REPORT TO THE TWENTY-FOURTH LEGISLATURE
STATE OF HAWAII
2008 REGULAR SESSION

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

PREPARED BY:
DEPARTMENT OF AGRICULTURE
AND
DEPARTMENT OF LAND AND NATURAL RESOURCES

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

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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 ninth in the series, highlights related national activities and addresses the progress in implementing ocean leasing for open ocean aquaculture during 2007.

2.0 National Activities

2.1 National Offshore Aquaculture Act of 2007

On April 24, 2007, Representative Nick Rahall, Chair of the House Natural Resources Committee and Congresswoman Madeleine Bordallo, Chair of the House Natural Resource Committee, Fisheries, Wildlife and Ocean Subcommittee, jointly introduced the National Offshore Aquaculture Act of 2007 in the United States (U.S.). House of Representatives. The bill was referred to three House committees. On June 13, 2007, U.S. Senators Daniel Inouye and Ted Stevens introduced by request the same bill and added four amendments.

The bill was referred to the Senate Committee on Commerce, Science and Transportation.

The Act directs the Secretary of Commerce to establish an operational permitting process for the development and operation of offshore aquaculture in the U.S. Exclusive Economic Zone (3 to 200 miles offshore). The Secretary of Commerce is to prepare an environmental analysis for requirements and is authorized to issue permits. Offshore aquaculture is excluded from the definition of fishing under the Magnuson-Stevens Fishery Conservation and Management Act. Facilities permits are not allowed within 12 miles of a coastal state if a state opposes the activities. A zone may be designated around a facility where incompatible installations, structures or uses are prohibited and consent is required from the Secretary of the Interior and lessees, operators and owners of areas subject to the Outer Continental Shelf Lands Act. Further, the Secretary of Commerce is authorized to establish and conduct integrated, multidisciplinary, scientific research and development to further aquaculture development, protect marine ecosystems and to reduce use of wild fish in aquaculture feeds.

3.0 Hawaii Activities

3.1 Hawaii Aquaculture Association Conference

The annual meeting of the Hawaii Aquaculture Association (HAA) was held on July 12, 2007 at Kapiolani Community College, Oahu. The speakers included seven individuals from Hawaii and eight others from out-of-state, who have some prior connection and relationship with Hawaii's aquaculture industry.

Ronald Weidenbach, Hawaii Fish Company and President of the HAA, presented opening and summary remarks for the conference. Dr. Allen Riggs, Hawaii Aquaculture Veterinarian, spoke on the general principles of farm biosecurity. Dr. James Foppoli, State Veterinarian, DOA, covered greater details about biosecurity and containment from a state regulator's point of view. Dr. Larry Rawson, Animal Plant Health Inspection Service, U.S. Department of Agriculture, extended the ideas of biosecurity to that of the federal level of regulation.

Joanna Seto, Clean Water Branch, Hawaii Department of Health, discussed the need for responsible discharge of effluents from farming operations. Roy Hardy, Commission on Water Resource Management, DLNR, spoke on state regulations for saltwater well construction. Erwin Kawata, Honolulu Board of Water Supply, described the source of Honolulu's water, water quality, standards, and usage of the water supply on Oahu.

Dr. Lotus Kam, Biosystems Engineering, University of Hawaii at Manoa, described the economic and financial challenges of operating a shrimp hatchery. Nick Carpenter, Belize Aquaculture, Limited, spoke on his experiences with

startups and management of penaeid shrimp hatcheries for sustained production. Allen Heres, Aquaculture Pathology, University of Arizona, discussed the disease issues of health management for a shrimp hatchery.

Dr. Chris Beattie, Skretting Canada, presented information on feed ingredients and regulations governing feed production. Dr. Carl Marichal, INVE Aquaculture, discussed larval hatchery advances from an European perspective. Dr. Dean Akiyama, Charoen Pokphand Indonesia, described the integrated nature of the Indonesian shrimp production industry from the perspective of one of the largest vertically integrated agriculture and aquaculture global companies.

Scott Houghtaling, Northwest Regional Office, National Marine Fisheries Service, National Oceanic and Atmospheric Association (NOAA), U.S. Department of Commerce, talked about hatchery financing and NOAA's loan program. Dr. James McVey, formerly of the Sea Grant Program, NOAA, U.S. Department of Commerce, talked on national open ocean aquaculture issues.

The conference ended with an evening reception featuring Hawaii aquaculture products prepared by various Hawaii chefs.

3.2 Research Funding

The previously reported Hawaii Offshore Aquaculture Project involving the University of Hawaii and Oceanic Institute has been completed. Currently under consideration by both organizations and the private sector is a general solicitation by NOAA for an open competition for up to $8M in competitive grants in 2008-2009 to be awarded through the National Marine Aquaculture Initiative. The goal of these research funds is to demonstrate and develop sustainable marine aquaculture in the U.S. NOAA intends to award nationally about 20 projects to include four large demonstration project awards at $1M and the remainder at about the $200,000 level. No awards have been made yet to date.

The funding priorities targets include:

- Site-specific commercial or pilot-scale demonstration projects to establish technical and economic feasibility on hatchery development and production systems;

- Studies to assess environmental impacts of current marine production systems and species;

- Nutritional research on alternative protein diets and their impact on product quality;

- Development of environmental models and Geographic Information System tools to aid site selection for new facilities;

- Development of disease diagnostics and controls;

- Development of hands-on training in marine hatchery operations and management; and,

- Development of synthesis research papers for environmental impacts of production systems, alternative protein feeds and potential impacts, disease transmission from aquaculture to wild stocks or vice versa, status of acceptable disease treatments and prevention, genetic technologies, and environmental risk analyses.

Under consideration and ongoing is discussion between NOAA and the U.S. Department of Agriculture for the development of the Pacific Marine Aquaculture Center (PMAC), a center of excellence for fostering an ecosystem approach toward developing a sustainable offshore aquaculture industry in the Pacific Region. PMAC has been part of an ongoing discussion involving the University of Hawaii, Oceanic Institute, Hawaii's offshore aquaculture industry and DOA's Aquaculture Development Program. PMAC intends to use an integrated multi-disciplinary approach in developing systems, operations, species, and associated enabling technologies to improve operational efficiencies and minimize impacts

to the environment, and species cultured, as well as associated economic risks factors. The proposed federal budget for this important collaborative initiative is $4M annually for five years.

3.3 Commercial Development Progress

At the present, there are two farms which have successfully met all requirements, and are able to raise fish within their sea cages. Additionally, there are two active groups seeking permission to lease undersea lands for their operations.

3.3.1 Hukilau Foods, LLC

Cates International, Inc. changed its name to Hukilau Foods, LLC when it merged with Grove Farm to form a new company. This merger has allowed Hukilau Foods, LLC to make a significant investment into its business with the building of a new fish hatchery, the largest in the U S. This new facility, located at Kalalaeloa (Barbers Point Harbor), will be able to produce up to 14M fry per year. At the present time, Hukilau Foods, LLC is working with the Oceanic Institute to refine existing hatchery technology in order to scale up from research to large-scale fry production. Hukilau Foods, LLC is planning to seek several new ocean site leases to accommodate its increased fry production levels. It may possibility increase its level of investment to $10M over the next 24 months.

Two significant problems that Hukilau Foods, LLC faced were its building permit, which was stalled for nine months, and finding a suitable shore side facility for logistical operations. Not being able to find a suitable site, it will need to extend the lease on its current location to justify further investment in facilities. This investment would be on the order of $2.5M for the shore side facility.

3.3.2 Kona Blue Water Farm

Over the last year, Kona Blue Water Farm has made significant technological breakthroughs in its hatchery and offshore cage production. In August 2006, they had approximately 120,000 fish offshore. In August 2007, they had 325,000 fish offshore. As of September 2007, they will deploy their eighth SeaStation cage and will have total stocks of approximately 400,000 fish offshore. With increased production, they are now able to sell approximately 18,000 pounds of Kona Kampachi per week. Kona Blue Water Farm is selling approximately 20% of their production within the State. To date, they have buyers in 24 states and Canada. Their most ambitious sales market to date is supplying the national grocer Whole Foods Markets.

Kona Blue Water Farms needs to expand their production and have recently submitted a draft environmental assessment statement to DLNR for an increase of four additional cages. Each would be twice as large as their existing cages at their current site. This action will allow Kona Blue Water Farm to fully use the capacity of their existing hatchery and offshore equipment.

3.3.3 Hawaii Oceanic Technology, Inc.

Hawaii Oceanic Technology, Inc. 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. They intend to use techniques for spawning tuna developed at the Achotines Laboratory, Panama, in collaboration with research and development at the Pacific Aquaculture and Coastal Resources Center, University of Hawaii at Hilo, lead by Dr. Kevin Hopkins.

Hawaii Oceanic Technology, Inc. has previously had a scoping meeting and submitted an environmental assessment statement to DLNR in June 2007, which was not accepted. At present, they are collecting more site data, answering additional questions raised by reviewers, and is doing another environmental statement submittal.

3.3.4 Maui Fresh Fish, LLC

Maui Fresh Fish, LLC is interested in farming opakapaka off southern Maui. They have begun to build a land-based hatchery and are waiting for installation of electricity and a saltwater well. Last year, they wrote proposals seeking funds for developing and operating a hatchery for restocking purposes, but were unsuccessful. Recently they have a hired an independent consultant for preparing an environmental assessment for a tentative site and have yet to do a scoping meeting or community review process. Maui Fresh Fish LLC has also begun to look and advertise for a fish hatchery manager and assistant. Like Hawaii Ocean Technology, Inc., this Company is concerned about how to get through the permitting process and their relationship with the community.