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Sudden oak death drying up with drought

Peter Fimrite

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Butch Kronlund, president of the Coastlands Mutual Water Co., walks in an area in Big Sur where seven of 137 bay laurel trees in a recent survey tested positive for the microbe that causes sudden oak death. Photo: Michael Macor, The Chronicle | [Buy this photo](#)



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The California drought is helping save the state's signature tree - the mighty oak - by slowing down the spread of the plague-like disease scientists call sudden oak death.

The exceptionally dry conditions have drastically reduced the number of contagious spores that have killed hundreds of thousands of oak trees and raised havoc among tree

lovers and scientists.

Preliminary results of surveys taken between April 4 and June 5 this year show an infection rate of between 2 and 10 percent of California bay laurel trees tested in 17 western counties between Fort Bragg and San Luis Obispo. That's compared with between 20 and 80 percent during a normal year when rainfall is abundant.

Pinpointing infected bay laurels is the key to fighting the tree-strangling pathogen because bays are the waylay point for the miscreant microbes before they do their dirty work on oaks.

The findings are significant because scientists had predicted that sudden oak death, discovered in Mill Valley in 1995, would kill 90 percent of California's oaks within 20 years.

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The drought is giving scientists battling the microscopic malefactor a fighting chance like they've never had before.

"This is a little bit of a positive because it gives us an opportunity to see and attack the weakest link of the disease - that is, when the populations really, really shrink," said [Matteo Garbelotto](#), the forest pathologist who heads the [Forest Pathology and Mycology Laboratory](#) at UC Berkeley. "The pathogen hates the drought. It's like an outbreak of influenza. When it is cold and wet, people get sick. We know that when it is dry, we do not have outbreaks."

107 susceptible host plants

Sudden oak death exists in forests and wildlands along the California coast and in southern Oregon. It kills big oak trees and the smaller understory tan oaks, which have been ravaged in portions of Big Sur, Jack London State Park in Sonoma County, China Camp State Park in Marin County and the Marin Municipal Water District watershed lands near Mount Tamalpais. It was even found in a cluster of three trees near Middle Lake, in the southwest corner of Golden Gate Park, near Sunset Boulevard.

The disease has 107 susceptible host plants, but California bay laurels are the vectors for the accursed affliction, storing up the spores on their leaves and spreading them in the winds to nearby oak trees, which are themselves not infectious.

Researchers at Garbelotto's lab have spent the past few years plotting test results taken all over Northern California by volunteers participating in what they call SOD-Blitzes. This year, only eight of 170 bay trees surveyed near the community called Coastlands near the Post Ranch in Big Sur tested positive for the disease. Only one tree out of 104 tested at Pfeiffer Big Sur State Park came back positive, Garbelotto said. Big Sur has over the years been one of the hardest-hit areas in the state.

The highest infection rate of bay trees was 83 percent last year on South Skyline Boulevard, at the top of the Santa Cruz Mountains. The infection rate increased tenfold in California in 2012, a year after heavy rains. Garbelotto believes the killer disease has finally been beaten down this year after three straight dry years topped off by a parched winter.

Chance to take offensive

The precipitous decline in the amount of infection, he said, is a prime opportunity to take the offensive in the long-running battle against the disease. Seven of the eight bay trees in the Coastlands area were cut down this past week, the first major logging operation targeting sudden oak death. Many more infected bay trees are likely to fall to the ax this summer, he said.

"We're figuring out where the pathogen is hiding. The approach is to basically inflict a strike on the pathogen so that it will exist in fewer places and, as a result, its outbreaks will be smaller," Garbelotto said. "When we take down these trees, we are taking away the place where the disease finds shelter during these harsh times. We can't get rid of the pathogen, but maybe we can go from having 70 percent of the oaks being killed to maybe less than 5 percent of the oaks being killed. That's really, really significant."

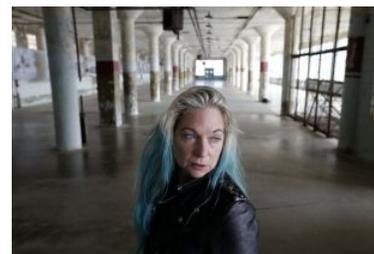
It would not be possible, he said, without the help of cities, counties, homeowners and landowners who participate in the sampling and testing program organized by the [Berkeley laboratory](#).

"People are taking advantage of what in theory is a negative and making it a positive," he said, adding that drought itself causes some tree mortality, but not as much as sudden oak death can cause. "We're joining forces with nature to defeat this exotic organism."

Detecting sudden oak death

Map: A Google Earth map downloadable for free will be published in October with the results of the 2014 surveys at www.sodblitz.org.

App: Scientists have developed a smartphone app called Sodmap Mobile that can be used to look at the map. The app, which uses global positioning technology, can also calculate for users the threat to oaks in a particular area and display on the screen whether trees are at high risk, moderate risk or low risk.



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Peter Fimrite is a San Francisco Chronicle staff writer. E-mail: pfimrite@sfchronicle.com
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nativegrump Rank 77

Random thought - the oaks have been growing California how long? Centuries. So they have ebbed and flowed with fire, disease, drought, flood and whatever slings and arrows nature has thrown at them. Maybe the scientists should switch to cancer research.

6 hours ago 3 Likes

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@nativegrump
Except oaks never had to face the sudden oak death fungus, which is not a natural phenomenon. It is one of many diseases that have spread around the globe unnaturally because humans unknowingly transport. While it's not definite, the pathogen causing sudden oak death, *Phytophthora ramorum*, is thought to have been inadvertently introduced from Asia.

When species are transported to non-native habitats where the targets have no resistance, they sometimes wreak havoc. Hence the... » more

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This is like your virus count holding steady because your fever spiked. Probably not a good sign of your overall health.

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billjitsu Rank 188

If I were a tree, I'd probably prefer "sudden oak death" over burning alive in a wildfire.

7 hours ago 4 Likes

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bay Rank 103

@billjitsu -- OMG ... You got me to thinking I'd participate in Hug-A-Tree day next year. My luck? It would be a sudden oak death and come crashing down on me.

5 hours ago 0 Likes

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mrkette Rank 466

@billjitsu: Wildfire serves an ecological purpose, while Sudden Oak Death is simply a scourge.

2 hours ago 0 Likes

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Every cloud has a silver lining.
Regards...

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jadjones Rank 87

@SirTC Dunno who you're regarding, but I agree.

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"The findings are significant because scientists had predicted that sudden oak death, discovered in Mill Valley in 1995, would kill 90 percent of California's oaks within 20 years."

And, how many have actually been killed in 19 years since?

"We can't get rid of the pathogen, but maybe we can go from having 70 percent of the oaks being killed to maybe less than 5 percent of the oaks being killed. That's really, really significant."

Kind of like the moving numbers used by other scientists... [» more](#)

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@fried_franco

Wait, what?

Models, made by real live humans can be.... Gasp.... WRONG?

Since when?

Most of The rest of you walked right into it.

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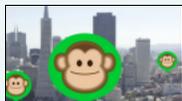
@FourthGenSanF We all know you have a problem with science.

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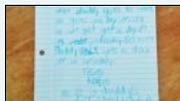
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