

Forest health projects, studies continue above Roslyn this summer



As catastrophic wildfires continue to burn swaths of land throughout the region, local communities are working tirelessly to protect themselves from what can be logically seen as an imminent and now, perennial threat.

Evidence of this work was seen in action Tuesday on land above Roslyn, where logging crews worked to thin stands of timber on the forestlands managed by The Nature Conservancy. The teams start early, as they must finish work by 1 p.m. due to the dry conditions.

Although the forest thinning and prescribed burn concepts are nothing new to Upper County residents, scientists are forging new ground this season in conducting a unique study that looks at the correlation between forest density and snowpack accumulation.

WORK IN PROGRESS

The work being done on the approximately 340 acres of TNC-managed land is part of a statewide forest restoration push in alignment with the Washington State Department of Resources' 20-year Forest Health Strategic Plan, as well as the Wildland Fire Protection 10-year Strategic Plan. TNC Forest Manager Kyle Smith said ongoing work will continue to reduce brush and shrubs, as well as densely packed trees, what are referred to as ladder fuels.

The ladder fuels literally act as low-hanging fruit for wildfires to work their way up to the upper part of trees, otherwise known as the crown. Once wildfires reach the crowns, they can spread unchecked, leaving firefighters much more limited means of suppressing the fire activity.

Prior to human intervention, Smith said wildfires would naturally take care of the ladder fuels, leaving a forest that would burn mainly on the forest floor with less intensity in subsequent fire events.

"These forests haven't had that natural fire suppression for over 100 years," he said. "What that's done is brought in a lot of ingrowth. Without that fire to kill these smaller trees, we see restriction on nutrients and water affecting the growth of trees."

Without the natural order present, Smith said human intervention is critical to ensuring the fires stay on the ground. He said the goal is to bring the tree density down from approximately 350 trees per acre to around 50, retaining the large healthy trees during the process.

"We've thinned out a lot of the young trees and the shrubs," he said of the work being done above Roslyn. "We're preparing this for a prescribed fire, which could be happening in the fall. That's another way to reduce fuels and restore these forests."

ADDITIONAL BENEFITS

As crews continue their work on forest restoration, scientists will take a look this summer at seeing if they can increase snowpack retention and accumulation as a product of the thinning process. TNC Aquatic Ecologist Emily Howe said they will be looking at snowpack depth response and the duration of how long the snowpack remains on the landscape as melt off begins in the spring.

With the snowpack creating the state's largest natural reservoir, Howe said studies like the one she is working on are crucial to seek innovative methods in increasing the potential water supply.

"In the Yakima Basin, the human-built reservoirs only hold about one-third of the total allocated water rights of the system," she said. "The rest of it is held in the snowpack. As we know, climate change is impacting water supplies throughout the entirety of the American West. In doing so, it's threatening our natural water supply storage system infrastructure."

During the study, Howe said logging crews will thin stands of trees to various densities, where the snowpack response will then be measured next winter. Scientists will take canopy photographs with a hemispherical camera lens, giving them a 180-degree look at the sky view fraction that is covered by the trees, their branches, and needles, versus what is open.

"That is a key metric that we use to create the baseline difference between one plot and another," she said.

During the winter, scientists will measure snowpack depth in the thinned plots. In the spring, they will monitor snowpack melt dates. She said the study will be unique in that the climactic region where the studies are being done has no data. In maritime climates, she said open gaps in tree canopies can result in a snowpack that is twice as deep and lasts 12 weeks longer. In the Rockies, however, she said the direct opposite result occurs when the gaps are present.

"There, you are opening up the snowpack to more solar radiation exposure and more wind exposure," she said. "Right here along the eastern spine of the Cascades where we sit, there is no observational data. All the hydrological models are doing their best guess at what that interaction is."

Howe said her team will work to fill that gap in data, because our regions climate is a blend of both of the extremes.

"We have both a maritime climate, as well as one that's similar to the Rockies," she said.

Using a part of the forestland that hadn't been thinned yet as an example, Howe pointed out that densely packed trees create an interception effect that prevents more snow from reaching the ground.

"What we're hoping to do is help more snow get to the ground and then have it shaded," she said. "Those are the interactions that we are really shooting for with this project. We really need local adaptation strategies, and that is what this project is really about."

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