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RapidOhiaDeath.org



2021 Rapid 'Ōhi'a Death Newsletter Volume 6, Issue 2

~ *'Opihi kauwawae lehua o Hōpoe* ~

"'Opihi covered by lehua blossoms of Hōpoe"

the fringes of lehua at Hōpoe fall into the sea and are washed up over the rocks, hiding the 'opihi

From 'Olelo No'eau: Hawaiian Proverbs and Poetical Sayings, Honolulu, Hawaii: Bishop Museum Press, 1983

This is our quarterly newsletter that was designed to update the community on current Rapid 'Ōhi'a Death (ROD) issues.

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Research Updates

- **O'ahu Update:** On O'ahu, Rapid 'Ōhi'a Death (ROD) was first detected in July 2019. Over the course of the last two years, the O'ahu ROD Response Team has sampled over 350 'ōhi'a trees and confirmed ROD in 8 individual trees. All 8 trees were found within the Ko'olau mountain range and all were positive with the less virulent species of ROD, *Ceratocystis huliohia*. Three cases were from residential properties and the other 5 cases were found in forested settings in various locations across the island. With funding from the legislature and the Honolulu Board of Water Supply, helicopter surveys of 'ōhi'a forests are conducted semi-annually, and suspect trees are sampled by ground crews. Public reports of sick 'ōhi'a are also submitted to and sampled by the O'ahu Invasive Species Committee (808-266-7994 or oisc@hawaii.edu).
- **Current Research:** Marc Hughes (USDA Forest Service) - Eradicating ROD Fungi from 'Ōhi'a Wood with Kiln and Chemical Treatments:
Since the advent of Rapid 'Ōhi'a Death, the movement of 'ōhi'a on wood could serve

wood sanitation treatments for their ability to eradicate these pathogens within diseased wood. Three types of kilns (dehumidification, vacuum and vacuum steam) and a boron chemical dip were tested and wood samples were assayed for fungus survival before and after treatments to assess their effectiveness. Results will be used to guide state policy relating to treatments and movement of 'ōhi'a wood and its products. All three types of kiln were able to heat 'ōhi'a wood up to an internal temperature of 140 degrees F, which was enough to kill any *Ceratocystis* fungi in the wood. While chemical treatments were able to kill fungi with direct contact, they did not soak deep enough into the wood to be a practical method for decontaminating 'ōhi'a wood from infected trees.

- **Current Research:** Flint Hughes (USDA Forest Service) - We established 250 monitoring plots in 'ōhi'a forests across Hawai'i Island to characterize forest stands in which ROD is occurring and to determine 'ōhi'a annual mortality rates within those forests. Our results indicated that 'ōhi'a stands with smaller trees (less than 8" in diameter) exhibited lower annual rates of mortality (4 to 5%) compared to 'ōhi'a stands with larger trees (12 to 13%). Mortality rates were also lower in 'ōhi'a stands on young stands growing on young lava flows compared to rates on older flows. Mortality rates decreased at higher elevations and increased in warmer and in wetter locations. Most plots did not have any new 'ōhi'a seedlings. Plots that did contain 'ōhi'a seedlings were found in the upper elevations of 'ōhi'a forest range (above 3,300 feet). At low elevations, non-native plants were prevalent. Results from this research indicate which 'ōhi'a forests are most vulnerable to ROD and where we can expect the forest to be resilient and regenerate itself after ROD.



Annual Lei Making Workshops

The Rapid 'Ōhi'a Death Outreach team hosted the 2021 Lei Making Workshops during the month of May. The team hosted three lei making workshops that highlighted the Wili lei style. In Hawaiian language, the word Wili means to wind, twist, writhe. Wiliwili adds emphasis to the twist with ho'owili expressing the action of twisting and circling. Wiliwili also is the name for the Hawaiian leguminous tree (*Erythrina sandwicensis*) found on dry coral plains and on lava flows (wehewehe.org).

The annual lei making workshops are opportunities to gather together and be creative. The 2021 workshop series were hosted virtually with guests attending from across Hawai'i and the Mainland US. The attendees created wili style lei using 'ōhi'a alternatives such as ferns, gardenia, ti leaf, and even plastic bags. The 2021 lei making workshops were so popular that the ROD outreach education team is planning to host another series of workshops later this year.

Kaua'i Outreach Education Update

Earlier this year, Kaua'i Invasive Species Committee (KISC) partnered with the Kaua'i Forest Bird Recovery Project to produce a monthly "Forest Friday" virtual events, encouraging conversation about the conservation of Kauai's Forests. Here's a recap of the topics that have been covered:

What does a healthy forest mean to you?

How do we protect our forests for our children's future?

How do you connect with the forest?

The skies are empty. The forest is quiet. Is it too late to save our native forest birds?

You can watch recordings of this series on the [KISC YouTube page](#).

[Sign up](#) to learn about future Forest Friday events.

KISC is also producing a regular "Faces of the Forest" series. One of their recent productions featured numerous members of the KROD Field Crew.



2021 'ŌHI'A LOVE FESTIVAL

COMING THIS FALL!

Management Tips

HOW CAN YOU HELP SAVE 'ŌHI'A?

The Rapid 'Ōhi'a Death (ROD) Outreach Education Team would like to share some useful tips to help save 'Ōhi'a, reduce the spread of ROD, and protect 'Ōhi'a forests.

Useful Tips to help save 'Ōhi'a Lehua:

1. **Practice good sanitation habits:** when going into the forest always remember to clean your vehicles, clean boots, and sterilize any cutting tools used.
2. **Use other native plants** such as 'a'ali'i and bottlebrush in lei making and/or other foliage art.

landowners and the forest you gather foliage from through cultural protocol and/or gratitude. **And always remember** to get the required permits from DLNR-DOFAW when harvesting foliage from state and public lands.

For state forests, you can apply for permits here:

DLNR Website: [https://dlnr.hawaii.gov/dsp/parks/state-parks-special-use-permit/Statewide Collecting Permit Form](https://dlnr.hawaii.gov/dsp/parks/state-parks-special-use-permit/Statewide%20Collecting%20Permit%20Form)

4. If you chose to pick 'ōhi'a lehua blossoms, **these practices are encouraged**: pick branch tips of not more than 4 inches and DO NOT cut down whole branches.

NOTE - The larger the wound opened, the greater chance the tree has to catch ROD.

5. Finally, **recognize when it is time** to let the 'ōhi'a lehua rest in the space where you gather to give them the opportunity to grow.

The Hawai'i Department of Agriculture rules state that you cannot bring anything made of 'ōhi'a off of Hawaii Island unless it's treated, and that includes lei. For more information about this quarantine rule please visit: <https://hdoa.hawaii.gov/blog/main/nr-ohiaquarantine/>

**Dustin Swan**

Forest Response Coordinator
Big Island Invasive Species Committee

I grew up in the forests of the Pacific Northwest and my previous experience was in natural resource management with the Forest Service. Although I hold a degree related to technology, I've always had a passion for conservation and an appreciation for how these disciplines can intersect.

After relocating to Hawai'i Island, I began working with the Big Island Invasive Species

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collaborating with the greater ROD Working Group to monitor the spread of disease, support ongoing research, and explore potential management techniques.

I am hopeful for a future where the native forests of Hawai'i thrive and 'ōhi'a are found in abundance.

5 THINGS YOU CAN DO



1 DON'T MOVE 'ŌHI'A

Do not move 'ōhi'a wood, firewood, or posts, especially from an area known to have ROD. If you don't know where the wood is from, don't move it.

2 DON'T TRANSPORT 'ŌHI'A INTER-ISLAND

Comply with the new quarantine rule to help prevent ROD from spreading. Don't move 'ōhi'a plants, whole or parts, 'ōhi'a wood, or soil from Hawai'i island without a permit.

3 AVOID INJURING 'ŌHI'A

Wounds serve as entry points for the fungus and increase the odds that the tree will become infected and die from ROD. Avoid pruning and contact with heavy equipment wherever possible.

4 CLEAN YOUR GEAR/TOOLS

If you must work around or cut 'ōhi'a, clean tools and gear before and after use, especially when used on infected 'ōhi'a. Brush all soil off of tools and gear, then spray with 70% rubbing alcohol. Shoes and clothes should also be cleaned before and after entering forests. Wash clothes with hot water and soap.

5 WASH YOUR VEHICLE

Wash the tires and undercarriage of your vehicle with detergent and remove all soil or mud, especially after traveling from an area with ROD and/or if you have traveled off-road.

Updated March 2017

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Our mailing address is:

University of Hawai'i Komohana Research and Extension Center

875 Komohana St.

Hilo, HI 96720

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