

Science

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"Science affects the way we think together."
Lewis Thomas

Taking an "All-Lands" Approach to Managing Wildfire Across Diverse Forest Ownerships



Mark Jacques

Land managers and other interested parties meet to discuss methods for reducing fire hazard as part of the East Face of the Elkhorn Mountains project in northeast Oregon.

*"Alone we can do so little;
together we can do so much."*

—Helen Keller

The Elkhorn Mountains in northeast Oregon have a robust fire history; lightning strikes thousands of times each year. Since the mid 1980s, 25 fires consuming more than 300,000 acres have roared through the area, all within a 50-mile radius.

"It's been nipped at by fire from all sides for the last 50 years," says Bill Gamble, district ranger in the Wallowa-Whitman National Forest.

The USDA Forest Service is just one public land management agency with a stake here. The USDI Bureau of Land Management and

the state of Oregon also manage land in the area, as does a private corporate forest owner—Hancock Timber Resource Group—and about 260 family forest owners. Their parcels abut each other, and when there's a fire on one ownership, it endangers them all.

These landowners and managers are addressing that shared danger through a project launched in 2014 that was designed to bring parties together to address wildfire risk across property lines.

From 2014 through 2016, the East Face of the Elkhorn Mountains project received nearly \$5 million in federal funding through the Forest Service-USDA Natural Resources Conservation Service Joint Chiefs' Landscape Restoration

IN SUMMARY

Across the American West, forests have diverse owners and are managed for different goals. But when wildfire ignites on one parcel—whether managed by the USDA Forest Service, a corporation, a tribe, or a family forest land owner—all neighbors are at risk. Fire doesn't respect property boundaries.

For the past decade, the Forest Service has been promoting an "all-lands" approach that advocates cross-boundary cooperation to reduce fire danger across landscapes with multiple owners. In 2014, the Joint Chiefs' Landscape Restoration Partnership—a cooperative venture between the Forest Service and the USDA Natural Resources Conservation Service—formed to fund all-lands projects that involve forest and rangeland restoration, including fuels reduction.

Susan Charnley, a research social scientist with the Forest Service's Pacific Northwest Research Station, and colleagues recently looked at six of these projects in Oregon and California to identify the social factors that lead to success. They found that cross-boundary cooperation can make wildfire mitigation more effective. Other factors that help include funding, trust, reciprocity, technical support, workforce capacity, communication, and an understanding that the benefits of working together outweigh the costs.

As wildfire becomes a more persistent threat across much of the Western United States, information about successful cooperative wildfire management is crucial.

Partnership to plan and conduct fuels reduction and other forest restoration treatments. The partnership provides funding for projects that improve forest health and resiliency in targeted landscapes where federal and private ownerships meet. As part of the East Face project, the Forest Service provided \$751,000 to the Oregon Department of Forestry (ODF) through its regional State and Private Forestry branch to support ODF participation in the project. There are no state forests in the project area, but ODF was an important partner, providing technical assistance to private landowners and other state entities.

The East Face project is considered a success not only because fuels were reduced on federal, state, and private lands, but because of the high level of cooperation among all parties.

“Before, individual landowners and land management agencies did their own thing,” Gamble says. “With this project, it was more synergistic.”

The project also set the stage for additional benefits. The Joint Chiefs’ partnership program funds projects for 3 years, but the relationships that form during that time, and increased local capacity, often attract resources for continued forest restoration beyond the initial project. For example, the East Face project made it possible for the state’s Elkhorn Wildlife Management Area to initiate commercial thinning treatments, which generated enough revenue to reinvest in treating four other state wildlife management areas in eastern Oregon to improve wildlife habitat and reduce hazardous fuels.

The East Face project also helped spur development of My Blue Mountains Woodland, a partnership project that supports forest health and wildfire risk reduction on family-owned forest lands in northeast Oregon.

The All-lands Approach

The East Face project is an example of the “all-lands” approach to forest restoration. The Forest Service has been promoting this approach since 2009, in accordance with then U.S. Secretary of Agriculture Tom Vilsack’s vision for America’s forests. (Vilsack was reappointed in 2021 after his 2017 successor.)

“The threats facing our forests don’t recognize property boundaries. So in developing a shared vision around forests, we must also be willing to look across property boundaries,” Vilsack said at the time. Since it was established in 2014, the partnership has funded 93 restoration projects on Forest Service, tribal, and family forest lands.

All-lands projects come in many sizes and configurations. Some are part of a national program such as the Joint Chiefs’. Others are not. Some focus on federal lands, others on private land, and still others work in transition zones between unoccupied forest lands and human development—called the wildland-urban interface.

What Makes It Work?

Susan Charnley, a research social scientist with the Forest Service’s Pacific Northwest Research Station, has long been interested in understanding the factors that enable or constrain participation in cross-ownership boundary resource management efforts. In 2015, Charnley and her

colleagues examined 41 all-lands projects on the west coast. The different approaches needed to be categorized, Charnley says, “because the all-lands approach remained a rather amorphous concept, lacking specificity about what it looked like or meant in practice. We developed a typology to characterize how all-lands approaches have been implemented to date, who participates, and what tools facilitate them.”

The catastrophic wildfires that now seem the norm each summer have social and ecological costs. By understanding the factors that yield effective collective action, the process can be better replicated to reduce wildfire risk and restore fire-resilient forests in the American West.

Charnley and her colleagues, Erin Kelly (Humboldt State University) and Paige Fischer (University of Michigan) recently looked at six all-lands projects that focused on restoring forests by reducing hazardous fuels to determine the conditions that set the stage for success.

The scientists interviewed 104 individuals who represented a variety of stakeholders involved with all-lands projects in Oregon and California. In addition to the East Face project, Charnley and her colleagues studied projects near Ashland and Klamath Falls, Oregon. They also studied two projects in northern California and one near the southern California city of San Bernardino—the most urban of the six.

“We found that Joint Chiefs’ projects were ideal in many ways for examining our research questions about how landowners who share a landscape work together to manage wildfire risk across jurisdictions,” Charnley says.

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Rhonda Mazza, editor; rhonda.mazza@usda.gov

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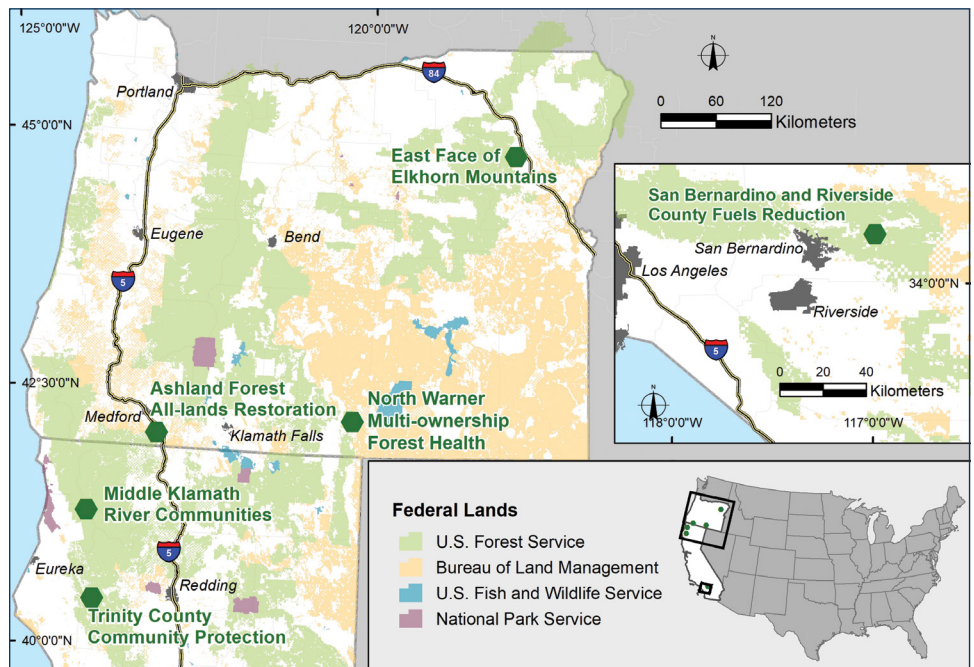
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Locations of the six case studies of Joint Chiefs’ Landscape Restoration Partnership projects.

Fuels Reduction Treatments

Fuels reduction treatments are designed to lower the risk of uncharacteristically large or severe wildfires. Common strategies include mechanically thinning stands and using prescribed fire.

Thinning projects generally cull smaller trees that can serve as “ladders” and carry fire up into the forest canopy. Thinning also reduces competition for water and nutrients so that the remaining trees are healthier, and hence more resilient to insects, disease, and fire.

Prescribed fire reduces fallen leaf litter, duff, grasses, and woody debris that can contribute to a large, uncontrollable fire.

Cultivating Collective Action

“The availability of funding for restoration treatments is a key motivator for landowners to participate in wildfire risk reduction activities,” Charnley says.

Although Joint Chiefs’ projects only provide funding for work on land managed by the Forest Service, tribes, and, families, the project areas often include additional ownership types. The Joint Chiefs’ partnership money may attract funding from other sources to help pay for restoration on these other ownerships.

Funding wasn’t the only factor needed for success in the projects Charnley and her colleagues studied. Also critical were partnerships that formed among landowners and stakeholders at different levels (federal, state, local) that made it possible to share resources (financial, technical, or other) across jurisdictions to get work done.

“Collective action was the lens through which we did our research, and we found that the Joint Chiefs’ projects provided one of the best mechanisms for bringing private, public, and tribal landowners together to take a collective approach to wildfire risk management,” Charnley says.

Collective action in this context means interdependent landowners organize and coordinate forest management with each other to improve joint outcomes. Owners and managers of shared landscapes are interdependent because wildfires can burn large areas and cross property boundaries. Action or inaction by one landowner affects wildfire risk for their neighbors.

Interdependence can motivate landowners to work together, but that motivation weakens unless everybody takes part.



KEY FINDINGS



- All-lands approaches to reducing wildfire risk take many forms, operate at multiple scales, and occur in diverse contexts.
- Five principles important for collective action by landowners and stakeholders to reduce wildfire risk are (1) shared understanding of the problem; (2) ability to communicate about and coordinate treatments; (3) capacity to participate; (4) trust that if you reduce fuels on your land, your neighbors will too; and (5) the benefits of participation outweigh the costs.
- New governance systems characterized by diverse actors at multiple scales who coordinate with each other, share resources, and fill capacity gaps have emerged to more effectively address wildfire risk in multiownership landscapes.
- The Joint Chiefs’ Landscape Restoration Partnership between the Forest Service and the Natural Resources Conservation Service can be an effective model for accomplishing landscape-scale wildfire risk reduction on multiownership landscapes.



Susan Charnley

A thin wire fence marks the boundary between forest parcels owned or managed by separate entities. The all-lands management approach helps neighboring owners work together to reduce fire hazard.

“We interviewed private landowners who said there was no point for them to treat their properties because their federal neighbors were not going to treat theirs,” Charnley says.

Coordination and cooperation are at the heart of successful fuels reduction projects, but getting to that point also requires other successes along the way.

“How are we defining success? It’s things like conducting effective education and outreach to landowners so that they will participate, getting money to treat acreage and getting

projects implemented across ownerships, sharing resources to create the capacity needed to get work done, and building new relationships and strengthening previous collaborations,” Charnley says.

With the East Face project, many key relationships among landowners were already in place. The project enabled the Forest Service to strengthen those relationships and build others—for example, with the Natural Resources Conservation Service.



Woody debris that could readily feed a wildfire is piled for removal at the Joint Chiefs' Landscape Restoration Partnership Middle Klamath River Communities project in northern California.



A "slashbuster" in the Elkhorn Mountains works to thin and reduce woody fuel loads.

Another success story was San Bernardino, a 1.8 million-acre project area east of Los Angeles. Kelly, a registered professional forester and an associate professor in the forestry department at Humboldt State University, was involved in researching the project.

"It was super interesting because it's very urban. It's almost like a city inside a national forest," Kelly says. "The area has a huge fire risk. Homes and other structures are on hill-tops surrounded by national forest lands."

As with East Face, the success of the San Bernardino project hinged on the cooperation of multiple parties.

Individual fire departments were involved, as was the California Department of Forestry and Fire Protection, which provides fire protection and stewardship for over 31 million acres of California's privately owned wildlands. Also involved were multiple local fire safe councils, which are grassroots organizations that bring together community leaders, employees of governmental agencies, and landowners to facilitate coordination, provide landowner education, and support landowners in conducting fuels treatments. The local fire safe councils are affiliated with the statewide California Fire Safe Council, which channels federal fire prevention and mitigation funding to support communities.

"Without all of them, this wouldn't have been successful," Kelly says. "It shows the importance of different actors working together."

Through the Joint Chiefs' project, fuels reduction treatments in San Bernardino were performed on 4,443 acres of Forest Service land, 11,695 acres of family forest land, and nearly 62 acres of tribal land.

A Recipe for Success

Charnley, Kelly, and Fischer concluded that, as with collective action in other contexts, certain factors help determine the success of this kind of project:

- **A shared understanding of the problem.** Landowners understand how wildfire operates and how their actions affect it. They understand that acting collectively to reduce wildfire risk will have a better outcome than acting individually, or in an uncoordinated fashion.
- **Communication and coordination.** Landowners communicate and develop coordinated strategies for reducing wildfire risk.
- **Capacity.** Landowners need the financial, technical, and workforce capacity to participate in these strategies.
- **Trust and reciprocity.** Landowners trust that if they are proactive and treat fuels, their neighbors will too.
- **Benefit-cost ratio.** Landowners perceive that over the long term, the joint benefits of coordinated wildfire risk reduction will exceed the short-term, individual costs of collective action.

The East Face and San Bernardino projects are characterized by a high level of cooperation among the parties. But that doesn't always exist, even with relatively successful all-lands projects.

One barrier to the all-lands approach is when one or more landowners do not participate. For example, Charnley says one federal agency was not a big participant because it was focusing its resources on different priorities, such as preserving sage-grouse habitat. Private corporate owners such as timber companies and timber and real estate investment firms also participated very little in the Joint Chiefs' projects, partly because they didn't receive funding.

"It's hard for private corporate owners to get financial assistance to reduce hazardous fuels, and they may not be able to participate in fuels reduction projects unless their treatments produce timber or biomass that can be sold to cover the treatment costs," Charnley says.

Getting some family forest owners—especially absentee owners—to cooperate can also be a challenge.

“They are invested in their land in ways that are more than economic,” Kelly says. “It can be difficult to think on a landscape scale. These are people who value their privacy and independence.”

Some landowners don’t participate because they simply don’t see the fire risks associated with accumulated fuels. And then there are other caveats. For example, Charnley says private owners in the two northern California projects they studied couldn’t get federal cost-share money if they grew marijuana on their land because it is illegal at the federal level.

Levels of cooperation also depend on the perception of fire risk by the various landowners in an area, and on the amount of resources they have available to participate.

Most of the research Charnley and her colleagues have done has been in drier forest types. They haven’t done much research in areas such as the west side of the Cascade Range, where fires occur less frequently.

“It’s hard to get people worked up about wild-fire when they think a fire will only happen every 100 years,” Charnley says. “As a result, west-side fires are understudied. But then in the summer of 2020, we had this huge conflagration in western Oregon—and these fires

	LAND MANAGEMENT IMPLICATIONS 
	Landowner participation to reduce wildfire risk can be increased by providing technical and financial assistance, strengthening partnerships with agencies, expanding educational outreach efforts, and using available legal authorities and policy tools to share resources across ownerships.
	Landowner coordination can be increased in fuels management efforts by jointly planning and implementing treatments together across ownerships, having the same forestry professionals work across multiple ownerships, and having shared management goals among landowners.
	Barriers to collective action include lack of funding, high turnover among agency staff, time and investment needed to participate, lack of agency capacity to administer assistance programs and conduct treatments, and unwillingness of some public and private landowners to collaborate in decisionmaking.
	Techniques for promoting an all-lands approach to managing wildfire can also be applied to other cross-boundary natural resource issues, such as managing wildlife and controlling invasive plants.

are now expected to happen more frequently with climate change. So my future research will focus more on the west side.”

As communities and western states grapple with the aftermath of the 2020 wildfires, understanding how to successfully stimulate collective action to reduce fire risk is more critical than ever. As Charnley explains,

“Acting collectively can be efficient and economical owing to opportunities to share equipment, forestry professionals, information, and other resources.” Programs such as the Joint Chiefs’ Partnership, that target investments in focal landscapes where partners have self-organized to carry out forest restoration across land ownerships, hold promise for creating more fire-resilient forests in the future.

*“No one can whistle a symphony.
It takes a whole orchestra to play it.”*

—Halford Luccock

For Further Reading

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Erin Kelly



A collaborative group of landowners and managers observes a fuels reduction project in northern California.

WRITER’S PROFILE

John Kirkland has been writing about science, higher education, and business for more than 20 years. He lives in Portland, Oregon.



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Pacific Northwest Research Station
1220 SW Third Avenue
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Scientist Profile



SUSAN CHARNLEY is an environmental anthropologist and research social scientist with the Pacific Northwest Research Station. Her research investigates how to achieve the dual goals of environmental conservation and rural community well-being through forest and range management on public and private lands. One of her areas of focus is examining forest management practices

on different land ownerships, the social variables that influence them, and how they influence forest conditions. Most of her research takes place in the Western United States.

Charnley can be reached at:

USDA Forest Service
Pacific Northwest Research Station
620 SW Main Street, Suite 502
Portland, OR 97205

Phone: (503) 808-2051
E-mail: susan.charnley@usda.gov

Collaborators

Erin Kelly, Humboldt State University, CA

Jodie Pixley, Western Klamath Restoration Partnership, CA

A. Paige Fischer, University of Michigan, MI