



## Upper Gales Creek Large Wood Placement

September 2010 to March 2012

### Project Background and Description

This project is located in two upper Gales Creek watershed main stem stream reaches (totaling 1.25 miles). The "Lower Reach" is a 0.75 mile stream reach located upstream of the confluence with the North Fork Gales Creek (river miles 21.5 to 22.25 ). The "Upper Reach" is a 0.3 mile stream reach upstream of the ODF campground (river mile 23 to 23.3).

The 2007 high water event caused mass wasting and slides that injected huge amounts of gravel and cobble into the creek above these sites. The placement of large wood increases the retention time of the gravel and cobble and facilitates sorting. This helps create prime spawning and rearing areas for salmonids. Retention of the gravel and cobble also decreases the width to depth ratio which increases the interstitial flow through the gravel and cobble bars. This decreases stream temperature which results in better salmonid habitat.

Over 170 whole trees were placed in selected areas of these two reaches. This large wood will create pools and smaller additional channels to provide refugia areas for the native fish as well as help retrain gravels in this area of the stream system.

Six months following the large wood placement, native conifers were planted in riparian and upland areas that were disturbed by the heavy equipment used to place the whole trees.

### Project Funding and Support

#### Cash

Oregon Watershed Enhancement Board	\$60,175
OWEB Grant Number 210-3059	

#### In-kind

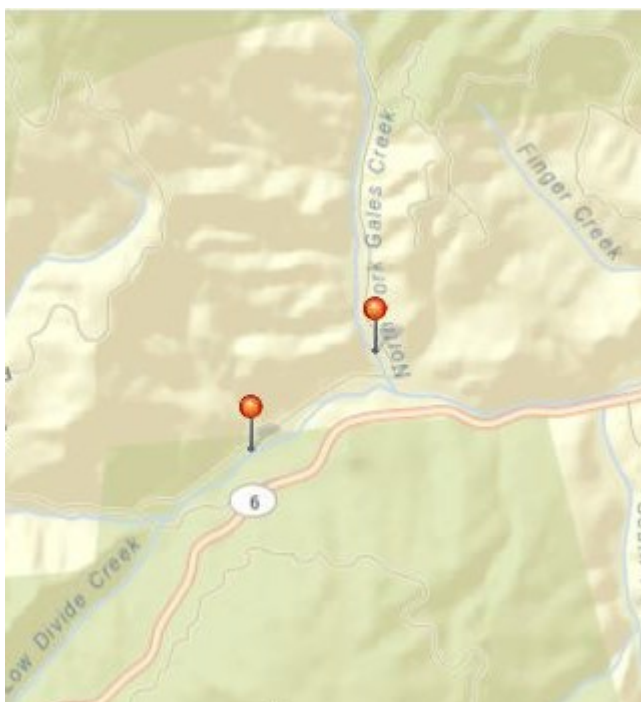
Oregon Department of Fish and Wildlife	\$10,360
Oregon Department of Forestry	\$42,000

#### Landowner

Oregon Department of Forestry



Upper Reach: Before Log Placement, June 2011



This map shows the location of the North Fork Gales Creek Large Wood Project and the Upper Gales Creek Large Wood Placement Project



## Upper Gales Creek Large Wood Placement

September 2010 to March 2012

### Implementation

This project was done under the Oregon Forest Practices Act, in conjunction with an Oregon Department of Forestry thinning activities in adjacent uplands. The project contractors followed best management practices with oversight from ODFW and/or ODF personnel. The log placements followed the guidelines in the ODF/ODFW Large Wood Placement Guide for both size and length of the logs and the diameter and stream size and slope requirements outlined in the guide.

Lower Reach: 105 whole trees were placed in 10 stream segments during September 2010.

Upper Reach: 63 whole trees were placed in 7 stream segments during September 2011.

A year after the log placement in each reach, a contracted crew planted a mix of western red cedar, Douglas fir and western hemlock in areas that were disturbed by heavy equipment placing the trees in both the lower and upper reaches.



Upper Reach: Log Placement, October 2011



Upper Reach: Post Log Placement, August 2012

### Effectiveness

After two winters of high flows, the large wood has captured small wood and other detritus and organic material, which collectively serve as important substrate and nutrients for invertebrates and small fish. Large wood pieces often have re-directed flows toward the banks and/or restricted them to smaller side channels, thus creating narrower, deeper channels with more shade and cooler flows. In some areas, these flows undercut existing riparian vegetation and the undercut banks provide shade, cover, food, and protection for fish and wildlife. In some areas, large wood has created major gravel bars in mid-channel that will form main stem islands, with multiple side channels that will rapidly become vegetated and increase shade, cover, and organic material to the stream. Plunge pools have been created on the downstream side of logs, deeper, cooler, shaded waters provide cover and rest and feeding sites for small fish and invertebrates. Gravel has been deposited on the upstream side of some logs and maybe used as spawning beds for adult fish during periods of adequate flows. During periods of low flow, these same sites provide interstitial flows that contribute to cooler water temperatures during summer months.

### Economic Benefit

Contractors from the surrounding area were used for all phases of the project which contributed to the local economy.