

BIOP Fly Creek Stream Restoration Project

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Completion Report

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Wallowa-Whitman National Forest

LaGrande Ranger District

LaGrande, OR

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Fly Creek Stream Restoration Project

Fly Creek is spawning and rearing habitat for Snake River Basin summer steelhead, and rearing habitat for Snake River Basin spring Chinook salmon. Both are federally listed under ESA as threatened species.

Historic timber harvest removed the large conifers from the valley bottom greatly reducing the future recruitment of large wood to Fly Creek. An abandoned road was used to harvest and transport trees out of the area in the 1970s. In addition, a splash dam from the early 1900s was located on Fly Creek at approximate river mile 2.0. This was likely the beginning of the removal of large conifers from the valley bottom.

In the 1980s, log weirs were constructed perpendicular to the stream flow in Fly Creek to create pool habitat. Pools that were created were shallow with very little cover and complexity, and created passage barriers to juvenile salmonids during periods of low flow.

Purpose

The purpose of the Fly Creek project is to restore the form and function of aquatic and riparian habitat in order to improve habitat for threatened fish species on 7.96 miles of stream.

Objectives

- Increase quantity and quality of pools
- Increase fish cover
- Increase habitat complexity
- Increase forage availability
- Increase residual pool depth
- Lower or partially remove log weirs that prevent juvenile fish passage at low flows
- Decrease bankfull width to depth ratios within the stream
- Increase number of large and medium pieces of large woody debris in the stream

- Increase spawning gravel recruitment
- Increase stream shading

Partnership

The complex nature of this project required a collaborative partnership between the U.S. Forest Service, Grande Ronde Model Watershed (GRMW) and the Bonneville Power Administration (BPA). BPA and the Forest Service provided the funding for this project.

Restoration Work

The project involves 7.96 miles of stream. The Forest Service completed additional work on Fly Creek beyond the BPA contract in regard to road recontouring, planting, exclosure fencing, and seeding.

Fish Structures

There were 78 structures added to the lower 6.38 miles of Fly Creek. These structures were arranged with multiple pieces of wood and boulders to encourage pool development and improve habitat complexity. Thirteen old sill log structures were partially removed and one was modified by deepening the notch on the log. Five of the structures involved placing rootwad stumps into the streambank in combination with large pieces of wood.



** Fish Structure Site # 29 in 2010 Spring Flows (constructed in 2009)*

Road Recontour/Floodplain Restoration

There were approximately 3 miles of stream bottom road recontouring completed on Fly Creek. The BPA contract included 635 feet. Funding from the Forest Service was used to accomplish the additional mileage. Within the road recontour, there were 6 intermittent and 3 perennial streams that were recontoured to allow for natural flow pattern. Wood (.25 stream mile) was added to these streams to provide stream channel roughness.



*** 2010 Fly Creek Road Recontour/Floodplain Restoration**

Planting

Within the lower 6.38 miles in 2010, there were approximately 2000 deciduous and coniferous seedlings planted and watered. The majority of the deciduous plantings were protected with vexar tubes.



*** 2009 Road Recontour/Floodplain Restoration (seeding occurred in the fall of 2009 and planting occurred in the Spring of 2010)**

Within the upper 1.57 miles (in 2009 and 2010), 2900 deciduous seedlings and 3,000 cuttings were planted. On the majority of the seedlings, drought protection for the seedlings included: scalping (by hand), watering the trees twice during the first year, adding soil moisture granules, mulching and tree mat placement. Approximately, 500 small exclosures were constructed to protect the seedlings.



*** Spring 2010 Deciduous Planting**

Native grass/forb seeding occurred on all sites where soil was exposed due to project operations.

Monitoring

Crosssections: Crosssections have been established on Upper Fly Creek. They will be repeated in 2011. Refer to the attached tables and figures.

Stream Survey: Fly Creek was surveyed in 2009 (Pre project) and 2010 (Post Survey). The surveys indicated the following where wood was placed (reaches 1-3): (1) The number of pools increased by 7; (2) The average residual pool depth increased by .19 feet; (3) The medium and large size wood classes increased by 176 and 15 pieces, respectively; (4) The amount of wood per mile increased for both size classes by 22 per mile and 2 per mile, respectively. Refer to the attached table.

Photo points: Photo points were established prior to and after project completion on structure sites, road recontour segments, and planting areas.

Noxious Weeds: Noxious weeds were surveyed in 2010. There was little to no increase in the amount of area where noxious weeds were present prior to project implementation. Noxious weeds will continue to be

monitored in the future. Treatment will occur by the USFS, where needed.

Stocking surveys: Stocking surveys occurred on planted seedlings. Results after the 1st growing season consisted of: (1) Cuttings had an average survival rate of 57%. (2) Deciduous seedlings had an average survival rate of 90%. (3) Conifer seedlings had an average survival rate of 95%.



** Spring 2010 Cutting Planting*

Deciduous seedlings in the upper mile of Fly Creek (RM 7 – 8) had a survival rate of 73% after two growing seasons.

Spring of 2011 (This portion of the project is funded by USFS and not apart of the BPA contract.)

- (1) Approximately, 2000 deciduous and conifer seedlings will be planted within the lower 7 miles of Fly Creek on approximately 2 miles of road recontour.
- (2) Approximately, 1000 deciduous cuttings will be planted in the upper mile of Fly Creek. These cuttings are replanting areas that were washed out by 2010 flooding.