

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

Section 1. General administrative information

**Enhance Habitat For Spring & Fall Chinook,
Summer Steelhead, And Bulltrout.**

Bonneville project number, if an ongoing project 9401806

Business name of agency, institution or organization requesting funding
Columbia Conservation District

Business acronym (if appropriate) CCD

Proposal contact person or principal investigator:

Name Terry Bruegman
Mailing Address 202 South Second Street
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Fax (509)382-4273
Email address ccd@bmi.net

Subcontractors.

| Organization | Mailing Address | City, ST Zip | Contact Name |
|--|------------------------|-----------------------|---------------------|
| WDFW - Snake River Laboratory | 401 South Cottonwood | Dayton WA 99328 | Glen Mendel |
| WSU - Center for Environmental Education | Cleveland Hall 57 AB | Pullman WA 99164-2132 | Darin Saul |
| Salmon Corps at Nez Perce | PO Box 54 | Lapwai ID 83540 | Heide Stubbers |
| | | | |

NPPC Program Measure Number(s) which this project addresses.

7.0

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

Endangered Species Act listed species, Snake River Spring Chinook, Snake River Fall Chinook, & Snake River Steelhead. USFWS proposed T&E listing of Bulltrout.

Other planning document references.

Tucannon River Model Watershed Plan, Snake River Salmon Recovery Plan, WA Department of Fish and Wildlife Wild Salmonid Policy, Bonneville Power Administration Tucannon Sub-Basin Plan,

Subbasin.

Tucannon River, tributary to the Snake River

Short description.

Restore, protect, and enhance fish habitat, riparian, and upland areas using bio-engineering technology to reduce stream temperature, sedimentation, geomorphic and stream bank instability while increasing pool density and habitat complexity.

Section 2. Key words

| Mark | Programmatic Categories | Mark | Activities | Mark | Project Types |
|------|-------------------------|------|------------------|------|-----------------------|
| X | Anadromous fish | X | 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- |
| | | | Acquisitions | | hancement/restoration |

Other keywords.

Model Watershed Plan, Implementation, Enhancement Project, Technical Lead

Section 3. Relationships to other Bonneville projects

| Project # | Project title/description | Nature of relationship |
|-----------|--|--|
| 9202602 | Implement Eastern Wa Model Watershed Plans | Technical Lead facilitates habitat restoration in the T&E fall and spring chinook and steelhead waters of the Tucannon River Watershed. Facilitates community-wide participation and inter-agency cooperation in habitat restoration activities. |
| | | |

Section 4. Objectives, tasks and schedules

Objectives and tasks

| Obj 1,2,3 | Objective | Task a,b,c | Task |
|----------------------|---|-----------------------|---|
| 1 | Reduce Stream Temperatures | a | Riparian Enhancement, Tree/Shrub Plantings 8,000 ft |
| | | b | Enhance width/depth ration of stream with installation of habitat structures |
| | | c | In-stream Structures - Refer to Obj. 2 Task a |
| 2 | Increase Resting/Rearing Pools with Enhanced Habitat Complexity | a | Installation of pool forming/habitat enhancing structures: vortex rock weirs, rock/log barbs, rootwad revetments, rock veins, LWD placement, meander reconstruction |
| 3 | Stream Bank and Geomorphic Stability | a | In-stream Structures - Refer to Obj. 2 Task a |
| | | b | Riparian Enhancement-Refer to Obj. 1 Task a |
| 4 | Reduce Sedimentation in Spawning Gravels | a | In-stream Structures - Refer to Obj. 2 Task a |
| | | b | Riparian Enhancement-Refer to Obj. 1 Task a |
| | | c | Upland BMPs (Best Management Practices) Implementation ie. direct seeding/no-till, sediment basins, grass waterways, etc. |
| 5 | Monitoring & Evaluation | a | Habitat component/utilization as outlined in section 7.e below by WDFW Snake River Laboratory & WSU. |
| | | b | Structural Integrity/function as outlined in section 7.e below by NRCS staff & WSU. |

Objective schedules and costs

| Objective # | Start Date mm/yyyy | End Date mm/yyyy | Cost % |
|--------------------|-------------------------------|-----------------------------|---------------|
| 1 | 10/1998 | 12/1999 | 27.00% |
| 2 | 10/1998 | 12/1999 | 26.00% |
| 3 | 10/1998 | 12/1999 | 26.00% |

| | | | |
|---|---------|---------|---------------|
| 4 | 10/1998 | 12/1999 | 18.00% |
| 5 | 10/1998 | 12/1999 | 3.00% |
| | | | |
| | | | TOTAL 100.00% |

Schedule constraints.

Committed long-term funding and cooperation for salmonid habitat restoration and protection is critical for the partnership between landowners and agencies to successfully implement the watershed management plan.

Completion date.

Projects developed under this proposal are expected to be completed by 12/99. Implementation of the Watershed Plan will continue until habitat restoration needs, landowner cooperation, and funding availability are maximized.

Section 5. Budget

FY99 budget by line item

| Item | Note | FY99 |
|---|--|--------------------|
| Personnel | Project administration is 6% of budget | |
| Fringe benefits | | |
| Supplies, materials, non-expendable property | | |
| Operations & maintenance | | \$69,000 |
| Capital acquisitions or improvements (e.g. land, buildings, major equip.) | | |
| PIT tags | # of tags: | |
| Travel | | |
| Indirect costs | | |
| Subcontracts | Monitoring/Evaluation & DSP | \$45,000 |
| Other | Habitat Projects & Upland BMP | \$1,186,000 |
| TOTAL | | \$1,300,000 |

Outyear costs

| Outyear costs | FY2000 | FY01 | FY02 | FY03 |
|----------------------|---------------|-------------|-------------|-------------|
| Total budget | \$1,300,000 | \$1,300,000 | \$1,300,000 | \$1,300,000 |
| O&M as % of total | 5.00% | 5.00% | 5.00% | 5.00% |

Section 6. Abstract

Tucannon River Model Watershed Plan was developed to identify, protect, and restore fish habitat by utilizing sound technical information and citizen input.

The Plan's habitat restoration, protection, and enhancement goals are consistent with identified elements in "Strategy For Salmon" and "Wild Salmonid Policy". Plan implementation, guided by Landowner Steering and Technical Advisory Committees, emphasizes habitat goals - the only element in salmonid restoration that non-governmental entities can impact positively.

Project goals of increasing salmonid habitat complexity and stream bank and geomorphic stability, reducing stream temperature and sedimentation in spawning gravels, promoting cooperation and agreement between landowners and resource agencies for restoring resource conditions are referenced in related planning efforts within the Tucannon River Model Watershed Plan.

Project implementation is relevant to the 1994 Columbia Fish and Wildlife Program in that specific problems were identified during the planning assessment. Individual, on site, project assessments with an Inter-Disciplinary Team will identify corrective actions to effectively enhance habitat conditions for ESA listed weak populations without adversely effecting biological diversity, while emphasizing total watershed health.

Inter-Disciplinary Team consists of landowner, Watershed Technical Lead, and staff from NRCS and WDFW. Resource agency staff representation consistency is emphasized but flexibility is maintained to allow for optimum technical expertise.

Monitoring/evaluation of project effectiveness, critical for adaptive management, will be accomplished cooperatively by Watershed Technical Lead, WDFW, NRCS, USFS, and WSU staff.

The goals of implementing projects and obtaining data that will identify benefits and deficiencies to guide future enhancement activities is attainable by 2005.

Section 7. Project description

a. Technical and/or scientific background.

In 1992, the Washington State Conservation Commission entered into a contract with Bonneville Power Administration(BPA) for the development and implementation of three Model Watershed Plans in SE Washington. In 1993 the Tucannon River Model Watershed was selected as one of these. This project proposal is specific to the Tucannon River Model Watershed.

The Tucannon River is currently home to ESA listed stocks of Spring Chinook Salmon, Fall Chinook Salmon, and Steelhead, as well as, pending listing of Bulltrout. Human activities and catastrophic natural events such as floods, droughts, and fires have negatively impacted the resources effecting these critical listed stocks. The Columbia Conservation District, due to it's ability to gain cooperation and participation by landowners and natural resource agencies, was selected as lead agency in the development and implementation of on-the-ground solutions to restore, protect, and enhance fish habitat and watershed health.

During the Plan's preparation and watershed assessment the Watershed Technical Lead, Landowner Steering and Technical Advisory Committees made extensive use and comparison of existing literature. Technical reports from state and federal natural resource agencies and personal communications with local residents intimately familiar with the watershed facilitated the assessment of historical watershed resource conditions on in-stream fish habitat, fish data, water quality, and upland practices.

Personnel from USDA NRCS, USFS, NMFS, USFW, WDFW, WDOE, WSU Extension, Confederated Tribes of the Umatilla Indian Reservation, Nez Perce Indian Tribe, Columbia County Planning, Columbia County Engineer, Columbia County Commissioners and BPA were invited by the District to be a part of the Technical Advisory Committee, while the Landowner Steering Committee consists of landowners within the watershed.

Problems identified through this effort are high stream temperature, high bacteria levels, high turbidity during periods of rain and snow melt, high levels of sediment in spawning gravels, low number of large rearing and resting pools with cover, and stream bank and geomorphic instability. Goals, jointly established by the Landowner Steering and Technical Advisory Committees to guide the development of the plan and identify corrective actions, required to address identified problems are; improve in-stream fish habitat quality and quantity, restore and maintain natural stream stability to reduce adverse effects of floods and benefit fish and wildlife resources as well as private and public resources, promote cooperation and agreement between landowners and resource agencies in decision making for resource use and fish and wildlife habitat improvement, reduce water temperature, reduce upland erosion and sedimentation rates to decrease the percentage of fines in spawning gravels, improve and re-establish riparian vegetation, utilize cost-effective ways to treat identified resource problems, and improve and maintain rangeland conditions and forest health.

1999 project involving sites located throughout the river basin and addressing all stocks have been identified. Corrective actions are identified on a project by project bases by the Inter-Disciplinary Team, consisting of Watershed Technical Lead, NRCS and WDFW staff, and landowner. All project corrective actions are formulated utilizing watershed plan goals and objectives. Proposed actions involve

installation of rock vortex weirs, rock/log barbs, large woody debris (LWD) placement, rootwad revetment, riparian restoration and enhancement, and meander reconstruction, as well as, recommendations for upland Best Management Practices (BMP's) implementation(direct seeding/no-till, sediment basins, grassed waterways, strip cropping, alternative crop rotations, grazing plans, and forest health management).

Projects included in this proposal are designed to make incremental improvements toward desired habitat conditions within the Tucannon River Watershed, and will address habitat and management activities identified in the 1994 Fish and Wildlife Program (FWP) Section 7.6D, as follows:

| | | | |
|------------------------|---------------|-------------------|---------------------|
| sediment | large pools | bank stability | riparian vegetation |
| grazing | water quality | stream morphology | large woody debris |
| agricultural practices | | land management | |

b. Proposal objectives.

This project proposal, building on past project implementation, continues with incremental increases in habitat restoration. Funding support builds on the creditability link between landowners and agencies and enhances the cooperative commitment to achieve desired watershed health conditions.

This project proposal may involve up to 30 individual projects. Each project will have a proposal developed identifying objectives and benefits and include IDT proposed corrective action, NRCS engineered design, specifications, cost estimate, required permits, and NMFS Biological Assessment concurrence. Project proposals will be submitted to BPA for individual project contracting.

The Columbia Conservation District will maintain a file on each individual project. Project files will include project plans, photos, permits, contracts/agreements, monitoring/evaluation reports, and other information assessing project status successfulness or unsuccessfulness.

Project Objectives:

1. Reduce stream temperatures through the implementation of riparian restoration and protection efforts utilizing dormant stock plantings(DSP), riparian fencing and grazing plans, and installation of bio-engineered stream bank structures to enhance width/depth ratios. The District will utilize DSP materials allocated to the Tucannon River Model Watershed from the Washington Association of Conservation Districts (WACD) Plant Materials Center. The District will utilize Salmon Corp personnel and volunteers for plantings.

2. In-stream structures will provide the following enhancements:

- Resting and Rearing Pools with LWD

- **Interstitial Spacing between Boulders and LWD/Rootwads**
- **Enhanced Width to Depth Ratio**
- **Added Meanders**
- **Enhanced Fish Habitat Complexity**
- **Sorted Gravels below structures for Suitable Spawning Habitat**

Habitat enhancement values are identified on all project sites.

3. Reduce sedimentation rates in spawning gravels through riparian enhancement/restoration, riparian fencing, off channel watering, and upland BMP implementation(direct seeding/no-till, sediment basins, etc.).

4. Monitoring/evaluation for project effectiveness, through short and long term plans, will enhance creditability of the Watershed Plan and the District’s ability to meet habitat goals and objectives. Monitoring/evaluation projects for habitat complexity and utilization, and structural integrity and performance will allow the adaptive management element of the Plan to maximize new technology for successful habitat restoration.

The Watershed Technical Lead will facilitate the development and implementation of monitoring/evaluation plans by WDFW, NRCS, and Landowner Steering and Technical Advisory Committees to assess habitat complexity enhancement, utilization, and structural integrity and performance.

The ability and opportunity to utilize the expertise and resources of WDFW, NRCS, USFS, WSU, Landowner Steering and Technical Advisory Committees is invaluable and contributes to the over all success of the project.

The District, members of the Watershed Planning Team, and Inter-Disciplinary Team promote total watershed restoration/protection and enhancement. It is our combined intent to address Watershed Plan identified problems, goals, and objectives in project selection and corrective actions to be taken, while enhancing total watershed health.

c. Rationale and significance to Regional Programs.

The rationale behind the ongoing Eastern Washington Model Watersheds, Tucannon River Model Watershed implementation funding is based on the goals found in the 1994 Fish and Wildlife Program, part 7.7B “Model Watershed,” and WDFW Wild Salmonid Policy. Specifically they both refer to “Bottom Up”, “locally driven” watershed planning and implementation. It also identifies implementation of priority on-the-ground actions that address key limiting habitat factors for salmonids which is the approach the planning and implementation team has taken.

Implementation of the Tucannon River Model Watershed Plan goals and objectives, while utilizing adaptive management techniques, will effectively address habitat restoration, protection, and enhancement for ESA listed weak populations without appreciably adversely affecting watershed biological diversity with the ultimate outcome being watershed health at a self-sustaining level for ESA listed species.

d. Project history

BPA provided \$554,410 to the Washington State Conservation Commission to support the three Model Watershed Technical Lead Positions from October 1992 through September 1997. The contract for these funds is 9202602. Through this contract the District has received an average of \$37,000 over the past two years for the Technical Lead position.

The Tucannon Model Watershed Technical Lead facilitated the model watershed plan process which identified salmonid and watershed habitat limiting factors and action for restoration. During FY96 & FY97, the District received \$329,954 directly from BPA to implement water quality and habitat restoration, protection, and enhancement projects identified in the Plan. The contract for those funds is 9401800.

In 1997 the District received \$200,027 directly from BPA (project numbers-96-065-02, 97-81, Tucannon Rootwad collection) for in-stream habitat projects. Project reports are currently being finalized. All funds were spent on in-stream fish habitat and riparian restoration, protection, and enhancement projects. During 1997 twelve new sites and five 1996 project O&M sites were installed. A 1996 carry over fish habitat project was also installed with funds carried forward. Projects were designed to address critical habitat elements identified in the Tucannon Model Watershed Plan. Upland projects were funded through other grant sources.

In 1996 the District received \$129,927 directly from BPA (project numbers-94-18-3, 96-065-00) for habitat restoration, protection, and enhancement projects. Those funds were matched in a 1:1 ratio with funds from the Washington State Conservation Commission effectively doubling dollars spent. Of the BPA funds, \$71,163 were spent on in-stream habitat structures, \$25,902 on an off river sediment basin, and \$25,541 was rolled into 1997 for an identified project which was not installed due to WDFW identified in-stream work window. An in-depth report was submitted to the NWPPC summarizing the 1996 habitat projects, as well as the entire watershed plan process.

BPA funding has been effectively enhanced by the in-kind contributions of USDA-NRCS. The technical assistance received from NRCS has totaled in excess of \$113,000 over the past two years, thus allowing greater watershed habitat enhancement than would have otherwise been possible.

e. **Methods.**

Specific tasks associated with the implementation of objectives as identified in Section 4 will be facilitated by the Model Watershed Technical Lead through the Model Watershed Organizational Structure. The structure includes: Landowner Steering Committee, Technical Advisory Committee, Inter-Disciplinary Team, Landowners, and public input. These committees and groups identify, assess, design, and prioritize projects, however it is the Technical Lead who facilitates the coordination of project implementation. The Technical Lead also insures projects reflect the goals and objectives as identified in the Model Watershed Plan. Lead oversees the project plan development, biological assessment development and submission, landowner acceptance and agreement, secures contract resources, and coordinates volunteers to insure implementation of habitat enhancement projects.

All current identified habitat restoration, protection, and enhancement projects consist of the following bio-engineered structures and upland practices:

| | | |
|---|------------------|--------------------|
| • 6400 ft. meander reconstruction | \$550,037 | |
| • 30 rock vortex weirs | \$144,923 | |
| • 35 rock barb/rootwads | \$107,192 | |
| • 30 log barbs | \$ 22,654 | |
| • 110 rootwad revetment | \$ 59,134 | |
| • 5000 ft. LWD placement | \$118,269 | |
| • upland BMP's | \$ 43,308 | |
| • direct seeding/no-till | \$ 96,615 | |
| • 6 upland sediment basins | \$ 32,481 | |
| • 2 miles riparian fencing | <u>\$ 11,387</u> | |
| • Subtotal-refer to section 5, other | | \$1,186,000 |
| • DSP on all project sites | \$ 15,000 | |
| • monitoring/evaluation of project sites | <u>\$ 30,000</u> | |
| • Subtotal-refer to section 5, subcontracts | | \$ 45,000 |
| • O&M - refer to section 5, O&M | | <u>\$ 69,000</u> |
| • TOTAL | | <u>\$1,300,000</u> |

Long-term habitat restoration, protection, and enhancement retention is expected as a result of the Plan and project implementation. All parties involved are committed to efforts needed to reflect long term benefits and stability.

Monitoring and evaluation plans identify factors for pre and post construction habitat complexity assessment and provide guidance for habitat utilization and structure integrity and performance.

TUCANNON MODEL WATERSHED PROJECT SITE MONITORING AND EVALUATION

At the request and direction of the Tucannon River Model Watershed Technical Lead, Landowner Steering and Technical Advisory Committees, The Tucannon Model Watershed Fish Habitat Enhancement Project Monitoring and Evaluation Plan as described here was developed by Snake River Lab (WDFW) personnel. The M&E Plan is based upon a short term approach due to time constraints and the variability of funding over the next ten years. Limited funding has been appropriated for 1998 project monitoring and evaluation. It is understood by the Landowner Steering and Technical Advisory Committees that if the plan and data are to withstand technical scrutiny and peer review, that a committed long term funding source will be required to develop and implement a solid multiple year monitoring and evaluation plan. Under the direction of the Tucannon Model Watershed Technical Lead and acceptance by the Landowner Steering and Technical Advisory Committees the Washington Department of Fish and Wildlife, with consultation with Del Groat of the USFS, will develop the experimental design of the monitoring and evaluation plan for long term project effectiveness and that the Snake River Lab (WDFW) will receive funding through the Columbia Conservation District to conduct the work.

Monitoring and evaluation requires that an experimental design be developed and that hypothesis be established and tested. For the short term plan, we developed very basic hypothesis and methods to test them. There are three general categories that need monitored and evaluated, they are 1) Physical site stability, 2) Fish utilization, and 3) Instream and riparian habitat.

WDFW will address and provide monitoring and evaluation for the second two categories. The NRCS will develop and provide a monitoring and evaluation plan for the first category, physical site stability. WDFW encourages that the following variables be addressed by the NRCS monitoring and evaluation plan for physical site stability, 1) Bank erosion, 2) Geomorphic channel stability, 3) Stream bed aggradation/degradation, 4) Substrate fines, 5) Bank full width, 6) Gradient, and that 7) Photopoints be established. WDFW also strongly encourages the deployment of sediment samplers to three locations, 1) Marengo, 2) immediately above the Pataha Creek, and 3) within one mile downstream of Pataha Creek.

Regarding fish use and habitat improvement, we hypothesize that the projects should improve the instream and riparian habitat quality and quantity, and that fish will utilize the sites greater than other locations in the river. We developed the following specific hypothesis and methods that will be used to test the hypothesis:

Ho: Juvenile spring chinook salmon and steelhead trout utilize project sites (treatment) greater than similar pre-project control sites above Marengo.

Method: Every 1997 project site will be evaluated and juvenile fish density determined by snorkeling in 1998. The density in treatment sites will be compared

to 1998 WDFW snorkel data (control sites) and t-test comparisons will be made to see if there is a statistical difference between control and treatment site juvenile fish densities.

Ho: Adult steelhead trout utilize project sites (treatment) greater than similar pre-project control sites below Marengo, and there is a relationship between project type and fish catch rate.

Method: A team of experienced steelhead anglers will be established and will fish treatment and control sites below Marengo during the winter steelhead season. Catch rate (number of fish caught per hour) and the number of fish caught in the treatment and control sites will be recorded. The type of structure fished will also be recorded to determine if adult steelhead prefer a particular structure type (ie. rootwad revetment, barb, rock weir, vane, etc.) It is expected that catch rate will vary, and therefore be statistically difficult to determine a difference. However, due to limited funding, volunteer angling is the preferred method.

Ho: Spring Chinook Salmon and Steelhead Trout prefer to spawn in project sites.

Method: Conduct redd surveys and record whether a redd was constructed in a project site or elsewhere. Habitat preference will be determined by dividing habitat use (# of redds in projects and # of redds in remainder of river) by habitat availability (cumulative length of projects and total length of river). For instance if 10 redds are constructed in 1 cumulative mile of projects, while 20 redds are constructed in the remaining 20 miles of river, then $10/1 = 10$ and $20/20 = 1$. So, in this example, fish prefer to spawn in projects 10 times greater than in other river locations.

Ho: In-stream habitat quality is increased one year after project construction.

Method: The experimental design will be based on a before - after approach, as opposed to a treatment - control approach. Project sites will be identified and surveyed prior to construction in 1998, then in 1999 to determine if habitat quality increases after project construction. The river will be stratified into two strata, 1) above Marengo, and 2) below Marengo. Basic habitat measurements will be recorded prior to project construction and again in the summer of 1999. Measurements will include 1) Pool number, 2) Pool area, 3) Maximum and average site depth, 4) Pool quality, 5) Quantitative and qualitative counts of woody debris, and 6) Standard deviation of thalweg depth.

Ho: Stream water temperatures decrease over time (10 years).

Method: Continuous recording thermographs will be deployed in each of five general locations, 1) at WDFW Wooten Wildlife Area, 2) at bridge 14, 3) at Marengo, 4) at highway 12, and 5) at Starbuck. Summer time (July 1 through

September 31) mean and maximum temperatures, and accrued thermal units will be compared from 1998 to 2008.

NOTE: Post construction and long term M&E will be conducted on 1996 projects, in relation to juvenile and adult salmonid population usage and habitat complexity as previously identified, depending on funding availability.

f. Facilities and equipment.

Columbia Conservation District obtains assistance from the USDA Natural Resources Conservation Service (NRCS) through a working agreement called the "Memorandum of Understanding." Other USDA agencies currently working with the district under such an agreement are: U.S. Forest Service, U.S. Department of Interior, Cooperative Extension Service, US Army Corps of Engineers, Farm Service Agency, and the Columbia County Commissioners.

The NRCS provides the District with in-kind services including: technical assistance, office space, office equipment, minor field equipment, and phone service. The total match exceeds \$27,000.00 per year.

The District currently uses the Internet and has two computers, a copier, and Fax machine that can be used by the NRCS staff. The working relationships between the District and USDA agencies are in great working order.

Currently we are not identifying any equipment that needs to be purchased with project funds. The District has the ability to use any field or office equipment to get the job finished in a proficient manner.

g. References.

Tucannon River Model Watershed Plan Final Draft 1997. Columbia Conservation District.

Strategy for Salmon. Vol. II. 1992. NWPPC, Portland, Oregon.

Wild Salmonid Policy. 1997. WDFW. Olympia, Washington.

Section 8. Relationships to other projects

Habitat enhancement projects in the Tucannon River started in the 1980's when the District's first watershed restoration proposal to BPA was submitted. Limited in-stream and riparian enhancement projects followed, funded on a cost-share bases with key landowners through a grant from Washington State Department of Ecology(DOE). The success of these demonstration projects lead to increased awareness of in-stream restoration and upland conservation efforts in the watershed. Landowners continued to adjust upland management systems with positive impact to the rivers riparian and in-stream environment. DOE grant funded demonstration projects included rock and boulder placement, cabled trees,

riparian fencing, limited access water facilities, off site watering facilities, and DSP by numerous volunteer sportsmen and students. USDA NRCS initiated the PL-566 program in the Tucannon Watershed to cost-share management conservation systems, reduce erosion, and the deterioration of overall watershed health. Grant money from the Washington Conservation Commission and WDOE continued to positively impact conservation through cost-share programs and NRCS technical support in-kind made major strides with landowners. The 1996 and 1997 floods had devastating effects on the watershed. Grants from the Commission, Washington State Department of Natural Resources(DNR), DOE dove tailed with BPA funding to initiate the implementation of the Tucannon Model Watershed Plan prior to publication. During 1996 and 1997 funds from the Commission, DNR, DOE, Columbia County, and landowners implemented \$347,450 in fish habitat enhancement structures. BPA funding was above and beyond this figure.

Section 9. Key personnel

Terry Bruegman
Tucannon River Model Watershed Technical Lead

Education: AA - Criminal Justice, Green River Community College 1972

Current Employer: Columbia Conservation District

Current Responsibilities: As District Coordinator, responsible for performing management and administrative duties in relation to District and Model Watershed Programs as directed by the Columbia Conservation District Board of Supervisors.

Recent Previous Employment:

- April 1997-Present: District & Model Watershed Coordinator, Columbia Conservation District, Dayton, WA.
- April 1995-April 1996: Laborer, Equipment Operator 1996 flood recovery efforts and Ag. Production.
- October 1981-April 1996: Wildlife Area Manager, WDF&W - Manage a wildlife area for production and restoration of fish and wildlife habitat and compatible public use including the development & implementation of annual and long range management plans and budgets and acting as liaison with the public, landowners, and agency representatives.
- February 1977-October 1981: Assistant Superintendent, Ellensburg Game Farm - Primary assistant to superintendent, responsible for organizing and supervising seasonal and voluntary work crews, liaison between public, landowner and agency representatives.
- March 1972-February 1977: Superintendent, Walla Walla Game Farm - Develop and implement annual and long term management plans and budgets, hire, supervise and

train seasonal employees, supervise voluntary work crews, liaison between public, landowner and agency representatives.

Expertise: Self-motivated individual with extensive experience in working with the general public, landowners and government agencies in relation to natural resource management. Positive personality with flexibility to adjust to changing work environments. Ability to objectively listen to concerns of various parties and develop a pro-active working solution. Very pro-active for on ground implementation and results while addressing various concerns.

Gregory D. Schlenz

Title: District Conservationist
Employer: USDA - NRCS
Project: Columbia Conservation District - Tucannon River
FTE: Blue Mountain Team NRCS Commitment 1920 hours
Duties: Coordinate NRCS activities associated in watershed

Qualifications

Degrees: BS Range Management/Forest Management Minor, Washington State University, 1980
Publications: Team member in the development of the Draft Tucannon Model Watershed Plan.
Previous Employer: Oregon State University School of Forestry 1981-1983
USFS-Region 6 Continuous Inventory Forester 1980
USFS-Gifford Pinchot NF Forestry Tech. 1977-1980
Job Experience: SCS Range Conservationist, Waterville, WA. 3yrs, SCS District Conservationist, Newport, WA. 5yrs, NRCS district Conservationist, Dayton, WA. 6yrs
Expertise: Project Implementation, Coordinating Watershed activities as related to riparian and upland treatment practices within NRCS Blue Mountain Team.

Richard D Stauty

PO Box 671
Pomeroy, Washington 99347 (509) 843-1998 (W) (509) 843-3950

Professional Experience:

USDA Natural Resources Conservation Service 9/94 to Present
Pomeroy, Washington
Soil Conservationist

Responsibility for planning, design and installation of riparian and fish habitat improvement structures in the three Model Watersheds of Southeastern Washington. Assist conservation districts and landowners in securing local permits and in-agency consultations.

USDA Natural Resources Conservation Service 7/91 to 9/94
Vancouver, Washington
Soil Conservationist

Coordinated County and NRCS efforts to reduce phosphorous loading into LacCamas Lake. Primary responsibilities included: farm planning, public information programs and developing both on-farm and a regional composting plan for small farm operations.

USDA Natural Resources Conservation Service 1/83 to 7/91
Moscow, Idaho
Soil Conservationist

Completed conservation planning on land uses. Performed construction inspection on federally funded projects. Served as GIS coordinator for national test site of database spatial information system interface.

USDA Natural Resources Conservation Service 7/81 to 1/83
Hailey, Idaho
Soil Conservationist

Completed resource plans on irrigated cropland and assisted in range inventory and planning. Performed construction inspection on multi-user irrigation system installations and on community recreation facilities.

Education

Vermillion Community College 1976 to 1978
Ely, Minnesota
AA Environmental Interpretation

University of Minnesota, Duluth 1978 to 1980
Duluth, Minnesota
Additional course work in Earth Science and Education

University of Idaho, Moscow 1986 to 1990

Moscow, Idaho
BS Crop Science and Plant Protection

Relevant NRCS Training

Erosion and Sediment Control Systems
Soil Bioengineering
Hydraulics for Technicians
Environmental Concerns in Conservation Planning and Application
Forest Water Quality
Cultural Resource Training

Resume for Frank Easter

| | |
|--------------------|---|
| Name: | Frank Easter |
| Title: | Watershed Planning Team Leader |
| Employer: | NRCS |
| Project: | Columbia Conservation District - Tucannon River |
| FTE: | 80 hours |
| Duties: | Watershed Staff Supervisor |
| Qualifications: | |
| Degrees: | AS Forestry Grays Harbor College 1969, BS Range Management Washington State University 1971 |
| Publications: | Team Leader in the Development of 9 Watershed Plans, 6 River Basin Studies and 4 Flood Plain Management Studies |
| Certifications: | None |
| Previous Employer: | USFS - Wallowa Whitman NF 1969 - 70 |
| Job Experience: | SCS Range Conservationist - 2yrs, SCS Soil Conservationist - 2 yrs, SCS District Conservationist 7 yrs, SCS Area Conservationist 9 yrs, SCS Assistant State Conservationist 4 yrs, NRCS Watershed Planning Team Leader 3 yrs. |
| Expertise: | Watershed Planning, NEPA, Project Implementation, Nutrient Management, Program Management |

Resume for Barry Southerland

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|-----------|--|
| Name: | Barry Southerland |
| Title: | Soil Conservationist |
| Employer: | USDA/NRCS |
| FTE: | 120 hours for Columbia Conservation District 1998 BPA projects |
| Duties: | Provide technical assistance to the CCD as a member of the |

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|--------------------|--|
| | Tucannon Technical Advisory Team. Serve as the lead when determining alternatives for stream and river restoration projects. |
| Qualifications: | |
| Degrees: | BS Range/Soils Utah State University MPA Natural Resources Management - Brigham Young University |
| Publications: | Co-author of several watershed plans, river basin studies, |
| Certifications: | Professional Erosion and Sediment Control Specialist |
| Previous Employer: | BLM |
| Job Experience: | Range Conservationist 3 years Soil Conservationist 5 years Supervisory Soil Conservationist 2 years HU Project Coordinator 2 years NRP Resource Conservationist 5 years Fluvial Geomorphologist 2 years |
| Expertise | Resource data collection that is used for alternative development for watershed treatment. Emphasis on fluvial geomorphic stream and river restoration. Works as member of an interdisciplinary stream team in Washington. |

Resume for Mark Schuller

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|-----------------|---|
| Name: | Mark Schuller |
| Title: | State Fish Biologist |
| Employer: | USDA/NRCS |
| Project: | Columbia Conservation District - Tucannon River |
| FTE: | 150 hours |
| Duties: | help decide what measures should be taken to improve habitat for salmonid fish in damaged stream sections that are proposed for property protection or improvement; help design, implement, and monitor habitat improvement projects; act as liaison with other environmental agencies and groups involved with these and similar projects. |
| Qualifications: | |
| Degrees: | Graduate of Boeing mechanical drafting course - 1968 BS in Fisheries Science with minor in Wildlife - University of Washington, 1972; Steelhead life history study in Graduate School at U of W until Sept. 1974 |
| Publications: | “Cemeteries as Floral and Faunal Preserves” - Pacific Search Magazine, 1970 |

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|-----------------|---|
| | co-author of Asotin Creek Model Watershed Plan (1995); Draft Tucannon River Model Watershed Plan (1997); Draft Pataha Creek Model Watershed Plan |
| Certifications: | none |
| Previous | |
| Employer: | Washington State Department of Fisheries (1974-1993) |
| Job Experience: | Regional Habitat Manager for WDF - overseer of numerous stream projects; designed and implemented many fish habitat restoration projects with volunteers in northwest Washington; coordinated projects and permits with numerous environmental agencies and groups. |
| Expertise: | working with landowners and volunteers to improve fish habitat |

Resume for Larry Cooke

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|-----------------|--|
| Name: | Larry Cooke |
| Title: | State Environmental Specialist |
| Employer: | USDA/NRCS |
| FTE: | 100 hours for Columbia Conservation District 1998 BPA projects |
| Duties: | Provide leadership and coordination with the gathering of resource information that is used for BPA's consultation with NMFS and USFWS in regards to the ESA. |
| Qualifications: | |
| Degrees: | BS Natural Resources Management, OSU 1974 |
| Publications | Participated in the preparation of several watershed plans, BA's and conservation field trials |
| Certifications: | Licensed as Professional Pesticide Consultant |
| Previous | |
| Employer: | USFS, and Agricultural Research Service |
| Job Experience: | Conservation Technician 2 years Soil Conservationist 2 years District Conservationist 14 years Environmental Specialist 5 years |
| Expertise | Participated in the preparation of 8 watershed plans in Idaho and Washington, co-author of 7 Biological Assessments, experience with cropland and forestland planning. Experience with implementing several USDA programs such as EWP, FSA, FACTA, PL-566, ACP |

Resume for Larry Johnson

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|--------------------|---|
| Name: | Lawrence (Larry) A. Johnson |
| Title: | Engineering Team Leader |
| Employer: | USDA - NRCS |
| FTE: | 80 hours for Columbia Conservation District 1998 BPA projects |
| Duties: | Design Review Construction Site Visits Assist with BA development Develop Soil Bio-Engineering Standard Drawings |
| Qualifications: | |
| Degrees: | BS Civil Engineering |
| Publications: | |
| Certifications: | Professional Engineer, Washington State |
| Previous Employer: | Perini Corporation |
| Job Experience: | Hydraulic Engineer, 1 year State Design Engineer, 2 years Assistant State Design Engineer, 1 year Field Engineer, 3 years Snow Survey Hydrologist, 1.5 years Construction Engineer, 1 year |
| Design Expertise: | Soil Mechanics: Foundation Design Seepage Analysis Retaining Wall Design Slope Stability Design Foundation Design Soil Bio-Engineering Design Hydrology Studies Open Channel Hydraulics Analysis Irrigation Design |

Resume for David Brower

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|-----------------|--|
| Name: | David R. Brower |
| Title: | Cartographer |
| Employer: | USDA/NRCS |
| FTE: | 40 hours for Columbia Conservation District 1998 BPA projects |
| Duties: | Provide technical expertise to develop resource databases for watershed plans and soils assessments. Provide technical leadership and guidance to staff members for the understanding and application of spatial information. Coordinate geospatial data exchanges with federal, state, and local GIS users. |
| Qualifications: | |

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| Degrees: | BA Geography, Cartography Emphasis, U of Montana 1988 |
| Publications | Produced geologic maps for <u>The Roadside Geology of Idaho</u> (Missoula: Mountain Press, 1989) by Alt and Hyndeman. Created landform illustrations and block diagrams for <u>Landforms for Soil Surveys in the Northern Rockies</u> (Missoula: U. of M. School of Forestry Misc. Pub. No. 51, June 1990) by Hoeldorf and Donahue. Participated in the preparation of watershed plans, floodplain management studies and soils survey publications (1991-1997). |
| Certifications: | |
| Previous | |
| Employer: | Johnson County Planning Department, Kansas, 1991 |
| Job Experience: | Circulation Clerk, U of Kansas Map Library 1 year Production Supervisor, U of Kansas Cartographic Service 1 year Senior Map Editor, Johnson County Kansas Planning Dept. 1 year Watershed Planning Cartographer, USDA NRCS 6 years |
| Expertise | Participated in the preparation of 9 watershed plans, 3 floodplain management studies, 2 stream assessments and 1 river basin study in Washington State since 1991. Experience with implementing several USDA programs including EWP, EQIP, PL-566, CRP, and Soil Surveys. |

RESUME FOR BPA WATERSHED/STREAM PROJECTS

Roberta L. Lewis, PE
Civil Engineer, USDA-Natural Resources Conservation Service

Education & Experience:

- BS Civil Engineering (emphasis in Water Resources), University of Nevada, Reno, 1983
- Registered Professional Engineer (Civil) in states of Idaho and California
- Watershed Project Engineer for Asotin Creek, Pataha Creek and Tucannon River Model Watersheds

Previous Employment:

- USDA-NRCS, Nevada:
- Inter-Field Office Engineer, responsible for design of small irrigation projects and systems.
 - Field Office Engineer, responsible for irrigation systems designs, Irrigation Water Management Program development, and BP-566 Watershed Project/River Basin Project Development.

USDI-Bureau of Reclamation:

- Water Conservation Program Manager, Upper Columbia Area Office.
- Facilities Examiner for Major Facilities Review of Operation and Maintenance Program (large dams, canals, pumping plants, etc.), Mid-Pacific Region.
- Facilities Examiner for Minor Facilities Review of Operation and maintenance Program (small dams, canals, pumping plants, etc.), Mid-Pacific Region.

Other Relevant Qualifications:

- Construction Inspector for emergency Watershed Project: Dozier-McCaw site on Touchet River. (Construction of stream bank protection measures).
- Attended Erosion and Sediment Control Systems training by NRCS, May 1997.
- Attended Geomorphology Seminar by NRCS, March 1997.
- Worked with BPA/NWPPC on planning in stream flow enhancement project on Teanaway and Yakima Rivers.
- Designed and supervised construction of 14 watershed projects in 1997.

Mark A. Wasemiller, PE

Washington State Civil Engineering License #33947

EDUCATION

Washington State University, Pullman WA, Bachelor of Science, Agricultural Engineering, 1986

EXPERIENCE

Agricultural Engineer, Natural Resources Conservation Service, United States Department of Agricultural, Walla Walla WA

February 1997
to present

Responsible for overseeing planning, surveying, design, and construction of engineering practices for NRCS-USDA in the Blue Mountain region of the state of Washington. Projects include stream bank protection and salmonid fish habitat restoration on major watersheds in the region. These projects include rock barbs and deflectors, rock vortex weirs, log weirs, and rootwad revetments. These projects are multi-dimensional in their function. They provide bank protection by absorbing and redirecting high energy stream flows to preserve and/or reestablish bank stability to areas that have been damaged due to high flows and/or floods. The projects incorporate bioengineering elements into the structure to also provide habitat for native fish species. Responsibilities also include interfacing with local, state, other federal agencies, and environmental interest groups on permitting requirements for these projects. Other projects include irrigation systems, dairy waste treatment systems, and water control and conveyance. Other responsibilities include the assessment of engineering training

needs for field office personnel, maintaining engineering records, and maintaining engineering equipment.

February 1989
to February 1997

Senior Environmental Engineer, Westinghouse Hanford Company & International Technology Hanford, Richland WA

Responsible for project management and coordination of environmental restoration of CERCLA and RCRA hazardous waste units on the United States Department of Energy Hanford Nuclear Reservation. Responsibilities included the planning, design, implementation and evaluation of soil, water, and waste sampling plans on inoperative waste sites. Waste sites included metals, volatile and semi-volatile organics, halogens, PCBs, radioisotopes, carcinogenic compounds, and other hazardous wastes. Projects called for development of health and safety plans, waste handling and storage plans, coordination of sampling and shipping in accordance with USDOT regulations, interface with local, state, federal agencies, and public and private interest groups. Developed technical presentations for company management, Washington State Department of Ecology, Environmental Protection Agency, US Department of Energy. Appointed company technical representative to the American Society for Testing and Materials (ASTM) committee D-18 on Soil and Rock for the development and review of consensus standards dealing with testing soil and soil like materials. Chaired subcommittee on Physical-Chemical interactions of soil and rock and was appointed member-at-large to the executive oversight subcommittee.

June 1986
to February 1989

Agricultural Engineer, Soil Conservation Service, United States Department of Agricultural, Pasco WA.

Responsible for oversight of all engineering activities in Benton, Franklin, and Walla Walla counties in the state of Washington. Responsibilities included planning, design and construction oversight of all projects. Projects included high and low pressure water conveyance systems, center pivot, solid set, handline, wheel line, and drip irrigation, embankment and excavated irrigation ponds, concrete and steel water control structures, windbreak layout, orchard and vineyard layout, dairy waste management systems, and earthen and lined open channels. Performed water budget analysis on various irrigation practices for Franklin and Benton County Conservation Districts in conjunction with a water quality study grant with the United States Geological Survey. Responsibilities also included the development and presentation of a course on basic engineering for non-engineers.

INTERESTS

Member of Promise Keepers

Member of Toastmasters International
Member Jason Lee Elementary Site Council (curriculum guidance)
Member of Washington State NRCS Civil Rights Committee

Steve Martin
209 E. Washington, Dayton, WA, 99328

Employment and Education:

- 1984-1988 Eastern Washington University, BS Biology
- 1988-1991 WDF and WDW Fisheries Technician
- 1991-1992 Graduate School, Eastern Washington University, MS Fisheries Biology
- 1993-1996 WDFW Fisheries Biologist, Yakima Fisheries Project
- 1996-current WDFW Habitat Biologist

Primary Publications:

- Martin, S. W. 1992. Investigations of bull trout, steelhead trout, and spring chinook salmon interactions in southeast Washington streams. Master's Thesis, 1992
- Martin, S. W. et. al. 1993. Investigations of the interactions among hatchery reared summer steelhead, rainbow trout, and wild spring chinook salmon in southeast Washington. Project report.
- Martin, S. W. and T. N. Pearsons. 1994. Age and growth of rainbow trout in the upper Yakima River basin. Annual report.
- Martin, S. W. and T. N. Pearsons, and S. A. Leider. 1994. Rainbow and steelhead trout temporal spawning distribution in the upper Yakima River basin. Annual report.
- Martin, S. W. and T. N. Pearsons. 1994. Variation in rainbow trout populations of the upper Yakima River: implications for ecological impact assessment. Vol. 68, No. 2.
- Martin, S. W. and T. N. Pearsons. 1995. Species and habitat associations of spring chinook salmon and rainbow trout in the upper Yakima River. Annual report.
- Martin, S. W. 1995. Salmonid distribution and rainbow trout population abundance variation in the upper Yakima River. Annual report.
- Martin, S. W., J. A. Long and T. N. Pearsons. 1995. Comparisons of survival, gonad development, and growth between rainbow trout with and without surgically implanted dummy radio transmitters. North American Journal of Fisheries Management. 15:494-498.

Presentations and Public Meetings:

- 1993 American Fisheries Society 1993 annual meeting in Portland, Oregon. Poster presentation. Title: Temporal and spatial distribution of rainbow trout spawning in the Yakima Basin.

- 1993 Wenatchee Flyfishers. Update on Yakima Fisheries Project research. Presentation given annually form 1993 through 1996.
- 1994 Northwest Science Association. Title: Variation in rainbow trout populations of the upper Yakima River: Implications for ecological impact assessment.
- 1995 American Fisheries Society, North Pacific International Chapter annual meeting in Vancouver, B. C. Presentation title: Interactions between and relationships among fish size, stream size, and redd size.
- 1995 Cascade Field and Stream Club. Update on Yakima Fisheries Project research.
- 1996 Pacific Coast Steelhead Management annual meeting, Portland, Oregon. Title: Ecological risk containment associated with steelhead supplementation in the upper Yakima Basin.
- 1996 Oregon Chapter of the American Fisheries Society, 1996. Life history, ecology and genetics of rainbow trout in the upper Yakima River.

Name: **Mark L. Schuck**
 Title: Fish Biologist 4
 Employer: Washington Department of Fish and Wildlife (WDFW)
 600 Capitol Way N
 Olympia, WA 98501

Local Address: 401 South Cottonwood
 Dayton, WA 99328

Phone: (509) 382-1004
 FAX: (509) 382-2427
 e-mail: schucmls@dfw.wa.gov

Education: Colorado State University, 1974
 B.S. Fish Biology

Current Duties: Project Leader; Lower Snake River Compensation Plan hatcheries evaluation program. Responsible for overseeing WDFW's evaluation of a federal mitigation program designed to replace fish resources lost due to construction of the four Snake River power dams. Evaluation activities are currently being undertaken for spring and fall chinook salmon and steelhead in several rivers in S.E. Washington. Duties include assisting with experimental design and implementation of studies, budgeting and report writing. Reports are submitted in both annual progress report and final refereed journal formats.

Previous Duties: Served as District Fish Management Biologist for WDFW in Asotin, Columbia, Garfield and Walla Walla counties; 1984-1994.

Expertise: Have managed or researched the fish resource in S.E. Washington

since 1982. Have been actively involved with evaluation of a major hatchery trout/ steelhead mitigation program since its inception in 1982 and with salmon and trout under the mitigation program since 1995. Helped conduct an evaluation of in stream habitat improvements in Asotin Creek and Tucannon River in 1989 as part of the mitigation program.

Publications: Viola, A.E., M.L. Schuck and S.A. Nostrant. 1991. An Evaluation of In stream Habitat Alterations in Southeast Washington, 1983-1989. Washington Department of Wildlife. Report #FM 91-11.

Viola, A.E. and M.L. Schuck. 1995. A Method to Reduce the Abundance of Residual Hatchery Steelhead in Rivers. North American Journal of Fisheries Management 15(2) 488-493.

Glen W. Mendel

Washington Department of Fish and Wildlife
Snake River Lab, 401 S. Cottonwood St, Dayton WA. 99328

Education:

- Supplemental Aquatic biology courses (1983), University of Idaho
- M.S. Wildlife Resources (1979), University of Idaho.
- B.S. Wildlife/fisheries (1975) University of Idaho
- B.S. Biology (1973) University of Idaho.

Employment History:

Fish Biologist 3 (fish management) for the Washington Department of Fish and Wildlife (WDFW) in SE WA (part-time since April 1997). Assistant project leader for evaluation of Lyons Ferry Hatchery program for spring and fall chinook salmon and steelhead (Mar. 1994-present).

Fishery Biologist 3 for the Washington Department of Fisheries (5/1991 to 3/1994). Field supervisor for three projects: Monitoring and evaluation of Lyon's Ferry spring and fall chinook salmon hatchery programs (as part of the Lower Snake River Compensation Plan - LSRCP), and conducting adult fall chinook salmon radio telemetry research to evaluate upstream migration and spawning in the Snake River. Planned, directed and supervised these projects with 3 permanent staff, and up to 10 seasonal support staff.

Habitat Biologist 3 for the Washington Department of Wildlife (12/1988 to 5/1991). Main duties included reviewing and responding to environmental permits to protect fish and wildlife and their habitats in 3 SW Washington counties.

Fish Biologist 2 for the Washington Department of Wildlife (7/1984 to 12/1988). Assistant project leader for evaluation of Lyon's Ferry trout Hatchery, as part of the LSRCP.

Wildlife Biologist 2 for the Washington Department of Game (5/1983 to 7/1984).

Biologist in charge of the In stream Habitat Improvement Study for several streams in SE WA.

Biologist - Fisheries (GS/7) for the US Army Corps of Engineers (Jan-Sep. 1982, Apr. - Jun. 1981). Field supervisor for radio telemetry studies of chinook salmon to evaluate adult passage facilities at two dams on the Lower Snake River. Supervised crews of 10-12 bio-techs and bio-aids.

Wildlife Biologist 2 for the Washington Department of Game (June - Dec. 1981, Jan. - Apr. 1981). Senior biologist on a study of anadromous fisheries enhancement potential in SE WA. Evaluated salmonid habitat and predicted salmonid biomass in streams by using the Wyoming HQI model. Estimated fish populations from electrofishing samples at 46 sites in 9 streams. Assisted with data collection for the In stream Flow Incremental Methodology.

Research Aid for the University of Idaho Cooperative Fisheries Research Unit (Sept. 1980 - Jan. 1981). Implanted radio transmitters in steelhead trout and monitored their movements and catchability in relation to discharges from Dworshak Dam on the Clearwater River, ID.

Wildlife Biologist (GS/7) for the USDA Soil Conservation Service (May 1979 - Dec. 1979). Compiled information from the literature on habitat requirements of 27 wildlife species (Habitat Suitability Indices) as part of the US Fish and Wildlife Service's HEP Handbook for the Columbia Plateau of the Intermountain West.

Technician positions (temporary) for the University of Idaho fishery program.

Publications: several publications in journals and symposium proceedings, and many agency reports.

Arthur E. Viola

Washington Department of Fish and Wildlife, Snake River Lab. 401 South Cottonwood Dayton, Washington 99328 (509) 382-4755.

Education

Masters degree in Fish and Wildlife Management, Montana State University, April 1986; graduate work in fisheries at Utah State University and Humboldt State University, CA Bachelor of Science degree in biology, Southern Connecticut State College, May 1973.

Employment history :

Fish Biologist III, (7/97 - present) Washington Department of Fish and Wildlife Snake River Lab. Identify, design, conduct analyze, interpret and report appropriate research for the Lower Snake River Compensation Plan program (steelhead / trout mitigation) in southeast Washington. Relate findings to LSRCF and fish management needs in area rivers.

Fish Biologist II, Assistant project leader, (3/89 - present). Washington Dept. of Fish and Wildlife, Snake River Lab.

Assist with all responsibilities for the Lyons Ferry Hatchery Evaluation study and Fish Management activities in Southeast Washington.

Fish Biologist III, (12/92-3/92) Acting Project Leader, Washington Dept. of Wildlife, 411 S. First, Dayton, WA 99328. (509) 382-4391. Assume all responsibilities for the Lyons Ferry Hatchery Evaluation study and Fish Management activities in Southeast Washington During project leader's absence.

Biological Technician, (3/85 - 7/97) Bozeman Fish Technology Center, USFWS 4050 Bridger Canyon Rd., Bozeman, MT 59715. (406) 587-9265. Care for experimental and production

groups of salmonid eggs, fry, fingerlings and adults, Conduct experimental projects to develop innovative fish culture methods related to the needs of fish management, write reports, maintain fish planting reports and computerized lot history records.

Assistant Special Project Biologist, (8/84 - 3/85). In stream flow-fisheries project on Bitterroot River, Hamilton, MT. Assist in the development of a water management plan designed to mitigate problems caused by river water diversions used for irrigation. Montana Dept. Fish, Wildlife & Parks.

Seasonal Fishery Biologist, (5/79 - 9/79), (5/78 - 12/78), (9/77 - 10/77). Wyoming Game & Fish Department, Jackson, WY. Fisheries management, data collection, fish population estimates, electro-fishing, gill netting, habitat surveys, stream improvement work, creel census, public information services, water chemistry, reclamation of ponds, working fish traps on spawning tributaries, mapping redds, planting eyed eggs, evaluation of high mountain lake fisheries.

Seasonal Fishery Biologist, (4/77 - 7/77). California Fish & Game Department, Weaverville, CA. Fish management.

Fishery Field Worker, (5/76 - 9/76). Montana Dept. Fish, Wildlife & Parks, Lewistown, MT. Fishery Management.

Fishery Research Assistant, (7 - 75 - 9/75). Utah State University Fish Co-op Unit, Logan, UT. University research position.

Fisheries Research Assistant, (3/74 - 10/74), (9/73 - 11/73), (6/72 - 9/72). Connecticut Dept. of Environmental Protection (Fish & Game Dept.) Assist fishery biologist

Relevant publication:

Viola. A.E., M.L. Schuck and S.A. Nostrant 1991. An evaluation of In stream Habitat Alterations in Southeast Washington, 1983-1989. Final report. Washington Department of Wildlife to the U.S. Fish and Wildlife Service Report NO. AFF1/LSR-90-14.

Resume of
Joseph D. Bumgarner

2039 Carl St
Walla Walla, WA 99362
509-529-8561(home) 509-382-4755(work)

EDUCATION:

Master of Science June, 1993 University of Washington, Seattle, WA
(Fisheries) **G.P.A. 3.5**; *Honors: Richard Van Cleeve Merit Scholarship*

Bachelor of Science December, 1987 University of Washington, Seattle, WA
(Fisheries) **G.P.A. 3.5**; *Honors: National Deans List Recognition, 1987*

WORK HISTORY:

July, 1997 Washington Department of Fish and Wildlife, Dayton, WA
to present **Fish Biologist III** - Responsible for identifying, designing, conducting, analyzing, interpreting, and reporting appropriate research for Lower Snake River Compensation Plan (LSRCP) for spring chinook mitigation in southeast Washington. Relate findings to LSRCP and fish management needs in area rivers. Performs as the WDFW spring chinook specialist for the LSRCP program.

June, 1993 to Washington Department of Fish and Wildlife, Dayton, WA
July, 1997 **Fish Biologist II** - Takes primary responsibility for the organization, writing, and data analysis for annual Tucannon spring chinook salmon report. Performs routine professional biological work related to salmon production at Lyons Ferry and Tucannon Hatcheries. Leads and/or assists in developing proposals, study plans, and designs for hatchery evaluation research.

May, 1988 to Washington Department of Fisheries, Statewide Locations, WA
September, 1990 **Scientific Technician II** - Responsible for the collection of tissue samples, coded wire tags, and scales from fisheries, and statewide stocks of salmon for GSI program; conducted creel surveys for groundfish and sport salmon fisheries.

February, 1988 to Idaho Department of Fish and Game, Lewiston, ID
May, 1988 **Biological Aide** - Assisted in the operation, maintenance, and data summary of two smolt monitoring traps.

1986-87, 1991-92 Fisheries Research Institute, Alaska Research Stations, AK
(Summers Only) **Research Assistant** - Assisted in Alaskan sockeye salmon research; spawning ground surveys, juvenile fish sampling, adult tagging, hydrology, and limnology work. Boat camp maintenance.

PROFESSIONAL AFFILIATIONS: American Fisheries Society

Richard E Rubenser
PO Box 325
Starbuck, WA 99359
509-399-2287

Education:

- Washington State University. 1956-60 B.A. Agriculture Economics
- United State Army. 1961-63
- Washington State University 1965 Post Graduate Studies
- Walla Walla Community college 1997 Spanish
- Many Professional Seminars
 - First Aid
 - Chemical/Pesticide License
 - Etc...

Career:

- 1997- Ranch Owner and Manager F&R Farms
Excavating and River Work

Starbuck Country Bed & Breakfast

- 1966-68 Manager of Carnation Albers Feed Company in Chehalis
- 1961-63 United States Army
- 1956-60 WSU Student

Other Activities:

- President of Farm Bureau
- Columbia County Fire Commissioner
- Port of Columbia Commissioner
- Volunteer Fireman
- President of Cattleman’s
- Vice-President of Columbia County Fair
- School Board Member
- Sportsman Organization
- Pheasants Forever
- WSU Alumni
- Wrestling Coach Dayton High
- Basketball Official
- AAU Basketball Coach
- Wrestling Official
- Outstanding Farmer of the Year
- Cattleman of the Year

My family and I have lived in the Tucannon River Valley all our lives. We have been involved in many conservation projects. I have built several fish habitat projects. I have also designed and built some flood control and fish habitat projects on my own. We are very interested in trying to make the streams of the area better for fish and wildlife. I have been very observant of the pheasants, deer, salmon, steelhead, bull trout and other species of fish and wildlife making their home in or by the Tucannon River for over fifty years.

Kim Eugene Lyonnais

114 South Second
Dayton, WA 99328
(509)382-4676 (W) (509)382-2312 (H)

Objective: Personal information for:
Terry Bruegman, District Coordinator, Columbia Conservation District

Professional Experience

- Union Carpenter** 1979 to 1980
Spokane, WA
Field Foreman
- Columbia County** February 18, 1986 to Present
341 E. Main, Dayton, WA 99328
Planning Director

Education

- North Central High School** 1966 to 1970

**Spokane, WA
High School Diploma**

**Spokane Community College
Spokane, WA
AA Business Degree** **1980 to 1983**

**Eastern Washington University
Cheney, WA
Bachelor of Arts Degree, Urban & Regional Planning
Minor in History** **1983 to 1985**

International Conference of Building Inspectors Certification, 1996

**Skip Mead
Columbia Conservation District Chairman of the Board**

Education: Bachelor of Science degree in Agriculture, Washington State University, 1979.

Current Occupation: Landowner/Operator Production Agriculture Enterprise

Current Associations:

- Chairman, Columbia Conservation District
- Tucannon Model Watershed Landowner Steering Committee
- 14 years as Supervisor on Columbia Conservation District Board
- Washington Association of Conservation District SE Area Director

Background: Third generation dryland wheat and cattle producer and landowner along and in the Tucannon River Watershed. An active participant in a very progressive and proactive conservation district and active with an incredibly capable group of landowners from Columbia County, Washington.

Section 10. Information/technology transfer

The District works closely with area news media to promote holistic resource management from a watershed prospective. Articles about the Tucannon River Model Watershed projects have appeared in regional newspapers, as well as, BPA's Circuit and the Journal. Presentations at Neighborhood meetings, before commodity groups, at public meetings, and before Legislators has created great

interest in the success of a “bottom up” effort for salmonid habitat restoration. Formal and informal tours of the projects have included, students, landowners, agency personnel, and Legislators. The success of the Tucannon Model Watershed is reflected in the level of trust established between landowners and resource agencies and has created interest nationally as evidence by the number of national level agency personnel visiting the project sites. Bio-engineering technology used in the Tucannon River was the bases for a very successful effort by a local group of FFA members who place 3rd in the National FFA Current Issues Contest and thus reaching hundreds of young resource oriented students. The Tucannon River Model Watershed process will be the bases for the Touchet River Watershed Plan effort in 1998.