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**ENVIRONMENT** 

## Discovering more victims of Hurricane lan: Pine Island's namesake trees



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More than four months after Ian, the hurricane is still claiming lives. Pine Island's namesake trees are falling to a one-two punch: beetles attack storm-stressed pines, bringing with them fungal spores that help finish them off in a matter of weeks.

Expect the same throughout Southwest Florida, says Stephen Brown, horticulture agent with the Lee County Extension Service. "The problem is not just confined to Pine Island but will be apparent in many areas of Lee, Collier, Charlotte and other affected counties," he said. Nor will the plague end any time soon: "Even pines that appear unaffected may be taken out by these beetles two to three years from now," Brown said. "Expect thousands of slash pines to be killed over time in those affected areas."

At this point, there's no way to estimate how many trees we'll eventually lose, says the Florida Forest Service's Bonnie Stine, because damage assessments aren't finished. But the news isn't good. "In coastal areas where there was saltwater (on land), that causes the trees to be stressed, then the beetles will get into the tree and become part of that spiral of decline and death," she said. Once infested, "Most of the trees are going to succumb. If there's been water inundation or saltwater intrusion, they usually take them out pretty quickly."

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As in a matter of weeks, says Gerard Cicoria, who runs St. James City-based Gerard's Tree Service. He's watched with horror as acres of once-healthy pines have died with alarming speed.

He recently had to remove 80 trees for a client. "It went from a beautiful forest to a desert ... It's really sad," Cicoria said. "Pine Island is going to have epidemic loss."

The first sign of the problem are pencil eraser-sized holes in the tree either with a trail of sawdust or a weeping ooze of sawdust and sap on the bark, Cicoria says, "then the tree will start wilting and turning a rust color, then probably a month and it's done."

If you don't know what to look for, it's hard to tell a tree has been hit. Just ask Pine Island author and nursery co-owner Mary Kaye Stevens.

Concerned about a couple of leaning pines on her St. James City property, she called Cicoria. "I thought the trouble was that they'd been partially uprooted, and he said, 'You realize that's not the problem? Take a look at this,' and he showed me it was actually pine beetles," she said.

What's particularly heartbreaking for her is that some of her decades-old pines are old friends her son Craig grew up climbing.

"I was just sick ... hundreds have died on our property alone," Stevens said.

Eventually, Stine says, there may be programs to help landowners replace lost trees, either government-funded or helped by nonprofits. "We have been reaching out to the Arbor Day Foundation," she said. "They have a community reforestation program for after storms."

Her agency also has requested supplemental hurricane recovery funding from Congress, "but we won't know about that unless it's appropriated."

## 'Bad little buggers'

Primarily to blame are three species of teeny beetles of the genus Ips (from the Greek meaning a worm that eats wood), Brown says.

Though the critters are less than an inch long, they do outsized damage. "The size of the tree doesn't matter," Cicoria said. "They'll take on any tree, even young heathy ones ... They're bad little buggers"

The beetles, which can fly up to four miles, are nothing new; it's just that healthy trees in healthy landscapes can resist them.

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The hurricane broke branches, tipped trees, pushed saltwater inland and flooded large swaths – all hard on trees. Once stressed, pines release a pheromone that attracts the beetles, Cicoria says.

"They bore into the tree and then they'll mate in there, and lay their eggs under the bark," he said. "The larvae grow and start spiraling around and start eating the tender cambium layer."

Adding insult to injury are fungal spores the beetles introduce, he says. "If you imagine the xylem and phloem (the tissue in a tree's vascular system) as pipes, the blue stain fungus clogs them."

What makes this more frustrating is that once an infestation has started, stopping it is all but impossible, the Forest Service's Stine says. "There's just not a whole lot you can do, unless it's a really high-value tree," and want to spend hundreds of dollars on treatments that may not even work.

If trees have escaped storm damage, maintaining them in the peak of health with plenty of water, mulch and nutrients may help, Cicoria says, and an insecticide called permethrin painted or sprayed lightly on the bark may be a deterrent as well, though he's loath to recommend that. "I hate to use that stuff," he said. He's hopeful someone will find a natural remedy, but so far, has nothing specific to recommend.

In the meantime, the best thing to do is burn or mulch damaged, declining, or recently-dead trees, Brown says. Better to act sooner rather than later, he says. "Once the symptoms are noticed, remove the pines for fear of spreading the contagion."