

STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
869 PUNCHBOWL STREET
HONOLULU, HAWAII 96813-5097

IN REPLY REFER TO:

April 6, 2011

TESTIMONY OF THE DEPARTMENT OF TRANSPORTATION

SENATE BILL NO. 1511, SD1, HD1

COMMITTEE ON FINANCE

The Department of Transportation (DOT) strongly opposes HD1's proposed amendment to Section 26-19, Hawaii Revised Statutes, to allow the DOT to designate any unused public lands under its jurisdiction for highway, airport and harbor purposes to be used for aquaculture activities. The bill further provides that the DOT may enter into agreements to authorize the Department of Land and Natural Resources (DLNR) to dispose of lands so designated for the purposes of aquaculture.

While certain parcels of DOT properties may appear to be unused, the airports, harbors, and highways divisions all have master plans that contemplate maximum and full use of all properties under their jurisdiction. Furthermore, if these lands are truly not needed for any highway, airport or harbor use, now or in the future, a process exists for the Governor to take action to rescind such use and transfer the land by executive order to the DLNR. The DOT strongly believes that lands presently under its control should only be used to meet its mission to maintain and operate transportation facilities of the State, including highways, airports and harbors.

In addition, aquaculture activities present a specific danger to airport activities. Typically, aquaculture activities attract birds. Birds near airport activities present a danger to both the birds and passengers on board planes.

NEIL ABERCROMBIE
GOVERNOR OF HAWAII



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

POST OFFICE BOX 621
HONOLULU, HAWAII 96809

**Testimony of
WILLIAM J. AILA, JR.
Chairperson**

**Before the House Committee on
FINANCE**

**Wednesday, April 06, 2011
3:00 PM
State Capitol, Conference Room 308**

**In consideration of
SENATE BILL 1511, SENATE DRAFT 1, HOUSE DRAFT 1
RELATING TO AQUACULTURE**

Senate Bill 1511, Senate Draft 1, House Draft 1 amends Section 171-59(b), Hawaii Revised Statutes (HRS), to increase the maximum term for aquaculture leases from thirty-five (35) to a maximum term of sixty-five (65) years; provides aquaculture lessees in good standing the right of first refusal; and allows the Department of Transportation to designate unused or underused public lands to be used for purposes of aquaculture. The purpose of this bill is to encourage commercial aquaculture production in the State by providing favorable terms for leasing of public lands. The Department of Land and Natural Resources (Department) respectfully opposes this bill, but offers a suggested amendment below.

The amendments proposed by the bill affect direct negotiation leases that, pursuant to Section 171-59(b), HRS, already benefit by being exempt from the public auction process and the public participation requirement that would ordinarily be required for such leases. While this bill would provide a benefit to aquaculture operations, it does so at the expense of ensuring fair competition for the leasing of public lands by excluding other potential bidders seeking to participate in the public disposition process.

The Department acknowledges the need for long term leases in order for certain business ventures to be economically viable, however, notes that potential aquaculture lessees are in fact eligible for sixty-five year leases through the public auction process and other public processes, in addition to direct negotiation through subsection (a) of Section 171-59, HRS, which is a form of public process akin to requests for proposals. The Department has become aware through testimony on related bills that in some cases, a minimum 45-year term may be necessary in order for an aquaculture operation to qualify for certain federal financial assistance programs and to amortize the cost of improvement over the term of the lease. In such cases, the Department

WILLIAM J. AILA, JR.
INTERIM CHAIRPERSON
BOARD OF LAND AND NATURAL RESOURCES
COMMISSION ON WATER RESOURCE MANAGEMENT

GUY H. KAULUKUKUI
FIRST DEPUTY

WILLIAM M. TAM
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

believes that a more palatable compromise would be to limit the disposition to a maximum term of 45-years, with conditions noted below. SECTION 4 of the bill could be amended to read:

(B) Aquaculture operations, which may provide for a maximum term up to forty-five years, provided that such forty-five year term is required of the aquaculture operation in order to qualify for federal financial assistance and to amortize the cost of improvements over the term of a forty-five year lease; and

Moreover, the bill also provides for a right of first refusal in favor of the tenant which is essentially an option to extend a lease that can be exercised unilaterally by a lessee. Such options have a chilling effect on other prospective bidders' willingness to bid on the property. Many prospective bidders would be reluctant to invest the substantial time, effort and resources to prepare and submit a bid with the knowledge that the existing lessee can exercise his or her right and nullify the bid at any time. Rights of first refusal provide an unfair benefit to the current lessee by depriving persons awaiting the published termination of the lease a fair opportunity to compete for the use of those lands at public auction. That inherent inequity ensures lower bids and consequently less revenue to the State.

A right of first refusal clearly goes against all the provisions for fairness in the leasing of state land in Chapter 171, HRS, and inappropriately impinges on the Board of Land and Natural Resources' (Board) discretionary authority to control the use of state lands. When seeking public lands for private use, potential lessees are well aware of the benefits and drawbacks of leasing state lands as opposed to conducting their activities on private lands. First and foremost is the knowledge that those lands are public assets that must serve primarily the interests of the general public and the public trust purposes, and secondarily the needs of a private user.

The safeguards and terms for leasing public lands are codified in Chapter 171, HRS, to ensure transparency and fairness in the disposition of state assets. Paramount in that process is the need to ensure and maintain the State's ability to use its land resources when and as needed to meet all of the State's obligations and priorities as well as the greater public needs of all of Hawaii's residents. Fundamental to that responsibility is the preservation and protection of the discretionary authority of the Board to consider and determine the most appropriate use of state land at any given time, including when and if an ongoing use should continue. The Board's ability to fulfill its fiduciary obligations to promote all five public trust purposes equally should never be compromised by any erosion of this authority.

NEIL ABERCROMBIE
Governor



RUSSELL S. KOKUBUN
Chairperson, Board of Agriculture

JAMES J. NAKATANI
Deputy to the Chairperson

State of Hawaii
DEPARTMENT OF AGRICULTURE
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TESTIMONY OF RUSSELL S. KOKUBUN
CHAIRPERSON, BOARD OF AGRICULTURE

BEFORE THE HOUSE COMMITTEES ON FINANCE

WEDNESDAY, APRIL 6, 2011
3:00 P.M.
CONFERENCE ROOM 308

SENATE BILL NO. 1511 SD1 HD1
RELATING TO AQUACULTURE

Chairperson Oshiro and Members of the Committee:

Thank you for the opportunity to testify on Senate Bill No. 1511 that increases aquaculture leases from 35 to 45 years and allows a maximum term of 65 years for ventures in good standing for 10 years or more. The Senate Bill also provides lessees in good standing the right of first refusal for the property and allows for supportive activities that are relating to aquaculture, as well as, allowing the Department of Transportation (DOT) to designate unused or underused public lands to be used for purposes of aquaculture. The effective date for this bill is July 1, 2050.

The Department supports the intent of the bill but defers discussion of lease terms to the Department of Land and Natural Resources (DLNR) which is the State's lease administering entity. The Department also defers to DOT regarding to the designation of unused or underused public lands under its jurisdiction.

Thank you for your consideration of Senate Bill No. 1511 as the Department recognizes that we must continue to support aquaculture as the State pushes toward self-sufficiency.



SB1511 SD1 HD1
RELATING TO AQUACULTURE
House Committee on Finance

April 06, 2011

3:00 p.m.

Room 308

The Office of Hawaiian Affairs (OHA) offers the following comments on SB1511 SD1 HD1. While OHA appreciates that the bill's proposal to increase aquaculture lease terms from 35 years to 65 years would benefit sustainable and culturally appropriate aquaculture initiatives, such as taro farming and traditional Hawaiian fishponds, we suggest explicitly excluding commercial finfish operations from the proposed aquaculture lease term extension.

While OHA understands the importance of developing the commercial aquaculture industry in Hawai'i, we have reservations about the environmental and cultural impact of open ocean commercial finfish operations. The current 35-year lease term permits finfish operations to continue while allowing the State to better regulate and observe the potential impacts of the industry.

Mahalo for the opportunity to testify on this important measure.



THE HOUSE
THE TWENTY-SIXTH LEGISLATURE
REGULAR SESSION OF 2011

COMMITTEE ON FINANCE
Rep. Marcus R. Oshiro, Chair
Rep. Marilyn B. Lee

DATE: Wednesday, April 6, 2011
TIME: 3:00am
PLACE: Conference Room 308, State Capitol
415 South Beretania Street

RE: Testimony In Strong Support of SB 1511 SD1 HD1- Relating to Aquaculture

Aloha Chair Oshiro, Vice Chair Lee, and Committee Members,

The Hawaii Aquaculture and Aquaponics Association (HAAA) with membership Statewide strongly supports SB 1511 SD1 HD1. This important bill supports the long term future of the Hawaii aquaculture and aquaponics industry, and helps support a more sustainable seafood future for Hawaii.

SB1511 SD1 HD1 increases lease terms for aquaculture operations from thirty-five to sixty-five years to accommodate Federal loan requirements, permits aquaculture lessees in good standing the right of first refusal to facilitate the succession of aquaculture operations to the next generation of family and employee aquafarmers, allows for supportive aquaculture activities to enable more sustainable and economic aquafarm operations, and allows the DOT to designate unused or underused public lands to be used for aquacultural purposes. Together these adjustments of law support further aquaculture industry expansion and increased seafood security, at no additional cost to the State.

Aquaculture is a steadily growing industry in Hawaii with sales in 2009 exceeding \$32M. Aquaculture is typically a high investment form of agriculture, especially in the early years of facility construction. Access to long term direct Federal loans or guaranteed loans is often critical for the construction and growth of aquafarm operations. However, such financing can require long term leases of 65 years, as explained in the Section 1. of this bill.

It should be noted that this bill addresses the direct aquaculture leasing process covered by Section 171-59, and does not cover the rigorous permitting process for open ocean

aquaculture or for land-based aquaculture in the Conservation district which are covered by Section 190 D and Section 343, respectively. This lengthy and transparent permitting process involves a minimum of an approved Environmental Assessment (EA) and may require a full Environmental Impact Statement (EIS).

The State of Hawaii's rigorous and transparent open ocean aquaculture permitting process is recognized by the National Oceanographic and Atmospheric Administration (NOAA) and the U.S. Congress as the National model for appropriate ocean leasing, and will likely provide the framework upon which all future Federal ocean leasing laws are based. The successful environmental evaluations done thus far on the State's three existing open ocean aquaculture leases were very comprehensive and thoroughly evaluated the environmental, economic, social and cultural impacts of the subject projects.

The most recent open ocean aquaculture leasing effort involved a full Environmental Impact Statement (EIS), a Cultural Impact Assessment, a Conservation District Use Application (CDUA), an U.S. Army Corp of Engineers Section 10 permit application, a National Pollution Discharge Elimination System (NPDES) application, and a Coastal Zone Management (CZM) Consistency Review application, all of which allowed transparency, thorough public review, and long periods for public comment. It was only after the successful conclusion of this entire lengthy and costly permitting process was the applicant allowed to move forward to the direct leasing portion of this overall process covered under Section 171-59, and, it is only this final leasing process that is addressed by SB1511 SD1 HD1.

The right of first refusal would allow tenants in good standing the opportunity to renew their lease to continue their aquafarming operations. The right of first refusal will also provide the opportunity for Hawaii to keep and support its good and proven aquaculture farmers, encourage their continued investment into this public resource, and ease the transition of such operations to successive generations of family members and employees who helped build and best know the characteristics of the aquafarm site and operations. Without this opportunity to be able to renew leases, as is allowed for terrestrial agriculture, future aquaculture investment and industry expansion will clearly be constrained.

The right of first refusal is critical to developing and ensuring future sustainable seafood production for Hawaii that currently relies on imports for approximately 90 percent of its seafood supplies. At present, DLNR has the means to terminate problematic tenants but no such mechanism to retain demonstrated good tenants. As such, under the current law, the tenants' years of investment and hard-earned site specific operational knowledge could be lost at the auction block to an unknown real estate speculator from outside the State. This represents an unnecessary potential loss to the tenant and family, the tenant's employees and customers, the community, and the State, and is clearly a disincentive to continued tenant investment in leasehold improvements during the latter years of a DLNR lease.

SB1511 SD1 HD1 also provides aquafarmers the right to engage in supportive activities that are related to or integrated with an aquaculture operation. It simply makes good economic sense to allow aquafarmers to develop additional related revenue streams so as to maximize overall farm output and facilitate an aquafarm's profitability and economic sustainability. As the aquaculture industry evolves and as the global marketplace becomes ever more competitive, the aquaculture and aquaponics industry needs the flexibility to maximize its use and reuse of aquafarm inputs and to develop multiple profit centers.

Aquaculture effluents can be very successfully used in aquaponics for the growing of plants, and in the process help the aquaculture farm meet current EPA and DOH discharge requirements. The aquaculture effluent-fertilized plants could include marketable produce, *Azola* (duckweed), forage grasses, algae, or cellulosic crops which in turn could be fed back to the fish or to secondary animals, eg., ducks, poultry, and livestock, or used to produce biofuels or biogas, which, along with wind and solar options, can help to power the aquaculture operation's water pumps and aeration devices. This section of the bill provides the flexibility to allow aquafarms to pursue such innovative and environmentally appropriate activities in conjunction with their primary aquaculture endeavors.

SB1511 SD1 HD1 also allows the DOT to designate unused or underused public lands to be used for aquacultural purposes. Together, the various components of this bill support the long term future of the Hawaii aquaculture and aquaponics industry, and helps support a more sustainable seafood future for Hawaii.

The HAAA's only suggested amendment is a matter of clarification in regards to page 7, line 8, as follows: "raising of animals grown on such forage." By adding the word "such", it clarifies that the intent of this statement is solely in regards to forage grown with aquaculture effluents.

Thank you for the opportunity to comment.

Respectfully submitted,



Ronald P. Weidenbach
HAAA President



**Testimony by Alicia Maluafiti
on behalf Marine AgriFuture**

SB1511 HD1 – Relating to Aquaculture
The House Committee on Finance
Wednesday, April 6, 2011, 3:00 p.m.

Position: Strong Support

Aloha Chair Oshiro, Vice Chair Lee, and members of the Committee:

Marine AgriFuture, LLC., is an alternative aquaculture enterprise that farms Ogo and fish together with the hydroponic culture of sea asparagus in saltwater. Marine AgriFuture strongly supports SB1511 HD1 which increases aquaculture leases from 35 to 45 years and allows a maximum term of 65 years for ventures in good standing for 10 years or more and supporting aquaculture activities.

The bill also enables the Dept. of Transportation to enter into long term aquaculture leases for available land around commercial harbors – **an important revenue generating strategy for the state utilizing land sitting vacant or idle.**

What is Marine Agriculture

Marine Agriculture involves growing of terrestrial plants on floating cultivation platforms in saltwater or on the sea. It is a merging agriculture technology that developed at University of Hawaii ten years ago and was commercialized by Marine AgriFuture at the Kahuku Shrimp pond in 2006. Marine agriculture overcomes issues of limited land and fresh water supplies and problems of inland flooding during rainy seasons. It uses salt water for agriculture products.

Marine AgriFuture is a leading farm company to conduct marine agriculture in the world. The applied aquaponic system with sea asparagus, Ogo and fish features its sustainability. The terrestrial plants grown on the floating platform can remove nutrients and other various pollutants in salt water serving for a phytoremediation purpose and provide a self-clean up device. Plants grown on regulated platforms do not encroach or endanger, but support local flora and wildlife. Therefore, it is an environmental friendly system. Sea asparagus is a cash crop. It has become a popular gourmet vegetable in many restaurants, hotels, supermarket, health food stores, and farmers markets in Hawaii. Three products can be generated from one pond allowing the farm multiply its revenue compared to traditional aquaculture, thus marine agriculture is economic viable. Sea asparagus as a vegetable is new to most of world. It is a health food. New products derived from sea asparagus, such as pickled sea asparagus, powder and tea of sea asparagus, etc. is under process. Any business to produce sea asparagus and its derived products will create lot of jobs and promote the development of rural business in Hawaii, benefiting our society. Creating legislation to provide land for marine agriculture will create nationwide demand/awareness/tourism for marine agriculture in Hawaii, and

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facilitate the replication of success in local production and marketing efforts in other major cities around the US (NYC, LA, SF, others). Overall it will be a great benefit to Hawaii's local economy.

Challenges Restricting Growth

Currently, Marine AgriFuture uses two acres for sea asparagus in Kahuku which will be transferred to the US Fish/Wildlife. They need to relocate the sea asparagus farm before March next year. More urgently, the 2 acres of land used for growing Ogo have just been transferred to Fish/Wildlife. They have to move out right away, but can extend their lease only temporarily to give them more time to relocate. In all, they will need four acres for immediate use near the ocean, where salt water is readily available, and if possible, existing wells are present to pump water from the ocean. Marine AgriFuture is a major supplier of Ogo in Hawaii. Losing these lands will result in shortages for restaurants and families that depend on ogo during the Holidays and throughout the year.

Anticipated Growth of the Farm

Marine AgriFuture has a sustainable system to conduct agriculture and can also include eco-ag-tours. They believe that sea asparagus has potential to become Hawaii's next major agricultural export. Therefore, the farm of Marine AgriFuture needs to grow. Land is a priority for their farm, critical to the survival and development of marine agriculture in Hawaii.

We ask you to please pass SB 1511 HD 1 to support the future of aquaculture in Hawaii and ensure the economic survival of these farms. Mahalo for the opportunity to comment.



Oceanic Institute
An Affiliate of Hawai'i Pacific University

HEARING DATE: Wednesday, April 6, 2011

TIME: 3:00 p.m.

PLACE: Conference Room 308, State Capitol

415 South Beretania Street

April 5, 2011

Senator Clarence K. Nishihara, Chair, Senate Committee on Agriculture
Senator Donovan M. Dela Cruz, Chair, Senate Committee on Water, Land, and Housing
State Capitol Building, 415 S. Beretania St.
Honolulu, Hawaii 96813

Dear Chairs Nishihara and Dela Cruz and Members of the Committees:

This letter is written in strong support for **SB 1511, SD1, HD1** "Relating to Aquaculture."

Oceanic Institute (OI) is a private, non-profit organization dedicated to development and transfer of applied aquaculture technologies. We are located on the Windward side of Oahu and employ 75 staff. OI recently celebrated its 50th year anniversary of research and innovation and support of local aquaculture. We are one of the largest aquaculture research and development organizations in the country. OI was a key research partner in the Hawaii Open Ocean Aquaculture Project (HOARP) initiated in 1999.

SB 1511 provides the option for 65 year aquaculture leases, first right of refusal, and allows accessory uses in support of or integrated with aquaculture, under Section 171-59 which addresses direct leases. SB 1511 allows the time required for aquaculture farmers to recoup and justify investment in infrastructure. Many farms have substantial infrastructure requirements including wells, tanks, pipes, buildings and other support structures which require significant investment and in many cases, long-term leases to acquire federal as well as private loans. There needs to be sufficient resident time on a facility to justify the financial investment and provide sufficient return on that investment.

SB 1511 would also allow established farms in good standing the right of first refusal. This would provide sufficient assurances to both farmers and investors that their life's work would not be given away to the highest bidder upon expiration of their lease. It would also encourage more efficient use of resources by specifically permitting supportive activities such as the use of aquaculture effluents to produce secondary crops.

It is important to indicate that SB 1511 and Section 171-59 do not cover the environmental, cultural and community concerns of the open ocean aquaculture permitting process. They are not intended to do so. Rather, open ocean aquaculture is specifically and comprehensively addressed by Section 190 D. There has been some confusion on this point. Noteworthy also is to date, after 11 years of water quality monitoring under the HOARP project and afterwards, no measurable water quality degradation has been recorded from research or commercial open ocean operations.

Aquaculture is one of the largest and fastest-growing sectors of Hawaii's diversified agriculture industry, a shining star amongst our challenged agricultural sector. Aquaculture also has deep roots in the Hawaiian culture. OI strongly supports this bill as written to continue the benefits to the economy of our state and the traditions of its people.

Please do not hesitate to contact me if you have any questions or require clarification.

Sincerely,

A handwritten signature in cursive script, appearing to read "Anthony C. Ostrowski".

Anthony C. Ostrowski, Ph.D.
President



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THE HOUSE

THE TWENTY-SIXTH LEGISLATURE
REGULAR SESSION OF 2011

COMMITTEE ON FINANCE
Rep. Marcus R. Oshiro, Chair
Rep. Marilyn B. Lee, Vice Chair

DATE: Wednesday, April 6, 2011

TIME: 3:00 pm

PLACE: Conference Room 308, State Capitol
415 South Beretania Street, Honolulu

RE: Testimony in Opposition to SB 1511 – Relating to Aquaculture

Aloha Chairperson Oshiro, Vice-Chair Lee and Members of the Committee,

Food & Water Watch (FWW) thanks you for the opportunity to provide testimony and to voice our strong opposition to SB 1511 as it is written. SB 1511 would extend the maximum lease terms for all aquaculture operations from thirty-five to sixty-five years. This includes commercial finfish open ocean cage aquaculture operations. These large-scale operations are highly experimental. Long-term lease extensions could cost the State more in oversight and enforcement costs than it receives in lease payments, which for one existing operation is a mere \$2,100 per annum or 1% gross revenue, whichever greater.¹

FWW is a national consumer advocacy group with over 1,800 supporters in Hawai'i. We are also a founding member of the Pono Aquaculture Alliance, which is comprised of over thirty Hawai'i-focused organizations supporting responsible aquaculture practices. FWW advocates for safe, wholesome food produced in a humane and sustainable manner, and public rather than private control of water resources, including oceans, rivers and groundwater. We work with various community outreach groups around the world to create an economically and environmentally viable future. The FWW Fish Program works specifically to promote safe and sustainable seafood for consumers, while helping to protect the environment and support the long term well-being of coastal and fishing communities. We have worked in Hawai'i for the past three years to promote public control of ocean waters and prevent the reckless expansion of the open ocean aquaculture industry.

¹ Board of Land and Natural Resources. "Request for approval of special installment agreement for payment of percentage rent under General Lease No. S-5721 to Kona Blue Water Farms, LLC, Kalaoa 1st through 4th, North Kona, Hawaii, Tax Map Key: 3rd/7-3-43; seaward of Kalaoa." August 28, 2009.



We support responsible and culturally appropriate forms of fish farming, such as small scale land-based recirculating aquaculture systems, *loko i`a* (traditional fish ponds) aquaponics and some shellfish culture. We have serious concerns, however, about expansion of the open ocean aquaculture industry (OOA), which already has resulted in negative environmental and social impacts at just its present scale, which are discussed below. The cumulative impacts of these operations and the ability of the marine environment to handle them are largely unknown. **Currently, State agencies have insufficient funding and are not well coordinated to be capable of carrying out oversight of ocean aquaculture.** Also, there are not strong regulations in place to address cumulative impacts and prevent damage to the ocean, its wildlife and Hawai'i's traditional and cultural ocean users from this highly experimental industry. Rather than further entrench this industry through lease extensions, we urge the State to take a precautionary approach and maintain or decrease current lease lengths until these issues are adequately addressed.

To address the issue of lease term extensions without impeding development of sustainable forms of aquaculture, SB 1511 could be amended to specifically exclude commercial finfish open ocean cage aquaculture operations from the general definition of "aquaculture" on page 2, line 21 through page 3, line 6.

The following provides more information on community opposition to OOA, its environmental and social impacts, challenges in agency oversight, the need for more rigorous environmental review, and prior legislative efforts in the 2011 regular session pertaining to OOA.

I. Abundant Demonstration of Community Opposition to Open Ocean Aquaculture

Since Hawai'i chose to allow leasing of ocean land for the purpose of commercial aquaculture, a number of companies have applied for or received leases. All have faced community opposition. To date, five farms – Ahi Nui Tuna Farms LLC, Ahi Farms, and Pacific Ocean Venture, Maui Fresh Fish, and Indigo Seafood – have been unsuccessful in obtaining the needed community support, permits and/or financing, though some are making a repeated attempt.^{2 3} In 2002, a Native Hawaiian group filed a contested case against Ahi Nui Tuna Farms LLC. Two cases were also filed, though ultimately dismissed based on standing, against Hawaii Oceanic Technology, Inc.'s (HOTI) prospective *ahi* operation. Again, the cases were filed by Native Hawaiians, one on

² Report to the Twenty-Fourth Legislature of Hawai'i 2008 Regular Session. Implementation of Chapter 190D, Hawai'i Revised Statutes Ocean and Submerged Lands Leasing. Prepared by Department of Agriculture and Department of Land and Natural Resources. November 2007. Page 9-10.

³ Report to the Twenty-Sixth Legislature of Hawai'i 2011 Regular Session. Implementation of Chapter 190D, Hawai'i Revised Statutes Ocean and Submerged Lands Leasing. Prepared by Department of Agriculture and Department of Land and Natural Resources. December 2010. Page 6.



behalf of the Kanaka Council and another by Michael Lee, a cultural practitioner.^{4,5} Additionally, due to lack of opportunity for involvement earlier in the permitting process, hundreds of people petitioned the Army Corps of Engineers to hold a public hearing regarding HOTI's Department of Army permit application. These requests, however, were denied.

After facing strong opposition from communities in Lanai, another company, Maui Fresh Fish, is shifting to an alternate location for its operation and is continuing the permitting process.

Kona Blue Water Farms (KBWF), an existing operation off of the Kona coast of Hawai'i Island, has met with numerous expressions of opposition over the years. The Kanaka Council, a Native Hawaiian organization, expressed frustration that Native Hawaiians were not adequately involved or consulted in the decision-making process for siting the KBWF facility which they saw is now located in a traditional fishing area directly off the coast of Kailua-Kona. This frustration led to a backlash in 2007 when KBWF applied to expand its cages that year, resulting in the filing of two contested cases. In response, the company decided to withdraw the application.^{6,7}

These experiences are all relevant to highlight the public opposition in Hawai'i to the expansion of this industry.

II. Ecological Concerns with Open Ocean Aquaculture

There are many serious issues related to OOA. Some of the primary concerns are: potential for pollution; effects on wild fish populations; effects on other marine animals, including mammals; and conflicts with the fishing and tourism.

Some proponents have argued that discharge from aquaculture facilities will have minimal ecological impacts because it will be diluted throughout the ocean, but in reality there is still little knowledge about the long-term effects. The Marine Aquaculture Task Force, assembled by the Woods Hole Oceanographic Institution found that: "Little is known about the assimilative capacity of marine ecosystems for the wastes produced by

⁴ Petition for contested case hearing, filed by Mike Lee, cultural practitioner with Board of Land and Natural Resources for its decision to award a Conservation District Use Permit to Hawai'i Oceanic Technology for 90 acres off of the North Kohala Coast, Hawai'i Island for the purpose of an open ocean fish farm. Filed on 23 October 2009.

⁵ Petition for contested case hearing, filed by Kale Gumapac on behalf of Kanaka Council Moku 'O Keawe with Board of Land and Natural Resources for its decision to award a Conservation District Use Permit to Hawai'i Oceanic Technology for 90 acres off of the North Kohala Coast, Hawai'i Island for the purpose of an open ocean fish farm. Filed on 23 October 2009.

⁶ "Kona fish farm facing expansion opposition." Associated Press, January 21, 2008. Available at: savekauai.org/oceans/kona-fish-farm-facing-expansion-opposition

⁷ Kona Blue Water Farms, LLC. "Final Supplemental Environmental Assessment for a Modification to Net Pen Designs within the Existing Production Capacity and Farm Lease Area for Kona Blue's Offshore Open Ocean Fish Farm off Unualoha Point, Kona, Hawaii." April 2009 at 3.



aquaculture operations,”⁸ A 2006 study of a the University of Hawaii/Cates open ocean facility found that waste from fish cages in deep ocean waters had “grossly polluted” the seafloor and “severely depressed” marine life at some sampling sites close to fish cages. It also found that these effects spread to sites 80 meters away over the course of 23 months.⁹

Additionally, operations may impact insular Hawaiian false killer whales (*pseudorca crassidens*), which are a candidate for the endangered species list.^{10 11} Impacts on whales, dolphins, sharks, seals and sea turtles are also a concern,. One facility, KBWF is actually located within the Hawaii Islands Humpback Whale National Marine Sanctuary, and other proposed projects are located just outside its boundaries.

A recent study showed that the incidence of some species of sharks increased at Hawaiian OOA sites.¹² Sharks can be attracted to the fish in the cages, which can also be a threat to other wild fish or marine animals that congregate around the cages. They also serve as a threat to fishermen in the area. In 2005, KBWF killed a 16-foot tiger shark that was stalking one of its divers.¹³ In September 2009, 500-1000 fish were reported to have escaped from KBWF’s operation after a Galapagos shark bit through a cage.¹⁴ The shark then entered the cage and had to be removed using a seine net.¹⁵ Interactions with sharks at OOA sites is also culturally problematic due to the significant role they play for culturally practitioners as ‘aumakua.¹⁶

Ocean fish farms operations in other parts of the world provide an example of how aquaculture facilities can damage wild fish stocks if not carefully regulated. It has been well documented that when farmed fish escape, they can compete with wild fish for resources and habitat.¹⁷ Despite industry advances, escapes continue to be a major issue.

⁸ “Sustainable Marine Aquaculture: Fulfilling the Promise; Managing the Risks.” Report of the Marine Aquaculture Task Force, Takoma Park, MD, p. 3, Jan 2007. Available at: http://darc.cms.udel.edu/Sustainable_Marine_Aquaculture_final_1_07.pdf

⁹ Lee, Han W., et al. “Temporal changes in the polychaete infaunal community surrounding a Hawaiian mariculture operation.” *Marine Ecology Progress Series*, 307:175-185, January 2006.

¹⁰ Baird, Robin et al. “False Killer Whales (*Pseudorca crassidens*) around the main Hawaiian Islands: Long-term site fidelity, inter-island movements, and association patterns.” *Marine Mammal Science*, vol. 24, iss. 3. January 2008. Pages 598-599.

¹¹ 50 Fed Register 70169-70187, (Nov. 17, 2010)

¹² Papastamatlou, Yannis P. et al. “Site fidelity and movements of sharks associated with ocean-farming cages in Hawaii.” *Marine and Freshwater Research*, vol. 61, iss. 12. December 13, 2010 at 1.

¹³ Lucas, Carolyn. “Fish farm seeks second location.” *West Hawaii Today*, May 6, 2006.

¹⁴ Note from Office of Conservation and Coastal Land. Titled September 2009.

¹⁵ E-mail communication. Neil Simms, President, Kona Blue Water Farms to Justin P. Viezbicke; William J. Walsh; Stephen M. Cain; and Nick Whitey. Subject: Galapagos freed. 15 September 2009.

¹⁶ Minerbi, Luciano. “Sanctuaries, Places of Refuge and Indigenous Knowledge in Hawaii.” In Morrison, R.J. and Linda Crowl (Eds.). (1994) *Science of Pacific Island Peoples Land Use and Agriculture Vol. 2*. Institute of Pacific Studies, University of the South Pacific. Page 108.

¹⁷ Naylor, R., et al. “Fugitive Salmon: Assessing Risks of Escaped Fish from Aquaculture.” *BioScience*, 55: 427-437, 2005.



Some recent examples of escapes include:

- From late December of 2008 through early January of 2009, a series of massive escapes in Chile – totaling more than 700,000 salmon and trout from various farms – prompted the leader of the Chilean Senate’s Environmental Committee to proclaim the incidents an “environmental disaster.”¹⁸
- In October of 2009, 40,000 fully-grown Atlantic salmon escaped from a net pen facility in British Columbia when a machine removing dead fish from the bottom of the pen broke a hole in the net; the company reportedly recovered less than 3% of the escaped fish at the time the article was written, though efforts to recover the fish were ongoing.¹⁹
- In October of 2010, 70,000 harvest-ready salmon escaped from a farm in Norway, resulting in a loss to the company of at least \$600,000; the same location had suffered from an outbreak of pancreatic disease resulting in high levels of mortality only months earlier.²⁰

Disease transfer from farmed to wild fish is another risk. Wild pink salmon populations in British Columbia were depressed due to outbreaks of sea lice – marine parasites that cause viral or bacterial infection and ultimately death – increased incidences of which are associated with salmon farms.²¹

Although aquaculturists have argued that the industry can bring jobs and a local food source to Hawai`i, the actual job numbers are limited, as the industry is highly mechanized (for example, KBWF modified its net pens so that cleaning the cages would be easier and diver jobs could be eliminated). Moreover, the bulk of the product from OOA operations has been, and in the case of the proposed farms, is planned to be, exported to the U.S. mainland and/or to countries where it will fetch higher prices.

If local food and economy were a true priority for open ocean aquaculturists, they could focus on developing land based facilities, or traditional fish ponds, which many environmentalists and Native Hawaiians consider a more sustainable option.

III. Consequences from Hawaiian Ocean Aquaculture and Inability to Regulate or Mitigate Them

Recent information released by the State after the submission of a FOIA request highlighted additional flaws with KBWF’s operation. Between 2005 and 2008, the company did little benthic testing. In their application for a modified permit in 2008, they provided only five samples from three sample dates, over three years. These included one

¹⁸ Witte, Benjamin. “Thousands of salmon and trout escape in southern Chile.” *The Patagonia Times*, January 19, 2009.

¹⁹ Lavoie, Judith. “40,000 fish escape farm.” *The Times Colonist*, October 24, 2009.

²⁰ Grindheim, Joar. “Costly salmon escape.” *IntraFish*, October 15, 2010.

²¹ Krkosek, M., et al. “Declining wild salmon populations in relation to parasites from farmed salmon.” *Science*, 2007. Peeler, E.J., et al.



sample for each site, with no replicates for any site sampled. The small sample size and lack of repetition call into question the accuracy of any analysis provided by the company regarding their impact on the benthos. In March 2007, the Office of Conservation and Coastal Lands (OCCL) notified KBWF that their current benthic monitoring system was unsatisfactory. They proposed a minimum of quarterly monitoring by drop camera, but it took over a year for the company to comply.²²

KBWF has introduced antibiotics in Hawaiian waters at their site, without approval by Hawaiian officials. The permission to use an antibiotic was given to KBWF by officials at the United States Fish and Wildlife Service in Montana and approved by a federal agency, the Center for Veterinary Medicine at the Food and Drug Administration.²³ After the drug was applied, OCCL questioned whether these outside agencies knew they were approving extra-label use of the drug to be deposited directly into Hawaiian waters and not a land-based tank.²⁴

The State also documented cases of deliberate interference with bottle-nosed dolphins at KBWF's operation, and according to the Hawai'i Department of Aquatic Resources, the animals have begun to exhibit "unnatural behaviors."²⁵

These examples all serve to illustrate the complexity of regulating OOA. Clearly, in these instances, the state agencies have not had the resources to stop problems from occurring, and extending lease durations to sixty-five years will make it even more difficult for the State to avoid undesirable environmental consequences. To envision such a facility not being required to update its technology until the year 2075, regardless of what harm occurs in the interim period, wholly fails to protect Hawaii's ecological, cultural and traditional ocean interests and ignores scientific progress.

IV. Insufficient Environmental Review Process

Issues regarding the environmental review process for OOA operations must be addressed before lengthening their lease times. Currently, companies are not always required to submit an Environmental Impact Statement (EIS). When applying for

²² Public comment. Dan Polhemus, Administrator, Division of Aquatic Resources, Department of Land and Natural Resources, to Sam Lemmo, Administrator Office of Conservation and Coastal Lands, Department of Land and Natural Resources. Review of Draft EA/CDUA HA-3443 for the Expansion of Kona Blue Water Farms Offshore Aquaculture Facility. 3 March 2008. Page 7.

²³ E-mail correspondence. November 2, 2007. Susan Storey, Aquaculture Drugs Team, FDA-CVM, Office of New Animal Drug Evaluation, Division of Therapeutic Drugs for Food Animals to Neil Anthony Simms, President, Kona Blue Water Farms. Subject: Florfenicol for your fish. On file with Office of Conservation and Coastal Lands, DLNR

²⁴ Letter dated November 15, 2007. Dan A. Polhemus, Administrator to Samuel J Lemmo, Administrator of Office of Conservation and Coastal Lands, DLNR. RE: Bacterial Outbreak at Kona Blue Offshore Fish Farm On file with Office of Conservation and Coastal Lands, DLNR.

²⁵ Memorandum. Dan Polhemus, Administrator, Division of Aquatic Resources and Jeff Walters, Co-manager of Hawai'i Humpback Whale National Marine Sanctuary to Sam Lemmo, Office of Conservation and Coastal Lands, Department of Land and Natural Resources. Subject: Kona Blue Water Farms open ocean fish farm, concerns regarding dolphin interactions. 20 February 2008.



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conservation district use, an aquaculture company must provide: “an environmental assessment or, if required, an environmental impact statement which shall be prepared and accepted in compliance with the rules adopted under Chapter 343.”

According to HRS §343-2 an Environmental Assessment (EA) is a “written evaluation to determine whether an action may have a significant effect.” An EIS is “an informational document prepared in compliance with the rules adopted under section HRS §343-6 and which discloses economic welfare, social welfare, and cultural practices of the community and State, effects of the economic activities arising out of the proposed action, measures proposed to minimize adverse effects, and alternatives to the action and their environmental effects.”

Based on an EA, the agency, in this case the Department of Land and Natural Resources (DLNR) OCCL, determines whether there is a “finding of no significant impact,” meaning, “a determination... that the subject action will not have a significant effect.” If significant impacts are expected, the applicant must go on to prepare an EIS. This determination and the final approval or disapproval of an EA or EIS must take public comment into consideration.

Unlike an EA, an EIS: must explore alternatives to the proposed action; must evaluate the environmental setting in greater detail; must give an in depth discussion of the probable impacts, including cumulative impacts, direct and indirect impacts, and impacts on cultural practices and resources; must discuss the relationship between short-term use of the environment and long-term productivity; must detail unavoidable environmental effects; must discuss mitigation measures; and in the final EIS, must discuss how each comment was evaluated or give reasons why a specific comment was not accepted. Given the waste discharge, potential impacts on marine animals and fish stocks, and potential cultural ramifications, it is not reasonable to expect that any OOA facility would not result in “significant effects.” Despite this, DLNR has not required all OOA applicants to conduct an EIS.

OCCL also needs to be held more accountable in the cases where it does require an EIS. In HOTT’s case, OCCL approved the EIS despite finding that “there are still unresolved issues regarding the level of environmental and project disclosure, analysis regarding the engineering design of the proposed engine, fish feed components, lack of benthic studies in the project area, and lack of shark, marine mammal and endangered species plan.”

An EIS should be required of every OOA project and each project should be more rigorously reviewed.

V. Lack of Demonstrated Economic Benefits

HB 568 states that “direct leasing of public lands had been a cornerstone for building a successful commercial aquaculture industry in the State,” but it does not discuss whether a successful aquaculture industry will **benefit** the State.



As ocean aquaculture is scheduled to increase in Hawai`i, projections for the amount of direct employment it will provide have decreased. Prior to modifications or expansions, Hukilau LLC and KBWF employed a total of 44 people, including jobs at both of their land-based hatcheries. After recently approved modifications are made to both the Hukilau and KBWF site, the industry estimates it will only be providing 39 jobs. This is despite anticipated increases in production of about 2.5 million pounds to 6 million pounds annually.²⁶ In 2010, Hukilau declared bankruptcy, putting their promise of jobs in question.²⁷

Furthermore, it is questionable whether employment by the aquaculture industry is safe or stable. For example, a diver employed by KBWF filed suit against KBWF, alleging that it failed to provide a safe environment, ultimately leading to personal injury. According to the suit: "Kona Blue, acting through its managerial agents, was guilty of outrageous conduct owing to gross negligence, willful, wanton, and reckless indifference to the rights of others, and/or conduct even more deplorable..."²⁸

In addition, the aquaculture industry in Hawai`i has not sufficiently proven that it can achieve profitability with existing operations filing for bankruptcy or transferring leases.

VI. Other Legislative Efforts

The controversy surrounding ocean aquaculture in Hawai`i is further evidenced by the introduction of two other bills this legislative session. HB 221 Relating to Mariculture lends support to the development of land-based, closed-loop re-circulating aquaculture systems, and would suspend the development, expansion or transfer of any existing permits of open water commercial finfish operations. SB 626 calls for tougher requirements for open ocean aquaculture, requiring that applicants submit a full EIS.

Conclusion

²⁶ Information derived from the following sources: Consent to Assign General Lease No. S-5654, Cates International, Inc., Assignor, to Grove Farm Fish and Poi, LLC, Assignee, Oahu, Tax Map Key:(1)9-1-005:Seaward. Land Submittal to State of Hawai`i Department of Land and Natural Resources Land Division Board of Land and Natural Resources on 9 February 2007; Aquaculture Planning & Advocacy LLC. Final Environmental Assessment Proposed Expansion of Hukilau Foods Offshore Fish Farm, Mamala Bay, Oahu, Hawai`i. Prepared for Office of Conservation and Coastal Lands, Department of Land and Natural Resources. 24 July 2009. Page 8; Kona Blue Water Farms, LLC Final Supplemental Environmental Assessment for a Modification to Net Pen Designs within the Existing Capacity and Farm Lease Area for Kona Blue's Offshore Open Ocean Fish Farm off Unualoha Point, Kona, Hawai`i prepared for Land Division, Department of Land and Natural Resources. Dated April 21, 2009. Page 17; Aquaculture Planning & Advocacy LLC. Final Environmental Assessment Proposed Expansion of Hukilau Foods Offshore Fish Farm, Mamala Bay, Oahu, Hawai`i. Prepared for Office of Conservation and Coastal Lands, Department of Land and Natural Resources. 24 July 2009. Page 8.

²⁷ Gomes, Andrew. "Hukilau Foods files for bankruptcy." Star Advertiser. November 3, 2010.;

²⁸ Wagner v Kona Blue Water Farms LLC United States District Court for the District of Hawai`i No CV09 00600 Filed 16 December 2009.



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Experiences with Hawaiian OOA operations indicate that the state of Hawai'i should proceed with extreme caution in regulating the industry's expansion. Opposition voiced by the local community, especially by Native Hawaiian groups, indicates that many constituents support this approach. We urge the legislature not to extend the maximum lease term, or include an option for renewal, as stated SB 1511, as that would allow the industry to completely circumvent meaningful oversight over the long term, and increase the State's difficulty in sufficiently regulating the industry and protecting natural and cultural resources.

Thank you for the opportunity to testify in opposition to the Bill, and in favor of a precautionary approach in protecting Hawai'i's ecological and cultural resources.

Sincerely,

A handwritten signature in cursive script, appearing to read "Marianne Cufone".

Marianne Cufone, Esq.
Director, Fish Program
202.683.2511

A handwritten signature in cursive script, appearing to read "Christina Lizzi".

Christina Lizzi
Policy Analyst, Fish Program
202.683.2495



EAST OAHU COUNTY FARM BUREAU

45-260 WAIKALUA ROAD S 101 KANEONE, HI 96744

April 5, 2011

Representative Marcus R. Oshiro, Chair
Representative Marilyn B. Lee, Vice Chair
House Committee on Finance
State Capitol Building, 415 S. Beretania St.
Honolulu, Hawaii 96813

Dear Chair Oshiro, Vice Chair Lee, and Members of the Committee:

I am sending this testimony to express the **strong support** of the East Oahu County Farm Bureau for **SB 1511 SD1 HD1**, "Relating to Aquaculture." Aquaculture is one of the largest and fastest-growing sectors of Hawaii's diversified agriculture industry. The value of Hawaii's aquaculture production has nearly doubled in the last 12 years, to more than \$32 million in 2009. With encouragement by Hawaii's Legislature, including the passage of SB 1511 SD1 HD1, it has the potential to double again in the next 12 years.

Aquaculture and aquaponics farms generally have substantial infrastructure requirements such as wells, tanks, raceways, pipes, and support structures which require a substantial investment. In order to make this investment, aquafarmers need to have access to long-term loan capital, and need to know that they will be allowed to remain in place long enough to justify not only the financial investment, but the investment of personal time, labor, and ingenuity that is necessary to succeed in a challenging endeavor.

SB 1511 SD1 HD1 would increase the maximum lease terms for aquaculture and aquaponics farms, which would encourage investment in farm facilities and allow farmers greater access to Federal loan guarantees. It would allow established farms in good standing the right of first refusal, reducing the risk that farmers who have invested much of their lives in building successful businesses will see their life's labors taken away when their original leases expire. It also encourages more efficient and ecologically sound use of resources by specifically permitting supportive activities such as the use of aquaculture effluents to produce secondary crops.

In view of testimony opposed to the expansion of offshore aquaculture in past hearings on this bill, we must emphasize that SB 1511 SD1 HD1 is not enabling legislation for offshore aquaculture, nor will it influence the siting of any particular offshore facility. These items are addressed by Hawaii's ocean leasing law and by other State and Federal regulations that require rigorous environmental review of any offshore

project. Instead, SB 1511 SD1 HD1 assists all aquafarms that are approved for State leases, including near-shore saltwater aquaculture, inland freshwater aquaculture and aquaponics, and even revival of Hawaiian fishponds if they are owned by the State. We urge you to support this valuable and growing sector of Hawaii's diversified agriculture by passing SB 1511 SD1 HD1.

Thank you for the opportunity to testify.

Sincerely,

A handwritten signature in cursive script that reads "Frederick M. Mencher".

Frederick M. Mencher
for Grant Hamachi, President

Testimony of

NEIL FRAZER, PhD

Professor of Geophysics
School of Ocean and Earth Science and Technology
University of Hawai'i at Mānoa¹

Before the House Committee on Finance

In consideration of

Senate Bill 1511_SD1_HD1

Wednesday 6 April 2011, 3:00 p.m.
Conference Room 308, State Capitol, 415 S. Beretania Street

Summary

If the goal of this bill is to give Hawaii aquaculturists access to federal loan guarantees, you would be doing them a big favor by killing it. Such loan guarantees frequently lead to risky behaviors that end in bankruptcy, loss of jobs and government bailouts. If the goal of the bill is to increase Hawaii employment, food security and general prosperity, I suggest that the scope of the present bill be limited to terrestrial aquaculture, and that the lease rents be indexed to the consumer price index (CPI) in order to protect lessees from deflation and protect the lessor (State of Hawaii) from inflation.

Open ocean aquaculture (sea-cage finfish aquaculture) requires a different regulatory regime in order to remove the moral hazard. Specifically, lease rents should be a percentage of revenue (say 5%), and antibiotics, toxic chemical therapeutants, and growth hormones should be strictly prohibited, including off-label use. Coupling lease rents to revenues reduces both the cost of fallowing and the temptation to overstock. Prohibiting drugs also reduces the temptation to overstock, and it would give Hawaii aquaculture a powerful 'brand' that can be used to compete with cheaper imports from Asia and Australia, both here and in export markets. I recommend it for *all* Hawaii aquaculture, but think it is essential for sea-cage aquaculture.

If the committee defers this bill, I will gladly work with the introducers and stakeholders to help draft amendments for the 2012 session.

Introduction

Terrestrial aquaculture mixed with agriculture is thousands of years old, and can be done in a sustainable fashion, as demonstrated by Hawaii's loko i'a (fish ponds). Sea-cage aquaculture is an entirely different type of business and is relatively new to Hawaii. It consists of large numbers of hatchery-bred carnivorous finfish confined in cages where they are fed until ready for market. A slide show comparing sea-cage aquaculture with loko i'a kuapā can be viewed at <http://www.sites.google.com/site/aquapono/home/powerpoint>

¹ The testifier is solely responsible for the views expressed in this letter. As an academic institution, the University of Hawaii does not take positions on the scholarship of individual faculty, and this letter should not be interpreted or portrayed as reflecting the official position of that institution.

I explain below why sea-cage aquaculture has been so controversial in other countries, but to understand the magnitude of the controversy consider that a recent protest in BC, Canada, brought about 5,000 people to the grounds of the legislature in Victoria. As BC has a population of about 4.5 million, and Hawaii has a population of about 1.3 million, a proportional sized protest here would attract 1,400 people.

What aquaculture has in common with fisheries

Capture fisheries is the technical term that includes hook-and-line, nets, trawls, traps and other gear used to capture fish in the wild. Although sea-cage aquaculture is often spoken of as if it were an alternative to capture fisheries, in fact the two enterprises have much in common. First, they are both forms of rent seeking from a common property resource. Thus there is always the potential for conflict between the public interest and the interests of the rent seekers. Second, the culture of fish such as moi, kahala, tuna and salmon is a capture fishery in disguise because those fish are all piscivorous carnivores that require large amounts of fish oil in their diets to survive [Alder et al. 2008; Tacon & Metian 2008], and the fish taken for oil are an important source of dietary protein in third world countries [Tacon & Metian 2009, Srinivasan et al. 2010]. Third, the dependence of sea-cage farmers on other fish for feed means that sea-cage aquaculture and fishing are both constrained by the same limit on primary production of algae and phytoplankton [Vitousek et al. 1986, Odum 1988, Pauly & Christensen 1995]. Fourth, a sea-cage farmer will invariably expand by adding more cages (until disease devastates his fish) just as a fisherman will invariably keep fishing until his costs equal his revenues [see references below]. Finally, U.S. aquaculture is now in the early stages of a bubble of optimism that is eerily similar to the bubble of optimism surrounding capture fisheries thirty years ago. In view of such similarities, it is important to know the history of industrial fishing.

Industrial fishing

In 1954 the economist Scott Gordon warned that the fishing industry would damage itself by over-fishing [Gordon 1954], and subsequent events have proved him right [Pauly et al. 1998, Jackson 2001, Lotze et al. 2006]. Excess fishing now costs the world ~\$50 billion/y in net economic losses [World Bank & FAO 2009, Holt 2009] because overfished stocks have lower yields. However, not all fisheries are over-fished [Rosenberg et al 1993, Costello et al. 2008], and economists and scientists have gone to a lot of trouble to understand why [e.g., Clark 1990, Iudicello et al. 1999, Hilborn 2007]. Briefly, what they have found is that in order to protect the fishing industry from its suicidal tendencies three things are necessary [Clark 2006]: The first is property rights; fishermen must have confidence that the fish they do not catch today will be theirs to catch another day. The second is good policing; unless fishermen are confident that poachers will be caught and punished, they will, quite reasonably, cheat by exceeding their quotas. The third is that fishermen should be taxed on their catch rather than subsidized, because, quite reasonably, they don't stop fishing until their costs exceed their revenues. The catch fees paid by fishermen to governments can be regarded as cost recovery (or, at higher levels, rent recovery). Those fees pay for the policing needed to deter poachers [Kaufmann & Green 1997, Clark 2006] and for scientific research called for by fishermen.

Fisheries governance is often victimized by wishful thinking [Pauly 1996]. For example, in 1969 the U.S. Government Commission on Marine Science, Engineering and Resources (CMSER)

predicted that global fisheries would plateau at 400–500 million tons per year². The U.S. and other nations responded by subsidizing capture fisheries with loan guarantees, fuel credits, and the development of advanced fishing gear; and those subsidies increased after 1982 when exclusive economic zones (EEZ) were expanded from 12 nm to 200 nm. The United Nations Food and Agriculture Organization (FAO) estimated global subsidies to fisheries at US\$54 billion/year [Pauly 2010, p25] and the World Bank recently estimated them as US\$50 billion/year [World Bank 2009]. The CMSER estimate was revealed to have been wildly optimistic when global fisheries production maxed out at ~85 million tons/y around 1988 [Watson & Pauly, 2001]³. From 1996 to 2004, long after the maximum was reached, the U.S. was still subsidizing industrial fishing at the rate of \$713 million/y [Sharp & Sumaila 2009].

When a subsidized industry crashes, as it inevitably does, governments must then subsidize the unemployed. Canada is a poster child for this. In the 1980s, after expansion of the EEZ, it began subsidizing new vessels and processing plants for Atlantic cod, which for 300 years had sustained the richest fishery in the world. By 1992 over-fishing had resulted in a stock collapse so severe that 40,000 people in Atlantic Canada were suddenly unemployed [Finlayson 1994, Harris 1998]. In the following decade, Canada's federal government was forced to spend well over \$2 billion on unemployment benefits, retraining and relocation [Harris 1998, p205, p242].

A scientific perspective on the wishful thinking that led to the Atlantic cod collapse can be found in Myers et al. [1997]. Briefly, scientific information was suppressed, and managers were rewarded for inflating stock estimates [Hutchings et al. 1997, Rose 2008]. The response of a fish stock to management action is not always easy to predict [Pine et al. 2009], but the main problem with fisheries management, as currently practiced is not bad science; rather it is a lack of good incentives for managers [e.g. Walters and Martel 2004, Chapter 2]. Attention to the three principles mentioned above (property rights, policing and royalties) addresses the incentive problem by aligning the interests of the fishermen with those of the fish, as both groups wish to survive.

Now Canada is vigorously subsidizing sea-cage aquaculture [Young & Matthews 2010, DFO-PSA 2000, CARDR 2009], perhaps in the hope that Canadians will forget Atlantic cod. Canada's federal government even has a group of scientists tasked with manufacturing doubt about the environmental effects of sea-cage aquaculture by publishing misleading papers in the scientific literature [Frazer 2007; Dill et al. 2009]. Those papers are then used by industry to mislead credulous bureaucrats [e.g. Doubleday 2001]⁴ and would-be sea-cage farmers both in Canada and in other countries. For example, my employer, UH Mānoa has an Aquaculture Coordinator position whose current incumbent maintains a website on which aquaculture can do no wrong. The sea-cage industry in Pacific Canada has employed Hill and Knowlton, a public relations company notorious for its defense of the tobacco industry [Cox 2004, Clausen 2005]. In view of the well established environmental effects of sea-cage aquaculture, and the similarities of sea-cage aquaculture to industrial fishing, one might hope that Canada would recall the effect of its

² The report stated "It is, therefore, more realistic to expect total annual production of marine food products (exclusive of aquaculture) to grow to 400 to 500 million metric tons before expansion costs become excessive. Even this estimate may be too conservative if significant technological breakthroughs are achieved in the ability to detect, concentrate, and harvest fish on the high seas and in the deep ocean." It was too optimistic by a factor of 5.

³ The maximum rises from ~85 Mt/y to ~100 Mt/y if illegal, unregulated and unreported catch is included.

⁴ Doubleday was Director General of Science in Canada's federal Department of Fisheries and Oceans when the northern cod collapsed [Harris 1998, p294].

subsidies to industrial fisheries and try to avoid making the same mistakes in industrial aquaculture. So far that has not been the case.

Subsidies to aquaculture

Judging by its subsidy programs for aquaculture, the U.S. federal government [NOAA 2011] is on the same path taken by CMSEER in 1969, and the results of the new subsidy program have already been demonstrated in Hawai'i. In 1998, local businessman Randy Cates began planning the first sea-cage farm here. With some help from my colleagues at UH Mānoa he and his then-business partner Virginia Enos were profitably growing moi (Pacific threadfin) by 2001. Moi was a good choice for culture because it is a schooling fish with large scales typically found in surf zones. By culturing it in waters much deeper than its natural habitat Randy avoided disease transmission from wild moi, and so his farmed moi never needed drugs. Oceanic Institute provided the necessary hatchery services. In 2006 Randy applied for and received a \$2 million loan guaranteed by NOAA to build a wholly owned hatchery, and while the hatchery was under construction he stopped production from his cages. Around this time he also cashed out by selling a controlling interest in his enterprise to Grove Farms. Shortly thereafter the enterprise went bankrupt.

The reason for relating these events is that if it had not been for the NOAA loan guarantee, Randy would still be growing fish and making a profit. By increasing his tolerance for risk, the loan guarantee caused him to take chances that cost him his business. Economists would say that the loan guarantee reduced Randy's risk-adjusted discount rate, and insurance adjustors would say that it created a moral hazard. I would say that, even without Randy's bad luck, the loan guarantee was a mistake, because if he had not gone bankrupt he would almost certainly have expanded his operation to the point where disease forced him to use drugs and chemicals, thus delivering him into the hands of the pharmaceutical industry which partners with sea-cage aquaculture around the world. Globally, the aquaculture industry uses ~5.5 million kg of antibiotics—that weight is active ingredients, not fillers—each year, most of which is discharged into the marine environment [GAPI 2011].

To see what Randy's fate might have been, consider an example from Atlantic Canada. The largest concentration of sea-cage salmon in Atlantic Canada is in the Quoddy Region. Production began in the early 1980s and expanded rapidly after 1986 aided by loan guarantees. In the autumn of 1994 an epidemic struck. Many thousands of farm fish suffered direct mortalities or extensive tissue damage [Hogans 1995]. The unexpected nature of the epidemic can be inferred from the fact that in 1994 no drugs or pesticides were approved by Canada for use in the marine environment. In response to the epidemic, intense lobbying resulted in federal emergency registration of hydrogen peroxide and pyrethrin, while cypermethrin was widely used illegally [Harvey & Milewski 2007]. The chief provincial veterinarian overseeing New Brunswick's salmon aquaculture industry pleaded with the federal Pest Management Regulatory Agency for approval of cypermethrin [references in Harvey & Milewski 2007], and the director of the New Brunswick Department of Fisheries and Aquaculture said "...we're fighting a losing battle. Farms are going bankrupt." Two years after the epidemic, production resumed its expansion using drugs to control the pathogen. Unfortunately drugs are disease specific—an epidemic of infectious salmon anaemia struck in 1998. This episode and its aftermath resulted in \$50 million in direct costs to the governments of Canada and New Brunswick for corporate bailouts and unemployment benefits [Harvey & Milewski 2007].

Stages of industrial aquaculture

Again, I'll use Canada as an example because I know both of its coasts from personal observation, especially its Pacific coast. Sea-cage aquaculture developed in Canada, as in most other countries, in a series of three stages: In stage 1, local entrepreneurs secure the permits and leases, and demonstrate that fish can be grown on a small scale. In stage 2, these entrepreneurs sell out to larger companies. In Stage 3, the larger companies sell out to large multinational enterprises. (Here in Hawaii, local entrepreneurs, Randy Cates & Neil Simms, have already sold out to larger corporations.) In such transactions, the items of greatest value are the leases and permits, and I am afraid that by putting the right of first refusal into law we risk delivering Hawaii's waters into the hands of multinational corporations in perpetuity. In Pacific Canada, over 91% of sea-cage production is from Marine Harvest, Cermaq (Mainstream) and Grieg, three multinational corporations headquartered in Norway.

In Canada, as elsewhere, multinationals have increased the density of fish at their aquaculture sites to the point where the use of the neurotoxin emamectin benzoate is now required on a routine basis for control of parasites [Costello 2001, BurrIDGE et al. 2010]. As parasite resistance has developed in Atlantic Canada they are now moving to other neurotoxins such as deltamethrin, a synthetic pyrethroid [Lack 2009, NBSGA]. In both Atlantic Canada and Pacific Canada (BC), wild fish are declining in areas with sea-cage farming (even in areas where there has not been a commercial fishery for many years) [Krkosek et al. 2007, Ford & Myers 2008], and algal blooms have increased [e.g. Keller & Leslie 1996, Chapter 6]. The declines of wild fish near farmed fish are unsurprising because that is what basic epidemiological principles predict [Frazer 2009], but scientists paid by salmon farmers dispute certain declines, contending that the data are insufficient [Marty et al. 2010], and such disputes are widely publicized [ANA 2011]⁵ to manufacture doubt.

As noted above, last summer 5,000 citizens from all walks of life gathered on the grounds of the BC legislature to protest sea-cage aquaculture [Mair 2010]. Yesterday (March 21, 2011), Canadian Member of Parliament Fin Donnelly carried a petition to his fellow legislators. The petition, which had 9,000 signatures, demanded removal of all sea-cage farms from the BC coast [Sanderson 2011]. It is possible to raise sea-cage fish without drugs and chemicals, and Yellow Island Aquaculture [Google it] has been profitably doing so in BC for many years, but that is not the model used by multinational corporations. Now that they are firmly entrenched, the multinationals are saying that they cannot "afford" to raise their fish in closed-containment systems [Google Agrimarine], and so Canadian taxpayers are paying for the necessary research.

Avoiding the pitfalls

Instead of subsidizing industrial aquaculture by giving it Hawaii's waters in perpetuity, I would rather we tried to encourage responsible aquaculture by making rules that put local operators on a level playing field with multinationals. The simplest way to do that is to prohibit the use of antibiotics, toxic chemical therapeutants, hormones and genetically modified organisms. By such simple rules, you would create good incentives for appropriate restraint in stocking and careful husbandry. Moreover, you would give all of Hawaii aquaculture a 'brand' that has the potential to be a powerful marketing tool in both domestic and export markets [Aaker 1995; 2011 Chapter 2] because consumers increasingly prefer foods produced without drugs [Star-Advertiser 2011,

⁵ In press releases Marty et al. are careful to use the word "significant," as in "Sea lice from fish farms have no significant effect wild salmon productivity." This is scientific language that in plain English means: The data were noisy, so in this case there is less than 95% certainty that the declines were caused by sea lice.

Yiridoe et al. 2007, Wikipedia].

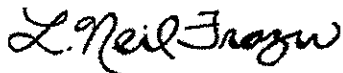
No existing enterprise would be damaged by such rules since none of them are currently using drugs. Local businessman Randy Cates successfully cultured moi without the use of drugs, and Kona Blue Water has so far used only a relatively harmless hydrogen peroxide bath to treat its fish for parasites. It has permission (from Montana!) to use the drug Praziquantel, but to the best of my knowledge it has refrained from using it.

Making lease rents proportional to revenue is a gift to the industry because it means they pay no rent prior to commencing production, or when they are fallow—a reward to the industry for renouncing drugs and toxic chemicals.

To conclude, I strongly oppose this bill in its present form, and respectfully ask that you defer it to the 2012 session so that it can be amended along the lines suggested above.

Mahalo for the opportunity to testify, and for your service to the people of Hawai'i.

Sincerely,



Neil Frazer
Professor of Geophysics

References

(To save paper, references have been omitted. Email neil@hawaii.edu for references.)

HAWAII FISH COMPANY, Inc.

Post Office Box 1039
Waiialua, HI 96791, USA
Cell Phones: 808-429-3187, 429-3147
E-mail: hawaiiifish@gmail.com

City Bank 2000 TIGR Award
US SBA 2000 Tibbitts Award
US SBA 2001 Small Business Award
Special Congressional Recognition 2001

The House
The Twenty-Sixth Legislature
Regular Session of 2011

Committee on Finance
Representative Marcus Oshiro, Chair
Representative Marilyn Lee, Vice-Chair

Date: Wednesday, April 6, 2011
Time: 3:00 pm
Place: Conference Room 308, State Capitol
415 South Beretania Street

Re: Testimony In Strong Support of SB1511 SD1 HD1—Relating to Aquaculture Leases

I am an aquaculture farmer committed to providing fresh seafood products for the local community. An increase in aquaculture lease terms to 65 years would allow my business to secure the larger long-term financial loans necessary to build up my infrastructure, to buy the necessary equipment, and to hire workers. Also, for a family-run operation, as many of the aquafarms in Hawaii are, such an increase would allow our children and younger employees, the next generation, the opportunity to continue the legacy of fulfilling Hawaii's need for locally-grown seafood crops.

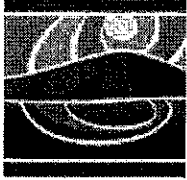
I believe that a farmer who has consistently demonstrated good management practices and who has expended great time and investment towards developing his/her farm, should have the right of first refusal, rather than having the farm potentially lost to a future higher bidder or land speculator without the expertise and personal commitment to the land and farming endeavor.

In addition, allowing additional supportive aquaculture activities to recycle the water for other crops, such as aquaponics, just makes good common sense.

Aquaculture farming requires much investment and commitment, and SB1511SD1 HD1--Relating to Aquaculture Leases would make more viable an aquacultural venture so well suited for Hawaii and her people.

Mahalo,

Estralita Pasalo Weidenbach, Co-Owner



KA HONUUA MOMONA

Welina me ke Aloha,

On behalf of Ka Honua Momona International, I would like to strongly oppose SB1511 which proposes to extend ocean leases for experimental finfish aquaculture. This is a dangerous practice which threatens our limited natural ocean resources.

On March 22, 2011, an open ocean aquaculture experiment lost its two cages in the Alenuihaha Channel. These cages are now loose in the ocean, entangling marine wildlife and possibly damaging coral. Without an apology or adequate government oversight, the owner is preparing to launch another experimental cage next month. Cases like this prove that the state does not have adequate policies and regulations in place to mitigate the many threats posed by open ocean aquaculture.

The state should establish regulations for industrial aquaculture first before considering whether to encourage industrial aquaculture operations in our collective ocean.

Ka Honua Momona cares for two 15th century fishponds on the island of Molokai. The state should provide better support for traditional fishponds. Fishponds are already proven to be successful, sustainable sources of fish for our communities. Hawaii needs fishponds and the state can do a lot to support fishpond restoration -- such as passing the lease preference for fishponds created by HB 377.

Please do not gamble with our collective resources. Please do not trade short-term economic gain for the ability of current and future generations to meet their most basic needs, a healthy ocean and the many sources of food it provides.

Me ka Ha'aha'a,
Kauwila Hanchett
Executive Director, Ka Honua Momona International

Keahole Point Fish LLC

74-429 Kealakehe Parkway
Kailua-Kona, HI 96740

April 4, 2011

Representative Marcus R. Oshiro, Chair
Committee Members
Committee on Finance
House of Representatives
415 South Beretania Street
Honolulu, HI 96813

Re: SB1511

Dear Congressman Oshiro and Committee Members:

I am writing in support of SB1511, relating to commercial aquaculture leases. Aquaponics, commercial aquaculture, and offshore mariculture represent important opportunities for Hawai'i to diversify its economy and increase food security in environmentally safe ways.

However, significant investment capital will be required to create an economically sustainable aquaculture industry. Bringing aquaculture lease terms into line with other agriculture lease terms will help attract this investment capital.

Everyone at Keahole Point Fish hopes that you will support this bill and its positive impact on the aquaculture industry in Hawai'i.

Sincerely,

/s/ Todd Madsen

Todd Madsen
President
Keahole Point Fish LLC

HOUSE OF REPRESENTATIVES
THE TWENTY-SIXTH LEGISLATURE
REGULAR SESSION OF 2011

COMMITTEE ON FINANCE
Rep. Marcus R. Oshiro, Chair
Rep. Marilyn B. Lee, Vice Chair

Rep. Pono Chong, Rep. Chris Lee, Rep. Isaac W. Choy, Rep. Dee Morikawa
Rep. Denny Coffman, Rep. James Kunane Tokioka, Rep. Ty Cullen
Rep. Kyle T. Yamashita, Rep. Sharon E. Har, Rep. Barbara C. Marumoto
Rep. Mark J. Hashem, Rep. Gil Riviere, Rep. Linda Ichiyama
Rep. Gene Ward, Rep. Jo Jordan

DATE: Wednesday, April 06, 2011, TIME: 3:00 P.M.

PLACE: Conference Room 308, State Capitol, 415 South Beretania Street

SB 1511, SD1, HD1 - RELATING TO AQUACULTURE.

Increases lease terms for aquaculture operations from thirty-five to sixty-five years. Permits aquaculture lessees in good standing the right of first refusal. Allows for supportive aquaculture activities. Allows the Department of Transportation to designate unused or underused public lands to be used for purposes of aquaculture.

Please accept my support to SB 1511, SD1, HD1 as written for the following reasons:

1. This bill will encourage future investments and commitment by farmers who hold good record in food production by increasing the lease terms for aquaculture to 45 years.
2. This bill will encourage the following generation of a farmer with good record to continue with the family values and commitment to aquaculture and by that to help bring about future food security and food safety to the State of Hawai'i, which currently imports 90% of its seafood.
3. This bill will give the professional aquaculturists, who lease the right of first refusal to make sure that their hardship and many years of financial investment in the aquaculture avoid the auction block and lost to a higher bidder, regardless her/his experience in aquaculture.
4. This bill will help encourage professional farmer to invest in new areas of aquaculture and go with the latest technology for growing food for the community in Hawai'i and by that to bring future food security and food safety to the State of Hawai'i, which currently imports 90% of its seafood.

Mahalo,

Dr. Tetsuzan Benny Ron

Hawaii Oceanic Technology, Inc.

Clean, responsible, next-generation open ocean aquaculture technologies

April 6, 2010

TO: COMMITTEE ON FINANCE, Rep. Marcus R. Oshiro, Chair, Rep. Marilyn B. Lee, Vice Chair and

HEARING DATE: Wednesday, April 6, 2011

TIME: 3:00PM

PLACE: Conference Room 308, State Capitol
415 South Beretania Street

RE: Testimony In Strong Support of SB 1511 SD1, HD1 - Relating to Aquaculture

Aloha Chair Oshiro and Vice Chair Lee, and Committee Members,

Hawaii Oceanic Technology, Inc. strongly supports SB 1511 SD1 HD1. The USDA Rural Development loan programs offer Federal loans up to 40 years for rural business development, but require a remaining lease term to be at least 50% longer than the loan term, i.e., at least 60 years remaining on a lease term for a 40 year loan. This change is noted and accommodated in SB1511 SD1 HD1 by increasing the direct aquaculture lease term to 65 years.

This is a measure that can be of great value to Hawaii's budding aquaculture industry that will not cost the State a penny. Putting aquaculture leases on par with other types of commercial and industrial leases will stimulate investment and help validate this important growth industry which if allowed to grow can generate significant tax revenues for the State of Hawaii.

As the aquaculture industry evolves and as the global marketplace demands more seafood, the aquaculture industry needs the flexibility to maximize its potential. SB1511 allows aquaculture leases to permit such loans and receive project financing commensurate with other types of commercial activities.

Though DLNR has expressed concerns about the right of first refusal for tenants in good standing, we see this as absolutely critical for the long-term development of a viable aquaculture industry in Hawaii for our future sustainable seafood production. Aquaculture requires high up-front investment and long-term growth to be viable. Without the opportunity to be able to renew leases, as allowed for terrestrial agriculture, future aquaculture investment and industry expansion will be constrained. Currently DLNR can terminate problematic tenants or to even change the State's allowable purpose for a subject property, but does not currently afford DLNR the opportunity to retain tenants in good standing on their existing leased property beyond their initial lease term. The right of first refusal will provide this option such that Hawaii can keep and support its good aquaculture farmers encourage their continued contribution to the economy. SB1511 supports this important industry goal and helps support a more sustainable seafood future for Hawaii.

Thank you for the opportunity to comment.

Bill Spencer, President/CEO

April 5, 2011

COMMITTEE ON FINANCE

Rep. Marcus R. Oshiro, Chair

Rep. Marilyn B. Lee, Vice Chair

HOUSE OF REPRESENTATIVES, THE TWENTY-SIXTH LEGISLATURE, REGULAR SESSION OF 2011

Hearing Date: Wednesday, April 06, 2011, 3:00 P.M. Conference Room 308, State Capitol
415 South Beretania Street.

Testimony In Support of SB 1511 SD 1, HD1 Relating to Aquaculture

My name is Clyde Tamaru and I am an aquaculture extension specialist with the University of Hawaii, College of Tropical Agriculture and Human Resources. While I am a faculty member of the University of Hawaii I am providing testimony as a private citizen and the views presented are NOT those of the University of Hawaii. However, one of the tasks of my current position is to provide the best science based information for decision makers like yourselves to make informed decisions and am providing testimony in that capacity.

I support the passage of SB 1511 SD1 HD1 for the following reasons. The current language of the bill being heard allows for an increase of aquaculture leases from a statutory 35 years with no option for renewal to a maximum term of sixty five years for experienced farmers that are in good standing and also inclusion of an option for renewal. The bill would place aquaculture enterprises on a more equal footing with that of soil based agricultural enterprises where the current maximum lease allowed for state agricultural park leases is 45 years¹ and for non-agricultural park leases up to sixty five years with the option for renewal. These terms are necessary to obtain adequate financing and private sector investment for enterprises to become economically viable. That the terms of the maximum lease are being compared to those of non-agricultural park leases is significant because such lands while marginal for the production of agricultural crops are still suitable for use with aquaculture enterprises, particularly those that employ recirculating systems (e.g., aquaponics). Prime agriculture lands are steadily being turned over to urban use in order to accommodate the increasing State population (Figure 1). Utilizing all available land, and that would include submerged ones, for the production of our own food supply will become necessary if our state is to become more self reliant in the production of its own food and energy as described in the Hawaii 2050 State Sustainability Plan². With 85% of our food and

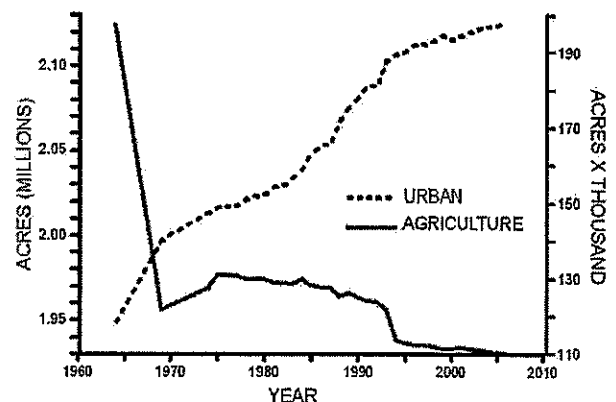


Figure 1. Agricultural land lost to residential development in Hawaii. Source:

http://hawaii.gov/dbedt/info/economic/databook/Data_Book_time_series

¹ http://hawaii.gov/hdoa/arm/arm_agparks/term

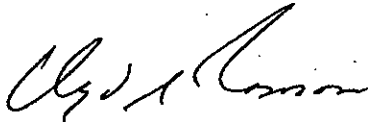
² http://www.hawaii2050.org/images/uploads/Hawaii2050_Plan_FINAL.pdf

90% of our energy being imported, necessary steps need to be taken to allow for the successful development of diversified agriculture to take its place as a means to diversify our State's economy. Recent events in the rise of gasoline prices, earthquake and tsunami in Japan that impact our main industry Tourism, underscores the need for our state to become more self reliant.

Hawaii's diversified agriculture industries (including aquaculture) filled the gap with the projected fall in the state economy with the demise of sugar and pineapple industries (Figure 2). Producing our own food and fuel is now being looked upon as one of the major means of filling the void being left by the fall in our tourism industry. It is clear that improving the conditions which will allow farms and farmers to succeed becomes paramount for our current leadership to address.

For all of these reasons I support passage of the proposed legislation.

Thanks for allowing me to provide testimony on this important legislation.

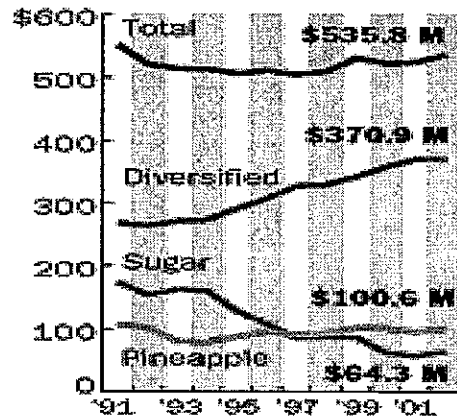


Clyde S. Tamaru, Ph.D.
Aquaculture Specialist

Agricultural sales up

The state's sugar, pineapple and diversified agriculture industries posted their best total sales last year since 1991.

IN MILLIONS OF DOLLARS



*unprocessed cane
** fresh pineapple
*** aquaculture included beginning in 1993

Source: Hawaii's Agricultural Statistics Service

The Honolulu Advertiser

HOUSE OF REPRESENTATIVES
THE TWENTY-SIXTH LEGISLATURE
REGULAR SESSION OF 2011

COMMITTEE ON FINANCE
Rep. Marcus R. Oshiro, Chair
Rep. Marilyn B. Lee, Vice Chair

Rep. Pono Chong, Rep. Chris Lee, Rep. Isaac W. Choy, Rep. Dee Morikawa
Rep. Denny Coffman, Rep. James Kunane Tokioka, Rep. Ty Cullen
Rep. Kyle T. Yamashita, Rep. Sharon E. Har, Rep. Barbara C. Marumoto
Rep. Mark J. Hashem, Rep. Gil Riviere, Rep. Linda Ichiyama
Rep. Gene Ward, Rep. Jo Jordan

DATE: Wednesday, April 06, 2011, TIME: 3:00 P.M.

PLACE: Conference Room 308, State Capitol, 415 South Beretania Street

SB 1511, SD1, HD1 - RELATING TO AQUACULTURE.

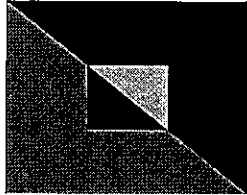
Increases lease terms for aquaculture operations from thirty-five to sixty-five years. Permits aquaculture lessees in good standing the right of first refusal. Allows for supportive aquaculture activities. Allows the Department of Transportation to designate unused or underused public lands to be used for purposes of aquaculture.

Please accept my support to SB 1511, SD1, HD1 as written for the following reasons:

1. This bill will encourage future investments and commitment by farmers who hold good record in food production by increasing the lease terms for aquaculture to 45 years.
2. This bill will encourage the following generation of a farmer with good record to continue with the family values and commitment to aquaculture and by that to help bring about future food security and food safety to the State of Hawai'i, which currently imports 90% of its seafood.
3. This bill will give the professional aquaculturists, who lease the right of first refusal to make sure that their hardship and many years of financial investment in the aquaculture avoid the auction block and lost to a higher bidder, regardless her/his experience in aquaculture.
4. This bill will help encourage professional farmer to invest in new areas of aquaculture and go with the latest technology for growing food for the community in Hawai'i and by that to bring future food security and food safety to the State of Hawai'i, which currently imports 90% of its seafood.

Mahalo,

Dr. Tetsuzan Benny Ron



Peter J. Boucher, P.E.
Civil, Environmental and Aquacultural Engineering

1537 Kalote Place
Hilo, Hawaii 96720
808-981-0827
pboucher@hawaii.rr.com

April 4, 2011

TO: COMMITTEE ON FINANCE
Rep. Marcus R. Oshiro, Chair
Rep. Marilyn B. Lee, Vice Chair

RE: SB 1511, SD1, HD1(HSCR1117) RELATING TO AQUACULTURE
Wednesday, April 6, 2011, 3:00 P.M.
Conference Room 308

This testimony is provided in strong support of the referenced bill as written. I am writing as a private engineering consultant operating on the Big Island of Hawaii specializing in civil, environmental and aquacultural engineering.

The bill would encourage growth and stability in the state's growing aquaculture and aquaponics industries. Specifically, by extending the lease terms and giving existing successful aquaculture farmers the right of first refusal, more potential farmers and investors will be drawn to these environmentally sustainable technologies.

Inclusion of additional supportive activities such as aquaponics further supports long-term sustainability and food security for Hawaii by utilizing aquacultural effluents for secondary crop production.

Thank you for the opportunity to testify in support of this important bill.

Sincerely,

Peter J. Boucher, P.E.

HOUSE OF REPRESENTATIVES
THE TWENTY-SIXTH LEGISLATURE
REGULAR SESSION OF 2011

COMMITTEE ON FINANCE

Rep. Marcus R. Oshiro, Chair
Rep. Marilyn B. Lee, Vice Chair

DATE: Wednesday, April 06, 2011
TIME: 3:00 P.M.
PLACE: Conference Room 308
State Capitol
415 South Beretania Street

Chair Oshiro, Vice Chair Lee, and Members of the Finance Committee:

My name is John Corbin. I was formerly Manager of the State Aquaculture Development Program in the Department of Agriculture and have worked in the development of the aquaculture industry in Hawaii for over 30 years. I strongly support SB 1511 SD 1 HD 1 and strongly recommend passage.

My experience with the application of Section 171-59 HRS is land based and open ocean farmers would benefit from longer lease terms of 65 years for existing and new farmers in good standing. This change would move towards giving aquaculture farmers the same leasing opportunities as currently being given to agriculture farmers. The additional lease time would provide more time to grow the business and provide for more financing options, particularly with federal loans.

In addition, allowing complimentary activities such as aquaponics and other activities that recycle farm effluents can lead to enhanced farm profitability. Moreover, providing this flexibility is consistent with the Governor's desire to encourage clean industries that contribute to economic development, jobs and greater Island food security.

Giving successful aquaculture farmers the opportunity for a right of first refusal to further extend their lease would promote successful farmers and farm families to stay on the site and continue to meaningfully contribute to Hawaii's economy and food self sufficiency.

Finally, while I am less familiar the use of Department of Transportation lands for aquaculture, if these provisions provide aquaculturists greater access to sites, I support it.

In summary, I believe this is a very positive bill that promotes a supportive business environment for aquaculture development, both land-based and ocean-based farms, while not costing the State money in these difficult financial times. It sends the right kind of message to potential farmers and investors that Hawaii wants sustainable commercial aquaculture as part of its economic portfolio. I strongly urge that you to pass this bill. Thank you for the opportunity to testify

John Corbin MS, CFP, AICP
President

Aquaculture Planning and Advocacy LLC
47-215 Iuiu Street
Kaneohe, Hawaii 96744
Phone: 239- 8316
E-mail: jscorbin@aol.com

April 5, 2011

Subject: SB1511

Dear Representative Marcus Oshiro,

I am writing this letter in strong opposition to the SB1511 regarding extending industrial aquaculture leases in Hawaiian waters. First of all, there is not enough research on how this type of aquaculture impacts our native population of aquatic animals. As far as everything I've read and heard about foreign aquaculture projects abroad, it does not leave me with a positive feeling towards this type of farming.

Secondly, I oppose any leasing of Hawaiian waters, which will forbid the indigenous people their right to fish in restricted areas for the purpose of others' commercial gain.

Please do not allow this bill to continue as it opens the door for more legislation, which will push the native people further from utilizing the resources that they depend on not only for feeding their families, but also with perpetuating cultural traditions and practices.

Mahalo Nui,

Kara K. Apiki
PO Box 312
Kaneohe, HI 96744
(808) 721-5943

I oppose SB 1511 to extend leases beyond 35 years because of the following reasons. The National Aquaculture Act of 2005 permits foreign-owned companies to own fish farms in the U.S waters, it is likely that large multinational companies with a tendency toward consolidation will be the owners of these leases. In British Columbia in 1989 there were 50 companies operating 135 salmon farms. In 2003 there were only 12, with five companies owning 80 percent of the remaining viable farms. In Washington State in 2003 one company –Omega Salmon Group(owned by Norwegian giant Pan Fish) controlled all the salmon industry. Industrial fin fish farming generate environmental and social cost that is rarely evaluated before farming begins or expands. Professor Whiteley from University of Washington compared waste from 4 fish farms near Bainbridge Island to that of 830,000 Seattle residents. Any business that has to rely on Federal funding is a poor investment. Example Cates Int. in Hukilau sold once had financial help from NOAA now in chapter 11. Kona Blue 1.8 million financial help from NOAA is not producing at present time sold once. A good investment for the State of Hawaii would be land-based aquaponics. Unfortunately that would take effort and research about a Bill before our Senators voted.

Please do not gamble with Hawaii's most important asset.

Tom Kapp

FINTestimony

From: mailinglist@capitol.hawaii.gov
Sent: Wednesday, April 06, 2011 11:02 AM
To: FINTestimony
Cc: musicmund2@hawaiiantel.net
Subject: Testimony for SB1511 on 4/6/2011 3:00:00 PM

Testimony for FIN 4/6/2011 3:00:00 PM SB1511

Conference room: 308
Testifier position: oppose
Testifier will be present: No
Submitted by: Ray Broggin
Organization: Individual
Address:
Phone:
E-mail: musicmund2@hawaiiantel.net
Submitted on: 4/6/2011

Comments:

This bill is bad because it allows legislature to decide on public land use for private aquaculture, because it makes leases way too long, and because it continues the practice of quiet, non public discussions about "good behavior" regardless of contrary conditions. This "industry" needs better regulation. We don't have enough oversight of their methods and how they may affect the quality of our oceans and their native fish.

FINTestimony

From: mailinglist@capitol.hawaii.gov
Sent: Wednesday, April 06, 2011 10:37 AM
To: FINTestimony
Cc: stanwishnick@earthlink.net
Subject: Testimony for SB1511 on 4/6/2011 3:00:00 PM

Testimony for FIN 4/6/2011 3:00:00 PM SB1511

Conference room: 308
Testifier position: oppose
Testifier will be present: No
Submitted by: Stanley Wishnick
Organization: Individual
Address:
Phone:
E-mail: stanwishnick@earthlink.net
Submitted on: 4/6/2011

Comments:

I am a resident of North Kohala in Hawaii County and I am writing in opposition to SB1511 that would extend leases for all aquaculture operations from 35 to 65 years. This bill should be either rejected or amended to exclude ocean fish farming.

Ocean water is a community resource and should not be leased for private exploitation for an extended period of time unless extensive regulatory oversight is provided and the aquaculture operation is operating under a currently approved environmental impact statement that is consistent with the actual operational plans of the company.

Hawaii Ocean Technology, Inc., an aquaculture company that would benefit from this legislation, has obtained a 247 acre lease of the North Kohala Coast to install a massive fish farm. which at full production, will have 12 OceanSpheres and produce 12 million pounds of ahi. It is noted that Hawaii Ocean Technology's EIS that was approved planned for 3 Ocean- Spheres that would be completely submerged. The 12 OceanSpheres are each 25 feet by 38 feet, float on the surface of the water, are powered by diesel engines, and are lighted. It is noted that the 247 acre lease is adjacent to the Hawaii Whale Sanctuary, making collisions between Whales and OceanSpheres inevitable.

Land based fish farming has been used successfully to farm tilapia in Chile, catfish in the U.S. and branzini in Australia. This type of fish farming can be successful without fear of adverse environmental consequences. Ocean fish farming, according to Food & Water Watch, a reputable environmental organization, has "adversely affected human health, the economies of local fishing communities, wild fish populations, marine mammals, endangered species, birds, and essential fish habitat."

I urge you to reject or amend SB 1511 to exclude ocean fish farming.

Sincerely,

STANLEY WISHNICK
59-270 Ou Place
Maunaloa, Hawaii
Telephone: 808 882 7959
e mail: stanwishnick@earthlink.net

FINTestimony

From: mailinglist@capitol.hawaii.gov
ent: Monday, April 04, 2011 3:49 PM
To: FINTestimony
Cc: marti@kahea.org
Subject: Testimony for SB1511 on 4/6/2011 3:00:00 PM

Testimony for FIN 4/6/2011 3:00:00 PM SB1511

Conference room: 308
Testifier position: oppose
Testifier will be present: No
Submitted by: Marti Townsend
Organization:
Address:
Phone:
E-mail: marti@kahea.org
Submitted on: 4/4/2011

Comments:

Aloha Rep. Oshiro and members of the Finance Committee,

KAHEA and its 7,000 members stand with the members of Hui Malama Loko I'a in strong opposition to SB1511.

We oppose SB1511 because it will encourage the experimental and dangerous mass cultivation of finfish in sea cages. This type of industrial aquaculture has introduced parasites and diseases into the wild fish stocks of the Canadian Coast. Experiments already underway in Hawaii have gone awry: experimental cages have been lost, caged fish have escaped, and coral has been damaged. This bill will only encourage experiments like this to increase.

It is obligation of the state to protect the health of our public trust ocean resources. Yet, there are no regulations governing open ocean aquaculture in Hawaii. Before the state encourages this new industrial experiment in our shared ocean, the state at the very least should establish strong regulations to protect the health of our ocean and our fisheries.

The state should also provide at least equal support for fishpond restoration in Hawaii. Fishponds are not antiquated. They are proven sources of sustainable fish protein for our communities. The state should not encourage industrialization of our oceans while ignoring the proven and sustainable methods of finfish cultivation. HB377 would give preference in the leasing process to any entity seeking to restore a state-owned fishpond.

Support HB377, not SB1511.

Mahalo for accepting our testimony.

FINTestimony

m: mailinglist@capitol.hawaii.gov
Sent: Monday, April 04, 2011 2:40 PM
To: FINTestimony
Cc: haws@aol.com
Subject: Testimony for SB1511 on 4/6/2011 3:00:00 PM

Testimony for FIN 4/6/2011 3:00:00 PM SB1511

Conference room: 308
Testifier position: support
Testifier will be present: No
Submitted by: Maria Haws
Organization: Individual
Address:
Phone:
E-mail: haws@aol.com
Submitted on: 4/4/2011

Comments:

I urge you to support HB1511 so that aquaculture farmers are treated equitably with other agriculture farmers and continue to produce seafood to lessen our dependence on imported food. Gov. Abercrombie has stated that it is a priority for Hawaii to produce more of its own food and aquaculture is simply another form of agriculture that allows us to do so. Enabling longer leases and allowing current aquaculture farmers to have first right of refusal on leases is only fair and will increase production of seafood. Please ignore the national propaganda of Mainland-based organizations that continuously attack aquaculture with spurious and often incorrect allegations. Most aquaculture farms are owned by local farmers, are small operations and use sustainable production methods. These farmers deserve fair and equitable treatment with regard to leases.

FINTestimony

From: mailinglist@capitol.hawaii.gov
Sent: Tuesday, April 05, 2011 8:30 AM
To: FINTestimony
Cc: joefarber@hotmail.com
Subject: Testimony for SB1511 on 4/6/2011 3:00:00 PM

Testimony for FIN 4/6/2011 3:00:00 PM SB1511

Conference room: 308
Testifier position: oppose
Testifier will be present: No
Submitted by: joe farber
Organization: Individual
Address:
Phone:
E-mail: joefarber@hotmail.com
Submitted on: 4/5/2011

Comments:

- Extending ocean leases for experimental finfish aquaculture is dangerous. On March 22, 2011, an open ocean aquaculture experiment lost its two cages in the Alenuihaha Channel. These cages are now loose in the ocean, entangling marine wildlife and possibly damaging coral. Without an apology or adequate government oversight, the owner is preparing to launch another experimental cage next month.

The state should establish regulations for industrial aquaculture first before considering whether to encourage industrial aquaculture operations in our collective ocean.

- The state should provide better support for traditional fishponds. Fishponds are already proven to be successful, sustainable sources of fish for our communities. Hawaii needs fishponds and the state can do a lot to support fishpond restoration -- such as passing the lease preference for fishponds created by HB 377.

thank you,
joe farber
2722 ferdinand ave
honolulu 96822

FINTestimony

From: mailinglist@capitol.hawaii.gov
sent: Tuesday, April 05, 2011 6:40 AM
To: FINTestimony
Cc: tylerandnani@hawaii.rr.com
Subject: Testimony for SB1511 on 4/6/2011 3:00:00 PM

Testimony for FIN 4/6/2011 3:00:00 PM SB1511

Conference room: 308
Testifier position: oppose
Testifier will be present: No
Submitted by: Tyler Paikuli-Campbell
Organization: Individual
Address:
Phone:
E-mail: tylerandnani@hawaii.rr.com
Submitted on: 4/5/2011

Comments:

I oppose SB1511. Extending ocean leases is dangerous and will not help the local communities. Traditional Fishponds need more support from the STATE. I support traditional fishponds. These traditional aquacultural systems have been in place for centuries and need to be used again. We need support from the STATE. My name is Tyler Paikuli-Campbell from Kailua-Kona, 96740. My family and I oppose SB1511. Tyler Paikuli-Campbell, Nani K. Paikuli-Campbell, Kulani M. Paikuli-Campbell, Kawaihua U. Paikuli-Campbell, Aukele K. Paikuli-Campbell

FINTestimony

From: mailinglist@capitol.hawaii.gov
ent: Monday, April 04, 2011 11:42 PM
To: FINTestimony
Cc: Hawaiian_feva@hotmail.com
Subject: Testimony for SB1511 on 4/6/2011 3:00:00 PM

Testimony for FIN 4/6/2011 3:00:00 PM SB1511

Conference room: 308
Testifier position: oppose
Testifier will be present: No
Submitted by: Peleke Flores of Waimea, Kaua'i
Organization: Individual
Address:
Phone:
E-mail: Hawaiian_feva@hotmail.com
Submitted on: 4/4/2011

Comments:

I Peleke Flores of Waimea, Kaua'i opposes SB1511. Please kill the bill. Mahalo!

FINTestimony

From: mailinglist@capitol.hawaii.gov
Sent: Monday, April 04, 2011 11:30 PM
To: FINTestimony
Cc: pinky@lava.net
Subject: Testimony for SB1511 on 4/6/2011 3:00:00 PM

Testimony for FIN 4/6/2011 3:00:00 PM SB1511

Conference room: 308
Testifier position: oppose
Testifier will be present: No
Submitted by: Laura Thompson
Organization: Individual
Address:
Phone:
E-mail: pinky@lava.net
Submitted on: 4/4/2011

Comments:

The advantages of this action are only in the best interest of the lessees -- in the long run the damage to our Hawaii's ocean environment will cost us taxpayers big money.

FINTestimony

From: mailinglist@capitol.hawaii.gov
Sent: Tuesday, April 05, 2011 1:08 PM
To: FINTestimony
Cc: green@coffeeofkona.com
Subject: Testimony for SB1511 on 4/6/2011 3:00:00 PM

Testimony for FIN 4/6/2011 3:00:00 PM SB1511

Conference room: 308
Testifier position: oppose
Testifier will be present: No
Submitted by: Barbara Harris
Organization: Individual
Address:
Phone:
E-mail: green@coffeeofkona.com
Submitted on: 4/5/2011

Comments:

Offshore Fish Farms are a bad idea. Extending their leases is a worse idea. If you will not be around in 65 years, then I recommend you vote NO.

FINTestimony

From: mailinglist@capitol.hawaii.gov
Sent: Tuesday, April 05, 2011 1:06 PM
To: FINTestimony
Cc: jwikum@gmail.com
Subject: Testimony for SB1511 on 4/6/2011 3:00:00 PM

Testimony for FIN 4/6/2011 3:00:00 PM SB1511

Conference room: 308
Testifier position: oppose
Testifier will be present: No
Submitted by: Jacqueline Wikum
Organization: Keoua Honaunau Canoe Club
Address:
Phone:
E-mail: jwikum@gmail.com
Submitted on: 4/5/2011

Comments:

Keoua Honaunau Canoe Club represents 150 paddlers on the Big Island of Hawaii. We stand opposed to Offshore Fish Farms that pollute our water and our horizon.

Please DO NOT extend the fish farms' leases on our beautiful oceans. Offshore aquaculture is experimental technology that our State does not have the resources to oversee. Sixty-five years is a very long time. We have yet to understand how they will impact our environment, and our wild fisheries. Not to mention our tourism dollars with their nets that are visible for miles.

Please vote NO.

FINTestimony

From: mailinglist@capitol.hawaii.gov
ent: Tuesday, April 05, 2011 5:19 PM
To: FINTestimony
Cc: dalesarver@hawaii.rr.com
Subject: Testimony for SB1511 on 4/6/2011 3:00:00 PM

Testimony for FIN 4/6/2011 3:00:00 PM SB1511

Conference room: 308
Testifier position: support
Testifier will be present: No
Submitted by: Dale
Organization: Deep Blue Research
Address:
Phone:
E-mail: dalesarver@hawaii.rr.com
Submitted on: 4/5/2011

Comments:

I support this bill.

Hawaii desperately needs to support its food production industries. The vast majority of our seafood is imported and the local fisheries are in decline. Hawaii has a tradition of aquaculture and new technologies advance that established farming technique. The longer lease period allows access to more loan and funding opportunities. The pioneers in this field should be able to have the right of first refusal on their leases. They took the high risk and developed the new technology. It is not fair to let an outside entity come in and take over the site just because they can offer more money. The original farmer would probably lose everything. This kind of farming is very site-specific and you can not just "move" a farm. The physical plant is designed for that particular site and it is very difficult and extremely expensive to move. There are other sites available and a new farmer should go and develop a new site.

This bill is about lease details. Discussion of this bill in other committees has been hijacked by well-funded lobbying groups and turned into a one-sided tirade against offshore aquaculture. The "information" being proposed is grossly biased and has little to do with the technology being used here in Hawaii. Offshore aquaculture in Hawaii has proven to be ecological friendly new industry that is beneficial to the State and Nation.

FINTestimony

From: mailinglist@capitol.hawaii.gov
Sent: Tuesday, April 05, 2011 8:28 PM
To: FINTestimony
Cc: gfilaban@aol.com
Subject: Testimony for SB1511 on 4/6/2011 3:00:00 PM

Testimony for FIN 4/6/2011 3:00:00 PM SB1511

Conference room: 308
Testifier position: oppose
Testifier will be present: No
Submitted by: Gwen Ilaban
Organization: Individual
Address:
Phone:
E-mail: gfilaban@aol.com
Submitted on: 4/5/2011

Comments:

SB 1511 would extend leases for all aquaculture operations from 35 up to 65 years.

It is wrong, unfair and unacceptable. Furthermore, it is unethical to allow the Department of Transportation to be involved with the disposing of public lands; as it is NOT in their jurisdiction.

This bill will only benefit large foreign corporations and not help family-run aquaculture and family-run aquaponic projects in Hawaii. And, discriminates against the Native Hawaiian fish ponds.

I am asking that this bill be amended to EXCLUDE ocean fish farming or REJECT this bill in its entirety.

Mahalo for your consideration.

FINTestimony

From: Casey Alinan on behalf of webmaster
Sent: Tuesday, April 05, 2011 11:12 AM
To: FINTestimony
Cc: 'hawaiifish@gmail.com'
Subject: FW: Testimony for SB1511 on 4/6/2011 3:00:00 PM

Forwarding email to FINtestimony@capitol.hawaii.gov

webmaster



From: Ronald Weidenbach [mailto:hawaiifish@gmail.com]
Sent: Tuesday, April 05, 2011 10:53 AM
To: Mailing List
Subject: Re: Testimony for SB1511 on 4/6/2011 3:00:00 PM

Important Correction: Testifier WILL be present

On Tue, Apr 5, 2011 at 10:48 AM, <mailinglist@capitol.hawaii.gov> wrote:
Testimony for FIN 4/6/2011 3:00:00 PM SB1511

Conference room: 308
Testifier position: support
Testifier will be present: No
Submitted by: Ronald P. Weidenbach
Organization: Hawaii Aquaculture and Aquaponics Association
Address:
Phone:
E-mail: hawaiifish@gmail.com
Submitted on: 4/5/2011

Comments:

FINTestimony

From: mailinglist@capitol.hawaii.gov
Sent: Tuesday, April 05, 2011 10:25 AM
To: FINTestimony
Cc: cindy@ponokai.org
Subject: Testimony for SB1511 on 4/6/2011 3:00:00 PM
Attachments: HOTI Petition 1st Batch 586.pdf

Testimony for FIN 4/6/2011 3:00:00 PM SB1511

Conference room: 308

Testifier position: oppose

Testifier will be present: No

Submitted by: residents kohala ranch community assn.

Organization: kohala ranch community assn., kohala by the sea, residents of kohala estates, kailapa community assn., south kohala hawaiian civic club

Address:

Phone:

E-mail: cindy@ponokai.org

Submitted on: 4/5/2011

Comments:

We are adamantly opposed to the inclusion of open ocean finfish aquaculture in this bill SB 1511. There is overwhelming evidence that this industry is environmentally harmful, causing water pollution, micro-threats(pathogens) of disease transmission to native fish populations, and certain die off of wild fish stocks. Attached are petitions signed by 586 Big Island residents and taxpayers opposed to commercial open ocean finfish aquaculture operating in Hawaiian waters. It would be premature to increase lease terms when this bill does not deal with the important issues of financing, transfer of leases to other corporations, and terminations in the event of permit violations. The ocean is Hawaii's greatest resource. Please take no action that could harm it and the economic future of Hawaii.

OPEN OCEAN FISH FARMS PETITION

The residents and communities of the Kohala coast are against Commercial Open Ocean Fish Farms and specifically the proposed Hawaii Oceanic Technology, Inc. project for the reasons listed.

1) **THE POTENTIAL FOR SIGNIFICANT AND LONG TERM IRREVERSIBLE CONSEQUENCES** such as interference with and impacts on marine mammals, fish escapes, alteration of marine life migration including concentration of sharks at site. Cumulative impacts could include algae bloom and jellyfish proliferation.

2) **WATER POLLUTION** from fecal waste, introduction of unnatural substances into the marine environment via fish feed, use of antibiotics and chemical treatment of cages.

3) **MICRO-THREATS** (pathogens) of disease transmission to native Hawaiian fish populations.

4) **HARMFUL EFFECTS** on native Hawaiian marine species from escaped farmed fish.

5) **SOCIAL AND ECONOMIC IMPACTS:** Farms could have a negative impact on our local fishermen and tourism. Homeowners must deal with visible blight created by cages and supporting equipment. Tax payer money - including federal and state grants, as well as tax breaks for corporations - would be poorly spent.

At a minimum, due to significant changes in its proposed operating plans, Hawaii Oceanic Technology Inc. should be required to modify its existing permits, hold public hearings and assess potential new environmental impacts in a supplemental environmental impact statement.

Thank you for your support: SOUTH KOHALA HAWAIIAN CIVIC CLUB, KOHALA RANCH COMMUNITY ASSOCIATION, KOHALA BY THE SEA, RESIDENTS OF KOHALA ESTATES, KAILAPA COMMUNITY ASSOCIATION, PONO AQUACULTURE ALLIANCE

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Anthony R. Jones	P.O. Box 796 Kealahou	Kealahou	<i>[Signature]</i>
Michelle L. Lauro	70 box 6747 Kamuela, HI 96743	Kamuela, HI 96743	<i>[Signature]</i>
Kenneth Demaya, Jr.	P.O. Box 6747 Kamuela, HI 96743	Kamuela, HI 96743	<i>[Signature]</i>
Alton M. Murakane	P.O. Box 731 Honokaa, HI	Honokaa, HI	<i>[Signature]</i>
IVAN R. Fernandez	P.O. Box 957 Hahaione, HI	Hahaione, HI	<i>[Signature]</i>

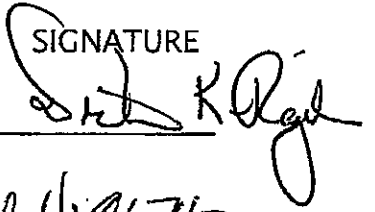
OPEN OCEAN FISH FARMS PETITION

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- 5) SOCIAL AND ECONOMIC IMPACTS: Farms could have a negative impact on our local fishermen and tourism. Homeowners must deal with visible blight created by cages and supporting equipment. Tax payer money - including federal and state grants, as well as tax breaks for corporations - would be poorly spent.

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Thank you for your support: SOUTH KOHALA HAWAIIAN CIVIC CLUB, KOHALA RANCH COMMUNITY ASSOCIATION, KOHALA BY THE SEA, RESIDENTS OF KOHALA ESTATES, KAILAPA COMMUNITY ASSOCIATION, PONO AQUACULTURE ALLIANCE

NAME	ADDRESS	EMAIL ADDRESS	SIGNATURE
Victor	P.O. Box 445		
<u>John Nahakuelua</u>	<u>P.O. Box 44624 Kamada, HI 96743</u>		
<u>Diana Konedio</u>	<u>PO Box 44563</u>	<u>Kaunaloa</u>	<u>Kaunaloa, Hawaii</u>

OPEN OCEAN FISH FARMS PETITION

14

HENRY PHILLIPS PO Box 44954 Honolulu
KAMUELA

JACKSON A. SENY PO BOX 1131
KAMUELA, HI

USA Castano DA P.O. Box 448 Honolulu

REUBEN COSTA RICO P.O. Box 5 Okaia, HI 96714

ROY TOLENTINO P.O. Box 903 KAMUELA HI 96743

DECK TOLENTINO Box 2121 Kameela, HI 96743

CY MIRAMONTES P.O. Box 383048 WAIHELOA HI 96738

Peggy Salentino P.O. Box 2121 Kameela, 96743

Jim Lin P.O. Box 585626
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Ululani Malani P.O. Box 1462, Kameela, HI 96743

G. Malen P.O. Box 1462 Kameela, HI 96743

J. G. Gomer P.O. Box 44425 Kameela HI 96743

Danielle Medeiros 25-3511 Opalipali St., HI 96720

Jill Angélique Medeiros P.O. Box 814 Pepee, HI 96783

OPEN OCEAN FISH FARMS PETITION

The residents and communities of the Kona/ Kohala coast and Beyond are against Commercial Open Ocean Fish Farms and specifically the proposed Hawaii Oceanic Technology, Inc. project for the reasons listed.

1) THE POTENTIAL FOR SIGNIFICANT AND LONG TERM IRREVERSIBLE CONSEQUENCES such as interference with and impacts on marine mammals, fish escapes, alteration of marine life migration including concentration of sharks at site. Cumulative impacts could include algae bloom and jellyfish proliferation.

2) WATER POLLUTION from fecal waste, introduction of unnatural substances into the marine environment via fish feed, use of antibiotics and chemical treatment of cages.

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5) SOCIAL AND ECONOMIC IMPACTS: Farms could have a negative impact on our local fishermen and tourism. Homeowners must deal with visible blight created by cages and supporting equipment. Tax payer money - including federal and state grants, as well as tax breaks for corporations - would be poorly spent.

At a minimum, due to significant changes in its proposed operating plans, Hawaii Oceanic Technology Inc. should be required to modify its existing permits, hold public hearings and assess potential new environmental impacts in a supplemental environmental impact statement.

Thank you for your support: The residents and tax payers of the State of Hawaii

NAME ADDRESS EMAIL ADDRESS SIGNATURE

Bobby Hoyt P.O. 1085 KAPAHA, HI BobbyHoyt@aol.com B. Hoyt

Colleen Kahlke P.O. Box 107 KAPAHA, HI KAH626@AOL.COM Colleen Kahlke

3) S. HAYES P.O. BOX 1563 KAPAHA S. Hayes

OPEN OCEAN FISH FARMS PETITION

13

Joe Malanan Jr. P.O. Box 921 Kapaau, 96755
MATEOS MALANAS JR.

Joe Kumukoa P.O. Box 124 Kapaau 96755
Joseph Kumukoa

Hatsue Hayashi P.O. Box 65 HAWAII, HI 96719
Hatsue Hayashi

NAME ADDRESS EMAIL ADDRESS
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Paul Antonio P. P.O. Box 1013 Kapaau 96755

George Pule P.O. Box 91 Kapaau HI 96755
George Pule

Lawrence Paseo Box 453 Kapaau HI 96755
Lawrence Paseo

HAR TALLMAN P.O. 411 HAWAII, HI. 96719
Har Tallman

Jeanine Mattoz PO Box 732 Kapaau HI. 96755
Jeanine Mattoz

Annette Perez P.O. Box 892 Kamuela, HI 96743
Annette Perez

Shadlan E. Lawai P.O. Box 429 Kapaau HI 96755

Wanda Jussels PO Box 277 HAWAII, HI

Halekeli Pule PO Box 429 " "

Memo Shortell " " 245 " "

OPEN OCEAN FISH FARMS PETITION

San Larone P.O. Box 267 Kapaau, HI 96755

AGNES G. KAHALO BOX 1073 KAPAAU, HI. 96755
Agnes G. Kahalo

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Ralph Galan P.O. BOX 145 KAPAAU HI 96755

Nana Hill " 1922 " " "

JOE CARVALHO P.O. BOX 776, KAPAAU 96755
Joe

Safah Boylan Box 247 Kapaau, HI. 96755

Attendant Kaji P.O. Box 171 Hawaii, HI 96719

Gilbert Byrnes Box 343 Kapaau ~~HI~~^{DC}

Judy Rogers General Delivery, Hawaii, HI 96719

MULTAN K POB 471, Kapa'au, HI 96755

John K P.O.B 471, Kapa'au, HI 96755

Patricia McKeague POB 1261 / Kamehala HI,

Joseph Kalaau-Catlett P.O. Box 353 Kapaau, HI 96755

Justina P. Egz P.O. Box 2194, Kamehala, HI 96743

Theresa E. Angulo P.O. Box 2194 Kamehala, HI 96743

OPEN OCEAN FISH FARMS PETITION

JR. DOMINGO P.O. BOX -118 K.K. HI 96745 n/a

~~XXXXXXXXXX~~
Nani'olii Kameheli POB 44543 Kameheli
Maui Hawaii

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SIGNATURE

[Signature] #99 HONOULI ST.

[Signature] P.O. BOX 164 HAWAII HI 96719

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[Signature] 100 Puako Beach Drive

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Arron Mura
[Signature] Kameheli HI

808 882-7752

OPEN OCEAN FISH FARMS PETITION

The residents and communities of the Kohala coast are against Commercial Open Ocean Fish Farms and specifically the proposed Hawaii Oceanic Technology, Inc. project for the reasons listed.

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Barbara Sterne	59-219 Kahalele Dr. P.O. Box 44571 Kamuela HI 96743	besterne@att.net	Barbara C. Sterne
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13

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59-191 Laninu Dr Bertrand Block		Bertrand Block
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59-191 Laninu Dr Patricia Block		Patricia Block
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59-189 Laninu Dr Bertina Block-Franzo		Bertina Block-Franzo
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59-189 Laninu Dr John Franzo		John Franzo
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59-205 Laninu Dr Gary Demaree		Gary Demaree
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59-205 Laninu Dr Nadine Demaree		Nadine Demaree
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65-1279 Kuaithae Rd Sharon Cislid		Sharon Cislid
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59-119 Haha Lua Pl James R Reyes		James R Reyes
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59-119 Haha Lua Pl Debra Bowman		Debra Bowman
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651232 Leche Pl Kurt Klumt		Kurt Klumt
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P.O. Box 4950 Mittie Edwards		Mittie Edwards
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OPEN OCEAN FISH FARMS PETITION

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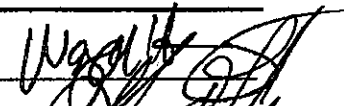
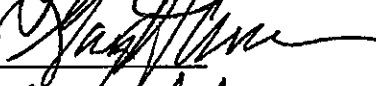

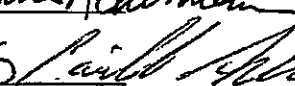
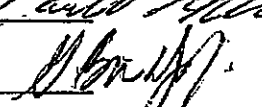

3) MICRO-THREATS (pathogens) of disease transmission to native Hawaiian fish populations.

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GARY ACKERMAN	PO Box 961 KAPA AU HI 96755		
YESAN ACKERMAN	PO B 961 KAPA AU HI 96755		
Camille Dugan	P.O. Box 1205 Kapaau HI 96755		
Brian Dugan	PO Box 1205 Kapaau HI 96755		
Ronnie Skaven	PO. Box 1017 Kapaau HI 96755		

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OPEN OCEAN FISH FARMS PETITION

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 Denny Ferrara P.O. Box 44403 alternative@oldnet.com Denny Ferrara
 Aeronum P.O. Box 44521 ABLD
 Britney Jones PO Box 1639 Kapaa HI Britney Jones
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 Tammy Touchet PO Box 44401 Kamuela Tammy Touchet
 Lisa Winborne PO Box 43755 Kamuela Lisa Winborne
 Emily Cohen PO Box 1968 Kamuela HI 96743 Emily Cohen
 SILVIA CANTONI PO Box 1968 Kamuela HI 96743 Silvia Cantoni
 Valerie Camio P.O. Box 441 Kamuela HI 96743 Valerie Camio
 Breanne Gumbo P.O. Box 441 Kamuela HI 96743 Breanne Gumbo
 Ross Pagat P.O. Box 675 Kapaa, HI 96755 Ross Pagat
 Tom Kapp PO Box 6528 Kamuela Tom Kapp
 MARCUS WISHNICK 59-276 DU PI Kamuela HI 96743 Marcus Wishnick
 Stanley Wishnick 59-276 DU PI Kamuela HI 96743 Stanley Wishnick
 PAUL Schleifer 59-327 OL RD KAMUELA, HI 96743 Paul Schleifer
 Jacqueline M Miller 59-327 Olomana Rd Kamuela, HI 96743 Jacqueline Miller
 Jacqueline Hawtree 59-079 Olomana Rd. Kamuela, Hawaii 96743 Jacqueline Hawtree
 ROGER HAWTREE 59-079 Olomana Rd. Kamuela HI 96743 Roger Hawtree

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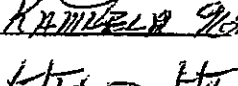
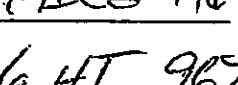
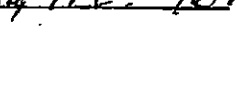
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6

OPEN OCEAN FISH FARMS PETITION

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Solatricia	P.O. Box 55 Paauilo	HI 96776	Solatricia

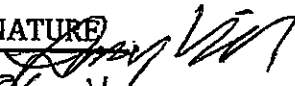
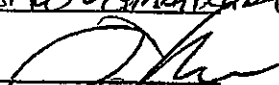
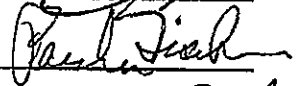

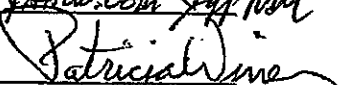
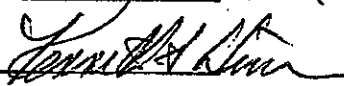
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OPEN OCEAN FISH FARMS PETITION

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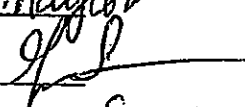
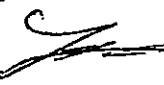
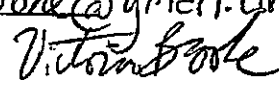
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OPEN OCEAN FISH FARMS PETITION

6

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Robert ~~Living~~

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Blank lines for additional entries.

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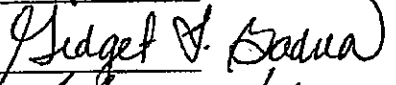
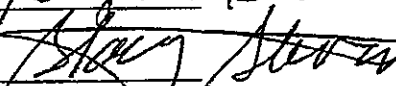
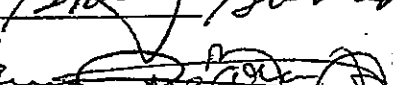
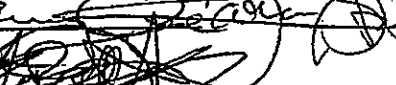
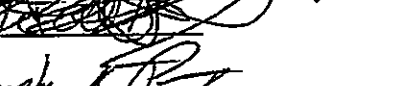
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Kennylene Badua-Stevens	"	"	
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Jordan Peters	"	"	

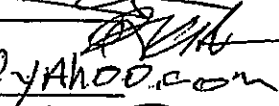
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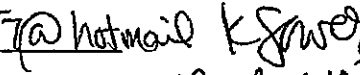
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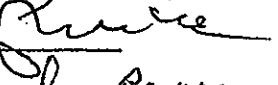
Phoenix Williams 84-5146 KONA-O-KONA 

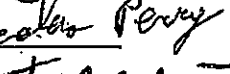
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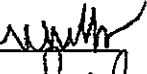
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Nicolas Perry 1294 KAPAU HI Nicolas Perry 

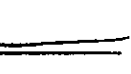
Kenneth Helbert 96719 HAWAII Kenneth Helbert 

DAVID AFIRE DAVIS HAWAII HI 96719 DAVID AFIRE DAVIS 

NELSON CANNON HAWAII HI NELSON CANNON 

Chyler Imai Kapaau, HI Chyler Imai 

Clayton Yamamoto Kapaau, HI Clayton Yamamoto 

Rob Forre KAPAUAU HI Rob Forre 

Kalin Reed Kapaau HI Kalin Reed

Stanky Kimura Kapaau HI Stanky Kimura

OPEN OCEAN FISH FARMS PETITION

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Joey Gamias	Po Box #2905 Kaimuki HI 96743		<i>[Signature]</i>
Ethan Wood	Po Box #7841 Kaimuki HI		<i>[Signature]</i>
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(6)

OPEN OCEAN FISH FARMS PETITION

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Kelly Asai	Kapaa, HI 96755		Kelly Asai
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Alisa Gumb	KAPAAU HI 96755		Alisa Gumb
Daniel Corrales	Kapaa HI 96755		Daniel Corrales
JANEZ PEREZ	" "		Janez Perez
STEVEN MURAI	KAPAAU HI 96755		Steven Murai

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Thank you for your support: The residents and tax payers of the State of Hawaii

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OPEN OCEAN FISH FARMS PETITION

13

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OPEN OCEAN FISH FARMS PETITION

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EVELYN MCCARTHY

OPEN OCEAN FISH FARMS PETITION

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Jerry K. Kama	68-3367 Kekumu Pl. A-14	Waikoloa	Jerry Kama
Sierra K Kama	68-3367 Kekumu Pl. A-14	Waikoloa	Sierra K Kama
Edward Calimpong	68-3367 Kekumu Pl. D-11	Waikoloa	Edward Calimpong
Stacey K. Calimpong	"	"	"
SHELBY K. Kekuku	68-3367 Kekumu Pl. A-13	Waikoloa	Shelby K. Kekuku

u

OPEN OCEAN FISH FARMS PETITION

NAME ADDRESS EMAIL ADDRESS SIGNATURE

3

Nate Ah Loo % 68-3367 Kekumu Pl. Nate Ah Loo

Nicole Sumida " " Nicole Sumida

Kekoa Sumalpong " " Kekoa Sumalpong

Blank lined area for additional signatures and names.

OPEN OCEAN FISH FARMS PETITION

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JOHN BROUSSARD " " " " brouspome@hawaii.rr.com John Broussard

✓

OPEN OCEAN FISH FARMS PETITION

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OPEN OCEAN FISH FARMS PETITION

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15

OPEN OCEAN FISH FARMS PETITION

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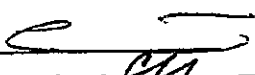
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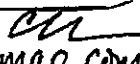
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G. Johnson	P.O. Box 458	Maunaloa, HI 96716	
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OPEN OCEAN FISH FARMS PETITION

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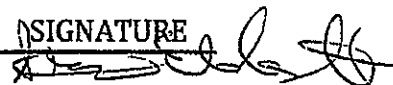



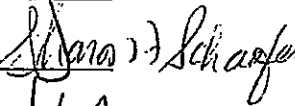
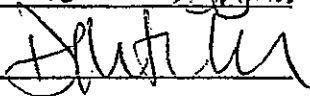
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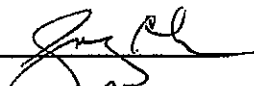
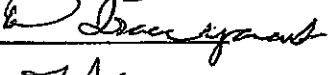
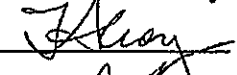
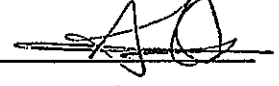

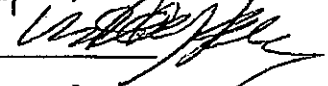

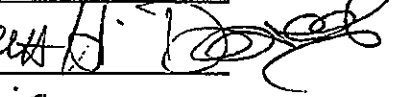
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OPEN OCEAN FISH FARMS PETITION

2

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Christi Bell 59-224 Alakahua Drive Christi Bell

Bryce Teraoka PO Box 44516 Kamuela, 96743 Bryce Teraoka

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BOB RUSSELL 59-1574 KOHALA RANCH RD 96743 Bob Russell

Blank lines for additional entries.

OPEN OCEAN FISH FARMS PETITION

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✓ Faye Ruis POB 389 96776 F/BA/L

Sebastian Schmitz Sebastian.Schmitz@y... Schmitz

Blank lined area for additional entries.

OPEN OCEAN FISH FARMS PETITION

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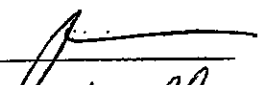

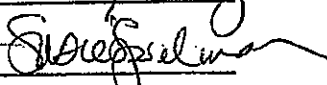
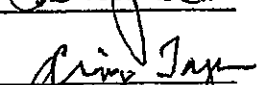
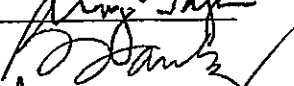
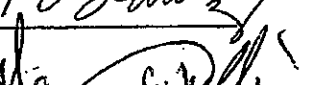
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Paula Hurler	P.O. Box 1538 Kamuela HI 96743		Paula Hurler
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ELIZABETH SONNE	59-639 PILIKOKE PL KAMUELA, HI 96743		<i>Elizabeth Sonne</i>
DAVID SONNE	59-639 PILIKOKE PL KAMUELA, HI 96743		<i>David Sonne</i>

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CHAD G. WELSH	PO Box 1217 Hanalei, HI 96727		<i>Chad G. Welsh</i>

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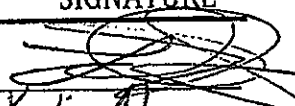
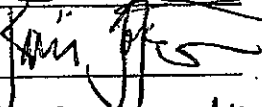
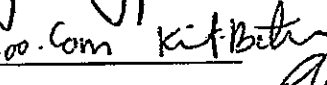

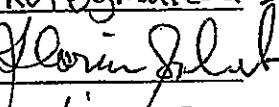
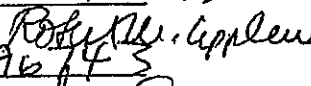


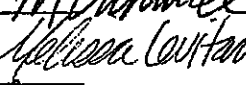
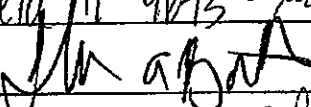
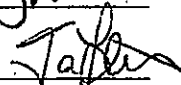
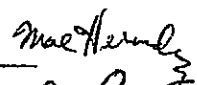

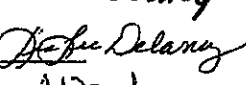
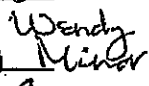
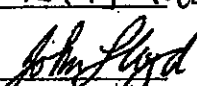
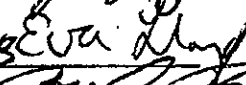
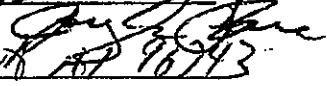
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OPEN OCEAN FISH FARMS PETITION

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APLTA5	59-493 Ka'ala Rd		<i>APLTA5</i>

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ALVIN WAKAYAMA	64-1015 McArthur Ave Kamele HI 96743		<i>[Signature]</i>

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- 1) THE POTENTIAL FOR SIGNIFICANT AND LONG TERM IRREVERSIBLE CONSEQUENCES such as interference with and impacts on marine mammals, fish escapes, alteration of marine life migration including concentration of sharks at site. Cumulative impacts could include algae bloom and jellyfish proliferation.
- 2) WATER POLLUTION from fecal waste, introduction of unnatural substances into the marine environment via fish feed, use of antibiotics and chemical treatment of cages.
- 3) MICRO-THREATS (pathogens) of disease transmission to native Hawaiian fish populations.
- 4) HARMFUL EFFECTS on native Hawaiian marine species from escaped farmed fish.
- 5) SOCIAL AND ECONOMIC IMPACTS: Farms could have a negative impact on our local fishermen and tourism. Homeowners must deal with visible blight created by cages and supporting equipment. Tax payer money - including federal and state grants, as well as tax breaks for corporations - would be poorly spent.

At a minimum, due to significant changes in its proposed operating plans, Hawaii Oceanic Technology Inc. should be required to modify its existing permits, hold public hearings and assess potential new environmental impacts in a supplemental environmental impact statement.

Thank you for your support: SOUTH KOHALA HAWAIIAN CIVIC CLUB, KOHALA RANCH COMMUNITY ASSOCIATION, KOHALA BY THE SEA, RESIDENTS OF KOHALA ESTATES, KAILAPA COMMUNITY ASSOCIATION, PONO AQUACULTURE ALLIANCE

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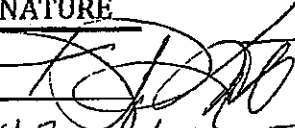

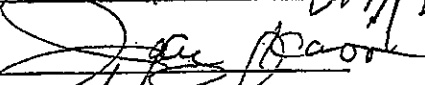
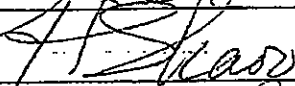
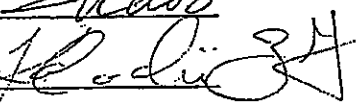
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