Analysis of Chinook Salmon in the Columbia River from an Ecosystem Perspective. In. EDT-The Ecosystem Diagnostic and Treatment Method. Bonneville Power Administration. Portland, Oregon.

Lichatowich, J. A., L. Mobrand, L. Lastelle, and T. Vogel. 1995. An approach to the diagnosis and treatment of depleted Pacific salmon populations in the Pacific Northwest watersheds. Fisheries 20(1): 10-18.

Northwest Power Planning Council. 1982. Columbia River Basin Fish and Wildlife Program. Portland, Oregon.

Northwest Power Planning Council. 1986. Compilation of Information on Salmon and Steelhead Losses in the Columbia River Basin. Portland, Oregon.

Poff, N. L., J. D. Allan, M. B. Bain, J. R. Karr, et al. 1997. The Natural Flow Regime. In BioScience 47(11): 769-784.

Stanford, J. A., and J. V. Ward. 1993. An ecosystem perspective of alluvial rivers: Connectivity and the hyporheic corridor. J. N. American Benthological Society 12(1): 48-60.

Stanford, J. A., F. R. Hauer, and J. V. Ward. 1988. Serial discontinuity in a large river system. Verh. Internat. Verein. Limnol. 23: 1114-1118.

Yakima Basin Watershed Council. 1997. A 20/20 Vision. Yakima, Washington. 93 pages.

Yakima River Basin Conservation Advisory Group. 1997. Draft Basin Conservation Plan for the Yakima River Basin Water Conservation Program.

YIN, WDW, WDF. 1990. Yakima River Subbasin Salmon and Steelhead Plan. Northwest Power Planning Council. Portland, Oregon. 282 pages.

b. Proposal objectives.

Cost per acre or acre/foot will vary depending upon a number of factors, including location, historic land or water use, seniority (in the case of water), potential land use, and surrounding land use. Based on very limited experience to-date, riparian/floodplain habitat may run between \$1,500-\$6,000 per acre. Water purchase may run \$400-\$800 per acre/foot. It is the intent, of course, to obtain the maximum amount of land/water for the lowest possible cost. It is important to keep in mind that it is normally impractical to identify a parcel of riparian/floodplain habitat, apply for funds, wait for approval (if granted) and award of funds, and then enter into negotiations with the landowner. This process typically takes 1-2 years, and by the time it is completed, the land will have long-since been sold to a developer that had funds readily available. This is especially true in the Yakima Basin, which is experiencing development pressure from the Puget Sound region. To “protect and enhance the ecosystem that remains” it is imperative that funds be readily available to purchase land/water as it comes on the market. The market is not compatible with long funding and acquisition processes.

c. Rationale and significance to Regional Programs.

This proposal is based on the proposition that “we must protect and enhance the ecosystem that remains”, as stated in Section 2.1 of the 1994 Fish and Wildlife Program. Riparian and floodplain ecological functions have been lost along much of the Yakima River and its primary tributaries due to a variety of human actions (YIN, WDW, WDF, 1990). Protecting and restoring riparian and floodplain ecological functions is the means by which a healthy Columbia River Basin is reached, which is the over-arching goal of the Northwest Power Planning Council. Riparian and floodplain land and water purchases are the means by which the normative river functions are restored (ISG, 1996).

This proposal is consistent with a series of activities and programs that have been undertaken in the Yakima Basin to restore natural salmon and steelhead production. Beginning with the first Fish and Wildlife Program adopted by the NPPC in 1982, an extensive program to provide proper fish passage throughout the basin was initiated. This effort is now nearing completion. More recently, a program to supplement natural populations of salmon and steelhead has been implemented, pursuant to Program measures adopted by the NPPC. The Cle Elum Supplementation Facility has been completed, and the first spring chinook eggs were taken in the fall of 1997. As part of the supplementation effort, acclimation ponds will be constructed at various locations in the Yakima Basin, and juveniles produced at the Cle Elum facility will be out-planted to these ponds. Smolts from these acclimation ponds will then migrate down through the basin. Adults from these out-plantings are expected to return to the Yakima Basin to spawn in 2001.

In addition to fish passage construction and the Cle Elum Supplementation Facility, this proposal is consistent with currently funded NPPC activities (Project No. 9704900) to provide instream flows in the Teanaway River, a major tributary of the Yakima River.

The Bureau of Reclamation, pursuant to Title XII, P.L. 103-434, is implementing a basin-wide program to increase instream flows, improve water quality, and protect fisheries habitat. This includes the purchase of land and/or water, with the water to be dedicated to instream flows. Title XII is "...a Federal action to improve streamflow and fish passage conditions and shall be considered part of a comprehensive program to restore the Yakima River basin anadromous fishery resource." [Title XII, Section 1203(d)(2)]

Pursuant to Title XII, BOR has initiated a land/water acquisition program in the Yakima Basin. This has resulted in the lease of water in the Teanaway River during the 1996 and 1997 irrigation season. BOR is expected to proceed with the purchase of two parcels of wetland/floodplain located along the lower Teanaway River in 1998.

The proposal is consistent with one of the primary goals of Wy-Kan-Ush-Mi Wa-Kish-Wit (1995): "Restore anadromous fishes to the rivers and streams that support the historical cultural, and economic practices of the tribes."

This proposal is consistent with and similar to a number of projects and activities currently funded pursuant to the 1994 FWP. These projects include: Satus Watershed Restoration, Project No. 9603501; Little Naches River Riparian and In-Channel Habitat Enhancement, Project No. 9705000; Yakima Basin Side Channels, Project No. 9705100; Toppenish/Simcoe Instream Flow Restoration, Project No. 9705300; Lower Klickitat River Riparian and In-Channel Habitat Enhancement, Project 9705600. On a wider scale, this proposal and its relationship to BOR implementation of Title XII, P.L. 103-434 compares well with similar collaborative efforts, such as the BOR/BPA/CTUIR/irrigation districts efforts to restore instream flows in the Umatilla River; efforts to restore instream flows in the Methow River; and similar efforts in the Columbia Basin.

Restoration of riverine ecosystems as the basis for restoring native fish populations is occurring on other rivers in the West, including the Colorado River and the Klamath River.

References:

Columbia River Intertribal Fish Commission. 1995. WY-KAN-USH-MI WA-KISH-WIT-Spirit of the Salmon The Columbia River Anadromous Fish Plan of the Nez Perce, Umatilla, Warm Springs, and Yakima Tribes. Portland, Oregon.

Independent Scientific Group. 1996. Return to the River. Portland, Oregon.

YIN, WDF, WDW. 1990. Yakima River Subbasin Salmon and Steelhead Plan. Northwest Power Planning Council. Portland, Oregon. 282 pages.

d. Project history

N/A This is a new proposal for FY 1998.

e. Methods.

This proposal will utilize the land/water purchase program of the BOR to acquire riparian/floodplain fisheries habitat and water for instream flows. This is the most cost-effective approach, as BOR has developed this program and appropriate staff expertise as a function of implementation of Title XII, P.L. 103-434. Utilizing this approach allows the maximum amount of funds to be allocated to actual purchase of land/water by using expertise that already exists in the Yakima Basin.

f. Facilities and equipment.

The proposal will use existing BOR facilities and equipment; office facilities, office equipment, vehicles, etc. No purchase of facilities or equipment will be funded through this proposal.

g. References.

Columbia River Intertribal Fish Commission. 1995. WY-KAN-USH-MI WA-KISH-WIT-Spirit of the Salmon The Columbia River Anadromous Fish Plan of the Nez Perce, Umatilla, Warm Springs, and Yakima Tribes.

Independent Scientific Group. 1996. Return to the River. Portland, Oregon.

Lichatowich, J. A., and L. E. Mobrand. 1995. Analysis of Chinook Salmon in the Columbia River from an Ecosystem Perspective. In EDT-The Ecosystem Diagnostic and Treatment Method. Bonneville Power Administration. Portland, Oregon.

Lichatowich, J. A., L. Mobrand, L. Lastelle, and T. Vogel. 1995. An approach to the diagnosis and treatment of depleted Pacific salmon populations in the Pacific Northwest watersheds. *Fisheries* 20(1): 10-18.

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Stanford, J. A., F. R. Hauer, and J. V. Ward. 1988. Serial discontinuity in a large river system. *Verh. Internat. Verein. Limno.* 23: 1114-1118.

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Yakima River Basin Conservation Advisory Group. 1997. *Draft Basin Conservation Plan for the Yakima River Basin Water Conservation Program*.

YIN, WDF, WDW. 1990. *Yakima River Subbasin Salmon and Steelhead Plan*. Northwest Power Planning Council. Portland, Oregon. 282 pages.

Section 8. Relationships to other projects

This proposal is supportive of and integrated with all other activities that taking place in the Yakima Basin with the goal of restoring natural populations of salmon and steelhead. This includes other elements of the FWP such as the construction of new fish passage facilities, and the Yakima Klickitat Fisheries Project. It also totally compliments actions initiated by Title XII, P.L. 103-434 to restore salmon and steelhead populations. This proposal seeks to take advantage of the on-going water and land acquisition program developed by BOR pursuant to Title XII, by providing additional funding in a timely manner to protect rapidly diminishing fisheries habitat in the Yakima Basin. Close working relationships have already been established between the YIN, BOR, BPA, and related agencies; this proposal seeks to expand on that base.

Section 9. Key personnel

N/A Type here (provide answers in paragraph form)

Section 10. Information/technology transfer

Information, data, and expertise developed during the course of this project will be transferred though inter- and intra-agency communication, formal reports, and presentations at various public meetings.