

FIRE AWARENESS, PREVENTION AND MITIGATION
CREATING FIRE-ADAPTED COMMUNITIES AND
RESILIENT LANDSCAPES



**Oregon Forest
Resources Institute**



LIVING WITH FIRE

OREGON'S WORSENING FIRE SEASONS

Kyle Reed, Douglas
Forest Protective Assoc.

Oregon Department of Forestry

Climate change, overgrown forests and people are among the top causes

On the cover: A prescribed burn on the Deschutes National Forest in central Oregon. Photo courtesy of Amanda Rau.

REPORT PARTNERS

This report was produced by the Oregon Forest Resources Institute in partnership with Keep Oregon Green, the Oregon Department of Forestry and the Oregon State University Extension Service.

In late summer 2020, it was impossible for Oregonians to ignore wildfire. We endured suffocating smoke that blanketed the state. Thousands fled their homes under evacuation orders as massive fires ripped through forests, threatening nearby communities across western Oregon. Entire towns were destroyed, and more than 4,000 homes were lost in the blazes. Tragically, nine people were killed by the devastating wildfires that burned more than 1.2 million acres.

The fires, which exploded in size following a high-wind event on Labor Day, were historic, and 2020 will certainly go down as one of the most deadliest and destructive fire seasons ever recorded in Oregon. But the Labor Day fires weren't unprecedented. According to fire experts, they were a disaster waiting to happen, part of a larger trend across the West toward longer, more intense fire seasons that risk the lives and threaten the property of an increasing number of Oregonians who live near forests and other wildlands in what's known as the "wildland-urban interface."

"We're experiencing more of the types of conditions that contribute to extreme fire

seasons," says Teresa Alcock, a wildfire intel and geospatial analyst with the Oregon Department of Forestry. "Conditions are getting drier, and warmer, and more conducive to fires igniting, spreading and burning intensely."

"There are probabilities associated with how many ignitions we get ... The problem is we have been growing all of those probabilities."

— John Bailey, Oregon State University College of Forestry

Over the past 10 years, the total number of wildfires in Oregon has remained relatively steady, but the total acres burned has increased dramatically. Factors contributing to this explosion of "megafires" include overgrown forests and the effects of climate change, which have led to extreme weather, drought and insect infestations that weaken and kill trees, making forests more prone to fire damage.

"There are probabilities associated with how many ignitions we get, if they start in fuel-



Kyle Reed, Douglas Forest Protective Assoc.

laden places, how much fuel is available to burn, how dry and windy it is that day, how explosive the fire becomes, and what a fire might encounter as it spreads,” says John Bailey, a professor with the Oregon State University College of Forestry. “The problem is that we’ve been growing all of those probabilities.”

Fire is a natural part of Oregon’s forest ecosystems, but what we’re experiencing now is not normal, he says. That’s because over the past century, humans have kept fire out of forests, quickly extinguishing most wildfires, including those that would have benefitted native trees, plants and animals that are adapted to fire. Excluding fire has led to many forests growing unnaturally dense, chock-full of fuel for large, destructive wildfires.

The good news is there are many actions homeowners and landowners can take to reduce the fuels wildfires need to spread, says Daniel Leavell, state fire specialist with the Oregon State University Forestry & Natural Resources Extension’s Fire Program. These include clearing flammable vegetation

and debris around homes, pruning or thinning trees, and using controlled burns to reduce dry brush and other fuels in forests, rangelands and grasslands adjacent to homes.

“Above all, we can reduce fuel,” he says. “It’s a proven fact that reducing fuel won’t stop a fire, but it will reduce the intensity.”

A RECORD FIRE SEASON

The 2020 wildfire season was one of the most destructive in Oregon’s history, with more than 1.2 million acres burned.

TOTAL FIRES AND ACRES BURNED IN OREGON

The total number of Oregon wildfires per year has remained fairly stable, but the total number of acres burned has increased dramatically in recent years.	Year	Total Fires	Total Acres
	2010	1,973	91,888
	2011	1,787	260,744
	2012	1,599	1,290,527
	2013	2,848	350,786
	2014	3,087	984,629
	2015	2,588	685,809
	2016	1,245	219,509
	2017	2,049	714,520
	2018	2,019	897,263
	2019	2,293	79,732
	2020	~2,101	~1.3M
	Average (2010-19)	2,149	557,541

*Data available as of 11/23/2020, Oregon Department of Forestry

FIRE PREVENTION – IT'S UP TO ALL OF US

Preventing wildfires is everyone's responsibility



KRISTIN BABBS

Executive Director,
Keep Oregon Green

On average, more than 70% of the wildfires that break out in Oregon each year are human-caused. The number-one cause is debris burns, followed by equipment and campfires, according to the Oregon Department of Forestry.

But if we all do our part by taking safety precautions when we light a debris burn or campfire or use equipment that could spark a blaze, in addition to following burn bans and other fire restrictions, we can significantly reduce the number of human-caused wildfires in Oregon.

When firefighters are already busy managing multiple wildfires during our increasingly hectic fire seasons, we cannot afford one more fire. Preventing human-caused wildfires allows firefighters to focus on the fires caused by lightning. Along with reducing the burden on firefighters, prevention means fewer wildfires threatening human lives, health and property.

Of course, prevention is just one piece of the puzzle when it comes to addressing Oregon's worsening fire seasons. Homeowners and communities can take steps to increase the odds that their homes will survive a wildfire, and ensuring that we have a robust statewide firefighting system means we can suppress the wildfires that threaten human lives and property.

What follows focuses on solutions, highlighting the stories of Oregonians whose lives have been affected by wildfire, who acted to mitigate the risk of fire to their homes, neighborhood or forestland, and who forged partnerships to improve fire resiliency across the landscape.

I hope you too will be inspired to be part of the solution. After all, if humans are responsible for a majority of the fires on the landscape, and there's something we can do about it, let's prevent them!



HELP PREVENT WILDFIRES

To learn more about preventing human-caused wildfires, go to **keeporegongreen.org**.

LIVING NEAR FORESTS



Homes built close to forests face increased wildfire risk

Michele Tesdal felt a deep sense of foreboding when she heard about a wildfire in the Breitenbush area east of her home in Detroit.

It was late summer 2020 and Labor Day weekend was approaching, typically a busy time for the Santiam Canyon town. Located on the shores of Detroit Lake and rimmed by forests on all sides, it's a popular destination for boaters, campers and other outdoor enthusiasts.

Tesdal loved living in Detroit full-time with her husband, Don, and their four youngest children, in a neighborhood adjacent to private forestland and the Willamette National Forest. They owned a house on a property with towering 90-year-old Douglas-fir trees, and had a garden where Tesdal grew vegetables and raised chickens.

"If you looked around, it actually looked like you were living in the forest," she says. "It

was rustic. Every day we lived out there, we couldn't believe how blessed we were."

In the summer, Tesdal and her family ate meals on the porch, where they could enjoy the natural scenery and visit with neighbors. That's where she was about two weeks before Labor Day, when she and Don, a volunteer firefighter, first learned from another firefighter about the nearby wildfire. Tesdal, who works for the Natural Resources Conservation Service, thought immediately of the forests that surrounded them and how they were primed to burn.

"I said," she recalls, "'They need to put that fire out. It will travel and burn down this town.'"

Looking back, she's sure it was her intuition kicking in, warning her about what was to come. By the end of that holiday weekend, Tesdal and her family would be among thousands of Oregonians who lost their

MICHELE TESDAL

Homeowner, Detroit.

Below: Michele's home before it was destroyed by wildfire in 2020.





HOMES LOST

More than 4,000 homes were destroyed in the 2020 Labor Day fires. Among the hardest hit communities in Oregon were Talent (bottom) and Detroit (top).

homes in a series of large wildfires that exploded across western Oregon following extreme winds.

Detroit, where Tesdal serves as a city councilor, was among the hardest-hit communities. Like many of the towns affected by the Labor Day fires, Detroit's location amid a sea of green, which provided so much of its scenic beauty, turned dangerous as flames leapt from the forest to homes.

As the holiday approached, the plume of smoke Tesdal could see in the distance became increasingly concerning. On Labor Day, news spread about extreme fire danger from an approaching historic windstorm.

That night, as it was getting dark and her children had gone to bed, Tesdal went out onto the deck and saw a glow coming from the ridge above her house. She went back inside and told her husband she couldn't sleep and urged

him to go see for himself. When he came back inside, he said, "Okay, we've got to leave."

First they had to return the fire truck parked in front of their home to the fire station. Even though it was a short drive, they decided to bring the kids. By the time the family returned home, the fire was crawling over the ridge toward them. That's when Tesdal knew they had to get out quickly. She told the kids to pack their bags and started shoving what she could into her purse. Around midnight, they got into their two cars and headed east, honking to warn their neighbors that they should leave too.

Tesdal describes herself as someone who doesn't get rattled easily, but her heart was racing as they drove toward Sisters, and she had to take deep breaths to stay calm and blink hard to focus on the road while she followed her husband and children in the car ahead of her.

Smoke was blowing across the road, scattered trees were on fire, and others had fallen across the highway. Fortunately, someone ahead of them had used a chainsaw to clear the way. The valley they were driving toward was glowing red from what they'd later learn was the Lionshead Fire, which would end up burning down much of Detroit. "We are driving into our doom, and my family is going to die right in front of me," Tesdal thought, but she pressed on, remembering the advice Idanha-Detroit Rural Fire Protection District Fire Chief Will Ewing gave them before they left: You're going to be scared. You'll see ash and branches flying through the air, but just keep driving.

Then Tesdal remembered they'd soon reach an old burn that would likely serve as a fire break. "I knew once we hit that, we would be okay," she says. As soon as they did, relieved, she turned on the radio to hear some of her favorite music playing. For the first time

since leaving home, Tesdal began to calm down, singing along to the music to distract herself from the traumatic hours before. She and her family ended up staying the rest of the night in a mall parking lot in Bend.

Tesdal says she was fortunate that she and her husband had a second home in Keizer where her parents live. They moved to Keizer after the fires and have been living there since. Even though she knew she was safe, the weeks following the night she and her family escaped the fires were rough.

“My husband, my children and I couldn’t sleep for days,” she says. “I’d wake up at 2 a.m. just in a panic.”

Don Tesdal, who quickly headed back to the Santiam Canyon to fight the wildfires, was the first to see their home after they fled Detroit. He sent a video to his wife showing the extensive damage to their property. Only the rims on the kids’ bicycles were left. Their utility trailer and motorcycle had melted into pools of metal. The mattress springs were all that was left of their beds. The fruit trees they planted were burnt sticks. The chickens died trapped in their coop.

Watching the video was devastating. Seeing their charred possessions brought up all the memories associated with them, Michele Tesdal says, her voice cracking. She and her husband wavered on whether to rebuild, eventually deciding they felt too much of a connection to the Detroit community not to. Some of the wood in their new home will come from the giant old Douglas-fir trees that once stood on their property and had to be cut down because of the fire.

She’s been heartened to see that her neighbors, who lost everything as she did, are just as determined to rebuild their lives in Detroit.

“I think the resilience of folks to come back is amazing,” she says.

The biggest lesson Tesdal learned from her family’s harrowing experience fleeing the wildfires has been recognizing how important it is to have an evacuation plan. Have water and shelf-stable food ready to bring with you, and flashlights and lanterns in case the power goes out, she advises. Don’t waste time packing up anything more than the essentials. And if you’re fleeing a forested area, bring a chainsaw.

Although they lost basically everything they own in the fire, Tesdal feels grateful her family is safe and says the experience has fortified her outlook on life.

“Everything is temporary. Learn to let your things go,” she says. “Hold on tight to God and your family, and be a good neighbor.”



HOMES NEAR FORESTS The risk of Oregonians losing their home in a wildfire is growing, especially with more residents living close to forests in what’s known as the wildland-urban interface, or WUI.

The WUI is the transition zone between forests or other natural areas, and human development. It’s the line where homes and other structures meet or intermingle with undeveloped wildlands. Homes in the WUI have a higher fire risk because of their close proximity to fuel sources such as trees and brush that can carry flames into residential areas. Most human-caused wildfires in the WUI start from causes such as backyard debris burns that get out of control and spread into the forest.

It’s important for communities in these areas to understand their risk, be prepared to evacuate in case of a wildfire, and take steps to make their homes and properties less susceptible to fire.

Learn more about preventing human-caused fires around the home at keeporegongreen.org, and how to create a fire-resilient home at firewise.org.

FIRE-ADAPTED COMMUNITIES

Neighbors work together to reduce their fire risk



Carrie Berger, OSU Extension Service

CARRIE BERGER

Fire Program Manager,
Forestry & Natural
Resources Extension,
Oregon State University,
and Skyline West
Neighborhood Firewise
Chairwoman, Corvallis

When Carrie Berger moved to Corvallis nearly a decade ago, she didn't think of the forests surrounding her neighborhood on three sides as a hazard.

It was through her work for the Oregon State University Forestry & Natural Resources Extension Program that she began to recognize that, even though she lived in the wetter, western part of the state, her home and those of her neighbors were vulnerable to wildfire.

That realization motivated Berger, who now leads OSU Extension's Fire Program, to get involved with Firewise USA. The voluntary nationwide program led by the National Fire Protection Association provides a framework to help neighbors get organized and take action to reduce wildfire risks in their communities. To earn the designation, communities must have at least eight

participating homes and conduct at least one event or activity related to reducing fire risk.

"It's really about self-empowerment, and people are looking for ways to mitigate their risk."

— Jenna Trentadue, Oregon Department of Forestry

The Oregon Department of Forestry administers the Oregon Firewise program, partnering with local fire departments to help communities across the state organize and secure grant funding for projects to reduce their wildfire risk, such as thinning trees and clearing brush away from evacuation routes. Berger's Corvallis neighborhood, Skyline West, is among 182 Firewise-recognized communities in Oregon. The state has the second-most program participants in the the nation and continues to grow, says Jenna Trentadue,



Carrie Berger, OSU Extension Service

NEIGHBORS HELPING NEIGHBORS

The Firewise USA program encourages neighbors to collaborate on reducing the fire risk to their community.



Kyle Reed, Douglas Forest Protective Assoc.

Firewise state liaison with the Oregon Department of Forestry.

“The reason people want to be involved with Firewise is because of that awareness that we have more wildfire,” she says. “It’s really about self-empowerment, and people are looking for ways to mitigate their risk.”

Berger says that building awareness of the importance of working together to create a fire-adapted community was the initial hurdle when it came to convincing her neighbors to take part in Firewise, but activities such as a neighborhood-wide fire evacuation drill helped illustrate that wildfire is a serious threat. Now Berger frequently sees her neighbors taking steps to reduce fire hazards around their homes.

“I drive around the neighborhood and see all the work people have done,” she says. “They really take the risk seriously.”

To learn more about Firewise USA and how to get your neighborhood involved in the program, visit nfpa.org/Public-Education/Fire-causes-and-risks/Wildfire/Firewise-USA.



REDUCING HOME FIRE RISK

The majority of homes ignite during a wildfire as a result of embers or sparks, according to the National Fire Protection Association. Having a 30-foot fuel break (called “defensible space”) around homes or other structures can make a big difference when it comes to reducing the risk of this happening. Since a defensible space can protect homes and improve the safety of firefighters, Oregon law requires property owners living near forests in wildfire-prone areas to create a defensible space by reducing excess vegetation, which may fuel a fire, around houses and other structures. In some cases, it’s necessary to create fuel breaks along property lines and roadsides as well.

Fire ignites easily and moves rapidly in dry grass, needles and leaves, dead branches on trees and shrubs, and piles of firewood. Reducing the number and arrangement of these flammable materials within a defensible-space fuel break around a house can slow the spread of an encroaching wildfire, because there’s less fuel for it to burn through. It also makes it easier for firefighters to defend that home from a fire.

COUNTY TAKES ACTION TO PREPARE FOR WILDFIRE

In the early 1990s, a couple large wildfires near Bend woke up many central Oregon residents to the need to be better prepared for fire. It also led to the creation of Project Wildfire, a community organization with a mission to prevent deaths, injuries, property loss and environmental damage from wildfires by providing fire prevention education to Deschutes County residents, and support for fuels-reduction projects to help protect high-risk neighborhoods.

Project Wildfire empowers county residents to take action against the threat of wildfire by arming them with information about how to protect their homes and communities from wildfire, says Boone Zimmerlee, who leads the organization as Deschutes County’s fire-adapted communities coordinator. Creating fire-adapted communities is an ongoing process that includes building awareness that wildfire will always be a part of living in the region, he says.

“Here in central Oregon, because of the fire-return intervals, the frequency of the fires, it’s not a question of if, but when the next fire will come through our backyard. The more we can educate people and provide them with the tools to prepare for it, the less they will be impacted and the better off we’ll be,” Zimmerlee says.

In addition to education, Project Wildfire supports efforts to thin trees, mow brush and light prescribed burns in forests abutting residential areas. This helps lessen the potential damage to these communities in the event of a wildfire. In 2020, Zimmerlee saw how successful this work can be, when the Rosland Road Fire threatened the Newberry Estates neighborhood in La Pine. Firefighters were able to suppress the fire before it could reach the neighborhood, due in part to a prescribed burn done the previous spring on nearby Forest Service land.

“If that prescribed burn hadn’t been done there, the fire would have been much larger, much more intense. But because of the reduction of fuels there, it lost a lot of its intensity and the opportunity was there for firefighters to take action on it safely,” he says.

Learn more at projectwildfire.org.

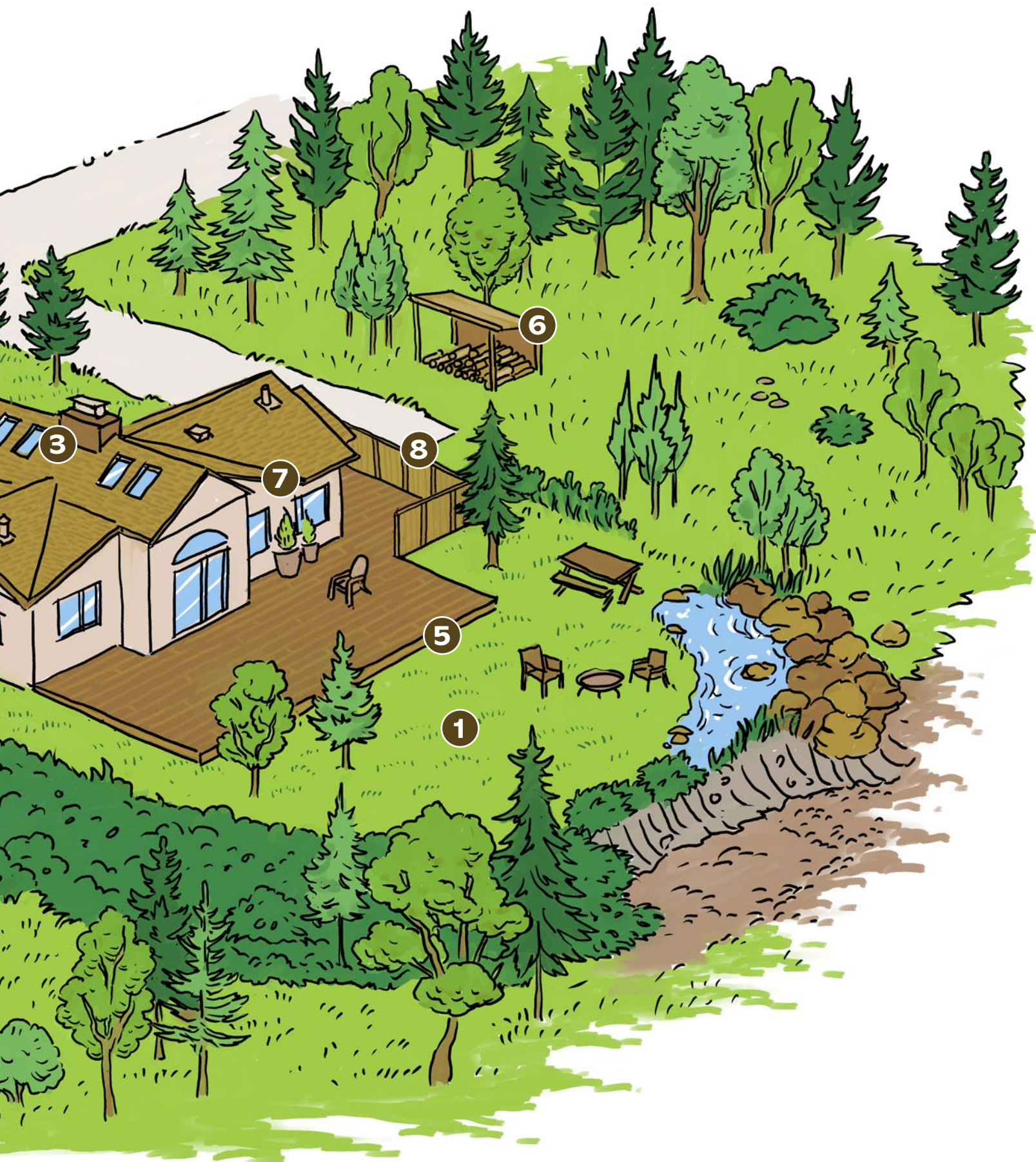
HERE ARE SOME TIPS FOR REDUCING YOUR HOME FIRE RISK

- 1 Ensure that you have defensible space around your home** that includes the following:
 - non-flammable or fire-resistant ground cover such as asphalt, green grass or rock
 - dry grass cut to a height of less than four inches
 - grass clippings, leaves, needles, twigs and similar small vegetative debris are broken up to avoid creating a continuous bed of fuel
 - shrubs and trees that are pruned regularly to ensure they're free of dead limbs and branches, along with any other potential "ladder fuels" that can carry flames upward
 - trees and shrubs that are arranged and thinned, if necessary, so that fire cannot easily jump from plant to plant
- 2 Good access for emergency vehicles** will help firefighters defend your home against wildfire. These guidelines ensure good access for fire trucks:
 - the horizontal clearance above the driveway must be at least 12 feet
 - the vertical clearance must be at least 13½ feet
 - clear dry grass, brush and dead vegetation from the driveway's edge to create a fuel break that helps firefighters get to your house and allows you to evacuate safely in the event of a wildfire
- 3 Trim all branches at least 10 feet away from a chimney** to reduce the chance of sparks from a chimney catching tree branches on fire.
- 4 All dead branches overhanging any portion of a roof should be removed.** Also, remove accumulations of leaves, needles, twigs, bark and other potentially flammable debris from roofs and gutters.
- 5 Keeping the space under wooden decks and exterior stairways clean and enclosed** is one of the best ways to keep a house safe during fire season. Firewood and lumber should be removed, and dry leaves and other flammable debris should be cleaned out, too.
- 6 Move firewood and lumber piles at least 30 feet away from any structure,** or store them in an enclosed shed. Firewood and lumber piles near a house can become a source of intense sustained heat if they catch fire, and could ignite nearby vegetation or cause windows to break, admitting fire into the house.
- 7 Cover attic, eave and foundation vents** with 1/8-inch wire mesh, or install new vent types designed to keep embers out.
- 8 Maintain wooden fences** in good condition and create a noncombustible fence section or gate next to the house for at least 5 feet.

For more information on how to protect your home and property from wildfire, contact your local fire department, the Oregon Department of Forestry or your forest protective association office.

Source: Oregon Department of Forestry and Be Ember Aware!, University of Nevada Cooperative Extension





CREATING HEALTHY, RESILIENT FORESTS

Forest landowners manage forests with fire in mind

After relocating from the San Francisco Bay Area to southern Oregon, Erica and Charles HooperLee learned quickly that fire would be a regular fact of life.

Every summer, smoke – and occasionally ash – from multiple nearby fires would blow over their 5-acre farm in Josephine County. It became an urgent reminder to the couple that their home, property and neighborhood should be prepared for the possibility of wildfire.

“If fires are going to be part of our lives, we decided we’d just have to educate ourselves as much as we possibly can to be proactive about it,” Erica says.

Erica, who runs a public relations and marketing firm, trained to be a land steward through the Oregon State University Extension Land Steward Program, which teaches landowners how to manage their land sustainably. Meanwhile, Charles, a software engineer, became a volunteer firefighter and the coordinator for their neighborhood Firewise program.

Their newly acquired knowledge about fire and land management helped the couple feel confident enough to purchase a 30-acre forested property near the town of Williams in the Applegate Valley. As avid outdoorspeople, they’re excited to fulfill their dream of living in a place where they’re surrounded by nature and can feel like they’re camping every day. But they also recognize that they’ve got a lot of work ahead of them, to make sure their forestland is fire-resilient.

“We feel like we know exactly what to do before next fire season,” Erica says. “Fire is going to be top-of-mind for sure.”

As Oregon experiences longer, more destructive fire seasons, the couple is among a growing number of small woodland owners across Oregon who are educating themselves and taking steps to make sure



Erica HooperLee

ERICA AND CHARLES HOOPERLEE

Forest landowners, Josephine County



MANAGING FORESTS FOR FIRE

Erica and Charles HooperLee's forested property in Josephine County. The couple is among many small woodland owners across Oregon who are working to ensure their forests are more fire-resilient by taking steps such as thinning trees or clearing brush.

Erica HooperLee

“If you can make it a healthy property, these trees have a better chance of surviving a fire.” – Erica HooperLee, forest landowner

their forests are more fire-safe. Often this involves reducing fuel in their forests to decrease the intensity of wildfires by thinning trees, pruning limbs, mowing down brush, disposing of woody debris and lighting prescribed burns.

“We know that fire is necessary in a lot of ways, but we’re also aware of the role we play in making fires worse than they have to be,” Erica says.

Like the HooperLees, many Oregon small woodland owners have benefitted from landowner education programs offered by OSU Extension, the Oregon Forest Resources Institute, the Oregon Department of Forestry and other organizations. Seeking out forestry expertise is the number-one advice Charles gives to anyone who is considering owning forestland

ENGAGING FOREST LANDOWNERS IN REDUCING FIRE DANGER

Many Oregon small woodland owners lack the technical expertise necessary to take steps to reduce the danger of a catastrophic wildfire on their properties. That’s why there are a number of collaborative efforts within the state to reach out to private landowners and connect them to resources to improve the health and fire-resiliency of their forests.

Such “all-lands” projects, which involve multiple landowners, public agencies and partners representing a range of different forest ownerships, are increasingly common. The American Forest Foundation, an organization that helps family forest landowners care for their forests, is part of coordinating several conservation projects throughout the West that focus on outreach to private landowners to get them involved in managing their forests to be resilient to wildfire.

In Oregon, these projects include My Blue Mountains Woodland, which focuses on the northeast Oregon counties of Baker, Umatilla, Union and Wallowa. The project began with funding forest restoration on private lands adjacent to the Wallowa-Whitman National Forest, but has since expanded to reach out to other unengaged private landowners throughout northeast Oregon. Landowners are invited to receive publications, join networks and have a professional forester visit and assess their property.

Two other landowner outreach projects that have been launched in Oregon and are similar to My Blue Mountains Woodland are My Southern Oregon Woodlands, which focuses on the unique landscape and landowners in Jackson, Josephine and southern Douglas counties, and the Chiloquin Community Forest and Fire Project, which is based in Klamath County around the town of Chiloquin.

Learn more:

My Blue Mountain Woodland – mybluemountainswoodland.org

My Southern Oregon Woodlands – mysouthernoregonwoodlands.org

Chiloquin Community Forest and Fire Project – klfhp.org/chiloquin

or has recently acquired a forested property.

“Get educated,” he says. “There is so much to it, and it all depends on the location and condition of your property.”

For Erica, a big takeaway since they started learning more about forest management has been that a healthy forest is a resilient forest.

“Instead of worrying about fire, worry about the health of the property. If you can make it

a healthy property, these trees have a better chance of surviving a fire,” she says.

Focusing on forest health is important, but it also means they have some tough decisions ahead as they plan to thin the trees on their property, Erica says.

“I have an abnormal obsession with trees,” she says. “Now I have 100,000 trees, but in order to keep many of them healthy, I have to make hard choices about taking a lot of them down.”

WHERE TO GET HELP

About 34% of Oregon's forestland is privately owned, and 12% belongs to individuals and families who own 5,000 acres or less. Fortunately for the more than 75,000 family forest landowners who care for approximately 3.7 million acres of Oregon's forests, there are many sources of assistance to ensure their forestland is both healthy and fire-safe.

Here are some of the places Oregon small woodland owners can find help to improve the health and fire-resiliency of their forests:

Keep Oregon Green is a nonprofit organization whose mission is to promote healthy landscapes and communities by educating the public about everyone's shared responsibility to prevent human-caused wildfires. Keep Oregon Green provides signs, brochures and other helpful landowner tools to help neighboring residents and tourists understand fire season restrictions to protect life, property and resources. Learn more at keeporegongreen.org.

The **Natural Resources Conservation Service (NRCS)** is a federal agency whose mission is to provide resources to farmers and forest landowners to aid them with conservation. Ensuring productive lands in harmony with a healthy environment is the agency's first priority. NRCS offers grants to forest landowners to undertake projects aimed at improving the health and fire-resiliency of their forests. Learn more at nrcs.usda.gov.

The **Oregon Department of Forestry (ODF)**'s Private Forests Division helps landowners develop healthy, productive forestlands and watersheds, which can help reduce wildfire risks. Regional ODF stewardship foresters provide expertise to private landowners and work with them to develop and implement forest management plans that are effective and balanced. Learn more at oregon.gov/odf/Working/Pages/helpinglandowners.aspx.

The **Oregon Forest Resources Institute (OFRI)** supports and enhances Oregon's forest products industry by advancing public understanding of forests, forest management and forest products, and encouraging sustainable forestry through

landowner education. OFRI's landowner education program offers a variety of training opportunities such as workshops, forest tours and webinars, as well as educational publications on topics such as clean water, reforestation and fire. Learn more at OregonForests.org/landowner-education.

The **Oregon Small Woodlands Association (OSWA)** is the largest organization representing the interests of Oregon's family forest landowners. OSWA's vision is to see privately owned family woodlands remain a thriving part of Oregon's landscape. Learn more at oswa.org.

The **Oregon State University Forestry & Natural Resources Extension** provides forestry education to landowners, covering complex issues of forest ownership such as enhancing fish and wildlife habitat, reducing fire risk, and increasing biodiversity through workshops, demonstration areas and publications. Learn more at forestry.oregonstate.edu/forestry-and-natural-resources.

OSU's **Forestry & Natural Resources Extension Fire Program** assists in identifying landscapes in greatest need of a strategic focus of resources to reduce wildfire and landscape health risks on a statewide scale. The program assists with implementing fire-resiliency projects on the ground in priority landscapes, and provides education and outreach throughout the process to all Oregonians. Learn more at extension.oregonstate.edu/fire-program.

ODF, OFRI and OSU Extension are all members of the **Partnership for Forestry Education**, a partnership of government, nonprofit and private organizations dedicated to providing educational resources to Oregon forest landowners. The partnership's website, KnowYourForest.org, includes a learning library with educational publications, videos and other resources offering practical information on forest management, a directory of landowner assistance programs, and an assistance map to identify the local resources available to Oregon forest landowners in each county.

THE VALUE OF “GOOD FIRE”

Using fire to promote resilient forests

Fire has always been – and always will be – a part of Oregon’s forests. That’s why Amanda Rau is adamant about the value of lighting controlled burns (also known as prescribed burns or prescribed fire) to reduce wildfire risk and restore the natural balance to forest ecosystems that have evolved over millennia with the presence of wildfire.

“On these frequent-fire-adapted forests, if you miss a few cycles (of fire), you get out of whack pretty quickly,” says Rau, a former fire manager for The Nature Conservancy who planned and coordinated prescribed burns.

Rau is also founder of the Oregon Prescribed Fire Council, which she says strives to “remove impediments to prescribed fire, and open doors for communities to use it as a tool to protect themselves from wildfire risk.”

To understand why prescribed fire is such an important tool when it comes to mitigating catastrophic wildfire, it’s important to know Oregon’s fire history, says Rau, who now works for the Oregon State University Forestry & Natural Resources Extension Fire Program as a regional fire specialist for the Willamette Valley and Cascades region.

Before European colonization, naturally caused fires generally burned at a lower intensity through the dry pine and mixed-conifer forests of central and eastern Oregon, and the mixed-conifer forests and broadleaf woodlands of southwest Oregon in



AMANDA RAU Regional Fire Specialist, Oregon State University Forestry & Natural Resources Extension Fire Program and Chairwoman, Oregon Prescribed Fire Council

Prescribed burns mimic the role natural fires once played: maintaining forest health and resilience in Oregon’s forest ecosystems.

cycles up to 35 years. The wetter, Douglas-fir-dominated forests of western Oregon once burned about every 35 to 200 years, and generally at higher severity. Tribal communities and indigenous peoples of Oregon would also light prescribed fires and cultural burns regularly, as a part their natural and cultural resource management practices.

When regular, low-intensity fires occurred in forests, they helped burn away smaller trees and brush that could serve as fuel for future wildfires. As a result, when another fire burned through those same forests, it was less likely to become large and destructive.

PLANNING A PRESCRIBED BURN

Unlike natural wildfires, a prescribed burn doesn't just happen. Before a single flame is lit, a significant amount of planning takes place to ensure the burn can be executed in a safe, controlled manner that has minimal impact on nearby communities.

"It's not something to take lightly," says Amanda Rau, who planned and oversaw controlled burns for The Nature Conservancy in the Willamette Valley.

The first step in planning a prescribed burn is determining if the area would benefit from low-intensity fire, she says. Once that's been confirmed, the next step for the "burn boss," the person responsible for planning, organizing and executing a prescribed burn, is to figure out how much fuel there is for fire and model how it is going to burn.

Then it's important to develop a plan for safely executing the burn that details the firefighting resources and water available if the prescribed burn does get out of control, Rau says. This is followed by applying for and obtaining permits for the prescribed burn through the appropriate regulatory agencies, such as the Oregon Department of Forestry.

Once the prescribed burn has been permitted, it's time to assemble the crew and equipment needed to execute the burn and delineate its boundary with fire breaks such as a road, river, rocky ridge or ditch, Rau says.

The next step is to look at the weather forecast. Monitoring the weather and only setting the burn during ideal conditions makes it much less likely to get out of control due to something like high winds, she says.

It's also important to get the word out about the planned prescribed burn through a public service announcement or press release, especially to nearby communities where residents might see smoke, think it's a wildfire and call 911, Rau says.

After all these preparations have been made and the weather forecast checks out, it's finally time to light the prescribed burn. Each person involved has a specific job. In addition to the burn boss, there are the people who light the fire using drip torches called the "igniters," and the "holding boss," who makes sure the fire stays within the designated boundary and that flames that go outside that line are extinguished.

With careful planning and execution, prescribed burns will usually stay close to the ground and are monitored and patrolled until they go out, Rau says.

Prescribed burns mimic the role natural fires once played: maintaining forest health and resilience in Oregon's forest ecosystems, before modern firefighting practices started keeping fire out, Rau says. That role varies for each region of the state. In central and eastern Oregon, prescribed fire restores forests to healthier conditions, and reduces and removes dense vegetation that contributes to high-intensity wildfires. Similarly, for forests in southwestern Oregon, prescribed burns reduce understory vegetation and fuel accumulations to protect the overstory. Conversely, in the Willamette Valley and eastern Oregon, controlled burns are sometimes used to keep conifers from encroaching on open rangeland, prairie and savanna environments.

In places where slash (the woody debris left after logging) has been generated, prescribed fire can be used to reduce wildfire hazard and mimic the natural role of fire in nutrient cycling and vegetation rejuvenation.

A wildfire behaves very differently when it hits a forest where a prescribed burn has been conducted, usually in conjunction with



Amanda Rau





BE SMOKE-AWARE

Prescribed burning is an important tool to ensure forests are better prepared for wildfire. These burns, which typically take place in the spring and fall, are regulated by the Oregon Department of Forestry to ensure they're conducted in a way that minimizes smoke intrusion into residential areas. Still, communities can expect to see some smoke in the air on burn days, which is why it's important to be prepared.

Prescribed burning usually produces far less smoke than an uncontrolled wildfire, but Oregonians should limit their exposure to smoke to avoid the associated negative health effects. Here are some tips from the Oregon Health Authority:

- Pay attention to local air-quality reports. Check websites such as airnow.gov to find air-quality data by ZIP code, city or state, as well as fire and smoke maps.
- Stay indoors when it's advised, and keep indoor air quality as clean as possible by closing windows and doors and using an air filter.
- Do not add to indoor air pollution by burning candles, fireplaces or gas stoves. Do not vacuum, since it stirs up particles already inside your home.

Learn more about limiting your exposure to smoke, whether it comes from prescribed burning or a wildfire, by visiting oregon.gov/oha/ph/preparedness/prepare/pages/prepareforwildfire.aspx.

thinning trees and mowing down brush, Rau says. "It's going to do what I call 'taking the steam out of the fire,' bringing it down to a more manageable level." This makes it easier and safer for firefighters to control a wildfire and make sure it doesn't spread to homes or other structures, she says.

Like other measures aimed at improving

forest health and reducing fuel, Rau cautions that prescribed burning should be part of ongoing work to maintain a forest's fire resiliency.

"One prescribed burn is generally not enough," she says. "In the places that need fire most, you have to come back and keep burning."



FIRE-ADAPTED ECOSYSTEMS

The use of prescribed burns on Oregon's fire-adapted forests helps clear away underbrush, rejuvenate the soil and restore forests to a healthier, more fire-resilient state.

RESILIENCY ACROSS THE LANDSCAPE

The Chiloquin Community Forest and Fire Project brings together private landowners, federal and state agencies, and other partners to collaborate on projects with the goal of improving fire resiliency in the Chiloquin area in southern Oregon.



Oregon Department of Forestry

CROSSING PROPERTY LINES

Diverse interests collaborate on creating fire-resilient landscapes

Reducing the fire risk to the Chiloquin community north of Klamath Falls presents a unique challenge.

“There’s a really complex wildland-urban interface,” says Leigh Ann Vradenburg of the nonprofit Klamath Watershed Partnership. “So many people have moved into little insets of the forest that it’s really complicated firefighting.”

Located near the Fremont-Winema National Forest, the Chiloquin area has some of the highest fire risk in Klamath County, she says. The forests are overgrown with “lodgepole pine that’s come in as thick as dog hair,” creating a potential recipe for disaster, Vradenburg adds. “It’s just a tinderbox. Fire would come through those areas every 10 years and clear out the underbrush. That just doesn’t happen anymore.”

Vradenburg serves as the project manager for the Chiloquin Community Forest and Fire Project, which brings together private landowners, federal and state agencies, and other partners to improve forest health and fire resiliency across the landscape. The project is led by the Klamath-Lake Forest Health Partnership. The partnership is dedicated to promoting forest health in Klamath and Lake counties, and its membership includes private landowners, forestry consultants, conservation groups, local fire districts, and state and federal agencies.

Engaging private landowners, who may lack the expertise or the resources to make their forests more fire-resilient, is a crucial part of the Chiloquin Community Forest and Fire Project, says Oregon Department of Forestry Stewardship Forester Jason Pettigrew, who



COLLABORATING ON FIRE-RESILIENT FORESTS

When Oregon's first forest collaborative groups were formed in the 1990s, the idea of bringing stakeholders with disparate views together to find consensus on managing the state's federal forests was uncharted territory.

But it was a better option than the escalating lawsuits that put control over federal forest management decisions in the hands of judges instead of with local communities, says Jenna Knobloch, wildfire program manager with Sustainable Northwest. The Portland-based nonprofit organization was at the forefront of bringing forest collaborative groups to Oregon. Often simply called "collaboratives," these groups encourage environmental and timber industry interests to seek common ground on federal forest issues in hopes of avoiding courtroom battles.

Today, Oregon has more than 22 collaborative groups, partnering with each of the state's 11 national forests. They involve hundreds of Oregonians hailing from diverse backgrounds who provide collaborative feedback to the U.S. Forest Service on managing public forests. Fewer lawsuits challenging Forest Service management activities is a frequent outcome of the work of these groups.

Sustainable Northwest provides technical assistance to collaboratives throughout Oregon, and a common goal of these groups – especially in the central and eastern part of the state – is restoring the health and fire resiliency of Oregon's federal forests to reduce the risk of catastrophic wildfire,

Knobloch says. As Sustainable Northwest's wildfire program manager, she works on landscape-scale forest restoration projects that support ecosystem health and community well-being in the age of wildfire.

"Forest collaboratives have taken on new significance and meaning in the context of wildfire," she says.

By encouraging feedback from a range of perspectives, forest collaborative groups improve the quality of projects aimed at improving the fire resiliency of public forests, Knobloch says.

"It's not just different values in the room, but different kinds of technical expertise," she says.

"You can't just do random acts of conservation. You have to look across the landscape."

– Jenna Knobloch, Sustainable Northwest

Collaboratives also build strong connections between forest managers and neighboring communities by involving local leaders and opening their meetings to the public, as well as encouraging an "all-lands" approach to mitigating wildfire risk that includes both public and private land, Knobloch says.

"You can't just do random acts of conservation," she says. "You have to look across the landscape."

CHANGING THE OUTCOME OF WILDFIRE

In the summer of 2017, a wildfire that started in central Oregon's Three Sisters Wilderness crossed outside the wilderness area boundary, forcing the residents of a couple neighborhoods outside the town of Sisters to evacuate their homes.

Firefighters were already stretched thin when the Milli Fire broke out and began threatening homes, Deschutes County Forester Ed Keith recalls. But then they caught a break, he says. The fire hit a Sisters-area fuel-reduction project in the Deschutes National Forest that involved the Deschutes Collaborative Forest Project. The forest collaborative group, which aims to restore central Oregon forests to a healthier, more fire-resilient condition, is run by a volunteer stakeholder committee of 19 community members representing a diverse set of views and values for the region's forests.

As soon as the Milli Fire entered the fuel-reduction project area, which had received a treatment that involved thinning trees, mowing down brush and prescribed burning, it slowed down, allowing fire crews to control the wildfire and protect nearby homes, Keith says.

"Firefighters were able to stop the fire by linking into those treated areas where the fire dropped down and became this ground fire," he says.

The Milli Fire illustrates how forest fuel-reduction and fire-resiliency projects can help bring down the intensity of wildfires, making them less likely to become large and destructive, Keith says.

"We're not trying to exclude fire so much as create the conditions where we can change the outcome," he says.



assists private forest landowners in Klamath County in complying with the state's forest protection laws.

"All of the indicators showed us that we need to be in that community helping them with the risk," he says. "That's the role of the partnership, to look at it on a landscape scale."

By connecting private landowners with technical assistance and grant-funding opportunities, the project allows them to undertake more complex forest restoration work such as prescribed burning, says Amy Markus, cohesive strategy coordinator with the Fremont-Winema National Forest.

"These are all dry forest landscapes where fire was frequent and at low intensities," she says. "Thinning only gets you partway there in terms of reducing fuels and the overall risk."

Another important component of the project is educating forest landowners about fire risk and how to mitigate it, Pettigrew says.

"The main thing is broad understanding and buy-in from everyone working toward a common vision and goals."

— Leigh Ann Vradenburg, Klamath Watershed Partnership

"Some of our successes include landowner outreach about what a healthy, fire-resilient forest should look like," he says. "Hopefully we've changed that awareness."

The Klamath-Lake Forest Health Partnership's diverse membership is a strong asset to the effort, Vradenburg says.

"The main thing is broad understanding



BEFORE



RESILIENT LANDSCAPES

Thinning trees and other forest restoration work being led by the Klamath-Lake Forest Health Partnership on public and private forestland is aiming to reduce the risk of catastrophic wildfire for the Chiloquin community north of Klamath Falls.



AFTER



Photos courtesy of the Oregon Department of Forestry.

and buy-in from everyone working toward a common vision and goals,” she says. “By bringing multiple partners to the table, we can kind of assimilate all those ideas and needs, and work together.”

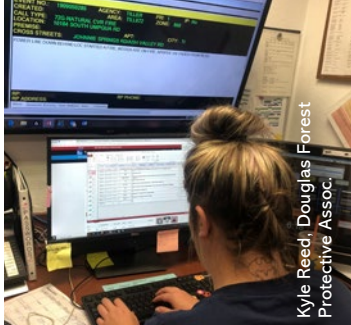
Plus, each partner has something different to contribute, Pettigrew says.

“We’re just leveraging the strength that each partner brings to the table,” he says. “The biggest advantage we found was that, whenever we hit an obstacle, one of our partners was able to step up.”

RESTORING FEDERAL FORESTS’ FIRE RESILIENCE

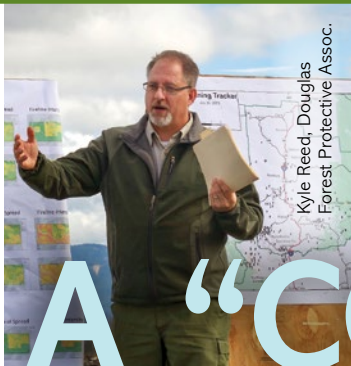
The state and federal government, in partnership with forest collaborative groups and other local stakeholders, are working to accelerate restoration work aimed at improving the health and fire resiliency of Oregon’s federal forests.

Since 2016, an agreement called Good Neighbor Authority has allowed the Oregon Department of Forestry to assist with completing forest restoration projects on federal lands. In 2019, Gov. Kate Brown signed a shared stewardship agreement with the U.S. Forest Service to increase this type of forest restoration work.



Kyle Reed, Douglas Forest Protective Assoc.

WORKING TOGETHER Oregon Department of Forestry fire crews work closely with public and private partners to fight wildfires.



Kyle Reed, Douglas Forest Protective Assoc.



Oregon Department of Forestry

A “COMPLETE AND COORDINATED” SYSTEM

State firefighters are aided by other public agencies & private landowners



Oregon Department of Forestry

DOUG GRAFE

Fire Protection Division Chief, Oregon Department of Forestry, Salem

The Oregon Department of Forestry (ODF) relies on partnerships to fulfill its role as the fire department for 16 million acres of private and public forestland.

Along with protecting state forests and, by contract, federal Bureau of Land Management lands in western Oregon, ODF provides fire protection for much of the state’s privately owned forestland. State law requires private forest landowners to provide protection from fire on their lands. Most opt to pay a fee to the state to have ODF provide fire protection for them.

ODF strives to put out fires in the forests it protects quickly and keep those fires as small as possible, to protect human lives and property as well as timber-producing

forests that support Oregon’s economy. This is accomplished through the state’s “complete and coordinated” system, which brings together personnel and resources from other public agencies, private forest landowners and contractors to help ODF fight fires, Fire Protection Division Chief Doug Grafe says.

“Landowners are very engaged in the system,” he says. “That’s one of the things that makes it unique. Landowners participate in a way that’s not seen anywhere else in the nation.”

That system sprang into action during the 2020 fire season, with private landowners assisting ODF with approximately 450 pieces of firefighting equipment and 650 personnel to fight wildfires that affected a significant number of acres of both state and private

forests across western Oregon. Public and private firefighting partners helped the agency establish 1,500 miles of fire line, Grafe says. “We put them to work right away.”

In addition to assisting ODF during fire season, the financial stake private forest landowners have in the state’s fire protection system makes it unique, he says. Landowners contribute to the cost of base-level fire protection, the state’s one-of-a-kind wildfire insurance policy through Lloyd’s of London, and aviation assets.

“Here, (public and private landowners) pay fire assessments and participate in fire response and readiness,” Grafe says. “From my perspective, that’s a tremendous partner to have.”

Since more than half of Oregon’s forests are managed by the federal government, the U.S. Forest Service (which maintains its own system to suppress fires on national forests) and other federal agencies are also important partners, he says. “What’s critical in any wildfire protection system is a recognition that we won’t function without the support of a robust national firefighting system. And we have that.”

“You have to reinforce and foster many relationships.”

— Doug Grafe, Oregon Department of Forestry

With the all-hands-on-deck approach that’s needed to fight wildfires, it’s important to have support, whether it’s from contractors, private landowners or other public agencies, Grafe says.

“To provide for a complete and coordinated system, relationships matter,” he says. “You have to reinforce and foster many relationships.”



MATT DONEGAN

Chairman, Governor's
Council on Wildfire
Response

GOVERNOR'S COUNCIL ON WILDFIRE RESPONSE

In early 2019, Gov. Kate Brown created the Governor's Council on Wildfire Response to review the sustainability of Oregon's current model for wildfire prevention, preparedness and response, given the state's increasing wildfire risks.

“Our communities and forests were being devastated to a degree not seen before, and our systems and funding were not up to the task,” says Council Chairman Matt Donegan. “It was time to step back and take a strategic look.”

With 20 voting members, 20 additional ex-officio members, and dozens more committee and subcommittee members, the council brought together a diverse array of stakeholders and experts to examine how wildfires affect Oregonians across the state, including the disproportionate impacts on low-income communities and communities of color, he says. They then looked at how the state could improve its wildfire response strategies to mitigate those impacts.

In the fall of 2019, the council identified the need for comprehensive change and released a report outlining 37 recommendations focused on three broad goals: creating fire-adapted communities, restoring and maintaining resilient landscapes, and responding safely and effectively to wildfire. Council members also recognized that there are three main factors contributing to Oregon's worsening fire seasons, Donegan says, an accumulation of fuels in overgrown forests, climate change, and population growth in the wildland-urban.

“We learned the total costs of these unnatural wildfires are typically much greater than we realize, with the greatest impacts to our most vulnerable communities, and all the contributors to worsening fire seasons are trending ominously in the wrong direction,” he says. “The good news is that we have a strategy akin to what other Western states are doing. Now we need to implement the strategy at the scale of the problem.”

The costs of the strategy are significant, but the costs of inaction are far greater, Donegan says. The staggering losses from the 2020 fire season provide a glimpse into the potential cost of clinging to the status quo, he adds.

“This was a long-term strategic look. It was never intended to be a quick fix,” he says. “But we have accumulated a significant debt in terms of excess vegetation, outdated systems and climate change. The longer we wait to act, the costlier and deadlier our situation will continue to grow. We need to modernize and create a restoration economy. We can create jobs and revitalize rural communities in the process.”

Learn more about the Governor's Council on Wildfire Response's recommendations and read its full report at oregon.gov/gov/policy/Pages/wildfirecouncil.aspx.

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ABOUT THE OREGON FOREST RESOURCES INSTITUTE

The Oregon Legislature created the Oregon Forest Resources Institute (OFRI) in 1991 to support and enhance Oregon's forest products industry by advancing public understanding of forests, forest management and forest products, and encouraging sustainable forestry through landowner education. A 13-member board of directors governs OFRI. It is funded by a portion of the forest products harvest tax.

OregonForests.org

ABOUT KEEP OREGON GREEN

For 80 years, the Keep Oregon Green Association has been educating the public on how to prevent wildfires. Beginning its efforts in April 1941, after a public outcry over the human-caused Tillamook Burns, roughly 250 Oregon leaders came together to form Keep Oregon Green (KOG). KOG's mission is to promote healthy landscapes and safe communities by educating the public about everyone's shared responsibility to prevent human-caused wildfires. **KeepOregonGreen.org**

ABOUT THE OREGON DEPARTMENT OF FORESTRY

Established in 1911, the Oregon Department of Forestry (ODF) helps keep forests healthy, working and providing economic, environmental, and social benefits to Oregonians. ODF protects 16 million acres of forestland from wildfire, manages more than 730,000 acres of state forestlands, administers Oregon's Forest Practices Act, monitors forest health, and supports urban and community forestry efforts statewide. The department is overseen by the Oregon Board of Forestry. **Oregon.gov/ODF**

ABOUT THE OREGON STATE UNIVERSITY EXTENSION SERVICE

The Oregon State University Extension Service has been providing research-based, informal educational programs for Oregonians since 1911. OSU Extension is the go-to resource for the expertise and knowledge every Oregonian needs to live healthy lives, nurture our great state's ecosystems and play a vital role in Oregon's vibrant communities. We are committed to creating positive change through programs and providing spaces where each person feels safe and welcome. **Extension.OregonState.edu**

