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Lt. Governor



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TESTIMONY OF SHARON HURD
CHAIRPERSON, BOARD OF AGRICULTURE

BEFORE THE HOUSE COMMITTEE ON WATER & LAND

FEBRUARY 13, 2024
10:30 AM
CONFERENCE ROOM 430

HOUSE BILL NO. 2001 HD1
RELATING TO RESTORATIVE AQUACULTURE

Chair Ichiyama, Vice Chair Poepoe, and Members of the Committee:

Thank you for the opportunity to testify on House Bill 2001 HD1. The bill requires the Department of Agriculture's Aquaculture Development Program to conduct a feasibility study to identify potential sites in the State for restorative aquaculture activities and make an appropriation. The Department supports this bill.

Restorative aquaculture is an emerging sector in the State's aquaculture portfolio. Thorough planning is necessary to sustain initiatives that incorporate the conservation benefits with good aquaculture practices. The identification of viable restorative aquaculture locations will support permitting, resource allocation, and community support for projected activities.

As such, the Department supports this measure. Thank you for the opportunity to testify on this measure.





HB2001 HD1
RELATING TO RESTORATIVE AQUACULTURE.
House Committee on Water and Land

February 13, 2024

10:30 AM

Room 430

The Office of Hawaiian Affairs (OHA) **SUPPORT** HB2001 HD1, which requires the Department of Agriculture's Aquaculture Development Program to conduct a feasibility study to identify potential sites in the State for restorative aquaculture activities. Make an appropriation. Effective 7/1/3000 (HD1).

For centuries, Native Hawaiians established and carefully maintained a thriving ecosystem of traditional loko i'a (fishponds) and lo'i (taro) fields throughout the Pae 'Aina region. The Native Hawaiian traditional ecosystem and resource management methods and practices have received national and international recognition. However, European and American contact and colonization led to changes in our land tenure systems, excessive development, and environmental degradation, resulting in damage and destruction of many of our traditional loko i'a and lo'i, as well as the ecosystems surrounding them.

Today, Native Hawaiian practitioners, families, and communities, in collaboration with non-profits, state and federal agencies, including OHA, are working hard to rebuild, restore, and revitalize many of the remaining traditional fishponds and taro fields. OHA supports a feasibility study for the restoration of native species of seaweed and native bivalve oyster species as an important next step for restoring the health and well-being of the traditional ecosystems of Hawai'i.

The OHA stands on our previous testimony, where the hard work of rebuilding, restoring, and revitalizing the remaining traditional loko i'a and lo'i are being done by Native Hawaiian practitioners, families, and communities in collaboration and partnerships, with non-profits, state, and federal agencies, including OHA. Further, OHA recognizes and supports the amendments made in HD1.

For the above reasons, OHA supports HB2001 HD1. Mahalo nui for the opportunity to testify on this important issue.



Testimony Before The
House Committee on Water and Land (WAL)
STRONG SUPPORT FOR HB2001 HD1
February 13, 2024, 10:30AM, Room 430 & Via Zoom

We are Olan Leimomi Fisher and Brenda Asuncion Lima, Kua'āina Advocate and Hui Mālama Loko I'a Coordinator, respectively, testifying on behalf of [Kua'āina Ulu 'Auamo \(or KUA\)](#). "Kua'āina Ulu 'Auamo" stands for "grassroots growing through shared responsibility," and our acronym "KUA" means "backbone." **Our mission is to connect and empower communities to improve their quality of life through the collective care for their biocultural (natural and cultural) heritage, serving as a "backbone organization" that supports creative and community-driven solutions to problems stemming from environmental degradation.** Hawai'i's biocultural resources continue to be negatively impacted by political, economic, and social changes, and the increasing dangers of climate change make fostering and empowering resilient communities acutely critical.

Currently KUA supports three major networks of: (1) almost 40 mālama 'āina (caring for our 'āina or "that which feeds") community groups collectively referred to as E Alu Pū (moving forward together); (2) over 60 loko i'a (fishpond aquaculture systems unique to Hawai'i) and wai 'ōpae (anchialine pool systems) sites in varying stages of restoration and development, with numerous caretakers, stakeholders, and volunteers known as the Hui Mālama Loko I'a ("caretakers of fishponds"); and (3) the Limu Hui made up of over 50 loea (traditional experts) and practitioners in all things "limu" or locally-grown "seaweed." Our shared vision is to once again experience what our kūpuna (ancestors) referred to as **'āina momona** – abundant and healthy ecological systems that sustain our community resilience and well-being.

KUA strongly supports HB2001 HD1 as an incremental step on a pathway toward 'āina momona. We mahalo the House Committee on Agriculture & Food Systems for passing this measure to your committee, and are very grateful for the amendments made in the HD1 draft adding fish to the analysis and prioritizing engagement with rural and Native Hawaiian communities and nonprofits already piloting restorative aquaculture with native fish and limu species.

KUA's coordinators and participants in all three of our networks have built stronger connections to the Department of Agriculture and the aquaculture community at-large knowing very well that to reach a vision of greater food self-sufficiency we need to transform our culture, values, and institutions together. **Restoration of our nearshore fisheries should support and prioritize the food systems that uphold subsistence lifestyles and practices in our community, including our subsistence lawai'a (fishers).** Supporting a restorative aquaculture feasibility study is significant to reviving the abundance of our shorelines with an added possibility of producing commercially valuable yields from healthy regenerative ecosystem services.

Approaches to restorative aquaculture are not new to Hawai'i; rural and Native Hawaiian community initiatives have talked about them for a long time. **Over thirty years ago in 1993, Governor Waihe'e's Task Force on Moloka'i Fishpond Restoration recommended that "the State of Hawai'i...actively support and help fund the development of a hatchery to provide seedstock for fishponds and stock enhancement of the reefs."** Many practitioners envision a future when loko i'a can be stocked again from natural populations of prized species such as 'anae, but since those fisheries are depleted in many areas across Hawai'i, hatchery-raised fingerlings are an important component of the restoration efforts for loko i'a and their surrounding waters. In our conversations with the Hui Mālama Loko I'a, practitioners from 24 loko i'a on 5 different islands have indicated this opinion in the past several years. **Looking beyond the boundaries of the fishpond walls, loko i'a themselves are key assets to restocking the wild fishery by serving as enhanced nursery areas for the baby fish.**

As we look to the future, our communities are raising the kupa'āina who want to have jobs focused on mālama 'āina. The recent increased capacity of the DOCARE Academy enrollment is one example, and greater aquacultural capacity and economy are also possible pathways for our young people to flourish. The communities we work with are committed to ensuring the long-term health of our biocultural resources that they have cared for and depended on for generations since time immemorial. **We believe our environment, the foundation of our very existence, is about long-term investment and a vision of 'āina momona.** To get there it requires taking the steps necessary for greater self-sufficiency, development of a pipeline of new and more innovative career pathways, mindsets, relationships, and resources for mālama 'āina efforts. Passing this bill out of your committee is a start on a pathway toward reaching this vision. Please support and **PASS** HB2001 HD1.

Mahalo for the opportunity to testify in support of this important measure.

Aloha 'Āina Momona no nā kau ā kau.

HB-2001-HD-1

Submitted on: 2/10/2024 3:24:54 PM

Testimony for WAL on 2/13/2024 10:30:00 AM

Submitted By	Organization	Testifier Position	Testify
Ronald Weidenbach	Hawaii Aquaculture and Aquaponics Association	Support	Written Testimony Only

Comments:

The Hawai'i Aquaculture and Aquaponics Association (HAAA) supports the intent of HB2001 HD1 but respectfully requests that this proposed feasibility study for restorative aquaculture be broadened to carefully assess the economic development potential and sustainability of restorative aquaculture in addition to a careful assessment of its technical, natural resource, and community benefit considerations. This study should identify specific types of restorative aquaculture activities and geographic locations where examples can be developed and successfully operated beyond the proposed paper study.

Aloha Chair, Vice Chair, and members of the committee,

Hulu Mamo Hawaiian Civic Club stands in support of HB2001.

Hulu Mamo Hawaiian Civic Club recognizes that hawaiian fishponds, known as loko i‘a, are a traditional form of mariculture that is designed to enhance and protect nutrient-rich estuary habitat to cultivate abundant algae and recruit smaller fish through a weir-type gate openings in the rock walls, and keep most large carnivorous fish out. Loko i‘a played an important role in food production of traditional Hawaii and has the ability to provide a healthy source of protein for the population of Hawaii today.

Loko i‘a also play an important ecological function in watersheds and resource management by capturing sediment that would otherwise enter the ocean and smother reefs, helping to protect our ocean resources and reefs, contributing to thriving nearshore fisheries. A healthy loko i‘a also provides an increase in fish that is able to be harvested from within a loko i‘a, reducing the fishing pressures on the nearby surrounding nearshore fish stocks.

Hulu Mamo also requests that loko i‘a be considered as a restorative aquaculture practice and included as part of the study, with it’s potential to generate net-positive environmental outcomes as mentioned above.

Hulu Mamo Hawaiian Civic Club and the Association of Hawaiian Civic Clubs support the environmental benefits of a loko i‘a as is mentioned in the attached resolution, which was passed by the Association of Hawaiian Civic Clubs on October 21, 2023 at their annual convention in Kālia, Waikīkī, O‘ahu.

Mahalo nui loa for your time and consideration.

Keoni Shizuma
President, Hulu Mamo Hawaiian Civic Club

ASSOCIATION OF HAWAIIAN CIVIC CLUBS

A RESOLUTION

NO. 2023 - 42

URGING THE DEPARTMENT OF LAND AND NATURAL RESOURCES AND ITS DIVISION OF AQUATIC RESOURCES TO SUPPORT THE RESTOCKING OF HAWAIIAN FISHPONDS IN ORDER TO REBUILD AND REPLENISH NEARSHORE FISH POPULATIONS

WHEREAS, Hawai'i's marine ecosystems are not as healthy as they once were, caused by things like climate change, unsustainable harvest practices, and land development, as certain reports showing that populations of Hawai'i's fish species have declined by as much as 90% since the early 1900s, and an estimated 88% of all food is imported to Hawai'i; and

WHEREAS, Hawaiian Fishponds, known as loko i'a, are traditional form of mariculture, designed to enhance and protect nutrient-rich estuary habitat to cultivate abundant algae and recruit smaller fish through a weir-type gate openings in the rock walls, and keep most large carnivorous fish out; and

WHEREAS, loko i'a played an important role in the food production of traditional Hawai'i, with close to 400 flourishing loko i'a prior to 1900, sustaining communities in numerous ways including through sustainable local seafood, limu, shellfish, and fertilizer, at one time producing an average of 400-600 pounds of fish per acre per year, yielding over 2 million pounds of fish annually throughout Hawai'i, according to the Loko I'a Needs Assessment (2021); and

WHEREAS, loko i'a have an ecologically important role in watersheds and resource management by capturing sediment that would otherwise enter the ocean and smother reefs, helping to protect our ocean resources and reefs, contributing to thriving nearshore fisheries; and

WHEREAS, loko i'a attract baby fish and provide a safer environment for them to grow, increasing their chances of survival and ability to reproduce; and

WHEREAS, a healthy loko i'a provides an increase in fish that is able to be harvested from within a loko i'a, reducing the fishing pressures on the nearby surrounding nearshore fish stocks; and

WHEREAS, a loko i'a can act as amplifying factors in nearshore environments, not just growing food within, but contributing to the fish populations outside the physical borders of the loko i'a for the benefit of the ecosystem and public fisheries; and

WHEREAS, fishing is part of Hawai'i's heritage and seafood is a primary food source, with local fisheries providing an estimated 45 million pounds annually, according to the State of the Plate report (2018); and

WHEREAS, the marine science learning center at Wai'anae High School currently has a functioning aquaculture facility with a saltwater well that has been the central focus of the science curriculum delivered to students enrolled in the class for more than twenty-five years and has a long history of engaging students in hands-on, work-based learning through work in an aquaculture facility, and is uniquely positioned to facilitate transmission of the skill sets necessary to produce sizable amounts of mullet fingerlings to supply fishponds and take mullet through their life cycle to future generations; and

WHEREAS, Ānuenuē Fisheries Research Center and nursery infrastructure at the Wailoa facility previously produced pua mullet and pua moi in the past; and

WHEREAS, thriving nearshore fisheries with abundant fish populations would provide residents with another avenue to source fish to feed their families, decreasing our need for imported seafood and contributing to Hawai'i's Aloha+ goal of 20-30% of food consumed is grown locally.

NOW, THEREFORE, BE IT RESOLVED, by the Association of Hawaiian Civic Clubs at its 64th Annual Convention in Kālia, Waikīkī, O'ahu, in the malama of 'Ikuā and the rising of 'Olekūkolu, this 21st day of October 2023, urging the Department of Land and Natural Resources and its Division of Aquatic Resources to support the restocking of Hawaiian fishponds in order to rebuild and replenish nearshore fish populations; and

BE IT FURTHER RESOLVED, that this Association calls upon the Department of Land and Natural Resources and its Division of Aquatic Resources to:

- Utilize the Ānuenuē Fisheries Research Center and nursery infrastructure to produce pua mullet and pua moi again, for restocking fishponds and replenishing nearshore fisheries
- Continue to support educational and capacity-building efforts related to native fish production at the marine science learning center at Wai'anae High School; and

BE IT FURTHER RESOLVED, that a certified copy of this resolution be transmitted to Department of Land and Natural Resources Division of Aquatic Resources, as well as the Governor of the State of Hawai'i, President of the State Senate, Speaker of the State House of Representatives, Chair of the State Senate subject matter committee on Hawaiian Affairs, Chair of the State House subject matter committee on Hawaiian Affairs, Chair of the Board of Trustees of the Office of Hawaiian Affairs, and all County Mayors.



The undersigned hereby certifies that the foregoing Resolution was duly adopted in the malama of 'Ikuā and the rising of 'Olekūkolu, on the 21st day of October 2023, at the 64th Annual Convention of the Association of Hawaiian Civic Clubs in Kālia, Waikīkī.

DreanaLee Kalili

DreanaLee Kalili, President



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February 13, 2024

HEARING BEFORE THE
HOUSE COMMITTEE ON WATER & LAND

TESTIMONY ON HB 2001, HD1
RELATING TO RESTORATIVE AQUACULTURE

Conference Room 430 & Videoconference
10:30 AM

Aloha Chair Ichiyama, Vice-Chair Poepoe, and Members of the Committee:

I am Brian Miyamoto, Executive Director of the Hawai'i Farm Bureau (HFB). Organized since 1948, the HFB is comprised of 1,800 farm family members statewide and serves as Hawai'i's voice of agriculture to protect, advocate, and advance the social, economic, and educational interests of our diverse agricultural community.

The Hawai'i Farm Bureau supports HB 2001, HD1, which requires the Department of Agriculture's Aquaculture Development Program to conduct a feasibility study to identify potential sites in the State for restorative aquaculture activities.

Hawai'i's aquaculture industry farm gate value is \$80,000,000, the second-highest contribution to the economy in diversified agriculture. Hawai'i's favorable climate and geography allow for inherent advantages benefitting aquaculture production.

The Legislature acknowledged the importance of Hawai'i's aquaculture industry by revitalizing the Aquaculture Development Program through Act 63, SLH 2019. However, more investment and research into the aquaculture industry is needed, including investment and research into different types of aquaculture, aquaculture system optimization, and economic implications of various methods of aquaculture production.

Restorative Aquaculture is a sustainable opportunity for food production that can also benefit the ocean and climate. Seaweed and bivalves can provide food for Hawai'i while requiring almost no feed or fresh water while also helping to restore coastal ecosystems by improving water quality and removing excess nutrients and carbon dioxide.

Hawai'i is well-positioned and suited for restorative aquaculture because of our favorable climate, critical ocean biosecurity through natural isolation, and high seafood consumption. Restorative Aquaculture can help strengthen and grow Hawai'i's aquaculture industry and also provide environmental benefits.

Thank you for the opportunity to testify on this important matter.

**Testimony of The Nature Conservancy
Support for HB 2001, Relating to Restorative Aquaculture
Committee on Water and Land
February 13, 2024, 10:30 a.m.
Conference Room 430 & Videoconference**

Aloha Chair Ichiyama, Vice Chair Poepoe, and Members of the Committee:

The Nature Conservancy (TNC) **supports** HB 2001, relating to restorative aquaculture, which requires the Department of Agriculture's Aquaculture Development Program to conduct a feasibility study to identify potential sites in the State for restorative aquaculture activities. It also makes an appropriation.

It's a long-held assumption that food production and environmental health are a zero-sum game. Food production currently accounts for nearly one-quarter of global greenhouse gas emissions, and 70 and 80 percent of freshwater usage and habitat degradation respectively. The ocean, meanwhile, faces unprecedented perils in the form of overfishing, coastal water pollution, and habitat degradation, including food production through fishing and aquaculture. A growing body of evidence, however, is challenging the assumption that increasing food production will inevitably result in the degradation of nature. Through practices such as restorative aquaculture, it's possible to produce nutritious food and actively contribute to the recovery of ecosystems at the same time.

Aquaculture is not only the fastest-growing form of food production—it can also be one of the most environmentally efficient ways of producing food. This is especially true for bivalves and seaweed, which are near-zero input forms of farming—their production requires almost no feed, freshwater or land and results in minimal greenhouse gas emissions.

TNC has been a policy leader in exploring the practices of restorative aquaculture. We appreciate that this bill has been amended to include indigenous nearshore fish species in the study for restorative aquaculture activities and that it will require a study to consider engagement with rural and Native Hawaiian communities and nonprofits already piloting restorative aquaculture with native fish and seaweed species.

Mahalo for the opportunity to testify in support of HB 2001.

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HB-2001-HD-1

Submitted on: 2/9/2024 12:14:09 PM

Testimony for WAL on 2/13/2024 10:30:00 AM

Submitted By	Organization	Testifier Position	Testify
Jacqueline S. Ambrose	Individual	Support	Written Testimony Only

Comments:

Aloha,

RELATING TO RESTORATIVE AQUACULTURE.

Requires the Department of Agriculture's Aquaculture Development Program to conduct a feasibility study to identify potential sites in the State for restorative aquaculture activities.

Makes an appropriation.

HB-2001-HD-1

Submitted on: 2/12/2024 9:07:19 AM

Testimony for WAL on 2/13/2024 10:30:00 AM

Submitted By	Organization	Testifier Position	Testify
Lea Iaea	Individual	Support	Written Testimony Only

Comments:

Aloha e Representative Ichiyama a me Representative Poepoe,

O Lea iaea ko'u inoa. Thank you for the opportunity to support HB2001_HD1 (companion bill SB2083) which details feasibility study for the restoration of native species of seaweed, bivalve, or nearshore fishes.

No O'ahu mai au yet up until recently, I have been disconnected to the 'Āina (the land that feeds). It wasn't until I began my journey of spending my time in loko i'a (fishponds) and lo'i (taro) fields that I have been feed with traces of my ancestral lineage and gifted wisdom for maneuvering through life's adversaries. After experiencing this kind of nutrients, I envision a Hawai'i that has a self-sustainable food system, that is accessible to everyone, in an abundant, thriving ecosystem, and managed with the kuleana that weighs so honorably and heavily on the people that are already practitioners of these spaces. That is why the feasibility study for the restoration of native species is imperative. This will pave the way of life for everyone when we are faced with economical, political, and social challenges.

By Identifying potential sites in the State of Hawaii for restorative aquaculture, one can also say that it is a performance of identification to mana (powerful nature) and the community at which we are all called upon to sustain and care for. It is heartening to witness our Hawai'i Legislature taking to this issue.

I urge the committee to Pass HB2001. Mahalo nui loa for considering my testimony.