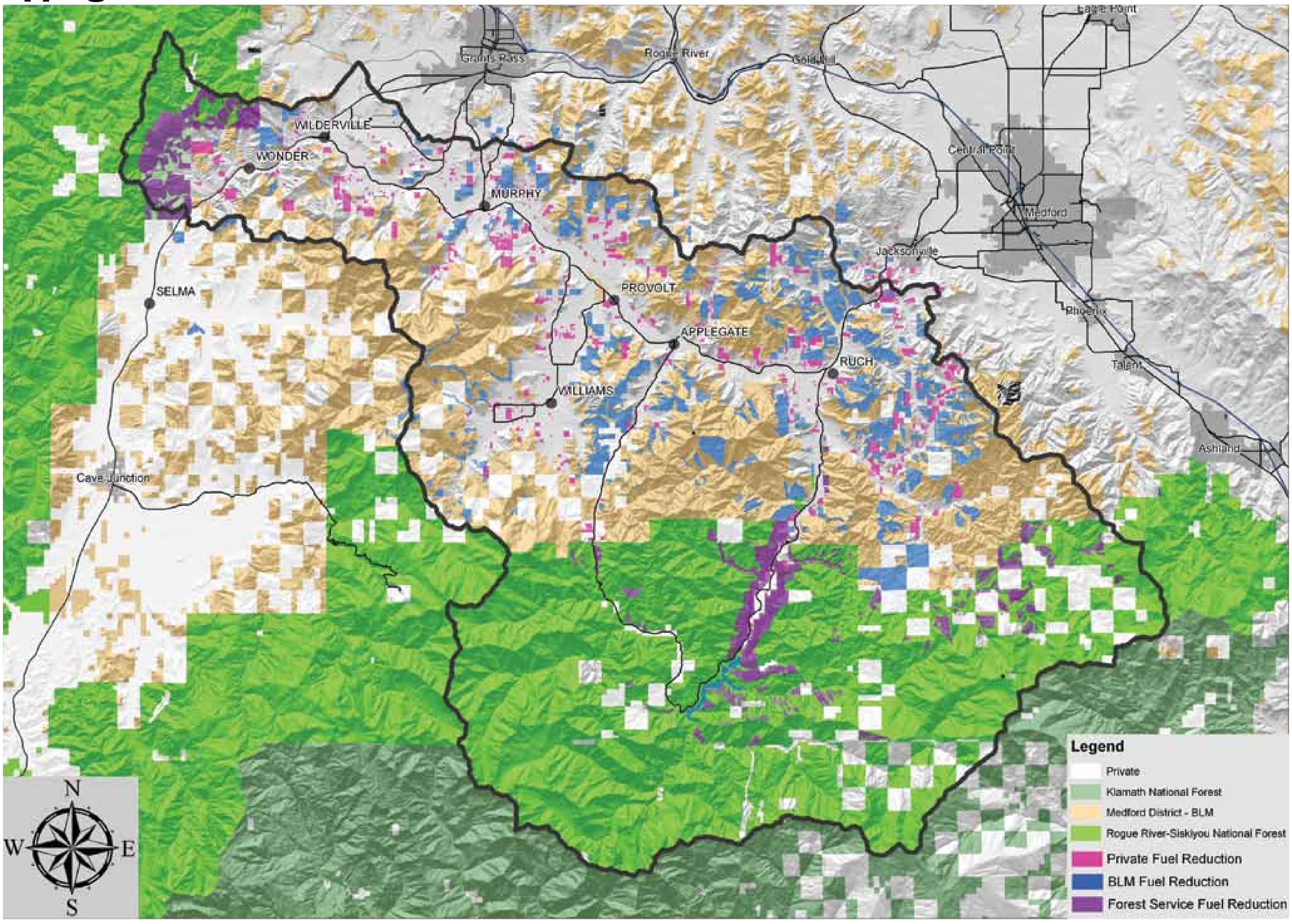
Applegate Fuels Treatment



Fuels Treatment map by Ed Reilly.

How and why hazardous fuels reduction projects work and why they must continue

BY TIM GONZALES

In arid southwest Oregon, plant communities have become adapted to frequent wildfire intervals. When historically routine fire cycles are interrupted by activities such as effective fire suppression, vegetation growth goes unchecked and can become unusually dense. After years and then decades of such practices, wildlands may become impenetrable to human traffic and susceptible to extreme fire behavior.

The story of unnatural fuels buildup in western forests started 100 years ago with the October 1910 "Fire Exclusion Policy." After centuries of fire tending the forests with either natural or Native American ignitions, a war on forest fires began. Policies waging a war on wildfires were not completely without merit. In October 1871 on the same day as the "Great Chicago Fire," 1,500 people died in Wisconsin wildfires. Ten years later, the 1881 fire season took 169 lives in Michigan. In 1884, 418 people died in Minnesota. After the turn of the century, the 1902 fire season claimed 38 lives in Oregon and Washington. The final straw for the U.S. government, however, was the 1910 fire season. The "Great Fire" which occurred in Idaho and Montana, consumed most of its 3 million acres in two days. Eighty-five people died in that fire storm and later that year, 42 more people lost their lives in Minnesota wildfires.

Over the years, more policies were created to continue the war on wildland fire allowing the buildup of forest fuels. Examples include: The Weeks Act of 1911, The Clarke-McNary Act of 1924, and the 10:00 am Policy (which in 1935 declared that every wildfire was to be controlled by 10:00 am the following morning). According to the 10:00 am policy if the fire wasn't contained by 10:00 am more resources were ordered with the objective to control it by 10:00 am the next morning, and so on.

The concept of fuels reduction to modify fire behavior is relatively simple. If fuel is removed, the fire cannot exist. Parking lots don't burn, but we don't want to turn our forests into parking lots either. So where do we draw the line regarding fuels reduction? Using a combination of experience, field surveys, and fire behavior modeling tools, fuels specialists determine how to treat fuels across the landscape.

The goal of fuels specialists is not to exclude fire from the woods, but rather to create fire-resilient ecosystems. An experienced fuels specialist is also a seasoned wildland firefighter who can tell if a forest stand is susceptible to a severe fire. Indicators include vegetation type and density, aspect, and topography. Certain shrubs burn more intensely than others. Manzanita and many ceanothus species carry fire rapidly. Their chemical make-up and dry dead lower branches, create an excellent fuel source for a wildfire. South-facing slopes are often drier with more fast-burning shrub species than north-facing slopes, but may have less fuel volume than a conifer-dominated north-facing slope. Topography is important when determining fuels reduction projects because fire travels uphill much faster and steep areas are often much more difficult to access by fire suppression crews.

Fuels specialists collect data to determine actual vegetation diversity, density and health and measure surface fuel loading. There are several ways to collect data, but most involve creating random sample plots. The collected data is imported into one of several existing fire behavior computer programs. One of these computer programs determines the crown fire potential of an area. Crown fires, the most unpredictable fires resulting in the majority of property damage, are the most dangerous to humans and fauna, and are the most difficult to contain and control. To determine crown fire potential, an assumption is made about how much wind would be needed to carry a fire into the crowns. We use the word assume because weather conditions and fuel moisture content are impossible to predict with complete accuracy. We can collect average weather data and wind speed at a representative remote automated weather station (RAWS). RAWS, as they are called, have been collecting and archiving data for decades. Using existing fuels data and historic weather conditions, computer programs predict crown fire occurrence at the lowest wind speed needed to initiate and sustain crown fire. If the predicted wind speed is lower than 50% of several decades' worth of averaged high summer wind speed, we assume a 50% chance of crown fire potential based on a 100-day fire season. A fuels specialist reading this result would determine that fuels reduction in this forest type is warranted to reduce the chances of loss of forest cover due to crown fire.

The next step is to incorporate the cutting guidelines into the computer model. We do that by eliminating smaller, overcrowded trees and shrubs within the computer model and see what wind speed is then needed to sustain crown fire. When desirable results are achieved, a forestry treatment prescription can be created. Many more variables are then taken into account by forestry and biology specialists, and a hazardous fuels reduction project is ultimately created. This typically includes cutting the undesirable vegetation and then removing it or burning it on site.

When fuels specialists are tasked to find areas in need of hazardous fuels reduction, they consider several variables. The highest priorities for projects are: urban interface, municipal watersheds, areas of high resource value, and habitat for threatened and endangered wildlife. Because funds are limited they are allocated to the projects with the highest needs first.

There are tens of thousands of acres in need of hazardous fuels reduction in Jackson and Josephine Counties (see map). Not only is there an extreme fire hazard, but the century-old policies have also created a stress on overall forest health. Trees overcrowding dry forest lands create too much competition for limited water and nutrients. The weaker trees are susceptible to insect infestation which kills the trees, thereby exacerbating the fire problem. While hazardous fuels reduction projects protect lives and property, they also serve to strengthen the health of our forests.

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