

The Press Democrat

California's towering redwoods face uncertain future, report says



(1 of 4) A docent led tour group passes by the Armstrong Tree, an old growth redwood in the Armstrong Redwoods State Natural Reserve in Guerneville, Tuesday May 1, 2018. (Kent Porter / The Press Democrat) 2018

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Millions of people venture into California's redwood forests to tilt their heads and behold the giants that stand taller than a football field set on end, can live for more than 2,500 years and form the backbones of coastal woodlands from Big Sur to southern Oregon.

At Armstrong Redwoods State Natural Reserve near Guerneville, the 308-foot Colonel Armstrong tree stands so tall that earthbound admirers can't see the behemoth's uppermost 100 feet.

But it and the other old-growth redwoods of equal majesty are essentially relics, comprising a mere 7 percent of the 1.6 million acres of the coastal redwoods, a species that flourished throughout the Northern Hemisphere during the age of dinosaurs and is now found nowhere else on Earth but the California-Oregon coast.

Just over 90 percent of the redwood forests are relatively slender second-growth trees that sprouted within the last 20 to 100 years and, unlike their massive elders, face a perilous future of more frequent and intense wildfires brought on by climate change.

“That was jaw-dropping to us,” said Emily Burns, director of science for Save the Redwoods League, a San Francisco-based nonprofit that has worked to protect and restore redwoods since 1918. “We saw there wasn’t much old growth left.”

Burns is a co-author of the league’s 52-page study, “State of Redwoods Conservation Report,” assessing the health of redwoods after a two-century onslaught from commercial logging, development, road building and agriculture, as well as fire suppression.

The remnants of old-growth forest, found mostly in Humboldt and Del Norte counties, “remain as islands of isolated forests surrounded by degraded and fragmented landscapes” of second-growth forests germinated in the wake of clear-cutting that started in the mid-19th century, the report said. Throughout the redwood region, there are only 113,000 acres of old growth, representing about 5 percent of the original 2.2 million acres of tall trees on the land before the California gold rush. Some 600,000 acres of redwood forest have since been lost to sawmills.

In Sonoma County, where logging the redwood giants along the Russian River began in 1836, there are 143,377 acres of redwoods, including 9,037 acres of old growth, most located on private property.

There are 7,249 acres of mature second-growth redwoods in place of trees felled in the early 1800s that are now up to 4 feet in diameter and beginning to regain the “habitat qualities” of old-growth forests, Burns said.

“That shows us recovery is possible,” he said.

The county has 57,282 acres of intermediate second-growth trees replacing redwoods harvested within the last century that are now 16 to 32 inches in diameter.

There are 69,808 acres of young second-growth redwoods replacing trees cut down in the last two to four decades that now average 8 inches in diameter. They comprise nearly half of Sonoma County’s redwoods and the same percentage of all redwoods in the region.

“The good news is there’s tremendous restoration potential because those logged forests can recover,” Burns said.

More than 100 years of conservation efforts to protect old growth from logging, along with recent regulations to enhance stream protection and promote positive forest management practices have slowed the damage done by decades of exploitation, the report said.

Redwood forests are far more than bucolic salves for urban-frazzled souls.

Massive old trees grow faster and add more biomass than younger trees, sequestering more carbon from the atmosphere. In their accumulated dead and live wood, old forests store more carbon above ground per acre than any other forest in the world, the report said.

Living trees also deliver an economic boost through tourist spending. Visitation to Redwood National and State Parks on the North Coast in 2016 generated more than \$34 million to local economies and supported 548 jobs, according to the report.

But Save the Redwoods League remains cautious over prospects for the coastal giants' survival. Only 22 percent of the redwood ecosystem — about 345,000 acres — is protected either by public ownership or binding commitments by private landowners to maintain their forests.



Redwood logging has diminished, though roads, residential development and agriculture remain threats to the forest. As the state's population rises, pressure to convert the nearly 1 million acres of unprotected forest to housing will increase between now and the end of the century, the report said. Meanwhile, what would seem to be an advantage — less-frequent fires in the vast majority of redwood forests — turns out to be another worry for conservationists.

Native Americans regularly burned the forests to clear out the undergrowth, while the ancient trees, girded in thick bark, were unscathed. Modern fire-suppression practices have now kept many forests from burning for more than a century, leaving second-growth forests crowded with slender trees and decades of accumulated debris vulnerable to wildfires, the report said.

Higher temperatures anticipated as a consequence of climate change will dry out forests, likely resulting in more frequent and intense wildfires, experts say.

The trend will be compounded by the emergence of sudden oak death, a pathogen that does not infect redwoods but kills some oaks and other woody forest species, the report said.

Sudden oak death, which is rampant in west Sonoma County redwood forests, creates a mass of dead wood that can “accelerate fires into the forest canopy,” the report said. The combination of fire and disease “poses a growing threat to redwood forest structure,” it said.

Still, Burns said she sees prospects for improving the future of the tree that is a quintessential symbol of wild California.

More than 400,000 additional acres of redwood forest need to be protected from future logging and development, while some existing farms and structures can be removed or relocated, the report said.

Forests throughout the region should be selectively thinned and cleared of underbrush to promote growth and reduce fire damage.

“We have a lot of tools at our disposal to protect our forests,” Burns said. “I find a lot of inspiration and hope in that.”

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