



**DEPARTMENT OF BUSINESS,  
ECONOMIC DEVELOPMENT & TOURISM**

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GOVERNOR

LUIS P. SALAVERIA  
DIRECTOR

MARY ALICE EVANS  
DEPUTY DIRECTOR

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Statement of  
**LUIS P. SALAVERIA**  
**Director**  
Department of Business, Economic Development, and Tourism  
before the  
**SENATE COMMITTEE ON ECONOMIC DEVELOPMENT,  
TOURISM, AND TECHNOLOGY**  
&  
**AGRICULTURE AND ENVIRONMENT**

Friday, March 16, 2018  
1:25 p.m.  
State Capitol, Conference Room 414

in consideration of

**HB 2041, HD2**  
**RELATING TO AQUACULTURE.**

Chairs Wakai, Gabbard; Vice Chairs Taniguchi, Riviere; and Members of the Committees.

The Department of Business, Economic Development & Tourism (DBEDT) supports HB 2041, HD2, which appropriates \$500,000 to NELHA for the establishment of an aquaculture incubator.

An aquaculture incubator at NELHA would greatly benefit and contribute to Hawaii's efforts to develop an aquaculture industry.

DBEDT supports the intent of this bill so long as it does neither replace or adversely impact the Administration's priorities.

Thank you for the opportunity to testify.



# NATURAL ENERGY LABORATORY OF HAWAII AUTHORITY

*An Authority of the State of Hawaii attached to the Department of Business, Economic Development & Tourism*



Statement of  
**Gregory P. Barbour**  
**Executive Director**

Natural Energy Laboratory of Hawaii Authority  
before the

**SENATE COMMITTEE ON ECONOMIC DEVELOPMENT AND TECHNOLOGY**  
**and**  
**SENATE COMMITTEE ON AGRICULTURE AND ENVIRONMENT**

Friday, March 16, 2018  
1:25 pm  
State Capitol, Conference Room 414

in consideration of

**HB 2041 HD2**  
**RELATING TO AQUACULTURE.**

The Natural Energy Laboratory of Hawaii Authority (NELHA) strongly supports HB 2041 HD2 which appropriates monies to NELHA for the establishment of an aquaculture proof of concept center which we refer to as the Hawaii Center for Aquaculture Sustainability (HCAS). \$500,000 is in the Administration's budget request for FY2019 and HB 1900 HD1 contains a like amount for the HCAS.

Aquaculture is the world's fastest growing agriculture sector and produces more than 50% of global seafood supply. By 2020 the industry value is expected to reach \$200Bn; a 38% increase from today. As the world demands more and more seafood; the wild fisheries are no longer able to support that, and any future growth of seafood is going to have to be together with industrial scale aquaculture. Accordingly, there is a clear global trend and demand for more innovative industrial scale aquaculture in open marine environments.

Recognizing recent initiatives on the Federal level, adoption of this measure will put us "ahead of the curve" in competing with other States. The federal government has recently stated the desire to open up the Pacific, for the first time, to offshore aquaculture. It is also important to note that the U.S. Department of

Commerce released their 2018-2022 Strategic Plan on February 13, 2018. Interestingly enough, the plan highlights aquaculture in one of the five key objectives and specifically states that “pre-competitive commercial scale demonstration facilities in collaboration with—and co-funded by— industry and coastal seafood communities” will be supported.

Recognizing these developments, the world’s capital markets are beginning to invest into the marine aquaculture sector and there has been a noticeable increase in investor interest in aquaculture companies. Hawaii has built a very credible global reputation over the past 20 years in aquaculture and is already recognized as a pioneer in this industry as we are home to the global brood shrimp industry and a pioneer in open ocean fish farming.

The HCAS will provide proof-of-concept (POC) and commercialization services to start-ups in Hawaii’s aquaculture cluster. This initiative is focused on attracting investor capital and a follow-on fund for aquaculture in Hawaii to develop technical and intellectual property that can benefit a global industry. The general approach is to create a facility and program at NELHA, using the existing world-class facilities, to attract entrepreneurs in startups to help them get into the market and find a commercial space for their project. The initiative will target companies that service global markets, develop new cultured species, pioneer new feed sources and the technologies needed to support open ocean and land-based aquaculture.

Finally, it is important to note that developing technical expertise and intellectual property relevant to a global aquaculture industry will complement and benefit existing efforts of the University of Hawaii and other State agencies currently involved in aquaculture with a focus on research and growing food for local consumption.

Thank you for the opportunity to offer these comments.



Written Statement of  
**Robbie Melton**  
Executive Director & CEO  
Hawaii Technology Development Corporation  
before the  
**Senate Committee on Economic Development, Tourism, and Technology**  
and the  
**Senate Committee on Agriculture and Environment**  
Friday, March 16, 2018  
1:25 p.m.  
State Capitol, Conference Room 414

In consideration of  
**HB2041, HD2**  
**RELATING TO AQUACULTURE**

Chairs Wakai and Gabbard, Vice Chairs Taniguchi and Riviere, and Members of the Committees.

The Hawaii Technology Development Corporation (HTDC) **supports** HB2041, HD2 that appropriates funds for the Department of Business, Economic Development, and Tourism to establish an aquaculture incubator at the National Energy Laboratory of Hawaii Authority to bring together entrepreneurs and investors to develop Hawaii's aquaculture industry.

As part of HTDC's vision to create 80,000 new innovation jobs in Hawaii earning \$80,000 or more by 2030, HTDC supports initiatives aimed at promoting technology and innovation jobs. Hawaii has a history of success with aquaculture and the Hawaii Small Business Innovation Research (HSBIR) program and has a world class research facility at NELHA. Through HTDC's Neighbor Island Initiative (NI3) program, HTDC has an office at NELHA Hale Iako facility with an experienced business mentor. HTDC's NI3 program has worked together with the Hawaii Small Business Development Center (HiSBDC) and NELHA in providing numerous training workshops this past year at NELHA covering topics such as pitching to investors, winning grants, state matching grant programs, food safety training, business planning, and others.

HTDC defers to NELHA on the implementation of this measure.

HTDC supports this initiative as long as it does not replace our priorities requested in the Executive Budget. HTDC respectfully requests correction of the defective effective date. Thank you for the opportunity to offer these comments.

DAVID Y. IGE  
Governor

DOUGLAS S. CHIN  
Lt. Governor



SCOTT E. ENRIGHT  
Chairperson, Board of Agriculture

PHYLLIS SHIMABUKURO-GEISER  
Deputy to the Chairperson

State of Hawaii  
**DEPARTMENT OF AGRICULTURE**  
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**TESTIMONY OF SCOTT E. ENRIGHT  
CHAIRPERSON, BOARD OF AGRICULTURE**

**BEFORE THE SENATE COMMITTEES ON ECONOMIC DEVELOPMENT, TOURISM,  
& TECHNOLOGY AND AGRICULTURE & ENVIRONMENT**

**MARCH 16, 2018  
1:25 PM.  
CONFERENCE ROOM 414**

**HOUSE BILL NO. 2041 HD2  
RELATING TO AQUACULTURE**

Chairpersons Wakai, Chairperson Gabbard and Members of the Committees:

Thank you for the opportunity to testify on House Bill No. 2041 HD2, relating to aquaculture. This bill appropriates funds to the Department of Business, Economic Development, and Tourism to establish an aquaculture incubator at the National Energy Laboratory of Hawaii Authority (NELHA). The Department supports this bill provided it does not impact the Department's priorities listed in the Executive Budget.

Aquaculture is a fast-developing industry that offers solutions to the ever-increasing demand of animal protein by a growing global population. It attracts investment capitals, talented researchers, and aspiring entrepreneurs. An aquaculture incubator provides catalysts for new ventures to be created.

NELHA is an excellent site to host such an aquaculture incubator because of easy access to both freshwater and seawater at different temperatures, and the large number of successful aquaculture businesses already present.

Thank you for the opportunity to testify on this measure.





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STRATEGIC  
DEVELOPMENT  
CORPORATION

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Statement of  
**Karl K. Fooks**  
**President**

Hawaii Strategic Development Corporation

Before the  
**SENATE COMMITTEE ON ECONOMIC DEVELOPMENT, TOURISM, & TECHNOLOGY**  
And  
**SENATE COMMITTEE ON AGRICULTURE AND ENVIRONMENT**

Friday, March 16, 2018  
1:25 PM  
State Capitol, Conference Room 414

In support of

**HB 2041 HD2**  
**RELATING TO AQUACULTURE**

Chair Wakai, Chair Gabbard, Vice Chair Taniguchi, Vice Chair Riviere and Members of the Committees on Economic Development, Tourism, & Technology and Agriculture and Environment:

The Hawaii Strategic Development Corporation (HSDC) **supports** HB 2041 HD 2, which appropriates funds for the Department of Business, Economic Development, and Tourism to establish an aquaculture incubator at the Natural Energy Laboratory of Hawaii Authority to bring together entrepreneurs and investors to develop Hawaii's aquaculture industry.

The global aquaculture industry is poised for a sustained period of growth and expansion. Hawaii is home to both pioneering industry research efforts and commercial activities that have made significant contributions to the global industry.

The proposed aquaculture incubator at NELHA will help establish a facility that will leverage the NELHA's world-class marine resources, with its strong base of global aquaculture companies, to attract entrepreneurs and investors to startup their companies here in Hawaii.

The success of programs supporting entrepreneurial companies in the global aquaculture industry like Fish 2.0, in California, and Hatch, the world's first aquaculture accelerator based in Europe, have demonstrated a strong investor and strategic corporate interest in investing in this growing industry sector.

With the Legislature's support for this initiative, NELHA will be able to have the aquaculture incubator staffed and operational by the time the global aquaculture conference, Aquaculture America 2020, is held in Hawaii in February 2020. This will allow Hawaii to signal a strong commitment to remaining at the forefront of innovation to the global aquaculture community that will attend the conference and position Hawaii as a leader in providing innovative solutions to the global aquaculture industry.

HSDC supports the bill as long as it does not either replace or adversely impact the Administration's priorities.

Thank you for the opportunity to provide testimony.

**HB-2041-HD-2**

Submitted on: 3/13/2018 7:00:25 PM

Testimony for ETT on 3/16/2018 1:25:00 PM

<b>Submitted By</b>	<b>Organization</b>	<b>Testifier Position</b>	<b>Present at Hearing</b>
Tom Leonard	Individual	Support	No

Comments:





Email: [communications@ulupono.com](mailto:communications@ulupono.com)

SENATE COMMITTEES ON ECONOMIC DEVELOPMENT, TOURISM, & TECHNOLOGY AND  
AGRICULTURE & ENVIRONMENT

Friday, March 16, 2018 — 1:25 p.m. — Room 414

### **Ulupono Initiative Strongly Supports HB 2041 HD 2, Relating to Aquaculture**

Chair Wakai, Vice Chair Taniguchi, Chair Gabbard, Vice Chair Riviere, and Members of the Committees:

My name is Kyle Datta and I am General Partner of Ulupono Initiative, a Hawai'i-based impact investment firm that strives to improve the quality of life for the people of Hawai'i by working toward solutions that create more locally produced food; increase affordable, clean, renewable energy; and better management of waste and fresh water. Ulupono believes that self-sufficiency is essential to our future prosperity and will help shape a future where economic progress and mission-focused impact can work hand in hand.

**Ulupono strongly supports HB 2041 HD 2**, which appropriates funds for the Department of Business, Economic Development, and Tourism to establish an aquaculture incubator at the Natural Energy Laboratory of Hawai'i Authority, because it aligns with our goal of creating more locally produced food.

No industry sector can prosper without technology innovation. Our commercial research shows that Hawai'i can be competitive in the area of aquaculture research, because of its physical advantages, particularly the pathogen free waters at NELHA. The global aquaculture industry is poised for the next phase of growth, and we have made investments in scaling up aquaculture in Hawai'i. Specifically, we have funded the expansion of the Blue Ocean Mariculture kamapachi farm, and have performed investment reviews of algae, abalone, and tilapia companies. Hawai'i's aquaculture industry has grown considerably over the last five years, and an incubator could help it double within the next 10 years.

If Hawai'i is to capitalize on the commercial opportunity in the global aquaculture industry it will have to undertake a concerted and collaborative effort to raise its global visibility in marine aquaculture. Public and private stakeholders in Hawai'i's aquaculture industry have agreed to support a development initiative to build scale in important industry inputs like feed sources and processing capacity and to clarify permitting issues. We have been honored to be part of the public-private partnership to build the Oceanic Institute Feed

*Investing in a Sustainable Hawai'i*



mill, currently under construction on Hawai'i Island.

NELHA already has the office space and commercial expansion footprint to attract international entrepreneurs and venture capital to the site. The proposed aquaculture incubator at NELHA will address this need by establishing a facility that will leverage NELHA's world-class marine resources, with its strong base of global aquaculture companies, to attract entrepreneurs and investors to startup their companies here in Hawai'i.

With the Legislature's support for this initiative, NELHA will be able to have the aquaculture incubator staffed and operational by the time the global aquaculture conference, Aquaculture America 2020, is held in Hawai'i in February 2020. This will allow Hawai'i to demonstrate to the global aquaculture community that our state is committed to growing our local aquaculture industry. It will also position Hawai'i as a leader in providing innovative solutions to the global aquaculture industry.

As Hawai'i's local food issues become more complex and challenging, organizations need additional resources and support to address and overcome them. We appreciate these committees' efforts to look at policies that support local food production through supporting a high technology incubator for aquaculture.

We believe that by collaborating, we can help produce more local food and support an economically robust homegrown agriculture industry, which strengthens our community with fresh, healthy food. Thank you for this opportunity to testify.

Respectfully,

Kyle Datta  
General Partner

**HB-2041-HD-2**

Submitted on: 3/13/2018 8:18:12 PM

Testimony for ETT on 3/16/2018 1:25:00 PM

<b>Submitted By</b>	<b>Organization</b>	<b>Testifier Position</b>	<b>Present at Hearing</b>
John N. Kittinger	Individual	Support	No

Comments:

13 March 2018

Re: Testimony on HB 2041 and HB 1960 relating to aquaculture in Hawaii

Dear members of the Hawaii State Legislature:

I am writing to express my strong support for HB 2041 and HB 1960, which will be heard on March 16, 2018 by a joint committee of the Senate Committee on Economic Development, Tourism, and Technology and the Senate Committee on Agriculture and Environment. Together, these bills support a growing and vibrant sector in Hawaii – the aquaculture, or seafood farming, sector. Hawaii is an innovation site for the research, development, and implementation of aquaculture and the industry represents an area of growth for green jobs, economic diversification, and sustainable food and food product development. Hawaii has been recognized as a global leader in aquaculture and these bills will help support this \$70M per annum sector to grow and continue to create opportunities that support our communities.

HB 1960, is the bill to provide support for the planning and participation of Hawaii's Aquaculture Industry in the Aquaculture America 2020 conference. This bill would appropriate funds to the Hawaii Strategic Development Corporation to be used to support the planning and coordination of industry efforts to participate in the upcoming Aquaculture America 2020 Conference to be held in Honolulu in February 2020. These funds will help support events leading up to the 2020 conference to bring the industry together to develop a consistent message to market Hawaii aquaculture to the over 2,000 participants expected at the conference. Also, these funds could support efforts to develop a fact book on Hawaii aquaculture that would provide a description the aquaculture assets available in Hawaii, the names and activities of companies operating in the industry, and the permitting and regulatory process for aquaculture activities. This fact book could be distributed to all the participants in the 2020 conference.

House Bill, HB2041, seeks to appropriate \$500,000 to DBEDT to establish an aquaculture incubator at NELHA on the Kona coast to bring together entrepreneurs and investors to develop Hawaii's aquaculture industry. These types of incubators can be key catalysts for development of industries in Hawaii. Blue Start-ups and the Energy Excelerator are good examples of how these business incubators can bring great value

to our state by encouraging social entrepreneurship, creating jobs, economic opportunities, and encouraging the state's pursuit of our Aloha+ sustainability targets.

**I strongly support these bills and urge the legislature to pass these bills, together with adequate and meaningful financial appropriations.**

Thank you for considering my testimony,

John N. (Jack) Kittinger, PhD



**Committee on Economic Development,  
Tourism, and Technology**  
Senator Glenn Wakai, Chair  
Senator Brian T. Taniguchi, Vice Chair

**Committee on Agriculture and  
Environment**  
Senator Mike Gabbard, Chair  
Senator Gil Riviere, Vice Chair

March 14, 2018

Support for H.B. 2041 Relating to Aquaculture

Blue Ocean Mariculture is the world's leading producer of cultivated Kahala (*Seriola rivoliana*). Our fish are served under the Hawaiian Kanpachi brand in sushi and fine dining restaurants in Hawaii and across the mainland United States. We employ 27 people full-time in the Kona area in our hatchery and offshore aquaculture operations. Blue Ocean's hatchery is located within the Natural Energy Laboratory of Hawaii Authority (NELHA).

We strongly support H.B. 2041 related to establishing an aquaculture incubator at NELHA to bring together entrepreneurs and investors to develop Hawaii's aquaculture industry.

An aquaculture incubator at NELHA will be a valuable resource in building a strong aquaculture industry locally and across the state. Aquaculture provides an opportunity to strengthen our state's economy by diversifying our economic base, reducing the amount of seafood imported to Hawaii, and creating high-wage job opportunities.

We also believe Hawaii can be a leader in the global aquaculture industry and provide leadership on environmentally responsible aquaculture practices. We believe the best way to pursue Hawaii's potential in aquaculture is through the type of program contemplated by H.B. 2041. Thank you for the opportunity to testify.

Blue Ocean Mariculture



**PO Box 1095  
Kurtistown, Hawaii  
+1-808-938-2840  
jim.wyban@gmail.com**

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March 14, 2018

House Committee  
Honolulu HI

**RE: House Bill HB2041**

Dear Committee,

I am writing in support of HB2041, which seeks to appropriate \$500,000 to DBEDT to establish an aquaculture incubator at NELHA to bring together entrepreneurs and investors to develop Hawaii's aquaculture industry.

Aquaculture is the world's fastest growing food production platform. Hawaii has a long and colorful history in this industry and needs to continue investing to maintain its preeminent place. HOST Park in Kona is a unique world-class facility. Funding development of an aquaculture-specific incubator at HOST Park would continue Hawaii's global leadership in this sector.

I wholeheartedly support this effort and ask that you approve this bill and support Hawaii's developing aquaculture industry.

Sincerely,

Jim

Jim Wyban PhD  
President  
Marine Genetics

29<sup>th</sup> Hawaii State Legislature  
415 South Beretania St.  
Honolulu, HI 96813

February 26, 2018

Dear Chairman Wakai & Senate Committee on Economic Development, Tourism, and  
Technology

**RE: Support for HB1960 – Relating to Aquaculture & HB2041 – Relating to Aquaculture**

Cyanotech Corporation, based on the island of Hawaii, supports appropriations of \$300,000 from Hawaii's general revenue fund to support the planning and participation of the Aquaculture America 2020 Conference in Hawaii, as outlined in HB1960. We further support appropriations of \$500,000 from Hawaii's general revenue fund for the Department of Business, Economic Development, and Tourism (DBEDT) to establish an aquaculture incubator at the Natural Energy Laboratory of Hawaii Authority (NELHA), as outlined in HB2041. We believe that these incentives will help attract entrepreneurs and investors to develop Hawaii's aquaculture industry.

The Hawaii State Department of Agriculture's Aquaculture Development Program reported \$29.9M of aquaculture revenue in 2010, 93% of which was generated by businesses at NELHA. The aquaculture industry has boomed in recent years, increasing by 40% in one year from 2011 to 2012, with record high sales reported in 2014. This industry accounts for a peak number of 500 hired workers on payroll in 2016 and \$75.7M in sales. Aquaculture produces high quality value added commodities from Hawaii including nutritional supplements and foods.

In closing, we greatly appreciate your support of HB1960 and HB2041 which will help perpetuate new business, the growth of the aquaculture industry and the expansion of a diversified portfolio of high wage-earning jobs in Hawaii.

Sincerely,



Mawae Morton, CEO  
Cyanotech Corporation  
73-4460 Queen Kaahumanu Hwy, #102  
Kailua-Kona, HI 96740

**HB-2041-HD-2**

Submitted on: 3/14/2018 10:21:49 PM

Testimony for ETT on 3/16/2018 1:25:00 PM

<b>Submitted By</b>	<b>Organization</b>	<b>Testifier Position</b>	<b>Present at Hearing</b>
Elizabeth Corbin	Individual	Support	No

Comments:

I strongly support this measure to establish an aquaculture incubator at The Natural Energy Laboratory of Hawaii (NELHA) and urge that adequate funding be appropriated. NELHA has a proven history as a location for the development of commercial aquaculture and is a natural location for an incubator to support further development of this industry. Aquaculture, with its long tradition in Hawaii, is an important component of diversified agriculture and has the potential to expand its contribution to the State's economic development and food security objectives.



Dear Chairs Wakai and Gabbard, Vice Chairs Taniguchi and Riviere, and Members of the Committees:

I strongly support HB 2041 HD2, providing funds to establish an aquaculture incubator at NELHA.

With my former business partner, Richard Spencer, I was among the first people to perform aquaculture research at what was then NELH. In the early 1980's, with a small amount of funding from Sea Grant, we tested the feasibility of land-based seaweed "tumble culture" in tanks. NELH provided a unique facility for our experiments, with laboratory facilities and a constant supply of cold deep ocean water and warm surface water. At that time there was no provision for companies to operate permanently at NELH, so when our funding ran out we moved to Kahuku on Oahu, started a commercial *ogo* farm using the experience we had gained at NELH, and operated successfully for 27 years until our lease expired. Effectively, NELH acted as an incubator for what became a profitable business.

I am happy to see that since my long-ago experience at what was then a small but forward-thinking research facility, NELHA has grown into a major center for aquaculture development and production. Aquaculture itself has grown in recent years to become one of the largest sectors of Hawaii's diversified agriculture, and still has much potential for future expansion. I hope, therefore, that your committee will support full funding for the proposed aquaculture incubator.

Sincerely,

Frederick M. Mencher