

DAVID Y. IGE
GOVERNOR OF
HAWAII



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

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**Testimony of
SUZANNE D. CASE
Chairperson**

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

**Monday, February 25, 2019
10:30am
State Capitol, Conference Room 211**

**In consideration of
SENATE BILL 944, SENATE DRAFT 1
RELATING TO CLIMATE CHANGE**

Senate Bill 944, Senate Draft 1 proposes to add to the authority of the Hawaii Climate Change Mitigation and Adaptation Commission (Climate Commission) by directing it to: 1. Identify and prioritize nature-based solutions to climate change; and 2. Assess opportunities for insurance and other risk transfer mechanisms that incentivize investment in nature-based solution to climate change. **The Department of Land and Natural Resources (Department) supports this measure provided that its passage does not replace or adversely impact priorities indicted in the Executive Supplemental Budget request.**

The Department understands that protecting and increasing the footprint of our native forests, beaches and open spaces will contribute significantly to mitigating the effects climate change on native species, water supply, our coastal areas, and coral reefs. The Department is already engaged in projects that aim to increase Hawaii's adaptive capacity by reforesting grasslands, protecting and expanding beaches and preserving open space.

One concrete way to mitigate greenhouse gas emissions at the regional, state, and local level is through reforestation. Since trees metabolize carbon dioxide, store that carbon in their leaves, roots, and living material, and release vital oxygen as a byproduct planting more trees is an ideal way to scrub harmful greenhouse gasses from the atmosphere.

Hawaii's forest and urban forests also mitigate climate change by keeping the island's buildings and streets cooler, protecting our reefs from being smothered by runoff, protecting communities from the impacts from storm events and natural disasters through storm-water mitigation and absorption, and efficiently collecting rainwater for our aquifers.

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

ROBERT K. MASUDA
FIRST DEPUTY

M. KALEO MANUEL
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

The Department also acknowledges the need for research and analysis of insurance, reinsurance, and other risk transfer products or market mechanisms that incentivize nature-based solutions and believes the Climate Commission to be a suitable entity to deliver such assessments in coordination with the Greenhouse Gas Sequestration Task Force. However, given the modest resources allocated to carry out Climate Commission work, additional functions as outlined in this and other measures would require additional resources.

Thank you for the opportunity to comment on this measure.

SB-944-SD-1

Submitted on: 2/24/2019 10:18:53 AM

Testimony for WAM on 2/25/2019 10:30:00 AM

Submitted By	Organization	Testifier Position	Present at Hearing
Melodie Aduja	Testifying for O`ahu County Committee on Legislative Priorities of the Democratic Party of Hawai`i	Support	No

Comments:



SENATE COMMITTEE ON WAYS AND MEANS

February 25, 2019 10:30 a.m. Room 211

In SUPPORT of SB944 SD1: Relating to Climate Change

Aloha Chair Dela Cruz, Vice Chair Keith-Agaran, and members of the committees,

The HAWAII REEF AND OCEAN COALITION –HIROC– was formed in 2017 by coral reef scientists, educators, local Hawai‘i environmental organizations, elected officials, and others to address a crisis facing Hawai‘i’s coral reefs and ocean, including those related to sea level rise.

We support the passage of SB944 SD1.

This bill would support Motion 62 adopted at the International Union for Conservation of Nature (IUCN) World Conservation Congress held in Honolulu in 2016. Nature-based Solutions (NbS) are defined by IUCN as “actions to protect, sustainably manage, and restore natural or modified ecosystems, that address societal challenges effectively and adaptively, simultaneously providing human well-being and biodiversity benefits”.

Adoption of SB944 SD1 would add to other steps already taken by the State of Hawai‘i and its citizens to contribute our efforts to address climate change threats within the global framework.

Mahalo for this opportunity to provide testimony.

Kimiko LaHaela Walter on behalf of the Hawai‘i Reef and Ocean Coalition.



Environmental Caucus

The Democratic Party of Hawai'i

SENATE COMMITTEE ON WAYS AND MEANS

February 25, 2019 10:30 a.m. Room 211

In **SUPPORT of SB944 SD1**: Relating to Climate Change

Aloha Chair Dela Cruz, Vice Chair Keith-Agaran and Committee Members,

On behalf of the Environmental Caucus of the Democratic Party of Hawai'i (ECDPH), we **support passage of SB944 SD1**, relating to climate change.

Climate change and efforts to mitigate its effects is the single most pressing issue of our time. This bill would support Motion 62 adopted at the International Union for Conservation of Nature (IUCN) World Conservation Congress held in Honolulu in 2016. Nature-based Solutions (NbS) are defined by IUCN as “actions to protect, sustainably manage, and restore natural or modified ecosystems, that address societal challenges effectively and adaptively, simultaneously providing human well-being and biodiversity benefits”.

The adoption of SB944 SD1 would add to other steps already taken by the State of Hawai'i and its citizens to contribute our efforts to address climate change threats within the global framework.

Mahalo for this opportunity to provide testimony **in support of SB944 SD1**.

Lana Olson, Chair, Environmental Caucus of the Democratic Party of Hawai'i

Testimony of The Nature Conservancy of Hawai'i
Supporting SB 944 SB1 Relating to Climate Change
Committee on Ways and Means
Monday, February 25, 2019, 10:30 AM, Room 211

The Nature Conservancy supports SB 944 SD1 that directs the Climate Change Mitigation and Adaptation Commission to prioritize nature-based solutions to climate change and investigate private insurance mechanisms that incentivize investment in natural solutions that mitigate the effects of climate change.

Hawai'i has increasing exposure to climate change related risks and disaster events. However, the islands also have environmental resources such as forests, wetlands, coral reefs, and other natural infrastructure that – if healthy, well-managed, and functioning – can help reduce emissions as well as mitigate the risks and related loss and damages from climate change.

For example, a team from The Nature Conservancy, University of California at Santa Cruz, Stanford University, and the US Geological Survey has developed biophysical models showing that coral reefs can provide an effective first line of defense for coastal flood reduction. These scientists have demonstrated that **healthy reefs can absorb up to 97% of wave energy**, protecting coastal properties from the power of the sea. Conversely, the loss of just one meter of reef could result in a doubling of the cost of damage.¹ And, two recent studies by the Conservancy and partners found that **natural climate solutions (i.e., conservation, restoration, and improved land management on natural and agricultural lands) can provide carbon storage and avoid greenhouse gas emissions equivalent to 21% of current U.S. annual emissions and 37% of cost-effective mitigation needed through 2030 toward holding global warming below 2°C.**^{2 3}

As such, it is important to invest in nature-based infrastructure to protect built infrastructure and property. And, insurance companies are beginning to apply parametric insurance products to natural infrastructure.

The Nature Conservancy has been working on one such pilot for a parametric insurance policy for the coral reef fronting resort areas on Mexico's Caribbean coast near Cancún. While reefs mitigate the effects of hurricanes, the storms also damage the reefs. Damage increases beach erosion and decreases the reefs' capacity to protect the coast in future storm events. But damage can be reduced by immediate post-storm clean up and restoration actions and that's where private parametric insurance comes into play. A dedicated insurance solution to cover the restoration cost for the reef is an essential step if the full protective value of the reef is to be reinstated.

Thank you for the opportunity to testify in support of this bill.

¹ Ferrario, Filippo, Michael W. Beck, et al. "The effectiveness of coral reefs for coastal hazard risk reduction and adaptation." *Nature Communications* volume5, Article number: 3794 (2014). www.nature.com/articles/ncomms4794

² Fargione, Joseph E., Steven Basset, et al. "Natural Climate Solutions for the United States.", *Science Advances* 2018, 4: eaat1869, November 14, 2018. <http://advances.sciencemag.org/content/4/11/eaat1869>

³ Griscom, Bronson W., Justin Adams, et al. "Natural Climate Solutions." *Proceedings of the National Academy of Sciences*. October 31, 2017 114 (44) 11645-11650. www.pnas.org/content/114/44/11645

LATE

SB-944-SD-1

Submitted on: 2/24/2019 1:17:09 PM

Testimony for WAM on 2/25/2019 10:30:00 AM

Submitted By	Organization	Testifier Position	Present at Hearing
Andrea Quinn	Individual	Support	No

Comments:

Dear Honorable Committee Members:

Please support SB944. Valuable coastline is eroding due to sea level rise and coral reefs are dying due to climate change, which is already occurring. We need to be a leader in legislation to mitigate global warming.

Thank you for the opportunity to present my testimony.

Andrea Quinn

Kihei



O'ahu County Democrats
oahudemocrats.org



LATE

Aloha Chair Dela Cruz, and Members of the Committee on Ways and Means,

RE: SB944 SD1, Relating to Climate Change

I write in support of Senate Bill 944, Senate Draft 1. This bill intends to prioritize nature-based solutions in Hawaii climate change mitigation and adaptation efforts, from a risk-management perspective.

When looking to the O'ahu County Democrats' Platform, notably, we find that goal 13 of our Preamble urges our lawmakers to "*take urgent action to combat climate change and its impacts.*" Additionally, the Democratic Party of Hawai'i Platform also specifies that we ought to "*advance measures to re-establish healthy Climate and Environment for humans and fellow species.*" Further, "*the climate emergency and the need to expand the middle-class demand that we make the most ambitious investment in Hawai'i infrastructure.*"

Although people often compartmentalize "infrastructure" and "nature" as distinct, this is an arbitrary segregation, to the extent that 'green infrastructure' is a rising example of "nature-based" mitigation and adaptation to a changing climate and landscape. Indeed, green infrastructure uses natural processes to mitigate natural disasters and human health threats such as flooding, water quality impairment, fire, erosion and the urban heat island (UHI).

In terms of stopping greenhouse gas itself, our eight main Hawaiian Islands have declined from over 90% native forestation to about 25% native forestation. Impending deforestation from Rapid 'Ōhi'a Death (ROD) may drive extinct our dominant native canopy tree in the wild, or make it rare. Dry forest restoration, as seen at Auwahi, Maui, is the key to restoring another 25% or so of the landcover to carbon sequestration. This bill strengthens the state's authority and obligation to restore the people's lands, which are severely degraded in 2019.

I thank Senator Riviere for his sense of justice in promoting this important issue, and as such am pleased to offer testimony in support as based on the O'ahu County Democrats Platform. Please vote 'aye' on SB944 SD1.

Respectfully,

Dylan P. Armstrong, B.Sci, Vice Chair
O'ahu County Committee, O'ahu County Democrats

Liaison for Ways and Means,
O'ahu County Committee on Legislative Priorities (OCCLP)