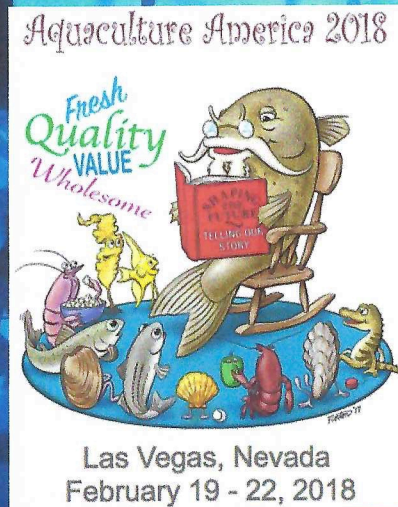


AquaTools: Smart Siting and Environmental Management for a Growing Aquaculture industry

Smart Siting from a Business Perspective

Donna Lanzetta:

CEO and Founder of Manna Fish Farms, Inc. and the Manna Ocean Foundation



Handwritten notes: a signature, the number "203", and the number "470 1006".

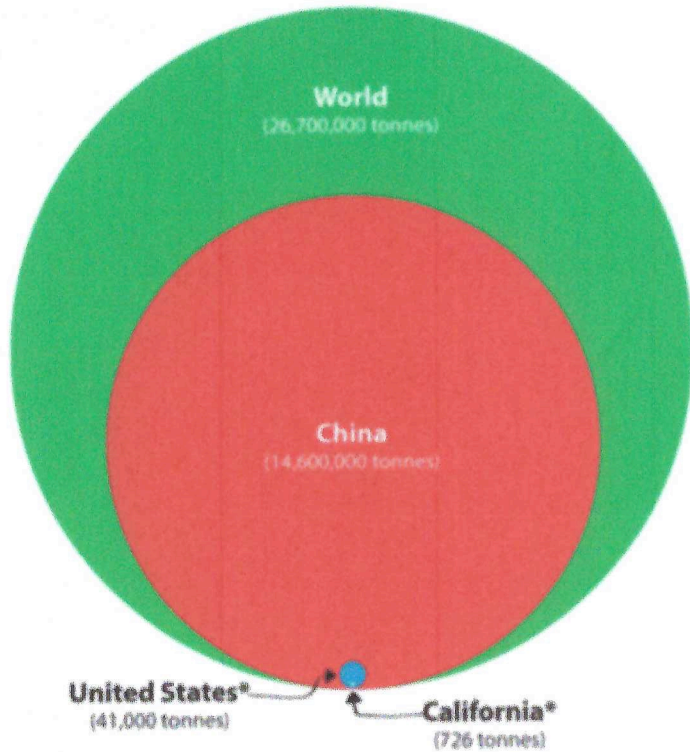


Striving to be the first open ocean farm on the East Coast of the United States.

2

Current US Aquaculture

Marine Aquaculture Production 2014¹



Acreage Used for Agriculture and Marine Aquaculture 2013²

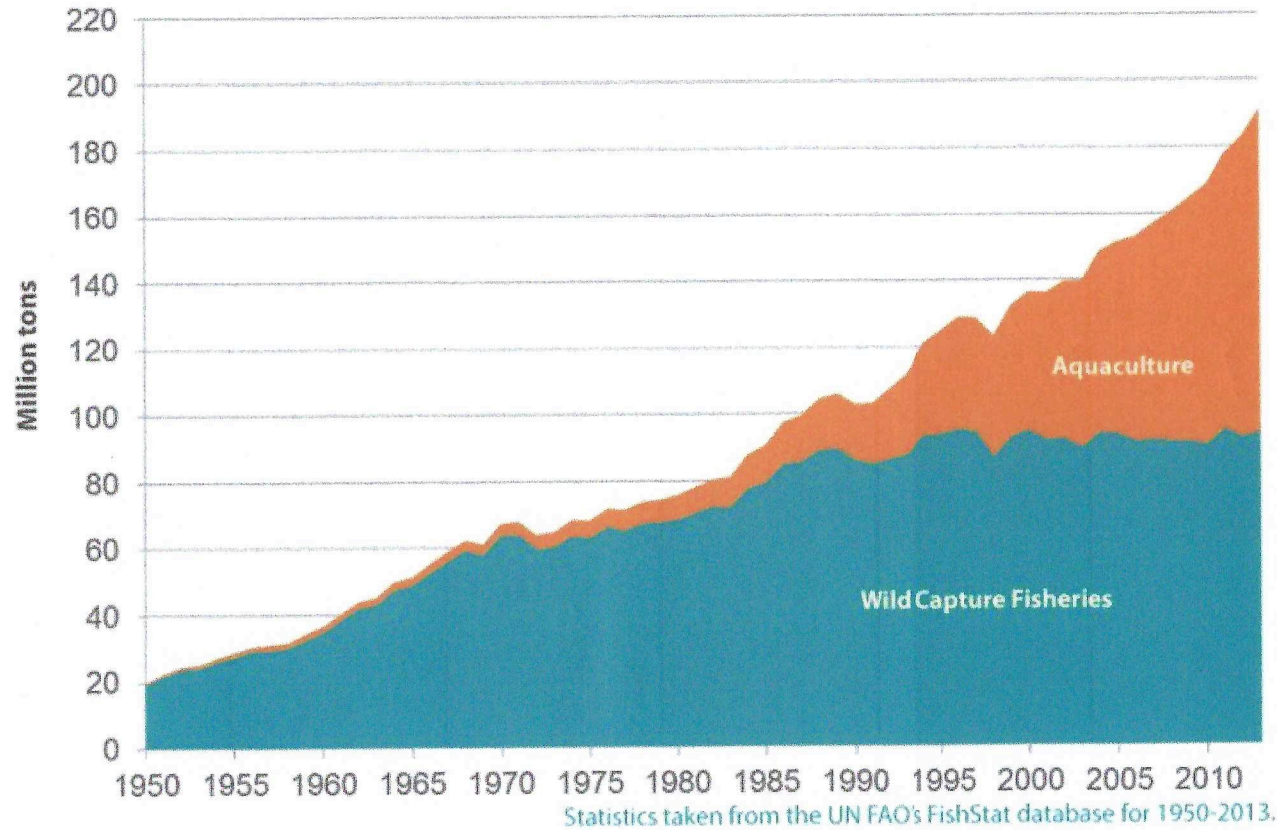


* Clams, oysters, and mussels are reported as meat weights (excludes shell), while all other species such as finfishes are reported as whole (live) weights.
Source: ¹ National Marine Fisheries Service (2016) Fisheries of the United States, 2015. U.S. Department of Commerce, NOAA Current Fishery Statistics No. 2015. ² FAO (2014) The State of World Fisheries and Aquaculture 2014. Contributing to food security and nutrition for all. Rome. 200 pp., CDFW (2015) 2014 Marine Bivalve Production. 5 pp. ³ 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.

3

No US Aquaculture businesses = No US Aquaculture Industry

Global Seafood Production



24



MANNA OCEAN FOUNDATION

A 501(c)(3) tax exempt organization

OUR MISSION:

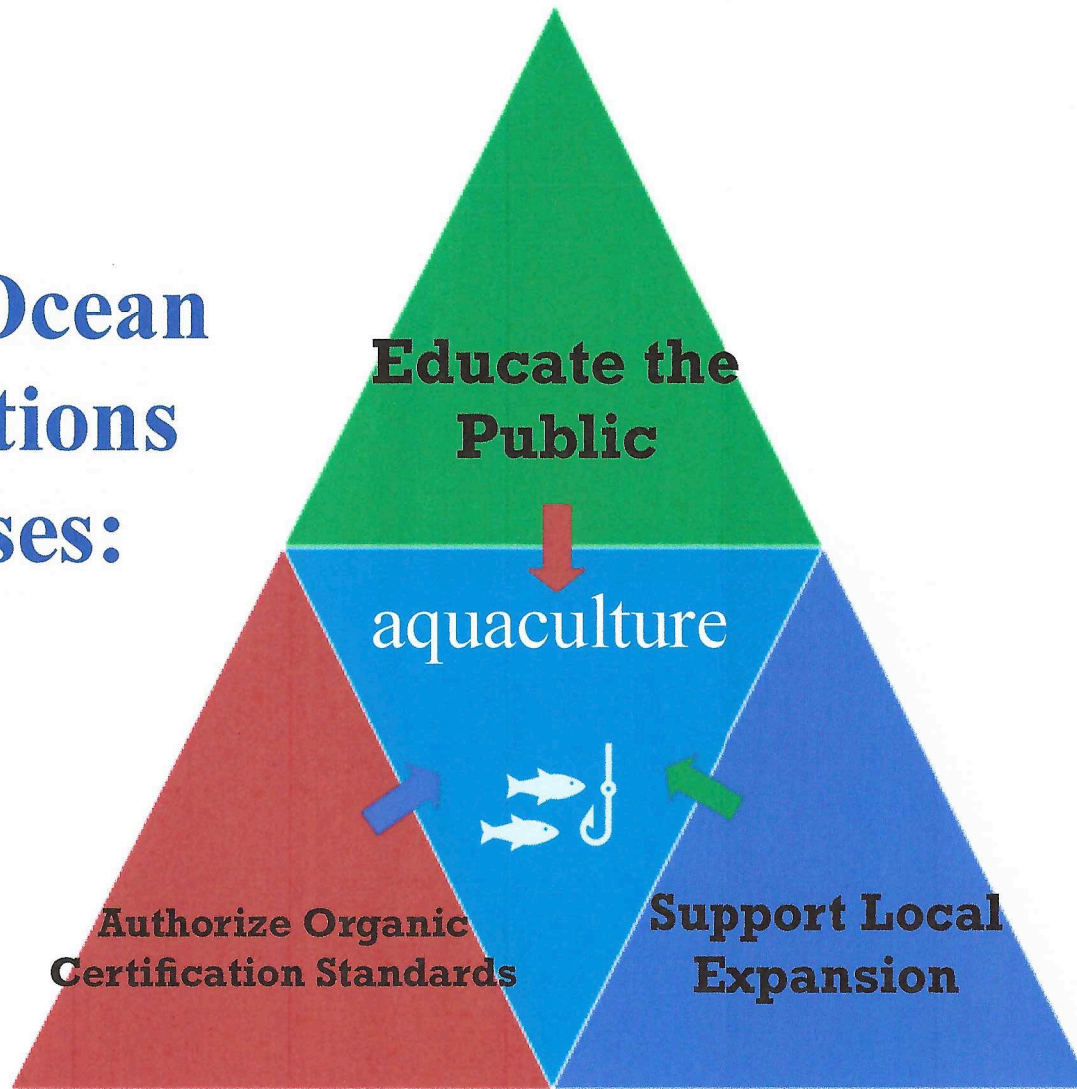
TO OPERATE A RESEARCH INSTITUTE AND HATCHERY DEDICATED TO OFFSHORE
MARICULTURE

GOALS:

RESEARCH, DEVELOP AND SUPPORT THE GROWTH OF NEW TECHNOLOGIES AND
INNOVATIONS TO INCREASE SUSTAINABLE OFFSHORE SEAFOOD PRODUCTION

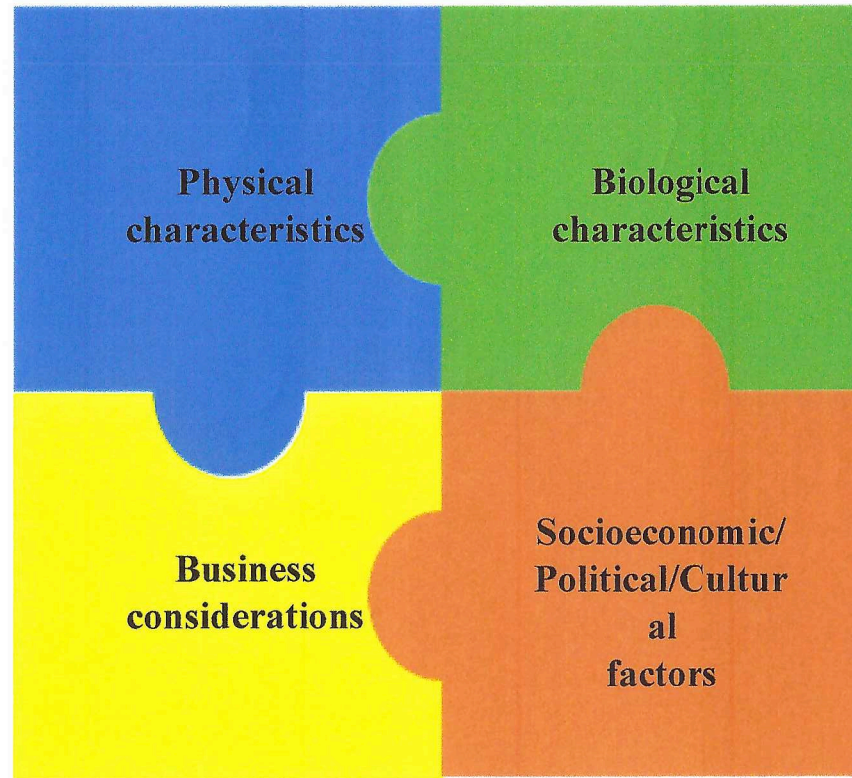
5

Manna Ocean Foundations Purposes:



6

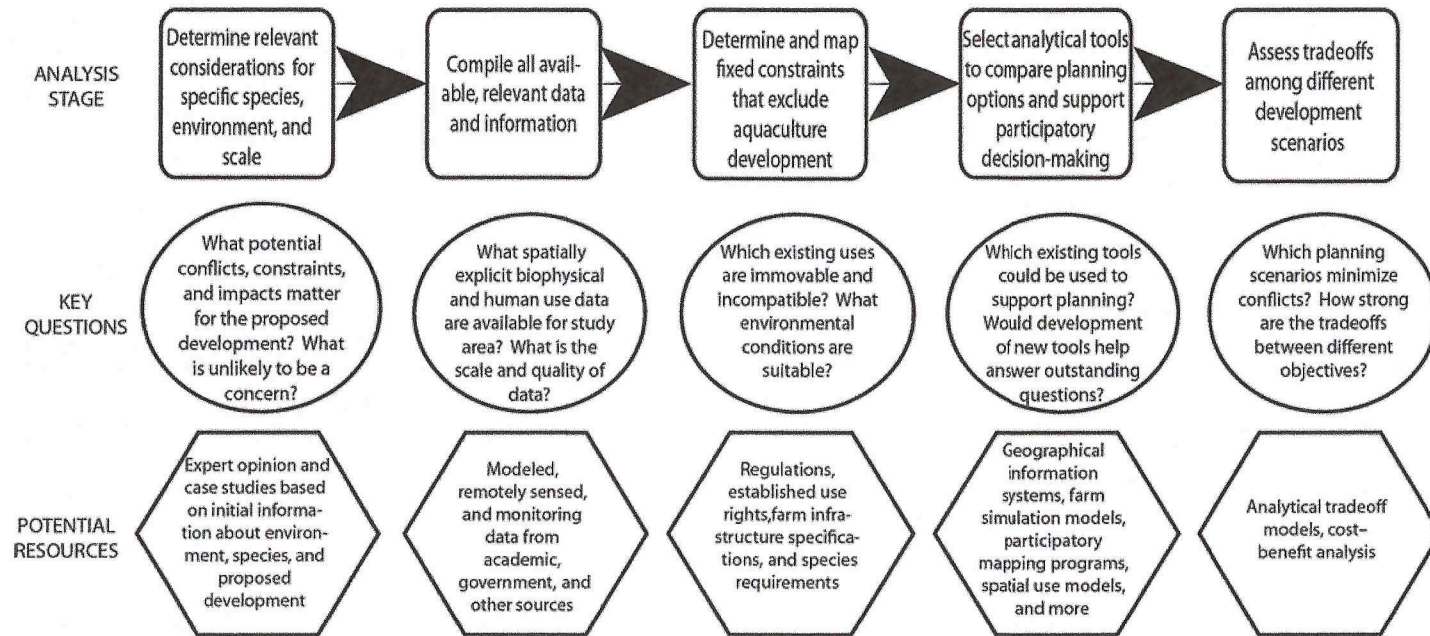
Smart Siting for Aquaculture



7

Planning takes patience...

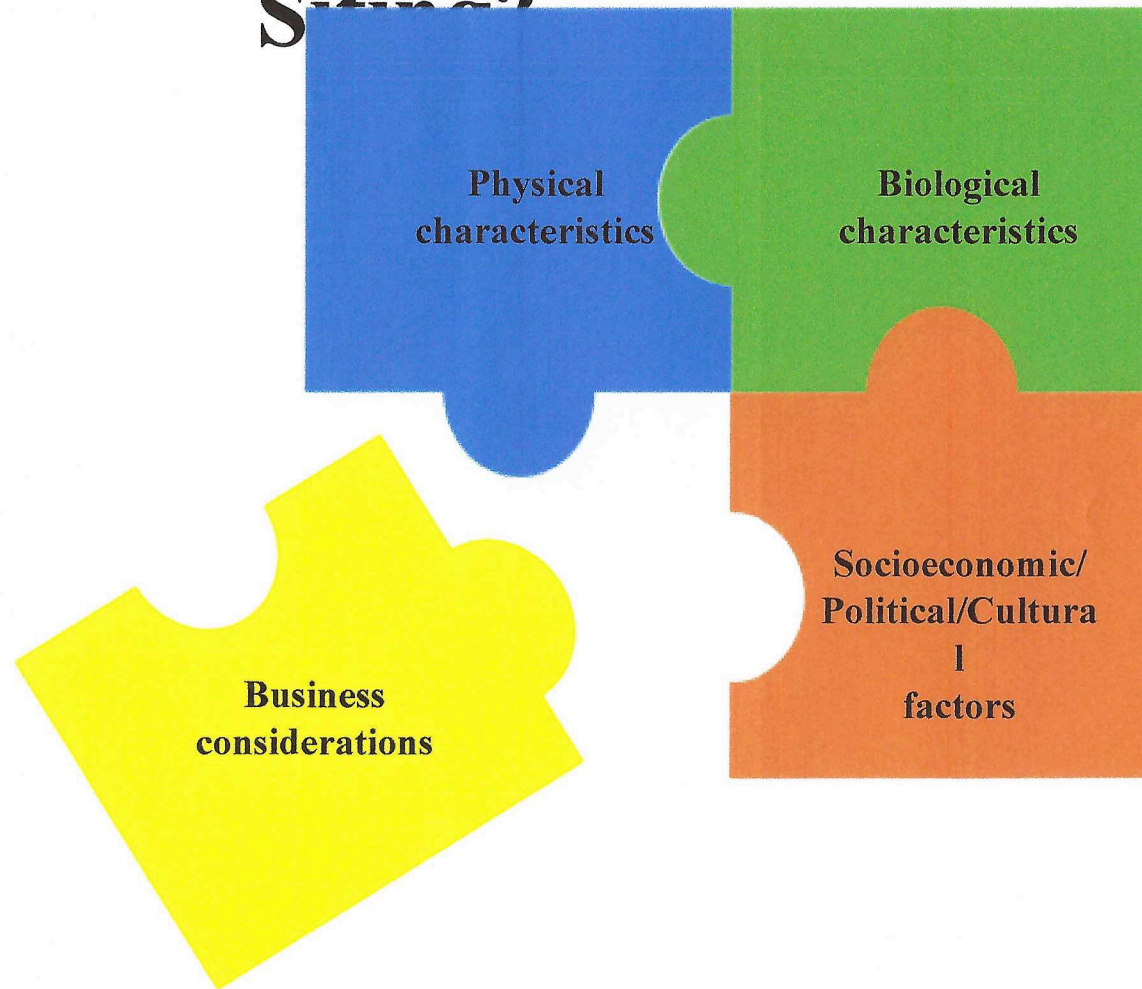
Offshore aquaculture: Spatial planning principles for sustainable development



Gentry et al., 2017, *Ecology and Evolution* [7\(2\), 733-743](#)

An Overlooked Piece in Aquaculture

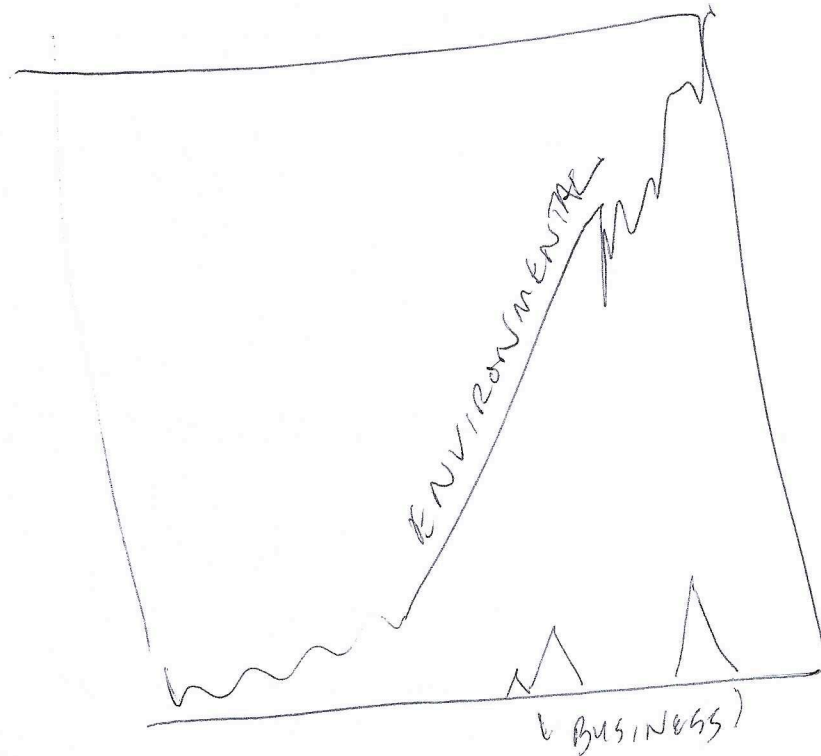
Siting?



Few publications providing siting advice from a business perspective

Quick Google scholar search: "aquaculture siting"

Business related Environmental Siting



Major business siting recommendations:

- Hoagland et al. 2003.
- Distance to shore
- GESAMP, 2001
- Price, quality, and consistent availability of inputs
- Skills and labour costs
- Access to processing facilities, markets, infrastructure, and support services.

ecosystem based. Currents
temperatures
Shipping Channels
migratory routes

Smart Siting for Businesses

Business considerations

Includes:

- Daily operating costs
- High start up costs
- Workforce availability and training
Workforce housing
- Working waterfront infrastructure
- Proximity to markets - Distribution availability
COLD STORAGE
- Supportive industries (e.g. ice, processing, insurance, etc.)
legal
- Suitable and reasonably priced areas for onshore and hatchery production

Public Safety
Seafood Safety, Lab + Vet access
Security, ~~Availability~~
Considerations.
USDA access

FINGERLINGS.

- Access to academic and non-profit collaborators
- Local, state, regional, and federal support -

• Marketing + Business Support - COOPS -
CSF -

• Grant availability

• Economic + tax incentive + incubator programs

DIVERS
AQ VET

Thank you!

and remember...

No Businesses, No Industry

Donna@MannaFishFarms.com



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