

## Trout Creek Recovery, Six Years After Removal of Hemlock Dam

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### Abstract

In 2009, the Gifford Pinchot National Forest removed Hemlock Dam and reconstructed the historic channel upstream of the dam. The dam was located on Trout Creek, a tributary and important steelhead producer in the Wind River watershed. Built by the Civilian Conservation Corps in 1935, the dam supplied electrical power and later irrigation storage until 1997. The dam also obstructed migration of Lower Columbia River steelhead, and affected water quality and instream habitats throughout lower Trout Creek.

The 26-foot high, 180-foot long concrete dam was removed by a local excavation contractor over a two month period. The project included excavation of over 50,000 cubic yards of sand and silt from behind the dam to expose and permit reconstruction of the historic channel through reservoir deposits. Streambanks were built using over 1,000 logs and whole trees. The entire site was then planted and seeded heavily to protect against invasive weed colonization. No hardware or other non-native materials were used in the constructed channel.

With funding support from BPA and other organizations, the Forest Service, USGS and Washington Department of Fish and Wildlife have monitored the effects of dam removal, tracking changes in water quality, substrate, benthic macroinvertebrates, and steelhead returns.

Some key findings from this work: The project resulted in unobstructed passage for steelhead and other aquatic organisms. It restored sediment routing processes, improved substrate and habitat diversity in the reservoir reach, and changed water temperature dynamics in lower Trout Creek. The abundance and diversity of benthic invertebrates was increased both in the reservoir reach and downstream reaches of Trout Creek. Steelhead returns to Trout Creek have increased since dam removal suggesting a positive response to the physical changes in habitat. Continued monitoring of adult and juvenile steelhead will help quantify the effects of the project.