A postfire restoration partnership that cultivates public trust

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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.

Not long after the 2018 Mendocino Complex fires, Hinda Darner, a Forest Service fuels specialist, got a phone call from a stranger. Darner oversees fuels reduction and vegetation management on about half of the Mendocino National Forest. The caller was Morris Johnson, a research fire ecologist with the Pacific Northwest Research Station.

"I asked him how he found me," Darner recalled. "He laughed and said whenever he hears of a large wildfire on a national forest he looks up the fuels officers. He was in search of partnerships with land managers, and I was excited to have this opportunity to work together." As a fire ecologist, Johnson needed data; and in return he was hoping to provide useful information to Darner and her colleagues.

Wildfire is a major management concern on the Mendocino National Forest, located in northern California a few hours north of San Francisco. Two years after the 2018 Mendocino Complex fires, the August Complex burned more than a million acres. Combined, these two incidents burned over 90 percent of the Mendocino National Forest and are among the largest wildfires in the state's history.

"When Morris and I connected, it was very timely because we were going down the path of our very first postfire restoration project," said Darner.

Johnson is familiar with the complicated decisions confronting land managers. He started his Forest Service career on a ranger district in Oregon and has maintained a network of close connections with staff on multiple national forests, even after moving to the research branch of the agency. His research is directly addressing some of the difficult questions the Mendocino National Forest faced as they began dealing with the innumerable dead trees left behind by wildfire.

Johnson explained the dilemma posed by acres of fire-killed trees: “Some members of the public are against logging, and they would say ‘Let nature take care of itself.’ But those dead trees are not going to stand forever. They are going to become fuel, and that fuel is going to accumulate. Land managers have to worry about reburn potential. If you don’t thin those trees in the next 10-15 years, you have much greater fire hazard in the future”

He continued: “A key question managers have identified for postfire restoration is, what are the effects of active versus passive management on forest structure, dead woody fuel loadings, tree seedling survival, and shrub cover?’”

Knowing that national forest staff must conduct National Environmental Policy Act (NEPA) assessments for projects that involve active management—such as thinning dead trees—Johnson had a novel idea: he convinced the Mendocino National Forest’s interdisciplinary team to include his research project in the purpose and need statements of their environmental assessment as a learning objective. Not only did the team agree, he was included as a team member.

“We were creating an interdisciplinary team to look at a particular priority area for postfire restoration right above the wildland urban interface,” recalled Darner. “At that point we felt that it would be beneficial to have Morris at the planning table with us, so we invited him to be a part of our team to help design the fuel reduction project. It was nice because we were able to build the research aspect of it in from the very beginning.”

Johnson’s research uses a randomized block design to compare effects of various management prescriptions, such as different types of thinning, to control plots that are untreated. This study design ensures that any changes in the metrics he is assessing can be reliably attributed to management actions. Most previous studies have been observational not experimental, so this study fills a big gap in existing scientific literature about postfire restoration.

Thanks to his frequent consultations with Darner, Johnson was even able to tailor his study to accommodate a specific request.

“I had been talking to him about some of the needs I had, of looking at smaller diameter trees and not just the larger ones because we’re unique here in that we focus a majority of our fuels treatments on the large amount of small and mid-diameter dead trees on the landscape that are ready to fuel the next wildfire,” said Darner. “While we had been collecting data for the larger diameter fuel loads, we did not have data yet on the smaller

and mid-diameter fuels so I asked if he could build that in. Morris was very adaptable and flexible, and found an opportunity to actually put some focused small diameter plots out there because he knew that was something that I had been needing for years and years and years."

Another positive result of Johnson and Darner's collaboration has been increased transparency to the public. This is important to Mendocino National Forest staff, who have given considerable effort to engaging local communities around the issue of wildfire.

"The plots he put in were very helpful to us," said Darner. "His research actually strengthens our environmental process because we are able to let the public know that we're not just saying we're going to do adaptive management, we're actually backing it up. We have different treatment types in those plots and the controls, so that we can demonstrate what we say we expect to happen if we treat versus if we don't. If we were right, we continue to do it, and if we were wrong, we can make adjustments based off what the plots are showing us. That helps build our trust with folks that might otherwise be skeptical about what we're doing as well as helps us to make informed decisions and adaptations."

This collaboration has been a positive experience on both sides and exemplifies what can be achieved through a highly interactive, reciprocal learning process.

"This relationship has been really, really good. We try to support each other," said Darner. "Morris and I joke back and forth that he is an honorary Mendocino [National Forest] employee, and that's how I jokingly introduce him."

Six years after that first phone call, Johnson and Darner are clearly no longer strangers. But even more importantly, Johnson's research—shaped by engagement with Darner and her colleagues—is helping support the forest's goal of stewarding the landscape. The North Shore restoration project, which brought Darner and Johnson together, has already begun reducing wildfire risk to communities near the southern boundary of the forest, and the benefits are spreading outward. By working together with local partners, the North Shore project has brought in funding and job opportunities to communities hit hard by wildfire: a true example of the positive impact of partnership.