UNIVERSITY OF HAWAIʻI SYSTEM
Legislative Testimony

Testimony Presented Before the
Senate Committee on Higher Education
Thursday, March 14, 2019 at 2:45 p.m.
By
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Pacific Biosciences Research Center
School of Ocean, Earth Sciences & Technology
And
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University of Hawaiʻi at Mānoa

HB 1546 HD1 – RELATING TO ENVIRONMENTAL PROTECTION

Chair Kim, Vice Chair Kidani and Members of the Committee:

Thank you for the opportunity to provide testimony in support of HB 1546 HD1 which requires the University of Hawaiʻi to develop a plan to be implemented for the statewide eradication of mosquitos.

To provide you some background, during the 2016 IUCN World Conservation Congress held in Honolulu, the University of Hawaiʻi convened a "To Restore a Mosquito-Free Hawaiʻi Workshop" attended by some of the top mosquito researchers worldwide to discuss the feasibility of eradicating three mosquito species from the state. It was determined that by taking a systems-thinking approach and addressing all aspects of the biology, ecology, behavior, genetics, etc. of the three mosquito species in question, Aedes aegypti, Aedes albopictus, and Culex quinquefasciatus, eradication of these mosquito species is certainly feasible. It would be possible to bring a few of the Workshop participants back to Hawaiʻi to assist in developing a strategic plan for implementing a mosquito eradication program in Hawaiʻi.

UH recommends the following amendments:
page 1, line 15-16 - delete "including introducing genetically engineered mosquitos"
page 2, line 19 - delete "genetic"
page 3, line 7. - insert a sum of "$50,000"

With these amendments, UH supports HB 1546 HD1 as long as it is in addition to the University's Biennium Budget request.

Thank you for the opportunity to testify on this measure.

DAVID Y. IGE
GOVERNOR OF
HAWAII

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

ROBERT K. MASUDA
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M. KALEO MANUEL
DEPUTY DIRECTOR - WATER

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Testimony of
SUZANNE D. CASE
Chairperson

Before the Senate Committee on
HIGHER EDUCATION

Thursday, March 14, 2019
2:45 PM
State Capitol, Conference Room 229

In consideration of
HOUSE BILL 1546, HOUSE DRAFT 1
RELATING TO ENVIRONMENTAL PROTECTION

House Bill 1546, House Draft 1 proposes to provide funds to the University of Hawaii (UH) to scale up research, coordinate with appropriate state agencies, and develop a plan to be implemented for the eradication of mosquitoes in the State. **The Department of Land and Natural Resources (Department) supports this measure, provided that its passage does not replace or adversely impact priorities indicated in the Executive Budget request, and offers the following comments.**

Mosquitoes are non-native to Hawaii, and spread diseases which threaten public health and native wildlife. In particular, the Southern house mosquito (*Culex quinquefasciatus*) is widespread across the State and is a vector for avian malaria. Hawaii's native birds are particularly susceptible to this disease and have seen precipitous declines in population size since the introduction of mosquitoes and associated avian diseases. There are several additional mosquito species in Hawaii in the *Aedes* genus, which are vectors of human diseases, including dengue, Zika, and chikungunya.

The Department supports the overall concept of landscape-scale mosquito control in Hawaii and is currently working with partners on a non-genetic tool that uses a bacteria called *Wolbachia* to induce a "birth control" effect in populations of *Culex* mosquitoes. Such technology is already being applied elsewhere in the United States and internationally to suppress populations of mosquitoes that spread diseases. This tool is not likely to lead to eradication of mosquitoes from the State, but would provide a safe and effective tool for localized population suppression.

The Department also supports UH conducting research into genetic tools that may be used for landscape-scale mosquito control. There are a variety of genetic tools being researched and developed, and several approaches may be necessary to achieve localized suppression or, potentially, eradication of mosquitoes from the State.

The Department notes that because mosquitoes are not native to Hawaii, there are no anticipated negative impacts from the eradication of mosquitoes within the State.

Thank you for the opportunity to comment on this measure.

HB-1546-HD-1
Submitted on: 3/11/2019 2:42:38 PM
Testimony for HRE on 3/14/2019 2:45:00 PM

Submitted By	Organization	Testifier Position	Present at Hearing
Benton Kealii Pang, Ph.D.	Individual	Support	No

Comments:

HB-1546-HD-1
Submitted on: 3/13/2019 10:24:51 AM
Testimony for HRE on 3/14/2019 2:45:00 PM

Submitted By	Organization	Testifier Position	Present at Hearing
J Ashman	Individual	Support	No

Comments:

CHARLES STRUWE, BBA
Research and Experimental Famer
Oahu, Hawaii

LATE

TESTIMONY BEFORE THE SENATE COMMITTEE ON HIGHER EDUCATION

MARCH 14, 2019
2:45 PM
CONFERENCE ROOM 229

HOUSE BILL 1546, HD1
A BILL RELATING TO ENVIRONMENTAL PROTECTION

STRONG SUPPORT

Chair Kim, Vice Chair Kidani and Members of the Committee:

> House Bill 1546, HD1, A BILL RELATING TO ENVIRONMENTAL PROTECTION, requires the University of Hawaii to develop a plan to be implemented for the statewide eradication of mosquitos and appropriates funds.

Thank you for hearing this important Bill for an Act.

The purpose of this Act is to eradicate mosquitoes from Hawai'i to protect public health, native species, and a way of life by providing funds to the University of Hawai'i to scale up research, coordination with appropriate state agencies, and develop a plan to be implemented for the statewide eradication of mosquitoes.

I strongly support the development of a plan by the University of Hawai'i System to eradicate mosquitoes in Hawai'i.

As the participants in the workshop "To Restore a Mosquito Free Hawai'i" noted at the end of the conclusion section of their report:

> "*Unless immediate action is taken, people will continue to suffer from mosquito-borne diseases, and avian malaria will continue to threaten the existence of a vast majority of Hawai'i's unique passerines.*" [1]

As to potential solutions, the participants stated:

> *"Putting resources to work, engaging the public, and developing the science are vital first steps in order to halt the extinction of Hawai'i's unique forest birds and to take measure to address the serious threats that mosquito-transmitted diseases pose to public health in Hawai'i."* [2].

Eradication of mosquitoes, though a relatively new idea, has been the goal of many people in effort throughout the world. [3, 4,5,6,7,8, 9, 10].

The major difference today are the tools available to accomplish this goal. [11, 12]

In conclusion, Kenneth Kaneshiro and Michael Bruno of the University of Hawai'i System testified that at the University convened "To Restore a Mosquito-Free Hawa'ii Workshop":

> *"(i)t was determined that by taking a systems-thinking approach and addressing all aspects of the biology, ecology, behavior, genetics, etc. of the three mosquito species in question, Aedes aegypti, Aedes albopictus, and Culix quinquefasciatus, eradication of these mosquito species is certainly feasible. It would be possible to bring a few of the workshop participants back to Hawai'i to assist in developing a strategic plan for implementing a mosquito eradication program in Hawai'i.* [13]

The University of Hawai'i System is uniquely qualified to prepare the plan to eradicate mosquitoes in Hawai'I which is why I support passage of this Bill for an Act.

Thank you for the opportunity to testify on this measure.

Works Cited

1. To Restore a Mosquito Free Hawaii (2016). Report from a Workshop, page 7.

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9. Pratt, Harry D., Littig, Kent, and Tinker, Milton E. (1966). Aedes aegypti Handbook Series No. 2. Entomological Handbook For Aedes Aegypti Eradication. Preliminary Issue. Center for Disease and Control.

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13. Kaneshiro, Kenneth and Bruno, Michael. University of Hawaii System. (2019). Testimony presented before the House Committee on Finance, February 21, 2019 regarding HB 1546 HD1.