



NOAA
FISHERIES

Marine Aquaculture: Next Steps

Council Coordination Committee Briefing
Michael Rubino
February 27, 2018





Take-away Messages

- Secretary Ross's desire to "correct" the \$14 billion seafood trade deficit. .
- Regulatory streamlining and aquaculture/seafood production are NOAA and DOC priorities
- Stakeholders asking NOAA to help expand seafood farming
 - Fishing and aquaculture: spectrum of technologies to produce seafood
 - Aquaculture, done right, benefits fisheries, communities and the environment
- The U.S. could significantly increase marine aquaculture production
 - Overcoming constraints
 - Engagement of fishing community
 - Role of Commissions, Councils, and State Fisheries Agencies



NOAA
FISHERIES

Drivers

- Global demand for seafood: need +40m t in 20 yrs
- Federal nutrition guideline: eat 2x more seafood
- Jobs, local seafood
- Seafood security
- Reduce \$14b seafood trade deficit and create export opportunities
- Healthy oceans: responsible aquaculture in US
- Restoration of species and habitats



Department of Commerce and NOAA Fisheries Priorities

**NOAA
FISHERIES**

DOC Strategic Plan 2018-2022:

Increase Aquaculture Production

- 1 stop shop for federal approval of marine aquaculture permits
- Support research to advance marine aquaculture

NOAA Fisheries FY18 Priorities:

- Regulatory streamlining
- Commercial scale pilot projects with coastal communities and industry
- Research to remove production bottlenecks



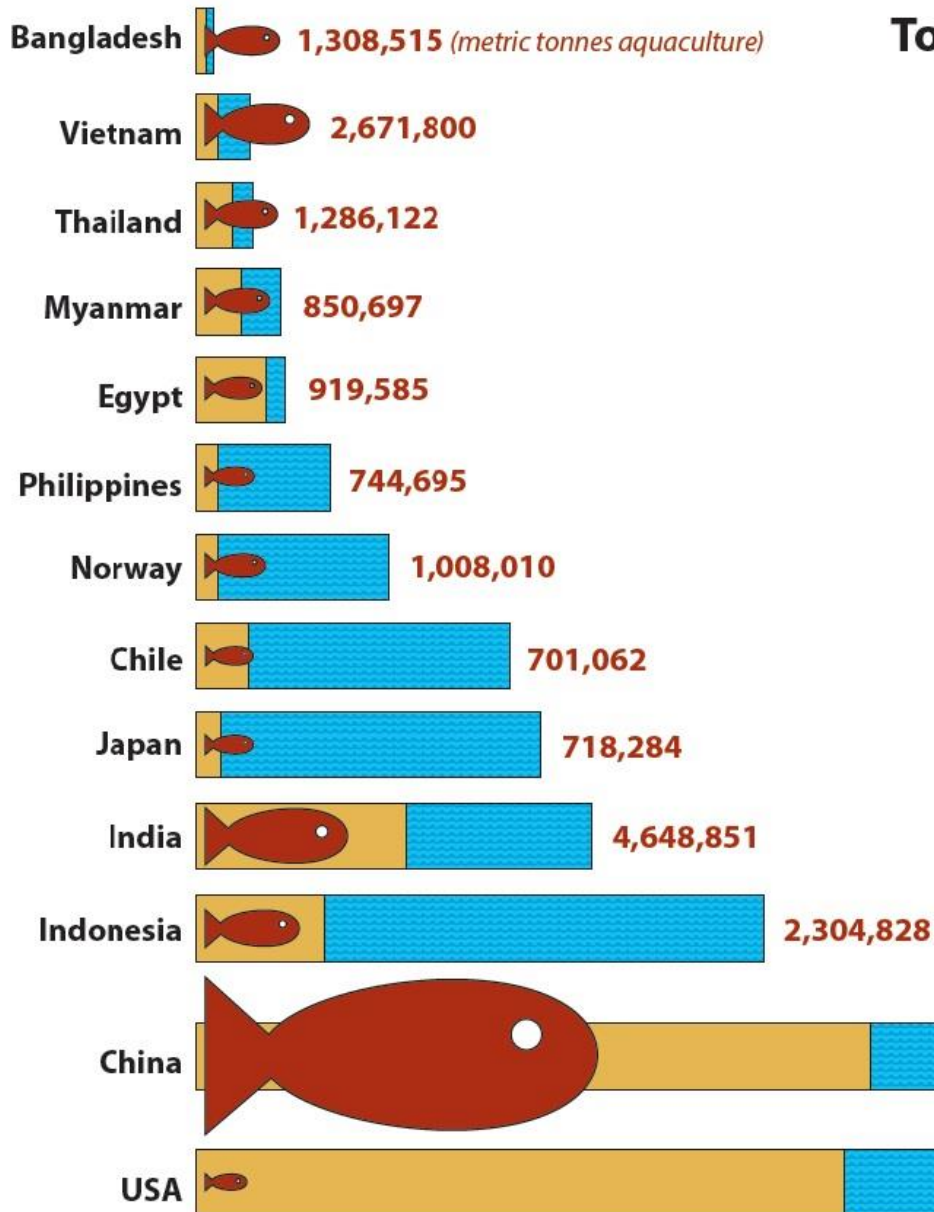
NOAA
FISHERIES

Stakeholder Engagement

- Shellfish Initiatives
- Gulf seafood explores aquaculture
- Aquaculture associations
- Environmental NGOs
- Stronger America Through Seafood industry coalition
- Fishing community

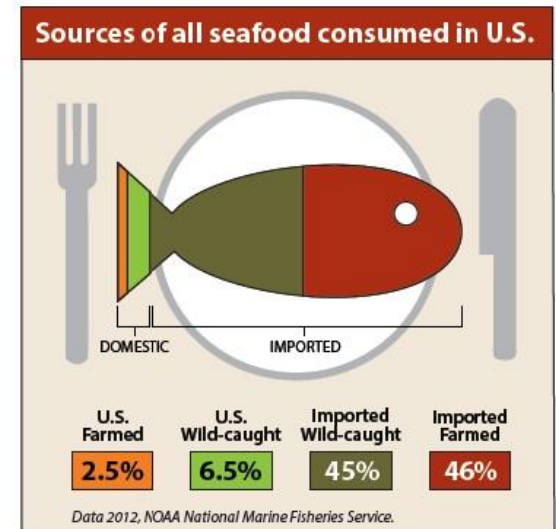


Substantial Untapped Potential



Top 13 Aquaculture Producers Worldwide

Total aquaculture production in relation to land and water resources



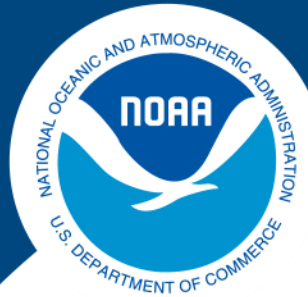


NOAA
FISHERIES

- 5%+ annual growth in marine aquaculture
- Many new seafood farmers are from fishing families
- US seafood companies own US fish and shellfish farms
- Public perception shifting
- Stakeholder engagement

Signs of Progress





**NOAA
FISHERIES**

What NOAA is Doing: Catalyze Smart Growth

Key elements:

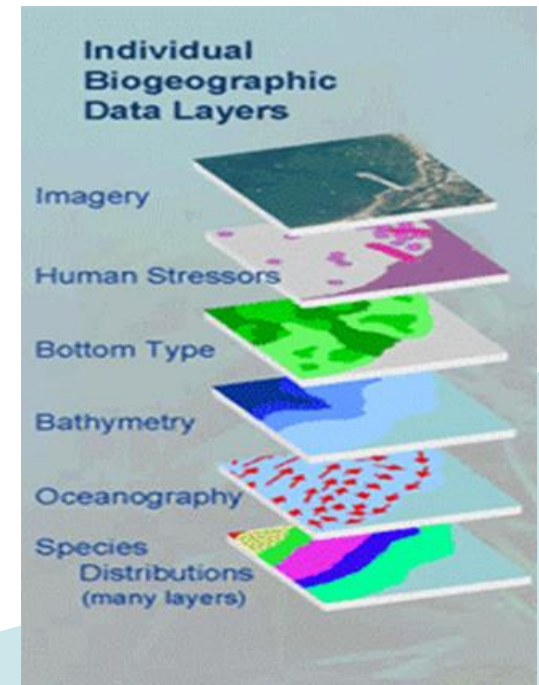
1. Regulatory streamlining (state and federal waters)
2. Regional partnerships, pilot projects
3. Science, R&D, technology transfer, and extension to accelerate production



NOAA FISHERIES

1. Regulatory Streamlining

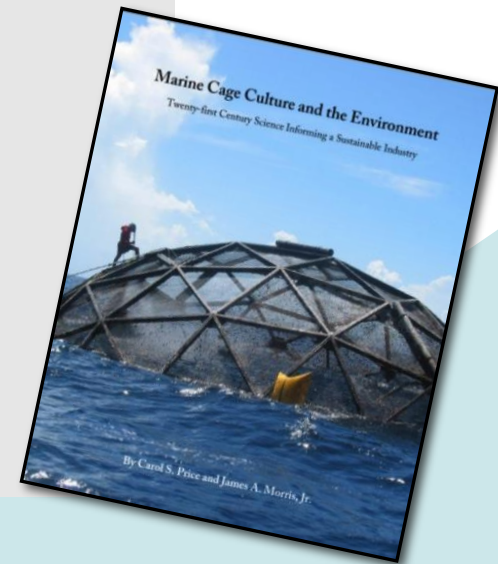
- NOAA as lead agency to coordinate federal permitting and work with Councils and states
- Programmatic approaches to consultations with Army Corps of Engineers
- Siting analyses and NEPA review: identify suitable areas





Science for Management

- Regional Siting Models
- Water Quality/Benthic Models
- Genetic Effects of Escapes - OMEGA model
- Ecosystem Services of Shellfish Farming
- Effects of Ocean Acidification, Changing Ocean Conditions
- Pathogen and Parasite Vectors



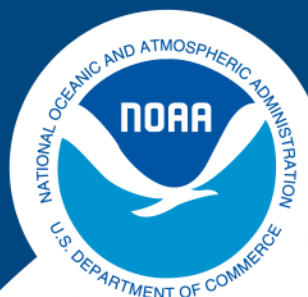


NOAA
FISHERIES

2. Partnerships, Pilot Projects

- Largely funded by private sector
- NOAA grants leverage private, state, and foundation funding (SK, SBIR, Sea Grant, Commissions)
- NOAA contributes science, siting, regulatory streamlining, tech transfer, extension





NOAA
FISHERIES

3. R&D, Science

- Shellfish Hatchery Techniques, Algae Starters, Probiotics
- Sablefish and Yellowtail Farming
- Marine Feed Ingredients
- Abalone and Native Oyster Restoration
- Fisheries enhancement
- Seaweed Farming
- Genetics





**NOAA
FISHERIES**

Role of Councils and Commissions

Regulatory

- FMPs for aquaculture under MSA

Partnerships/Grants

- 2016-2017 aquaculture grants via Commissions
- Other aquaculture studies, partnerships

Outreach and Education

- Advice to fishing, aquaculture, and seafood community
- Building approaches to increase production and marketing of local sustainable US seafood



**NOAA
FISHERIES**



Michael.Rubino@noaa.gov