GRAYS RIVER WATERSHED RESTORATION

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Status Report 2007

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Introduction

The Bonneville Power Administration (BPA) Project 2003-013-00, *Grays River Watershed Restoration*, began in FY04 and continues into FY09. This status report is intended to summarize accomplishments during the period 1 May 2007 through 30 October 2008. Accomplishments are summarized by Work Elements, as detailed in the Statement of Work (see BPA's project management database PISCES).

The Pacific Northwest National Laboratory (PNNL) is collaborating with the Columbia River Estuary Task Force (CREST) on implementation of the Grays River Restoration Project. The Grays River is vitally important to the recovery of Lower Columbia River (LCR) chum salmon because it currently has the most viable population remaining in the LCR region. The Grays River watershed is also important to the recovery of salmon and steelhead in the LCR ecosystem. Today, numbers of naturally spawning salmon and steelhead have declined to levels far below historical numbers because of habitat limiting factors that include but are not limited to the lack of habitat connectivity, diversity, channel stability, riparian function and altered stream flow conditions.

The objective of this project is to restore habitat-forming processes to enhance salmon and steelhead populations in the Grays River, following recommendations developed during the FY04-06 BPA-sponsored Grays River Watershed Assessment (BPA Project # 2003-013-00). Specifically, this project will be the first step in restoring channel structure and function that will increase instream habitat diversity, channel stability, and riparian integrity in the critical response reach upstream and adjacent to critical salmon spawning areas of the Grays River. The major component of this strategy is the planning, design, installation, and monitoring of engineered logjams (ELJ) that will rejuvenate historic channel and floodplain processes. Additional restoration measures include reforesting the riparian corridor to enhance future large woody debris recruitment and investigation of conservation activities within ecologically critical areas. These activities include land acquisition and levee removal to protect critical areas and reconnect floodplain areas. Finally, monitoring integrated with restoration activities is proposed to evaluate restoration effectiveness and allow for adaptive management of future restoration treatments in the project area as well as other degraded watersheds in the Lower Columbia River.

Progress by Work Element

Work Element A – Conceptual restoration design

Work Product/Deliverables: Technical assistance to conceptual project design drawings and specifications.

PNNL assisted CREST with development of conceptual project design to solicit proposals from qualified engineering firms for the installation of engineered log jams (ELJ) in the Grays River Project Area. CREST established and coordinated a technical review team to assure appropriate input from local stakeholders and local and regional experts during the planning phases of the project. PNNL technical assistance for this work element included site visits to the study area and coordination meetings with CREST. PNNL also provided data management, analysis, and interpretation of existing data sets relevant to the Grays River restoration project.

Work Element B – Engineering sub-contractor selection

Work Product/Deliverables: Technical assistance with identification of subcontractor for ELJ design and installation

Based on proposals submitted to the design specifications developed, PNNL assisted CREST with selection of an experienced engineering firm (Anchor Environmental) and contractor to install multiple ELJ structures in the Grays River project area. PNNL technical assistance for this work element included site visits to the study area, technical review meetings, and coordination meetings with CREST. PNNL also provided data management, analysis, and interpretation of existing data sets relevant to the Grays River restoration project.

PNNL worked with CREST and Anchor on identifying topographic survey needs for the study area. PNNL provided existing and modified data sets to Anchor. As a result of the data review, Anchor crafted a bidding document for surveying firms. Statewide Surveying was selected and a contract was implemented. The surveying took place from May 28 to June 5, with one additional day of surveying requested in late June to finalize survey data.

Work Element C – Final restoration design

Work Product/Deliverables: Technical assistance to final project design drawings, specifications, and location

PNNL assisted CREST and the selected engineering subcontractor with the final design and siting of the ELJ structures. A design alternatives review meeting was held in conjunction with the Grays River Working Group. As a result of the meeting, a meeting with the Gorley family, feedback provided verbally and electronically and a through CREST review, Anchor Environmental produced the final design alternatives analysis. The engineer is now proceeding with design of the preferred alternative. The ELJ structures will slow flood flows, reduce erosion, contribute to sediment storage in the project area, enhance fish habitat, and contribute large woody debris to the project area. These structures will also divert partial flow into alternate channels within the Grays River floodplain, increasing total aquatic habitat area, restoring spawning habitat.

PNNL technical assistance for this work element included site visits to the study area, technical review meetings, and coordination meetings with CREST. PNNL also provided data management, analysis, and interpretation of existing data sets relevant to the Grays River restoration project.

Anchor staff are currently working on providing 30% design drawings, which are expected to be completed 30 November 2008.

Work Element D – Restoration monitoring and assessment plan

Work Product/Deliverables: Monitoring and assessment plan for the restoration activities

PNNL completed the *Monitoring and Assessment Plan for the Grays River Gorley Springs Restoration Project*. This monitoring and assessment plan includes evaluating the effectiveness of restoration activities (focusing on trend detection over time) and providing information for revisions to management actions. The Grays River monitoring and assessment framework is intended to quantify the cause-effect relationships among restoration activities and salmonid habitat benefits. This framework is focused on characteristics of the physical environment that are linked directly to the proposed restoration activities, and the expected habitat benefits. The framework includes: channel planform and lateral profile; channel bedform and longitudinal profile; large woody debris; riverbed substrate; and hydrologic connectivity.

This monitoring and assessment plan is designed to be adaptive to the sequential phases of the restoration implementation activities in the Gorley Springs reach of the Grays River.