In This Together: Partnerships With Land Managers Inform Research for Whole Stream Restoration

By Rachel White

Published September 9, 2024

In This Together

The Pacific Northwest Research Station is encouraging projects like this that follow the principles of "coproduction" – an approach to research that fosters deeply rewarding partnerships with those who need and use information, so that they can help enhance the accessibility of the work.

Research ecologist Steve Wondzell's work with the USDA Forest Service Pacific Northwest Research Station focuses on stream-groundwater interactions. But the wet climate of Corvallis, Oregon, where he now lives is not his native habitat. He grew up in New Mexico and spent his early career as a desert plant community ecologist.

Photo credit: USDA Forest Service photo by Steve Wondzell. Middle Fork John Day River in northeastern Oregon.

"When people ask me how long it takes to get used to the rainy winters, I say, 'I don't know,'" he joked. "'I've been here 36 years, and I'm still not used to it.'"

When Wondzell's work takes him east of the Cascade Range, however, to support river restoration on the John Day River or Medow Creek in central and eastern Oregon, respectively, he feels right at home. "Eastern Oregon is more like New Mexico. I have always loved the east side of the state," he said.

The real draw for Wondzell, however, is the need for research east of the Cascades: "Much of our Forest Service research happens on the west side, but the public land ownership is so much greater in the eastern portion of the state."

Agency partners such as American Indian tribes, national forest land managers, and ranchers have unique information needs, and he directs his research accordingly.

Cooling the Upper Middle Fork John Day River

Wondzell's study of the upper Middle Fork John Day River developed through an effective partnership with the Confederated Tribes of Warm Springs. The river supports spring Chinook salmon, but it is poorly shaded. Some summers, stream temperatures get too hot for the returning adult salmon, killing some before they can spawn.

"The [Confederated] Tribes were planting riparian shrubs and they wanted to know if growing [vegetation that will cast] shade could offset expected increases in stream temperatures. They were super supportive and interested in research," Wondzell said.

The plantings had limited success, in part because deer and elk ate so many of the shrubs. But the Confederated Tribes were still keen to learn the results of Wondzell's research. His team used computer models to simulate how shade plantings could affect stream temperatures under projected increases in air temperature resulting from climate change.

The team's model simulations clearly showed that restoring this kind of riparian forest could offset the effects of future increases in temperature.

"Stream temperatures are far more sensitive to changes in shade than to changes in either air temperature or stream discharge," according to their report. In fact, the study found that the effect of shade planting could reduce future stream temperatures to below what they are today—even under a warmer climate and with much lower late-summer streamflow.

This provided evidence that efforts to continue shade planting would be worth it. "People were very interested in the outcome," Wondzell said.

The Pacific Northwest Research Station is encouraging projects like this that follow the principles of coproduction—an approach to research that fosters effective partnerships with those who need and use the information, so that they in turn can help enhance the accessibility of the work.

Having interested and engaged partners, like the Confederated Tribes of Warm Springs, is vital for the success of coproduction.

“You need practitioners who actually want science to ask hard questions about what works and what doesn’t work,” said Wondzell. “With the right partners, coproduction has real value. People outside the research station are more in tune with the land and the questions, and their input can really help us move in directions that are important to land managers.”

Restoring Meadow Creek

Wondzell is currently working with another project built on partnership: the Meadow Creek collaborative on the Starkey Experimental Forest and Range in northeast Oregon. Based on longstanding partnerships with the Columbia River Intertribal Fish Commission (CRITFC), the Confederated Tribes of the Umatilla Indian Reservation (CTUIR), the Bonneville Power Administration, Wallowa-Whitman National Forest, and others, the Meadow Creek project integrates research, monitoring, and management.

“The Meadow Creek project is a bottom-up, grassroots group of people, aimed at research questions that are locally and regionally deemed important,” said Wondzell.

“It’s been really neat to work with CRITFC and CTUIR because they have a long and deep cultural interest in the health of the landscape. They look at the landscape differently than a rancher or a forester. It’s a different cultural setting,” he added.

“At project meetings and on field trips, all are present at the table,” Wondzell explained. “Restoration can’t be successful on only one landownership. It’s a whole-stream effort. It’s at a scale larger than any one landownership and it works only by having all the voices in the room.”