

THE RIVER RUNS THROUGH IT...JUST LIKE IT USED TO: Umpqua National Forest's Tiller Ranger District hosts thriving instream fisheries rehabilitation program

Rotor blades clip the cloudy skies above the tree tops lining the banks of Jackson Creek on the Tiller Ranger District of the Umpqua National Forest in southern Oregon. Standing midstream beneath the Chinook helicopter, a Columbia Helicopters crew works to situate the few tons of tree currently hanging from the ship's long line. On a rise a few hundred feet uphill, a man with a clipboard and radio in hand watches his plan unfold.

Tiller Ranger District Fisheries Biologist, Bob Nichols, is the draftsman behind the majority of instream fisheries rehabilitation work that is taking place along the South Umpqua River and its tributaries. After arriving at Tiller in 1997, Nichols "fell in love with the district" and the Umpqua watershed's fish species. Having completed his degree in environmental science at Utah State University, Nichols found that the river habitat of the Cascades proved an exciting contrast to the desert landscapes of his previous ranger districts.

His first Umpqua National Forest instream restoration project, in 1998, came shortly after his arrival on the Forest and took place on the North Umpqua Ranger District. Early on, Nichols realized that instream work is the "ultimate problem-solving effort." Instream rehabilitation provides fish with revitalized habitats and spawning grounds.

"We listen to the stream and design restoration treatments based on what we know about functional streams. If there's a missing component, we fix it," says Nichols about the basic principles behind instream rehabilitation.

Many of the area's streams can be revitalized with two materials: gravel and wood. Native fish species on the South Umpqua River and its tributaries need cool water temperatures to thrive, something that the watershed struggles with, especially during the heat of summer. By building log structures across streambeds, Nichols and his team are able to aggregate preexisting gravel beds. As water flows beneath the buildups, water temperatures naturally cool. The instream projects also seek to create stable spawning beds, refuge habitat and flood plain connectivity.

"We try to see what's functioning in natural, unimpacted streams," describes Nichols. "From there, we see what is going to last, what mimics the natural process, and what isn't going to fall apart."

The Tiller Ranger District's instream fisheries work is guided by routine stream surveys, which have been conducted on the District since 1989, as well as, by observations and professional assessment. Nichols works closely with Amy Rusk, Tiller Ranger District's hydrologist, and Casey Baldwin, a fisheries biologist also based out of Tiller to walk the course of each creek, measuring pools, riffles and wood debris in order to better understand the stream as a whole. By completing these surveys on a routine basis, Nichols and his team are able to measure and monitor streams before and after instream restoration.

“It’s fun to watch [the streams] after the wood comes in,” explains Rusk. “You can see how [the streams] will change after high flows, returning back to the way that they should be functioning.”

Often times, the team enlists the aid of aerial support to complete their work. Tiller Ranger District is the steepest of the Umpqua’s four districts, making many stream portions inaccessible by road. Rather than cutting in miles of new road systems and disturbing large portions of untouched land, the team has largely relied on helicopters. Not only do acres of forest remain unscathed, but helicopters are also an efficient method of hauling the logs into place in a short time. During the five days of 2014’s instream project, over 700 logs and trees were flown and placed into stable configurations along Jackson Creek and the Middle South Umpqua Watershed.

Hazard trees from around the Tiller Ranger District provide the timber for the majority of the instream restoration work. In recent years, logs have been collected from previously burned areas, blowdown sites and road systems. The trees’ quality is typically not high enough to consider selling the wood to lumber mills.

In the months prior to the physical implementation of log structures, team members revisit each site. They prepare basic sketches of the log structures that he thinks will create the best configuration for the streambed.

“I love the problem-solving part,” Nichols says as a wide grin spreads across his face. “There’s this great mixture of technology, science and art to [instream designs].”

Instream rehabilitation work is a year-around project, but the window for the physical implementation process begins mid-summer and runs through early autumn. Before on-the-ground implementation can begin, however, a number of logistical tasks must be completed.

Nichols and his team work to partner with federal and state agencies, watershed conservation organizations and local resources. In recent years the Forest Service has partnered with the South Umpqua Rural Community Partnership, Ecotrust, Oregon Watershed Enhancement Board, and Partnership for the Umpqua Rivers. These partnerships are crucial to the instream process. Nichols receives aid in seeking grants and funding for the following year’s projects. Each proposed instream project must be cleared through procedures and guidelines stipulated by the National Environmental Protection Act, the Northwest Forest Plan and the Endangered Species Act.

While the Forest Service spearheads the instream initiative, they rely heavily upon their partners, as well as, local contractors. Projects generally employ people from within the community to help complete instream construction.

“Instream work is something easy to believe in,” asserts Nichols. “It’s something that I can get most of the public to support and the grant funding to pay for.”

Technology, and the science surrounding instream restoration, is continuing to evolve. Nichols and his team periodically revisit previous years' sites to assess whether or not the structures were successful. In some cases, they will modify previous designs to enhance efficiency.

Nichols, Rusk and Baldwin oversee a myriad of other projects for the District, including timber sales, range work, road project evaluations and fuels treatment projects. However, it's easy to see that Nichols and his team are passionate about the instream fisheries rehabilitation work that they do.

"I love fish," reflects Baldwin. "So there's nothing more satisfying than to see Coho or Chinook spawning on a gravel bar that you created or set in motion to create."

Born and raised in the tiny mountain community of Kernville, California, Jaimie Olle is a seasonal forestry technician on the Diamond Lake Ranger District handcrew on the Umpqua National Forest. She graduated from Seattle University in 2014 with a double-degree in strategic communications and creative writing. Combining her passion for the outdoors and people, she plans to make a lifetime career with U.S. Forest Service.