

Thousands of palm trees are dying from a new disease

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The section of Tampa's Bayshore Boulevard that winds around the Hillsborough Bay is lined on either side by one of Florida's most iconic plants, the palm tree.

Some are tall and spindly, necks so long and thin it seems impossible they could support an entire head. Others have verdant green limbs that stretch around their short trunks.

Among a canvas of lush palms, a few trees stand out. Their fronds are a sickly light brown.

Local forester Richard Bailey offers a prophetic warning: These [palm trees](#) are dying. So are many more around the Tampa Bay area and throughout Florida.

Just as worrisome: There is no cure for the disease that ails them.

Samuel Thomas spent his childhood looking at trees. Growing up in a rural part of Virginia, he spent many days walking through the forest with his grandfather and learning to identify the many different types of trees.

When Thomas first moved to the area about six years ago to attend the University of Tampa, he felt that the state's identity was interwoven with palm trees.

But soon, he noticed: some were dying. He watched as the once-flowering palms withered into ravaged shells.

Thomas told people about it. They just rolled their eyes.

"They get tired of me talking about it," he said.

So Thomas came to Florida Wonders.

"I have steadily noticed an increase in the amount of dead or dying palm trees, many of them in the city or right along highways," Thomas wrote

to the Times in late May. "They sit for months as eyesores before being removed and sometimes replaced."

He ended his email with a plea for someone to recognize these dying trees.

"Has anyone else noticed the rise of dead palm trees?" he wrote. "Sadly, no one I know seems to notice."

Thomas is right: Something is killing Florida's palm trees.

The disease that afflicts these trees, lethal bronzing, has a name similar to the color it turns diseased leaves, a brown that slowly morphs onto each leaf until the whole tree dies.

The first characterized case of lethal bronzing occurred in Texas in 2002, according to Brian Bahder, an assistant professor of insect vector ecology with the University of Florida's Institute of Food and Agricultural Sciences extension. But it wasn't until 2006 that the disease was first identified in Florida.

The disease starts with a tiny insect. The aptly named plant hoppers feed on the tree's sap and inject their saliva into its tissue through their "needlelike mouths," Bahder said. When a planthopper feeds on an infected tree, they become a carrier of the disease.

Once a planthopper feeds on a healthy tree, the disease is instantly transferred. And just like that, a quick feeding process turns a healthy tree into a sick one.

Scientists first noticed a disease consistent with lethal bronzing after an onset of dying palm trees cropped up in Texas in the 1980s, Bahder said. Florida was already accustomed to lethal yellowing, a palm disease that

originated in Jamaica and spread throughout the Caribbean. That disease lingered in South Florida, primarily affecting the Florida Keys and Miami-Dade, but it largely stayed there, mostly affecting coconuts.

Yet these trees in Texas looked different. When scientists tested them in 2002, they found the bacteria was not the same as lethal yellowing. At that time, the disease was named Texas Phoenix Palm Decline because it was thought to only affect Phoenix or date palms in Texas.

By 2006, scientists found that the disease had spread to other parts of the country, including Florida, where it was centered in Hillsborough County. Since then, lethal bronzing has trickled to 31 counties in Florida as far north as Duval and as far south as Broward.

Scientists are still trying to determine how the disease migrated to Florida. But they do know that it was first seen in Hillsborough.

"Tampa is kind of ground zero for this infection," Bahder said.

When a tree is infected with lethal bronzing, the symptoms start slowly. First, the tree will drop its fruit prematurely. If there are flowers on the tree, those will slowly die, eventually browning the oldest leaves. There is no chance of a tree surviving once the spear leaf, or the youngest leaf of a palm tree, gets diseased.

It takes four to five months from acquiring lethal bronzing until death, Bahder said. There's no treatment.

"Lethal bronzing is different than lethal yellowing at the molecular level," Bahder said. "It always kills the palm when it gets into it."

How many trees have died since lethal bronzing descended on Florida's palm populations? It's hard to quantify, Bahder said.

"I've heard some growers have lost full stands of palms and that runs them in the millions of dollars of loss," he said.

But he estimated that "tens of thousands" of trees in Florida have been affected at this point.

Right now, there is one solution: Pump unafflicted trees full of an antibiotic, oxytetracycline, which can be used to treat acne and rosacea in humans, every three to four months.

The problem with that solution is it's expensive and not permanent. To get a forester like Richard Bailey to inject your trees, it's \$50 per palm four times a year. If you have more than one palm, you're quickly spending hundreds of dollars simply to prevent your trees from getting a disease they may never get.

Could there be a cure? Earlier studies of lethal bronzing found that pumping liters of "really pure" antibiotic into palms was enough to subvert the effects of lethal bronzing. But it's not a surefire solution.

"I think it's possible," Bahder said. "We just need the money and the time."

Richard Bailey is the kind of man who can look at a tree, point to its branches and immediately spout off its Latin name.

"Phoenix roebelenii," he says quickly, pointing to a short palm that curves out of the ground, its brown, spiked edges breaking off into sloping green leaves. "Pygmy date palm."

Bailey spends his days going from house to house and inspecting trees. It's almost as if he can diagnose on sight.

On a recent day, Bailey was at Tampa resident Norman de Lapouyade's house, traveling through a backyard that could rival a tropical forest. De Lapouyade asked Bailey to look at three trees in the back that are near death.

While he was there, de Lapouyade asked for Bailey's opinion on this tree or that. Bailey had one recommendation: Plant a diverse variety of species. He pointed out an areca palm.

"This is a good alternative," he said.

Bailey considers himself a preacher of a particular type of gospel: how to ward off lethal bronzing.

"That's my story," he said. "I don't see us ever curing this disease. It's here and it's probably going to be here to stay. So how do we manage it?"

The city of Tampa has the same problem. They currently spend about \$9,000 to inoculate 300 trees every four months. Next year, the city will have to invest more money into the program, said Eric Muecke, an urban forestry manager with the city of Tampa's Parks and Recreation department.

Muecke calls inoculating trees a "proactive" move on the city's part. Once symptoms of lethal bronzing appear, he says, the tree has only a 10% shot of surviving.

In the last three years, the city has planted about 140 palm trees per year, he said. But as more types of palms fall prey to lethal bronzing, Muecke said, it's difficult to sustain a population of the trees Floridians expect in their back yards.

"We have to lean toward diversity when it comes to replacement because

the diversity of our tree population is what makes it resilient to things like insects, diseases, even coming back after storms," Muecke said.

When Bailey first saw a tree infected with what he thinks was lethal bronzing years ago, he knew it was something serious.

Although tests from the lab indicated the tree had a more common ailment, Bailey wasn't convinced.

Since then, he has seen lethal bronzing take down his clients' trees, his neighborhood's trees and trees that line one of Tampa's most luxurious streets. Because the disease isn't carried from tree to tree but from insect to insect, there's a randomness to it that makes it hard to combat.

"It's a terrible disease," Bailey said. "It'll take one here and one over there and come back and grab one or two and then it won't bother you for a year or two and it'll come get another one. It doesn't move in a big wave and kill everything as it goes—it's even worse."

Bailey has even seen the death of trees he's injected with preventative antibiotics.

"It breaks my heart," he said.

He develops a relationship with his customers and takes it hard when he loses a tree.

"Their palms become like mine," he said. "They're my babies, too."

When he lost a recent [palm](#) tree at a client's house on Harbour Island, he came home from work with a sullen look on his face. Bailey's wife didn't even have to guess what upset him.

"Another one of your palms die?" she said.

The answer was, of course, yes.

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