

*Science, Service, Stewardship*



# US Marine Aquaculture: Economic Opportunities and Constraints

WHOI Colloquium

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Dr. Michael Rubino

Manager

NOAA Aquaculture Program

**NOAA  
FISHERIES  
SERVICE**



## Today's Talk

- What is US marine aquaculture?
- Opportunities and constraints
- Economic analysis to inform US policy





## Current US aquaculture contribution to seafood supply

- 85% of US seafood consumption imported
- 5% from US aquaculture production
  - ~ 500,000 tons (75% freshwater, 25% marine)
  - 40% of Alaska salmon harvest from hatcheries (~ 125,000 tons)
- Equipment, technology, investment, feed, and seed stock to world market





## Stock Enhancement & Restoration Aquaculture Supporting...

**Commercial Fisheries** – Salmon, oysters, king crab

**Recreational Fisheries** – Pacific rockfishes,  
Gulf redfish, California white sea bass

**Habitat** – Oysters, grasses



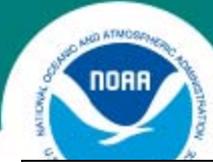
Pacific Rockfish



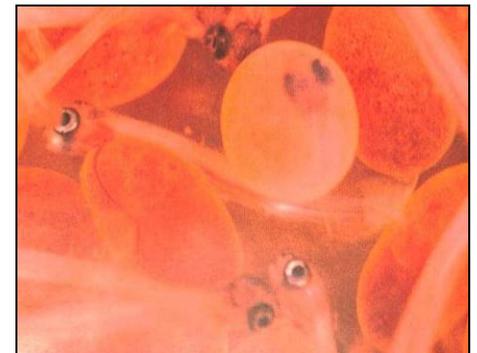
King Crab



Chesapeake Oysters



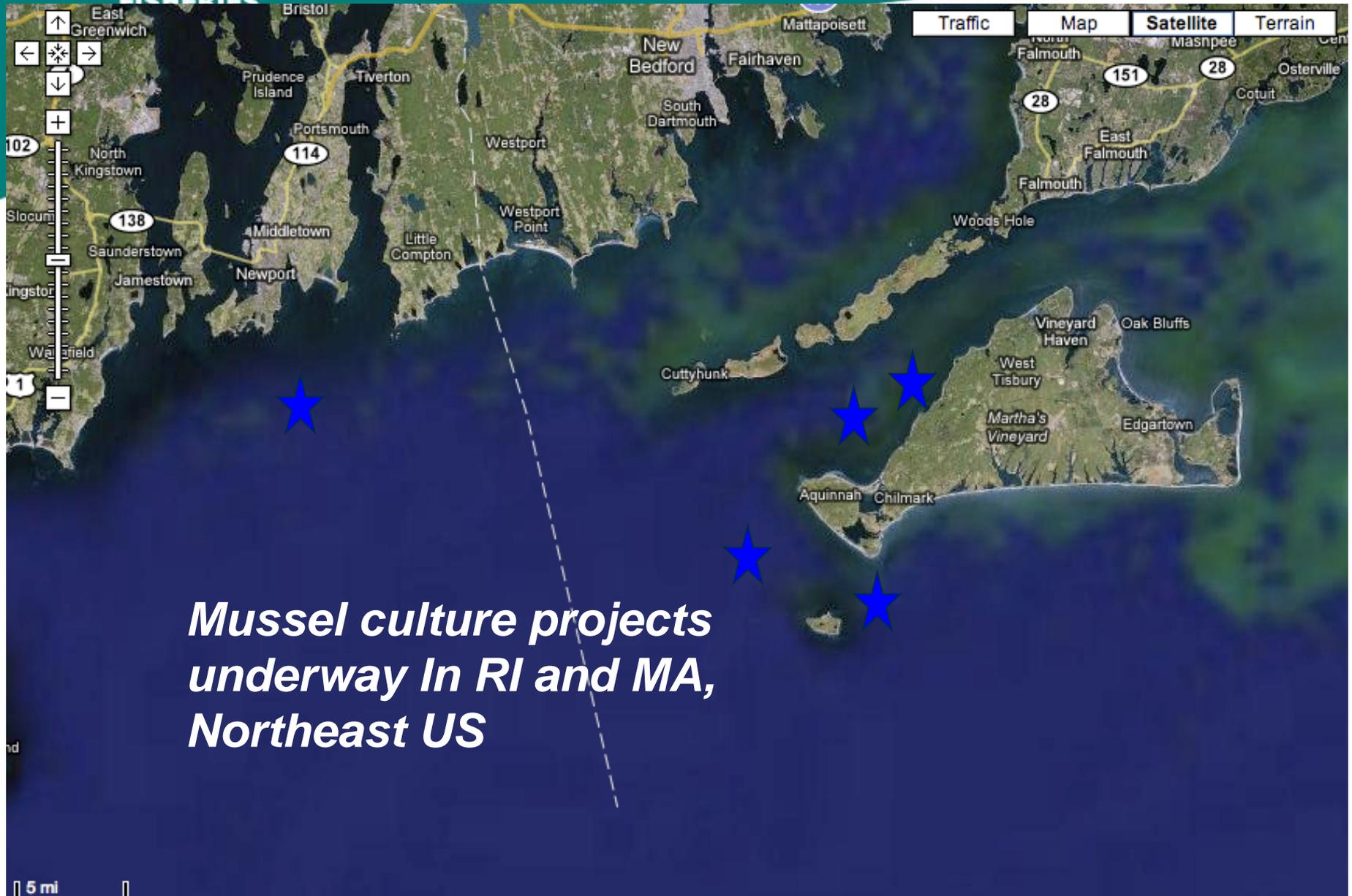
# Maine





# New England





*Mussel culture projects underway in RI and MA, Northeast US*

# Rhode Island, Massachusetts









Florida





# Mississippi





# Louisiana





## California



# Hawaii



# Washington



# Alaska





## Common Features of Commercial U.S. Marine Aquaculture



- ✓ Owner/operators: U.S. seafood businesses, fishing families
- ✓ Local support
- ✓ Working waterfronts
- ✓ Range of technologies
- ✓ Synergies with commercial and recreational fishing
- ✓ Innovative
- ✓ Best management practices



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Eat More Fish!!!!  
Support Ocean Farmed Seafoods!!!!  
Support Maine's Working Waterfronts!!!!!!!







*With earth's burgeoning human population to feed we must turn to the sea with new understanding and new technology. We need to farm it as we farm the land.*

*Jacques Cousteau, 1973*



## US Marine Aquaculture: Opportunities

Demand for seafood, health benefits, dietary guidelines

Supply constraints, complement wild catch

Product form

Demand for local

Food security

Jobs, working waterfronts





## Constraints

- Regulatory uncertainty, costs
- Competition for use of marine commons: tourism, leisure, real estate development
- Competition with commercial fishing
- Environmental concerns
- Globalization



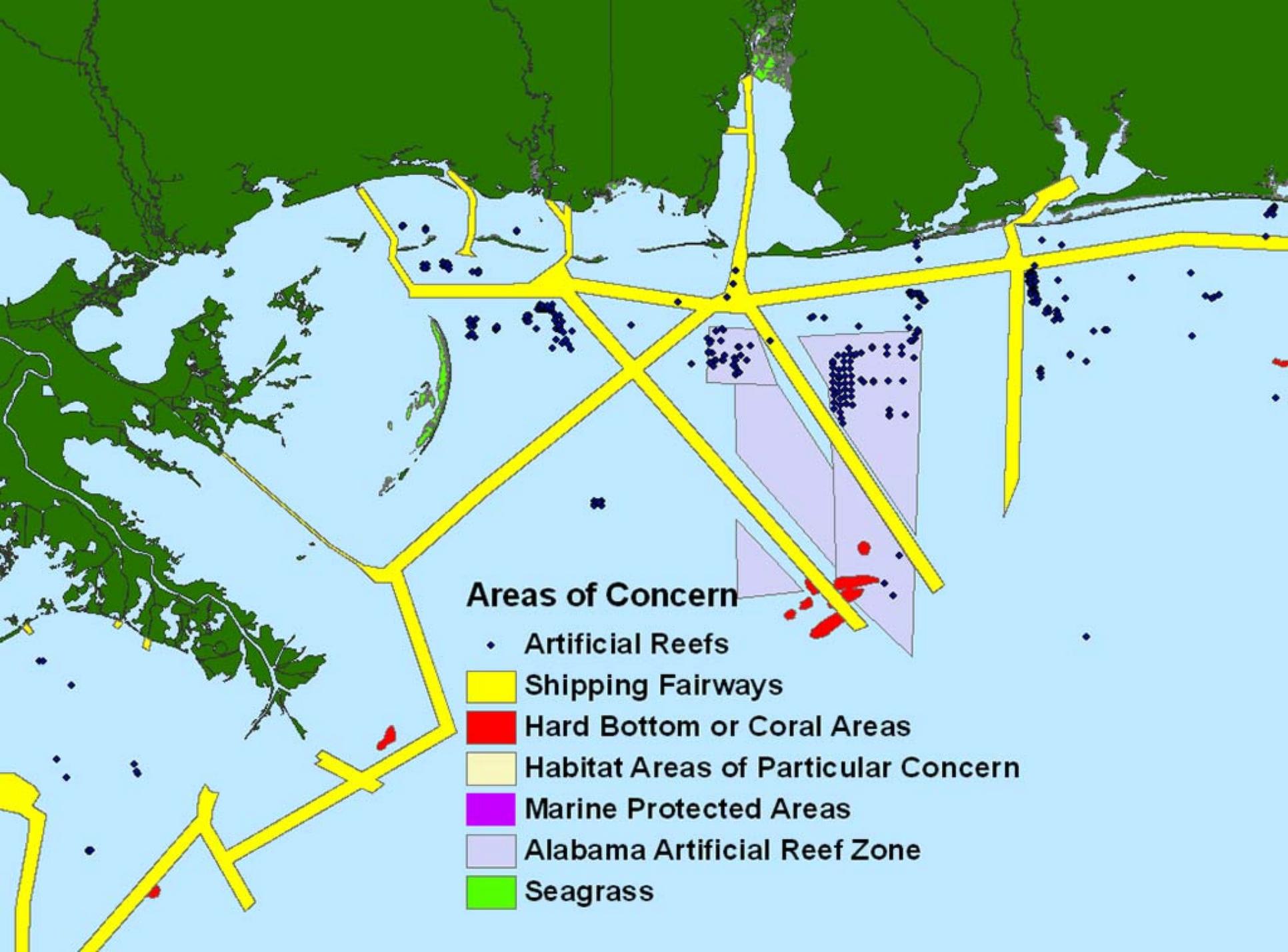


## Crowded Coastlines









### Areas of Concern

- Artificial Reefs
- Shipping Fairways
- Hard Bottom or Coral Areas
- Habitat Areas of Particular Concern
- Marine Protected Areas
- Alabama Artificial Reef Zone
- Seagrass



# Global Market





## Marine Stewardship at NOAA

- Multiple mandates
- Ecosystem approach
- End overfishing
- New aquaculture policy





# Listening Sessions for New NOAA Aquaculture Policy

Farm more seafood in the US

Protect wild stocks and the marine environment

Science knowledge

Local and regional solutions

Aquaculture supports local culture

Integrate fishing and aquaculture to sustain coastal communities

Address competition between fishing and aquaculture

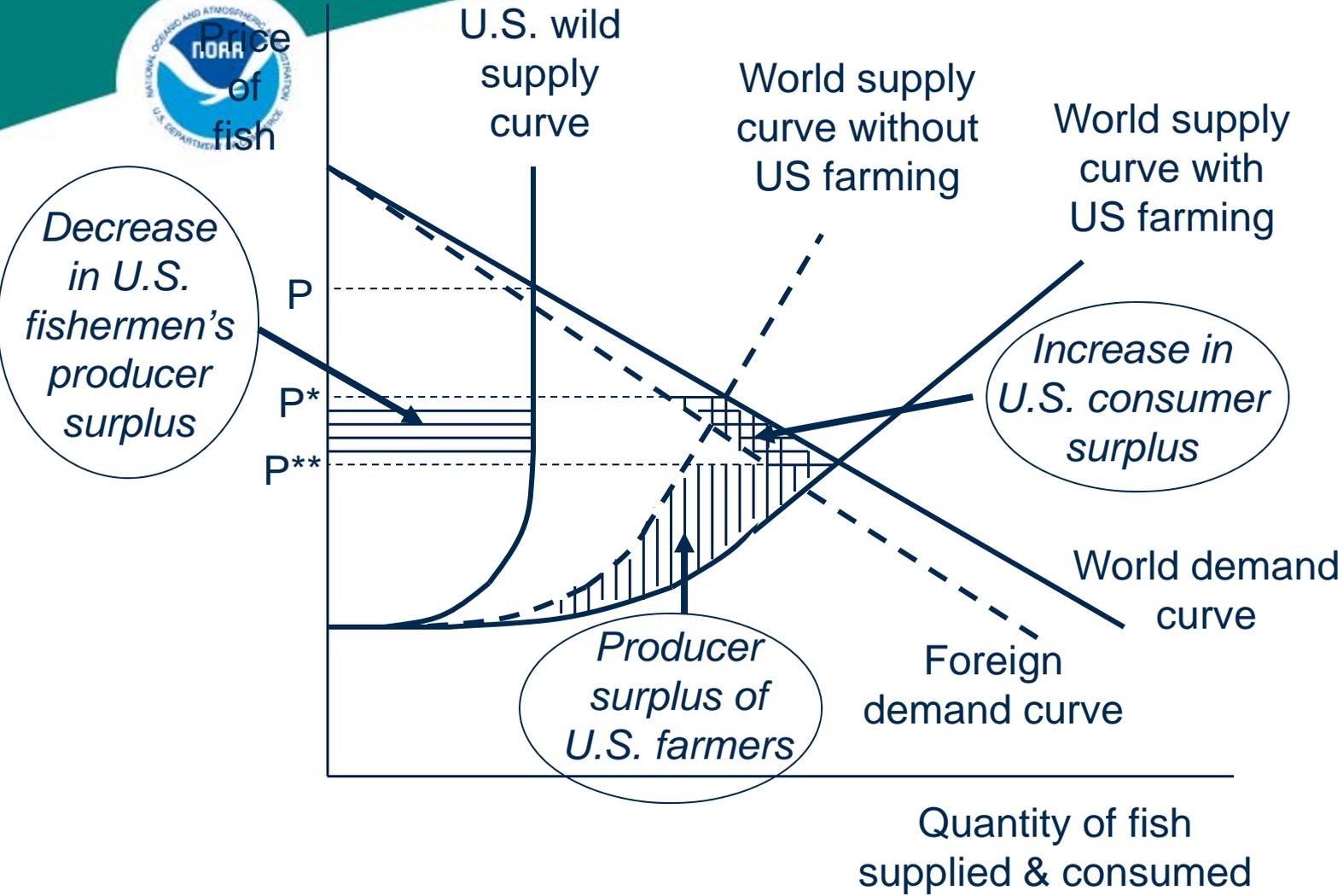
Foster innovative sustainable designs

More shellfish

Pro and con offshore aquaculture



# Economic Analysis





## Economic Analysis to Inform Public Policy

- Job creation
- Investment drivers
- New business models, innovation
- Synergies with fishing, energy and other uses
- Monetize ecosystem services
- Level the playing field (globalization)
- Environmental and social concerns





Questions?

<http://aquaculture.noaa.gov>

