

Fish preservation via steel, concrete and natural cover

The fish screens — a relatively new design — are part of the effort to bring back salmon and steelhead runs

By Kate Ramsayer / *The Bulletin*

Published: March 21, 2011 4:00AM PST

SISTERS — Sparks flew along Whychus Creek late last week as welders worked to piece together specialized fish screens along two parallel 140-foot concrete chutes. Nearby, a crane lowered a large frame into place around steel rods, prepping for more concrete to be added to the structure.

With less than a month to go before the start of irrigation season, crews have been busy constructing a complex \$1 million fish screening structure at the Three Sisters Irrigation District diversion. The relatively new design will prevent resident fish — as well as future runs of steelhead and salmon, currently being introduced into Whychus Creek — from being swept down the district's irrigation canal.

And as the crews build the screens in the forest about three miles upstream of Sisters, environmentalists have expressed concern that new state legislation would be a step back for fish protection measures.

The Three Sisters Irrigation District's diversion on Whychus Creek was on a statewide top 10 list of places that needed additional protections for fish, said Mathias Perle, project manager with the Upper Deschutes Watershed Council.

The irrigation district has water rights that allow it to take about 150 cubic feet per second of water, he noted, which at times could be almost 90 percent of the water flowing down the creek.

"They take so much water, and it has the potential to take a lot of fish because of that," he said. Anecdotes about a time when the canal was emptied tell of 5,000 fish being trapped in the canal at one point, he said.

Whychus Creek is a key stream for the ongoing effort in the Deschutes Basin to bring back runs of salmon and steelhead. The area around the irrigation diversion has also been subject to significant



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A worker installs screens inside concrete chutes several miles upstream of Sisters. The screens are designed to keep fish in Whychus Creek and out of the Three Sisters Irrigation District's pipes.

erosion over the years, Perle said. All of that combined to make it a prime site for the watershed council, the irrigation district and the U.S. Forest Service — which manages the surrounding land — to collaborate on a restoration project and fish screen installation.

Last fall, crews started rerouting a stretch of the creek, smoothing its slope to allow fish to swim upstream, and planting vegetation and installing logjams and gravel beds to improve the habitat for fish and other species.

“What we’re trying to do now is get it back to a more natural state,” Perle said. The whole restoration and fish screening project cost about \$2.3 million, he said, which was raised from federal and state grants and organizations like the Pelton Round Butte Fund. The irrigation district did in-kind work to leverage some of the funds, he said.

And this winter, crews started installing the fish screens.

While many screens that keep fish out of irrigation canals are vertical barriers, the ones being installed along Whychus are horizontal — a design developed and patented by farmers in an irrigation district near Hood River, Perle said. When irrigation season starts, gates at an existing dam will open, allowing water into a sediment bay, where rocks and debris can settle out. The water then flows into another section, and is directed to two parallel chutes. In each, a sloping and narrowing screen allows most of the water to drop down, but it sweeps the fish forward.

“The water going across (the screen) is so much faster than the water going down, so everything shoots forward,” Perle said.

The water flows into 54-inch irrigation pipes, to be delivered to farmers, while the fish are diverted into a smaller pipe that empties back into a protected section of Whychus Creek.

“It’s the right thing to do, in terms of keeping resident and anadromous fish out” of the canal, he said, noting that the irrigation district voluntarily installed the screens.

Kate Ramsayer can be reached at 541-617-7811 or at kramsayer@bendbulletin.com.



Photos by Rob Kerr / The Bulletin

Kevin Bickong welds a support bar on the fish screen structure that is being installed at Whychus Creek, west of Sisters. Crews are working to finish the screens before irrigation season starts on April 15.



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Fish that are diverted from the irrigation pipes will be flushed down a separate pipe that will drop them back into Whychus Creek at a site designed to provide cover and protection from predators.