



# Center for Tropical and Subtropical Aquaculture

## Program and Organization

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### Mission

The Center for Tropical and Subtropical Aquaculture, or CTSA, is one of five regional aquaculture centers funded by the U.S. Department of Agriculture. The mission of CTSA and the other regional aquaculture centers is to support aquaculture research, development, demonstration and extension education to enhance viable and profitable U.S. aquaculture. Research projects span the American Insular Pacific, using the areas extensive resource base to meet the needs and concerns of the tropical aquaculture industry.

CTSA is jointly administered by the University of Hawaii and The Oceanic Institute. The Center's offices and staff are located at The Oceanic Institute's Makapu'u Point site on windward Oahu.

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### Organization

CTSA funds aquaculture research, development and demonstration projects. Each year's program is the result of several groups working together for many months. A Board of Directors (BOD) oversees the programmatic functions of CTSA, and an Executive Committee oversees the administrative functions of the Center. In addition, CTSA has two working groups. The Industry Advisory Council (IAC) comprises members from aquacultural and agricultural enterprises, financial institutions, government agencies and other business concerns. The Technical Committee (TC) is made up of researchers, extension agents and fisheries officers.

BOD, IAC and TC members are from American Samoa, the Commonwealth of the Northern Mariana Islands, the Federated States of Micronesia, Guam, Hawaii, the Republic of the Marshall Islands and the Republic of Belau.

The Center funded 87 projects in its first eight years of operation. A brief summary of the objectives of selected projects follows. Details on the accomplishments of these projects are given in the individual project update.

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## Commercial Feasibility of Giant Clam Mariculture in American Samoa

### Objectives

- Operate a giant clam culture demonstration station to be used for training, extension and economic feasibility studies.
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## Differential Growth Rate Studies in Cultured Commercial Sponges

### Objectives

Improve the efficiency of commercial sponge farms by conducting several experimental studies at the demonstration nursery farm in Pohnpei, Federated States of Micronesia;

Maintain the existing demonstration farm.

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## Disease Management for Hawaiian Aquaculture

### Objectives

Identify the contributing factors that may be important to the occurrence of bacterial disease during growout of Chinese catfish (*Clarias fuscus*);

Develop practical strategies to control bacterial diseases during growout of Chinese catfish in Hawaii;

Field test an approach for decontaminating shrimp ponds infected with the IHVN virus;

Survey groups of freshwater tropical fish to document mortality patterns, portray environmental conditions and determine the presence and prevalence of certain protozoan and metazoan parasites and specific bacterial pathogens.

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## Development of Threadfin (*Polydactylus sexfilis*) Fry Production Technology

### Objectives

Develop seedstock production technology for Pacific threadfin (*Polydactylus sexfilis*);

Resolve bottlenecks in threadfin production and quality;

Demonstrate and document threadfin fry production technology.

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## Extension and Training Support in the U.S.-Affiliated Pacific Islands

### Objectives

Provide extension and training support to private aquaculturists and to government fisheries and aquaculture staff to develop commercial and subsistence aquaculture crops;

Help develop and support hatcheries and growout farms of other aquaculture plant and animal species, including sponges, pearl oysters, seaweed, trochus and green snails;

Conduct training courses in culture techniques and general biology of aquaculture species;

Assist in reef reseeding programs and surveys for giant clams, sponges and other species as requested by local authorities.

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## Gill Discoloration in *Penaeus stylirostris*

### Objective

Identify primary and secondary causes of gill discoloration in market-sized penaeid shrimp in Guam.

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## Improvement of Tilapia Stocks in Hawaii Phase One: Collection and Identification of Present Stocks

### Objectives

Review the international, national and Hawaii technical and regulatory status of tilapia stocks and strains related to improvement of the tilapia aquaculture industry in Hawaii;

Morphometrically and genetically assess the status of farmed stocks from 12 sites and wild stocks from 12 sites in Hawaii;

Determine growth characteristics of existing farmed tilapias and compare the data with the available scientific literature.

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## Library Aquaculture Workstation

### Objectives

Enhance information transfer within the Pacific region through the Pacific Regional Aquaculture Information Service for Education (PRAISE) using CD-ROM database searching, telecommunications and new technologies as they develop;

Disseminate information products as needed by the industry;

Expand the existing dial-in remote access information network to the Pacific Islands.

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## Mangrove Crab as a Model for Development of a Quarantine System to Screen Species for Aquaculture in Guam

### Objectives

Establish an aquatic animal quarantine area at the University of Guam Marine Laboratory;

Capture local juvenile through adult mangrove crabs and transfer them to the quarantine area for pathogen and disease studies;

Identify a list of pathogens and disease syndromes found in wild caught mangrove crabs.

## Ornamental Aquaculture Technology Transfer

### Objectives

Import and evaluate the culture potential of several ornamental fish species;

Provide extension support to develop an ornamental fish culture production industry in Hawaii;

Establish ornamental fish in commercial production on cooperating aquaculture farms in Hawaii;

Evaluate the production economics of breeding and growout in selected species;

Conduct a business feasibility analysis of ornamental fish culture in Hawaii;

Demonstrate culture of Amazon Basin ornamental fish using reverse osmosis technology.