

Scientists finger possible culprit in California oak tree disease

Researchers debate what the next step should be

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The discovery of a new species from a notorious family of fungi has given scientists their first suspect in the death of California oak trees and handed them an even tougher problem: How can the killer be stopped?

Quarantines have been proposed, but state parks officials contend that's premature and would be difficult to enforce.

Researchers, meanwhile, are almost clueless about how the disease is spread, and hence, how it can be contained.

Doing nothing may be best, said David Rizzo, a plant pathologist at the UC Davis, who is on a statewide task force of researchers stalking the disease.

"People want to do something and it's really hard to tell them not to," he said. "But it's really hard to say what to do, mostly because there's so much about the pathogen we don't know."

If the newly discovered fungus is like other Phytophthora species, it could move through water. But the disease could also have spores that are moving with wood, mud, soil, on car tires, insects, animals, shoes or in the air.

Steve Singer, a biologist and representative of the Bioregional Council in Santa Cruz County, contends that with the disease prevalent in state parks, neighborhoods and other areas frequented by humans, people be the ones spreading it.

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STEVE SINGER,
BIOREGIONAL
COUNCIL

Singer recommends a partial quarantine.

"Since there is no known cure, containment of the disease is crucial," said Singer. "Quarantining infected sites would be a logical first step, however, much inertia will need to be overcome before this

can occur.

"People (who) work in the woods or mountain bike or ride horses should be very aware of where they've been. There's no question they should clean their tires, their horses' hooves, whatever it takes, before they go to another area," Singer said.

On a scale of one to 10, Singer said he rates the "potential damage from this disease as a 100."

"It may be the single greatest opportunity of our lifetime to do something to protect biodiversity in the Santa Cruz Mountains and the state as well," Singer said.

To repeat mistakes the state made in responding to the pitch pine canker disease would be "unforgivable," Singer said. "Everyone was so cautious and waiting to see what the disease would do that by the time they found out what the disease was like, it was virulent."

Scientists are still trying to determine how many trees have been afflicted, with estimates ranging from the thousands to the millions. A broadcast survey has found an average of 15 percent of the trees are infected in the affected areas, and up to 80 percent in some areas.

In Santa Cruz County, the disease has been found in slivers of Big Basin, Henry Cowell and Castle Rock state parks and along road corridors, such as highways 9 and 17.

Closing state parks in the Santa Cruz Mountains to curb the spread of oak deaths would probably be ineffective, said George Gray, resource manager for the district.

"You can try it on paper, but in reality there's a hundred entrances to these parks and they don't lend themselves to closing. To be really effective you'd have to close some state highways. Limiting traffic in affected areas might slow things down, but I doubt it would stop it," Gray said.

Dave Vincent, supervisor of state parks in Santa Cruz County, said he has directed parks personnel to avoid walking, driving or riding in areas with diseased oaks. Meanwhile, "we will continue to identify and map the areas," Vincent said.

"If we begin to see it expanding at all, especially when we get the map and see if it's along heavily trafficked areas, then we'll have to sit down and see what else we can do."

The "sudden death" oak tree killer has been moving through California's coastal forests for the past five years, apparently starting with a patch of tan oak trees north of San Francisco. Scientists say it has now spread more than 350 miles stretching north from

Oaks

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Monterey County.

While the tree killer started quietly in tan oaks, a tree more important to wildlife than commercial loggers, the alarm was sounded when it spread to the prized coast live oaks and black oaks.

Among the many unknowns is whether the disease can spread to other species.

Scientists edged closer last month to identifying the culprit when Rizzo found a previously unknown species of Phytophthora, a notorious group of fungus-like organisms that includes the species that caused the Irish potato blight and the species now killing oak trees in Europe and eucalyptus trees in Australia.

Since then, two other fungi have been found in the afflicted trees, said Steve Tjosvold of the Santa Cruz County Agriculture Extension Office. Neither have been identified to the species' level, but both are pathogenic to oaks, he said. They may work in concert with the Phytophthora and insects in a complex relationship.

In hard-hit Marin County, the county Board of Supervisors have declared a state of emergency and asked Gov. Gray Davis for \$3 million to help fight the oak killer. They were denied the funding.

Citizen groups have also formed

in Marin to spray afflicted trees for the invasion of beetles that follow the disease in hopes that it will stop spread of the disease.

Property owners might unwittingly contribute to the spread by cutting diseased trees if the spores move in water or air or soil or via the tree's wood, Rizzo said.

Statewide task force members last week, via teleconference, debated with federal Department of Agriculture officials whether to impose quarantines on the movement of oak wood and living oak trees or take some other action.

Rizzo, who took part in the conference, said there was no agreement among participants. "Some said here was not enough information to act and there were others who seemed to think that's more reason to act."

For example, experts disagree on the benefits of spraying. Tjosvold said he feels it may be beneficial to spray insecticides on infected trees to kill beetles that may spread the disease to other trees. He doesn't recommend any fungicide sprays for the disease.

Rizzo said, however, that while there is no proof, his "gut feeling" is that spraying might prolong the life of the tree, and the fungus as well. "If you're spraying for beetles, you may keep the tree alive, but the fungus doesn't go away. You may increase the chances of spreading the disease."