



POINT REYES LIGHT

Too late to stop oak death, study says

By Samantha Kimmey

05/11/2016

A new scientific report says that sudden oak death has spread so far that statewide efforts to stop or slow it are no longer feasible and have been impossible for over a decade.

Researchers, who used computer modeling to examine the spread of a water mold called oomycete *phytophthora ramorum* wrote in the Proceedings of the National Academy of Sciences that it may have been possible in 2002 to curb sudden oak death, though it would have required serious funding and “unprecedented cooperation” between the government and private landowners. But that time has long since passed.

“[O]ur analyses show—for the first time, to our knowledge—that statewide action to slow epidemic spread has not been feasible for some years,” wrote the five authors, who include Nik Cunniffe and Christopher Gilligan of the University of Cambridge, Richard Cobb and David Rizzo of the University of California, Davis, and Ross Meentemeyer of North Carolina State University.

The disease was discovered in California in 1995, in the Bay Area. Its precise origins are unknown, but it made its way into California forest from ornamental rhododendrons. Though sudden oak death has killed oaks, it has particularly devastated tanoaks, which are not true oaks but a close relative. Bay laurels, which host the pathogen but do not die from it, are largely responsible for spreading it.

Today upwards of 70 percent or more of Marin’s tanoaks are infected or dead, said Matteo Garbelotto, who runs a research lab at the University of California, Berkeley, called The Forest Pathology and Mycology Lab and who was not involved in the current study. “For tanoak, it’s too late in the Bay Area. Hopefully there will be pockets of survival,” he said.

Mr. Garbelotto noted that in California, areas of the Santa Cruz Mountains and West Marin have suffered the most from sudden oak death. Because the pathogen thrives in wetter conditions, it spreads easily in foggy areas on the coast.

Tom Gaman, an Inverness resident who runs East-West Forestry Associates, wrote in a local journal last year that “there are a thousand standing dead tanoaks near Shell Beach alone, and it is generally thought that all tanoaks here will eventually become infected and die, which means fewer acorn staples for wildlife.”

There have been no broad statewide efforts to try to combat sudden oak death, the new scientific paper notes,

but smaller-scale efforts have included thinning areas where it strikes and injecting trees with Phosphonate, a fungicide. (In the Bay Area, a yearly “bioblitz” trains citizens to identify and map affected trees.)

Researchers used the computer model to try to answer a number of questions, including whether statewide prevention efforts could have worked, how early such an effort would have needed to begin and what strategies may be best effective for battling an epidemic in its early stages.

For instance, the authors say that theoretically it would have been best to frontload funding—that is, given a certain amount of money, agencies should spend a big chunk early on, rather than a set annual amount, to better slow the epidemic. They also say that with limited resources, it is most effective to focus efforts “at and ahead of the northerly wave of the epidemic,” as opposed to focusing purely on infected sites.

Although the researchers do not have a time machine, they write that the modeling is meant in large part to provide insight for future invasions of forest pests and pathogens, which is probably inevitable. And the study doesn’t say agencies should simply surrender to sudden oak death. Instead, it urges smaller scale work to continue. “Management efforts to reduce impact at local scales must now be the focus,” the authors said.

Mr. Garboletto said the study was mostly solid, but emphasized that it was both a “theoretical exercise” and “something we have known for a while,” adding that local efforts can indeed “make the situation better.”

“We can’t protect 100 percent of oaks, but we can protect a significant number,” he said.

Still, Mr. Garboletto said the situation is dire. Research in California, largely undertaken through U.C. Berkeley and U.C. Davis, depend on funding—which could also become scarce this fall, he said.

Funding typically comes from three sources: the Forest Service, the National Science Foundation and private foundations. That has amounted to half a million to \$1 million a year. But that could dip to closer to \$100,000 this autumn, as monies from private foundations and the N.S.F. becomes scarce.

Long-term studies about sudden oak death—such as research into resistant trees, treatment methods and more—could suffer, Mr. Garboletto said. “We are in a dire situation...we have a very small amount of funds assigned,” he said.

He also worried about media reports on the new study, given that projects to protect local living oaks hinge on buy-in and awareness from private landowners and citizens.