

Partnership for the Umpqua Rivers



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MAR 25 2016

*Review & Approval
3/23/2016*

Rock Creek Instream Salmon Habitat Enhancement Project (OR)

OWEB Project # 213-8004-10553
Second Post-Project Monitoring Report
Exhibit D



March 8, 2016

Background

The Oregon Coastal Coho Assessment (2005) states that hatchery influence and lack of habitat are the main limiting factors for wild fish production in the North Umpqua Watershed. Douglas County's only remaining hatchery is located near the mouth of Rock Creek. Competition for habitat and food, increased predator populations, genetic changes in wild fish and increased infectious disease problems are a few potential concerns that may adversely impact wild salmonid populations. The Oregon Department of Fish and Wildlife (ODFW) has identified High Intrinsic Potential habitat for Oregon Coast (OC) coho throughout the Rock Creek watershed, but most of the same area is also currently identified as having poor winter habitat. The lack of refuge from high winter flows in the tributaries causes juvenile fish to be flushed into the mainstem North Umpqua River lowering winter survival of rearing fish.

As part of a multi-agency review process, the North Umpqua Watershed was recognized as a "salmon stronghold" by the Wild Salmon Center (WSC). The WSC, National Fish and Wildlife Foundation (NFWF) and the Oregon Governor's office have joined to support the stronghold concept. The Oregon Governor's Fund (GF) for the Environment recently realigned to focus on supporting the stronghold watersheds in Oregon through a competitive grant program and awarded funds for instream restoration work in Rock Creek during 2013.

Restoration in Rock Creek, a 13,465 acre tributary to the North Umpqua River, is based off of identified bottlenecks to fish production. The Rock Creek Area Assessment and Action Plan (2006) listed seven specific limiting factors that impede salmon recovery:

1. Lack of winter habitat and refuge from high winter stream flows.
2. Elevated summer temperatures that stress fish.
3. Lack of gravel substrate required for spawning.
4. Fish passage barriers or obstacles preventing access to habitat.
5. Hatchery influence on genetics of wild fish populations.
6. Elevated peak flows due to lack of wood and boulders in the stream.
7. Lack of adult holding pools and harassment of fish in existing pools by humans.

Project work was completed in summer 2013 and included restoration in East Fork Rock Creek as well as a short reach in the upper mainstem Rock Creek. Project designs for 2013 were similar to designs already implemented in the area. Restoration reaches on BLM lands were chosen to connect restoration contiguously across multiple ownerships. Structures placed in Rock Creek created specific habitats: slow flowing meanders, juvenile fish refuge areas, spawning gravels for spring Chinook, summer steelhead and coho and deep pools for upstream migrating fish.

Project Description

ODFW Hydromitigation Biologists led design work for 2013 project work in Rock Creek. They determined the locations, designs, material needs and equipment access for each of the 34 sites. BLM fisheries and hydrology staff and PUR staff were mentored by ODFW staff through this process due to the new staff on board. ODFW Mitigation Biologists work almost exclusively in Rock Creek on instream restoration projects on private lands and were most qualified with the most on the ground experience in this watershed.

Structures were designed based upon sites already in place in the watershed that are providing the highest quality summer and winter fish habitat for the many fish species

present. The biologists also used results from two ongoing monitoring projects in Rock Creek (Stillwater Science East Fork Rock Creek; Harrington Creek Side Channel Juvenile Coho Survival) to select the best locations for sites. Rock Creek is much more gravel-rich than other streams in the Umpqua and this was a critical design consideration.

Boulders (669), logs (62) and trees (30) were placed at 12 sites throughout 0.75 miles of Rock Creek. On 1.9 miles of East Fork Rock Creek, 1093 boulders, 103 logs, and 15 trees were placed at 22 sites. A total of 160 logs, 45 trees, and 1,792 boulders were placed at 34 sites throughout 2.65 miles of Rock Creek and East Fork Rock Creek. Sites were located on BLM, FIA and Seneca Jones Timber lands. PUR, BLM and ODFW biologists worked together to coordinate staging, traffic control, and placement of materials. Project work was completed in early July 2013.

An additional 1.0 mile of East Fork Rock Creek, on BLM land was planned to be part of this project. Due to the need for additional wildlife clearances to be made, this area was passed over for this year. Once these issues are resolved, we will return to this portion of the project area and complete the project work.

Changes to original proposal

Project work on the BLM portion in upper East Fork Rock Creek was delayed until additional wildlife clearances can be made. The large size of the trees in the riparian stand has complicated efforts to pull whole trees, to pull logs through this habitat, to drive through with an excavator or to use standing trees as tailholds for the line pulling machine. Additional time is needed for planning this portion of the project.

Boulder sizes called for in the design specifications for lower East Fork and Rock Creek were revised during spring 2013. Boulder size was increased from 3' - 4' rocks to 5' - 6' rocks. This significantly increases the yardage per rock. Therefore less rocks were ordered, but each rock was bigger. Total cubic yardage stayed roughly the same. Sites in upper East Fork Rock Creek were redesigned to include 93 more boulders than originally designed. The yardage of rock was delivered for the 2013 project was equivalent to what was planned in the application.

Lessons Learned

A tremendous amount of coordination was needed to implement this project work. Lessons learned included the need to keep all the partners aware of the timelines and funding situations. The Rock Creek Team determined that a monthly coordination meeting was necessary to keep planning and project work moving on both private and federal lands. Monthly coordination meetings will be the tool to keep on track for implementing the Rock Creek five-year plan that PUR, ODFW and BLM staff have developed.

Partners also met after the project was complete to discuss strengths and weaknesses of project implementation so that any issues present in 2013 would be resolved for 2014 project implementation. The main issues to resolve included bringing all partners to the table during budget discussions. The various forms of mitigation money, as well as the

cash match, was difficult to explain in lengthy spreadsheets. Face to face meetings would have saved time in the end, rather than communicating through email.

Meeting Goals

In 2013, project work focused on boulder and wood placement at 34 sites throughout 0.75 miles of Rock Creek and 0.9 miles of East Fork Rock Creek. This work together with previously restored areas makes restoration nearly contiguous across 7.5 miles of various private and BLM parcels. The placement of boulders, logs and trees increased cover habitat and pools in areas with virtually no cover and very wide channels. Instream structures have provided "lee" habitat along the edge of the stream for juvenile fish to escape high flows. Some structures were designed to redirect water and produce scour holes where spring Chinook and summer steelhead can spend summer months. In other areas, log and boulder structures were used to reconnect historic side channels and provide additional high quality juvenile fish habitat. Accumulation of gravel above some of the structures has provided additional spawning habitat. Creating so many different habitat types is necessary due to the many runs of fish in Rock Creek and its' tributaries that have different habitat needs throughout the year.

Photo point monitoring was used to track changes in stream width, area of spawning gravel, and degree of stream connection with the side channels present in Rock Creek. See Figures 1 through 3. Effectiveness monitoring will also include ODFW habitat and fish spawning surveys. Monitoring of this project is required for 2 years, but will likely be monitored much longer as a part of determining if the 5th field watershed restoration approach was effective at decreasing threats to native fish runs in Rock Creek.

Maintenance and Modifications

No maintenance or modifications have been needed.

Costs

Since no maintenance or modifications were required with this project there were no additional costs. Monitoring was completed by ODFW. ODFW Biologist time and travel is in-kind match to this project. Costs were incurred by PUR to write the report and included 3 hours at \$30 per hour for \$90.

Public Awareness

Rock Creek is home to RockEd, an innovative, grassroots education effort focused on natural resources immersion learning. A dedicated building is on site at the Rock Creek Hatchery to host students of all ages as well as community meetings. Interpretive trails around the hatchery are also associated with the program. Project work across Rock Creek is toured by students to show the effects of instream restoration on fish habitat. These specific sites have been toured by BLM biologists hosting groups of students. The location of the sites make them easy to get to with groups. Touring these sites, in addition to education activities at the hatchery, show students a variety of fisheries management techniques.

Photo Point 1



Description

Figure 1a. Looking upstream at photo point 1 before log and boulder placement.

Pre-project: 01/31/2013



Figure 1b. Looking upstream at photo point 1 after log and boulder placement.

Post-project: 07/12/2013



Figure 1c. Looking upstream at photo point 1, 3 winters following implementation.

Post-project: 03/02/16

Photo Point 2



Description

Figure 2a. Looking downstream at photo point 2 before log and boulder placement.

Pre-project: 01/31/2013



Figure 2b. Looking downstream after log and boulder placement.

Post-project: 07/31/2013



Figure 2c: Looking downstream at photo point 2, 3 winters following implementation.

Post-project: 03/02 /2016

Photo Point 3



Description

Figure 3a. Looking downstream at photo point 3 before log and boulder placement.

Pre-project: 01/31/2013



Figure 3b. Looking downstream at photo point 3 after log and boulder placement

Post-project: 07/31/2013



Figure 3c: Looking downstream at photo point 3, 3 winters following implementation.

Post-project: 03/02 /2016

