

**Bonneville Power Administration  
Fish and Wildlife Program FY99 Proposal**

**Section 1. General administrative information**

**Protect & Enhance Coldwater Fish Habitat In  
The Umatilla River Basin.**

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**Bonneville project number, if an ongoing project**    8710002

**Business name of agency, institution or organization requesting funding**  
OREGON DEPARTMENT OF FISH AND WILDLIFE

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**Business acronym (if appropriate)**    ODFW

**Proposal contact person or principal investigator:**

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**Subcontractors.**

<b>Organization</b>	<b>Mailing Address</b>	<b>City, ST Zip</b>	<b>Contact Name</b>
Various equipment, construction, and fence contractors	no specific address	statewide	competitive bid process.
Umatilla County Weed Control	3920 Westgate	Pendleton, OR. 97801	Matt. Voile
Bioengineering consultanting services	no specific address	region wide	competitive bid process
Project material vendors	no specific address	state/region wide	competitive bid process

**NPPC Program Measure Number(s) which this project addresses.**  
NPPC Columbia Basin Fish & Wildlife Program Measures 7.6; 7.7; 7.8, & 7.10

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

N/A (project is not directly associated with mainstem Columbia River hydroelectric projects, nor ESA requirements yet.)

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**Other planning document references.**

1)CTUIR- Wildlife Mitigation Plan (Draft) May 1996, Columbia Basin Salmon Policy. 1995 pg 9-10, and Water Assessment Report. 1994. 2)NMFS - Salmon & Steelhead Enhancement Plan for the Washington and Columbia River Conservation areas.Vol 1. chpt 4, 37pgs. 3)ODFW-Umatilla River Drainage Anadromous Fish Habitat Improvement Plan. 1988, 37 pgs. 4)ODFW/CTUIR - Umatilla Hatchery Master Plan. 1990, pg 25&43. 5)OWRD - Umatilla Basin Report. 1988, pg 138-150. 6)BOR - Umatilla basin Project Planning Report. 1986, chpt. 3, pg7. 7)Umatilla County - Comprehensive Plan. 1983, chpt 8. 8)USNF - Umatilla National Forest Land & Resource Management Plan. 1990, chpt 2, pg 13. and Final EIS. 1990, chpt III, pgs 59-62. 9)Umatilla River Subbasin Salmon and Steelhead Production Plan. 1990, pg 93. 10)USDE, BPA, & ODFW - A Comprehensive Plan for Rehabilitation of Anadromous Fish Stocks in the Umatilla River Basin. 1985, pg 40-43, and pg 115. 11)USFWS & NMFS Umatilla R. Planning Aid Report, Apr.1982, pg 24-37

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**Subbasin.**

Birch Creek & Meacham Creek subbasins

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**Short description.**

Protect and enhance coldwater fish habitat on private lands in the Umatilla River basin in a manner that achieves self-sustaining salmonid populations and their associated habitat by utilizing natural stream functions to the fullest extent.

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**Section 2. Key words**

Mark	Programmatic Categories	Mark	Activities	Mark	Project Types
X	Anadromous fish	+	Construction	X	Watershed
+	Resident fish	X	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-
		+	Acquisitions		hancement/restoration

**Other keywords.**

Fish Habitat Enhancement, Fish Passage Improvement, Private Landowner Education, Riparian Restoration, Ecological Interactions, Proper Functioning Condition, Floodplain Function(s), Watershed Health, Public Outreach.

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### 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	Conduct administrative activities necessary to insure maximum program benefits in a cost effective manner.	a	Coordinate project activities with ODFW fiscal, realty, regional and district staff; with BPA contracting officer and NPPC staff to insure program operations are consistent with ODFW and BPA policies.
1		b	Maintain habitat program databases, records and files.
1		c	Hire, train and supervise activities of project employees.
1		d	Prepare annual work statements and budgets, write quarterly, annual and other reports. Write and administer contracts, and purchase necessary equipment, materials and supplies.
1		e	Pursue cost share opportunities with other programs and agencies (GWEB, ODFW Fish R&E, FEMA, etc.) and private landowners. Adminster and track these additional funds.
2	O & M - Insure maximum program benefits within leased areas by providing maintenance on all existing riparian exclosure fences, bioengineering treatments, planting, and instream habitat	a	Assess project leases for O&M needs after spring run-off. Conduct onsite preparation activities (e.g. staking, surveying, etc. for project maintenance) on all properties needing O&M work in FY 1999

	improvements.		
2		b	Inspect and maintain approximately 15 miles of fence which currently protects. 12.5 miles of stream and the associated riparian habitat from livestock over utilization.
2		c	Inspect and maintain instream fish habitat structures and streambank restoration treatments on all projects.
2		d	Control noxious weeds within all leased riparian areas.
2		e	Revegetate riparian areas disturbed by flood/PFC restoration activities conducted during FY98. Seed and plant native vegetation from local plant donor sites and native plant nurseries.
2		f	Install additional off-channel livestock water developments to eliminate more watergaps and reduce program maintenance obligations.
3	Implementation--Prework: Analyze existing information and prioritize potential projects; procure long term lease agreements on private lands; develop plans; and obtain permits to implement new fish habitat projects.	a	Analyze existing information available from documents listed in Section 1, consult with local districts fisheries biologists, Umatilla Basin Watershed Council, CTUIR, etc. and prioritize potential new projects.
3		b	Work cooperatively with private landowners to procure long term riparian lease agreements in high priority areas.
3		c	Conduct onsite activities (surveying, staking, etc), prepare contracts, and obtain any permits needed to complete work.
4	Implementation--Onsite: Contribute to improving watershed conditions by improving the quality and quantity of riparian and	a	Construct livestock enclosure fences on stream(s) impacted by grazing, and remove any human caused barriers to fish migration.

	instream habitat on selected streams.		
4		b	Construct off-site livestock water developments to encourage utilization of uplands and focus grazing pressure away from streams.
4		c	Construct streambank, instream, and riparian buffer treatments (if needed) using native vegetation/materials and bioengineering or other “soft” habitat restoration techniques.
5	Monitor and evaluate existing habitat leases and prepare reports of the results.	a	Retake pictures (annually) during the Fall at approximately 65 photopoints, which were established prior to project implementation on each of the leases.
5		b	Continue year round (1 hr. interval)collection of stream temperature data from 10 monitoring sites located within project streams. Summarize existing data collected from these same thermographs.
5		c	Collect data from existing habitat monitoring transects established on project leases to assess stream channel response to habitat restoration (as time permits).
5		d	Conduct biological surveys of project streams to assess presence/absence of salmonids and species composition. (as time and water conditions permit).
5		e	Report the results of all project M&E activities in quarterly, annual and special reports. Distribute to ODFW fish districts, BPA, and other interested parties.
6	Insure maximum communication, education and coordination of habitat enhancement activities by	a	Work cooperatively with the Umatilla Basin Watershed Council and other local groups involved with stream habitat restoration to

	actively pursuing opportunities to work with, educate and learn from personnel involved with other agencies, organizations, and programs.		identify and prioritize projects and activities beneficial to the protection and restoration of basin watershed lands.
6		b	Coordinate field activities with other agencies, organizations, and programs to insure maximum technology transfer, program consistency and coordination of habitat enhancement efforts.
6		c	Answer coorespondence, respond to information needs, and make presentations to other agencies, private organizations, school/youth groups and the news media.
6		d	Work cooperatively with private landowners to promote management activities that protect and restore instream and riparian habitat and watersheds on private lands.

**Objective schedules and costs**

Objective #	Start Date mm/yyyy	End Date mm/yyyy	Cost %
1	3/1999	3/2000	10.00%
2	3/1999	3/2000	60.00%
3	3/1999	3/2000	5.00%
4	3/1999	3/2000	10.00%
5	3/1999	3/2000	10.00%
6	3/1999	3/2000	5.00%
			TOTAL 100.00%

**Schedule constraints.**

a) Catastrophic natural events (e.g. floods, storms, etc.). b) Change of landownership & level of commitment to the project by new landowner, c) Compliance with state & federal environmental laws (ODSL, ODEQ, COE,etc.) d) Political/funding constraints.

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**Completion date.**

2015

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## Section 5. Budget

### *FY99 budget by line item*

<b>Item</b>	<b>Note</b>	<b>FY99</b>
Personnel	FY99 budget; 2-FTE's & 1 seasonal @ 36 mo.; ODFW Administrative & Engineering assistance, 6 mo.	\$106,578
Fringe benefits	FY99 OPE @ 38%	\$40,499
Supplies, materials, non-expendable property	FY99 Office S&S.	\$5,859
Operations & maintenance	FY99 (O&M & new implementation) Field S&S, Vehicles, equipment operation, milage, etc.	\$32,418
Capital acquisitions or improvements (e.g. land, buildings, major equip.)	1)10-12yd Dump Truck, 1) 12-15ton 30ft. equipment trailer & 1) 16ft. utility trailer	\$45,000
PIT tags	# of tags: n/a	
Travel	FY99 contract review meetings, I & E activities, professional development.	\$3,625
Indirect costs	Administrative overhead @ 22.9%, note: subcontracts listed below are not subject to this charge.	\$53,581
Subcontracts	FY99 (O&M and new implementation) Fence, instream, equipment/operator rental, and weed control.	\$33,000
Other		
<b>TOTAL</b>		\$320,560

### *Outyear costs*

<b>Outyear costs</b>	<b>FY2000</b>	<b>FY01</b>	<b>FY02</b>	<b>FY03</b>
Total budget	\$280,000	\$295,000	\$310,000	\$325,000
O&M as % of total	60.00%	60.00%	60.00%	60.00%

## Section 6. Abstract

### **ABSTRACT**

The Umatilla Fish Habitat Improvement program establishes long term stream/fish habitat improvement projects on private lands through riparian leases, cooperative agreements, and easements with private landowners. Individual projects contribute to ecosystem/basin wide watershed restoration/management efforts that are underway by state, federal and tribal agencies. Project planning includes the participation/involvement

of private landowners, state/federal agencies, tribes, stakeholders, and watershed council(s) as called for in measure 7.7 of the 1994 CBFW Program.

The Umatilla program goal is to rehabilitate and improve anadromous fish spawning, rearing habitat, and tributary passage as outlined in Program Measure 7.6 & 7.10 to contribute to the NPPC's interim goal of doubling anadromous fish runs in the Columbia River basin. Individual projects incorporate Best Management Practices (BMP's) as called for in Program Measure 7.8.

Initiated by ODFW in 1987, this project protects and enhances coldwater fish habitat primarily using passive restoration techniques. Riparian enclosure fencing is a primary tool for this work. Where applicable, active remediation techniques are also used. These strategies incorporate bioengineering techniques, plantings, off-site water developments, and site specific instream structures.

While the focus of this project is on summer steelhead, spring/summer chinook, coho, and resident fishes, many species of wildlife also benefit. The Umatilla program in FY 1999 will complete flood restoration work initiated during FY97-98 on its existing projects and break away from its six year O&M/M&E status to begin implementing new projects.

Long term monitoring and evaluation is an ongoing and vital element of this program. Monitoring includes: stream temperature data, physical & biological stream surveys, photopoints, and habitat transects.

## **Section 7. Project description**

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

**Section 7a. Technical and/or Scientific Background:** The Umatilla River, located in northeast Oregon, originates on the western slopes of the Blue Mountains east of the city of Pendleton. The river and its tributaries flow in a northwesterly direction for approximately 115 miles. The confluence of the Umatilla with the Columbia River is located at river mile 289 near the town of Umatilla Oregon. The River Continuum concept (Vannote et.al. 1980) best describes the model by which Umatilla habitat restoration projects are addressed. Energy sources and channel forming processes change from the headwaters to the sea. In much the same manner, salmonid habitat utilization has evolved to utilize different portions of these habitats during key stages of the fishes life cycle. Umatilla projects focus on removing the causes of degradation(s) that affect all or portions of this continuum and therefore provide the natural benefits for the long term sustainability of these fish.

Intensive land uses within basin flood plains and upslope habitats have led to dramatic changes in waterway characteristics since arrival of Euro-american pioneers to the area during the middle 1800's (Nagel, 1997 and Beschta, 1994). Historically, the Umatilla

river basin supported large runs of spring and fall chinook salmon. Native populations of these fish had become extinct by the mid-1900's (OGC 1963 & Thompson and Haas 1960), while native populations steelhead, redband and bull trout continue to exist in the basin today. Through cooperative efforts, the Oregon Department of Fish and Wildlife (ODFW) and the Confederated Tribes of the Umatilla Indian Reservation (CTUIR) have been implementing a major salmon re-establishment program since the early 1980's. Part of this effort is to protect and enhance salmon and steelhead habitat, with the ODFW Umatilla Habitat Improvement project (#8710002) working on private lands and CTUIR's project (#8710001) working on tribal lands.

The overall intent of the Umatilla Fish Habitat program is to provide offsite (out-of-kind) mitigation for Columbia River mainstem losses of habitat and fish productivity caused by the construction and operation of Bonneville, The Dalles, John Day, and McNary Dams.

Primary factors influencing fish habitat in the Umatilla River basin are Grazing, Agriculture, Forest Harvest, Roads, and Urbanization/Suburbanization. The effects of these landuses/influences on salmonid habitats is well known (Jones and Grant 1996, Waters 1995, US EPA 1994, Armour et al. 1991, Meehan 1991, Wright et al. 1990, Cacek 1989, USDA FS 1988, Beven 1986, Lowerance et al. 1984, Beschta 1978, Karr and Schlosser 1978, and Hammer 1972).

The specific program objective to mitigate these losses is to increase natural salmonid production in the Umatilla River basin by reducing sediment loading, decreasing unnatural high water temperatures, improving riparian habitat, increasing instream habitat diversity, and improving salmonid access to historical/preferred habitats. To achieve this objective, the Umatilla program has been constructing fences to exclude livestock from leased riparian areas, planting native grasses, forbs, shrubs and trees, adding off-site (livestock) watering developments to replace instream watergaps, improving instream habitat diversity (addition of logs and rootwads), and modifying/removing man-made fish passage barriers. The program also inspects, maintains, monitors and evaluates its existing projects. Implementation and maintenance activities employ "best management practices" and utilize bioengineering techniques to mitigate instream and riparian habitat degradation.

In FY 1999 the Umatilla program will continue to work with cooperating landowners to protect as many miles of riparian habitat as possible. The program will also perform routine maintenance on its existing projects and provide additional maintenance following severe flooding that occurred in February of 1996 and January of 1997. Program will also correct any new damages (windstorms, ice flows, additional flooding, etc.) that develop over the course of the coming year and continue to monitor the effectiveness of its completed projects.

**b. Proposal objectives.**

**Section 7.b. Proposal Objectives:** The overall program objective is to increase natural production of wild anadromous salmonids by reducing sediment loading and summertime high water temperatures, protecting and enhancing riparian/floodplain habitat, restoring proper functioning condition of the stream, improving instream habitat diversity, and enhancing salmonid access to preferred/historical habitats.

Objective 1 -- Conduct administrative activities necessary to insure maximum program benefits in a cost effective manner.

Objective 2 -- Insure maximum program benefits within leased riparian enclosure fences, bioengineering treatments, planting, and instream habitat improvements.

Objective 3 -- Implementation--Pework: Analyze existing information and prioritize potential projects; procure long term lease agreements on private lands; develop plans; and obtain permits to implement new fish habitat projects.

Objective 4 -- Implementation--Onsite: Contribute to improving watershed conditions by improving the quality and quantity of riparian and instream habitat on selected streams.

Objective 5 -- Monitor and evaluate Umatilla Basin fish habitat improvement projects and prepare reports of the results.

Objective 6 -- Insure maximum communication, education and coordination of habitat enhancement activities by actively pursuing opportunities to work with, educate and learn from personnel involved with other agencies, organizations and programs.

**c. Rationale and significance to Regional Programs.**

**Section 7c. Rational & Significance to Regional Programs:** Habitat degradation, caused by overgrazing, road construction, timber harvest and other management activities has adversely affected instream and streambank/floodplain riparian areas and their effective hydrologic function. Low summer stream flows and associated high water temperatures, poor streambank stability, winter icing, excessive sedimentation, and a lack of instream and riparian habitat diversity has occurred, affecting salmonids throughout much of the Umatilla subbasin. Degradation of riparian areas and their effective hydrologic function has contributed significantly to these flow/temperature problems. In 1982, 74 miles of degraded stream habitat on private lands within the Umatilla subbasin were identified as in need of habitat restoration. (USFWS and NMFS 1982). After ten years of intensive efforts, ODFW has effectively treated 12.5 miles of stream habitat on these same lands. Contingent on securing future funding for new project implementation work, the Umatilla program will strive to address the remainder of the untreated stream miles.

Planning for project implementation is coordinated on a comprehensive watershed basis and includes the participation and involvement of private landowners, state and federal agencies, tribes, stakeholders, and watershed councils as called for in Program Measures 7.6 & 7.7 of the 1994 Fish & Wildlife Program. Individual projects implement habitat improvements using: “best management practices” as called for in Program Measure 7.8B; riparian easements with private landowners called for in Program Measure 7.8E; and provide fish passage improvement as called for in Program Measure 7.10. These projects contribute to the Northwest Power Planning Council’s interim goal of doubling anadromous fish runs in the Columbia River basin by providing offsite mitigation for mainstem fisheries losses caused by the dams that constitute the Columbia River hydroelectric system.

**d. Project history**

**Section 7d. Project History:** The Umatilla Habitat Improvement project (Project 8710002) is comprised of numerous habitat improvement projects located on private lands throughout the Umatilla River subbasin. Each project has been implemented only in cases where long term riparian lease or cooperative agreements could be signed with landowners. The Oregon Department of Fish and Wildlife became the primary agency for implementing these projects on private lands because of its local fisheries expertise, its successful dealings with landowners in the basin, and its ability to provide long term maintenance and monitoring to these projects.

**Past Costs:** This project has been in existence since 1987 (ten years). Project budgets have ranged from a high of \$592,540 in 1998 (pending) otherwise \$279,083 in 1991, to a low of \$124,168 in 1993 -- the year in which new project implementation with BPA funds ceased and the program took on a O&M and M&E mode of operation. Prior to FY 1993, the Umatilla program was 100% funded by BPA. In FY 1993, ODFW began supplementing BPA funds with outside funds (ie. GWEB, R&E, TU, UPRR, FEMA, etc.) in order to continue some level of new project implementation and to address flood damage problems. The uncertainty of supplemental outside funding however has made it extremely difficult to plan and implement new projects within this program in an efficient manner.

**Major Results Achieved:** Habitat achievements to date using BPA funds include: 15.5 miles of riparian fencing, 12.5 miles of stream restoration with varying quantities of instream fish habitat structures, 35 livestock water gaps, 5 off-channel water developments, removal of two man-made fish passage barriers (flood irrigation dams), implementation of four bioengineered streambank restoration projects, planting of tens-of-thousand native deciduous plants and shrubs in severely degraded areas where recovery of native vegetation was not occurring at an acceptable rate, and 310 acres of fenced riparian areas that are now lush with riparian vegetation and are inspected and treated for noxious weeds as needed.

The Umatilla Fish Habitat Enhancement program has benefited our primary target species of summer steelhead in addition to our other resident fish and wildlife in this basin by re-establishing key riparian habitat features inside the corridors we have leased from private landowners. In addition, these projects have stabilized eroding streambanks, improved floodplain function, and have begun to provide overhead shading of the stream reaches that have been treated. For example: Our photopoint records today show cottonwood and willow trees up to 25 feet tall inside of our leases, where our initial photopoints of these same areas show the absence of these species under pre-project/lease conditions. This is quite remarkable recovery when you consider our oldest projects are only nine years old.

Each project is designed to restore degraded instream, riparian, and floodplain habitats and improve fish passage. All elements of these projects are beneficial to improving/increasing natural production of steelhead (our target species) and are also beneficial to other coldwater fish species such as chinook, coho, redband trout, bull trout, and margined sculpin that inhabit various portions of the Umatilla basin.

**Adaptive Management Implications:** At the onset of this program we felt that enhanced instream and riparian habitat will result in improved water quality and quantity, and therefore an increase in the carrying capacity for salmonid populations within the system. Modification/removal of fish passage barriers will allow adult and juvenile salmonids better access to preferred habitat at critical times of the year and during critical life stages within their lifecycle. A few of the things we have learned over the years that influence our approach to stream restoration are:

- Upon initiation of the project a variety of riparian enhancement strategies were considered (such as intensive pasture management, total protection of riparian zones using exclosure fencing, intensive planting and/or instream structures, etc.) Based on our experience over the last fourteen years (Projects 8402500 & 8402100, {ten years for 8710002}) it seems clear that on Eastern Oregon streams, riparian exclusion, along with some limited instream work or planting, most often will achieve the quickest recovery with the least amount of effort, and in most cases fits best with the most commonly used cattle management strategies where livestock grazing occurs. Our experience has also shown that different streams have shown different rates of recovery; many factors such as stream order, landuse constraints, flood plain interventions, location of the stream, climate, condition of the upper watershed, and past management practices largely influence how quickly streams respond and can depict the likelihood for success on many projects. For example: high elevation sites typically require much longer recovery periods than lower elevation areas because of extreme climate changes and shorter growing seasons; and multiple landownerships within a relatively short stream reach can make for an almost impossible restoration project unless all landownerships involved can agree to operate under a single restoration plan.
- The use of active remediation techniques such as use of instream structures alone for improving habitat is variable and in order to be successful they must be installed to

address specific limiting factors. In planning habitat improvement projects we have focused on achieving proper floodplain function first and foremost. Instream structures are installed only on a case by case basis where they address specific problems. Given a particular floodplain problem, there are a number of different approaches that may be utilized. We believe that in most situations riparian fencing, planting, and using bioengineering techniques to solve streambank erosion problems will achieve better results than the more traditional “hard” structural techniques such as channelization and rip-rap so commonly used by others, even yet today.

- We have used a wide variety of bioengineering and planting techniques since the program was initiated. For example, local and distant plant stocks, native and exotic plants, cuttings and rooted stocks have all been tried. Bioengineering and riparian planting success is largely dependent on donor plant selection and/or brood source. Our experience has shown that local indigenous stocks are most likely to succeed. Success is also increased when individual plants or species of plants are placed in areas where they would occur naturally, therefore site selection is critical. In addition, we have learned timing of planting (ie. during plant dormancy), irrigation of the treatment sites, implementation of a noxious weed control program, and plant protection from animals (wild and domestic) for the first year or two after implementation will increase the projects chance for success immensely.
- As originally designed, riparian fences were thought to be relatively maintenance free. Our experience has shown that a successful program is dependent on a project design that includes a consideration of geomorphology and hydraulics of the stream (i.e. place the fence outside of the flood prone area and consider the stream channel meander belt needs of the project in the layout of the fence design), and a modest, yet continuous level of maintenance of the fence throughout the life of the project will ensure “best” overall success for the program.
- Modification/removal of fish passage barriers allows adult and juvenile salmonids better “unimpeded” access to preferred habitat at critical times of the year and during critical life stages for the organism.

**Reporting:** Results such as those listed above are reported regularly in quarterly, annual, or special reports and distributed to interested parties.

**e. Methods.**

**Section 7e. METHODS:** The overall program objective is to increase natural production of “wild” anadromous salmonids by reducing sediment loading, improving water quality and quantity, and improving riparian habitat and instream habitat diversity.

**Scope:** This project addresses habitat degradation in the Umatilla River subbasin by:

- 1) implementing new projects through lease agreements with private landowners

on selected streams;

- 2) maintaining project investments over the terms and duration of the lease;
- 3) monitoring and evaluating the projects and applying adaptive management as necessary;
- 4) coordinating with other agencies, Tribes, Umatilla Basin Watershed Council, Volunteer organizations, and school/youth groups.

**Underlying Assumptions:** Overgrazing of riparian areas, timber harvest, road construction along streams and other management practices have led to habitat degradation in the basin. Encouraging recovery of riparian vegetation, improving streambank stability and instream habitat diversity will result in an overall increase in water quality and quantity within the Umatilla River subbasin. These habitat improvements will result in a net increase in salmonid carrying capacity within the system.

**Tasks:** (*Note: Specific Tasks in parenthesis refer to those listed in Section 4*) In FY 1999 and beyond we will continue working cooperatively with landowners to protect riparian and instream habitat on selected streams. This will be accomplished through lease or cooperative agreements that restrict human use (i.e. eliminates grazing, road construction, timber harvest, errant lawn mowing, mining, burning, etc.). We expect to begin implementing new projects in FY 1999 (*See tasks 3a-c & 4a-c*) at the rate of 2-3 new leases annually. For FY 1999 we will complete our current efforts on Flood restoration activities on our existing Birch Creek projects (*See FY98 proposal*). Fish access to preferred habitat will be improved or modified by removing fish passage barriers where applicable.

Control of livestock utilization within riparian areas will be done through:

- fencing riparian areas to exclude grazing; and
- developing off-site water sources to encourage livestock to focus their attention away from riparian areas. (*See tasks 2a, 2b, & 2f*)

Degraded riparian areas will be revegetated (if necessary) by:

- planting native shrubs and trees;
- seeding grasses and legumes; and
- controlling noxious weeds. (*See tasks 2a, 2d, & 2e*)

Streambank stability and instream habitat diversity will be improved (if necessary) on a site-specific basis by:

- using bioengineering techniques to stabilize streambanks and provide stream channel/grade control;
- installing large wood and/or boulders in stream channels to increase habitat diversity;
- installing other site-specific instream structures to address factors limiting salmonid production or floodplain function. (*See task 2c*)

In order to protect program investments, inspections and maintenance (*See tasks 2a-2f*) will be completed at least once annually on the following:

- 15.5 miles of riparian fencing, 12.5 miles of stream restoration with varying quantities of instream fish habitat structures, 35 livestock water gaps, 5 off-channel water developments, four bioengineered streambank restoration projects, and 310 acres of fenced riparian areas treated for noxious weeds as needed. (*Note: it may be determined that some instream structures should not be maintained if they are not achieving desired results*) Coordinate frequently with individual landowners and other stakeholders. Additional maintenance will occur following any catastrophic natural events (e.g. floods, wind storms, ice flows etc.).

**Monitoring and Evaluation:** There are several ways in which individual projects are monitored and data evaluated (*See tasks 5a-5e*). The Umatilla Fish Habitat Enhancement Project has been monitoring the following:

- **Stream Temperatures:** Ten permanent thermographs have been installed at the upper and lower ends of selected project reaches to measure long term changes in stream temperatures. These thermographs record water and in some cases air temperatures on an hourly basis, 24 hours/day, year around. Other thermographs have been deployed in specific stream reaches to record summer temperatures only.
- **Habitat Monitoring Transects:** These transect studies measure specific physical and biological characteristics (i.e. channel substrate, channel width, bank height, flow features, ground cover type, stream shading, etc.) in selected study areas. They are designed to measure long term changes in the riparian vegetation and stream channel morphology. Approximately 35 habitat monitoring transects remain on two streams (we lost several over the past few years to severe flooding) within our Birch Creek projects. Following establishment of these transects and the initial data collection, measurements are retaken at 3 to 5 year intervals.
- **Photopoints:** Due to the size and complexity of the program, the easiest and least costly way to monitor results from individual projects is through photographic documentation. The purpose of these photographs is to show changes in riparian vegetation (such as increased canopy and shading, improved bank stability, etc.), and changes in stream channel morphology (such as narrowing and deepening of the channel). Several photopoints are established on each individual project prior to implementation. Pictures are then retaken during the Fall from most of these sites on an annual basis. In the Umatilla Habitat Improvement Program there have been 65 photopoints established on our projects. “Before/After” photographs and slides are used for presentations and as educational tools, and they are provided to the respective landowners to demonstrate project benefits that have occurred over the years.
- **Other Biological Surveys:** On selected streams--salmon or steelhead spawning

ground counts, inventories of nesting birds, and measurements of growth rates of woody species have been collected.

The results of monitoring efforts have been included in quarterly, annual and other special reports, and are shared with other agencies or interested parties (*See Tasks 5e & 6a-6d*). In addition, other information frequently used by this program includes adult salmonid redd counts conducted throughout the basin, physical stream habitat surveys, aerial photographs, and research information on salmonid life histories. This information is available from respective ODFW fish districts, research groups, and other agencies or programs.

**Expected Results:** This project ensures that streams and associated native plant communities are allowed to evolve through natural stages of succession. Important riparian plant communities such as cottonwood and aspen groves are protected from harvest or other human related damage. In general, near term changes (1-5 years) in the affected streams include:

- increases in sedges, grasses, forbs and shrubs; narrowing and deepening of the stream channel; and improved overall habitat diversity. Long term changes (> 5 years) include: increased shading from development of overstory, reduced summer temperatures; increased summer flows; reduced sedimentation; less bank erosion; increased instream and riparian habitat diversity; and reduced winter icing. Eventually, these changes will lead to a climax plant community characterized by an overstory of deciduous hardwood tree species and/or conifers, accompanied with a functional mid- and understory plant/shrub community. Increases in large woody debris input and associated pool habitat will occur naturally as late succession/climax plant communities develop.

Improvement of the quantity and quality of spawning and rearing habitat for spring/summer chinook, summer steelhead and resident fishes such as bulltrout and redband trout will result from this passive regeneration approach (NFMS, 1997), and increases in natural fish production should occur. We believe this project will also provide multiple wildlife benefits, since approximately 75-80% of all wildlife species utilize riparian habitats for at least some portion(s) of their life cycle. There are many benefits to participating landowners as well (i.e. reduced soil loss, improved water quality/property aesthetics, increased property value(s), and better pasture management).

Factors that may limit success of this project include: catastrophic natural events (i.e. floods, fires), changes in upslope management practices and/or changes in land use laws, and continued mainstem fish passage problems. However, regardless of the outcome of targeted species, we expect that project outcomes will be generally beneficial to all other stream and riparian dependent native species.

**f. Facilities and equipment.**

**Section 7f. Facilities & Equipment:** Umatilla Fish Habitat Improvement project personnel are stationed at the ODFW Pendleton District office in Pendleton, Oregon. Facilities include an office, office equipment (phones, fax, copier, desktop/laptop computer, Internet access, slide projector, overhead, VCR, etc.), and limited storage areas (mainly-uncovered!) for materials and equipment. The district office also has a combination wood and metal shop that is accessible to this project.

Two vehicles (4x4 pick-ups) are leased from the state motor pool. Utility or Heavy equipment owned by the project include: a caterpillar 416 backhoe, hydraulic fence post driver, and one 2-wd ATV. Other vehicles and/or equipment desperately needed by this project include: *a 10-12 yd dump truck, 12-15 ton capacity 30 ft. heavy equipment trailer, and a 16 ft. utility trailer.* Occasionally this project has access to two 2.5 ton trucks, two JD farm tractors with implements, a D-4 cat, and a worn out 5yd dump truck.

Field equipment owned by this project includes: specialized fence construction tools, (wire stretchers, spoolers, chainsaws, etc.); instream work tools (rock drills, cable cutters, glue guns, etc.); planting augers/stingers; pick-up racks, bumper winches, and tool boxes, cameras; survey equipment (autolevel, stadia rod, tapes, compasses, survey vests, handheld radios; and ten permanent thermographs.

**g. References.**

**Section 7g. References:**

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## **Section 8. Relationships to other projects**

**Section 8. Relationships to other projects:** In Eastern Oregon, the Umatilla Habitat Improvement project (8710002), Mainstem, Middle Fork, and North Fork, John Day River project (8402100), Grande Ronde River Enhancement project (8402500), Fifteen Mile Creek Habitat Improvement, project (9304000), and Trout Creek project (9404200) are closely tied. These projects use similar methods, focusing on watershed health and riparian/instream habitat enhancement within anadromous fish streams as a means of

protecting and improving the quantity and quality of salmonid spawning and rearing habitat. The Umatilla, Grande Ronde, and John Day habitat projects communicate on a frequent basis and regularly share equipment, funding, technology and personnel. For example, two projects in the Birch Creek drainage received personnel assistance extensively on two bioengineered O&M treatments in 1996.

Specifically within the Umatilla River Basin there are several FWP funded projects that complement this project. Examples include:

- CTUIR Habitat Enhancement project (8710001), counterpart to the Umatilla Habitat Improvement Project (8710002) that addresses identical parameters on Tribal Land.
- CTUIR Riparian and Fish Habitat Analysis, Protection, and Enhancement (9604600) Addresses issues affecting the quality and quantity of this habitat in the Umatilla River Basin.
- CTUIR Natural Production Monitoring (9000501), Assesses natural fish production within the Umatilla River basin.
- ODFW/CTUIR Trap and Haul Program (8802200), addresses fish passage issues around Umatilla River water diversions and dams.
- Oregon Screens project(9306600) sponsored by ODFW installs fish screens to protect migrating salmonids from instream water diversions.

On a broader scale, there are several agencies and programs this project collaborates with. In addition to the projects listed above, the USDA Forest Service - Umatilla National Forest, along with the Bureau of Land Management, Baker District have many non-FWP funded habitat policies, programs, and projects (such as PACFISH) on federal lands within the basin.

The ODFW Fish Restoration and Enhancement Program has funded several riparian and instream enhancement cooperative projects in the region, focusing primarily on resident native fishes. The R&E program utilizes many of the techniques (i.e. leases, cooperative agreements, fence specifications, etc.) we have developed over the years from this project, including sharing facilities and equipment occasionally to help them accomplish similar goals.

The Army Corps of Engineers (ACOE) and Oregon Division of State Lands (ODSL) enforce the fill/removal laws in the waters of the state. Project personnel must be knowledgeable of these regulations and fill out necessary permits to complete projects involving instream work.

Other more generally related programs or agencies include: 1) Columbia River Fisheries Development Program (Mitchell Act) which provides funding to the Oregon Screens Program to protect migrating salmonids from instream diversions, pumps, etc. 2) Ongoing interagency cooperation occurs between this project and local watershed councils, Soil & Water conservation Districts, Natural Resource Conservation Service, Oregon Department of Forestry, Oregon Department of Transportation, Oregon Department of Environmental Quality, Trout Unlimited, Northwest Steelheaders, and other organizations or groups.

## **Section 9. Key personnel**

### **SUMMARY OF KEY PERSONNEL:**

<b><u>NAME</u></b>	<b><u>TITLE</u></b>	<b><u>FTE/Hours</u></b>
Troy Laws	Fisheries Habitat Biologist	Permanent, Full time
John Gordon	Fish Habitat Technician	Permanent, Full time
Mike Montgomery	Experimental Biology Aid	Seasonal, 12 months
Bruce Eddy	Regional Program Coordinator (Acting)	Permanent, 2 months

**Troy S. Laws  
P.O. Box 711  
Despain Gulch Rd.  
Pendleton, OR 97801  
home (541) 276-9028  
work (541) 276-2344**

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**EDUCATION** Bachelor of Science in Fisheries, 1986  
Oregon State University, Corvallis, OR 97424

**PROFESSIONAL EXPERIENCE**

**1993 to Present Fisheries Habitat Biologist**, Umatilla River Basin  
Oregon Department of Fish and Wildlife, Pendleton, OR 97801

Project Leader for the Umatilla Fish Habitat Enhancement Project. Management responsibilities include: planning, design, implementation, maintenance, and monitoring of 28 fish habitat projects on private lands in the Umatilla River Basin. Specific duties include: working with private landowners to develop and implement fish habitat enhancement projects in anadromous fish streams; conduct stream habitat inventories; prepare riparian easements or leases and construction contracts for fish habitat projects; develop biological and physical monitoring and evaluation plans; provide program oversight and direction for collection, analysis and interpretation of data; inspect and assess project maintenance needs; provide technical assistance, make presentations and coordinate with various public agencies, private landowners and tribal agencies; prepare reports on program activities; develop and track program budgeting; and provide supervision of one permanent technician, one to three seasonal employee(s), and numerous volunteers.

**1992 to 1993 Assistant Fish Biologist**, Prineville (Ochoco) Fish District  
Oregon Department of Fish and Wildlife, Prineville, OR 97754

Management responsibilities included: planning and conducting physical and biological surveys of various fish species and other aquatic organisms to estimate population trends, species composition and distribution, sex and age, production and mortality and other factors; planning and conducting fish habitat enhancement projects; conducting periodic creel census; reviewing and commenting on land-use activities (including BLM range allotment plans) proposed by federal, state, county, city and private entities that may affect fish populations and their habitat; preparing monthly and special reports; and answering public requests for information including oral presentations at clubs, schools, civic groups and public meetings.

**1987 to 1992 Experimental Biological Aid**, Various Fish District, Fish Research, STEP, Fish Screening, and Fish Liberation Programs. Oregon Department of Fish and Wildlife, Southwest Region

Major responsibilities included: planning and conducting physical and biological surveys of various fish species and other aquatic organisms to estimate population trends, species composition and distribution, sex and age, production/mortality and other factors; planning and conducting fish habitat enhancement projects; conducting periodic creel census; angler pressure counts; heavy equipment operation; fish screens construction and maintenance; fish passage improvement projects; adult fish broodstock collection projects; dam pre-impoundment studies; fish liberation activities; fish habitat enhancement projects; volunteer programs; public education and outreach activities; spawning surveys; pre-spawning mortality surveys; salmon carcass counts; fish disease studies; fish passage studies; employee/volunteer training; and report writing.

**1987**            **U.S Foreign Fishery Observer**, Atlantic and Pacific Oceans.  
Oregon State University, Corvallis OR, 97424  
Contracted to the U.S. National Marine Fisheries Service, East and West Coast

Compliance Inspector on board foreign fishing ships at sea for adherence to U.S. fisheries regulations; collected biological data from target and non-target fish species; summarized data; and wrote trip reports at the end of each deployment.

**1986**            **Experimental Biological Aid**, Rogue Seining Project (Fish Research)  
Oregon Department of Fish and Wildlife, Gold Beach, OR 97444

Collected biological data from adult salmonids returning to the lower Rogue River and from juvenile salmonid populations in other South Coast District streams; assisted with the planning and supervision of Salmon and Trout Enhancement Program (STEP) projects; summarized data; wrote monthly reports; trained project crew members and volunteers; maintained, purchased, and constructed project equipment.

**1978 to 1986**    **Construction** (heavy equipment and building), **Farming** (livestock and hay production), **Commercial Fishing** (ocean salmon trolling and buyer/processing), **Commercial Wood Cutting**, **Auto Mechanics/Maintenance**, **Grounds Maintenance**, and **Native Plants Nursery**. Various locations (Private Enterprise) North Oregon Coast and Eastern Oregon.

**SKILLS/INTERESTS:**

Member: American Fisheries Society & Trout Unlimited. Enjoy: Salmon - Steelhead Angling, Hunting and River Boating. Certified in CPR, First Aid and Hazmat Response. Specialized Training in Bioengineering and Fish Habitat Restoration Techniques.

**John J. Gordon**  
**P.O. Box 612**  
**Pendleton, OR. 97801**  
**(541) 443-2256**

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**EDUCATION** Bachelor of Science in Biology, 1990  
Southern Oregon State College, Ashland, OR 97520

**PROFESSIONAL EXPERIENCE**

**1997 to Present Fish Habitat Technician 2**, Umatilla River Basin  
Oregon Department of Fish and Wildlife, Pendleton, OR 97801

Duties: Assist program biologist with technical aspects of project administration by: maintaining fish habitat leases (riparian fences, watergaps, water developments, plantings, fish habitat structures, etc.) and program equipment; monitoring and collecting biological and physical stream data; purchasing field supplies; preparing portions of reports; conducting inventories; directing seasonal personal; development of plans; administering contracts; and assisting with public education and outreach.

**1996 to 1997 Manufacturing Assistant**, Amgen Inc. (Biotechnical Company)  
Boulder CO, 80301

Maintained and operated fermentors, centrifuges, homogenization, filtration and purification equipment in a Biotechnical laboratory to assist in the production and research of protein pharmaceuticals.

**1995 to 1996 Experimental Biological Aid**, Enterprise Fish District and Umatilla Fish Habitat Program. Oregon Department of Fish and Wildlife, Northeast Region

Major responsibilities included: Conducting biological surveys of various fish species and creel census of lake and riverine fisheries; installation of bioengineering treatments on BPA funded fish habitat improvement projects; planning and conducting fish habitat enhancement projects; angler pressure counts; field equipment operation; fish habitat project maintenance; volunteer programs; public education and outreach activities; employee/volunteer training.

**1992 to 1995 Bioprocess Supervisor and Operator**, Synergen Inc. (Biotechnical Company)  
Boulder CO, 80301

Supervised and trained employees in the maintenance and operation of fermentors, centrifuges, homogenization, filtration and purification equipment in a Biotechnical laboratory to assist in the production and research of protein based pharmaceuticals.

**1990 to 1992 Experimental Biological Aid**, Medford Fish District and Rogue River Fish Research, Oregon Department of Fish and Wildlife, Southwest Region

Pre-impoundment dam studies; anadromous fish creel surveys; angler pressure counts; spawning fish surveys; fish carcass counts; equipment maintenance; data collection/summarization; and fish disease sampling.

**SKILLS/INTERESTS:** Member: Trout Unlimited. Enjoy: Salmon - Steelhead Angling, Archery Hunting and Backpacking. Certified in CPR and First Aid.

**Mike Montgomery**  
**1306 SW Third Place**  
**Pendleton, OR. 97801**  
**(541) 443-2256**

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**EDUCATION** Associate of Arts in Biology, 1994  
Blue Mountain Community College, Pendleton, OR 97801

**PROFESSIONAL EXPERIENCE**

**1997 to Present Experimental Biology Aid, Umatilla River Basin**  
Oregon Department of Fish and Wildlife, Pendleton, OR 97801

Duties: Assist program biologist and technician with technical aspects of project administration by: maintaining fish habitat leases (riparian fences, watergaps, water developments, plantings, fish habitat structures, etc.) and program equipment; monitoring and collecting biological and physical stream data; purchasing field supplies; conducting inventories; and assisting with public education and outreach.

**1995 to 1997 Livestock Manager, JV Ranch,**  
Monument, OR. 97801

Self employed cattle rancher in charge of all aspects of maintenance and operation of ranch and associated equipment.

**1994 to 1995 Experimental Biology Aid, Umatilla Fish Habitat Program.**  
Oregon Department of Fish and Wildlife, Northeast Region

Duties: Assist program biologist with technical aspects of project administration by: maintaining fish habitat leases (riparian fences, watergaps, water developments, plantings, fish habitat structures, etc.) and program equipment; monitoring and collecting biological and physical stream data; purchasing field supplies; conducting inventories; and assisting with public education and outreach.

**1993 to 1994 Experimental Biology Aid, Pendleton District Office.**  
Oregon Department of Fish and Wildlife, Northeast Region

Duties: Conducted Aquatic Inventory of East Birch Creek, a tributary of the Umatilla River. Included identifying all aspects of the habitat and a population survey of the fish species present using electro fishing techniques.

**1987 to 1992 Timber Faller, Jim Angel Contracting.**  
Pendleton Oregon

Duties: Falling and bucking timber on steep, rugged terrain in all types of weather and driving long distances on a daily basis under all types of road conditions. Required accurate measurements and species identification of trees.

**SKILLS/INTERESTS:** Heavy Equipment Operation including a Cat and Backhoe, Carpentry skills including use of hand and power tools. Interests include Fishing and hunting.

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

### **Section 10. Information/Technology Transfer:**

The success of the project depends upon forming cooperative agreements between private landowners and other entities. Interagency cooperation and education will continue to be a vital component of this project.

The closely tied Umatilla, Grande Ronde, and John Day habitat enhancement projects regularly share information, new techniques, and data summaries (such as stream temperatures, fish or habitat surveys) are distributed to a large number of individuals and agencies including private landowners, ODEQ, ODSL, USFS, BLM, Tribes, and local watershed councils. Ongoing cooperation and technology transfer regularly occurs between these groups.

Efforts to educate private landowners and the public include:

- Signing is placed in visible locations at all projects, identifying them as cooperative habitat restoration efforts between federal/state agencies and private landowners.
- News articles specifically on this project are written in local newspapers, internal/external agency news letters, etc periodically.
- Photopoint pictures and/or slides illustrating benefits of these restoration projects are displayed to the public regularly, such as at county fair exhibits, local school groups, bird clubs, forestry associations, elected officials, and other groups.
- Watershed or riparian restoration workshops are regularly attended by project personnel. This program sponsored a Bioengineering Workshop in 1995 and displayed/presented a Bioengineering display at the ODFW Oregon State Fair Display in 1997. In addition, we have produced two instructional videos on Bioengineering techniques. All of which have been incorporated into our on the ground projects.

Methods used in this project (i.e. fence specifications, lease or cooperative agreement text, bioengineering design typicals, etc.) have been applied on closely related ODFW Fish Restoration & Enhancement projects to benefit resident fishes (redband trout and bulltrout). Our methodology has also been utilized by many other agencies or groups. For example we are frequently asked to give demonstrations on planting techniques, streambank treatments, etc. Finally, ODFW region and district offices display several

project-related riparian restoration and fisheries brochures that are readily available to the public.