

The Importance of Awareness: Slowing Rapid 'Ōhi'a Death

When tourists plan a trip to paradise, they often think of Hawai'i, with its white sandy beaches and pristine forests full of unique wonders found nowhere else. What they do not envision, however, is a silent expanse of dying 'ōhi'a trees. This phenomenon, called Rapid 'Ōhi'a Death, or ROD, has already suffocated thousands of native trees as it inches its way across the islands. The 'ōhi'a's position as not only a vital part of the native ecosystem but as an iconic symbol of Hawai'i makes it invaluable to our state. They were the first plants to settle into the newly formed Hawaiian islands, making them the literal foundation on which the Hawaiian ecosystem thrives. While officials have already begun the process of finding a cure, the ROD only spreads as unknowing carriers pass through islands. This magnifies the dire need for public awareness about the growing ROD crisis.

ROD is caused by a genus of fungus identified as *Ceratocystis*. It spreads from tree to tree through open wounds caused by invasive ungulates, storms, beetles, and human interaction. Next, the spores enter the tree's vascular system, preventing water from reaching the upper limbs, effectively strangling and killing the tree within a few weeks. The symptoms of ROD can be seen in the browning of leaves, death of large portions of the tree, and red stains on the inside of the wood. The disease spreads quickly. It is estimated that as of January 2018, 135,000 acres of forest on Hawai'i Island have been affected by ROD. ROD has been found on both Kauai and the Big Island. Researchers are concerned that without proper quarantine, ROD will spread and become a state-wide epidemic.

'Ōhi'a are a vital part of the indigenous Hawaiian ecosystem as they make up approximately 80 percent of Hawai'i's native forests. They are the primary food source of many

indigenous nectar-feeding birds including the ‘apapane and ‘i‘iwi. Dead ‘ōhi‘a also provide nurseries for native invertebrates and seedlings. Therefore, the loss of these trees would have the potential to cause the extinction of these native species. Many story-telling hulas involve a message or direct usage of the ‘ōhi‘a flower in adornments; the disappearance of this flower would harm our link to the ancient culture of the islands. Our state also would lose its unique wonder that sets us apart from other tropical destinations, impacting the tourism industry. The ‘ōhi‘a help to maintain Hawai‘i’s watershed systems. The canopies catch rainwater which filters through the rock into underground aquifers. Many communities in Hawai‘i are dependent on these reservoirs for drinking and irrigation water. Without the trees, Hawai‘i would face a water crisis as the aquifers would not be refilled naturally-- “no ‘ōhi‘a, no drinking water, no irrigation water” (Keith).

Currently, scientists at the University of Hawai‘i, the USDA Agricultural Research Service, and the U.S. Forest Service are conducting research on ROD in hopes of finding an effective fungicide. Drones, DNA testing, and geological mapping are all being utilized to monitor the infected population. Researchers at the University of Hawai‘i believe that human activity contributes most to the spread of ROD. They urge prevention of any ‘ōhi‘a parts (namely wood, seedlings, or soil) moving through from one area to another as it will slow the spread of ROD, giving the researchers time to find a cure. The Hawai‘i Department of Agriculture has even declared a quarantine rule that prohibits “interisland movement of all ‘ōhi‘a plant or plant parts from Hawai‘i Island” (“The Disease”). However, many inter-island travelers are unaware of the danger they are to Hawai‘i’s native forests. People continue to smuggle ‘ōhi‘a plants and

infected soil across islands in their footwear and clothing, increasing the risk of ROD in the destinations they visit.

Our government needs to educate the public about this growing plight to prevent the unknowing spread of ROD. The easiest way to reach most travelers would be in airports and airplanes. Carefully worded videos and PSAs about ROD can be applied in cabins as the planes begin their descent, especially to areas where ROD is known to exist. The videos would showcase the effect ROD has on 'ōhi'a trees and the ways one can prevent spreading the fungus. This would include the thorough cleansing of shoes and clothing before traversing uninfected forests as well as the importance of abstaining from taking any 'ōhi'a tree parts. Additional information could be placed on the Hawai'i Agricultural Declaration forms that are given to passengers before landing to ensure that all potential forest-goers would at least be aware of ROD. Such preventive measures would allow the scientists more time to save the remaining 'ōhi'a forests of Hawai'i, fulfilling T.C. Ching's vision of a better Hawai'i. His dream of united communities and a healthy island could be one step closer to becoming a reality through the preservation of Hawai'i's native 'ōhi'a forests.

One may argue that this policy is too gentle, that if our state wants quicker results then the rules should be more extreme. However, our state cannot ban people from our forests. Many tourists would easily find their way around restrictions or simply ignore the messages entirely. Harder policies might tempt people to purposely break the rules and cause more destruction out of spite. This is why a less drastic solution would prove to be more productive. If worded correctly, these messages would be able to convince tourists to be conscious of their impact on their holiday paradise.

The 'ōhi'a tree is deeply ingrained into our culture, ecosystem, and way of living. ROD is decimating 20 to 25 percent of Hawai'i's 'ōhi'a trees every year. If the spread of this disease is not halted, Hawai'i will face an inevitable cascade of negative effects. The biodiversity of our native species, the tourism industry, the watershed, and even our own connection to Hawaiian culture would come under threat. The time has come for our state to begin effective campaigning for ROD awareness, lest we lose this integral part of Hawai'i's heart forever.

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