# In Defense of Grand Fir

Why broadscale logging of large grand fir trees to protect old-growth ponderosa pine and western larch is not supported by the science.

## Why grand fir trees need defense

In 2020, the Trump Administration and Forest Service rushed through a proposal to eliminate protections for big and old trees east of the Cascade Crest in Oregon and Washington.

Their justification? Large grand fir trees (*Abies grandis*) were threatening ponderosa pine (*Pinus ponderosa*) and western larch (*Larix occidentalis*) by competing for limited resources.

While the proposal to rollback large tree protections was halted following a federal judge's ruling that it violated three bedrock environmental laws, logging projects conducted by the USFS continue to target large grand fir for removal under the pretext of protecting large ponderosa pine and larch trees.

### Why do grand fir trees matter?

Grand fir is a native tree to forested ecosystems east of the Cascade Crest in Oregon and Washington. Grand fir trees of all sizes play an important ecological role in mixed-conifer forests in the region, including by providing dense forest habitats many species depend upon (Thomas 1979; Bull et al. 1997).

### Grand fir trees provide essential wildlife habitat

Grand fir trees are important to the biodiversity of many eastside forests, providing habitat for species such as American marten, Canada lynx, Rocky Mountain elk, flying squirrel, Vaux Swift, American Goshawk, Pacific tree frog and many others (Thomas 1979; Wisdom 2000).

In many eastside forests, grand fir and western larch comprise the majority of the hollow trees used by wildlife (Bull et al. 1997). The relatively soft wood of grand fir trees creates ideal wildlife habitat by providing natural hollows, cavities, and unusual growth forms that wildlife use for shelter, nesting, and foraging (Henjum 1994; Wisdom et al. 2000). "No artificial means to create or encourage the formation of a hollow tree structure has been found, so retaining such trees…is essential to providing habitat for the species that depend on them" (Bull et al. 1997).

### Grand fir trees are key to mitigating climate change

Large diameter trees (≥21 inches) including grand fir account for just 3% of all trees, but hold 42% of total aboveground carbon on six national forests in eastern Oregon and Washington (Mildrexler et al. 2020). Retaining these trees throughout their lifecycle allows for long-term carbon storage with an eventual slow release through decomposition.

## Grand fir trees are naturally resistant to fire

The thick bark and height of large and old grand fir trees provide natural resistance to fire. In a grand fir forest, wildfire severity is relatively low and second only to ponderosa pine forests in fire resistant traits (Moris et al. 2022).

The canopy of grand fir trees offer several additional benefits: canopy trees help create cool, moist conditions that help moderate fire behavior (Hakkenberg et al. 2024); the canopy shade helps suppress growth of hazardous surface and ladder fuels (Zhou et al. 2013); and the canopy helps reduce penetration of warm dry air into the forest that can increase evaporative demand and increase the drought stress that trees are exposed to (Jarecke et al. 2023; Watts et al. 2024).

## Grand fir trees provide critical large tree structure

The geographic extent and number of large trees (≥21 inches) across six national forests in eastern Oregon and Washington shrank dramatically over the last century (Bolsinger and Gerger 1975; Cowlin et al. 1942; Henjum 1994; Merschel et al 2014). A Forest Service Bulletin from 1975 found that between the mid-1950s and 1975, there was a 44% reduction in the acreage of trees ≥21 inch DBH (Bolsinger and Gerger 1975).

Today, large grand fir represent only 2% of the total grand fir population but 19% of all trees ≥21 inches dbh among five dominant species, providing much needed large tree structure in forests east of the Cascade Crest in Oregon and Washington (Mildrexler et al. 2020; Mildrexler et al. 2023).

## Grand fir trees are not a “threat” to old growth ponderosa pine

Ponderosa pines are the most common species of large trees found on all national forests in central and eastern Oregon and infrequently co-mingle with large grand fir. Further, researchers noted large ponderosa pine and grand fir were found together on only 8% of over 3,300 plots; large western larch and grand fir were found together on only 4% of all plots (Mildrexler et al. 2023). Sweeping regulatory changes are not needed to address this relatively infrequent occurrence.

# Conclusion

Grand fir trees are a native species on all national forests east of the Cascade Mountains in Oregon and Washington and play an outsized ecological role in providing important wildlife habitat in a landscape experiencing a significant deficit of large trees. Further, large grand fir trees are relatively fire resistant and resilient, play an essential role in regulating climate extremes, and seldom intermix with large ponderosa pine and larch trees in Oregon and Washington.

**For these reasons, Forest Service plans for large-scale removal of large grand fir trees is not supported by science or logic.**

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