

DAVID Y. IGE  
GOVERNOR OF  
HAWAII



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

ROBERT K. MASUDA  
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  
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HISTORIC PRESERVATION  
KAHOOLAWE ISLAND RESERVE COMMISSION  
LAND  
STATE PARKS

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  
FINANCE

Friday, February 23, 2018  
2:00 PM  
State Capitol, Conference Room 308

In consideration of  
HOUSE BILL 2182, HOUSE DRAFT 1  
RELATING TO ENVIRONMENTAL PROTECTION

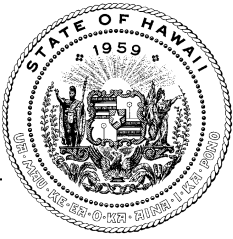
House Bill 2182, House Draft 1 proposes to convert the carbon farming task force established by Act 33, Session Laws of Hawaii 2017, into a permanent Greenhouse Gas Sequestration Task Force and amends its membership and duties. The State's clean energy and carbon sequestration efforts would be aligned with climate initiative goals, and a zero-greenhouse gas emissions target for the State would be established. **The Department of Land and Natural Resources (Department) supports this initiative and provides the following comments.**

The Department is charged with the stewardship and management of the State's terrestrial and aquatic areas, including its natural resources. Climate change poses an imminent threat to these natural resources. As shown by research and as already practiced around the world, climate-smart agriculture, including agroforestry systems, can have multiple environmental, social, and economic benefits.

Among the different land uses, forest ecosystems, and long rotation systems such as agroforests, permaculture, home gardens, and boundary plantings have the capacity to sequester greenhouse gases in plant biomass and in long-lasting wood products. Agroforestry, an integral part of historic native Hawaiian land use, is considered to be one of the land uses with the most potential to reduce emissions from agriculture. Many agroforestry systems can also increase below-ground carbon storage, both in plant biomass and soil organic matter. In addition to higher rates of carbon storage, agroforestry systems provide many other benefits such as improved soil protection and ameliorated microclimatic conditions due to their wind break effect, improved soil fertility through higher content of soil organic matter and higher biological activity,

improved nutrient cycling, reduced soil toxicities, more efficient use of solar energy, and reduced pests and diseases, by integrating trees and shrubs into agricultural practices. These benefits are consistent with the objectives of this measure.

Thank you for the opportunity to comment on this measure.



# OFFICE OF PLANNING STATE OF HAWAII

DAVID Y. IGE  
GOVERNOR

LEO R. ASUNCION  
DIRECTOR  
OFFICE OF PLANNING

235 South Beretania Street, 6th Floor, Honolulu, Hawaii 96813  
Mailing Address: P.O. Box 2359, Honolulu, Hawaii 96804

Telephone: (808) 587-2846  
Fax: (808) 587-2824  
Web: <http://planning.hawaii.gov/>

Statement of  
**LEO R. ASUNCION**  
Director, Office of Planning  
before the  
**HOUSE COMMITTEE ON FINANCE**  
Friday, February 23, 2018  
2:00 PM  
State Capitol, Conference Room 308

in consideration of  
**HB 2182, HD1**  
**RELATING TO ENVIRONMENTAL PROTECTION.**

Chair Luke, Vice Chair Cullen, and Members of the House Committee on Finance.

HB 2182, HD1 amends Act 33, Session Laws of Hawaii (SLH) 2017 (Act 33), by: (1) making permanent the Carbon Farming Task Force and renaming it the Greenhouse Gas Sequestration Task Force (Task Force); (2) charging the Task Force with the duty to identify agroforestry policies to promote increased greenhouse gas (GHG) sequestration, build healthy soils, and provide GHG benefits; (3) amending the membership of the Task Force to include the Director of the Environmental Law Program at the University of Hawaii at Manoa William S. Richardson School of Law, rather than the Director of the Center for Island Climate Adaptation and Policy at the University of Hawaii at Manoa; (4) expanding the Task Force's mission to include reducing urban temperatures via tree canopies and vegetation; and (5) appropriating \$150,000 to fund the Task Force and its related efforts.

The Office of Planning (OP) supports HB 2182, HD1 and respectfully offers comments. Given the broad scope of Act 33 and the additional tasks proposed by HB 2182, HD1, OP believes that a permanent Task Force is necessary. The amended membership with added expertise and the funding proposed in HB 2182, HD1, provided that the appropriation does not replace or adversely impact priorities indicated in the Executive Budget, will enable it to carry out the proposed legislation's mandates.

HB 2182, HD1 further amends Act 32, SLH 2017, by changing the phrase "the greenhouse gas emissions statewide" to "greenhouse gas emissions", which seems reasonable and appropriate.

Thank you for the opportunity to comment on this measure.



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

## HOUSE COMMITTEE ON FINANCE

Friday, February 23, 2018 2:00PM Conference Room 308

In **SUPPORT of HB 2182 HD1** Relating to environmental protection

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Aloha Chair Luke, Vice Chair Cullen and members of the Committee,

On behalf of our 20,000 members and supporters, the Sierra Club of Hawai'i, a member of the Common Good Coalition, **supports HB 2182 HD1**, which seeks to convert the carbon farming task force--established by Act 33, Session Laws of Hawaii 2017--into a permanent carbon *sequestration* task force and expand its mission to include identification of practices and policies that increase the urban tree canopy. The bill also proposes a requirement that one task force member also be a member of the Climate Change Mitigation and Adaptation Commission and the State's clean energy and carbon sequestration efforts would be aligned with climate initiative goals.

The Sierra Club of Hawai'i's central objectives are to preserve and protect clean air and clean water resources. Therefore, we support efforts across the state that steward and manage the terrestrial and aquatic regions and the natural resources offered by them. Climate change poses an imminent threat to the aforementioned natural resources. As illustrated by numerous peer-reviewed studies and practiced the world over, climate-smart agriculture, including agroforestry systems, can have multiple environmental, social, and economic benefits.

Among the different land uses, forest ecosystems and long rotation systems such as agroforests, permaculture, home gardens, and boundary plantings have the capacity to sequester greenhouse gases in plant biomass and in long-lasting wood products. Agroforestry plays an integral part in historic native Hawaiian land use and was found to be one of the land uses with most potential to reduce emissions from agriculture. Many agroforestry systems can also increase below-ground carbon storage, both in plant biomass and soil organic matter. Integrating trees and shrubs into agricultural practices, which leads to higher rates of carbon storage, agroforestry systems provide a multitude of benefits such as:

- Improved soil protection and ameliorated microclimatic conditions due to their windbreak capabilities
- Improved soil fertility due to a higher composition of soil organic matter and increased biological activity
- Improved nutrient cycling
- Reduced soil toxicities
- Increased efficiency of solar energy intake
- Reduced incidence of pests and disease

These benefits are consistent with the objectives of this measure. Therefore, **we urge the committee to pass HB 2182 HD1.**

Thank you for the opportunity to provide testimony in support of this important measure.

**HB-2182-HD-1**

Submitted on: 2/22/2018 3:07:16 AM

Testimony for FIN on 2/23/2018 2:00:00 PM

<b>Submitted By</b>	<b>Organization</b>	<b>Testifier Position</b>	<b>Present at Hearing</b>
Jun Shin	Young Progressives Demanding Action - Hawaii	Support	No

Comments:

In strong support!

**HB-2182-HD-1**

Submitted on: 2/22/2018 1:55:47 PM

Testimony for FIN on 2/23/2018 2:00:00 PM

<b>Submitted By</b>	<b>Organization</b>	<b>Testifier Position</b>	<b>Present at Hearing</b>
Melodie Aduja	OCC Legislative Priorities Committee, Democratic Party of Hawai'i	Support	No

Comments:

**HB-2182-HD-1**

Submitted on: 2/22/2018 1:46:24 PM

Testimony for FIN on 2/23/2018 2:00:00 PM

<b>Submitted By</b>	<b>Organization</b>	<b>Testifier Position</b>	<b>Present at Hearing</b>
Sarah Toole	Individual	Support	Yes

Comments:

I strongly support this measure.

Sarah Toole

1128 Ala Napunani St 96818

UH Manoa Political Science student



**HB-2182-HD-1**

Submitted on: 2/22/2018 3:49:16 AM

Testimony for FIN on 2/23/2018 2:00:00 PM

<b>Submitted By</b>	<b>Organization</b>	<b>Testifier Position</b>	<b>Present at Hearing</b>
Michael Reed Gach	Individual	Support	No

Comments:

I urge you to support this Environment Protection Bill.

Please SUPPORT.

Mahalo!

Michael Reed Gach, Kihei

**HB-2182-HD-1**

Submitted on: 2/22/2018 8:25:01 AM

Testimony for FIN on 2/23/2018 2:00:00 PM

<b>Submitted By</b>	<b>Organization</b>	<b>Testifier Position</b>	<b>Present at Hearing</b>
Nathan Yuen	Individual	Support	No

Comments:

Dear Chair Sylvia Luke and Vice-Chair Ty J.K. Cullen:

I strongly support HB2182 HD1 which makes permanent the Carbon Farming Task Force and renames it the Greenhouse Gas Sequestration Task Force.

Greenhouse gas sequestration presents an opportunity for entities to offset their carbon footprint and reduce the amount of carbon dioxide in the atmosphere. We need to investigate how Hawaii can participate in this effort.

Thank you for this opportunity to testify on this important matter. I strongly support HB2182 HD1 and urge you to pass this from your committee.

Sincerely,

Nathan Yuen

**HB-2182-HD-1**

Submitted on: 2/22/2018 9:05:37 AM

Testimony for FIN on 2/23/2018 2:00:00 PM

<b>Submitted By</b>	<b>Organization</b>	<b>Testifier Position</b>	<b>Present at Hearing</b>
Mary Lacques	Individual	Support	No

Comments:

**HB-2182-HD-1**

Submitted on: 2/22/2018 10:43:14 AM

Testimony for FIN on 2/23/2018 2:00:00 PM

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

Comments:

**HB-2182-HD-1**

Submitted on: 2/22/2018 11:12:26 AM

Testimony for FIN on 2/23/2018 2:00:00 PM

<b>Submitted By</b>	<b>Organization</b>	<b>Testifier Position</b>	<b>Present at Hearing</b>
Denise Boisvert	Individual	Support	No

Comments:

I support Bill 2182.

**HB-2182-HD-1**

Submitted on: 2/22/2018 11:18:04 AM

Testimony for FIN on 2/23/2018 2:00:00 PM

<b>Submitted By</b>	<b>Organization</b>	<b>Testifier Position</b>	<b>Present at Hearing</b>
Merle Hayward	Individual	Support	No

Comments:

STRONGLY SUPPORT HD1

**HB-2182-HD-1**

Submitted on: 2/22/2018 11:24:55 AM

Testimony for FIN on 2/23/2018 2:00:00 PM

<b>Submitted By</b>	<b>Organization</b>	<b>Testifier Position</b>	<b>Present at Hearing</b>
Kim Jorgensen	Individual	Support	No

Comments:

I support Bill 2182.

**HB-2182-HD-1**

Submitted on: 2/22/2018 12:02:47 PM

Testimony for FIN on 2/23/2018 2:00:00 PM

<b>Submitted By</b>	<b>Organization</b>	<b>Testifier Position</b>	<b>Present at Hearing</b>
Shannon Rudolph	Individual	Support	No

Comments:

**Support**



**HB-2182-HD-1**

Submitted on: 2/22/2018 1:31:26 PM

Testimony for FIN on 2/23/2018 2:00:00 PM

<b>Submitted By</b>	<b>Organization</b>	<b>Testifier Position</b>	<b>Present at Hearing</b>
Javier Mendez-Alvarez	Individual	Support	No

Comments:

**HB-2182-HD-1**

Submitted on: 2/22/2018 3:14:56 PM

Testimony for FIN on 2/23/2018 2:00:00 PM

<b>Submitted By</b>	<b>Organization</b>	<b>Testifier Position</b>	<b>Present at Hearing</b>
Leslie Cole-Brooks	Individual	Support	No

Comments:

**LATE**

**HB-2182-HD-1**

Submitted on: 2/22/2018 5:19:12 PM

Testimony for FIN on 2/23/2018 2:00:00 PM

<b>Submitted By</b>	<b>Organization</b>	<b>Testifier Position</b>	<b>Present at Hearing</b>
Sandra Fujita	Individual	Support	No

Comments:

**LATE**

**HB-2182-HD-1**

Submitted on: 2/22/2018 8:05:00 PM

Testimony for FIN on 2/23/2018 2:00:00 PM

<b>Submitted By</b>	<b>Organization</b>	<b>Testifier Position</b>	<b>Present at Hearing</b>
Cory Harden	Individual	Support	No

Comments:

**HB-2182-HD-1**

Submitted on: 2/22/2018 8:59:36 PM

Testimony for FIN on 2/23/2018 2:00:00 PM

**LATE**

<b>Submitted By</b>	<b>Organization</b>	<b>Testifier Position</b>	<b>Present at Hearing</b>
Sherry Pollack	Individual	Support	No

Comments:



STATE OF HAWAII  
DEPARTMENT OF HEALTH  
P. O. Box 3378  
Honolulu, HI 96801-3378  
doh.testimony@doh.hawaii.gov



**Testimony COMMENTING on HB 2182, HD1  
Relating to Environmental Protection**

REPRESENTATIVE SYLVIA LUKE, CHAIR  
HOUSE COMMITTEE ON FINANCE

Hearing Date: February 23, 2018  
Time: 2:00 PM

Room Number: 308

1 **Fiscal Implications:** None.

2 **Department Testimony:** The Department of Health (Department) has the following comments  
3 and recommended amendments to the measure.

4 We support the objective of establishing the Greenhouse Gas Sequestration Task Force  
5 and of having the task force, along with the Hawaii Climate Change Mitigation & Adaptation  
6 Commission, establish the framework for adapting to global warming impacts, and mitigating  
7 greenhouse gas emissions by carbon sequestration.

8 Section 4, HRS 225P(2) establishes the target of sequestering more atmospheric carbon  
9 and greenhouse gases than emitted within the state by 2045. Therefore, incorporating the  
10 language in Section 3, HRS 342B(a) is duplicative and unnecessary.

11 The Task Force and the Commission are directed to develop the framework to achieve  
12 the 2045 target. Section 3, HRS 342B(b) requires the agency to consider the impact of all of its  
13 plans, decisions, and strategies on the State's ability to achieve the goal. However, without the  
14 framework, the language in Section 3, HRS 342B(b) is premature and would not accomplish the  
15 goal because direction on how to achieve the 2045 target has yet to be developed.

16 Moreover, this language is inappropriately placed within the Department's greenhouse  
17 gas permitting program which has no authority to modify the plans, decisions, and strategies of

1 other agencies. Achieving such a statewide goal could not be accomplished by the Department  
2 alone, but would require the coordination of multiple state and county agencies. The Task Force  
3 and the Commission should have the opportunity to build a comprehensive plan that involves all  
4 environmental advocacy groups, industries, and government agencies that regulate or contribute  
5 to the production or sequestration of carbon and greenhouse gases.

6 Thank you for the opportunity to testify on this bill.



**LATE**

HOUSE FIN COMMITTEE  
Tuesday, February 23rd, 2018 2 PM  
In SUPPORT HB 2182 Relating to Climate Change

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Dear Chair Luke and members of the FIN committee:

On behalf of Surfrider Foundation's Oahu Chapter, I am writing in strong support of HB2182, which expands upon last years Carbon Farming Task Force in the state of Hawai'i.

Sustainable and healthy soils are a pertinent part of a future Hawai'i that reduces the impact that agriculture land is having on our oceans – the largest economic engine for our State. One of the most successful programs of Surfrider Oahu is its Ocean Friendly Gardens & Surfblitz program which teaches home owners, school children, and businesses how to create healthy soils that retain storm water runoff. Through organic soil enrichment, we can also take huge strides in creating land that fosters its ability to sequester carbon from our atmosphere. The combination of having soils that are healthy enough to be large sinks for pollution and to be sources of home grown food production, makes HB 2182 a key step forward in a sustainable Hawai'i that takes responsibility for its part in reducing the impact of climate change.

This bill will help to identify future possibilities in agriculture that lead to regenerative soils and increased abilities of our land to harness its true potential to mitigate the effects of climate change. The benefits of creating healthier soils for food growth also mean less reliance on fossil fuel based transportation to bring food to our islands. By harnessing the power of photosynthesis, plants convert carbon dioxide into energy and send as much as 40% of that carbon down through their roots to feed hungry microorganisms living in the soil.

The Food and Agriculture Organization of the United Nations (FAO) and the United States Natural Resources Conservation Service (NRCS) have both identified soil health and soil carbon as critical factors for climate resilience, food production, and climate change mitigation. Many of Hawai'i's soils are currently degraded, but we have the opportunity to reverse that trend.

There is great need to figure out ways that we can incentivize a Hawaii with regenerative soils through tax credits, composting programs, and the future of value added products from this industry. Taking initial steps in the form of a task force and information gathering is a prudent step towards this future. By using the collective knowledge of stakeholders, farmers, scientists, community groups, and citizens concerned with this issue we



will be able to formulate a program that creates a robust future for sustainable agriculture in Hawai'i.

By adding mechanisms to increase urban forest cover we also derive multiple benefits related to climate mitigation. Urban centers are often found to be multiple degrees hotter than the surrounding rural or forested areas and thus are often associated with large energy consumption just in cooling costs. This effect is known as the urban heat island effect. By focusing resources on renewing urban forestry and programs that involve living roofs and walls, cities across the world are seeing huge benefits in reduced urban heat, runoff from hard spaces, and energy consumption, while also having vegetation act as carbon sequestration.

Surfrider appreciates the legislatures willingness to tackle these issues with innovative solution that will put Hawai'i at the forefront of global climate resiliency.

Mahalo for taking the time to consider this testimony,

Rafael Bergstrom  
Oahu Chapter Coordinator, Surfrider Foundation.