# FOOD TECH CONNECT

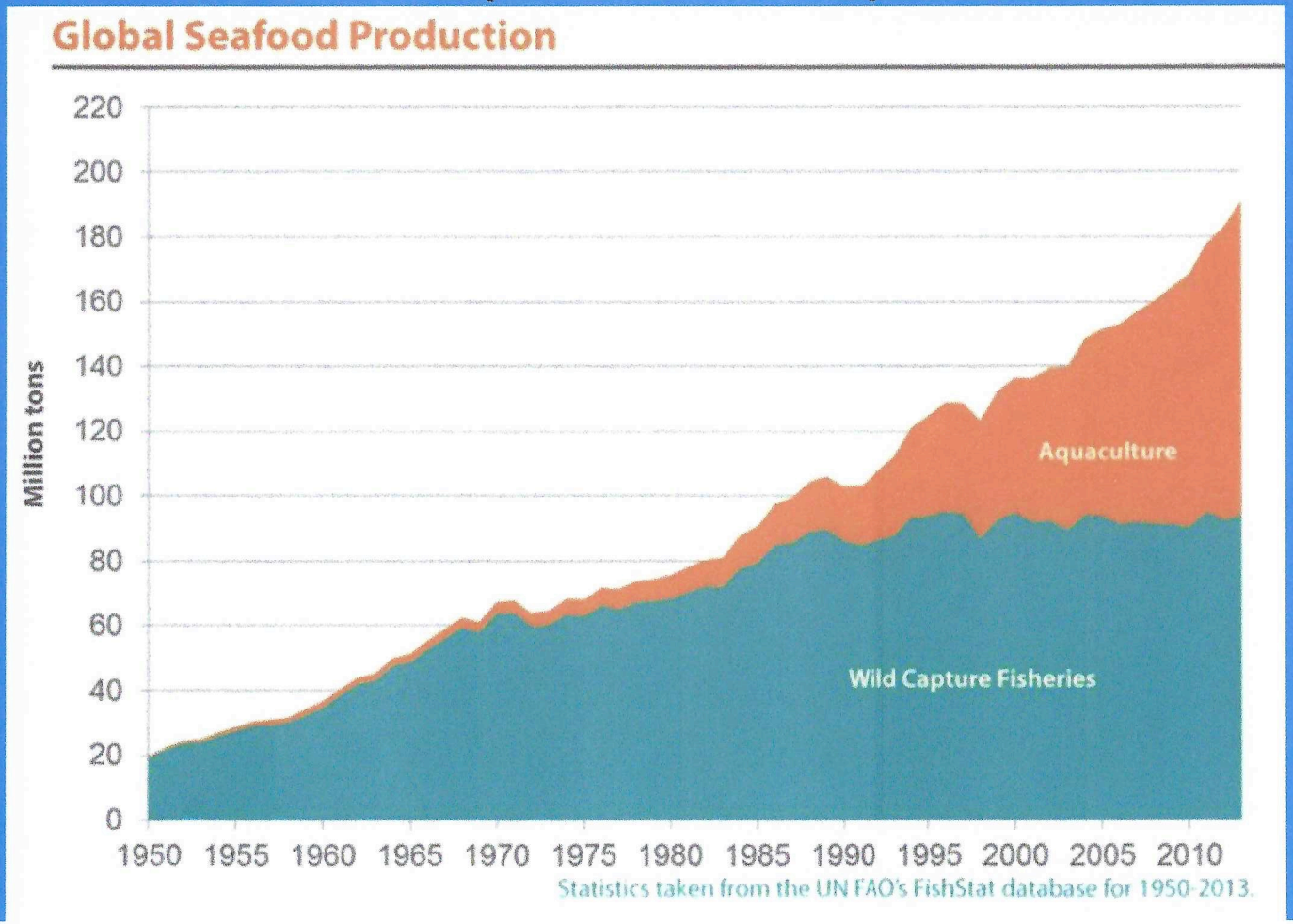
# FUTURE OF SEAFOOD


**Donna Lanzetta:**

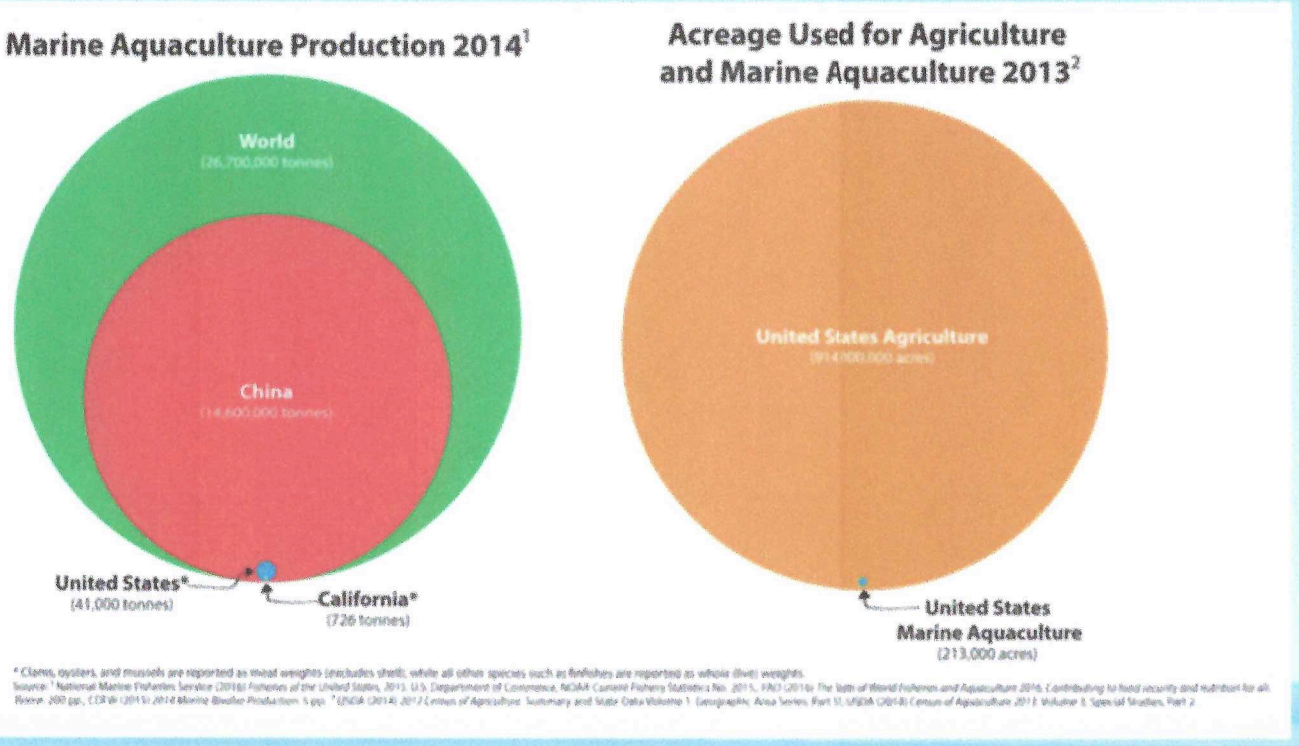
**CEO and Founder of Manna Fish Farms, Inc.**


MANNA
FISH FARMS, INC.

# The United Nations advises: we must Double Aquaculture by 2030!



# Current US Aquaculture

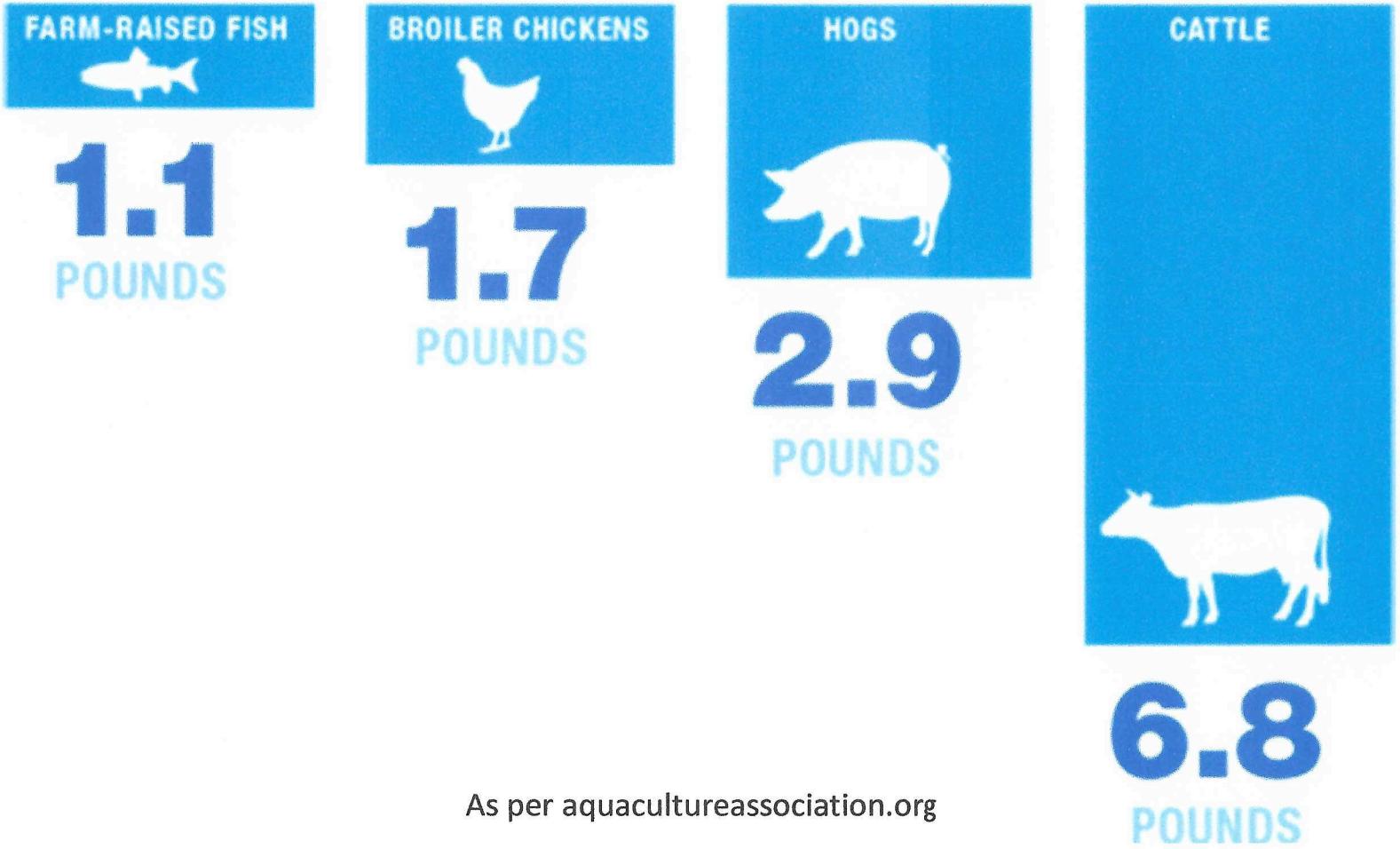



* Clams, oysters, and mussels are reported as meat weights (excludes shell); while all other species such as finfishes are reported as whole (live) weights.

Source: [1] National Marine Fisheries Service (2016) *Fisheries of the United States, 2015*. U.S. Department of Commerce, NOAA Current Fishery Statistics No. 2015; FAO (2016) *The State of World Fisheries and Aquaculture 2016. Contributing to food security and nutrition for all*. Rome. 200 pp.; CDFW (2015) *2014 Marine Shellfish Production*. 5 pp. [2] USDA (2014) *2012 Census of Agriculture. Summary and State Data Volume 1. Geographic Area Series. Part 51*; USDA (2014) *Census of Aquaculture 2013. Volume 3. Special Studies, Part 2*.

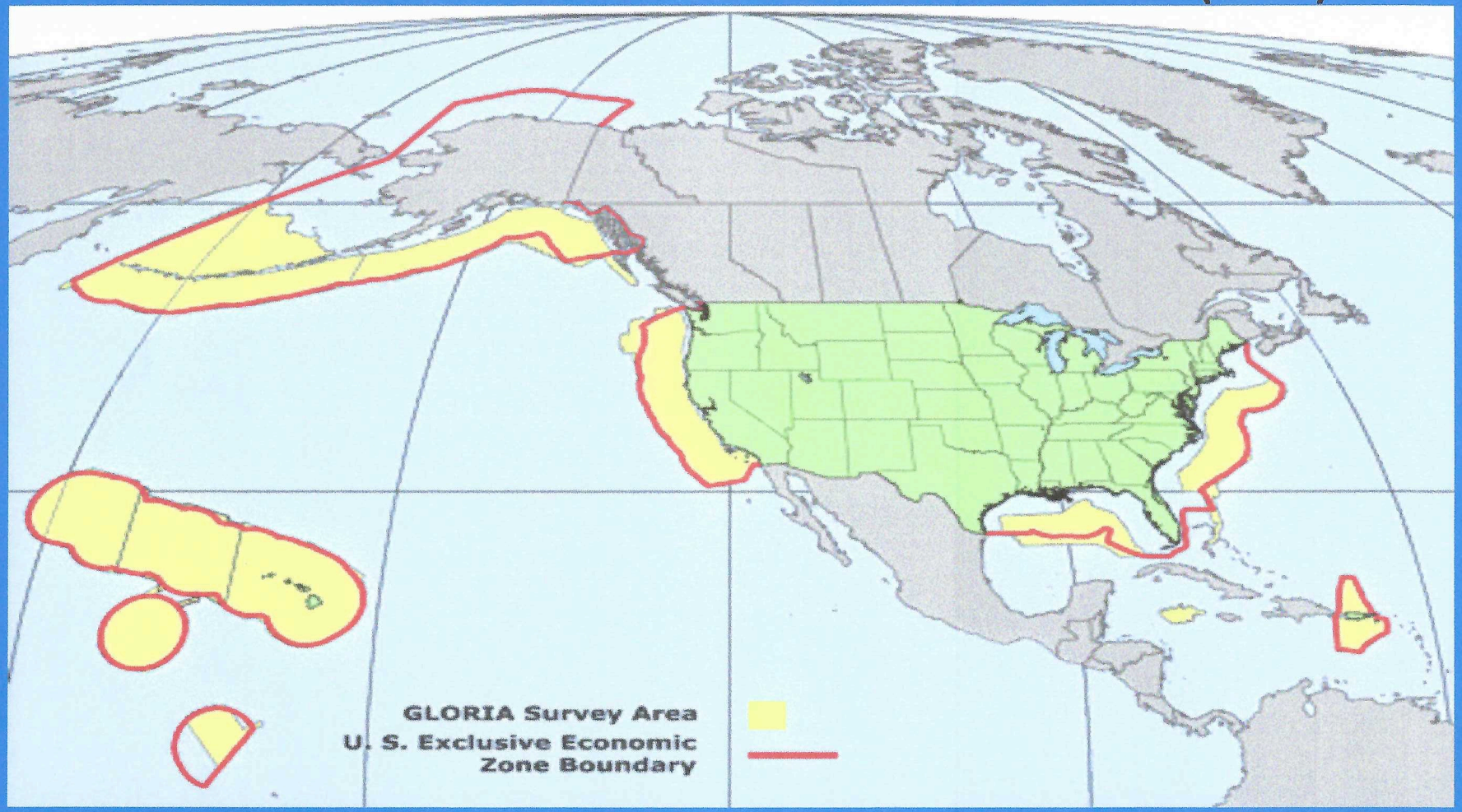
# FEED CONVERSION RATIO

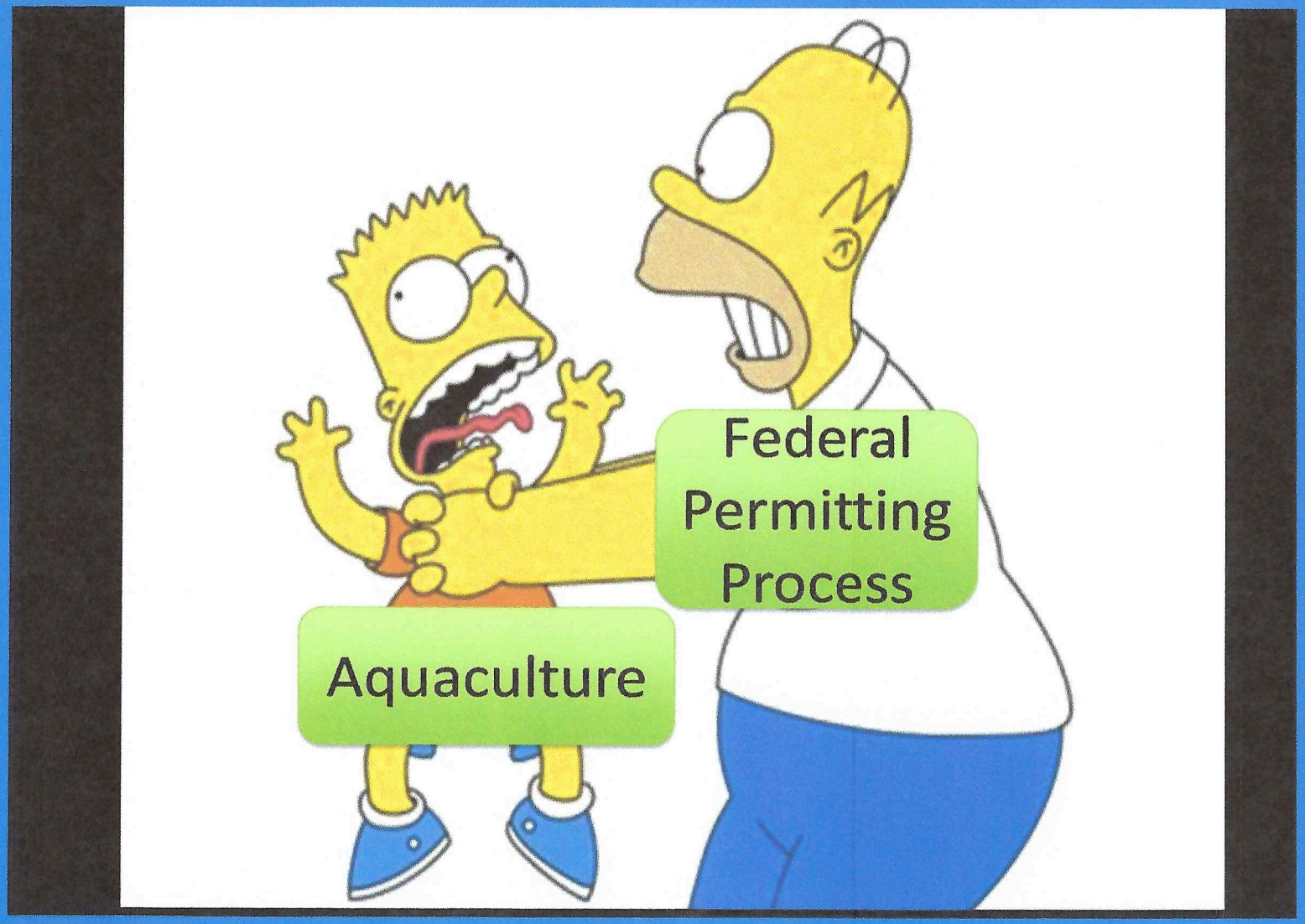
Estimated feed required to gain one pound of body mass.[5]

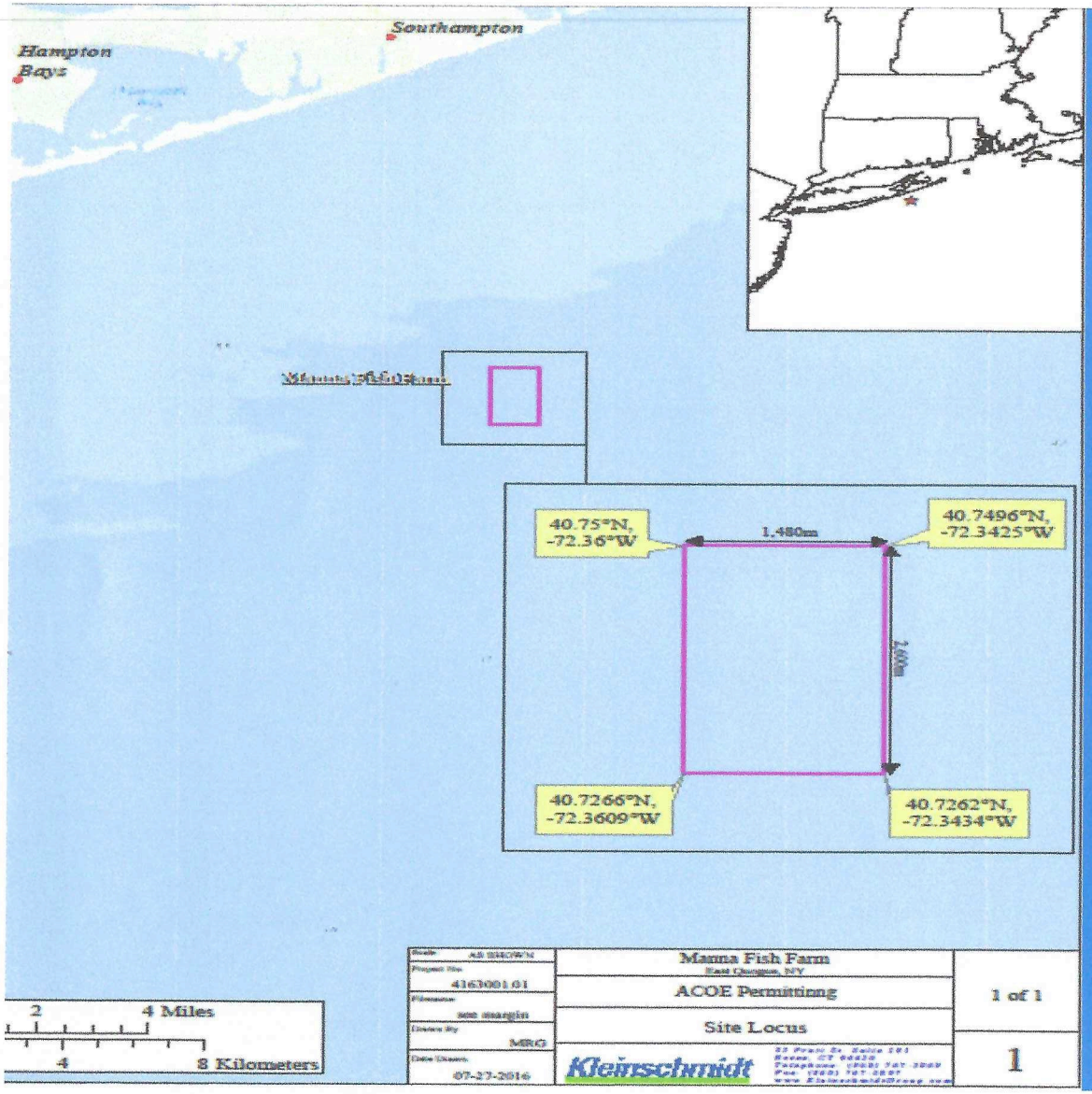



As per aquacultureassociation.org

# United State Exclusive Economic Zone (EEZ)




Federal
Permitting
Process
Aquaculture

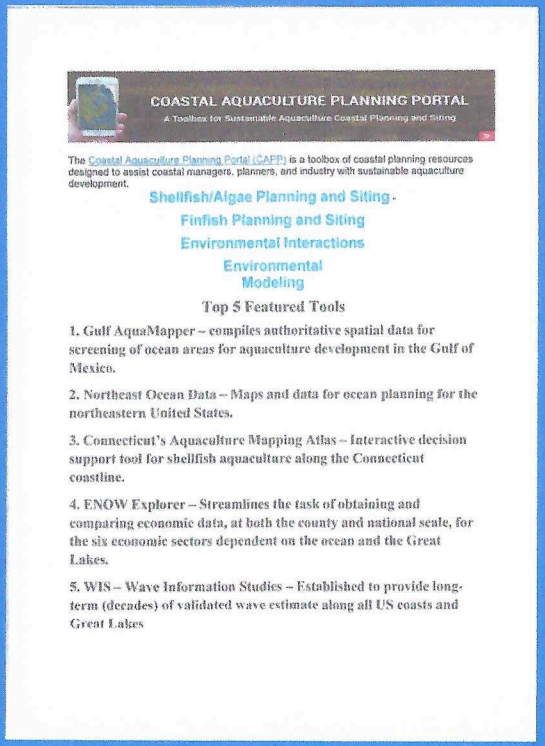



# Proposed Location

**The Offshore Marine Aquaculture Facility is proposed for 8 miles off the coast of eastern Long Island (Shinnecock Inlet)**

**1.5 square miles**

# New Tools Available for site selection



COASTAL AQUACULTURE PLANNING PORTAL

A Toolbox for Sustainable Aquaculture Coastal Planning and Siting

The Coastal Aquaculture Planning Portal (CAPP) is a toolbox of coastal planning resources designed to assist coastal managers, planners, and industry with sustainable aquaculture development.

Shellfish/Algae Planning and Siting

Finfish Planning and Siting

Environmental Interactions

Environmental Modeling

**Top 5 Featured Tools**

1. Gulf AquaMapper – compiles authoritative spatial data for screening of ocean areas for aquaculture development in the Gulf of Mexico.

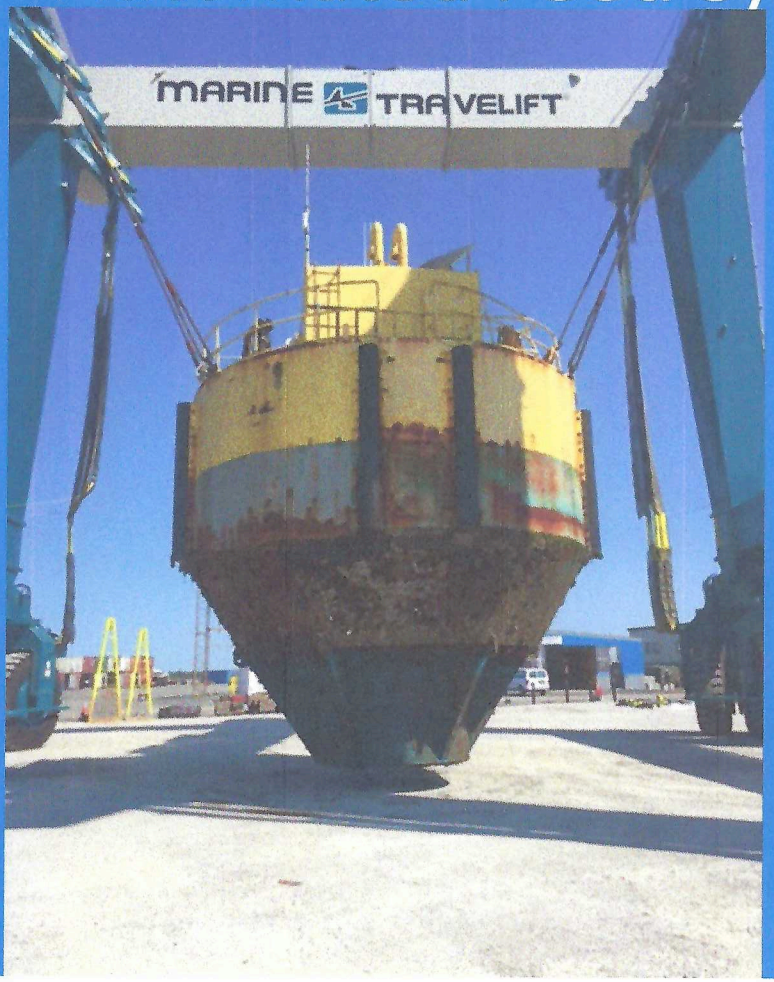
2. Northeast Ocean Data – Maps and data for ocean planning for the northeastern United States.

3. Connecticut's Aquaculture Mapping Atlas – Interactive decision support tool for shellfish aquaculture along the Connecticut coastline.

4. ENOW Explorer – Streamlines the task of obtaining and comparing economic data, at both the county and national scale, for the six economic sectors dependent on the ocean and the Great Lakes.

5. WIS – Wave Information Studies – Established to provide long-term (decades) of validated wave estimate along all US coasts and Great Lakes

# Automated Feed System – Before and After




# Getting ready to go off shore

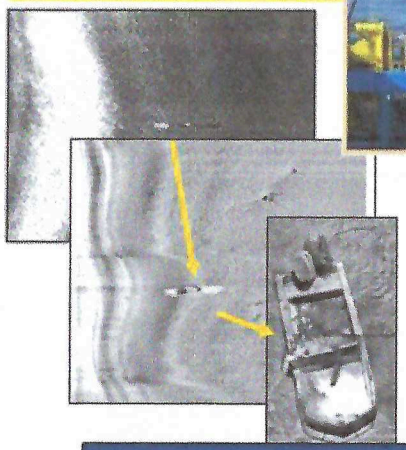
# Submersible Cage Technology

# Autonomous Underwater Vehicles (AUVs)

Deep Water — Littoral — Surf Zone

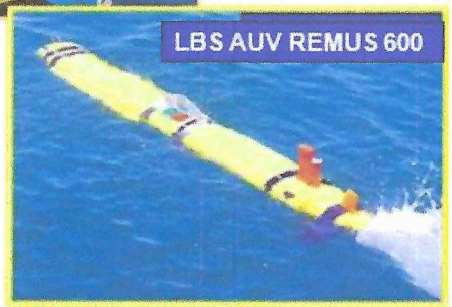
Full Ocean | 3000 M | 300 M | 100M | Shore Line

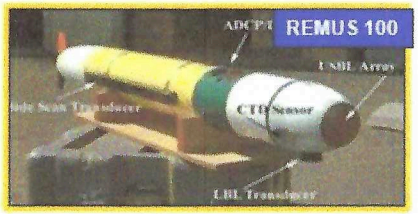




## Capabilities

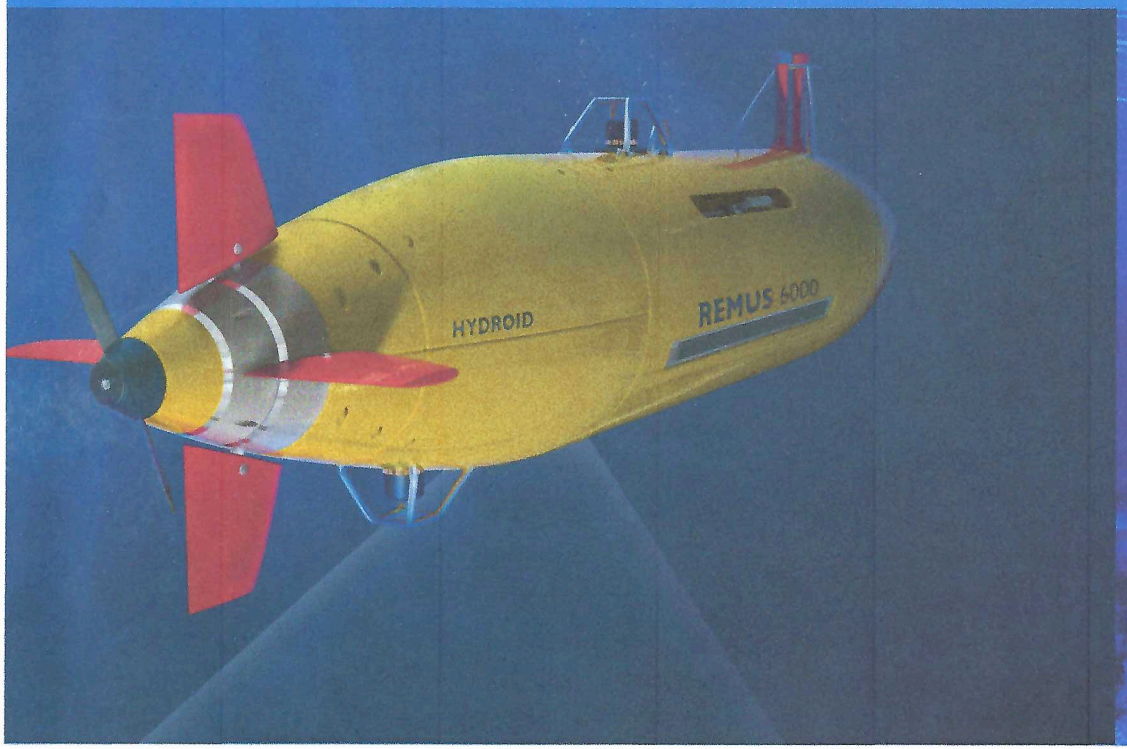
Side Scan Sonar
Sub-Bottom Profiler
Camera
CTD
ADCP
GPS
Iridium, Freewave, & Acoustic Comms

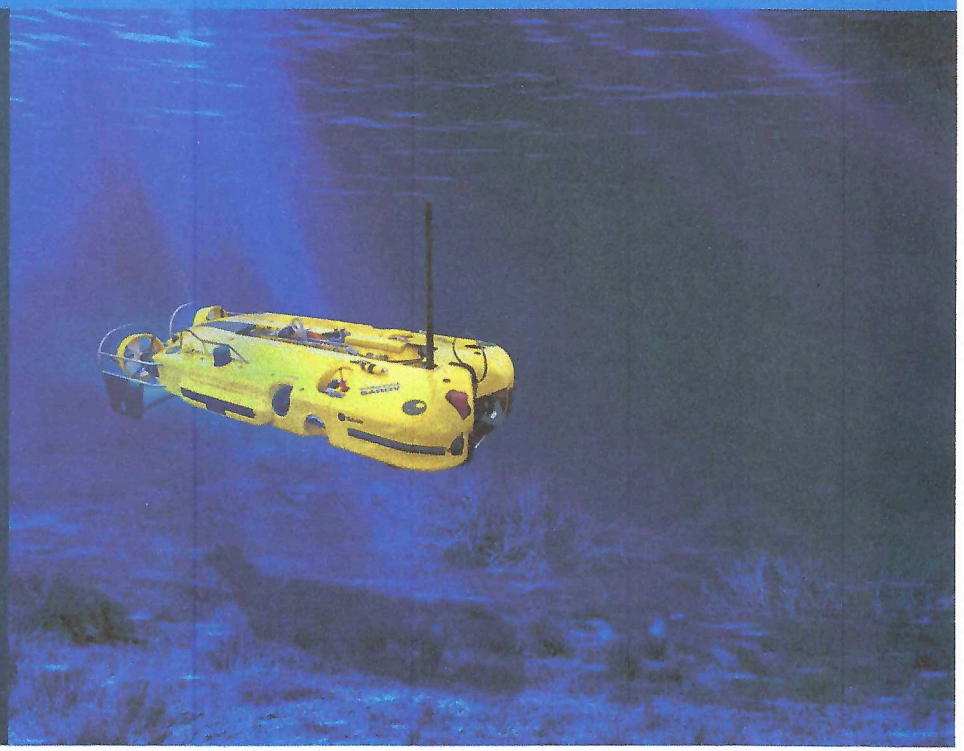


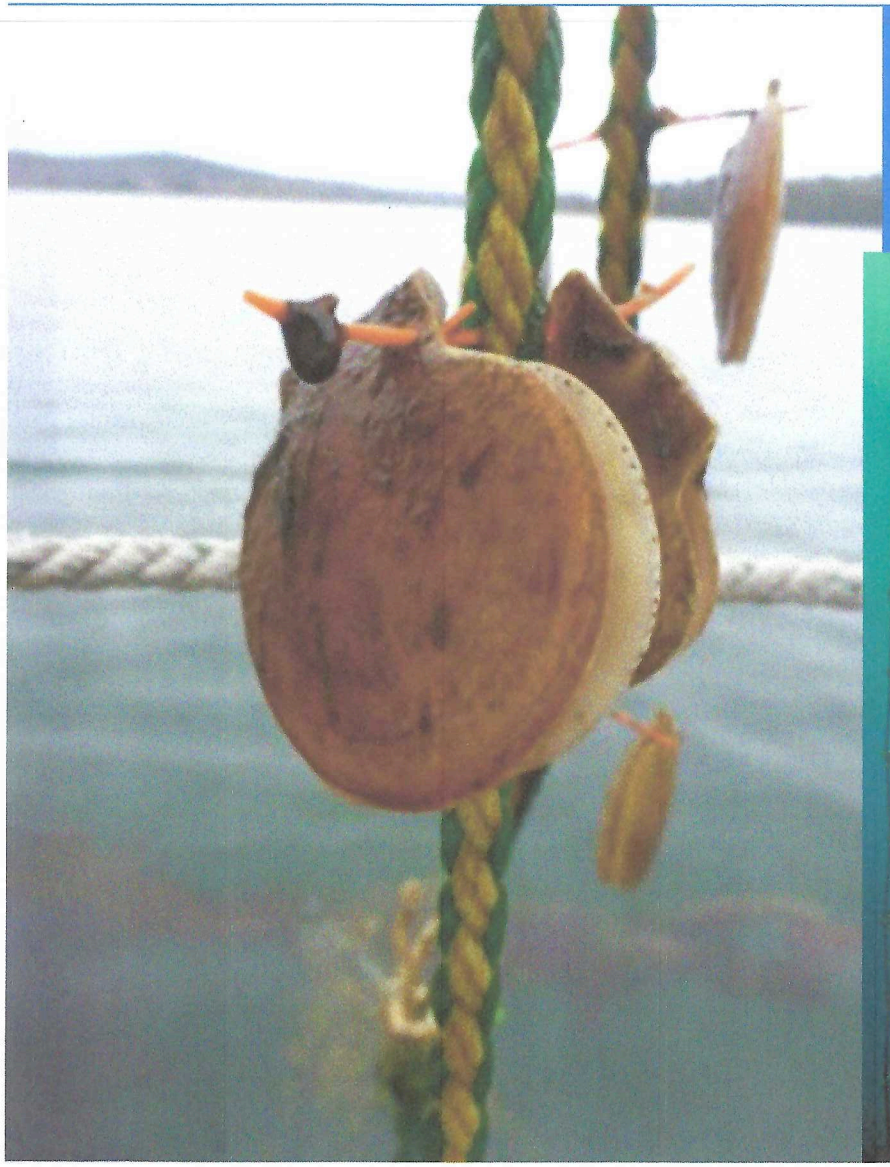

**Over a Decade of Full Ocean Depth AUV Expertise**

# New technology available to support the sustainable production of seafood



# Scallop farming methods



# CHALLENGES AND LESSONS LEARNED

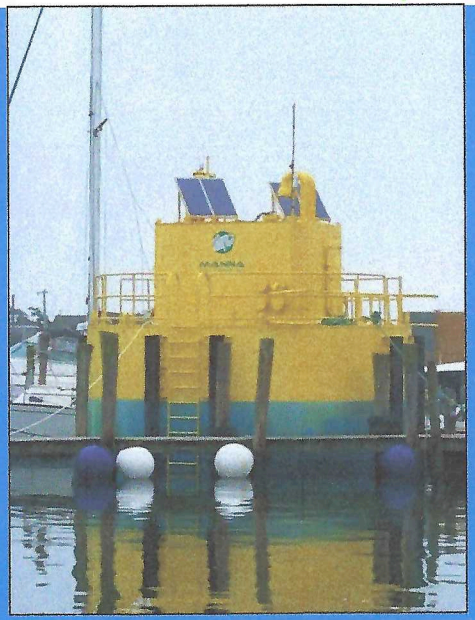
- ***Challenges***
- No clear path to permitting
- No funding available
- No curriculum available
- It is overwhelming to contemplate
- Overlapping skill sets necessary
- No idea where to start

- ***Lessons Learned***
- Don't accept no for an answer
- Think outside the box
- Learn something new every day
- Think big – it's the only way
- Build a strong, skilled team
- Start with the potential opposition and address challenges – then educate

# Research and Education

MANNA OCEAN
FOUNDATION

# MANNA
## FISH FARMS, INC.



*Charting the course for open ocean aquaculture in the Atlantic Ocean!*