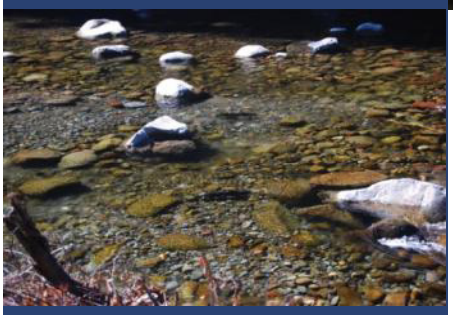
Science, Service, Stewardship

NOAA RESTORATION CENTER

The Salmon River, about 40 miles away from Portland, Oregon.



Spring Chinook were found spawning in a constructed riffle in September 2010.

The *Community-based Restoration Program* provides funding and technical assistance to restoration projects that benefit coastal, marine, and migratory fish habitat.

Salmon River Aquatic Habitat Restoration Project Location.

Salmon River Aquatic Habitat Restoration

The Salmon River sub-basin is one of the Sandy's four major watersheds, draining 116 square miles, and providing 28 miles of anadromous fish habitat for threatened spring Chinook salmon, coho salmon, and steelhead trout. The Salmon River originates on the south slope of Mt. Hood and flows for 33 miles before entering the Sandy River. The Salmon was designated as a Federal Wild and Scenic River in 1988. The lower 14 miles of the Salmon River provide some of the most diverse and productive salmon and steelhead habitat in the entire Sandy River basin.

Though still relatively productive, the aquatic habitat of the Salmon River has been impaired by the legacy effects of land uses such as timber harvest and flood control. Current federal land management, county land use ordinances, and the Salmon's Federal Wild and Scenic designation protect much of the watershed and have put it on a restoration trajectory.

In 2010, The Freshwater Trust began large-scale, in-stream restoration work in the Salmon River. Over the next several years, The Freshwater Trust and partners will restore habitat complexity to an 11,500 foot reach of the Salmon River by implementing restoration actions, including side channel restoration, engineered log jams, large wood habitat features, and pool-tailout habitat features. NOAA Restoration Center, Fish America Foundation, Oregon Watershed Enhancement Board (OWEB), National Forest Foundation, City of Portland, Bureau of Land Management (BLM), US Forest Service (USFS), and many other partners have contributed to this project's success.

Side channel pre-project September 2008.

Re-opened side channel post-project September 2010. Juvenile coho were observed in side channel after restoring flow. Note large wood habitat structures in post-project image.

Restoring Habitat

Timber harvest began in the Sandy basin in the 1940s. Following a major flood in 1964, sections of the Salmon River were straightened and diked, and large wood was removed from the river and floodplain. This channelization coupled with the loss of large wood from the river corridor decreased overall habitat diversity and complexity. Side channels, meanders, wood jams with scour pools and pool tailouts crucial to providing habitat for salmon and steelhead were lost. By restoring these features the project increased the amount of habitat available for salmon and steelhead spawning and rearing. Since the first phase of the project was completed in 2010, the river has experienced severe flooding. By monitoring the project area closely, The Freshwater Trust is learning which restoration techniques perform best under high flows. Their findings will inform future phases of restoration on the Salmon River.

Engaging Local Youth

The Freshwater Trust and Sandy River Basin Watershed Council have teamed up to coordinate student participation in the Sandy River Basin Partners' restoration efforts through community projects and environmental education. Students from Portland's Leadership and Entrepreneurship Public Charter High School and David Douglas High School monitored the project before and after implementation. The students took pre- and post-project photo points, collected water quality and macroinvertebrate data, completed habitat assessments, and helped develop and implement a revegetation plan.

Building Partnerships

The Salmon River Aquatic Habitat Restoration Project involved collaboration among a variety of partners, including The Freshwater Trust, BLM, USFS, Sandy River Basin Watershed Council, and The Sandy River Basin Partners. Funding and in-kind contributions were provided by OWEB, BLM, USFS, National Forest Foundation, and City of Portland. The NOAA Restoration Center and its partner Fish America Foundation contributed $50,000 for 2010 project work and have committed $68,525 for 2011 project work.

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High school students helped monitor and replant the project site.

*All project photos courtesy of The Freshwater Trust.