

DAVID Y. IGE
GOVERNOR OF
HAWAII



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

POST OFFICE BOX 621
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**Testimony of
SUZANNE D. CASE
Chairperson**

**Before the Senate Committees on
AGRICULTURE AND ENVIRONMENT
and
WATER AND LAND**

**Monday, February 11, 2019
State Capitol, Conference Room 224**

**In consideration of
SENATE BILL 944
RELATING TO CLIMATE CHANGE**

Senate Bill 944 proposes to add to the authority of the HI 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 trying to increase our 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 afforestation. Since trees metabolize carbon dioxide into oxygen and store that carbon in their leaves, roots, and living material, planting more trees is an ideal way to scrub harmful greenhouse gasses from the atmosphere.

Hawaii's forest and urban forests also mitigates climate change by keeping the island cooler, protecting our reefs from being smothered by runoff, protecting communities from the impacts

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

from storm events and natural disasters through storm-water mitigation and absorption, and efficiently collecting rainwater for our aquifers.

The Department also acknowledges the need for research and analysis of different mechanisms that incentivize nature based solutions and believes the Climate Commission to be a suitable entity to deliver such assessments. However, given the modest resources allocated to carry out Climate Commission work, if the Commission is to carry out substantially more functions as outlined in this and other measure, it must be resourced more fully.

Thank you for the opportunity to comment on this measure.

Testimony of The Nature Conservancy of Hawai'i
Supporting SB 944 Relating to Climate Change
Committee on Public Safety, Veterans, and Military Affairs
Wednesday, January 30, 2019, 10:30 AM, Room 430

The Nature Conservancy supports SB 944 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

SB-944

Submitted on: 2/8/2019 2:31:06 PM

Testimony for AEN on 2/11/2019 2:45:00 PM

Submitted By	Organization	Testifier Position	Present at Hearing
Regina Gregory	Testifying for EcoTipping Points Project	Support	No

Comments:

This needs a much better definition of "nature-based"



SENATE JOINT COMMITTEE ON AGRICULTURE & ENVIRONMENT AND WATER & LAND

February 11, 2019 2:45pm Room 224

In SUPPORT of SB944: Relating to Climate Change

Aloha Chairs Gabbard and Kahele, Vice Chairs Ruderman and Keith-Agaran, and members of the committees,

The HAWAI'I 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.

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 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 JOINT COMMITTEE ON AGRICULTURE AND THE ENVIRONMENT AND WATER AND LAND

February 11, 2019 2:45 p.m. Room 224

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

Aloha Chairs Gabbard and Kahele, Vice Chairs Ruderman and Keith-Agaran and
Committee Members,

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

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

SB-944

Submitted on: 2/10/2019 2:39:12 PM

Testimony for AEN on 2/11/2019 2:45:00 PM

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:



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COMMITTEE ON WATER AND LANDS

Senator Kaiali`i Kahele, Chair
Senator Gilbert S.C. Keith-Agaran, Vice Chair

COMMITTEE ON AGRICULTURE AND ENVIRONMENT

Senator Mike Gabbard, Chair
Senator Russell Ruderman, Vice Chair

Monday, February 11, 2019, 2:45 p.m., Conference Room 224

SB664 – Relating to Climate Change

SB828 – Relating to Coastal Erosion Adaptation Plan

SB930 -- Relating to Climate Change

SB944 – Relating to Climate Change

SB393 – Relating to Coastal Zone Management

SB1113 – Relating to Coastal Management

TESTIMONY

Nancy Davlantes, Legislative Committee Member, League of Women Voters of Hawaii

Chairs Kahele and Gabbard, Vice-Chairs Keith-Agaran and Ruderman, committee members:

The League of Women Voters of Hawaii echoes its testimony previously submitted to various House bills addressing the challenges taken up by the Senate in this hearing.

Hawaii's Climate Change Mitigation and Adaptation Commission, created by Act 32 in 2017, certainly has a lot on its plate, tasked in three of these bills to assist the state and counties with developing and implementing various sea level rise adaptation plans and climate change mitigation efforts; to prioritize nature-based solutions in its climate change mitigation and adaptation efforts and assess risk transfer market mechanisms that promote investments in nature to reduce the risks of climate change; and to determine areas in each county to designate for either armoring or managed retreat. Fortunately, these bills appropriate money, and it's going to take a lot of it.

If there's anything that stands out from a review of the objectives of each of these bills is that everything is inter-related. Climate change is all-encompassing: sea-level rise, coastal erosion, what to do about moving roads and property mauka of the ocean, preserving beach and access – these problems can't be confronted in isolation.

What is needed is an integrated approach to the significant challenges confronting our island state. The League is both gratified and impressed by the number of bills introduced this session by both the Senate and House, recognizing that delay in addressing these challenges is not an option.



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Now comes the hard part—sifting through the myriad bills, recognizing the common goals, and putting the pieces of the puzzle together to come up with the legislation and the money to put Hawaii on the course it needs to be on to face what’s ahead of us.

It’s a daunting task, to say the least, but the very number of bills introduced indicates that the time to act is now.

Thank you for the opportunity to submit testimony.



SIERRA CLUB OF HAWAII
MĀLAMA I KA HONUA. *Cherish the Earth.*

LATE

SENATE COMMITTEE ON AGRICULTURE AND ENVIRONMENT

SENATE COMMITTEE ON WATER AND LAND

February 11, 2019 2:45 pm. Room 224

In SUPPORT of SB 944: Relating to Climate Change

Aloha Chair Gabbard, Vice-Chair Kahele, and Committee Members:

On behalf of our 20,000 members and supporters, the Sierra Club of Hawai'i, **supports SB 944**, which calls for amending Chapter 225-3(i) to identify, utilize, and maintain nature-based solutions in its climate change mitigation and adaptation efforts at the regional, state, and local levels, and develop a science-based carbon budget for Hawai'i in support of meeting global targets to limit carbon emissions.

This amendment 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*".

Among other provisions, Motion 62 "*ENCOURAGES regional and local authorities to integrate these solutions into their territorial climate change adaptation and mitigation, energy and land-use planning policies and strategies, as well as their budgets where appropriate.*" Climate change adaptation and mitigation requires actions across the globe by governments, non-governmental organizations, and citizens. Adoption of SB 944 would add to other steps already taken by the government and citizens of Hawai'i to address climate change threats.

Mahalo for the opportunity to provide testimony on this important measure.

Mahalo,

Jodi Malinoski, Policy Advocate

SB-944

Submitted on: 2/7/2019 6:46:24 PM

Testimony for AEN on 2/11/2019 2:45:00 PM

Submitted By	Organization	Testifier Position	Present at Hearing
Erica Scott	Individual	Support	No

Comments:

SB-944

Submitted on: 2/10/2019 2:17:00 PM

Testimony for AEN on 2/11/2019 2:45:00 PM

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 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.

Sincerely,

Andrea Quinn

Kihei

LATE

SB-944

Submitted on: 2/10/2019 6:34:12 PM

Testimony for AEN on 2/11/2019 2:45:00 PM

Submitted By	Organization	Testifier Position	Present at Hearing
Dain Christensen	Individual	Support	No

Comments: