

Appendix C. Additional Case Studies

In this appendix, we present two additional case studies of creating properties that are more fire resistant. One example, from Sumpter, Oregon, shows what multiple owners of small forested properties can do to reduce their risk of wildfire. The key to this example is that reducing fire risk improves as more people join in the effort because fuels in a larger area have been reduced. This concept is important since there are many recreational homes in the Sumpter area. The other example is from western Washington. Many people may not view western Oregon and Washington as being fire-prone because of moister forest conditions. In the summer, however, even areas west of the Cascades can get dry enough to burn. In this case, humans may cause the fire, not lightning. With increased development on the coast and in the Willamette Valley fringe areas, the threat of a human-caused wildfire is high.

Sumpter, northeastern Oregon

The town of Sumpter, founded in 1862, was named in commemoration of the 1861 shelling of Fort Sumter, which signaled the beginning of the American Civil War. Like other mining communities in the west, when gold was discovered in 1868, the community quickly grew to more than 30,000 residents. By the early 1900s, the gold had played out and the town dwindled. Today, there are more than 650 small forested properties but only about 120 year-round residents live within the roughly four square miles that comprise the city limits.

Sumpter is completely surrounded by national forest lands. The forests have progressively become overstocked with trees over the years and concerns about the risk of wildfire are high (Figure 35). Beginning in the late 1990s, the U.S. Forest Service began thinning trees,

piling slash, and underburning on its lands around the town to minimize the risk of a high-intensity wildfire burning into Sumpter.

The Oregon Department of Forestry (ODF), recognizing the high fuel loads on private property within Sumpter itself, identified the community as a high-priority area for reducing wildfire hazards. The ODF began securing National Fire Plan grant money in 2000 and, over the next few years, obtained approximately \$2 million for fuel reduction work in Baker County. Additionally, the ODF partnered with the City of Sumpter Fire Department and the Powder River Rural Fire Department to plan fuel treatment strategies and to motivate the landowners through public education. The local firefighting departments were instrumental in this effort, providing many individual home assessments and hosting community informational meetings. These departments have also worked to increase their firefighting capacities by purchasing new equipment and stepping up training for their personnel.

The ODF sent multiple letters to approximately 400 landowners, explaining the need for fuel reduction and the availability of grant funds to help pay for clean-up work. Within the next few years, around 30 percent of landowners treated their properties beyond the 100-foot “defensible space” zone surrounding their homes (Figure 36). More than half of this group performed additional work within the defensible space zone. These treatments included thinning, pruning, piling and burning slash (Figure 37), and hauling chipped material to a co-generation facility in Prairie City. The large number of absentee landowners created challenges, but those who did participate represented the majority of the highest-risk properties, and nearly 1,000 acres have



Bob Parker, Oregon State University.

Figure 35. Typical vegetation prior to treatment.



Bob Parker, Oregon State University.

Figure 36. Treated area around residence.

been treated to date. The properties that have not been treated yet are being closely scrutinized and the landowners are strongly encouraged by their fire departments and neighbors to take action.

Sumpter now has a Community Wildfire Protection Plan that emphasizes collaboration to guide the community through prioritizing and planning where future fuels reduction work will be focused. Thanks to the hard work by all the partners, the town of Sumpter has successfully transitioned from a community with a high risk for fire to one that is well positioned to survive a wildfire with minimal damage or loss.

Western Washington

The western hemlock zone of the Pacific Northwest is characterized by shade-tolerant western red cedar, western hemlock, and grand fir. In openings typically created naturally by wind or culturally through the harvest of timber, light penetrates the forest floor, stimulating rapid growth of Douglas-fir, red alder, and a variety of shrubs. Though wildfire is a rare event on the western slope of the Cascades and Olympic Peninsula, large stand-replacing wildfires have occurred. These fires were closely tied to climate and climate history; variations in precipitation and temperature effected the forest and its vegetation. In some cases on the Olympic Peninsula, the vegetation reflected that of northern Idaho, dominated by Douglas-fir, western hemlock, spruce, alder, and lodgepole pine, while the Puget Trough was dominated by Douglas-fir, alder, and oak, similar to Oregon's Willamette Valley today. Both historic vegetation suggest a forest where fire was present.

Greatly improved fire prevention techniques are responsible for the significant decrease in small and large

fires today. In the absence of natural and human disturbance, which would change the density and composition of the forest stands, large fuel loads have created a wildfire risk for owners of family forests. This case study represents one forest owner's silvicultural practices executed for the purpose of protecting his home and forest from stand-replacing wildfire. Secondary management objectives included enhancement of wildlife habitat and viewshed enhancement.

Family forest owner Walt Megahan has a home on 20 acres near Sequim, on Washington's north Olympic Peninsula. His primary management objectives were to protect his home and forest from fire and to create a diverse forest attractive to a variety of wildlife species. In order to reduce the risk of wildfire and home ignition, Megahan implemented practices to create a defensible space around the home and decrease the fuel quantity and arrangement.

First, a defensible space of 30 feet on the east and west side of the house was cleared and replanted with grass. On the north and south sides of the home, where slope was much greater, a 150-foot grass landscape was created (Figure 38). For the next 100 feet beyond the lawn, trees 6 to 14 inches in diameter were thinned to a 20-foot spacing and the lower 18 feet of branches were pruned to create a shaded fuelbreak. Trees and branches removed were chipped and left on-site in several small piles. Bird boxes were hung to provide cover habitat for cavity-nesting birds and mammals.

The remainder of the 20-acre parcel was pre-commercially thinned using a variable-density thinning design aimed at creating a mosaic of openings as well as varied tree species composition and stand densities (Figure 38). Twenty percent of the parcel was thinned



Bob Parker, Oregon State University.

Figure 37. Treated stand.



Andy Perleberg, Washington State University.

Figure 38. Defensible space.

lightly with approximately 8-foot spacing; 60 percent of the parcel was thinned at traditional 12- to 15-foot spacing; and the remaining 20 percent was thinned heavily with 22- to 26-foot spacing between leave trees. Western red cedar was favored and patches of it were left untouched. Natural openings created by root disease were taken advantage of for creating treeless gaps in the forest. Where Megahan desired to preserve the view of the Straight of Juan De Fuca, he removed large trees and planted shrubs for wildlife.

The forest thinning, pruning, and wildlife enhancement practices were partially funded through the Forest Land Enhancement Program, a cost-share program helpful for landowners implementing their Forest Stewardship Plans and administered by the Washington Department of Natural Resources. The second phase of the fuels reduction project was cost-shared through the Environmental Quality Incentives Program (EQIP), which is administered by the Natural Resources Conservation Service.

As a result of the pre-commercial thinning, there was a tremendous amount of downed trees too small for commercial use but sufficiently large in size to risk carrying fire into the crowns of the leave trees. Downed trees also created access limitations for wildlife such as deer. The second phase consisted of lopping this downed material into one- to two-foot sections and scattering the material around the forest (cut-and-scatter), increasing the rate of decomposition of the downed trees and brush. Although EQIP did not fund the practice, a trail was created to provide a clear access path for firefighters. This loop trail has also given the landowner an improved means for exploring and monitoring his forest for health, productivity, and safety.

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