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Removing barrier allows Big Creek to run along its natural path

Project could enhance the return of historic fishing runs

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ALEX PAJUNAS — *The Daily Astorian*
A Vinson Brothers Construction Company excavator carefully diverts water from Big Creek off to the left and into its historic channel July 15. The project, taking place more than six miles upstream from the Big Creek Fish Hatchery, will allow salmon easier access to the upper reaches of the creek and reconnect to historic wetlands that will provide spawning and rearing habitat.



ALEX PAJUNAS — *The Daily Astorian*
Dwain Farner, an equipment operator with Vinson Brothers Construction Co., watches the flow of Big Creek as it moves into its

KNAPPA - Many decades ago, to protect a mainline logging road from flooding, a section of Knappa's Big Creek was moved off its historic streambed and into a new channel blasted out of bare basalt.

Safely out of the road's way on Hampton Affiliates property, the creek hurtled through the rock-walled chute about six miles above Big Creek Hatchery.

For the 25 years he's worked for Hampton, logging supervisor Bud Henderson, also a member of the Nicolai-Wickiup Watershed Council, has known the chute was a problem.

But it became a real issue in 1994, when Big Creek hatchery managers started allowing unmarked adult salmon and steelhead past the hatchery walls to spawn naturally in the creek bed.

The chute created a velocity barrier for the fish. The water was flowing so fast, it stopped salmon and trout from swimming through and accessing 11 miles of spawning grounds and rearing habitat above.

"Through fish monitoring we did through the watershed council, we determined that chute was an impediment to upstream migration of adult salmon and steelhead," Henderson said. "It was a barrier to up and downstream migration of juvenile fish in almost all stages."

This summer, a project coordinated by Hampton and the Nicolai-Wickiup Watershed Council used more than \$388,000 to realign the mainline logging road, install two bridges, block off the chute and move the stream back to its historic channel.

The project lifted the barrier to valuable fish habitat above the hatchery, and could yield a major boost in natural fish production on the creek.

"The historic channel is going to provide easier access to upper reaches of Big Creek and also provide spawning and rearing habitat," said Henderson. "It was a straight rock channel before now, so this reconnected the stream to historic wetlands and added additional habitat."

When the mainline logging road was originally built, it was constructed only a few feet above the creek at normal flows, Henderson said. During wintertime high water events, the creek would take out the bridges, so eventually the logging company blasted a new path for

historic channel.

the water to travel through nearby rock.

About \$189,000 of the funding to reset the historic creek bed came from the Oregon Watershed Enhancement Board, which draws funds from state lottery and salmon license plate revenues as well as federal salmon recovery programs. The Lower Columbia Estuary Partnership contributed \$110,385 of Bonneville Power Administration funds and \$66,491 from the National Oceanic and Atmospheric Administration. U.S. Fish and Wildlife Service kicked in \$9,700, and Hampton Affiliates spent \$13,070, made up mostly of in-kind materials and labor.

"Big Creek is the largest and potentially most productive salmon stream in the Nicolai-Wickiup watershed," said Henderson. This fall and winter, Big Creek hatchery is transporting unmarked steelhead trout and coho salmon around hatchery diversions and putting them into creek "to do their own thing," he said. "It's easier for them to do that now."

The Big Creek restoration project was years in the making. Columbia River Estuary Study Taskforce Executive Director Micah Russell said his group worked with the watershed council to study how naturally spawning fish were using the creek before any restoration plans were made. They tagged the fish with tracking devices and used radio receivers to see how far up the creek the fish were swimming.

"We discovered they could only get to a certain point and then there was a velocity barrier," he said. "It was too steep and too fast for them to get beyond all the pooling beneath it."

The restoration project reconnected the river to its historic channel and allowed fish to swim around that velocity barrier, greatly expanding their habitat. This winter, CREST staff will be checking to see whether the connection is increasing spawning in the upper reaches of the creek.

"With that much more opportunity, there should be a bump in production - more wild fish leaving and returning to that watershed," said Russell. "We have to do some more science in between to really show that. From what we've seen of natural spawners - steelhead, cutthroat, coho - several species are using that habitat, and they are producing fish."

The Nicolai-Wickiup watershed is one of the bigger watersheds on the Lower Columbia River, Russell said, and Henderson has pushed forward "a lot of aggressive restoration work" in his dual role on the watershed council and as a logging supervisor for Hampton.

"Bud has been a tremendous ally," Russell said. "He has a budget for restoration work, which is almost unheard of. Not so many logging companies are as proactive as that."

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