Fremont-Winema Programmatic Restoration EA
Restoration Project Description

Project Name: Paradise and Watson Creeks Large Wood Restoration

Project Location

County: Lake and Klamath
6th field HUC: Paradise Creek, 180102020103
Stream Name: Paradise and Watson Creeks
Lat/Long: Paradise Creek: Start 42.6896, -120.9186 and End 42.6708, -120.8976.
Watson Creek: Start 42.6317, -120.8943 and End 42.6383, -120.8657
Legal: T33S, R15E, Sec. 25, 35, 36 and T34S, R15E, Sec. 2, 12, 13 and T34S, R16E, Sec.7, 18

Contact

Rich Pyzik, NE Zone Fisheries Biologist

Timing

Estimated Start Date: August 1 to September 30 (State Mandated Inwater Work Period)
Actual Start Date: August 1, 2015

Need for Proposal

Recent stream surveys documented several reaches of these streams that were below INFISH standards for pieces of large woody material per mile. The goal of the project is to restore stream channel complexity and function by adding large woody material to stream reaches deficient in this key stream habitat parameter. The project objectives are to create large wood concentrations, create/develop scour pools and backwater areas, hydrologically reconnect side channels during high water events, create cover for aquatic organisms, and provide a source of food for aquatic macroinvertebrates.

Describe the Collaborative Process and how it shaped the project

Large wood deficiencies were identified in Paradise and Watson Creeks as part of the Upper Sycan Watershed Analysis conducted by the Paisley Ranger District in 2001. The Watershed Analysis was produced by an interdisciplinary team consisting of fish and wildlife biologists, hydrologists, botanists, archaeologists, timber specialists, and engineers. The project was also identified as two of the three major areas for large woody debris restoration in the Upper Sycan River Watershed Restoration Action Plan prepared by the Fremont-Winema National Forest in 2011.

Project Description

The project will restore 4.0 miles of stream and approximately 10 acres of riparian habitat. The project falls under Category 1 in the Watershed Restoration Environmental Assessment II (2013), **Installation of Instream Structures using Large Wood and Boulders for fish habitat/passage.**

Objective

Objectives are to increase channel stability, rearing habitat, pool formation, spawning gravel deposition, instream structural complexity and diversity, hiding cover, and low velocity areas for productive fish habitat.

Structures would be a short term solution to establish natural process that would be self-sustaining in the long term.

Detailed Description

Instream or riparian placement of large wood and/or boulders using various types of machinery. Live and/or dead trees would be acquired from riparian or upland areas to provide large wood for restoration projects providing they are removed and placed according to project design criteria (See Project Design Criteria 22). Low ground disturbing methods would be utilized for getting material to placement sites consistent with existing site conditions. Post installation restoration of disturbed areas would include appropriate native vegetation and bank stabilization techniques and/or debris. Excess material, wood, or installation generated material, would be deposited in appropriate upland/waste areas and stabilized to eliminate any future sediment source. (See Attachment 2 of Decision Project Design Criteria 1.1, 1.2, and 22)

Large wood, boulder placement and boulder weirs would include the use of log trucks and dump trucks for transport and excavator-type machinery, cable yarders, in riparian areas for placement of material. Motor vehicle access for both small and large equipment would occur within riparian areas; routes would be decommissioned, restored, and hidden after use. (See Project Design Criteria 22)

Collection of Material

Large woody material will be obtained from adjacent riparian areas where lodgepole pine has encroached. A mountain pine beetle outbreak has caused significant mortality of the lodgepole pine, which makes them ideal to use in Paradise and Watson Creeks. This material will be obtained using a tracked excavator and placed in the identified reaches at appropriate locations with approximately 70 pieces in Paradise Creek and 50 pieces in Watson Creek. Adding this material will improve stream channel stability and complexity of stream habitats, provide cover for fish, and create pools. Removing the material from adjacent riparian areas will improve the shrub component in those areas. Some boulders, which would also come from adjacent riparian areas, will be incorporated into the large wood structures.

Placement of Material and Area of Disturbance

The area of disturbance would be from the stream edge into the adjacent lodgepole stands, not to exceed 100 feet. Most of the ground disturbance is associated with the streambank area, due to the excavator tracking through the area to place material and excavating into the streambank to place key pieces of large wood. Figure 1 shows a typical large wood placement location including a channel cross-sectional view (Rogen 1996); this method has been used successfully on the Deschutes National Forest. Figures 2, 3 and 4 are photos showing examples of large wood placement on the North Fork Sprague River, which would be similar to the proposed project on Paradise and Watson Creeks.

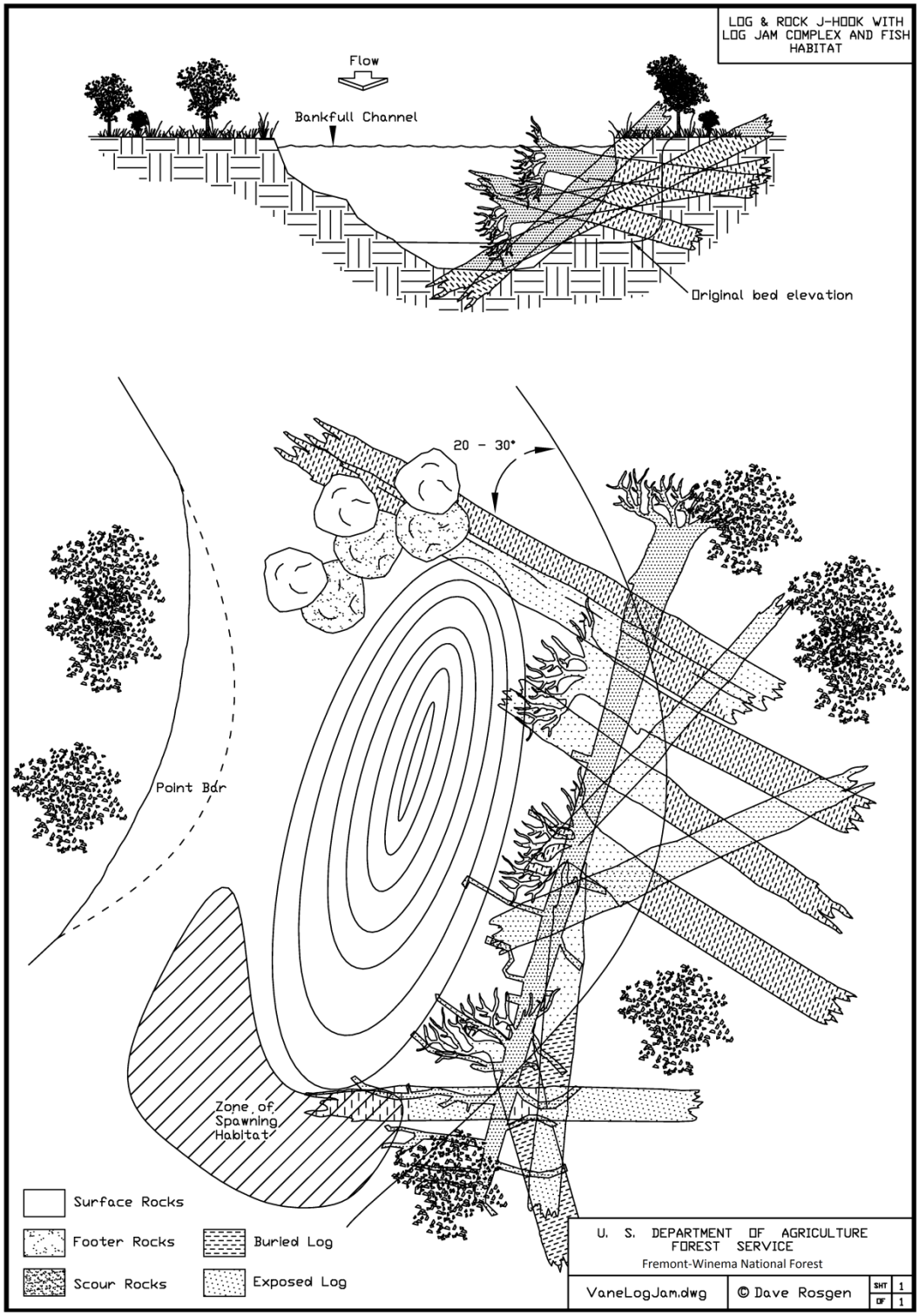

Figure 1. Schematic Drawing of Large Wood Placement (Rosgen 1996).

Figure 2. Large Wood Placement on the North Fork Sprague River.

Figure 3. Bank Excavation for Key Piece Placement on the North Fork Sprague River

Figure 4. Large Wood Placement & Bank Excavation for Key Piece Placement on the North Fork Sprague River

Expected Outcome

The project is expected to result in properly functioning aquatic habitats, by restoring stream channel complexity and function via the addition of large woody material to stream reaches deficient in this key stream habitat parameter. This will be accomplished via the project objectives as stated above: create large wood concentrations, create/develop scour pools and backwater areas, hydrologically reconnect side channels during high water events, create cover for aquatic organisms, and provide a source of food for aquatic macroinvertebrates.

Aquatic habitat parameters in the project area were initially identified in the Upper Sycan Watershed Analysis and further refined with recent Level 2 stream surveys. The project was incorporated into the Upper Sycan Watershed Restoration Action Plan in 2011. In addition, the project area lies within a forest priority watershed. Other restoration actions in the area have primarily been culvert replacement for aquatic organism passage and some fuels reduction along roads and campgrounds.

ESA and Sensitive Species or Species Habitat Affected

Paradise and Watson Creeks are tributary streams to the Upper Sycan River, which is designated critical habitat for bull trout. Potential habitat for Miller Lake lamprey, a Region 6 Sensitive Species, occurs in both Paradise and Watson Creeks although the species has not been documented in either stream. Redband trout occur in both Paradise and Watson Creeks; however, the species of redband trout occurring in the Klamath drainage is not on the Region 6 Sensitive Species list. Non-sensitive species of interest include Pit-Klamath brook lamprey in Watson Creek and western pearlshell, a mollusk, throughout the project area.

Specific Project Design Features for Resource Protection

The following are project specific design features as stated in the Programmatic Watershed Restoration EA and are the same as the design features from the Regional Aquatic Restoration Biological Opinion (USFWS 2013). These design features have been edited to fit the needs and scope of the project.

1.1 Large Wood, Boulder, and Gravel Placement

a. Place large wood (LW) and boulders only in those areas where they would naturally occur and in a manner that closely mimic natural accumulations for that particular stream type.

b. LW includes whole conifer and hardwood trees, logs, and root wads. LW size (diameter and length) should account for bankfull width and stream discharge rates. When available, trees with rootwads should be a minimum of 1.5x bankfull channel width, while logs without rootwads should be a minimum of 2.0 x bankfull width. Structures may partially or completely span stream channels or be positioned along stream banks.

c. No conifers should be felled in the riparian area for in-channel large wood placement unless conifers are fully stocked and are consistent with project design criteria in vegetation treatment categories. Felled hazard trees can be used for in-channel wood placement.

d. Key boulders (footings) or LW can be buried into the stream bank or channel but shall not constitute the dominant placement method of boulders and LW.

e. Anchoring large wood with cable should be done sparingly, primarily for the protection of infrastructure and in consideration of downstream landowner concerns. Before using cable, attempt to use, when feasible, the following anchoring alternatives in preferential order: (1) use adequate sized wood sufficient for stability; (2) orient and place wood in such a way that movement is limited; (3) use ballasting (gravel and/or rock) to increase the mass of the structure to resist movement; (4) use large

boulders as anchor points for the large wood, and (5) pin wood with rebar to large rock to increase its weight.

22. Remove and use of Large Trees for instream and riparian restoration actions.

a. A wildlife biologist must be fully involved in all "Individual Tree Removal" planning efforts, and be involved in making decisions on whether individual trees are suitable for nesting or have other important listed bird habitat value. This coordination is especially critical when cutting trees within Late Successional Reserves, suitable nesting or dispersal habitat for Northern Spotted Owl (NSO) and or bald eagle management areas.
b. No trees larger than 21 inches will be cut or removed from stands. If trees larger than 21 inches are needed for a restoration project, it will be a hazard tree adjacent to a Forest Road or Danger Tree from a recreational site.
c. Individual trees or small groups of trees (<5) should come from the periphery of permanent openings (roads etc) or from the periphery of non-permanent openings (e.g. plantations, along recent clear-cuts etc). Skidding of large wood should be avoided, trees should be located where they can be lifted and loaded onto trucks from an existing road or disturbed site or directly picked up by helicopter for placement.
d. Single tree removal may only be from the first two lines of trees adjacent to openings described in d, above.
e. When removing LW from an area burned by a wildfire, consult a wildlife biologist to determine the latitude in which trees can be removed and for determining the location and number of trees that can be acquired.
f. Trees selected for LW restoration projects must be spaced at least one site potential tree height apart and at least one crown width from any trees with potential nesting structure for ESA listed bird species.
g. No conifers should be felled in the riparian area for in-channel large wood placement unless conifers are overstocked for the riparian vegetation management objectives and are consistent with project design criteria in vegetation treatment categories.

Additional Project Design Features

An interdisciplinary team reviewed the project and added the following design features:

Botany, Invasive Plants

Sensitive plant populations will be flagged and avoided. Any equipment used in weed-infested areas will be cleaned before entering weed-free areas.

Soils

To limit soil damage and the associated increases in runoff and erosion, heavy equipment (typically excavators) used to move large logs or boulders and set them in the stream would operate when soils are dry and with rutting limited to less than 2 inches deep or the equipment is shut down.

Cultural Resources

Sites will be flagged and avoided.

Monitoring Plan

Monitoring will consist of a variety of methods to determine overall effectiveness of the project. Methods will include photo point, numeric tagging of placed large woody material to determine stability and movement, and establishment of permanent stream channel reference sites using techniques identified in Harrelson, Rawlins, and Potyondy 1994.

Public comments

Comments on this proposal should be received by June 13, 2015. You may comment:

- in person 8:00 a.m. to 4:30 p.m. Monday-Friday at either the Silver Lake or Paisley Ranger District office
- By email to comments-pacificnorthwest-fremont-paisley@fs.fed.us with Paradise Watson in the subject line
- By mail to Rich Pyzik, Fisheries Biologist, P.O. Box 67, Paisley, OR 97638