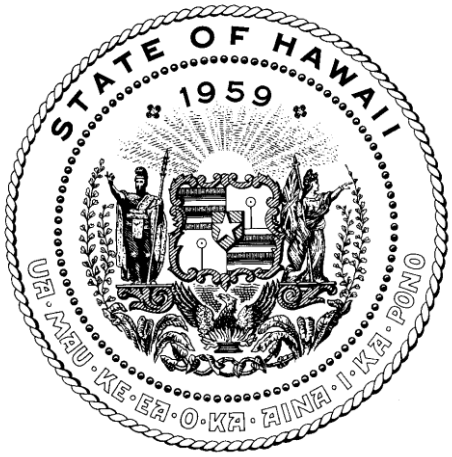
REPORT TO THE TWENTY-FIFTH LEGISLATURE
STATE OF HAWAII
2010 REGULAR SESSION

# IMPLEMENTATION OF CHAPTER 190D, HAWAII REVISED STATUTES OCEAN AND SUBMERGED LANDS LEASING

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DEPARTMENT OF AGRICULTURE
AND
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IN RESPONSE TO SECTION 12 OF ACT 176, SESSION LAWS OF HAWAII 1999

July 2010

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## 1.0 Introduction

Act 176, Session Laws of Hawaii 1999, went into effect on July 1, 1999, allowing greater use of Hawaii's ocean resources for research and commercial development of open ocean aquaculture. In addition, the law requires the Department of Land and Natural Resources (DLNR) in cooperation with the Department of Agriculture (DOA), to submit a report to the Legislature prior to each regular legislative session. This report, the eleventh in the series, highlights related national activities and addresses the progress in implementing ocean leasing for open ocean aquaculture during 2009.

## 2.0 The National Scene

Activity at the Federal level has reflected that of the global economy limping along with sudden jumps of activity. Most recently, the National Ocean and Atmospheric Administration (NOAA) announced on September 3, 2009 that it was developing a national policy for sustainable marine aquaculture after noting that the Gulf of Mexico Fishery Management Council had approved offshore aquaculture to proceed in the Northern Gulf of Mexico under the Magnuson-Stevens Act with no action on the part of the Secretary of Commerce.

On September 9, 2009, the House Committee on Natural Resources, Subcommittee on Insular Affairs, Oceans and Wildlife held a hearing on offshore aquaculture. The hearing was chaired by Delegate Madelaine Bordallo of Guam. The Acting Assistant Administrator of the National Marine Fishery Service, NOAA, spoke on how the Gulf of Mexico Fishery Management Council decision passed into law. The supportive voice speaking for ocean aquaculture was Neal Sims of Kona Blue Water Farm.

The Pew Environment Group (Washington, D.C.) and other non-government organizations decryed the potential environmental threats to the marine ecosystem from untreated effluent waste discharges from fish farms.

In September 2009, the National Academy of Science published a new scientific paper, “Feeding Aquaculture in an Era of Finite Resources.” The paper explored the usage of fishmeal and fish oil in aquaculture feeds and described the progress made in the use of alternative aquaculture feed components. The major finding of the study was that it takes about 5 pounds of wild fish as the source of fishmeal and fish oil to grow one pound of salmon. The position taken by industrial producers and processors of fishmeal and fish oil and other researchers is that less than one pound of wild fish is required for the production of two pounds of aquacultured fish. The reality is that such observations are species specific and dependent upon the culture method and situation.

## 3.0 Hawaii Activities

### 3.1 Research Funding

The Marine Research Initiative supported by NOAA, Department of Commerce has been limited to $1.3M for the entire United States (U.S.) research community. Not surprisingly, research progress has been limited.

The previously reported Hawaii Offshore Aquaculture Project (2007) involving the University of Hawaii and Oceanic Institute (a two year study of the benthos impacts beneath the sea cages of Hukilau Foods, Inc. off Ewa Beach) is nearing completion and is in the final stage of data analyses and report writing. Biologic and environmental data were collected as part of the study. Preliminary findings show that the benthic habitat beneath the sea cages is recovering.

In 2008, DOA awarded research funds ($49,916) to Dr. Spencer Malecha (University of Hawaii – College of Tropical Agriculture and Human Resources) for a project exploring the concept of culturing scavengers (i.e., lobsters or shrimp) that may feed on the organics drifting down from open ocean fish cages. Dr. Malecha has been able to spawn and maintain lobster larvae in the laboratory. Settlement to the juvenile stages take a long time before it occurs. Research results are pending.

Currently, there is ongoing establishment of a tuna hatchery research program by Hawaii Oceanic Technology, Inc. and the Pacific Aquaculture and Coastal Resources Center (PACRC), University of Hawaii at Hilo, lead by Dr. Kevin Hopkins. PACRC has completed retrofitting two outdoor oxidation round tanks to house broodstocks captured by fishermen, a hatchery area and sufficient larval rearing space for experimental work. They have also have assembled a large outdoor mass algal culture facility, which serves as a resource for their mollusk maturation and hatchery research.

Dr. Clyde Tamaru, Sea Grant College Program Aquaculture Extension, and the Hawaii Institute of Marine Biology, collaborated and were awarded a research grant from NOAA, U.S. Department of Commerce, and the Center for Tropical and Subtropical Aquaculture (total $450,000) for the culture of the pink snapper opakapaka. The research is finding that at the transition larval stages for mass culture beyond Day 14, mortalities are very high owing to the fry not eating rotifers. Early copepod life stages are now undergoing trial as a live food for these young opakapaka fry.

### 3.2 Commercial Development Progress

Currently, there are two farms which have successfully met all requirements and are able to raise fish within their sea cages. One of the two farms, Kona Blue Water Farm, has decided to move its production to the Gulf of California, Mexico.

The other farm, Hukilau Foods, Inc. is raising moi off of Ewa Beach, Oahu. Both of the existing farms are seeking permission to expand their present farm sites by using large cage volumes. At present, two new groups are seeking permission to lease undersea lands for their operations.

### 3.2.1 Hukilau Food, LLC

Hukilau Foods has not completed permitting and construction of its hatchery at Campbell Industrial Park, Barbers Point, Oahu. Meanwhile its biological team has been successfully developing and expanding its finfish hatchery technology at the facilities of the Oceanic Institute, Makapuu Point. Hukilau Foods is currently addressing the permitting issues for expansion on its present site and awaiting final approval by the Board of Land and Natural Resources (BLNR) to expand their lease site for moi production.

### 3.2.2 Kona Blue Water Farm

Kona Blue Water Farm has about 250,000 Kona Kampachi in its sea cages located offshore at Keahole Point, Big Island. Kona Blue Water has made a large number of hatchery improvements and continues to develop a strong marketing presence for its. Earlier this year, it attempted to double its production by increasing the number of its submerged cages. It has passed public hearings and is awaiting a final hearing from DLNR. Meanwhile, it has increased production by establishing a second new facility in Baja Mexico in order to be closer to its mainland market.

### 3.2.3 Hawaii Oceanic Technology, Inc.

Hawaii Oceanic Technology, Inc. (HOT) is interested in farming tuna off the Big Island in geostatic positioning platform cages using hybrid ocean

thermal energy conversion engines in the offshore waters of the State. Each proposed cage is capable of producing 2,000 tons of biomass per platform cage. HOT has previously held a scoping meeting and submitted an environmental assessment statement to DLNR in June 2007, which was accepted. In October 2009, BLNR approved the Conservation District Use Application for three cages as a phase I of the project. Subsequent expansion would require HOT to reapply with BLNR.

#### 3.2.4 Maui Fresh Fish, LLC

Maui Fresh Fish has not taken further action with siting or filing of papers for an environment statement, permit, and lease. It has restricted its activities to hatchery development and research on closing the life cycle of opakapaka.

#### 3.2.5 Indigo Seafood

Indigo Seafood is still in the preliminary planning stage. It has assembled one year's worth of environmental data for a potential site. It has not taken steps to conduct an environmental assessment, request a lease nor asked for a scoping meeting, but has met with many state and federal agencies and community interest groups.

## 3.3 Other Activities and Major Developments

A gathering of Hawaii fish farmers, and federal and state agency managers met in Honolulu in September 2009 to organize a national workshop and summit meeting for resolving environmental, fishery, aquaculture and sanctuary policies in 2010.

The unprecedented economic downturn has resulted in the down-sizing of DOA's Aquaculture Development Program (ADP) by 75% of its staff. The ability of ADP to provide support to companies seeking ocean leases will be greatly diminished as the remaining staff focus on aquaculture disease control and brood stock certification and advocacy. Going forward, ADP will be integrated with DOA's Animal Industry (AI) Division. This integration will provide the open ocean industry with new opportunities for collaboration with DOA staff on disease and stock enhancement programs as AI veterinarians and laboratory staff become familiar with the aquaculture industry. Wherever possible, aquaculture staff will continue to work with DLNR and the industry to support the lease and permit process.

## 4.0 Conclusions

Progress to expand open ocean aquaculture has been slow. The existing operations continue to struggle with obtaining permits to expand and gain community support. New operations looking to enter the market face similar challenges. Hawaii has the ability to lead the World in open ocean aquaculture operations and research but without a supportive regulatory and business environment, the opportunity will pass.

## 5.0 Recommendations

In order to support open ocean aquaculture, the proper infrastructure must be established to balance environmental concerns with opportunities for development. Areas for focus are governance, environmental impact and health management. Governance is crucial because there is a current lack of clear federal responsibility and jurisdiction in governing the open ocean space and a lack of standards to protect the marine environment. The National Offshore Aquaculture Act is the beginning of such a framework and should be supported. Navigating the current ocean lease process is a challenge for applicants.

Reducing the length and improving the transparency of the permitting process would greatly decrease the cost and confusion created by the current process – providing an additional incentive for new enterprises considering operations in Hawaii. Also, funding needs to be sought to support research and the implementation of protocols to identify and mitigate environmental and health risks for aquaculture products. Additionally, a system to disseminate authoritative information needs to be implemented to offset the misinformation about the industry that is easily found today. Finally, alternative resources should be sought for ADP to provide needed support so that Hawaii aquaculture can expand its capability to contribute to Hawaii's food self-sufficiency.