BONNEVILLE POWER ADMINISTRATION

Assess Current and Potential Salmonid Production in Rattlesnake Creek Associated with Restoration Efforts

Underwood Conservation District

Annual Report 2001 - 2002 February 2004 DOE/BP-00006301-1

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UNDERWOOD CONSERVATION DISTRICT

ASSESSMENT OF RATTLESNAKE CREEK IN RELATION TO RESTORATION EFFORTS PROJECT

~Annual Progress Report~

BPA project ID Number: 21009

Reporting Period: July 1, 2001 through June 30, 2002
Contract Period: July 1, 2001 – June 30,2002

1. Introduction:

The White Salmon River Watershed Enhancement Project (WSRWEP) began in 1993 through efforts of the Underwood Conservation District (UCD), local stakeholders and various agencies. Early accomplishments of the project included the formation of a multi-stakeholder watershed management committee (WMC) and technical advisory committee (TAC), completion of several baseline assessments, drafting of a watershed management plan, and beginning implementation of the plan. Since inception, the effort has utilized the support of various government / private grants, and local in-kind contributions to accomplish project goals. The WMC and its partners utilize a four-pronged approach for achieving watershed enhancement: on-ground restoration, extension of technical and financial assistance to cooperators, community and environmental education, and assessment/monitoring to develop strategies and track the success of ongoing work. Project activities are generally targeted to sub-basins and stream reaches within the White Salmon watershed that exhibit important water quality and fish/wildlife habitat problems. Such project prioritization is being conducted with the active input of both the White Salmon WMC and TAC.

An important current phase of the WSRWEP targets detailed monitoring and assessment of the Rattlesnake Creek sub-basin, and is the focus of this report. The "Assessment of Rattlesnake Creek in Relation to Restoration Efforts" project (BPA Project ID Number 21009) was identified and prioritized for accomplishment by the White Salmon River TAC in January of 2000. Rationale for the project stemmed from the group's realization that Condit Dam on the lower White Salmon is scheduled for removal, or fish passage retrofitting, within the near future. Given this eventuality, the TAC identified the current lack of understanding regarding both *potential* anadromous habitat and *existing* native fish and habitat conditions above Condit Dam (RM 3.2) as an important need. In response to the TAC's determination, the US Geological Survey (USGS), Yakama Nation (YN) and UCD began work to develop the current project that is intended to address the above.

The overall goal of the Rattlesnake Creek assessment is to document existing riparian habitat and water quality conditions, native fish populations, and future restoration sites before future return of anadromous fish to the basin above RM 3.2. Since the project is jointly enacted by the USGS, YN and UCD, a high degree of shared planning and joint implementation is applied during completion of tasks. In general, the

USGS and YN are cooperatively working to monitor and assess fish populations and riparian habitat conditions within the drainage and adjacent sections of the White Salmon. The UCD is generally responsible for assessing water quality, mapping stream channel geomorphology to enable future restoration planning, and measuring the ratios of carbon and nitrogen isotopes at various trophic levels

The remainder of this report provides a summary of significant activities achieved by the UCD under BPA Project 21009 during the first project year. The report follows the FY 2001 UCD/BPA contract Statement of Work (SOW) format. Discussion of major problems encountered, changes in the work plan and schedule deviations are noted in italics after the description of accomplishments for each task.

2. Accomplishments

Objective 1: **Characterize stream and riparian habitat conditions in the Rattlesnake Creek drainage.**

Task 1.a: Measure water quality, water quantity, stream habitat, and riparian conditions (UCD, YN, USGS). (90 % completed).

Five water quality monitoring rounds were conducted during the project year. This included one base flow event in September 2001, one flush flow event in January 2002, one fall quarterly event in October 2002, one winter quarterly event in January 2002, and one spring quarterly event in April 2002. The work targeted six stations along Rattlesnake Creek and tributaries, and ten stations in the remainder of the White Salmon River watershed (see Attachment 1). An extensive review and update of UCD water quality sampling methods and quality assurance procedures was performed. Resulting data has been entered into the UCD's White Salmon River Watershed Water Quality Database for use during future water quality comparisons. USGS personnel, were responsible for the collection of stream flow data at four stations along Rattlesnake Creek. *Due to scheduling, the UCD was unable to perform a summer 2001 quarterly monitoring event. This omission was caused by delayed project start-up and hiring.*

- Continuous water temperature was logged at eight stations in the Rattlesnake Creek sub-basin and eight stations throughout the remainder of the White Salmon River basin during the entire project period. Installation labor and the purchase of 20 new StowAway logger units was accomplished before the contract period start. This input represents a considerable in-kind donation to the current project. The units were field checked with USGS during the year to ensure presence and sufficient submergence. In May 2002, all units were returned to the office for calibration using a NIST certified thermometer before summer 2002 field placement. *All units performed well during the year, with the exception of one case of tampering/vandalism.*

Task 1.b: Describe geomorphology of the watershed (UCD). (5% completed).

- Work intended to document the geomorphic characteristics of lower and middle Rattlesnake Creek and select tributaries began in summer of 2000 by the Clark Conservation District Engineering Cluster (CCDEC) Engineer. The CCDEC is expected to provide the remainder of needed surveys as an in-kind contribution during the remainder of the ongoing three-year BPA funded project. A portion of lower Indian Creek was successfully mapped before BPA project 21009 start-up. No further work was performed during the project year.

Task 1.c: Determine background levels of stable carbon and nitrogen isotopes in the Rattlesnake Creek drainage (UCD). (100% complete).

- The UCD began intensive work in August of 2001, intended to document the current isotope ratios of carbon and nitrogen being taken up through various trophic levels in Rattlesnake Creek . Initial work under this task included researching nutrient isotopes and monitoring protocols , establishing goals, and developing a monitoring scheme. Subsequently, a Rattlesnake Creek isotopes monitoring plan was drafted in October 2001. The plan was developed by the UCD with the assistance of USGS during the course of several planning meetings. Supporting resources (lab space, equipment, etc.) have been provided through the USGS throughout the project year. The first of two isotope sampling rounds (fall round) was conducted in October 2001 at four stations along Rattlesnake Creek, and one station on the White Salmon River just below the creek's confluence. A total of 271dual (C and N) isotope samples from various trophic levels (terrestrial and aquatic plants, primary and secondary consumers) were secured from the five sites for later lab analysis. The second (and final) isotope sampling round was conducted in June 2002. Again, 332 samples were collected, prepared and sent for dual isotope analysis Isotope ratio results are being entered into a UCD database for use in future comparisons, after achievement of fish passage around Condit Dam. Once this fish barrier is eliminated, this baseline data will allow understanding of the effects of re-introduced marine-derived nutrients (from anadromous fish) back into the system.

3. Budget Summary

Expenditures by Category --

Underwood Conservation District
Rattlesnake Creek Assessment Project
BPA Contract Number: 21009

Category	***Dollars Expended***	***Dollars Remaining***
Personnel:	26,073.22	(1,876.22)
Supplies:	1,169.89	2,230.11
Overhead:	2,273.41	2,326.59
Travel:	1,693.86	619.14
Subcontracts:	7,519.00	5,681.00
Other:	1,413.97	1,086.03
Total	40,143.35	10,066.65