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HAWAII

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KAHOOLAWE ISLAND RESERVE COMMISSION
LAND
STATE PARKS

STATE OF HAWAII
DEPARTMENT OF LAND AND NATURAL RESOURCES

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Testimony of
SUZANNE D. CASE
Chairperson

Before the House Committee on
FINANCE

Thursday, February 25, 2016
3:00 PM
State Capitol, Conference Room 308

In consideration of
HOUSE BILL 2020, HOUSE DRAFT 1
RELATING TO THE CAUSES OF DECLINE IN LIMU AND REEF FISH

House Bill 2020, House Draft 1, proposes to appropriate general funds for the Department of Land and Natural Resources (Department) to conduct and contract for studies to identify the causes of decline in limu and reef fish along the Ewa coast. **The Department supports this measure provided that this appropriation does not adversely impact appropriations for other priorities in the Executive Supplemental Budget request.**

As outlined in its report to the Legislature, submitted in November 2015 in response to House Concurrent Resolution 119, Senate Draft 1, the Department believes that a combination of factors may be responsible for the decline in limu and reef fish along the Ewa coast. These potential factors include overharvesting, the decrease in groundwater recharge due to the closure of Oahu Sugar Company, the change in land use along the Ewa plain, and a prolonged drought which has led to a reduction in surface and ground water flows and less nutrients going into the ocean. Further research will be helpful in determining what factors have the greatest impact to the marine resources along the Ewa coast.

The Department wishes to acknowledge that we do not have water chemistry or other historical data to explain why limu and reef fish were more abundant in the past. Such baseline data is necessary to compare past and current conditions. However, research supported by this measure will assist in analyzing current conditions in which may have an impact on these marine resources.

Thank you for your consideration of this testimony.

Report to the Twenty-Eighth Legislature
Regular Session of 2016

RECOMMENDATIONS TO STOP THE DECLINE AND REPLENISH THE SUPPLY OF LIMU AND REEF FISH IN CERTAIN AREAS OF THE EWA COAST OF OAHU

Prepared by
Department of Land and Natural Resources
State of Hawaii

In response to
House Concurrent Resolution 119, Senate Draft 1
Regular Session of 2015

November 2015

RECOMMENDATIONS TO STOP THE DECLINE AND REPLENISH THE SUPPLY OF LIMU AND REEF FISH IN CERTAIN AREAS OF THE EWA COAST OF OAHU

PURPOSE

House Concurrent Resolution (HCR) 119, Senate Draft (SD) 1, adopted during the Regular Session of 2015, requested the Department of Land and Natural Resources (Department) to provide a report of its recommendations on what actions are needed to stop the decline in and replenish the supply of limu and reef fish from the easternmost point of Pu'uloa to Barber's Point, Oahu.

BACKGROUND

The Department notes that the Ewa area used to be the most productive limu grounds in the State but no longer produces limu in such amounts. The Department suspects that a reduction in the high productivity of the grounds may have been due to a loss of nutrients.

Given the limited data, it would be very difficult to scientifically prove why limu no longer grows in such abundance. The Department would have had to determine the causes for why limu was so abundant when it was abundant under past conditions, then compare those past conditions to current conditions to quantify the differences and understand the problem better. Because the Department does not have past baseline ocean nutrient information in the area, the Department had nothing to which the Department can compare current conditions.

What was causing the decline in limu and reef fish in certain areas of the Ewa coast of Oahu may have been due to several factors:

- Changes in land use along the Ewa coast with the cessation of intensive agriculture by Oahu Sugar being replaced by urban development;
- Land use changes would also change the amount and types of nutrients in the surface and groundwater runoff in the Ewa coastal area;
- Re-routing and re-alignment of outfall from wastewater treatment plants (WWTP), including the Honouliuli WWTP wastewater being re-routed to Pearl Harbor and the Pearl Harbor WWTP wastewater being re-aligned into deeper waters of the coast; and
- Prolonged drought has likely contributed to the reduction in surface and ground water flow to the ocean.
- Invasive species competition for nutrients and habitat.
- Disease impacting native species.
- Continued harvesting at rates no longer sustainable.

RECOMMENDATIONS

Without the availability of baseline data to compare the impacts of land use changes and nutrient changes, it would be difficult to determine the causes of decline in limu and reef fish in the Ewa

coast areas. However, studies can be proposed to look at other possible causes of the decline in limu and reef fish in the Ewa area.

Objectives and Estimated Time Frame:

- Contract a study (multi-year (3 years)) to survey, inventory, and monitor the macro-algae community along the Ewa coast line. Study the nutrient requirements for the desired native macro-algae species and look at any invasive algae species (*Avranvilla amadelphia*) which are present that may out compete native algal species for nutrients or space. ($600k total budget).

- Research, review and analyze previous hydrological studies in the Ewa coastline area to determine what is already known and if additional hydrological studies are needed to identify causes for the decline of limu and reef fish. (1 year, $100k total budget).
  The study should include, but not be limited to:
  - Determine if groundwater flows have changed;
  - Determine if there was a nutrient change;
  - Determine if the groundwater and nutrient levels are connected; and
  - Determine if nutrient levels are the reason that limu and reef fish have declined.

- Conduct a study to review and analyze the decline in commercial limu and reef fish landings in the Ewa area. (1 year).

From: mailinglist@capitol.hawaii.gov
Sent: Tuesday, February 23, 2016 11:08 AM
To: FINTestimony
Cc: mkhan@hawaiiantel.net
Subject: Submitted testimony for HB2020 on Feb 25, 2016 15:00PM

HB2020
Submitted on: 2/23/2016
Testimony for FIN on Feb 25, 2016 15:00PM in Conference Room 308

Submitted By	Organization	Testifier Position	Present at Hearing
Leimomi Khan	Kalihi Palama HCC	Comments Only	No

Comments: The Kalihi Palama Hawaiian Civic Club continues to support this measure based on our testimony in support given at the Ocean, Marine Resources, and Hawaiian Affairs hearing that was held on Wednesday, February 17, 9:00 a.m., room 325.

Please note that testimony submitted less than 24 hours prior to the hearing, improperly identified, or directed to the incorrect office, may not be posted online or distributed to the committee prior to the convening of the public hearing.

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Testimony Before The
House Committee on Finance
IN SUPPORT OF HB 2020
Thursday, February 25, 2016, 3:00 pm, Room 308

Aloha Chair Luke, Vice Chair Nishimoto and Committee Members:

My name is Wally Ito. I am the Coordinator of The Ewa Limu Project and this is our testimony in support of HB 2020 with comments.

Ewa Limu Project is a small volunteer organization dedicated to the advocacy of limu being important to the nearshore marine environment as well as important to the native Hawaiian culture. Limu was once a significant part of the native Hawaiian diet providing much of the nutrients necessary for a strong and healthy body. Limu was used for medicine as well as being used in many cultural and religious practices. Ewa Limu Project is carrying on the legacy of recently departed Uncle Henry Chang Wo Jr. We continue his legacy by conducting workshops to pass on knowledge obtained from him and other kupuna as well as knowledge gained from scientific research.

Ewa Limu Project supports this bill because Uncle Henry and other limu experts taught us that one of the main reasons for the loss of limu is due to the loss of freshwater, freshwater in the form of groundwater as well as surface stream flow. If this bill passes we are confident that the studies will confirm what people have known for many generations. Knowing this information will enable us to determine strategies to restore limu abundance. Because limu is the base of the marine food chain, restoring limu abundance will restore the nearshore fish stocks.

Mahalo for recognizing limu's importance and mahalo for allowing me to testify.

Aloha,

Wally Ito
Coordinator, Ewa Limu Project

KUA'ĀINA ULU 'AUAMO

Testimony Before The
House Committee on Finance
IN SUPPORT OF HB 2020
Thursday, February 25, 2016, 3:00 pm, Room 308

Aloha Chair Luke, Vice Chair Nishimoto and Committee Members:

My name is Kevin Chang, I am the Executive Director of Kua'āina Ulu 'Auamo (or KUA) and this is our testimony in support of HB 2020 with comments.

KUA works to empower communities to improve their quality of life through caring for their environmental heritage together to better Hawai'i and achieve 'āina momona— an abundant, productive ecological system that supports community well-being. We employ a community-driven approach that currently supports three statewide networks: more than 31 mālama 'āina community groups collectively referred to as E Alu Pū (moving forward together), 38 fishpond projects and practitioners called the Hui Mālama Loko I'a, and a new and growing group of limu practitioners and kupuna called the Limu Hui.

The communities and individuals we work with recognize the importance of limu as the foundation of the nearshore marine environment's food chain and that the decrease in our shoreline fish stocks are directly related to the decline of limu.

KUA supports this bill because it proposes to fund studies that will look into what may be the root cause of limu decline. Uncle Henry Chang Wo Jr., a recognized loea limu (limu expert) grew up in Ewa Beach and personally witnessed the decline of limu there. He even had a place legally designated for traditional gathering.

Uncle Henry taught us that the loss of limu is a direct result of the loss of groundwater that once flowed abundantly along the shoreline. As the flow of groundwater decreased, limu abundance decreased. Unfortunately in 2015 Uncle Henry passed away. He left a legacy which includes the Limu Hui, his protected area out in Ewa and the struggle to bring limu back to Ewa the way it once was. KUA is working to perpetuate this legacy. We maintain that the proposed studies will confirm what Uncle Henry and other kupuna have known for many generations, no groundwater no limu; no limu no fish.

If the Legislature passes HB 2020 KUA urges the DLNR to conduct or contract new and independent studies under this proposal and not rely on previous studies produced by development interests.

I apologize for not being with you in person today as I have a prior commitment. Mahalo for your service to our community and this opportunity to testify.

Aloha 'Āina Momona.

Pamela Lota Fujii
520 Kuli'ou'ou Road
Honolulu, Hawaii 96821
Phone: (808) 956-2577

Testimony Before The
House Committee on Finane
IN SUPPORT OF HB 2020
Thursday February 25, 1016, 3:00pm, Room 308

My name is Pamela Lota Fujii. I am a member of the Ewa Limu Project and this is my testimony in strong support of HB 2020.

We are a small volunteer organization dedicated to the advocacy of limu being important to the nearshore marine environment as well as important to the native Hawaiian culture. We continue to carrying on the legacy of recently departed Uncle Henry Chang Wo Jr. by conducting workshops to pass on knowledge obtained from him and other kupuna as well as knowledge gained from scientific research.

The Ewa Limu Project is part of a network of communities collectively referred to E Alu Pū (moving forward together) that is supported by Kua'āina Ulu 'Auamo (or KUA). KUA works to empower communities to improve their quality of life through caring for their environmental heritage together to better Hawai'i and achieve 'āina momona— an abundant, productive ecological system that supports community well-being.

Mahalo for recognizing limu's importance and for the opportunity to testify..

Pamela Lota Fujii