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— Traci Weaver, U.S. Forest Service

Burning Desire

The Forest Service was founded in 1905 with the duty of stewardship: protecting newly designated federal forestland. After the Great Fire of 1910 — which destroyed 3 million acres across Montana, Washington and Idaho, taking 87 lives — it became the protocol of the Forest Service to suppress all fires.

Smokey Bear was the face of the Forest Service's campaign against wildfires, and through his genial visage Americans were taught to fear the phenomenon. We thought fire was a monstrous thing and ignored the knowledge of indigenous stewards who set the landscape alight to maintain its health and bounty.

Forests have a deep and abiding need for fire — ecologists now categorize ecosystems by their fire return intervals, or the average number of years between naturally occurring fires. In the Willamette Valley, those return intervals range from every 3-5 years in the low elevation grasslands, prairies and savannas, to 11-15 years for oak woodlands, and even to a span of 100 to 1,000 years in very wet rainforests or near rivers.

The Oregon Department of Forestry estimates that the statewide total for prescribed burns in 2016, both governmental and private, was 181,800 acres. According to a 2015 report by The Nature Conservancy, Oregon State University and the Forest Service, 4.2 million acres across Oregon and Washington are in need of disturbance restoration in the form of fire or thinning.

After more than 100 years of well-intended fire repression, much of the Willamette Valley — and the rest of Oregon — has been severely altered from its pre-pioneer days. That means, according Traci Weaver at the U.S. Forest Service, that there is more fuel build-up in these areas, which can lead to more severe wildfires.

"When you break up that canopy a little bit, when you clear out that understory, then you have a much healthier forest that can withstand fire and not go through full stand replacement," Weaver says.

Fire also plays a role in balancing the ecosystem, Weaver says. "The plants and animals of the Northwest basically evolved with fire, so they're either fire-adapted or fire resilient."

Amanda Stamper, a fire manager at The Nature Conservancy (TNC), agrees. Her organization is steward to thousands of acres of land in Oregon and around the world, and prescribes fires in Oregon to rejuvenate native plants.

Ponderosa pine is an example of a fire-dependent plant found all across Oregon. Heat in that species triggers flows of resin that close off holes in its thick, protective bark, which can help the trees fight off insect infestation.

"Fire is the primary agent that causes that to happen," Stamper says.

TNC owns a 519-acre plot of land in the West Eugene Wetlands called the Willow Creek Preserve, and torches sections of it every year. "We burned about 100 acres last year," Stamper says. Warning neighbors before they set fires has helped the burns remain a relatively calm affair, and she says people often ask if they can come out and watch the spectacle.

That property is blooming with native plants this time of year, and even more so a year after they set the prairie ablaze. "Those cattails rejuvenated really nicely, they love fire," Stamper says, pointing to a set of plants alongside a pond.

Stamper uses a term to describe how fire interacts with nature: pyrodiversity. The term means that fire set in a diverse manner on a landscape creates a diverse reaction in the ecosystem.

Setting the entire prairie on fire wouldn't have the same positive effects as starting small fires in disparate areas throughout the seasons and years, Stamper says.

Jason Nuckols works with Stamper at TNC. He says a lot of plants native to the prairie are endemic to the Willamette Valley. "We have more endemic species here than most other places," he says. Much of Willow Creek is made up of prairie, with the occasional oak or Oregon ash growing taller.

Nuckols says that without fire to hold them back, ash trees move into the prairie, and if they didn't burn the land here so often it would be totally filled in with trees within a few decades. Those trees would shade out a lot of smaller plants and lower the biodiversity of the area.

Some of the plants growing there are rare, endangered or threatened, like Kincaid's lupine. That flower is habitat to the endangered Fender's blue butterfly — another species endemic to the Willamette Valley's upland prairie.