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Alaska Region



NCCOS
NATIONAL CENTERS FOR COASTAL OCEAN SCIENCE

NOAA Fisheries Aquaculture Opportunity Areas Request for Information

Alicia Bishop, *NOAA Fisheries Alaska Regional Aquaculture Coordinator*
Chris Schillaci, *NOAA National Centers for Coastal Ocean Science*

AK RFI Listening Sessions, 2023



Today's Presenters

- **Alicia Bishop:** NOAA Fisheries Alaska Regional Aquaculture Coordinator



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- **Chris Schillaci:** NOS National Centers for Coastal Ocean Science, Marine Ecologist, Coastal Aquaculture Siting and Sustainability



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Ground Rules

This Meeting is:

- An introduction to Aquaculture Opportunity Areas (AOAs)
- To accept oral public comments on the requested information in the Request for Information (RFI)

This Meeting is Not:

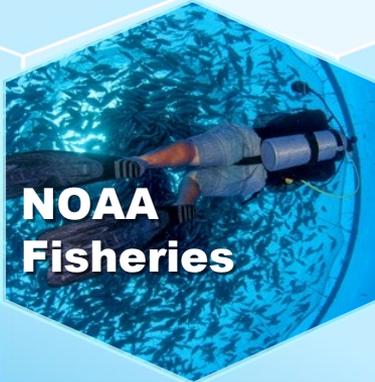
- Question and answer session
- About any specific permit application





NOAA Aquaculture Program

These organizations partner across NOAA to advance sustainable aquaculture in the United States through policy, outreach, science, research, grants, and extension.



- Office of Aquaculture
- Regional Offices
- Science Centers



- National Centers for Coastal Ocean Science



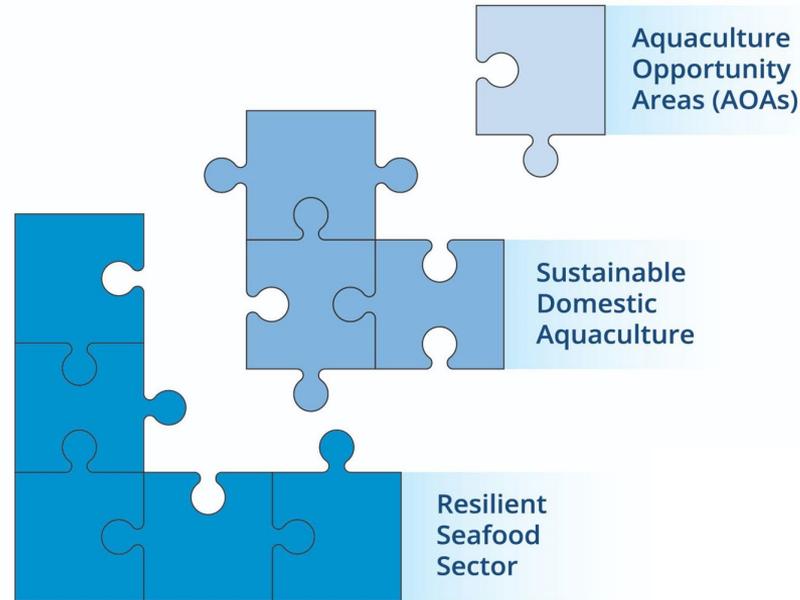
- National Sea Grant College Program

AOAs and Expanding U.S. Seafood

Expanding U.S. Seafood

As a complement to our wild-capture seafood, expanding domestic aquaculture is critical for economic and environmental resilience.

fisheries.noaa.gov/aquaculture



AOA Goals

- **Utilize a science-based approach to inform marine aquaculture planning**
- Find areas that could be suitable for multiple future aquaculture projects
- Address interests and concerns regarding seaweed and invertebrate aquaculture siting
- Address the increasing demand for seafood
- Promote American seafood competitiveness, food security, economic growth while also sustaining and conserving marine resources
- Meet the directives of Executive Order 13921

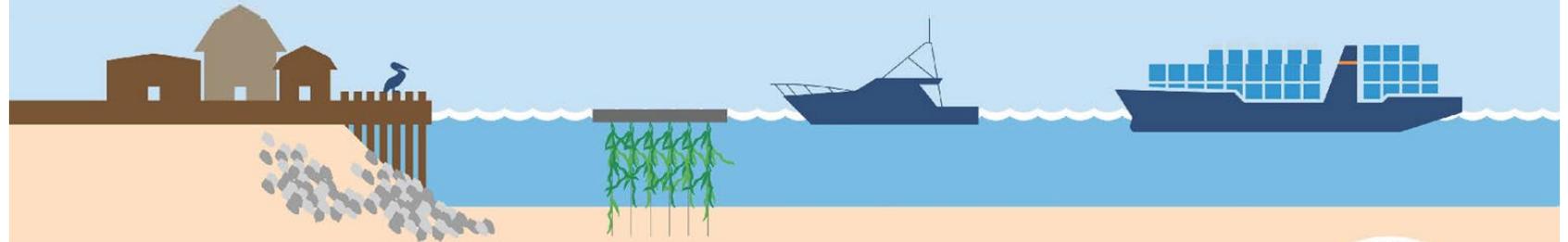


What is an Aquaculture Opportunity Area?

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, subsistence activities, and the military.



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, subsistence and cultural activities, and protect the ecosystem.



What is the Process?

- The AOA process is anticipated to take approximately four years.
 - 2 years suitability analysis
 - 2 years environmental review (NEPA)
- Some of the products of this process include: spatial analysis (Atlas) and environmental review (NEPA).
- The AOA identification process is public driven. Public input is essential in the design and location of AOAs.



NEPA: National Environmental Policy Act

Key Points

- Multi-year planning process, not regulatory, no new NOAA authorities
- AOAs are *not* pre-permitted sites. Federal and state leasing and permit requirements remain the same
- In Alaska, AOAs will be sited in state waters and will support **seaweed** and **invertebrate** aquaculture (finfish farming is prohibited)
- Identification of AOA location(s) will not be made until end of NEPA process
- Aquaculture projects don't have to be located in an AOA



Alaska AOA Process Timeline

Fiscal Year 2023-2024

June 2023



Now: Nov 2023

Coming soon!

Alaska Next Steps:

Announce start of process to identify Aquaculture Opportunity Areas in Alaska

Engagement and data collection. Gather feedback on study area parameters

RFI in October 2023; Nov two listening sessions

Finalize study areas based on public input

NCCOS data collection and modeling for siting analysis

Spring 2024 Mapping Workshops

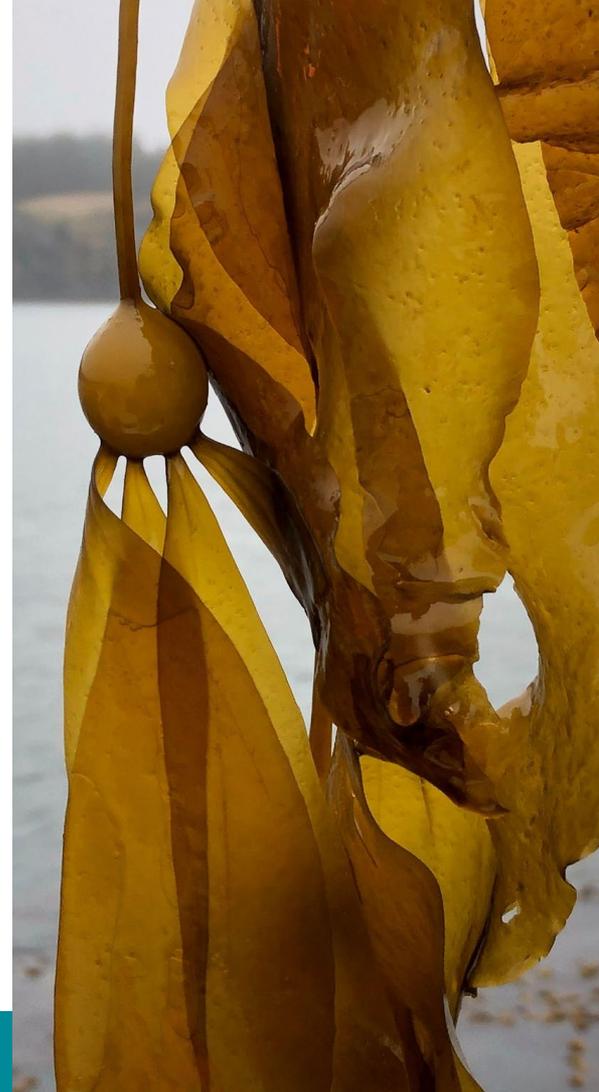
NCCOS draft Aquaculture Opportunity Atlas; peer review

*Tasks and timeframes may shift due to resource restrictions or needs

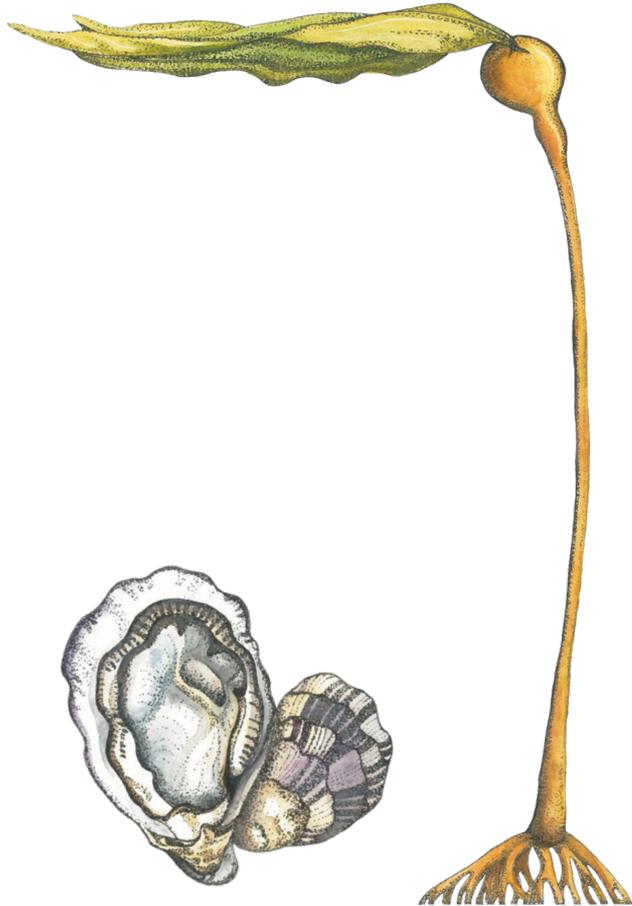
Public Process for AOA

- **Request for Information**
 - Support the identification of AOA in Alaska state waters, including siting parameters that can be used to select potential study areas for further analysis
- **Notice of Intent to Prepare NEPA**
- **Draft NEPA Review**

NEPA: National Environmental Policy Act

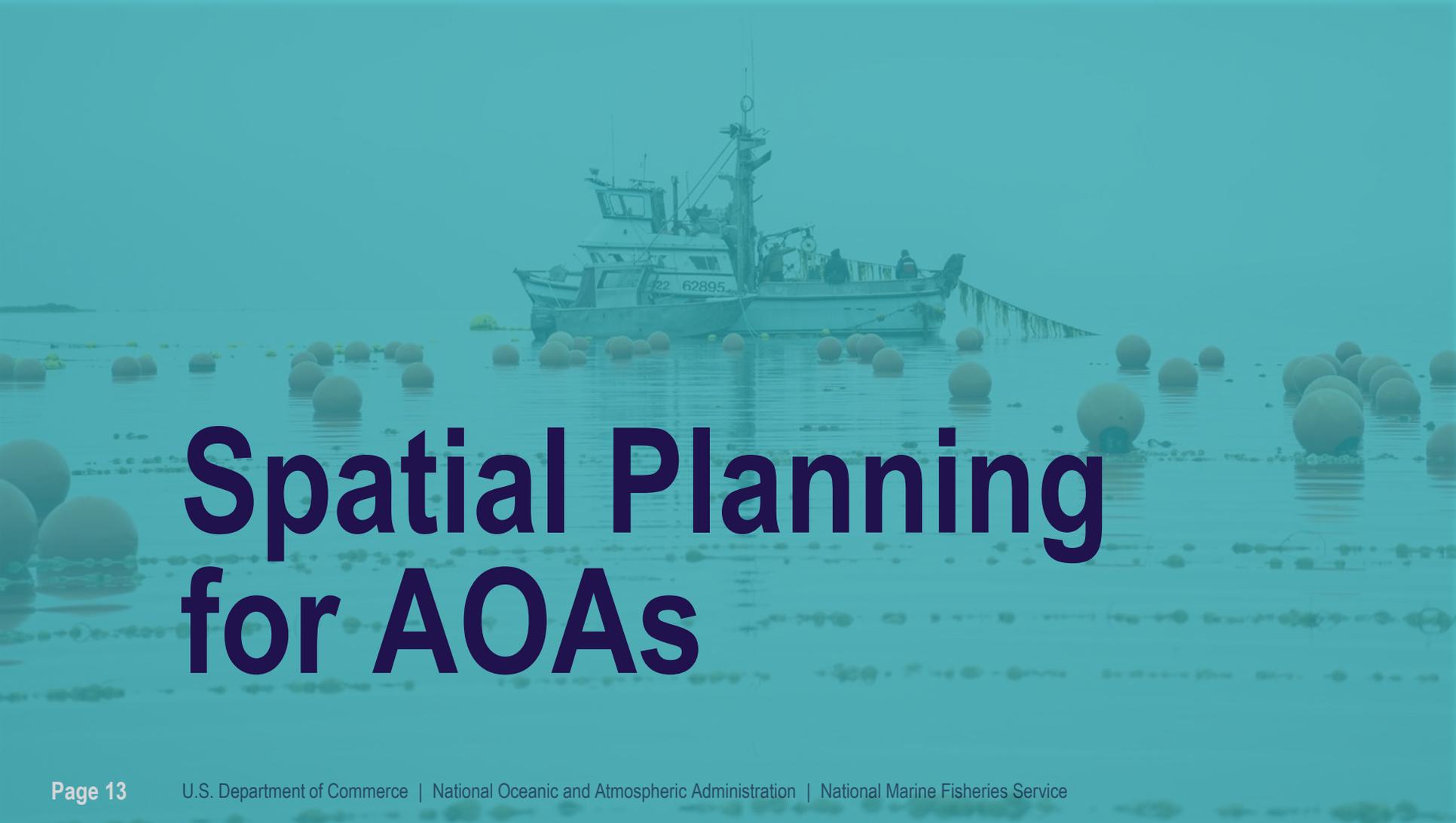


Learn More About Request for Information



- [Federal Register Notice](#) published Oct 19th
- Open for 60 days through **Dec 18th**
- NOAA Fisheries [website](#) identifies how to provide electronic, written, and oral comments and provides overview maps of study areas.
- NCCOS [website](#) provides all of the study areas maps including at community levels
- Listening Sessions are being held:
 - **Nov 14th 9-11am AST**
 - **Nov 15th 2-4pm AST**





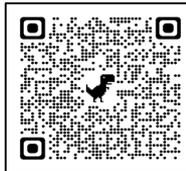
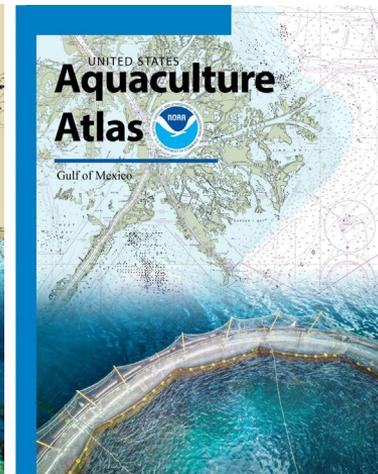
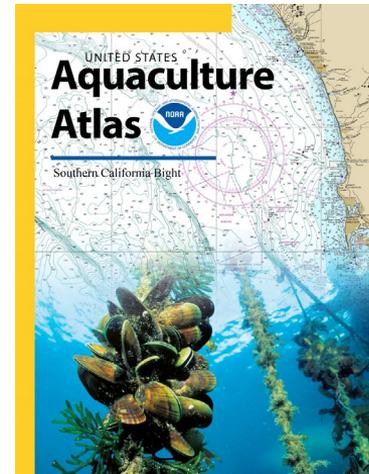
Spatial Planning for AOAs



Spatial Planning For Aquaculture Opportunity Areas

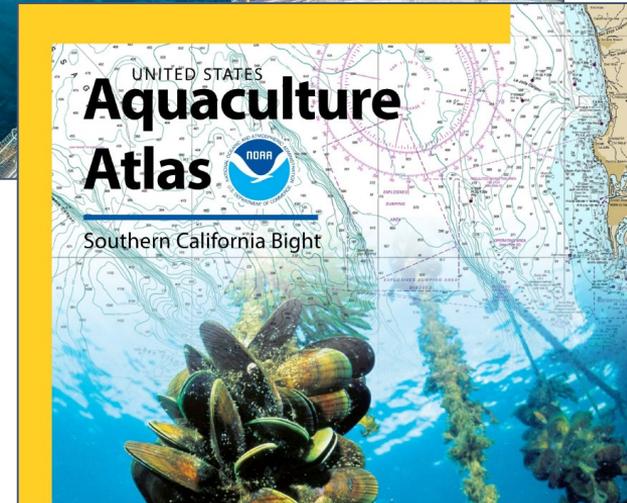
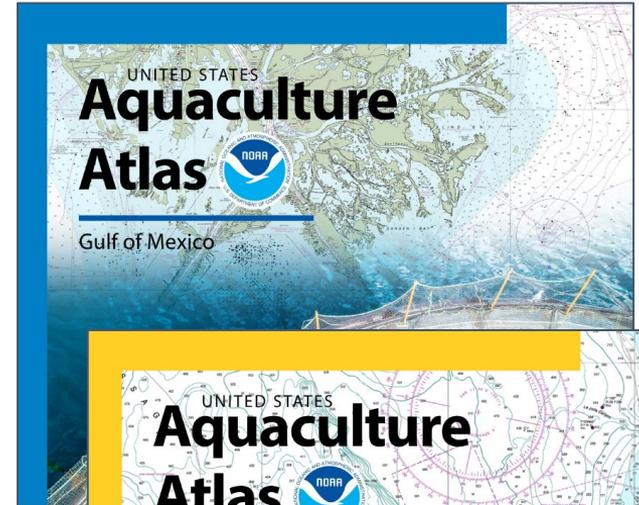
National Centers for Coastal Ocean Science
National Ocean Service
Marine Spatial Ecology Division

Chris Schillaci, James Morris,
and Team



Aquaculture Spatial Planning and Siting

- Completed 50+ analyses in last 5 years
- Aquaculture Opportunity Areas
- State-designated aquaculture use areas
- Spatial planning for Ports/Harbors and farm specific sites



Planning for Aquaculture Opportunity

Areas Round 2

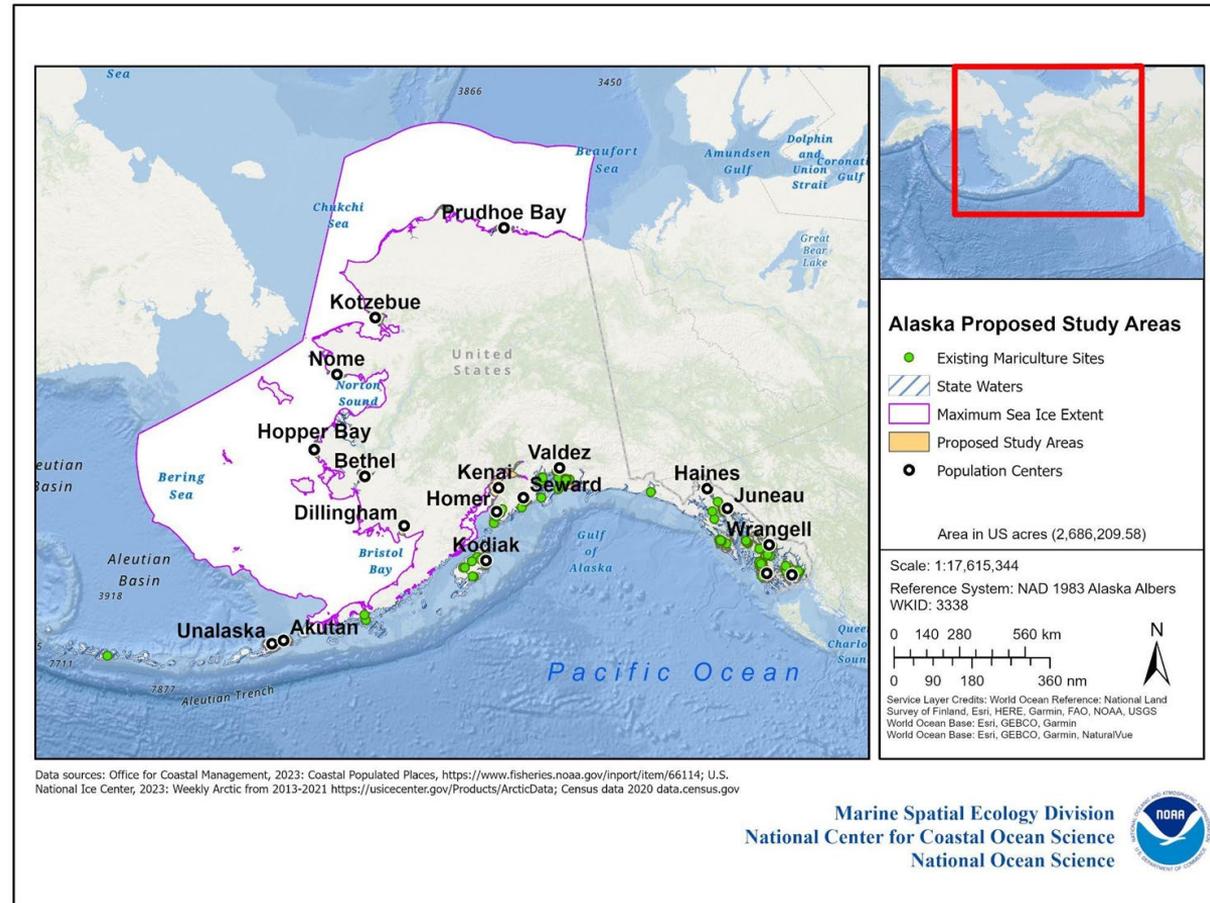
Step 1 - Identify project requirements?



- Critical parameters for siting (e.g., distance from port, ice cover)?
- Final product for Atlases (e.g., consider species/gear, consider economic development, consider largest area for all aquaculture types)

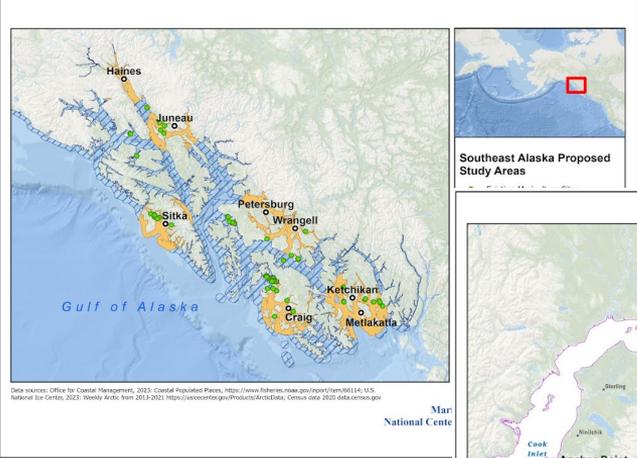
Step 2 - Identify Study Areas

- Alaska state waters
- Use distance from coastal population centers as proxy for infrastructure
 - 25 mile radius from top 25 coastal communities by population (2010 census data)
- Ice cover- aggregate maximum sea ice extents between 2013-2021
- Leaves 16 communities

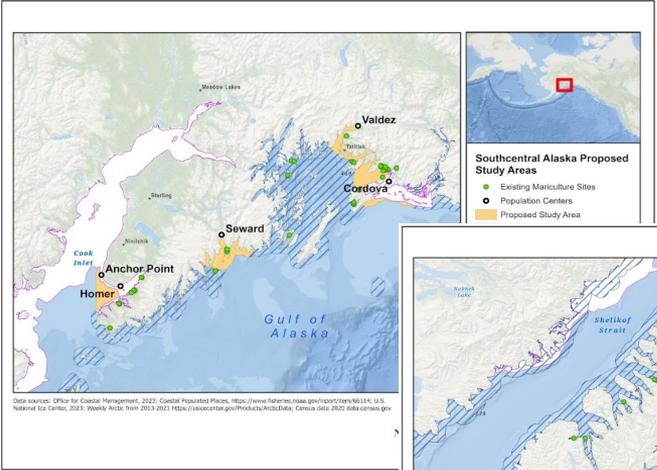


Step 2 - Identify Study Areas

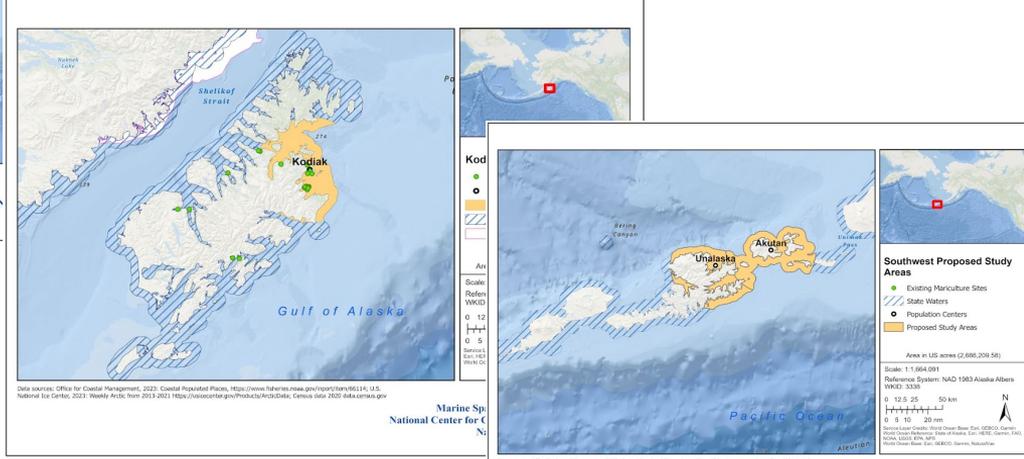
Southeast



Southcentral



Southwest

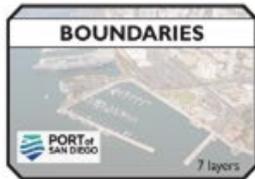
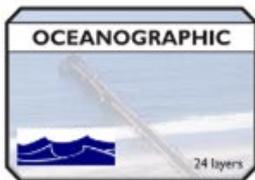


Draft Study Area Maps in RFI

- See [NCCOS AOA RFI webpage](#) for more information



Step 3 - Compile comprehensive geodatabase for study areas



*Photos courtesy of the Port of San Diego



**AquaData
Catalog**

33 million

The number of data
layers we analyze to
find the right space
for your ocean
industry



Step 4 - Build a suitability model for study areas

- Develop list of candidate species
- Identify cultivation techniques
- Develop thresholds for each species/gear combination



Species Thresholds
Chlorophyll a
Current speed
Depth
pH
Salinity
Temperature
DO
Substrate type
Light transmissivity

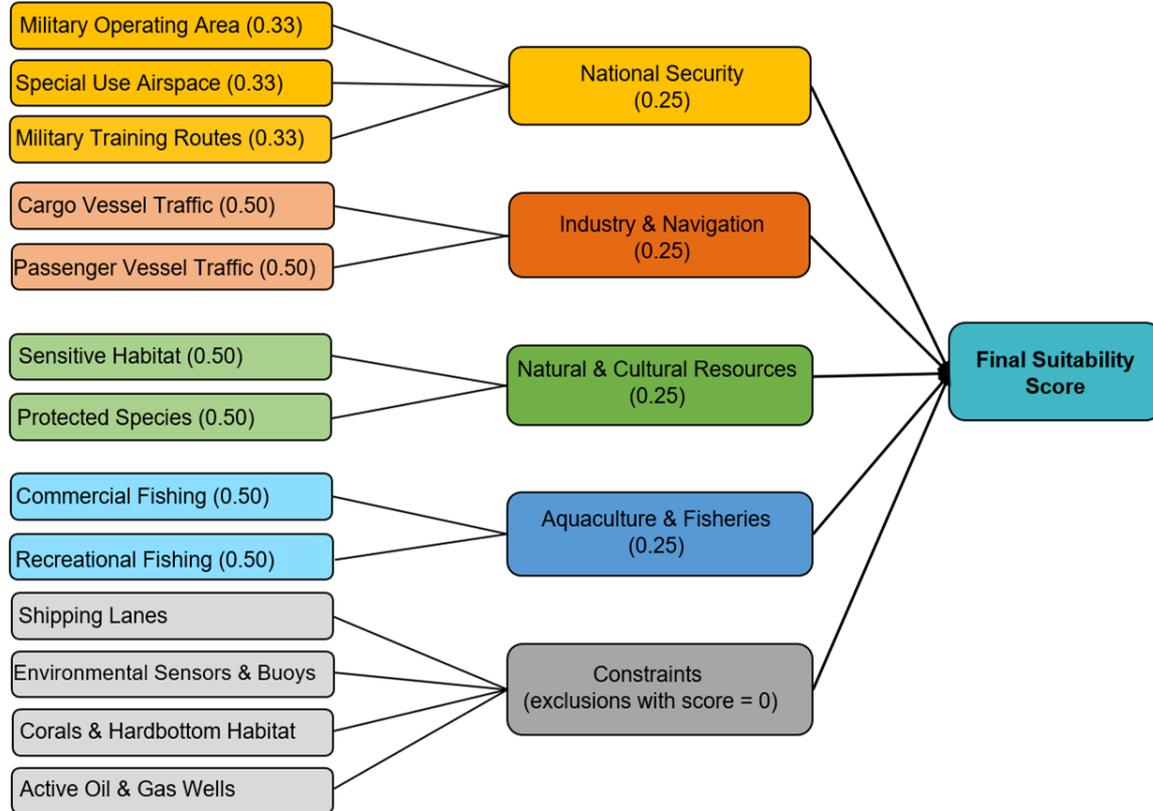
Gear Thresholds
Depth
Substrate type
Current speed

Requirement	
Preferred port	Santa Barbara
Federal/State waters	Federal or State Waters
Selected culture species	Giant Kelp (<i>Macrocystis pyrifera</i>)
Farm Footprint Size	133 acres (~54 ha)*
Maximum distance from port	≤ 8 nm
Gear depth requirements	≥ 30 and ≤ 150 m
Seawater temperature	< 20 °C
Current Velocity	< 1.02 m/s
Significant wave height	< 4 m

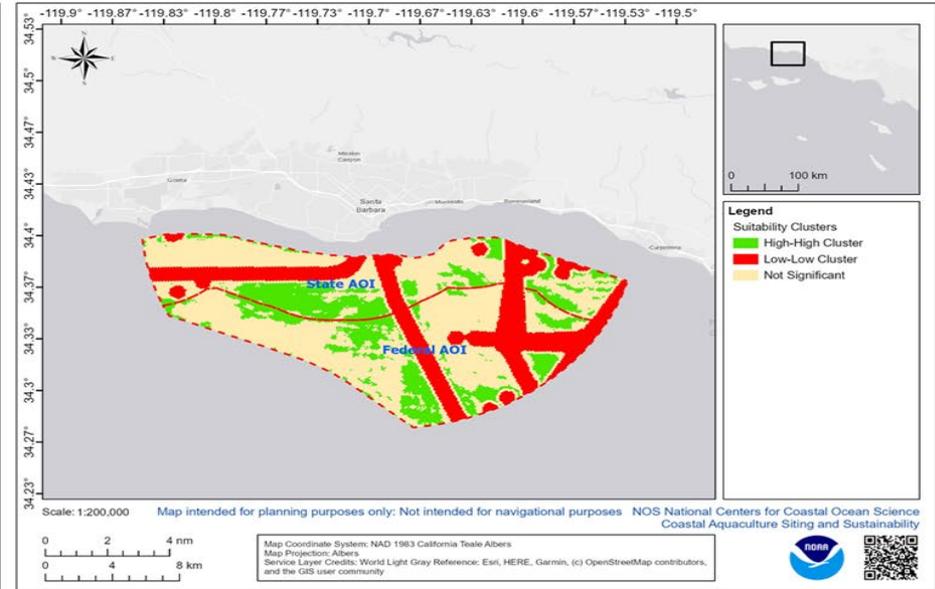
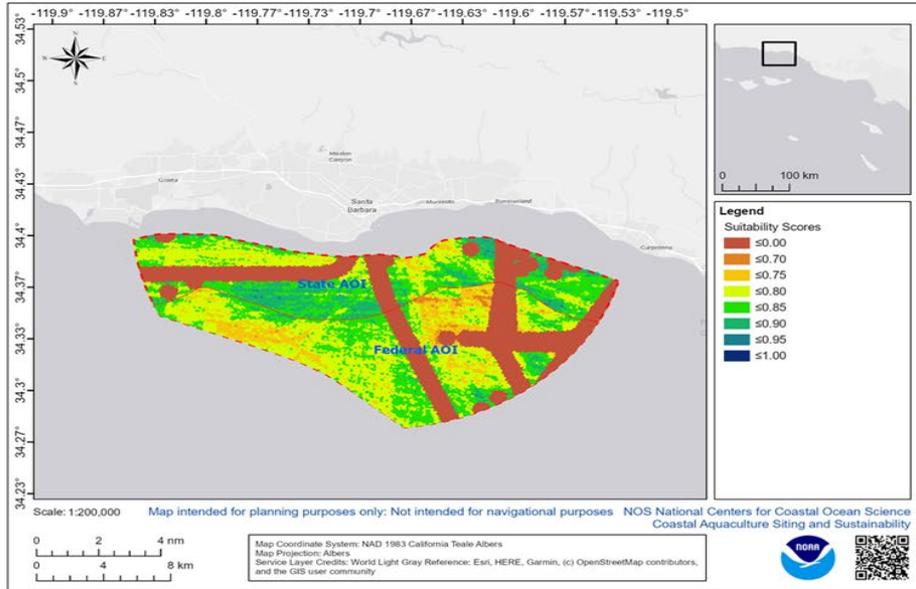


Step 4 - Build a suitability model for study areas

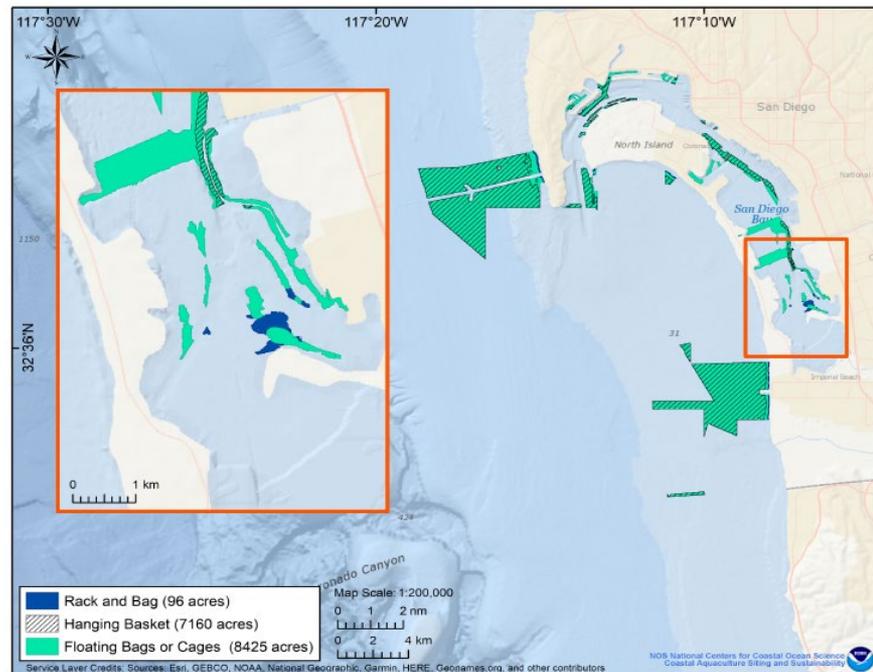
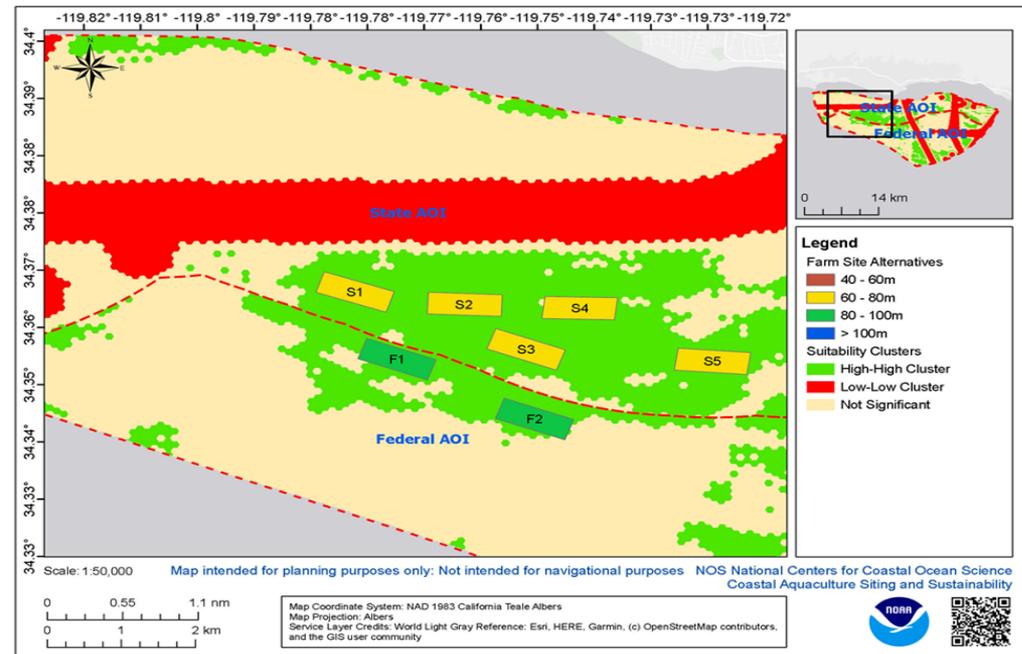
- Four submodels and constraints model
- Equal weights for all data and submodels
- Geometric mean used for calculating scores



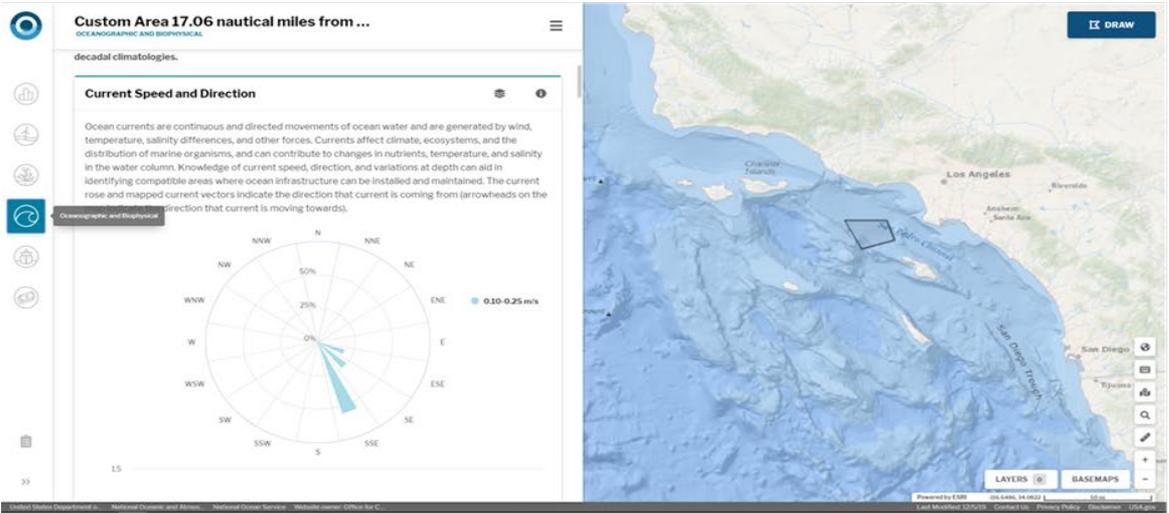
Step 5 - Cluster areas with highest suitability within study areas



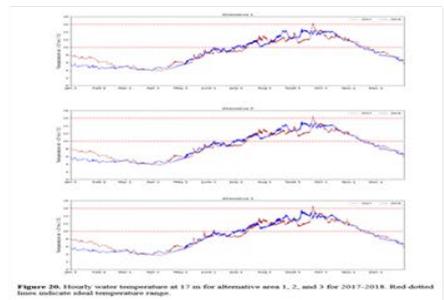
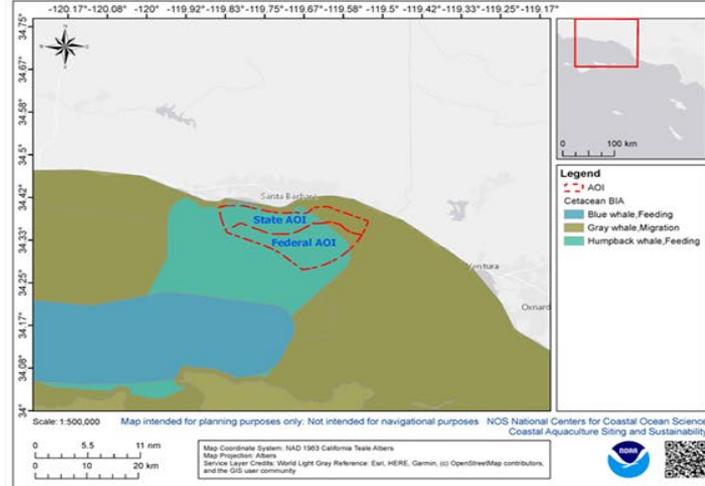
Step 6 - Identify best possible options within study areas



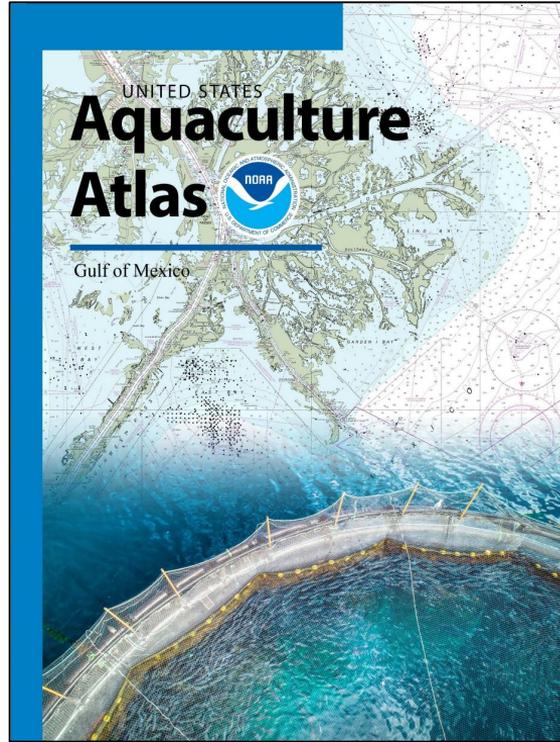
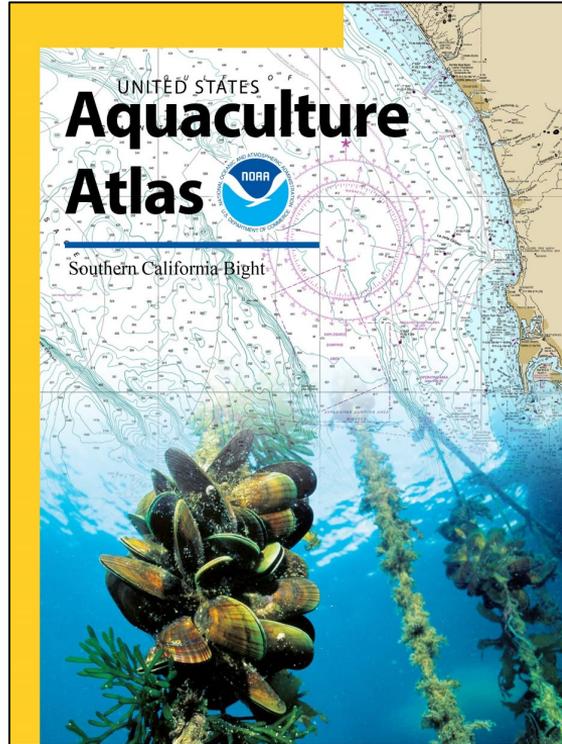
Step 7 - Characterize options within study areas



Parameter	Location A	Location B	Location C	Location D
Area (Acres)	390	1630	2640	840
Mean Suitability Score	0.86	0.86	0.84	0.86
Mean Bathymetry	44	39	37	33
Mean Slope	0.30	0.43	0.71	0.47
Mean Sediment grain size	0.29	0.68	0.43	0.32
Wave Height hours	50	54	68	58
Temperature hours	3933	3924	3908	3904
Mean VMS Traffic (2009-2019)	23	24	17	12
AIS 2017 Other vessel transits per 1 ha	1.66	2.34	1.90	2.84
AIS 2017 Tug/Tow vessel transits per 1 ha	0.24	0.13	0.33	0.45
AIS 2017 Tanker vessel transits per 1 ha	0	0	0	0
AIS 2017 Pleasure vessel transits per 1 ha	3.66	1.37	1.43	4.04
AIS 2017 Passenger vessel transits per 1 ha	1.03	5.50	3.66	0.57
AIS 2017 Fishing vessel transits per 1 ha	0	0	0	0
AIS 2017 Fishing vessel transits per 1 ha	0.43	1.21	2.38	0.50
Closest Port	Rye Harbor	Hampton Harbor	Newburyport	Newburyport
EPA Region	1	1	1	1
Coast Guard District	1	1	1	1
US Army Corps of Engineers District	New England	New England	New England	New England
Unexploded Ordnance	Yes	No	No	No



Step 8 - Develop report/atlas



Request for Information Questions



1. Are these parameters useful? What else should we consider?
2. How big/small should AOA be within study areas? Should we connect size with economic development goals?
3. Are there specific locations we should consider/avoid?
4. Subsistence harvest locations, fishing areas, sacred sites, etc. we should avoid?
5. Protected resource concerns/overlap?
6. Health concerns like HABs, impaired water quality?
7. Research we should be aware of (e.g., EVOST, Mariculture Cluster).
8. Other data (e.g., oceanographic, natural resources, social/cultural, gov't boundaries, industry, military, navigation, recreation)
9. species/gear you want us to analyze, and info on biological/physical thresholds
10. Anything else?

Submit comments by December 18, 2023!

What's Next?

- Public comment period ends **Dec 18, 2023**
- Electronic Submission at:
 - [Regulations.gov](https://www.regulations.gov)
 - Search for **NOAA-NMFS-2023-0113**.
 - Click on the “Comment” icon
 - Complete the required fields, and enter or attach your comments
- Mail Submission to:
 - **Jon Kurland**, Regional Administrator for the Alaska Region NMFS, Attn: Records Office
 - P.O. Box 21668, Juneau, AK 99802-1668



Public Comment Session



- Select “Raise Your Hand” to enter the line
- The host will unmute you
- There is a two minute time limit, after which the host will mute you
- To maximize time to gather comments NOAA will not respond to comments
- We are only accepting comments on the questions asked in the Request for Information on AOAs
- If there is time you can rejoin queue