

# **CSREES and Coral Reef Preservation**

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# Cooperative State Research, Education, and Extension Service

- Extramural research, education, and extension agency
- Land grant university system
- Various funding authorities
- Relevance, quality, performance

# Coral Reef Task Force Priorities

Coral Reef Task Force: *fundamental themes for immediate and sustained national action*

1. Understand coral reef ecosystems and natural and anthropogenic processes that determine health and viability
2. Quickly reduce adverse impacts of human activities on coral reefs and associated ecosystems

# Marine Aquarium Trade and Coral Reefs

- U.S. number one importer of live coral and marine fishes for aquarium trade
- Largest importer of coral skeletons and precious corals for curios and jewelry
- Increasing market demand pressuring wild-sourced supplies

# Aquaculture: Reduce Dependence Wild Populations for Marine Aquarium Trade

- Ensure legal international trade in coral reef species
- Support sustainability of coral reef species and ecosystems
- Stock enhancement assessment opportunities

# Aquaculture Factor

- International Conference for Marine Ornamentals (scientific/technical forum)
- Coastal states and S. Pacific states/territories seek economic opportunities and long-term sustainability of coral reef resources
- Aquaculture in controlled aquatic systems and artificial propagation techniques offers alternative to wild capture techniques with poor resource extraction efficiency

Land Grant Partner:  
University of Florida  
Tropical Aquaculture Laboratory

- Coral Project
  - Growth/survival of corals and live rock lease in Florida Keys
- Inland Greenhouse Production of Marine Ornamentals
  - Grow-out experiment with *Tridacna* seed

# Land Grant Partner: University of Guam

- Cultivation of Scleractinian corals for the aquarium trade
- Investigations of the economics of aquaculture on Guam



# Land Grant Partner: College of Micronesia

- Saddled butterflyfish aquaculture with sustainable - wild indigenous seed extraction
- Studies on the reproductive cycle of black-lip pearl oyster *Pinctada margaritifera* in the Marshall Islands

# Land Grant Partner: Cornell University

- Coral antifungal drug discovery
- A global coral disease assessment
- Disease resistance in corals

# Land Grant Partner: Northern Marianas College

Research and development  
of water quality  
monitoring and toxicity  
identification methods for  
watershed assessment and  
management

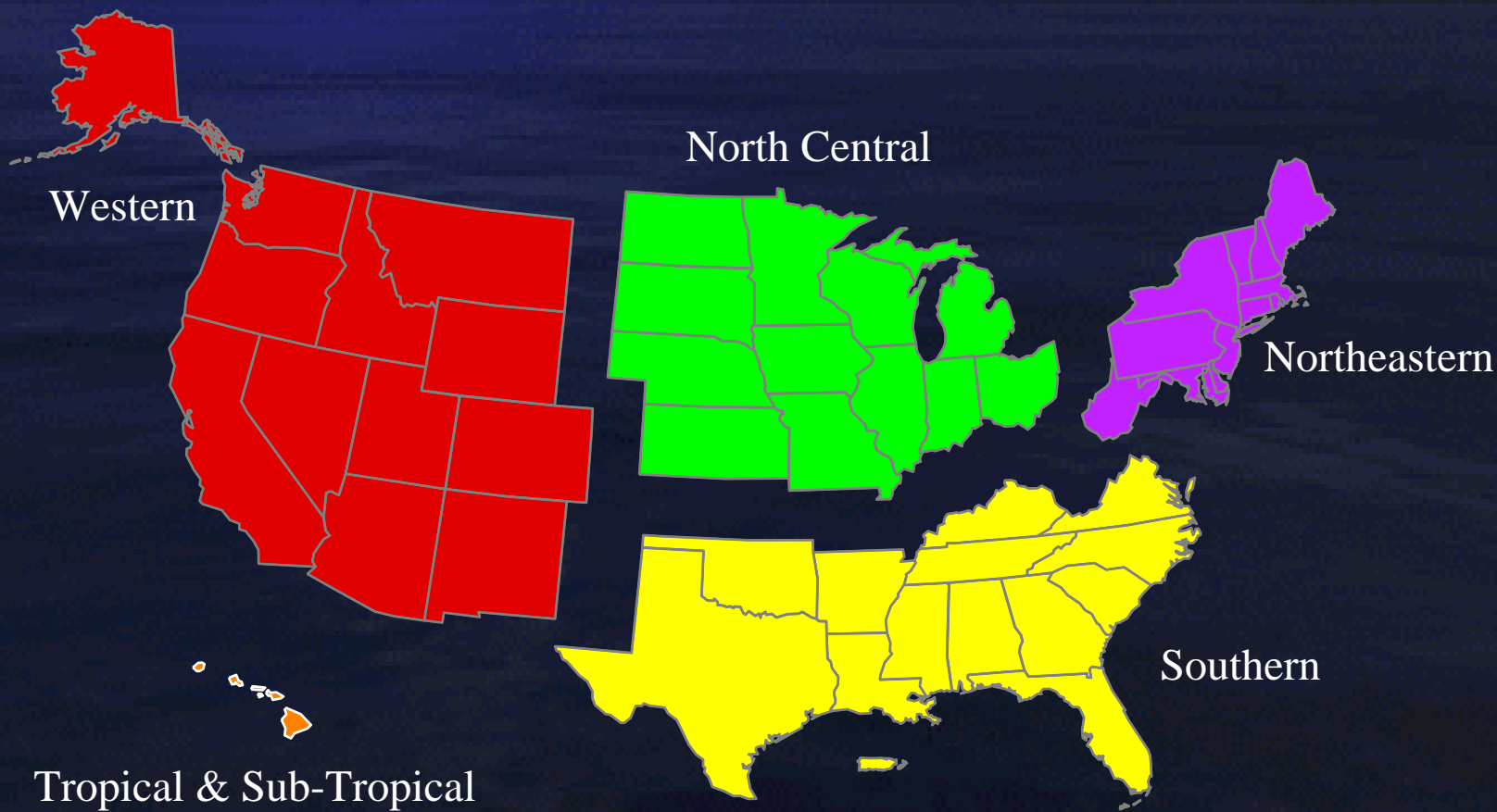
# Land Grant Partner: North Carolina State University

Control of mating  
behavior and  
reproduction in  
fishes and  
amphibians

**Bluehead Wrasse**

# Regional Aquaculture Center Program

Regional research and extension programs  
addressing critical industry needs



# Center for Tropical And Subtropical Aquaculture

- Address Critical Bottlenecks to Commercially Viable Hatchery and Nursery Techniques for Black-lip Pearl Oyster Farming in Micronesia
- Population Genetics of the Black-lip Pearl Oyster (*Pinctada margaritifera*)
- Differential Growth Rate Studies in Cultured Commercial Sponges
- Sponge Aquaculture Demonstration Project

# Center for Tropical and Subtropical Aquaculture

- Aquaculture of Hawaiian Marine Invertebrates for the Marine Ornamental Trade
- Marine Ornamental Fish Culture and Conservation

# Northeastern Regional Aquaculture Center

Nutrition studies in  
hatchery technology  
of clownfish and  
angelfish in closed  
marine systems



# Reduce Marine Pollution

- Center for Tropical and Subtropical Aquaculture
  - Characterize Aquaculture Effluent, Environmental Impact Assessment for Effluent from Hawaiian Aquaculture Facilities
  - Aquaculture Alternatives to Coastal Water Discharge: Technical Review and Cost Analysis
  - Effects of Aquaculture Effluent on Environmental Quality and Associated Recreational Activities
  - Document and Analyze Existing Information Regarding Aquaculture Effluent Discharge in Hawaii that Reflects Public Interest in the Environment and Aquaculture

# Reduce Marine Pollution

- University of Guam
  - Laying houses produce nutrient rich waste if not properly managed can result in water pollution and overgrowth of tropical **coral** reefs by algal blooms. Research aims to reduce the phosphorus level in poultry wastes in tropical environments.

# Marine Education

- Center for Tropical and Subtropical Aquaculture
  - Aquaculture Extension and Training Support for U.S. Affiliated Pacific Islands with Emphasis on Hatchery Propagation of the Black-Lip Pearl Oyster (*Pinctada Margaritifera*)
  - Aquaculture Extension and Training Support for the U.S.-Affiliated Pacific Islands
  - Commercial Feasibility of Giant Clam Mariculture in American Samoa

# Interagency Coordinating Body Joint Subcommittee on Aquaculture

## Executive Office of President

- National Science and Technology Council
  - Committee on Science
    - Subcommittee on Aquaculture

## Leadership Structure

- Chair, Department of Agriculture
- Vice-chairs, Departments of Commerce and Interior
- Executive Committee (multiple agencies)

# Joint Subcommittee on Aquaculture

- Created by Federal statute – National Aquaculture Act 1980
- Increase overall effectiveness and productivity of Federal aquaculture research, technology transfer, and assistance
- National task forces and working groups on issues of national scope and importance

# Strategic Partnerships and Coordination

- Many issues complex within global context with multiple science disciplines linked to public policy
- No single department or agency has resources needed for such complexities often urgent and dependent on our best knowledge system
- CSREES-NOAA National Aquaculture Extension Steering Committee aim to strengthen interagency collaboration on constituent driven issues of common interest