



2022 NATIONAL SALTWATER RECREATIONAL FISHERIES SUMMIT



NOAA
FISHERIES



March 29, 2022

Session 2: Balancing Ocean Uses



What's Happening on the Water – Offshore Wind Energy

Balancing Ocean Uses
National Saltwater Recreational Fisheries Summit
March 29, 2022

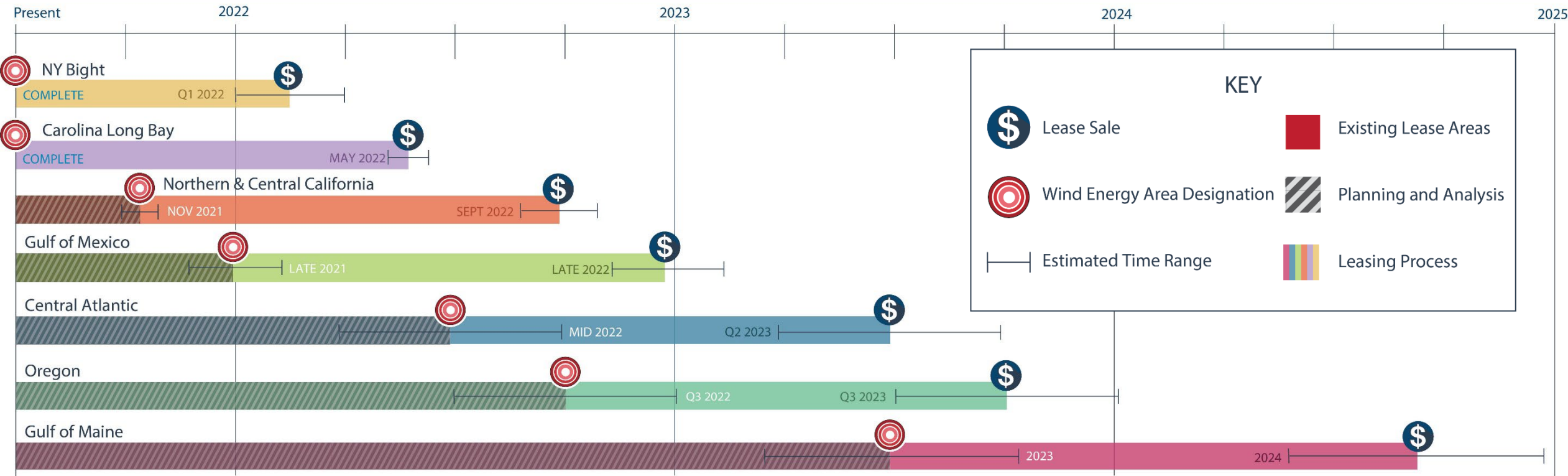
BOEM Office of Renewable Energy Programs



Administration Goals

- President Biden issued **Executive Order 14008** that called for the Interior Department to identify steps to increase responsible renewable energy development on public lands and waters
- First-ever **national offshore wind goal** to deploy **30 gigawatts of offshore wind by 2030**, which would create nearly **80,000 jobs**

BOEM Offshore Wind Leasing Path Forward 2021-2025



Our path forward will help achieve the first-ever **national offshore wind goal to deploy 30 gigawatts of offshore wind by 2030**, which would create nearly **80,000 jobs**



Renewable Energy Program by the Numbers



Competitive Lease Sales Completed:

9

Active Commercial Offshore Leases Issued:

18 (+6)

Active Research Offshore Leases Issued:

2

Site Assessment Plans (SAPs) Approved:

14

General Activities Plans Approved:

1

Construction and Operations Plans (COPs):

- Approved since 2021

2

- Under Review

12

- Anticipated within Next 12 Months

5

Guidance:

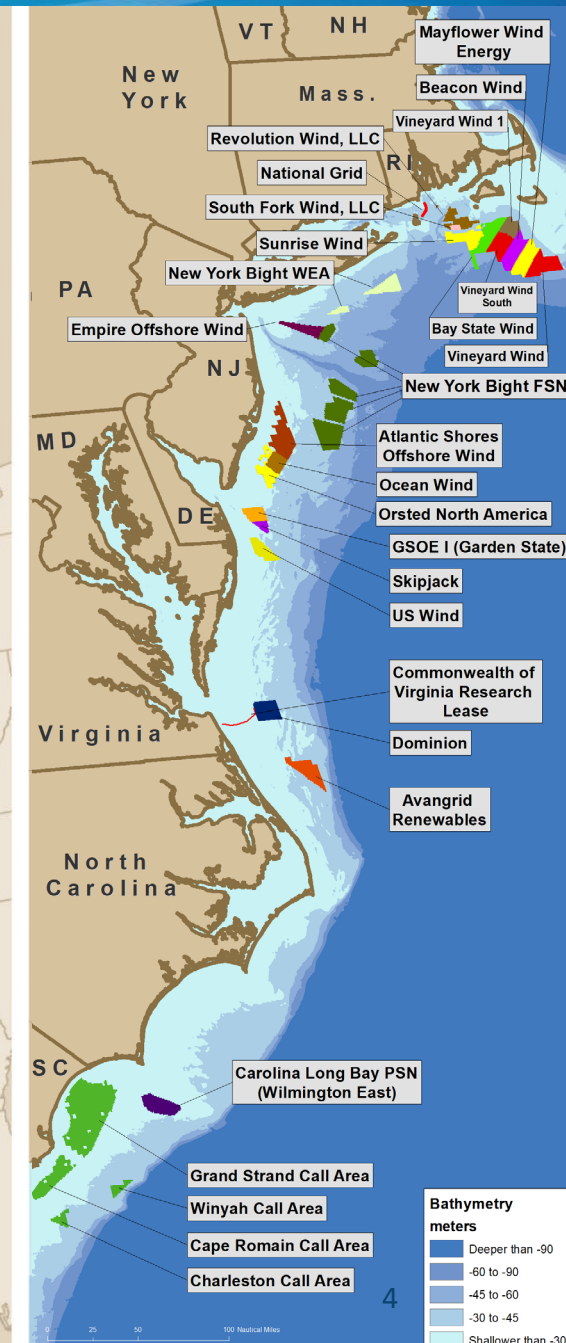
11

Leasing Under Consideration:

6

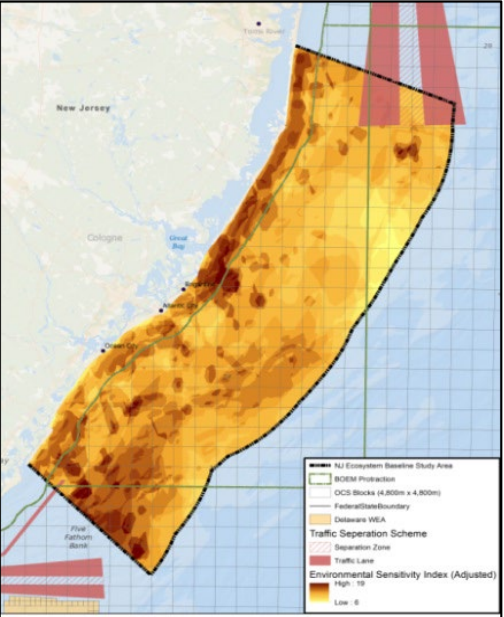
Steel in the Federal Waters:

2020



OCS Renewable Energy Authorization Process

Planning & Analysis



Leasing



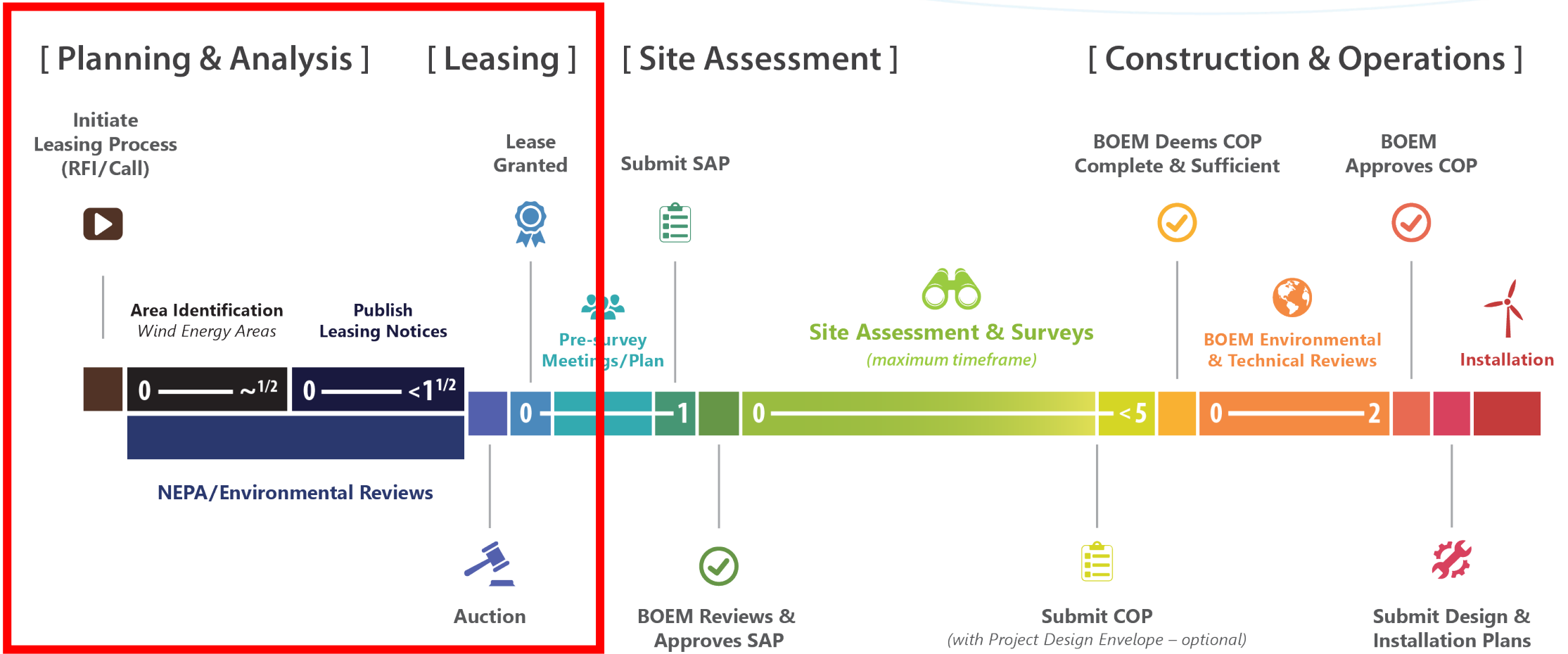
Site Assessment



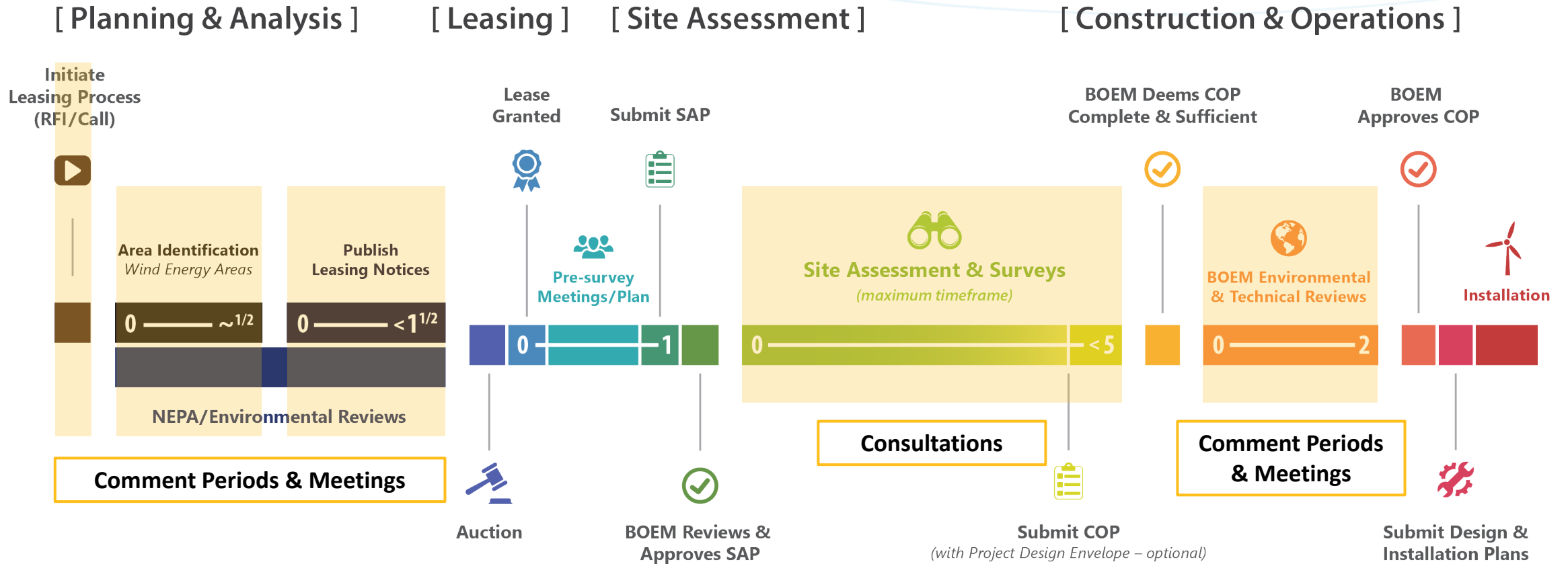
Construction & Operations



Renewable Energy Process: From RFI/Call to Operation

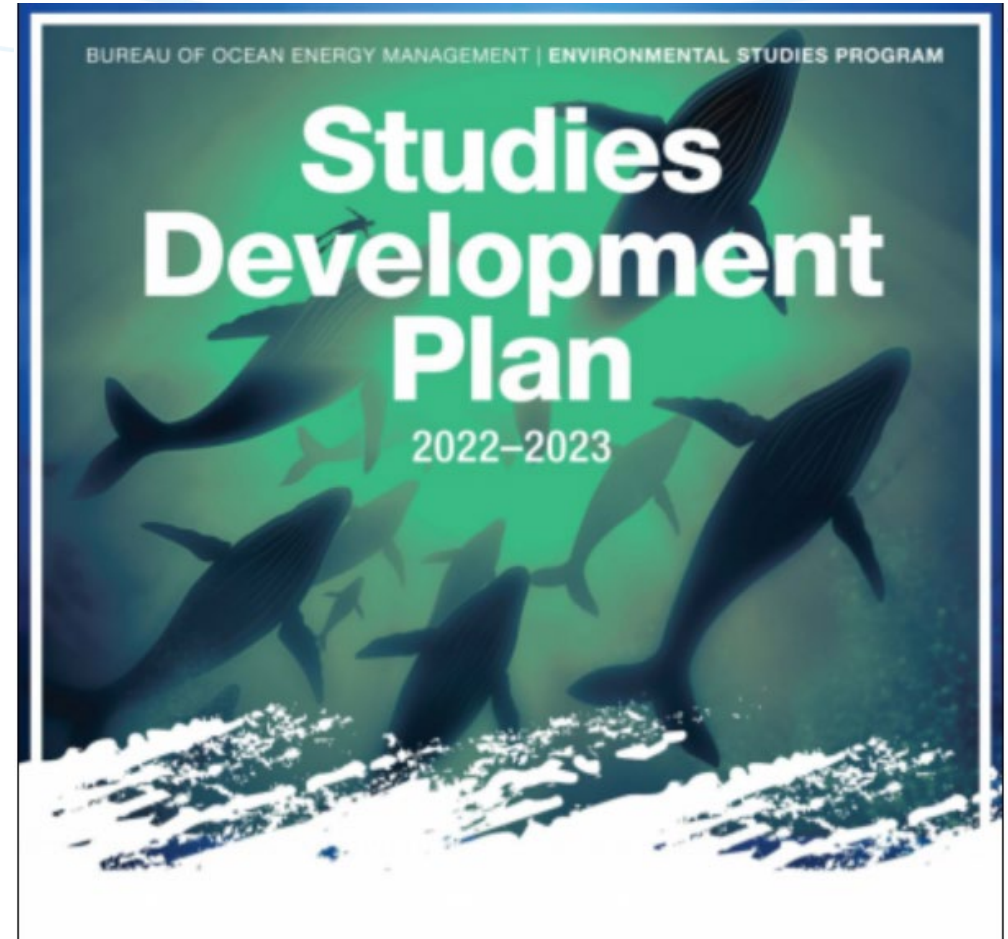


How is Input Collected?



Environmental Studies Program

- BOEM recently published the 2022-2023 Studies Development Plan and the National Studies List for 2022.
- Study ideas are reviewed by the Standing Committee on Offshore Science and Assessment (COSA) convened under the National Academy of Sciences
- Results of studies are incorporated into BOEM environmental assessment and decision-making process



BOEM

Bureau of Ocean Energy Management
U.S. Department of the Interior

BOEM.gov



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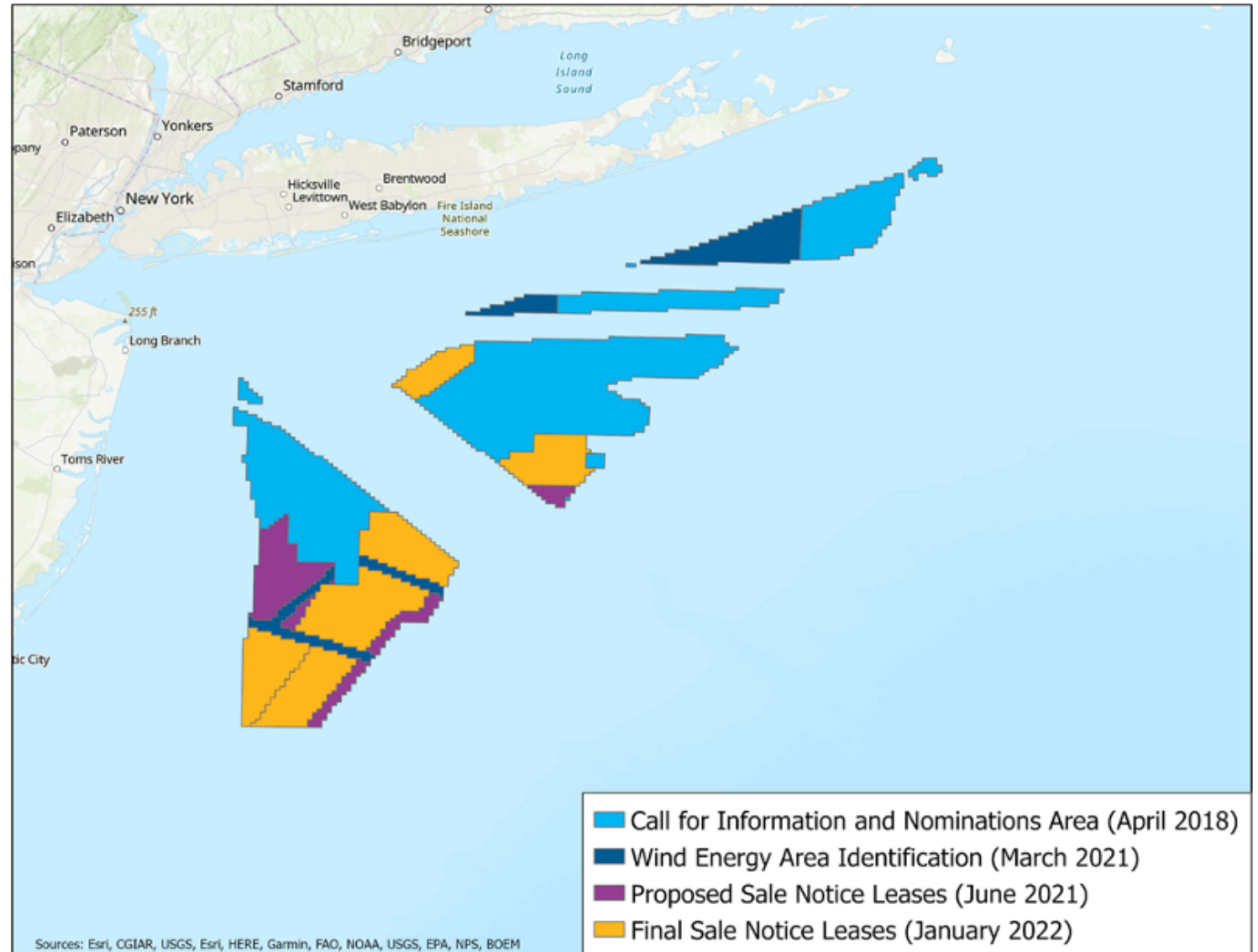


Offshore Wind & Recreational Fishing

New York Bight

Planning Projects with Stakeholder Input

BOEM incorporated stakeholder input and reduced the initial Call Area's 1.7 million acres by 72 percent to approximately 488,000 acres in the Final Sale Notice



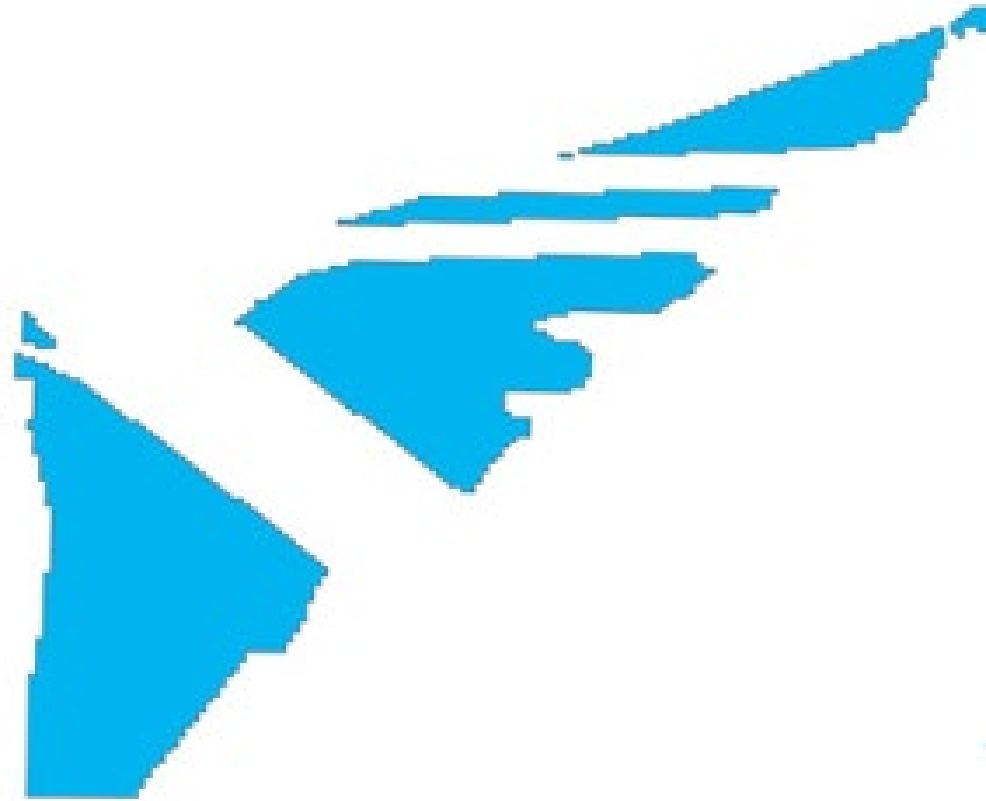
New York Bight

**Call for Information & Nominations
Area – April 11, 2018**

1,735,154 Acres

**BOEM creates a Call Area in
consultation with the State of New York
and receives over 130 comments from:**

- **Commercial fisheries,**
- **Maritime industries**
- **General public**
- **Federal agencies**
- **State and local agencies**
- **Industry groups**
- **Offshore wind developers**
- **NGOs**
- **Universities**
- **Other stakeholders**



New York Bight

Wind Energy Area Identification –
March 29, 2021

807,383 Acres

BOEM reduces the original areas identified in the Call by 63% to create WEAs. Reductions were intended to reduce conflicts for uses including:

- Commercial fisheries
- Recreational fisheries
- Maritime navigation
- DoD activities
- Marine protected species
- Avian species
- Radar
- Existing Infrastructure
- Wind Resources



New York Bight

Proposed Sale Notice – June 14, 2021

627,331 Acres

BOEM reduces the Wind Energy Area an additional 22% in the PSN by eliminating two WEAs due to:

- Conflicts with the proposed USCG fairway
- Maritime traffic concerns
- Commercial fisheries
- State preferences
- Marine protected species
- Commercial Viability

BOEM also creates transit corridors to account for

- Vessel traffic patterns
- Fisheries
- DoD Concerns



New York Bight

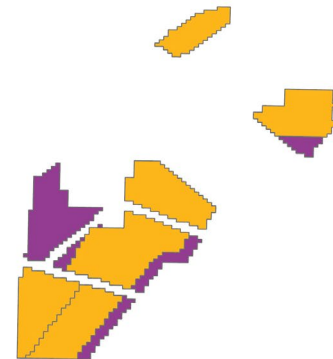
Final Sale Notice – January 14, 2022

488,201 Acres

BOEM reduces acreage of leases in FSN by 22% from the PSN

BOEM offers only 6 leases instead of 8 to address conflicts raised by:

- Fishing industry
- Coast Guard
- Navigation Interests
- National Marine Fisheries Service
- Department of Defense



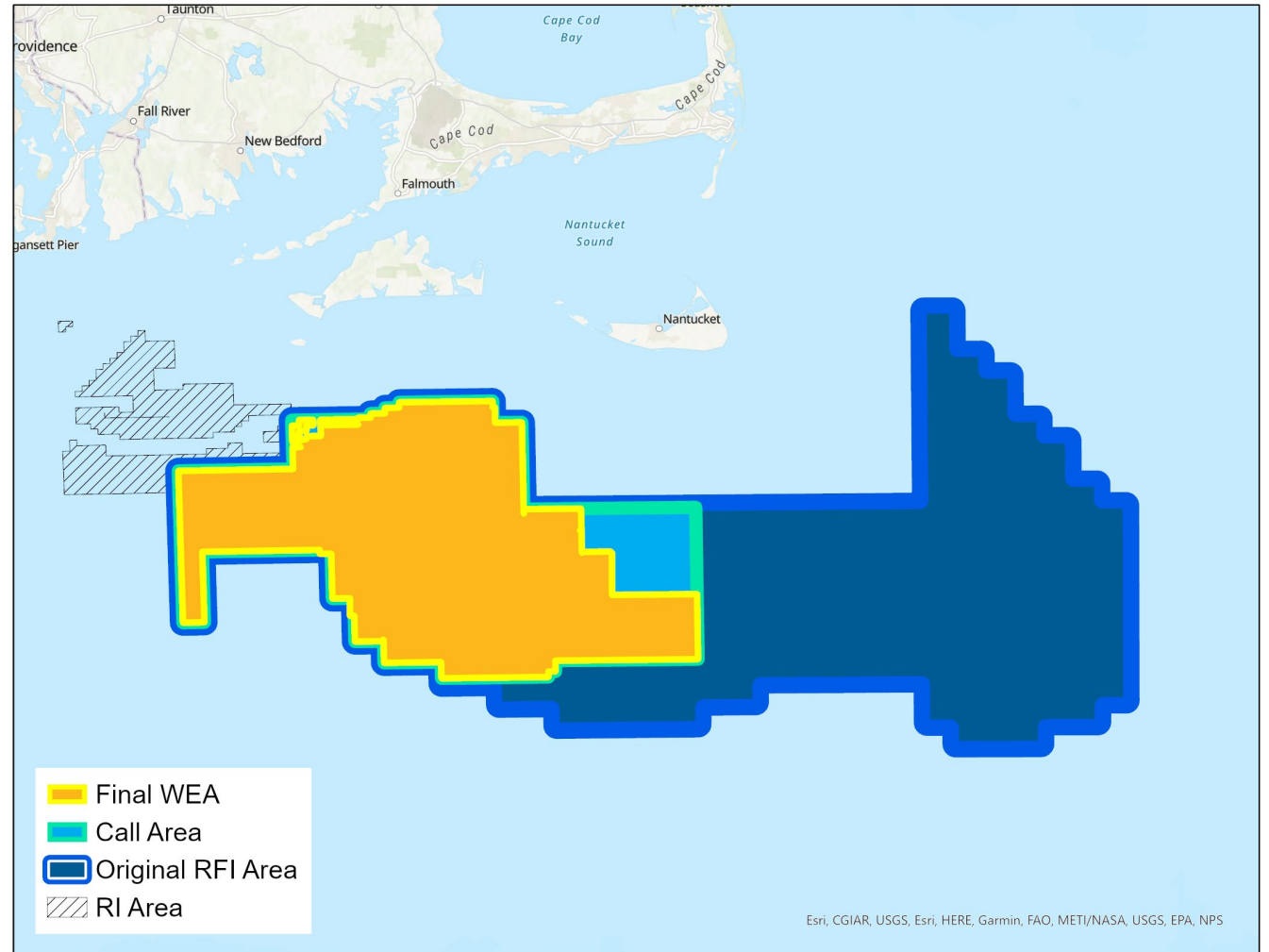
MA/RI Wind Energy Area

Request for Information & Intergovernmental Taskforces:

1,884,920 Acres

Lease: 742,000 acres

- An area about twice the size of Rhode Island was under consideration in the 2010 MA RFI Area to gauge wind developer interest.
- The original RFI area was reduced by 60% from 2010-2015
- An area smaller than the state of Rhode Island was leased in January 2015

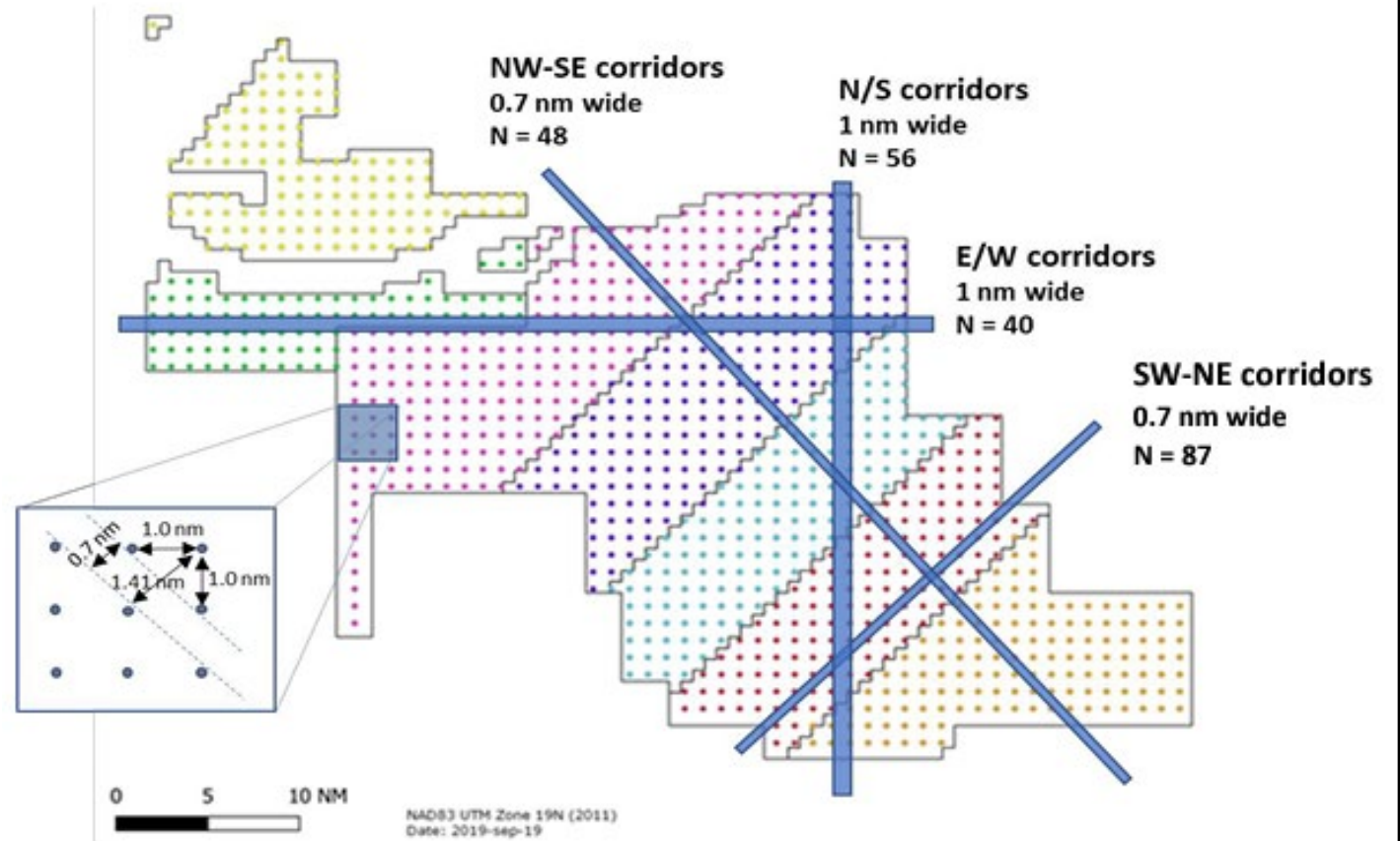


MA/RI Wind Energy Area

Call for Information & Nominations
Area – April 11, 2018

1,735,154 Acres

Developers remove energy production from the MA/RI area in 2019, after purchasing their leases, to establish a 1x1 nautical mile layout throughout the 5 adjoining lease areas. This common layout between competing companies' leases created over 200 transit lands to address fishing industry concerns.



Recreational Fishing Opportunities

Coastal Virginia Offshore Wind Pilot Project and the Block Island Wind Project provide more recreational fishing opportunities





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Office of
Aquaculture

NOAA's Work to Foster Marine Aquaculture



Why Aquaculture?

- **Global demand for seafood is growing:** we will need an additional 40 million tons in 20 years.
- **Seafood security:** ~70% of seafood Americans eat is imported, ½ of that from aquaculture.
- **Good for People, Good for the Economy, Good for the Planet.**

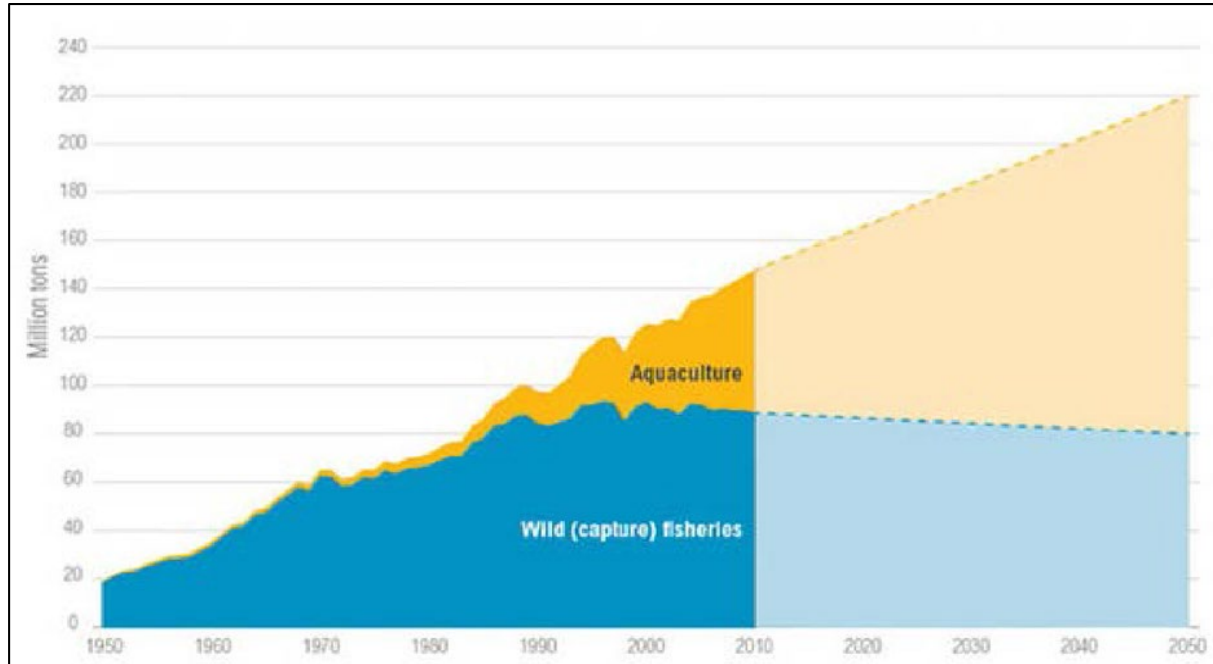
DHS recommended the growth of domestic aquaculture as one of six key national priorities to support domestic food system resilience.

*Threats to Food and Agricultural Resources (2021).
U.S. Department of Homeland Security*

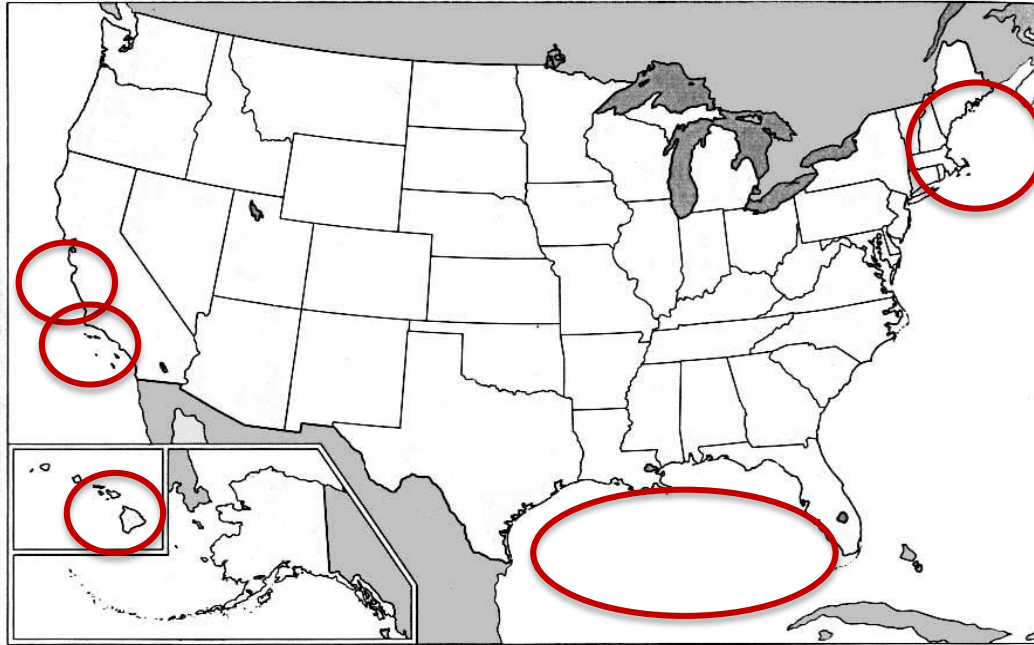


Aquaculture is Expanding Rapidly Worldwide

Historical and Projected Global Aquaculture and Fisheries Production



Aquaculture in Federal Waters: Current Interest



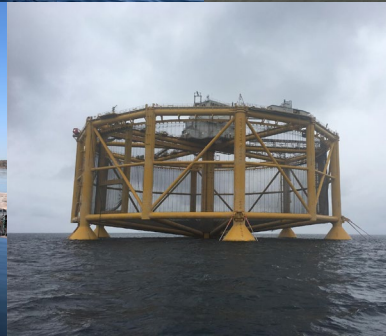
What Does Aquaculture Look Like Today?



Courtesy of Maine Aquaculture Association



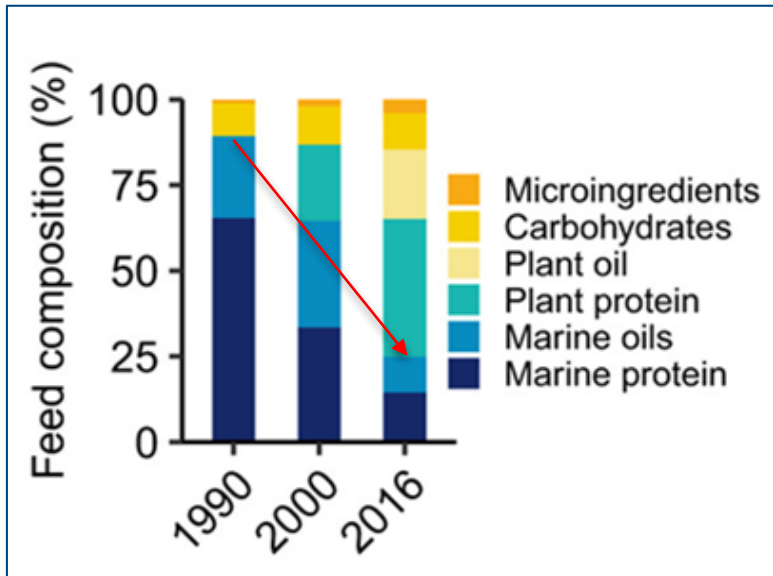
Courtesy of Maine Aquaculture Association



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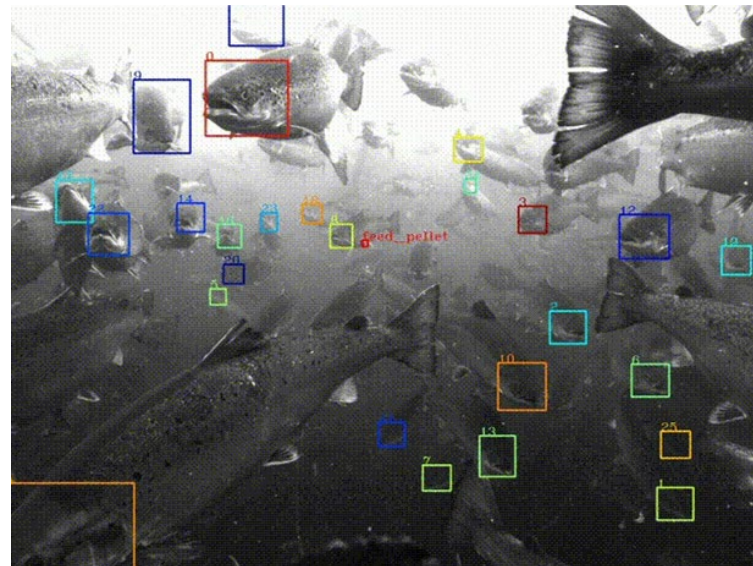
What Does Aquaculture Look Like Today?

Feed innovation leads to greater sustainability.



Fish meal and oil use down from 90% in 1990 to less than 25% today.

- Cottrell, Richard S., et al. "Time to Rethink Trophic Levels in Aquaculture Policy." *Reviews in Aquaculture* 13.3 (2021): 1583-1593.



Up to 35% improvement in feed conversion ratios since 1997.

- Naylor, Rosamond L., et al. "A 20-year Retrospective Review of Global Aquaculture." *Nature* 591.7851 (2021): 551-563.
- Image Source: Towards Data Science



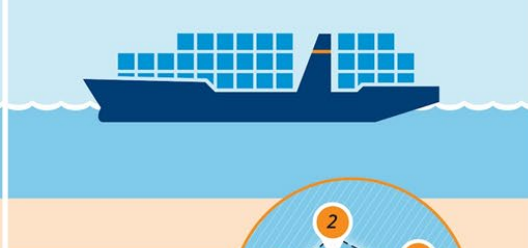
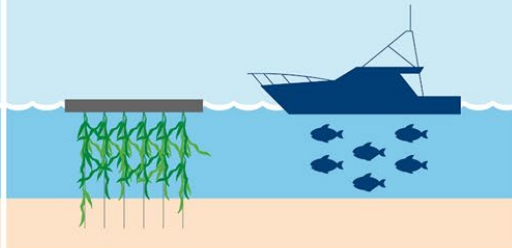
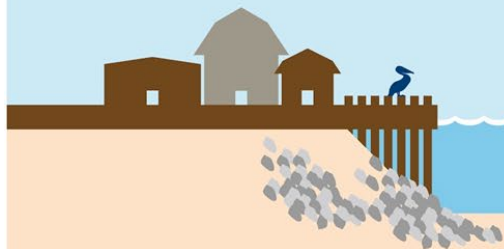
What is an Aquaculture Opportunity Area?

Aquaculture Opportunity Areas show high potential for commercial aquaculture. A science and community-based approach to identifying these areas helps minimize interference with other enterprises, account for current fishing patterns, and protect the ecosystem.

AOAs will expand economic opportunities in coastal and rural areas, and increase our nation's seafood security.

AOAs use the best available science to find appropriate spaces for sustainable aquaculture.

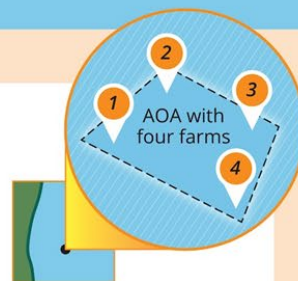
AOAs minimize interactions with other users, such as shipping, fishing, and the military.



Assessment and Use of AOAs

Stakeholder input is essential in the design and location of AOAs and NOAA expects these areas will be shaped through a public process that allows constituents to share their community and stewardship goals, as well as critical insights.

AOA size, exact location, and farm types will be determined through spatial analysis and public input to expand sustainable domestic seafood production while minimizing potential user conflicts. Farms will still need to go through the permitting process and environmental reviews.

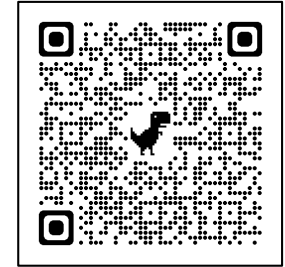
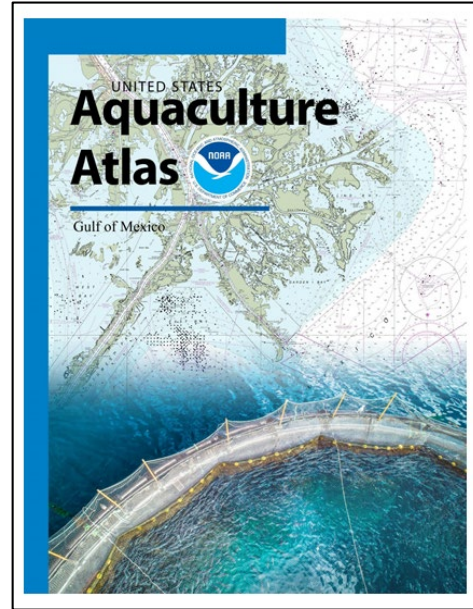
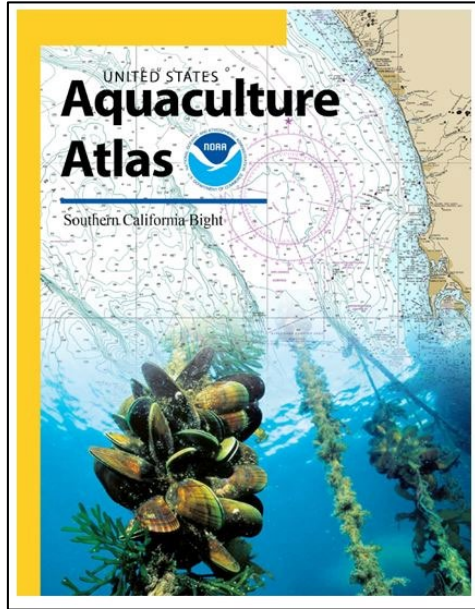
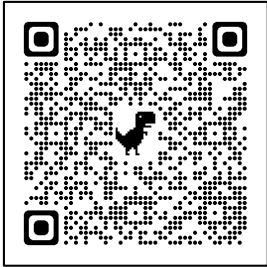


fisheries.noaa.gov/aquaculture-opportunity-areas



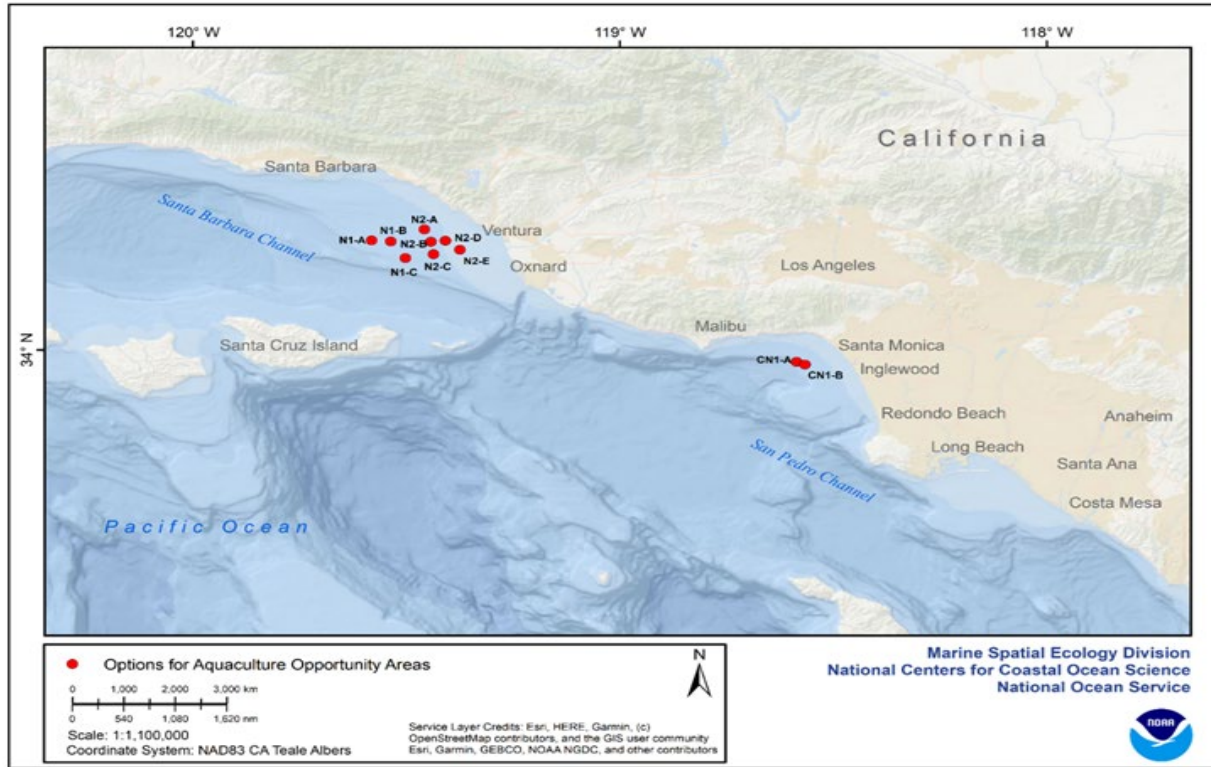
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AOA Atlases: Southern California and Gulf of Mexico

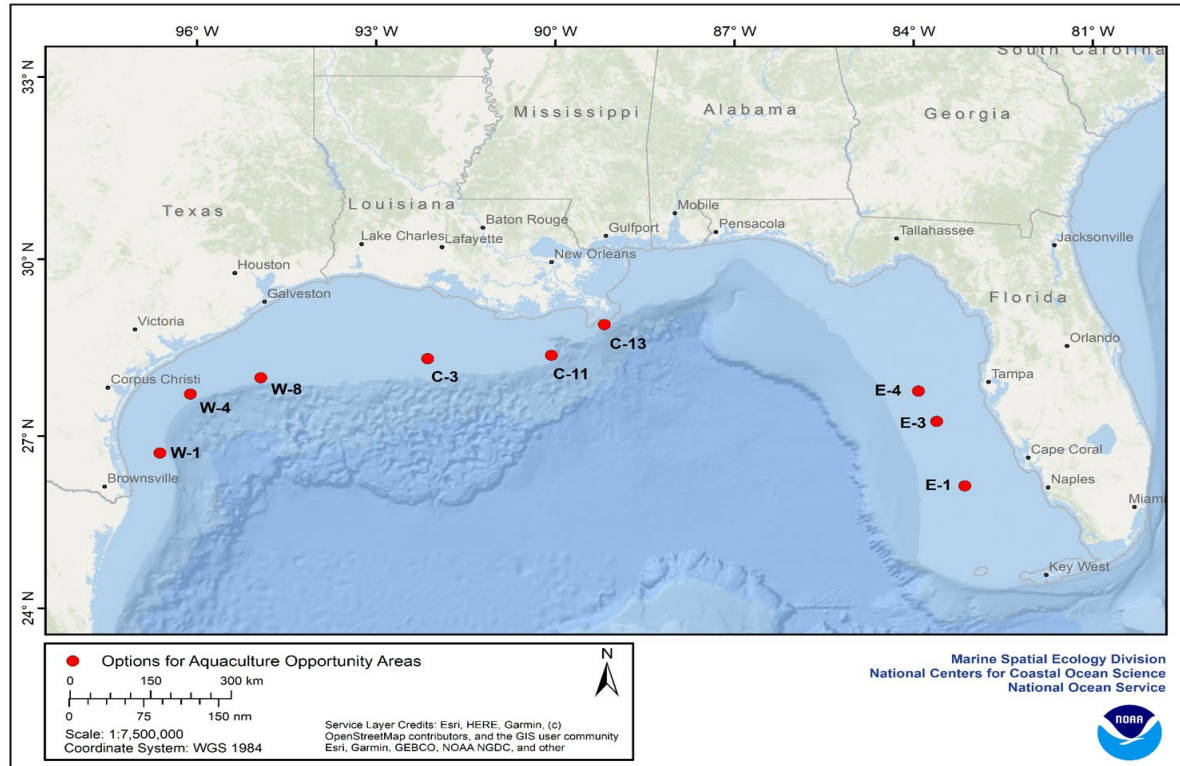


['NOAA Analyses to Inform Aquaculture Siting in the Gulf of Mexico and Southern California'](#)

Southern California Aquaculture Atlas

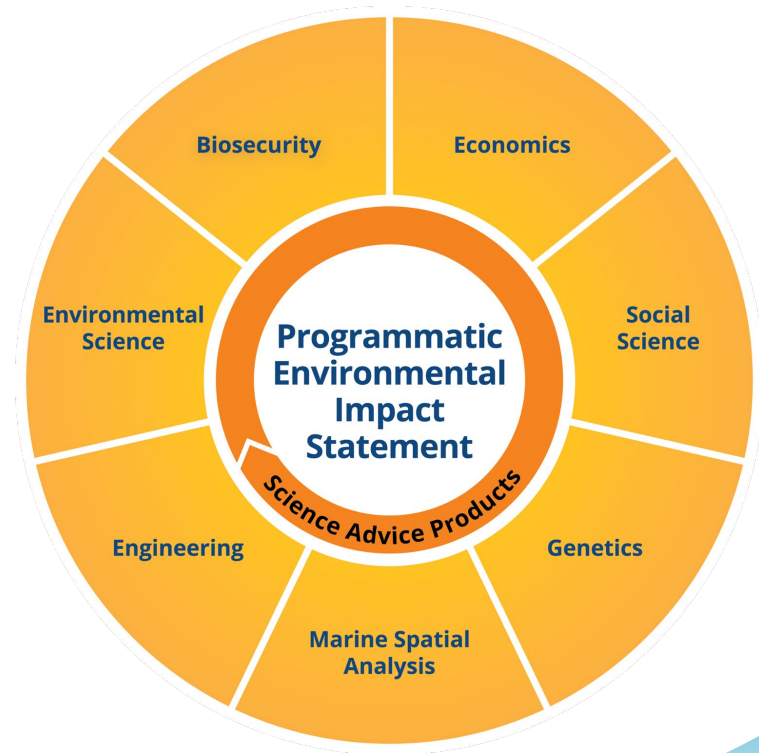


Gulf of Mexico Aquaculture Atlas



Multidisciplinary Science to Advice

Use the best available science across multiple disciplines, public and stakeholder input, and relevant regulations, laws, policies, to evaluate the beneficial and adverse impacts of siting aquaculture in a given area.





Danielle Blacklock
danielle.blacklock@noaa.gov

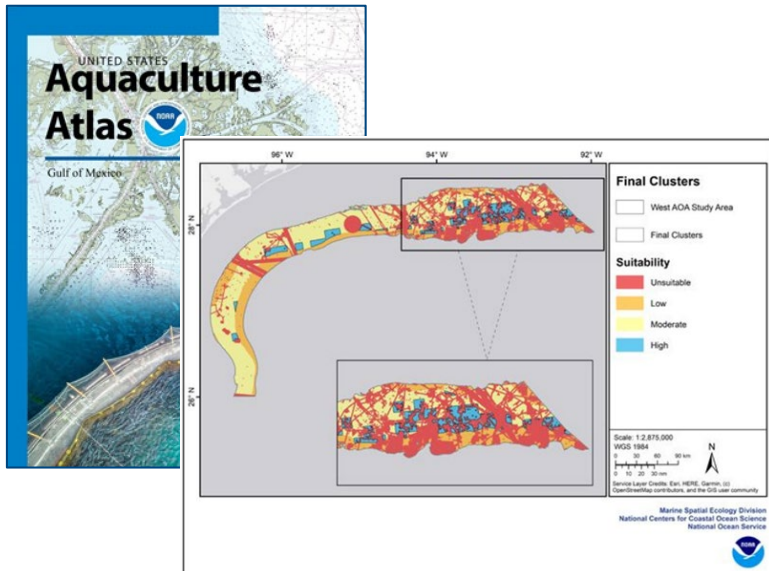
Learn more: fisheries.noaa.gov/aquaculture



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What Does Aquaculture Look Like Today?

Siting and management innovation leads to greater sustainability.



Cutting-edge spatial analysis tools ensure environmental compatibility and avoid conflicts of use.

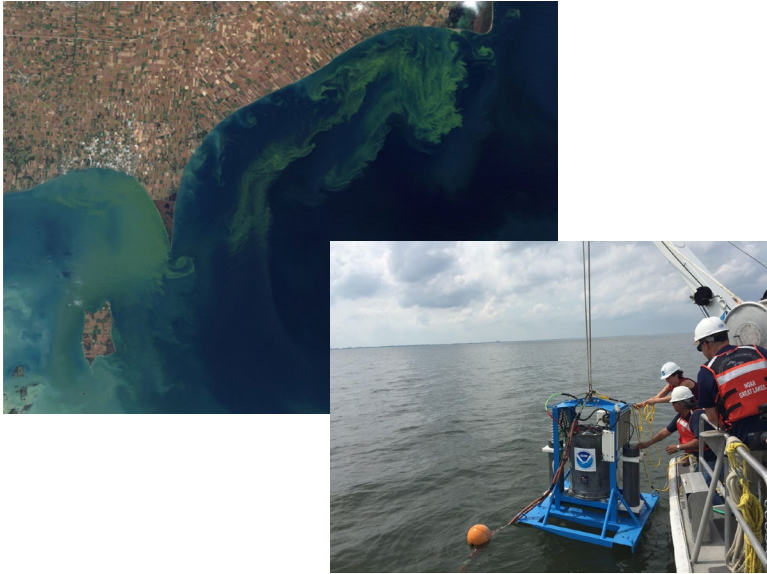
- [Riley, K.L., et al. 2021. An Aquaculture Opportunity Area Atlas for the U.S. Gulf of Mexico. NOAA Technical Memorandum NOS NCCOS 299. Beaufort, NC. 545 pp. https://doi.org/10.25923/8cb3-3r66](https://doi.org/10.25923/8cb3-3r66)

Advanced monitoring technology helps us understand how to maximize aquaculture's habitat value.

- [Fact Sheet: Aquaculture Provides Beneficial Ecosystem Services](#)
- Images: [Milford Lab's GoPro Aquaculture Project](#)

What Does Aquaculture Look Like Today?

Technology innovation leads to greater sustainability.



Space- and place-based technologies can forecast and monitor harmful algal blooms and water quality.

- [Fact Sheet: Harmful Algal Bloom Impacts on Aquaculture](#)
- [Fact Sheet: Sustainable Aquaculture Feeds and Fish Nutrition](#)
- Images: NOAA

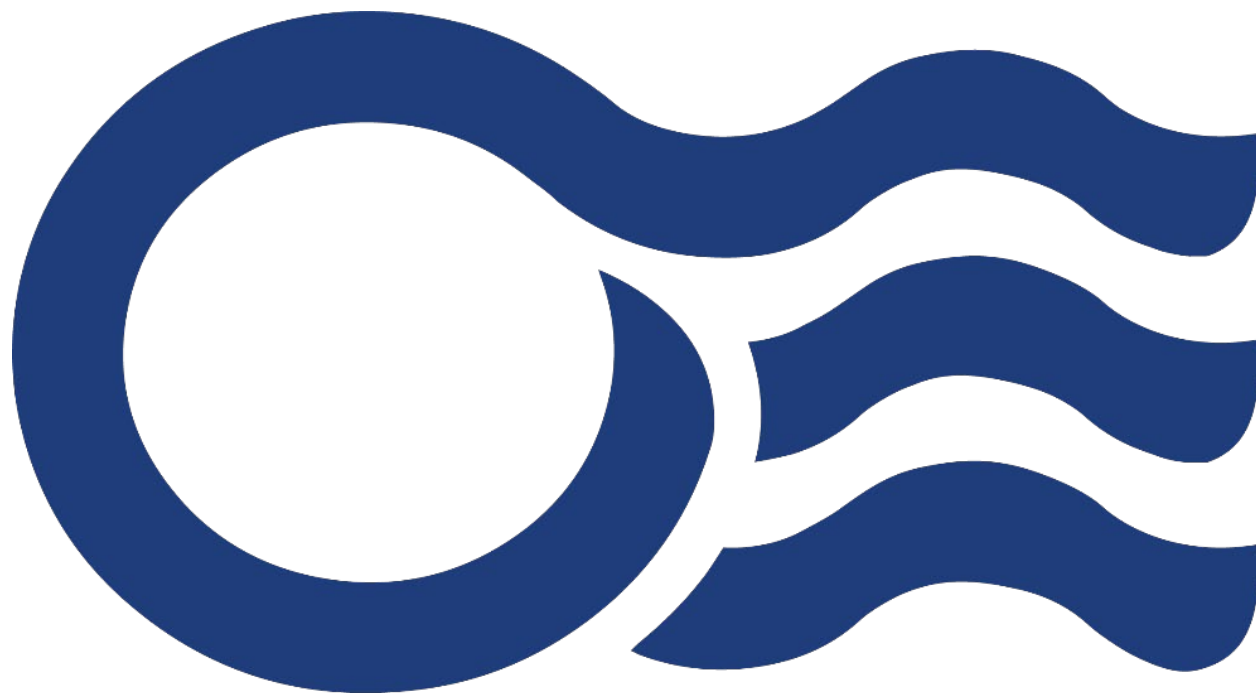


Integrated pest management approaches provide powerful solutions to persistent challenges.

- Image Source: Hakai Magazine

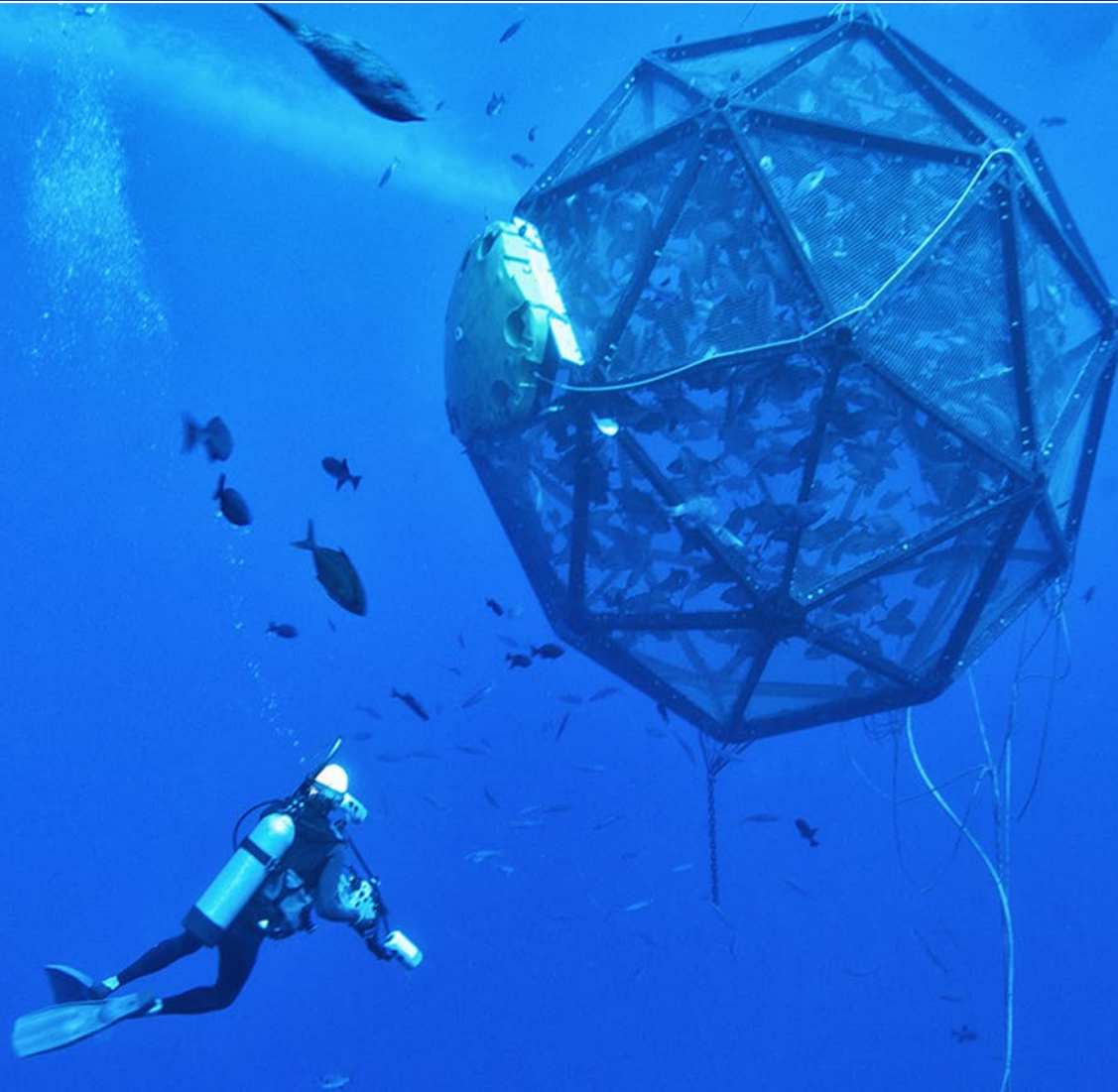
For: Recreational Fishing Summit

For: March 29th, 2022 – “Balancing Ocean Uses”



OCEAN ERA

Offshore Aquaculture: What's on the line?



**Potential risks and benefits for recreational fisheries
from expansion of aquaculture in offshore waters**

First, some background ...

**Kona Blue Water Farms, LLC:
"Kona Kampachi™"**

3000 m³ Sea Station™ net pen

© Doug Perrine / SeaPics.co



First, some background ...

Kampachi Mexico

U.S. regulations drove expansion investment to overseas locations

- **Supportive regulations and permitting**

First, some background ...

Kampachi Mexico



Submersible Polar-Cirkel-style surface pens

The Velella Beta-test (2011-2012)

Velella Gamma-test (2013-2014)



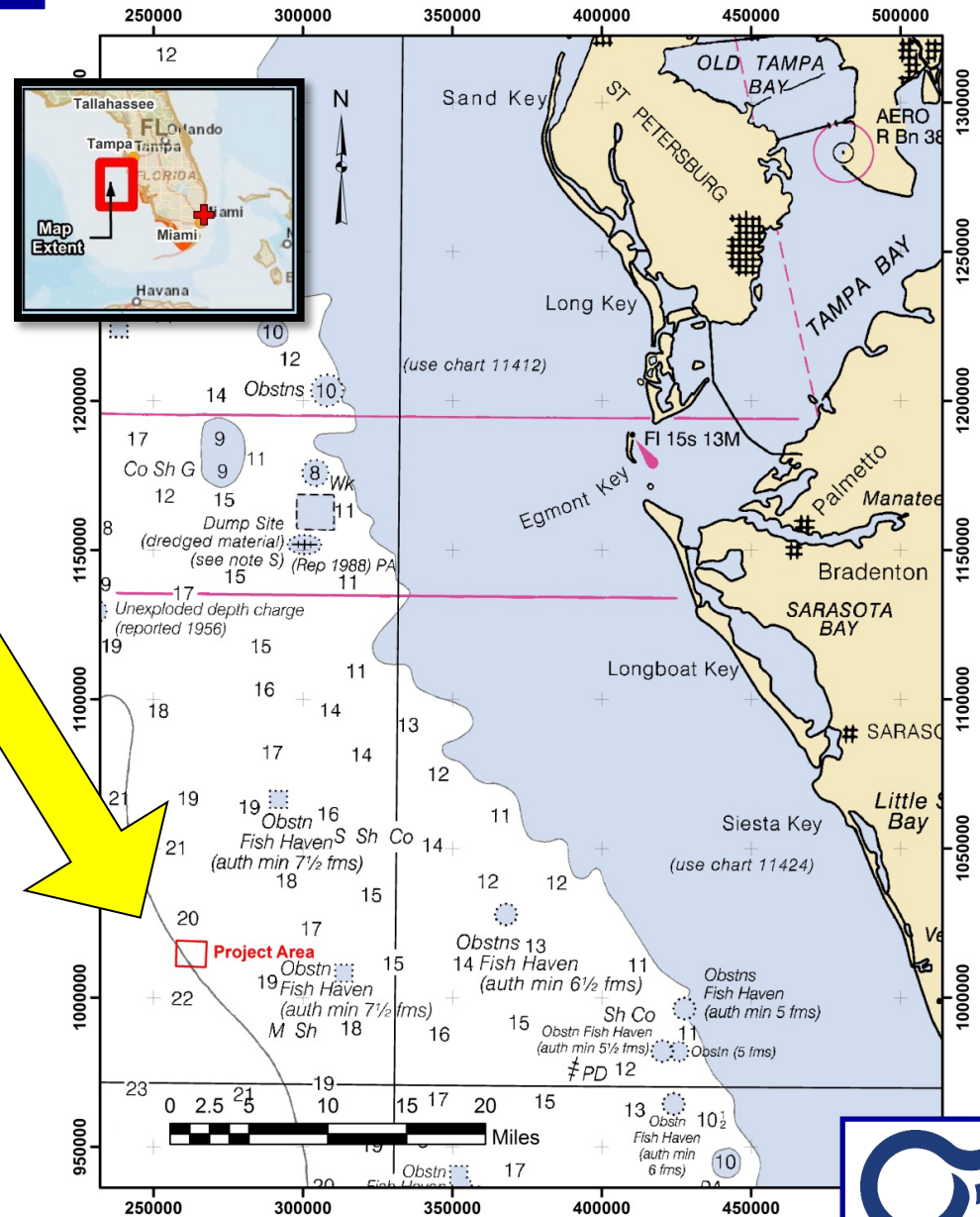
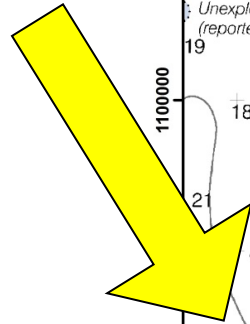
**Single 132 m³
Aquapod net pen**



The Velella Epsilon: Plan

Project Area:

- 40 NM offshore of Sarasota
- 130 ft deep water
- avoids conflict with shrimp trawl, sensitive habitat, navigation, military ops



Veella Epsilon : Production plan

Single cohort: 20,000 Kampachi
(*Seriola rivoliana*; Almaco Jack)

Provide community / journalist / eNGO access

Demonstrate FAD benefits to fishing community

Potential risks and benefits for recreational fisheries :

Risks? Model, Manage, Monitor ...

Not just a passing FAD ...

Stock enhancement – plenty more fish in the sea

Potential risks and benefits for recreational fisheries :

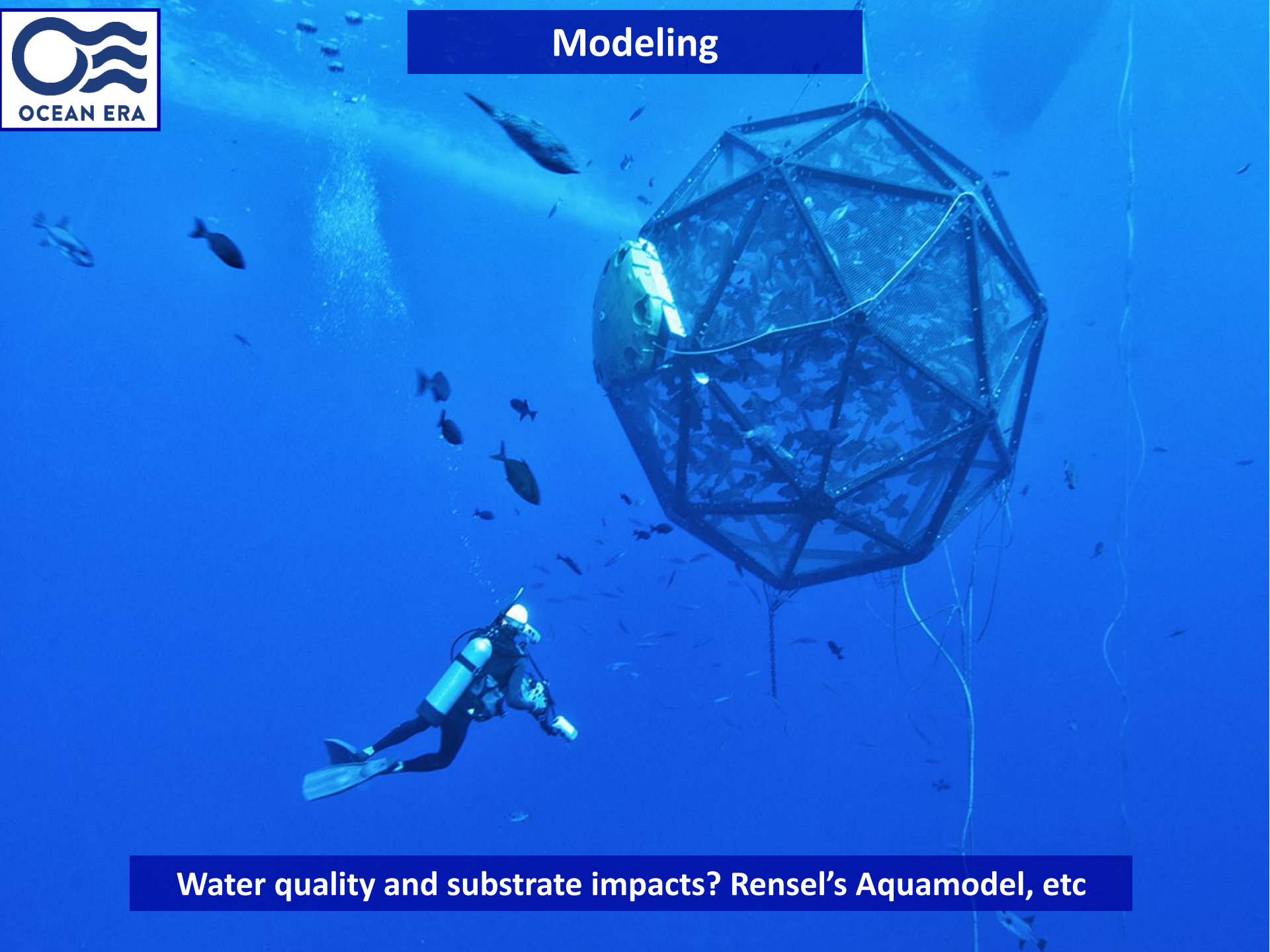
Risks? Model, Manage, Monitor ...

Not just a passing FAD ...

Stock enhancement – plenty more fish in the sea



Modeling



Water quality and substrate impacts? Rensel's Aquamodel, etc

Modeling

Table 1: Sea state conditions at the Velella mooring site during Hurricane Iniki.

Parameter	Value	Unit
Wave height (H_s)	4.7	m
Wave period (T_p)	12	s
γ	3.3	~
Current speed	2	m/s

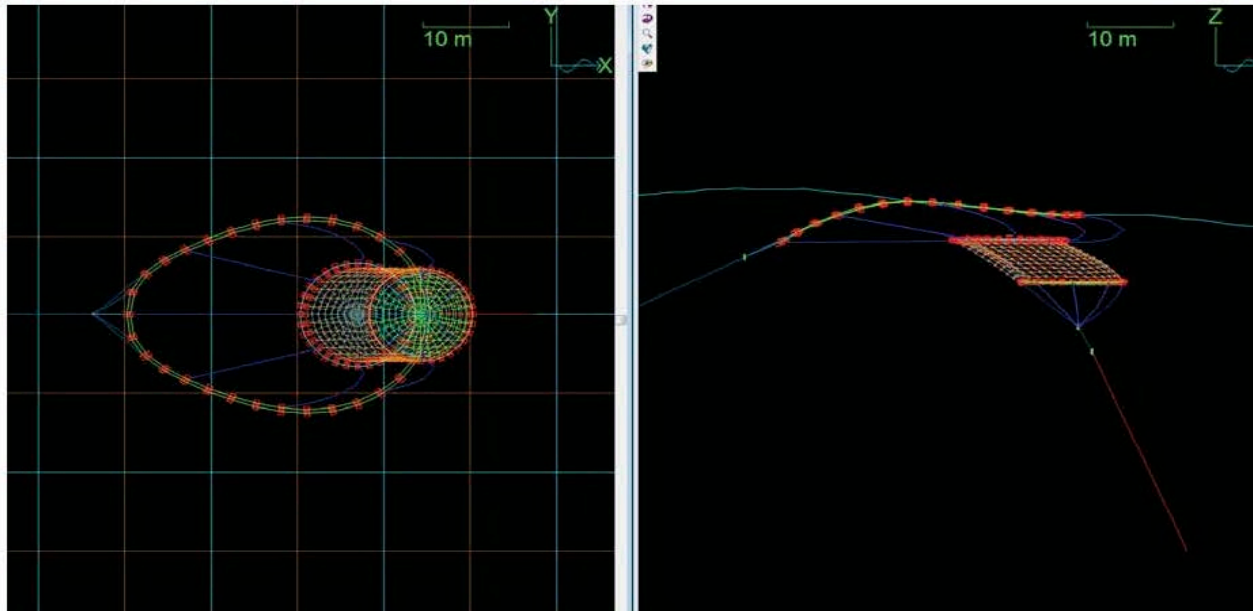


Figure 5: Orca-Flex model simulation of the Velella Delta HALO array under sea conditions similar to that experienced at the existing Velella mooring location during Hurricane Iniki.

Net pen integrity? OrcaFlex, etc.



Modeling

Escapes? Fat, slow, stupid ... (and NOAA's OMEGA model)

Management ...

1. EPA NPDES Permit

2. NMFS ESA Consultation

3. NMFS MSA EFH Assessment

4. CZMA CCD Concurrence

5. NHPA Section 106 Concurrence

6. NEPA Documentation

7. USCG Approval

8. ACOE Section 10 Permit

9. State Aquaculture Certificate

Potential risks and benefits for recreational fisheries :

Risks? Model, Manage, Monitor ...

Not just a passing FAD ...

Stock enhancement – plenty more fish in the sea

The Velella Beta-test



Phenomenal FAD: Earned great 'social license' with local fishermen

The Velella Beta-test – FAD effects

E.g. Veteran's Day morning, 2011 :
16 vessels



Veella Gamma-test

“That’s the best fishing I’ve had in my life!” - local Kona fisherman



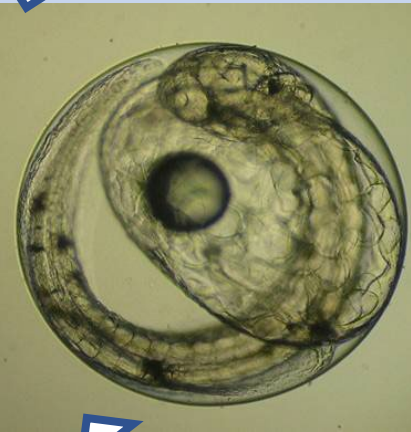
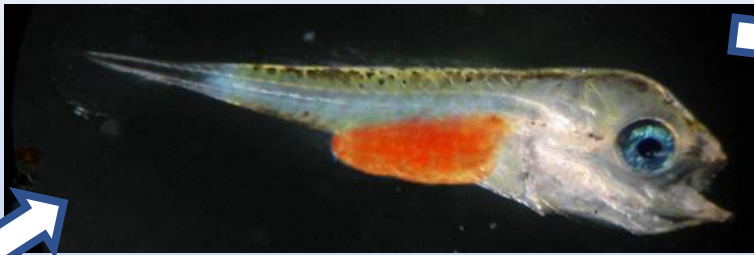
Potential risks and benefits for recreational fisheries :

Risks? Model, Manage, Monitor ...

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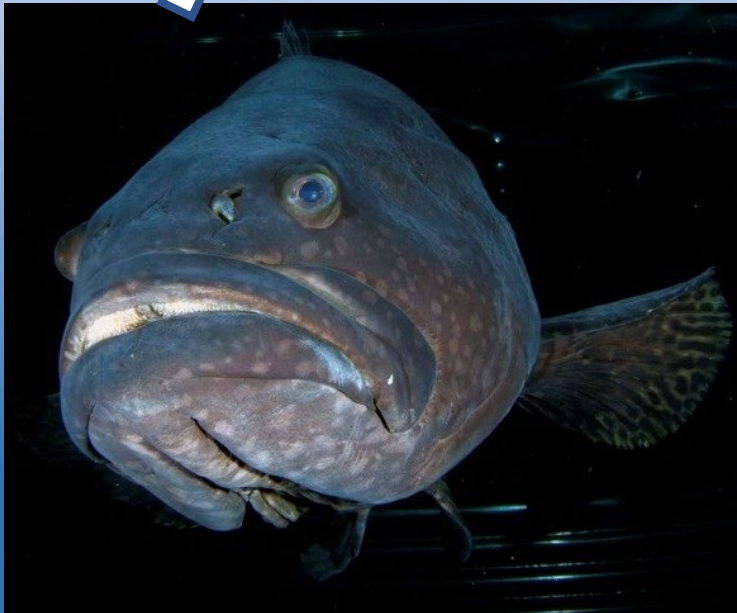
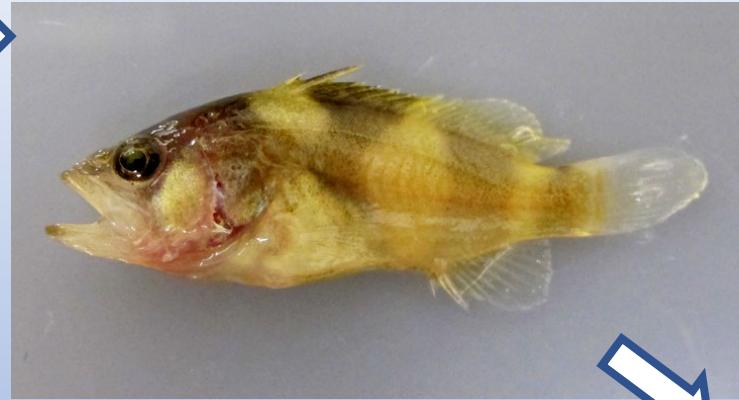
Stock enhancement – plenty more fish in the sea

Stock enhancement – plenty more fish in the sea



Almaco Jack (kampachi)
(Seriola rivoliana)

Stock enhancement – plenty more fish in the sea



Giant Grouper
(Epinephelus lanceolatus)

Stock enhancement – plenty more fish in the sea



Giant Trevally
(Caranx ignobilis)

Opakapaka (snapper)
(Pristipomoides sexifilis)



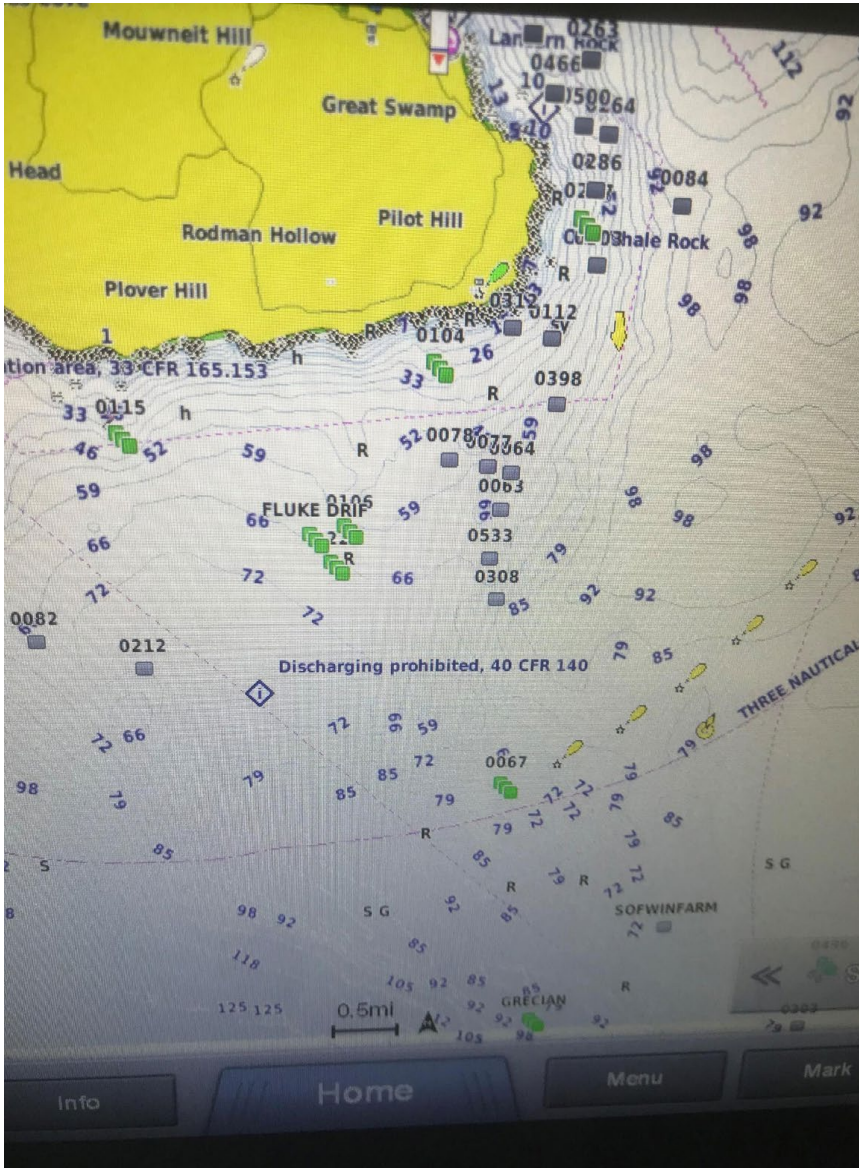
- Offshore industry can:**
1. Develop and refine hatchery technology
 2. Build hatchery capacity

An underwater scene with a diver in the lower left, a large octahedral metal cage in the center-right, and many fish swimming around. The water is clear blue. A white box with a black border contains the text "Thank you".

Thank you

neil@ocean-era.com





National Saltwater Fisheries Summit

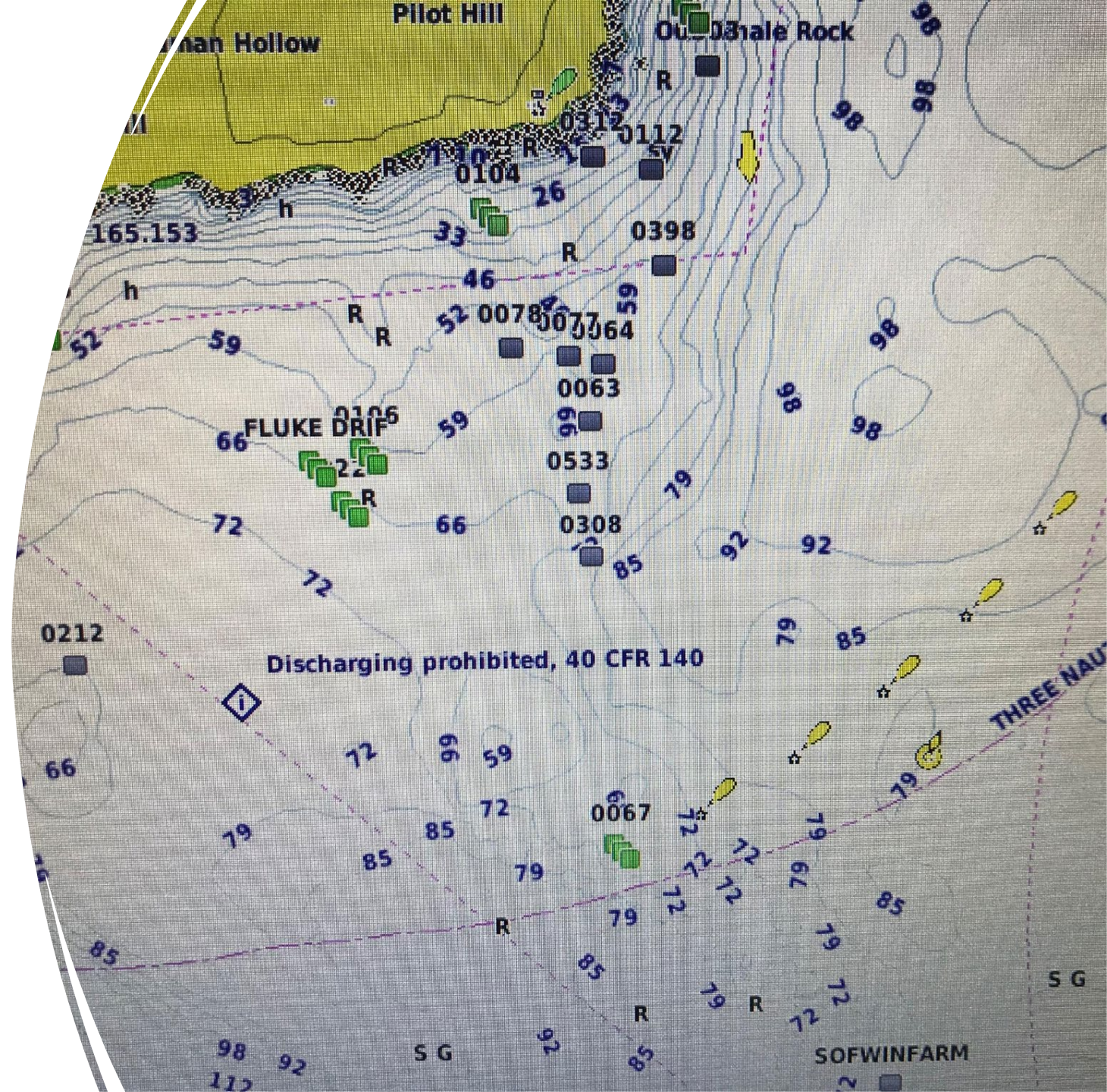
Captain Rick Bellavance

Priority Fishing Charters

Point Judith Rhode Island

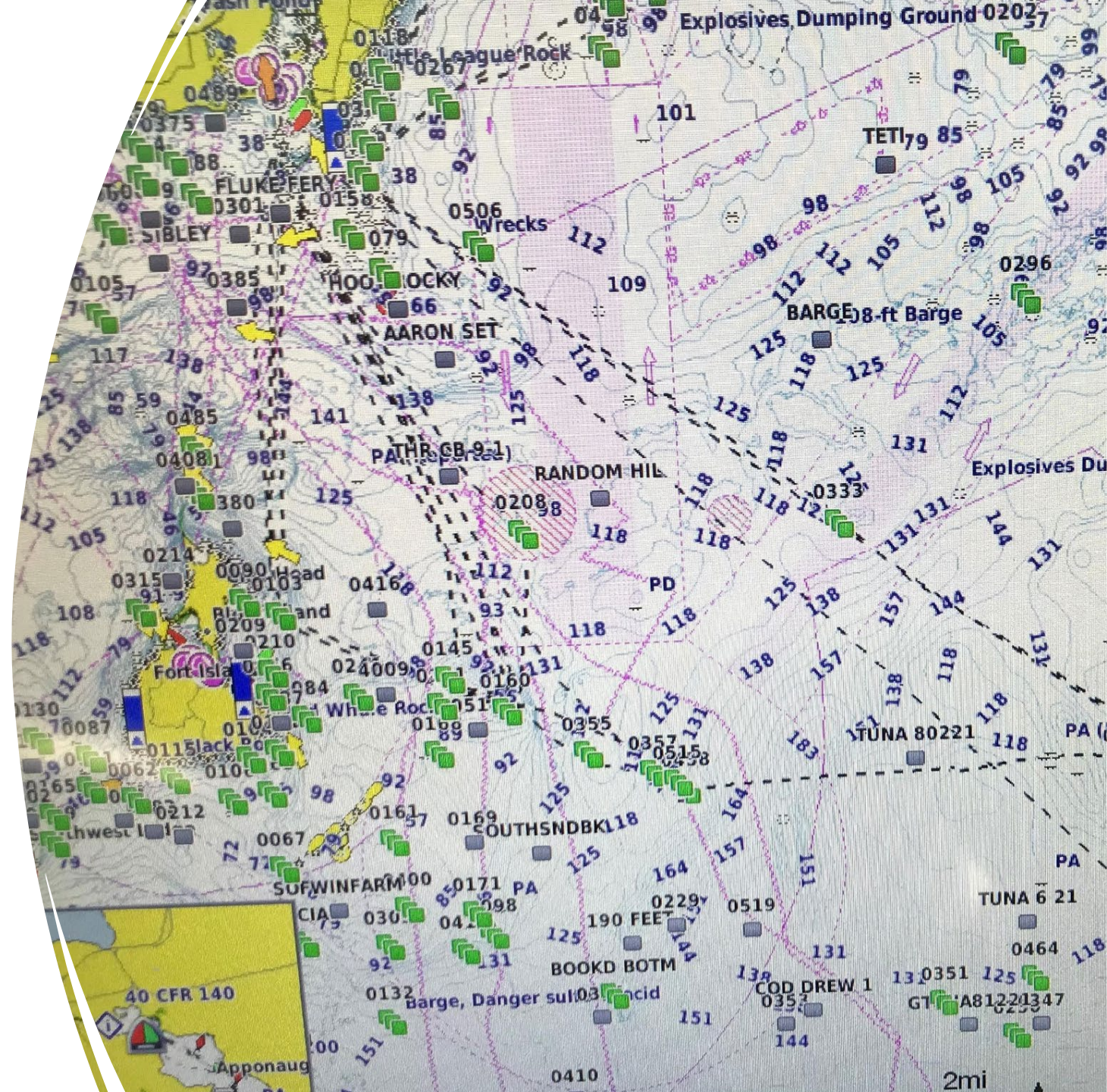
Block Island Wind Farm

- Construction began in 2015, Commissioned in December 2016
- 3 Miles Southeast of Block Island, 16 Miles South of Point Judith
- 5 Windmills placed N/E to S/W
- 90 to 75 feet of water
- 1st Offshore wind development in USA



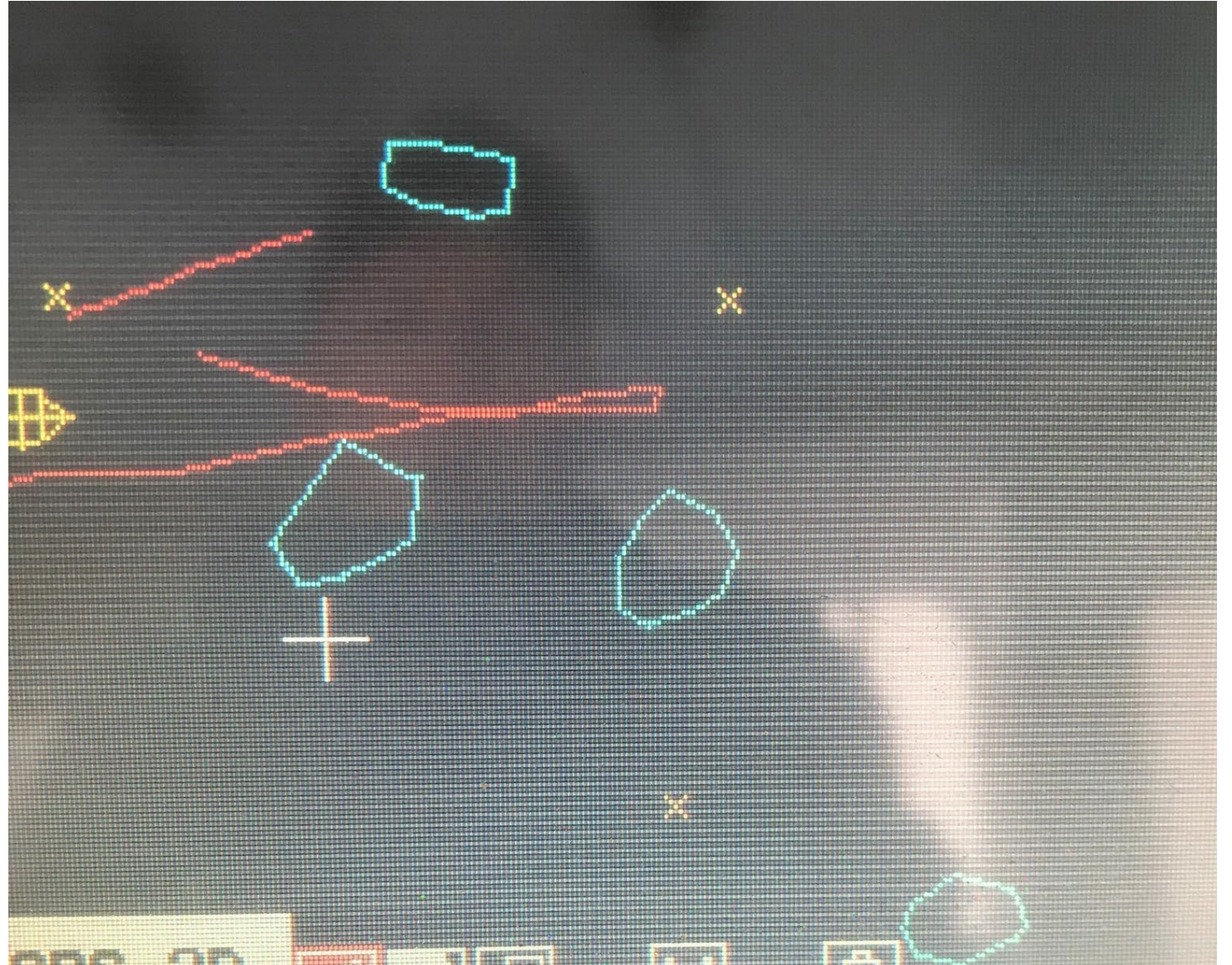
Recreational fishing during construction

- Several hundred foot exclusion area during construction operations only
- During piling driving impacts felt miles away - fish did not bite
- Construction lasted longer than planned
- For hire vessel used to monitor protected species



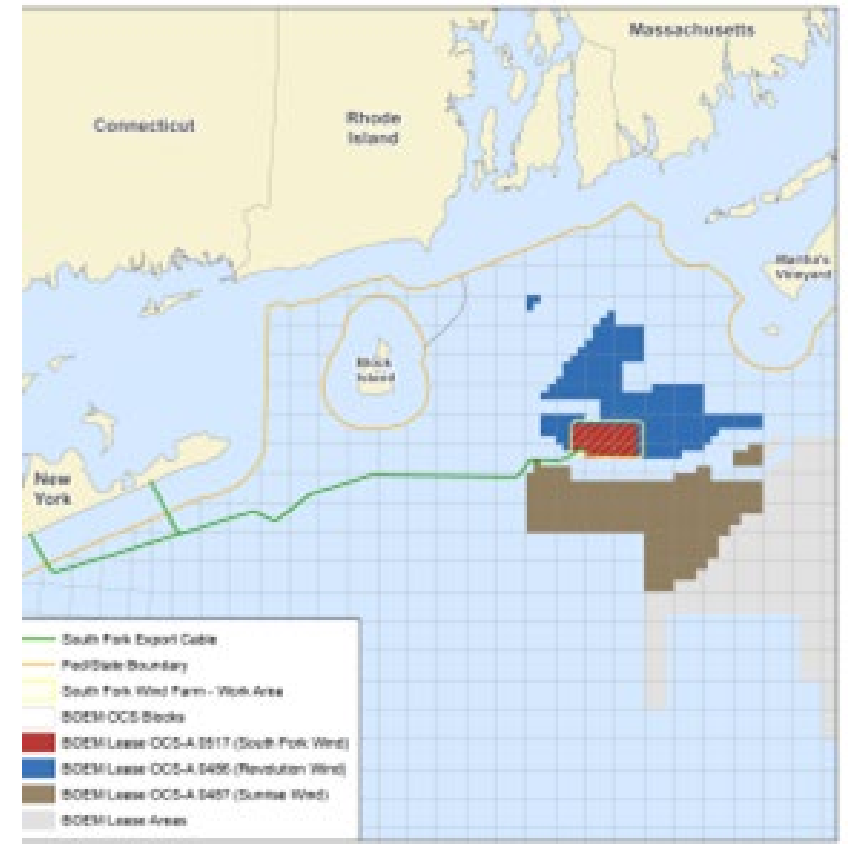
Fishing post construction

- The area became very popular for recreational fishing
- Attracts CBass, Striped Bass, Bluefish, Dogfish Less Cod
- Quality fish get caught up quickly
- Previous less known good bottom now discovered
- Sketchy to fish near bases at times
- Scuba and free diving



Future Projects

- SouthFork Wind Farm, Revolution Wind, Sunrise, Vineyard Wind among many others.
- Further off land, less protected, more costly to fish these areas
- More frequently fished by for hire, but some private vessel
- Atlantic Cod, HMS, and Protected Species
- Construction may last a decade, uncertain impacts
- Located on EFH for over 30 species





Recreational data is important but lacking

- Where you fish
- What you fish for
- When you fish
- What you spend to fish
- What concerns you
- What benefits you see



Let's not ignore these important items

- Impacts to forage
- Essential Fish Habitat
- Cumulative Impacts

How to provide recreational fishing input



- Each project is unique, but also need to think about cumulative impacts
- Reach out to Boem, NOAA, Councils, and State agency people
- Huge time suck
- Recreational fishing input is extremely important and needed
- Changes in project design and location can occur based on input