

DAVID Y. IGE
Governor

SHAN S. TSUTSUI
Lt. Governor



State of Hawaii
DEPARTMENT OF AGRICULTURE
1428 South King Street
Honolulu, Hawaii 96814-2512
Phone: (808) 973-9600 FAX: (808) 973-9613

SCOTT E. ENRIGHT
Chairperson, Board of Agriculture

PHYLLIS SHIMABUKURO-GEISER
Deputy to the Chairperson

**TESTIMONY OF SCOTT E. ENRIGHT
CHAIRPERSON, BOARD OF AGRICULTURE**

BEFORE THE SENATE COMMITTEE ON WAYS AND MEANS

March 31, 2016
9:05 A.M.
CONFERENCE ROOM 211

**HOUSE BILL NO. 2675 HD1 SD1
RELATING TO RAPID OHIA DEATH**

Chairperson Tokuda and Members of the Committees:

Thank you for the opportunity to testify on House Bill 2675 HD1 SD1. This bill appropriates general funds to support pathology research on rapid ohia death. The department supports the intent of this bill and defers to the Department of Land and Natural Resources.

Rapid Ohia Death (ROD) is known to infest at least 35,000 acres on the Big Island and continues to spread throughout that island and has not been found on other islands. It has left a devastating impact to the forests killing 50-90% of the trees in infested areas. The Department of Agriculture (HDOA) established a quarantine on August 25, 2015 to prevent its spread from the Big Island to the uninfested islands. This is under our authority which enables us to create an interim rule to govern the transport of flora and fauna into and within the State to protect agriculture and the environment.

ROD is a serious disease of Hawaii's ohia forests and the loss of these trees would have a devastating impact on our forest lands, watersheds, and natural resources. The purpose of this bill is to fund research to study the pathogen that causes ROD. This research is critically needed in order to move forward with the control and mitigation of this disease.

Thank you for the opportunity to present testimony.



DAVID Y. IGE
GOVERNOR OF
HAWAII



**STATE OF HAWAII
DEPARTMENT OF LAND AND NATURAL RESOURCES**

POST OFFICE BOX 621
HONOLULU, HAWAII 96809

**Testimony of
SUZANNE D. CASE
Chairperson**

**Before the Senate Committee on
WAYS AND MEANS**

**Thursday, March 31, 2016
9:05 AM
State Capitol, Conference Room 211**

**In consideration of
HOUSE BILL 2675, HOUSE DRAFT 1, SENATE DRAFT 1
RELATING TO RAPID OHIA DEATH**

House Bill 2675, House Draft 1, Senate Draft 1 proposes to appropriate funds to the Department of Land and Natural Resources (Department) for research related to Rapid Ohia Death. **The Department supports this measure provided that this appropriation does not adversely impact appropriations for other priorities in the Executive Supplemental Budget request or any existing funding to the Department's programs.**

The recent spread of Rapid Ohia Death (ROD) on Hawaii Island threatens the State's most important forest species and requires urgent action. Recent surveys conducted by the Department found 34,000 acres of ohia forest potentially killed by this disease, which is more than double the area mapped in 2014. Ground surveys are needed to validate disease presence in many of the areas mapped. The Department is working closely with the State Department of Agriculture (DOA), United States Department of Agriculture (USDA) Forest Service and Agriculture Research Service, University of Hawaii (UH) College of Tropical Agriculture, and others to understand ROD and mitigate its spread where possible. Due to the lack of knowledge about this disease, many questions urgently need to be answered to effectively manage the outbreak and inform the public.

Funds appropriated by the Legislature for ROD research would supplement federal and private funding to hire full time staff to focus on ROD research and monitoring projects. The appropriation for \$600,000 would fund approximately 50% of the budget for ROD-related activities including research, survey, and outreach for fiscal year 2016-2017. This appropriation would be used to leverage federal and private funds to make up the other 50%.

SUZANNE D. CASE
CHAIRPERSON
BOARD OF LAND AND NATURAL RESOURCES
COMMISSION ON WATER RESOURCE MANAGEMENT

KEKOA KALUHIWA
FIRST DEPUTY

JEFFREY T. PEARSON, P.E.
DEPUTY DIRECTOR - WATER

AQUATIC RESOURCES
BOATING AND OCEAN RECREATION
BUREAU OF CONVEYANCES
COMMISSION ON WATER RESOURCE MANAGEMENT
CONSERVATION AND COASTAL LANDS
CONSERVATION AND RESOURCES ENFORCEMENT
ENGINEERING
FORESTRY AND WILDLIFE
HISTORIC PRESERVATION
KAHOOLAWE ISLAND RESERVE COMMISSION
LAND
STATE PARKS

All of the activities mentioned are vital to an effective response; therefore funding will need to be sustained over several years. The Department will continue to work closely with USDA, DOA, UH, and other partners to share knowledge and coordinate actions so resources are used efficiently.

Thank you for your consideration of this testimony.



**Department of Land and Natural Resources
Aha Moku Advisory Committee
State of Hawaii
Post Office Box 621
Honolulu, Hawaii 96809**

Testimony of
Piilani Kaawaloa
Aha Moku Advisory Committee – Moku O Keawe (Hawaii)

Before the Senate Committee on
Ways and Means

Thursday, March 31, 2016
9:05 A.M.
State Capitol, Conference Room 211

**In Consideration of
HOUSE BILL 2675 HD 1 SD 1
RELATING TO RAPID OHIA DEATH**

House Bill 2675 HD 1 SD 1 appropriates funds for research to combat rapid ohia death. **The Aha Moku SUPPORTS this measure.**

The Aha Moku encompasses the eight main Hawaiian Islands, which in turn is comprised of 47 moku and 607 ahupua'a, each one of which is individual and unique with its own natural resources. The commonality among all of them is that the ohia tree is unique and sacred to the Hawaiian culture as a whole and with the exception of Kahoolawe and Niihau; the other islands have them where the people have used the ohia in their traditional practices for generations.

The focus of the Aha Moku System, as stated by this Legislature is to assist the State in the protection and sustainability of its distinctive natural and cultural resources by bringing forward Native Hawaiian empirical resource methodology that together with scientific expertise may further protect our natural assets. However, in the case of the ohia, we do not know where the disease came from. We do support every effort to find this out, and find a cure for this as soon as possible.

Today, it is often difficult to protect these resources because of the influx of invasive species which, because they are not native to Hawaii, often causes irreparable harm to our endemic and indigenous flora and fauna. This in turn does great harm to our cultural resources. We believe this measure is greatly needed. On our island, Moku O Keawe (Hawaii), alone, we currently have to deal with the rapid demise of our sacred ohia trees. In time, if a cure is not found, this will eventually spread to all islands. All of this directly impacts our native Hawaiian resource practices. We need to find a way together, to find a cure for this deadly disease.

Thank you for the opportunity to offer testimony and we urge this committee pass this measure.



Conservation Council
for Hawai'i

Hawai'i's voice for wildlife

Kō Hawai'i leo no nā holoholona lōhiu



Testimony Submitted to the Senate Committee on Ways and Means
Hearing: Thursday, March 31, 2016 9:05 am
Conference Room 211

In Support of HB 2675 HD 1 SD 1 Relating to Rapid 'Ohi'a Death

Chair Tokuda, Vice Chair Dela Cruz, and Members of the Committee.

Aloha. Conservation Council for Hawai'i supports HB 2675 HD 1 SD 1, which appropriates funds for research to combat rapid 'ohi'a death.

'Ohi'a lehua is a dominant forest tree in our watersheds and habitat for rare and endangered species. Rapid 'ohi'a death/wilt is a major threat to our native forests and watersheds, but it is not the only threat. Even if we are able to control or slow ROD, our native forests and watersheds will continue to decline as a result of additional threats, including introduced feral and game mammals (pigs, goats, sheep, and deer), invasive plants (such as strawberry guava, miconia, and others), plant pests, and diseases.

Our 'ohi'a forests and other watersheds and native species are in trouble. Please do more to protect our public lands and trust resources for future generations by providing more funding for watershed protection and invasive species control. Ask the administration and your colleagues to stop nickel and diming important land conservation programs under the Department of Land and Natural Resources.

Please support HB 2675 HD 1 SD 1.

Mahalo nui loa for the opportunity to testify.

A handwritten signature in black ink that reads "Marjorie Ziegler".

Marjorie Ziegler



The Senate
Committee on Ways and Means
March 31, 2016
9:05 a.m., Conference Room 211
State Capitol

Testimony in Support of HB 2675 HD1 SD1

Aloha Chair Tokuda, Vice Chair Dela Cruz, and Members of the Committee,

The Coordinating Group on Alien Pest Species (CGAPS) **is in strong support of HB 2675 HD1 SD1, Relating to Rapid ‘Ōhi‘a Death.**

As this Committee is aware, Rapid ‘Ōhi‘a Death is a new fungal disease that was recently detected on the island of Hawai‘i, and it is killing ‘ōhi‘a at an alarming rate. ‘Ōhi‘a is Hawaii's most important and widespread forest tree and is central to watersheds, serves as habitat for many native species, and has tremendous cultural importance. Research shows that once this microscopic fungal disease enters an ‘ōhi‘a tree, it can take several months for the tree to show symptoms, but once the fungus moves into the tree’s vascular system, it quickly cuts off water, quickly leading the tree to dry out and die.

It is not yet known all of the ways that the fungal pathogen can be spread, although it can spread through infected soil (in the lab, 40% percent of seedlings succumbed within 6 months of infecting the soil with the disease), and wood from infected ‘ōhi‘a. The fungal pathogen was found in the trunk of an ‘ōhi‘a tree that had died of the disease over a year ago, and it was alive and able to spread with the movement of the wood. Similar diseases around the world are known to spread when the disease spores stick to sawdust (frass) from beetles boring through dead trees. The science team is currently looking at the possibility of insect interactions and the possible presence of infected sawdust in areas in and around infected trees. There is also some evidence that ‘ōhi‘a roots growing into each other, waterways such as streams, and even feral animals may carry and spread the pathogen from tree to tree.

From intensive studies of ‘ōhi‘a trees in the 1980’s we can say that this pathogen was not present in ‘ōhi‘a at that time. The strain of this pathogen affecting ‘ōhi‘a may be new to science, and researchers are conducting multiple investigations into its possible origins or relations to other similar diseases. Closely related strains of this disease (*Ceratocystis* spp.) are all known to be spread long distances through the movement of soil and plants, and new introductions of different genetic strains may allow the disease to “jump” to new hosts.

Therefore, researchers are racing to learn as much as possible about its biology, all of the ways that the pathogen can spread, and to identify and test quarantine methods to detect and kill the pathogen in small amounts of soil (such as potted plants shipped from Big Island nurseries) and ‘ōhi‘a wood to protect neighbor islands from these known pathways for spread. However, at this rate of spread and with the tens of thousands of acres considered infected, there are virtually no options for landscape-scale protection of ‘ōhi‘a trees in natural areas on the Big Island. Faced

with this sobering information, researchers are also looking at management actions that can and should be taken to mitigate impacts.

We should note that plant diseases such as these are extremely difficult to successfully address. For example, two well-documented accounts of widespread iconic U.S. tree species being wiped out by plant diseases include the disappearance of American chestnuts from an introduced fungal disease in the early 1900's (nearly 4 billion trees were killed and only a handful of trees remain in the wild, even today), and the 2003 discovery of an introduced beetle which is spreading a new fungal disease that is killing red bay/laurel in the south eastern U.S. The disease is on track to drive two species of red bay trees in the south eastern U.S. to extinction, and also impact the avocado industry. These tragedies and their impacts are ongoing, and we in Hawai'i need to shift our emergency-response framework and mind-set to the idea that this disease is not going away, and that we must find ways to mitigate the impacts over the long term.

The most urgent need is funding to support research positions. The current estimated need to support the priority positions and work is \$1M/year. For calendar year 2016, we have \$785,000 secured: 40% private, 40% state, 20% federal. However, the majority of these funds will be depleted by the end of 2016, and funds have NOT been secured for this work in calendar year 2017. Therefore, state funding is crucial to supporting this work and as leverage for federal and private fund requests. Mahalo for your consideration.

Aloha,
Christy Martin
CGAPS



P.O. Box 253, Kunia, Hawai'i 96759
Phone: (808) 848-2074; Fax: (808) 848-1921
e-mail info@hfbf.org; www.hfbf.org

March 131, 2016

HEARING BEFORE THE
SENATE COMMITTEE ON WAYS AND MEANS

TESTIMONY ON HB 2675, HD1, SD1
RELATING TO ENVIRONMENTAL PROTECTION

Room 211
9:05 AM

Aloha Chair Tokuda, Vice Chair Dela Cruz, and Members of the Committee:

I am Randy Cabral, President of the Hawaii Farm Bureau (HFB). Organized since 1948, the HFB is comprised of 1,900 farm family members statewide, and serves as Hawaii's voice of agriculture to protect, advocate and advance the social, economic and educational interest of our diverse agricultural community.

HFB strongly supports HB 1597, HD1, SD1, which appropriates funds for research to combat rapid ohia death.

Watersheds are the lifeblood of our communities. It is important not just to agriculture but to our social and environmental health. The spread of rapid ohia death has been alarming and its' management before spreading to other islands is very critical. Many of the other islands depend on surface water for their drinking and irrigation needs. Loss of trees will severely impact watersheds.

HFB respectfully requests your support of HB 2675, HD1, SD1.

Thank you for this opportunity to provide our opinion on this important matter.

Testimony of The Nature Conservancy of Hawai'i
Supporting H.B. 2675 HD1 SD1 Relating to Rapid 'Ōhi'a Death
Senate Committee on Ways and Means
Thursday, March 31, 2016, 9:05AM, Room 211

The Nature Conservancy of Hawai'i is a private non-profit conservation organization dedicated to the preservation of the lands and waters upon which life depends. The Conservancy has helped to protect nearly 200,000 acres of natural lands in Hawai'i. We manage 40,000 acres in 14 preserves and work in 19 coastal communities to help protect the near-shore reefs and waters of the main Hawaiian Islands. We forge partnerships with government, private parties and communities to protect Hawai'i's important watershed forests and coral reefs.

The Nature Conservancy supports H.B. 2675 HD1 SD1. We appreciate the crisis situation that exists with respect to Rapid 'Ōhi'a Death (ROD) and the acute circumstances on Hawai'i island with this disease and other pests of the environment, agriculture, and human health and well-being. We support a strong and coordinated response to ROD that is threatening the dominant native tree species in the Hawaiian forest—a tree that is central to the forests' ecological, cultural and watershed values statewide.

We also hope that providing the necessary and critical support for Rapid 'Ōhi'a Death will be additive and not prevent the Legislature, the Administration and partners from also devoting appropriate attention and funding to the full range of pest issues across the islands. We are concerned about unintended financial impacts of a piecemeal approach to invasive species funding. For example, in Fiscal Year 2007 the Legislature's provision of specific funding for coqui frog control was really a shifting of existing funds from other important invasive species programs, which then caused layoffs in the Island Invasive Species Committees and a hiatus in the Hawai'i Invasive Species Council's research grant program.

Therefore, we respectfully ask that the Committee and the Legislature also take a comprehensive approach of providing significant and consistent funding to address invasive species prevention, early detection, rapid response, control, research, and outreach priorities across the state. The Hawai'i Invasive Species Council is the appropriate multi-agency venue for this broader effort. This approach necessarily results in prioritization based on a variety of issues including human health, safety and well-being, economic harm, and the threat to the health and function of the environment.

Thank you for the opportunity to testify on this bill.

BOARD OF TRUSTEES

Mark E. Agne Paul D. Alston Christopher J. Benjamin Dr. C. Tana Burkert Anne S. Carter Richard A. Cooke III Brian J. Doyle
Thomas M. Gottlieb James J.C. Haynes III Sean A. Hehir Mark L. Johnson Dr. Kenneth Y. Kaneshiro Eiichiro Kuwana
Duncan MacNaughton Kathy M. Matsui Wayne K. Minami James C. Polk Jean E. Rolles Scott C. Rolles
Crystal K. Rose Dustin E. Sellers Nathan E. Smith Peter K. Tomozawa James Wei



Testimony of the O'ahu Invasive Species Committee
Supporting HB 2675 HD1 SD1 Relating to Rapid 'Ōhi'a Death
Senate Committee on Ways and Means
Thursday, March 31 9:05 AM Rm. 211

The O'ahu Invasive Species Committee supports HB 2675 HD1 SD1 which would provide funding to research questions surrounding the *Ceratocystis* pathogen that causes Rapid 'Ōhi'a Death. We are grateful to the Legislature for recognizing the seriousness of this situation and acting quickly to address it. OISC is currently assisting with outreach and early detection on O'ahu for this disease.

Although, the research team made up of scientists from University of Hawai'i, the USDA Forest Service and USDA Agricultural Research Service have already resolved many of the questions surrounding this disease, there is still much work to be done. Research and outreach are both necessary to stop the spread of the disease and to figure out how best to manage it. We would ask however, that this funding be additive and not in place of regular invasive species funding so that if we are able to contain this disease, we will not have to play catch up with invasive species projects that we had to drop.

We understand that the Committee may question why the pathogen got as far as it did without detection and why it has not been eradicated, despite a strong interagency response. There are an estimated 5.1 million species of fungi in the world. This makes identification and control of fungal pathogens a long process. Dying 'Ōhi'a trees were first reported on Hawai'i Island in 2010. In 2014, it the fungus was isolated and identified as a species of *Ceratocystis*. This is a relatively quick identification in the world of plant pathology. Conversely, it took 10 years to isolate and identify the pathogen that causes rapid oak death in California.



'Ōhi'a is the backbone of Hawaiian forests and anchors the watersheds of Hawai'i, Maui, Moloka'i, Lana'i, O'ahu and Kaua'i.



'Ōhi'a is the backbone of our watershed—a watershed that provides fresh water worth between \$4.6 and \$8.5 billion dollars¹. Research suggests that the invasive species that would move in if 'ōhi'a were wiped out could not direct rain and fog drip into the aquifer for water recharge as well as 'ōhi'a². Private and federal funders have already pitched in to provide funding support for research, testing and outreach. We hope the State will be able to provide funding as well. Thank you for the opportunity to submit testimony.

¹ Basharat Pitafi and James Rousmasset. "Watershed Conservation and Efficient Groundwater Pricing." Prepared for the Agricultural and Applied Economics Association Annual meeting, Denver, CO, 2004. See also: Brooks Kaiser et al., The Economic Value of Watershed Conservation, <http://www.uhero.hawaii.edu/assets/EconValueWatershed.pdf>

² Takahashi et al. 2011 "Hydrometeorology of Tropical Montane Cloud Forests" Hydrological Processes Vol. 5 Issue 3 pp.448-464. <http://onlinelibrary.wiley.com/doi/10.1002/hyp.7797/abstract;jsessionid=EB0FB5EA68EB07E803D4103A6028B56A.f01t04>

From: mailinglist@capitol.hawaii.gov
To: [WAM Testimony](#)
Cc: kallygos@mac.com
Subject: Submitted testimony for HB2675 on Mar 31, 2016 09:05AM
Date: Tuesday, March 29, 2016 10:25:27 PM

HB2675

Submitted on: 3/29/2016

Testimony for WAM on Mar 31, 2016 09:05AM in Conference Room 211

Submitted By	Organization	Testifier Position	Present at Hearing
Kally	Individual	Support	No

Comments: Please allocate the funds to save our lifeblood the Ohi'a forest. Hopefully our inundated forests will get some much needed research and protection before its too late. So much is at stake. I SEE NOTHING MORE CRITICAL so save our special tree, forest, native species, soil, reefs, watershed, farming, and entire environment. Please allocate AT LEAST this \$600K. Thank you.

Please note that testimony submitted less than 24 hours prior to the hearing, improperly identified, or directed to the incorrect office, may not be posted online or distributed to the committee prior to the convening of the public hearing.

Do not reply to this email. This inbox is not monitored. For assistance please email webmaster@capitol.hawaii.gov

From: mailinglist@capitol.hawaii.gov
To: [WAM Testimony](#)
Cc: kamakane73@gmail.com
Subject: *Submitted testimony for HB2675 on Mar 31, 2016 09:05AM*
Date: Wednesday, March 30, 2016 12:05:47 AM

HB2675

Submitted on: 3/30/2016

Testimony for WAM on Mar 31, 2016 09:05AM in Conference Room 211

Submitted By	Organization	Testifier Position	Present at Hearing
Kama Hopkins	Individual	Support	No

Comments:

Please note that testimony submitted less than 24 hours prior to the hearing, improperly identified, or directed to the incorrect office, may not be posted online or distributed to the committee prior to the convening of the public hearing.

Do not reply to this email. This inbox is not monitored. For assistance please email webmaster@capitol.hawaii.gov

From: mailinglist@capitol.hawaii.gov
To: [WAM Testimony](#)
Cc: kevink59@gmail.com
Subject: Submitted testimony for HB2675 on Mar 31, 2016 09:05AM
Date: Tuesday, March 29, 2016 3:19:49 PM

HB2675

Submitted on: 3/29/2016

Testimony for WAM on Mar 31, 2016 09:05AM in Conference Room 211

Submitted By	Organization	Testifier Position	Present at Hearing
Kevin Kelly	Individual	Support	No

Comments: The urgency of identifying a solution to rapid ohia death cannot be overstated as the impact to Hawaii's forest ecosystems would be severe and long lasting. I strongly support providing emergency funds for research as provided in this bill. Thank yo for the opportunity to testify.

Please note that testimony submitted less than 24 hours prior to the hearing, improperly identified, or directed to the incorrect office, may not be posted online or distributed to the committee prior to the convening of the public hearing.

Do not reply to this email. This inbox is not monitored. For assistance please email webmaster@capitol.hawaii.gov

From: mailinglist@capitol.hawaii.gov
To: [WAM Testimony](#)
Cc: flylehua@yahoo.com
Subject: *Submitted testimony for HB2675 on Mar 31, 2016 09:05AM*
Date: Tuesday, March 29, 2016 9:37:21 PM

HB2675

Submitted on: 3/29/2016

Testimony for WAM on Mar 31, 2016 09:05AM in Conference Room 211

Submitted By	Organization	Testifier Position	Present at Hearing
lehua	Individual	Support	No

Comments:

Please note that testimony submitted less than 24 hours prior to the hearing, improperly identified, or directed to the incorrect office, may not be posted online or distributed to the committee prior to the convening of the public hearing.

Do not reply to this email. This inbox is not monitored. For assistance please email webmaster@capitol.hawaii.gov

From: mailinglist@capitol.hawaii.gov
To: [WAM Testimony](#)
Cc: admin@hicc.biz
Subject: Submitted testimony for HB2675 on Mar 31, 2016 09:05AM
Date: Wednesday, March 30, 2016 4:16:59 PM

HB2675

Submitted on: 3/30/2016

Testimony for WAM on Mar 31, 2016 09:05AM in Conference Room 211

Submitted By	Organization	Testifier Position	Present at Hearing
Miles Yoshioka	Individual	Support	No

Comments: As much as the use of ohia for firewood, art products and lei has become an integral part of life for many Hawaii Island residents, those who are aware of this dire situation are taking steps to reduce the spread. I offer my support of for HB2675, to appropriate \$600K to Hawaii's Department of Land and Natural Resources for ROD-related research.

Please note that testimony submitted less than 24 hours prior to the hearing, improperly identified, or directed to the incorrect office, may not be posted online or distributed to the committee prior to the convening of the public hearing.

Do not reply to this email. This inbox is not monitored. For assistance please email webmaster@capitol.hawaii.gov