

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 House Committee on
ENERGY & ENVIRONMENTAL PROTECTION**

**Tuesday, March 12, 2019
8:30am
State Capitol, Conference Room 325**

**In consideration of
SENATE BILL 944, SENATE DRAFT 2
RELATING TO CLIMATE CHANGE**

Senate Bill 944, Senate Draft 2 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 indicated 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.



SIERRA CLUB OF HAWAI'I

MĀLAMA I KA HONUA. *Cherish the Earth.*

HOUSE COMMITTEE ON ENERGY AND ENVIRONMENTAL PROTECTION

March 12, 2019 8:30 AM Room 325

In SUPPORT of SB 944 SD 2: Relating to Climate Change

Aloha Chair Lowen, Vice-Chair Wildberger, and committee members:

On behalf of our 20,000 members and supporters, the Sierra Club of Hawai'i, **supports SB 944**, which calls for the Hawaii Climate Change Mitigation and Adaptation Committee to identify and prioritize nature-based solutions to climate change and assess opportunities for insurance and other risk transfer mechanisms that incentivize investment in nature-based solutions.

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*".

Hawai'i will need to pursue a variety of initiatives to address climate change and reduce the impacts of greenhouse gas emissions. Nature-based solutions, such as planting trees to add to the urban canopy, helps to keep concrete cities cool and also sequesters carbon. As Hawai'i prepares for the increasing impacts of climate change, it is important to integrate and utilize nature-based solutions, like tree planting, into applicable adaptation and mitigation strategies. We should welcome and prioritize these types of solutions to help us tackle this comprehensive issue.

Mahalo for the opportunity to provide testimony in support of SB 944.

Mahalo,

Jodi Malinoski, Policy Advocate

Testimony of The Nature Conservancy of Hawai'i
Supporting SB 944 SD2 Relating to Climate Change
House Committee on Energy and Environmental Protection
Tuesday, March 12, 2019, 8:30 AM, Room 325

The Nature Conservancy supports SB 944 SD2 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



Healthy Climate
Communities

Testimony in support of SB944

HOUSE COMMITTEE ON ENERGY AND ENVIRONMENTAL PROTECTION

Hearing Tuesday, March 12, 2019 8:30 a.m.

Aloha Chair Lowen, Vice Chair Wildberger and EEP Committee Members,

I am writing in strong support of SB944.

Nature based solutions to climate change such as planting trees, restoring wetlands and protecting coral reefs have the unique quality that they both help to mitigate and to adapt to climate change. They also have many spill over benefits such as providing habitat for native species.

The benefits often develop slowly over time as the natural organisms grow and mature, so it is important to start investing in nature-based solutions now.

Healthy Climate Communities is already involved in nature-based solutions through a community-based forestry project on the watershed of Hamakua Marsh. It is something that is easily within our reach, we just need the political will to make the right investments.

Mahalo,

Dr. Lisa Marten

Executive Director
Healthy Climate Communities
healthyclimate@hawaii.rr.com



**Testimony Presented Before the
House Committee on Energy and Environmental Protection
March 12, 2019 at 8:30am
House Conference Room 325**

**By
Dolan Eversole
President
Hawai'i Shore and Beach Preservation Association**

SB944-SD1 – RELATING TO CLIMATE CHANGE

Chair Lowen, Vice Chair Wildberger and members of the committee:

The Hawai'i Shore and Beach Preservation Association (HSBPA) supports Senate Bill 944 SD-1. This legislation requires the Hawai'i Climate Change Mitigation and Adaptation Commission 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.

Hawaii's beaches have become increasingly threatened by coastal erosion. According to the United States Geological Survey (USGS) *National Assessment of Shoreline Change for the Hawaiian Islands*, 70% of Hawaii's beaches are eroding and 13 miles of beach have been lost over the last century. Beach erosion affects shoreline access, recreation, cultural activities, coastal environments, and our economy. Beaches are a critical component of Hawai'i's \$15-billion tourism industry and are central to Hawai'i's unique culture and lifestyle. With sea level rise and chronic coastal erosion, the state is challenged to find effective and efficient ways to conserve and restore our naturally occurring sand beaches. In a "healthy" state, beaches and dunes provide effective and natural protection for beachfront development from the impacts of high waves and erosion. The HSBPA believes SB944 will help support the long-term preservation of Hawaii's coastal resources by identifying nature-based solutions to Hawaii's coastal erosion and coastal hazards and evaluating potential risk-transfer mechanisms.

HSBPA supports SB944 in the effort to identify and establish an economic justification for beach management and conservation, and to inform the selection of appropriate coastal management policies to protect and conserve the beaches of Hawaii. The HSBPA has considerable professional experience working with nature-based mitigation responses to coastal hazards including beach conservation and restoration projects. Protection of natural "infrastructure" on

our coasts combined with the risk transfer approach is a very appropriate response to the significant coastal threats Hawai'i faces today.

*The Hawai'i Shore and Beach Preservation Association (HSBPA, <http://asbpa.org/hawaii/>) is an organization of private sector, academic, and government professionals, students and local community members dedicated to the preservation and restoration of Hawaii's beaches and coastal environments. The HSBPA aims to bring together various members of the coastal community to foster dialogue and cooperation on beach and coastal resource conservation, management, and regulation; supporting professional development of chapter members; and providing education to students and community members on Hawaii's beaches and coastal environments.

Thank you for considering our testimony on the bill.



COMMITTEE ON ENERGY AND ENVIRONMENTAL PROTECTION

March 12, 2019 8:30 AM Room 325

In **SUPPORT** of **SB 944 SD2**: Relating to Climate Change

Aloha Chair Lowen, Vice-Chair Wildberger, and Committee Members.

The HAWAII'Ī 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 Hawaii's coral reefs and ocean, including those related to sea level rise.

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 SB 944 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.

While we have an urgent need to pursue climate change mitigation and adaptation, we should seek to do so with environmentally and socially positive strategies—such as the Nature-based Solutions promoted by SB 944 SD2.

Mahalo for this opportunity to provide testimony.

Submitted on behalf of HIROC by Dave Raney

SB-944-SD-2

Submitted on: 3/11/2019 2:25:35 AM

Testimony for EEP on 3/12/2019 8:30:00 AM

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

Comments:

SB-944-SD-2

Submitted on: 3/10/2019 10:35:13 AM

Testimony for EEP on 3/12/2019 8:30:00 AM

Submitted By	Organization	Testifier Position	Present at Hearing
Lois Crozer	Individual	Support	No

Comments:

SB-944-SD-2

Submitted on: 3/10/2019 11:58:47 AM

Testimony for EEP on 3/12/2019 8:30:00 AM

Submitted By	Organization	Testifier Position	Present at Hearing
Barbara L. George	Individual	Support	No

Comments:

SUPPORT.

SB-944-SD-2

Submitted on: 3/10/2019 3:03:01 PM

Testimony for EEP on 3/12/2019 8:30:00 AM

Submitted By	Organization	Testifier Position	Present at Hearing
Sandra Fujita	Individual	Support	No

Comments:

I support SB944 SD2.

SB-944-SD-2

Submitted on: 3/10/2019 4:25:59 PM

Testimony for EEP on 3/12/2019 8:30:00 AM

Submitted By	Organization	Testifier Position	Present at Hearing
Dyson Chee	Individual	Support	No

Comments:

SB-944-SD-2

Submitted on: 3/10/2019 7:49:54 PM

Testimony for EEP on 3/12/2019 8:30:00 AM

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

Comments:

SB-944-SD-2

Submitted on: 3/11/2019 3:56:01 PM

Testimony for EEP on 3/12/2019 8:30:00 AM

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

Comments:



Environmental Caucus

The Democratic Party of Hawai'i

HOUSE COMMITTEE ON ENERGY AND ENVIRONMENTAL PROTECTION

March 12, 2019 8:30 a.m. Room 325

In **SUPPORT** of **SB944 SD2**: Relating to Climate Change

LATE

Aloha Chair Lowen, Vice Chair Wildberger and Committee Members,

On behalf of the Environmental Caucus of the Democratic Party of Hawai'i (ECDPH), we **support passage of SB944 SD2**, 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 SD2 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 SD2**.

Kimiko LaHaela Walter

Interim Chair, Energy and Climate Change Subject Committee, Environmental Caucus of the Democratic Party of Hawai'i

SB-944-SD-2

Submitted on: 3/11/2019 4:56:20 PM

Testimony for EEP on 3/12/2019 8:30:00 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. Our reefs are already virtual deserts. We need to be a leader in legislation to mitigate global warming.

Thank you for the opportunity to present my testimony.

Andrea Quinn

Kihei

SB-944-SD-2

Submitted on: 3/11/2019 8:49:43 PM

Testimony for EEP on 3/12/2019 8:30:00 AM

LATE

Submitted By	Organization	Testifier Position	Present at Hearing
Greg Puppione	Individual	Support	No

Comments:

We should consider all options to deal with the crisis of climate change, and nature-based ones seem like an important piece of the puzzle.