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HISTORIC PRESERVATION
KAHOOLAWE ISLAND RESERVE COMMISSION
LAND
STATE PARKS

Testimony of
DAWN N.S. CHANG
Chairperson

Before the Senate Committee on
AGRICULTURE AND ENVIRONMENT

Monday, March 25, 2024
1:01 PM
Conference Room 224 & Videoconference, State Capitol

In consideration of
SENATE CONCURRENT RESOLUTION 67 / SENATE RESOLUTION 55
URGING THE LEGISLATURE TO PRESERVE, PROTECT, AND RESTORE LIMU KALA

Senate Concurrent Resolution 67 / Senate Resolution 55 propose to preserve, protect, and restore limu kala to the full extent of the Legislature's ability. **The Department of Land and Natural Resources (Department) supports these measures.**

In 2023, the State Legislature passed House Bill 819 (Act 230) which designated limu kala as the official limu of the State of Hawai'i. The Department supported the Legislature's efforts for that designation, and the Department continues to support further efforts to preserve, protect, and restore limu kala.

These measures acknowledge and promote the critical role that limu plays in our natural environment and in sustaining the people of Hawai'i. Limu kala has numerous uses and significant cultural importance. The Department realizes the decline of desirable limu species, including limu kala, throughout the State. The presence of native limu is an indicator of a healthy marine ecosystem. Many species of limu, including limu kala, need a brackish environment and therefore grow in abundance where there is mauka-makai water connectivity of kahawai (streams) or punawai (springs) to muliwai (river mouths or estuaries) to kai (ocean). Therefore, preserving, protecting, and restoring limu kala, a limu that grows where fresh and ocean water mix, honors the interdependence and connectivity of Hawai'i's environment.

Mahalo for the opportunity to provide testimony in support of these measures.

SCR-67
Submitted on: 3/22/2024 11:02:37 AM
Testimony for AEN on 3/25/2024 1:01:00 PM

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

Comments:

Aloha,

Yes to; URGING THE LEGISLATURE TO PRESERVE, PROTECT,
AND RESTORE LIMU KALA.

Aloha,

Mahalo for the opportunity to provide testimony on SCR67 and SR55, URGING THE LEGISLATURE TO PRESERVE, PROTECT, AND RESTORE LIMU KALA. I wish to recommend the resolution be amended to call on the University of Hawaii to provide recommendations on what would be needed to increase the growth of limu.

As is, this is a shallow resolution. The real issue is the decline in limu. DLNR submitted a report to the legislature in 2016 to stop the decline and replenish the supply of limu and reef fish in certain areas of the Ewa Coast of O'ahu, a copy of which is attached. Their report was disheartening because they said that data was limited, thus it would be very difficult to scientifically prove why limu no longer grows in such abundance. Hence, I would suggest that instead of focusing on the reasons for decline, we focus on what actions would be needed to increase the growth of limu. Hence, recommend this resolution be amended to call on the UH to provide recommendations on what would be needed to increase the growth of limu, to include best practices that have resulted in increased growth of limu.

Such organizations such as the Sierra Club, Aloha 'Aina Momona, Malama Pupukea-Waimea, and OHA, may be able to offer some recommendations as they are knowledgeable of this issue . They and others gave testimony in support of HB 819 HD2 SD1 that was enacted into law by Act 230, Designates limu kala (Sargassum echinocarpum) as the official Hawai'i state limu.

Respectfully submitted,
Leimomi Khan

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).