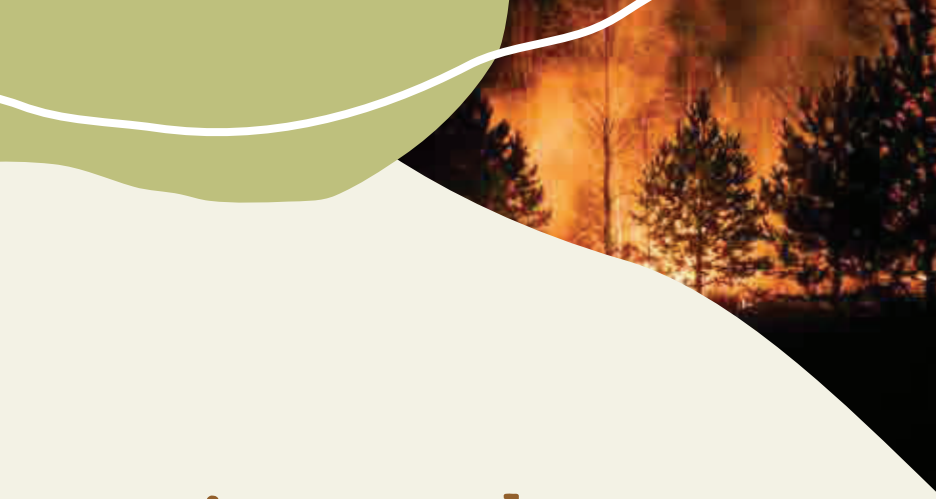


Fire and Your Landscape

How to create a fire resilient East Cascades and support oaks

The East Cascades is a mosaic of rolling hills, cliffs, and rivers falling from **12,000 feet** near the top of Mt. Hood and Mt. Adams to only **130 feet** on the Columbia River. At the same time, rainfall drops from **100”** at the top of the Cascades to only **10”** on the Columbia Plateau.

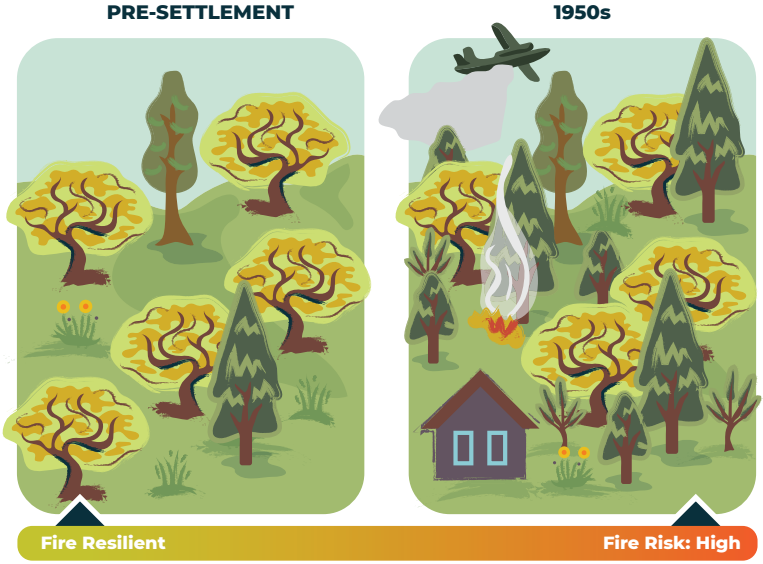
These dramatic changes take place over a distance of about **40 miles**; meaning there are a whole lot of **different microclimates** and growing conditions packed into a rather small space. All of this results in some really exciting and **diverse habitat!**

Fire as a check on conifer growth

Throughout the region, oaks grow together with pine, juniper, and Douglas-fir. In drier areas and on shallow soils, oak and **pine are climax species**—meaning, free of disturbances like wildfire or cutting, **they're the trees that survive and dominate**. In wetter regions, oak is a successional species and Douglas-fir is climax, so without fire, firs will dominate the oaks.

Historically, fire has burned regularly across the landscape, ignited by people, during lightning storms, and consuming vegetation like fir seedlings that are, overall, less fire adapted. These fires burn differently in different places; leaving some habitats with more oak and some with more fir. This means that **our region's fire history has also shaped to diverse habitats**. We also understand that fire suppression has unintended consequences.

Fire Risk Across Time



Oaks are adapted to fire and survived in droughty, fire-prone conditions for millenia.

Increased fire suppression tactics have meant less fire. Douglas Fir trees proliferate, encroaching on oaks.

Overshadowed by fir and pine trees

As Oregon white oaks and Douglas-fir grow side by side, we see a natural series of events play out.

Oaks need abundant sunlight to thrive, so in the shade of fast-growing—and taller—firs, they're more likely to die. Oaks will drop limb after limb, a process known as pruning, in an attempt to concentrate their resources upwards to find light. Try as they might, oak trees just don't grow as tall or as fast as the fir trees. And without any intervention, they will lose the race.

TODAY

OUR VISION

Fire Risk: High — **Fire Resilient**

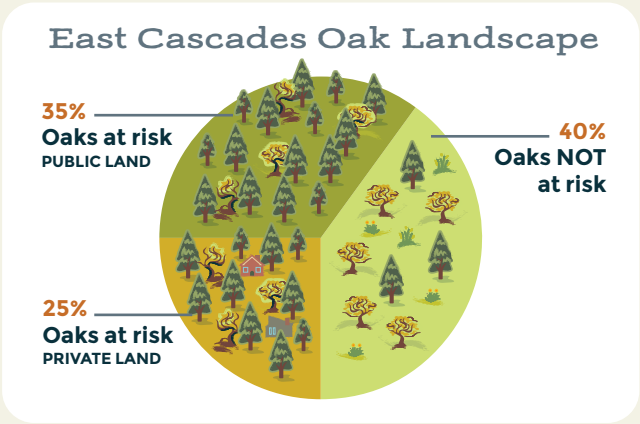
Suppressed oaks eventually die for lack of light. Brush and branches accumulate increasing risk for high intensity fire.

Thinning can help reduce conifers in important oak areas. Logs can be sold to pay for the restoration. Released oaks can thrive, making the landscape more fire resilient.

Every property is unique. Mature oaks provide unparalleled habitat for a multitude of wildlife. Conifers also provide nesting, food, and cover habitat for many wildlife. So watch for nests, and get help designing your project!

Are your oaks at risk?

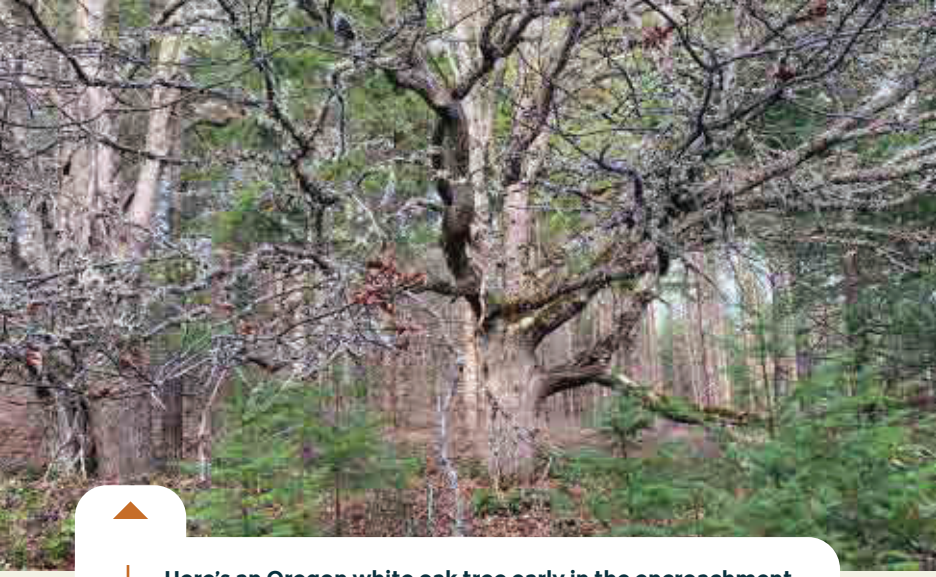
Currently, about 60 percent of the East Cascades oak landscape is at risk for conifer encroachment and 42 percent of that occurs on private lands.



While we have modeling tools that can help us predict where encroachment might be happening, the best way to tell is by observing the following:

> **Are your oak trees under a canopy of fir trees?**
>
> **Are the live limbs of the oaks concentrated toward the top of the tree? Do they also have dead or fallen limbs lower down?**
>
> **Do the stubs project out as though they originally grew laterally, instead of up toward the light?**

Each of these clues suggest your oaks may have developed when there was more light available, which typically means there were fewer competing conifers.



Here's an Oregon white oak tree early in the encroachment process. The Douglas-firs have not yet overtopped it, but they're growing much more quickly than the oak will.

Freeing the oaks around you

While oak trees obviously can't get up and go, we can help them get the light they need by "releasing them," or creating i**ntentional, planned space** around oaks that still have live branches in their crowns, or tops.

Just like south-facing windows let light into your house, so too does removing fir from the south and east sides of an oak tree. You can maximize the benefit to oaks this way and keep plenty of fir in the mix. Releasing mature oak from conifers through **selective thinning can help** fund the cost of this process, because the removed conifers may be commercially valuable. **It's restoration that also has a financial incentive!**

CASE STUDY

Testing our own ideas in oak woodlands

At Columbia Land Trust's Little White Salmon Natural Area, Douglas-firs were overtaking Oregon white oaks. "There were some really nice old growth fir and pine trees that fire had spared over the centuries and we wanted to keep those," explained Lindsay Cornelius, the Land Trust's Natural Area Manager. "So, we focused on removing the smaller diameter firs that were growing up and between the old growth conifers and the oak."

The land trust hired a contractor with "cut-to-length" equipment that could cut and carefully extract the firs from the gnarled branches of the oak. Then, while holding the removed trees aloft, lop off the branches and cut the stems into merchantable lengths to haul to the mill. This approach minimized ground disturbance, which prevented the expansion of invasive weeds, and it generated revenue to help pay for the restoration.

In the end, the oaks are thriving and still providing those incredible benefits to wildlife. The old growth fir and pine are better protected from the risks of catastrophic fire, while the land trust is able to help their neighbors adopt similar practices on their properties.

Using equipment to remove conifer or shrubs can cause soil disturbance that invites invasive weeds and grasses. Seed disturbed areas after your project is complete.

Reach out to oaks@ColumbiaLandTrust.org for ideas and resources.

"It was stunning, the change. You would not have believed you were standing in the same forest, before and after. And those old oaks are much happier—they produced a whole flush of new leaves the year after we released them."

Lindsay Cornelius, Land Trust's Natural Area Manager

Be a part of the team working to support oaks!

We not only want you to see and celebrate Oregon white oaks, we want to **give you** the tools and resources you need to adapt to changing conditions and restore a fire-adapted forest.

Support for landowners

In Wasco County, the USFS and the Natural Resources Conservation Services (NRCS) are investing more than four million dollars to help alleviate wildfire threats to rural communities by restoring forest health on public and private lands. Recent legislation in Washington (House Bill 1168) and in Oregon (Senate Bill 762) dedicates tens of millions in funding through local forestry departments to **help restore forests on private land.** And fire-prone landscapes like ours are high on the priority list.

Find out if your forest qualifies for support by contacting **WA DNR's Landowner Assistance Forester** or **Underwood Conservation District** in Washington; Oregon Department of Forestry, or your local **NRCS** office in Oregon.

ECOP is here to help

ECOP partners are working to develop and deliver conservation-based **incentives** for interested landowners like you—and technical assistance too!

We're developing **assessment tools** to help you interpret the condition of oak systems, **management guidance** tools to help you chart a path forward that considers your many goals for your land, and **monitoring tools** that help us track and measure progress as management unfolds. Conifer trees are a natural and necessary part of our forested landscape, and not all forests are the same. Having technical support and assistance can help you know when restoration is appropriate and access resources to help make it happen.

> **If you're ready to get the ball rolling on your property, visit us at www.columbialandtrust.org/ecop or drop us a line, anytime, at oaks@columbialandtrust.org. You can also reach out to your local NRCS, DNR or ODF office to learn more.**

Get connected:

www.columbialandtrust.org/ecop
oaks@columbialandtrust.org
#EastCascadeOaks

EAST CASCADES OAK PARTNERSHIP