

Aggressive local efforts were key to limiting spread of sudden oak death disease in Oregon

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In 2001, forest pathologists in Oregon discovered what was killing trees in Curry County in southwest Oregon—a devastating disease known as

sudden oak death. Almost 20 years later, sudden oak death hasn't spread beyond the county's borders.

Although the initial goal was eradication, limiting [sudden oak death](#)'s spread proved to be a success, said Everett Hansen, a now-retired Oregon State University professor who helped spearhead the effort to contain the spread of the disease.

"From day one, we invoked legal machinery to mandate the destruction of diseased [trees](#)," Hansen said. "Every time we found a diseased tree we cut it down as fast as we could. We were going full bore. So, we went through all these years without any published data to suggest what we were doing was working."

Until now.

In a new study published in the journal *Forest Pathology*, Hansen and colleagues at the Oregon Department of Forestry and U.S. Forest Service highlight the successes of the two-decade effort to manage and reduce the spread of sudden oak [death](#) in Oregon.

In 2001, federal, state and local agencies marshaled their resources to manage the outbreak. They quarantined areas where the trees had been infected and cut down and burned sick trees.

"We focused on local treatments instead of landscapes, sometimes by design but sometimes out of necessity," said Hansen, lead author on the study. "If it was one tree and we cut it down and all the surrounding trees for a mile we might well have eradicated it. But we never had that chance. We didn't have enough chainsaws."

However, the researchers found that these treatments did demonstrably reduce the infestation. They concluded that eradication of sudden oak

death is difficult—the pathogen that causes the disease may survive in soil for several years—but not impossible.

"This is pretty strong evidence that the state and federal agencies in Oregon did the right thing in actively managing this disease," said Jared LeBoldus, a [forest](#) pathologist at Oregon State who, like Hansen before him, has a dual appointment in OSU's College of Agricultural Sciences and College of Forestry.

Through the years, studying sudden oak death during eradication and management efforts in Oregon proved difficult, Hansen said, because there wasn't an opportunity to set up a classic experiment using an untreated control group to measure success.

"By state law, we can't leave replicated patches untreated," he said.

"There was no opportunity to sit back and look to see if what we were doing was working or not."

Sudden oak death was first reported in North America in 1995 in Mill Valley, California. In 2004, the U.S. Department of Agriculture formed a rapid response task force to limit the spread of sudden oak death in nurseries across the country but in tanoak forests the disease traveled north unabated for several years. Hansen thinks sudden oak death was likely present in southwest Oregon for five years before it was detected.

"Based on the biology, based on what happened in California, I would have expected sudden oak death by now to be north of the Umpqua River—two counties to the north," he said. "But it isn't. It's because we've been really aggressive in going after it."

In trees, it takes about two years from the time of initial infection to death. But the pathogen that causes sudden oak death affects far more than just oaks. About 130 plants that define Oregon landscapes can

harbor the pathogen, including rhododendron, madrone and huckleberry.

If sudden oak death spreads north up the Oregon coast, timber exports could be crippled. That's the conclusion of a recent Oregon Department of Forestry economic analysis. Protecting neighboring Coos County from sudden oak death would prevent the closure of the Port of Coos Bay, according to the analysis.

Other benefits of managing the spread are cultural impacts to Native Americans, preserving forest aesthetics and related property values, and a lowered risk of wildfire.

In 2017, a team of scientists including OSU reported a second strain of the pathogen that causes sudden oak death disease has infected Douglas-fir and grand fir saplings in southwest Oregon. The strain, identified in 2012 and reported first in Europe, spreads more aggressively than its North American counterpart. This study didn't include the European strain.

Co-authors on the study are Paul Reeser and Wendy Sutton with the Department of Botany Plant Pathology in OSU's College of Agricultural Sciences; Sarah Navarro and Alan Kanaskie with the Oregon Department of Forestry; and Ellen M. Goheen with the U.S. Forest Service Southwest Oregon Forest Insect and Disease Service Center.

"This study demonstrates the importance of the initial eradication program and our current slow-the-spread efforts," said Navarro, an OSU graduate and forest pathologist for the Oregon Department of Forestry. "The disease treatment work continues to buy us time to research and develop better management options for this destructive disease."

OSU Extension has published two guides for preventing the spread of sudden oak death. "[Sudden Oak Death: Prevention, Recognition,](#)

[Restoration](#)," is targeted to homeowners, small woodland owners, resource managers and conservation groups. The other is "[Sudden Oak Death and *Phytophthora ramorum*: A Guide for Forest Managers, Christmas Tree Growers, and Forest Tree Nursery Operators in Oregon and Washington](#)."

More information: Everett Hansen et al. Efficacy of local eradication treatments against the sudden oak death epidemic in Oregon tanoak forests, *Forest Pathology* (2019). [DOI: 10.1111/efp.12530](https://doi.org/10.1111/efp.12530)

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