







S I N C E
1 9 9 0

The single most important source of news on environmental issues in the 50th state.

BROWSE
OUR ARCHIVES

[Manage Your Account](#)

[Log Out](#)

SEARCH
OUR ARCHIVES

[Advanced search](#)

HOME
SUBSCRIBE
FEEDBACK
DONATE
LINKS

Volume 19, Number 3 September 2008

ʻOHIʻA RUST THREAT IS AS LARGE AS EVER, BUT BAN ON IMPORTS IS ALLOWED TO LAPSE

One of the scariest potentially invasive pests is also one of the smallest. Known as ʻohiʻa rust, *Puccinia psidii* is a relative latecomer, being discovered on ʻohiʻa seedlings in an Oʻahu nursery in 2005. Since then, it has spread throughout the state. While ʻohiʻa have escaped its worst effects, the strain of the rust that is present in Hawaiʻi has devastated rose apple (*Syzygium jambos*) and has been found to kill individuals of two native species, *Eugenia reinwardtiana* and the endangered *Eugenia koolauensis*, both known as nioi in Hawaiian. All affected plants are in the Myrtaceae family.

Last year, in response to the alarm raised by natural resource managers, the state Department of Agriculture adopted an emergency rule, banning the import of Myrtaceae plants and plant parts from the states of California and Florida, and from Central and South America. When the rule expired in late August, the DOA was still working on a permanent rule.

Anne Marie LaRosa of the U.S. Forest Service's Institute for Pacific Island Studies, in Hilo, gave an overview at July's Hawaiʻi Conservation Conference of what, she said, is not only "possibly the greatest threat to ʻohiʻa," but also "a serious threat to global biodiversity ... equivalent to other introduced epidemic tree diseases, such as Dutch elm blight." Unlike the wiliwili gall wasp, the puccinia rust has been known to science for more than a century, having been described on guava in Brazil in the 1880s. No one was alarmed over its presence there until the 1930s and 1940s, LaRosa said, when Brazil's fledgling eucalyptus industry was affected by the rust. Since then, it has spread to Florida and the Caribbean, where it ravaged allspice trees, to California. "The concern now is that Hawaiʻi is the gateway for Australia, New Zealand, and

Samoa.”

“`Ohi`a is at stake here, the very fabric of our forest,” LaRosa said. “If we have an epidemic like Dutch elm disease or chestnut blight, we’re looking at changes in our ecosystem... Over 400,000 acres are potentially impacted.”

The good news is that the strain of rust identified in Hawai`i, while it can be found on `ohi`a, has limited impact. “We see it everywhere, but it’s not that bad on `ohi`a,” she said. Other species affected elsewhere, such as eucalyptus and allspice, have also avoided being hard hit in Hawai`i.

But that could change quickly if a new strain arrives in the islands. At the moment, LaRosa said, “we’re working with a single strain, called the rose apple strain. There’s little genetic variability now, indicating the rust is something that recently arrived and has not yet undergone change.”

Hawai`i Department of Agriculture adopted an interim rule prohibiting the importation of all Myrtaceae plants and plant parts. Even asymptomatic plants could still harbor the rust, LaRosa said: “You can’t inspect for rust.”

But is the ban on imports of Myrtaceae plants and plant parts enough?

LaRosa herself identified a large gap in the process. “The flower trade is very active,” she said. “We believe that’s how the rust came in.” In 2007 and 2008, cut flower material, in pre-arranged bouquets, was intercepted coming into Maui. “People grow flowers, send them to a central location to be bundled into bouquets, where it’s mixed with Myrtaceae” and other flowers from other plants known to be hosts to the rust.

In another presentation, David Simmons, a student in the University of Hawai`i Department of Plant and Environmental Sciences, reported that the rust had been found on two popular landscape plants, the brush cherry (*Eugenia paniculatum*) and the downy rosemyrtle (*Rhodomyrtus tomentosa*), which is also naturalized and considered a serious pest in forests on Kaua`i, O`ahu, and Hawai`i. (On Maui, several rosemyrtle infestations were found and eliminated, but monitoring continues.)

Simmons reported that the larvae of the diptera fly *Mycodiplosis pucciniae* had been found eating spores of the rust on all the islands. “It eats a lot of spores,” he said, and “helps greatly to reduce the amount of inoculum in nature.” When asked where the fly was from, Simmons said that no one knows if it’s native or not.

The fly doesn’t seem to be helping the native nioi ward off the ravages of the rust, however. Chris Kadooka, also with the UH Department of Plant and Environmental Sciences, reported on his work developing a genetic profile of the Hawai`i rust strain and what he had seen when collecting rust samples in the wild. “What we’ve seen in the field is moderately affected `ohi`a... Where I’ve seen it bad is where we have a roseapple source that’s nearby.” As for the nioi: “We found one fungicide that might be protecting it in the nursery, but we’re pretty sure there’s no fungicide approved for the forest. We went to Kahuku, and it’s pretty sad. Lots of trees are susceptible.”

According to a source at the U.S. Fish and Wildlife Service, both species of native *Eugenia* are “equally affected, fairly severely. There’s not much we can do.” “Extinction in the wild is a real possibility,” said another botanist who wished not to be identified in print.

LaRosa summed up the prospects for control: “There’s no practical management for this disease in the wild. Prevention is the key.”

A Delayed Rule

With the expiration of the emergency rule, the state has no ban on plants that might host the `ohi`a rust. Leslie Iseke, with the Plant Pest Quarantine branch of the state Department of Agriculture, said the department was intending to go forward with a permanent rule, but, "unfortunately, it's taking longer than I thought to gather information."

In the meantime, she said in a phone interview, "we're setting up a plant quarantine policy on how we handle Myrtaceae coming into the state."

"We're still targeting areas where the rust is known to occur – Florida, Central and South America," she said, but added that instead of the entire state of California subject to the Myrtaceae ban, based on information provided by California agriculture officials, the ban will probably be narrowed to just San Diego County,

"So as we go along," Iseke continued, "as we do the permanent ruling, the infested areas will be better defined, down to counties instead of states. And the same with South and Central America. If people know what areas are infested, we can define it that way – or it could be the entire continent, if the rust is more widespread."

In addition to learning more about areas of infestation, Iseke said that the DOA is also "waiting to see if we can get information regarding the types of strains that are out there" so that the rule does not exclude the strain of rust already here. "That's how quarantine works," Iseke said. "You're trying to keep something out of Hawai`i, so it has to be something not already here."

When asked whether identifying the rust down to the strain is a reasonable standard for a quarantine rule, Iseke agreed that tests to identify the strain of *Puccinia* might take weeks or longer. Still, she said, "to ban all Myrtaceae is probably not the way we want to go." With quarantine rules, she added, "you don't ban everything."

The emergency rule was broader than the final rule is likely to be, she said. "When we did the emergency rule, not everyone was in agreement. It was like shutting the gate after the horse has escaped."

-- Patricia Tummons