

A photograph of a shellfish aquaculture site. In the foreground, a large pile of harvested oysters sits on a wooden platform. In the middle ground, a person is bent over, working with several blue plastic crates. The background shows a body of water with another person in the distance and a small boat. The sky is clear and blue.

ShellFAST-MA:

A Shellfish Aquaculture Siting
Tool for Massachusetts

Read Porter
Marine Affairs Institute
Rhode Island Sea Grant Legal Program
December 2018

The Marine Affairs Institute

We are:

- a partnership among RWU School of Law, Rhode Island Sea Grant, and URI
- home to the Rhode Island Sea Grant Legal Program
- an academic and research institute: we do not advocate or litigate

Our mission:

- educate the next generation of marine law and policy professionals
- serve as a legal and policy resource on marine and coastal issues
- convene experts to address issues in marine law and policy



THE
UNIVERSITY
OF RHODE ISLAND

Creating a Spatially-Defined Tool for Marine Shellfish Aquaculture Siting and Permitting



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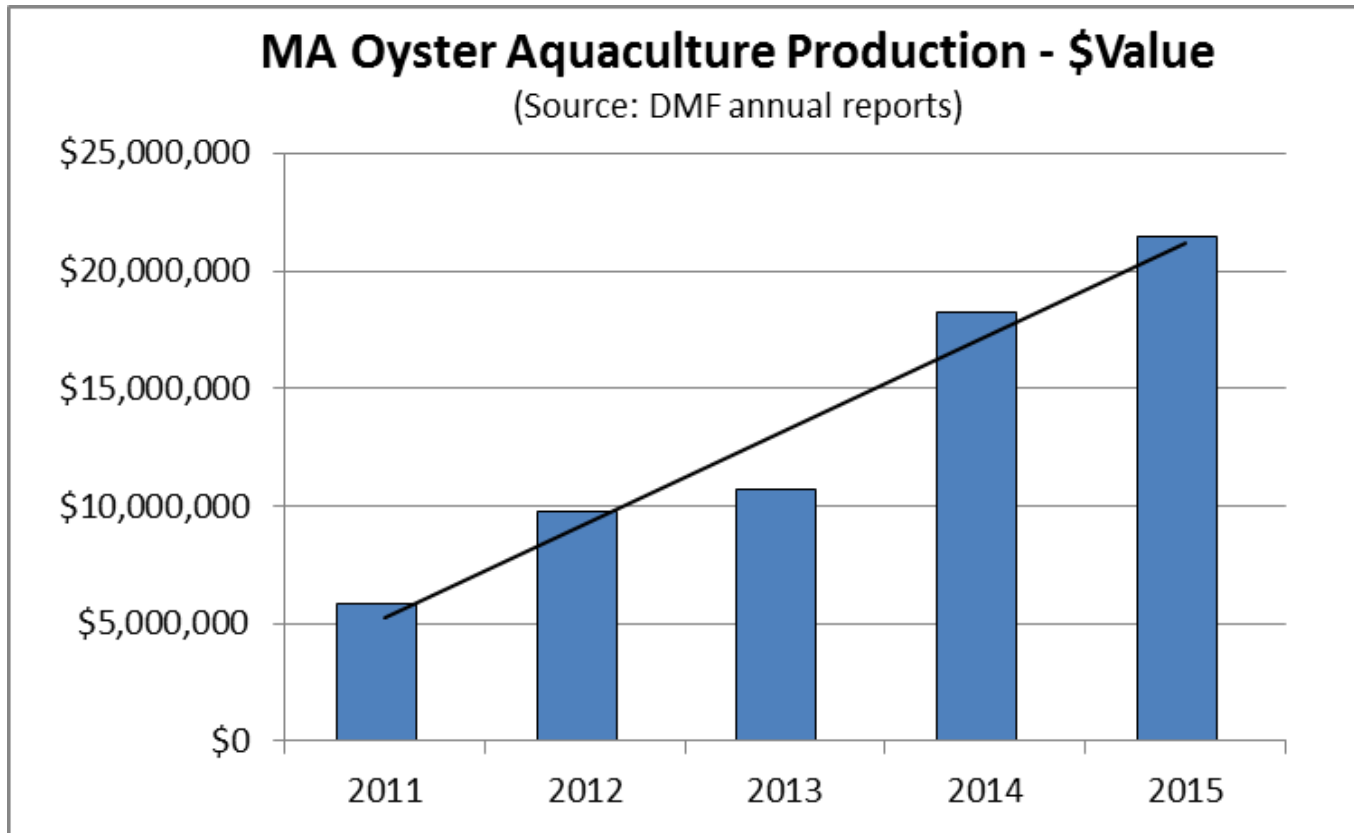
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Shellfish Aquaculture in MA



1128+ acres, 1000+ jobs



Where Can New Farms Go?

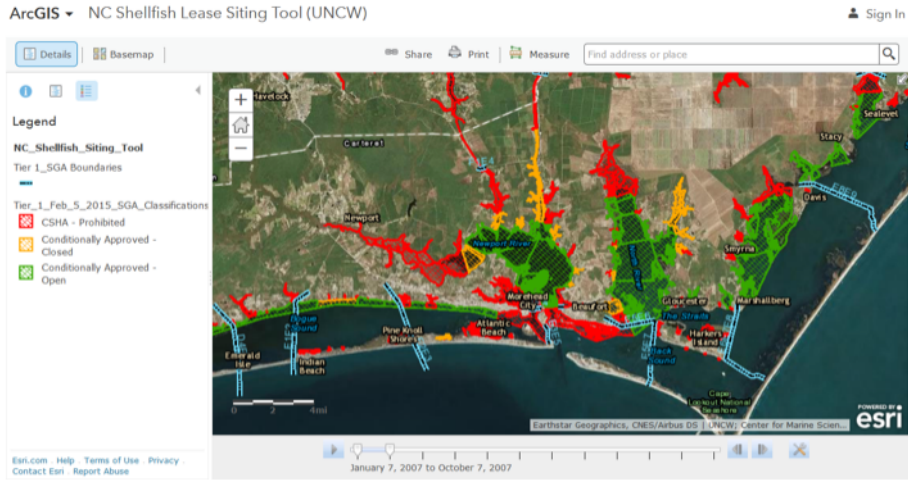


Many potential conflicts:

- Waterfront property owners
- Navigation
- Wild shellfishing
- Protected habitat/species
- Water quality
- Legal prohibitions/barriers



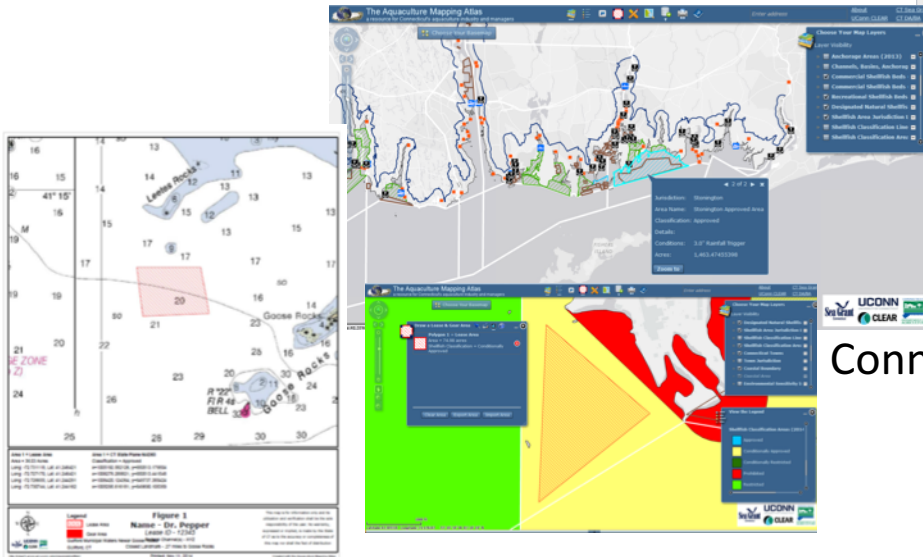
GIS Siting Tools for Aquaculture



North Carolina Shellfish Lease Siting Tool



Maryland Aquaculture Siting Tool



Connecticut Aquaculture Mapping Atlas



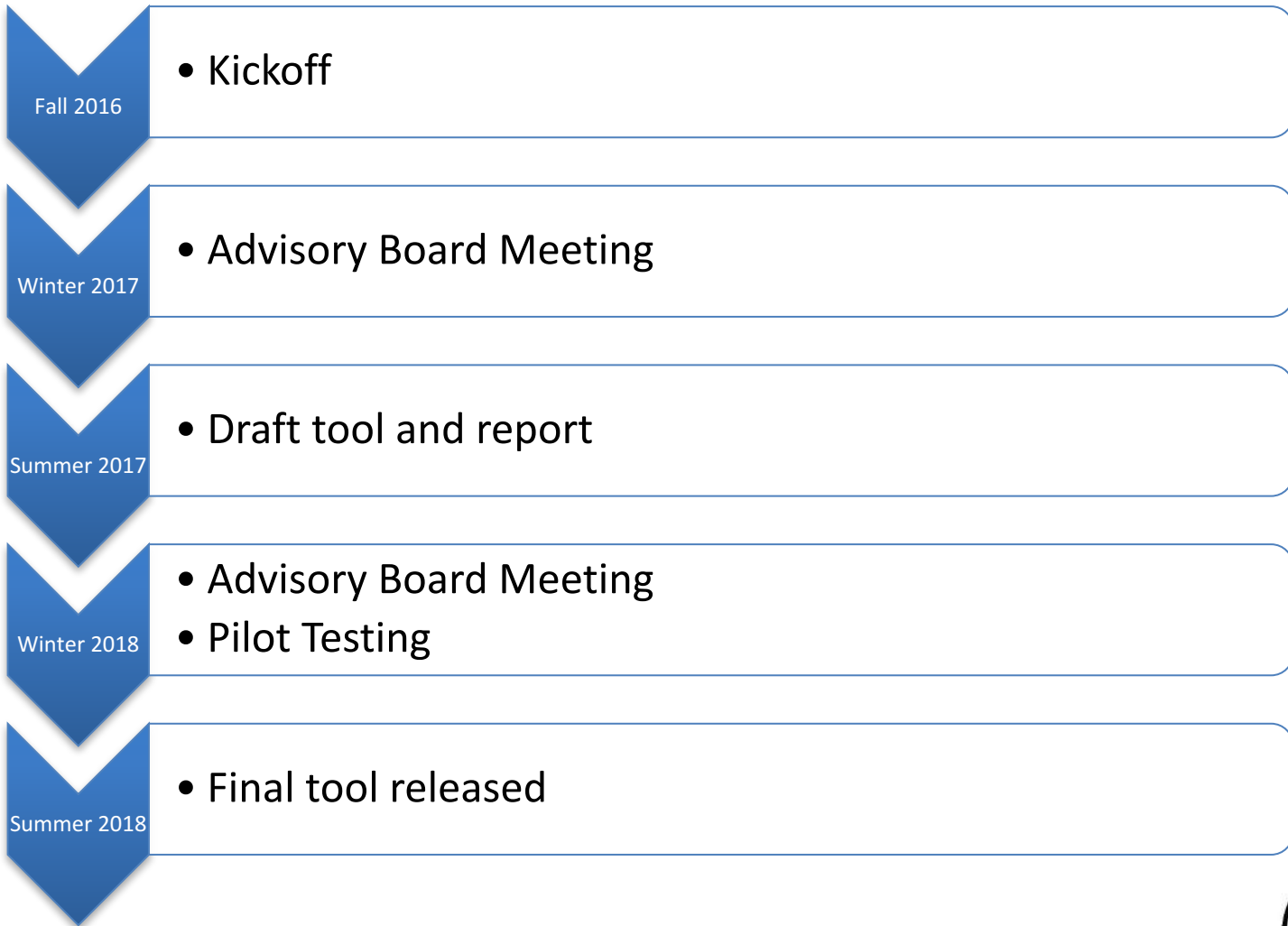
Shellfast-MA: Project Concept

A GIS-based tool to improve commercial shellfish aquaculture siting in Massachusetts

- Decision support and conflict avoidance for industry and regulators
- **Legal** analysis + biophysical information
- Simple and user-friendly
- Replicable beyond Massachusetts



Timeline



Overview

- Background, tutorial video, instructions, documentation
- Online viewer



MA-ShellfAST Viewer

View MA-ShellfAST [INSTRUCTIONS](#) and [LAUNCH](#) the MA-ShellfAST Viewer.

Disclaimer:

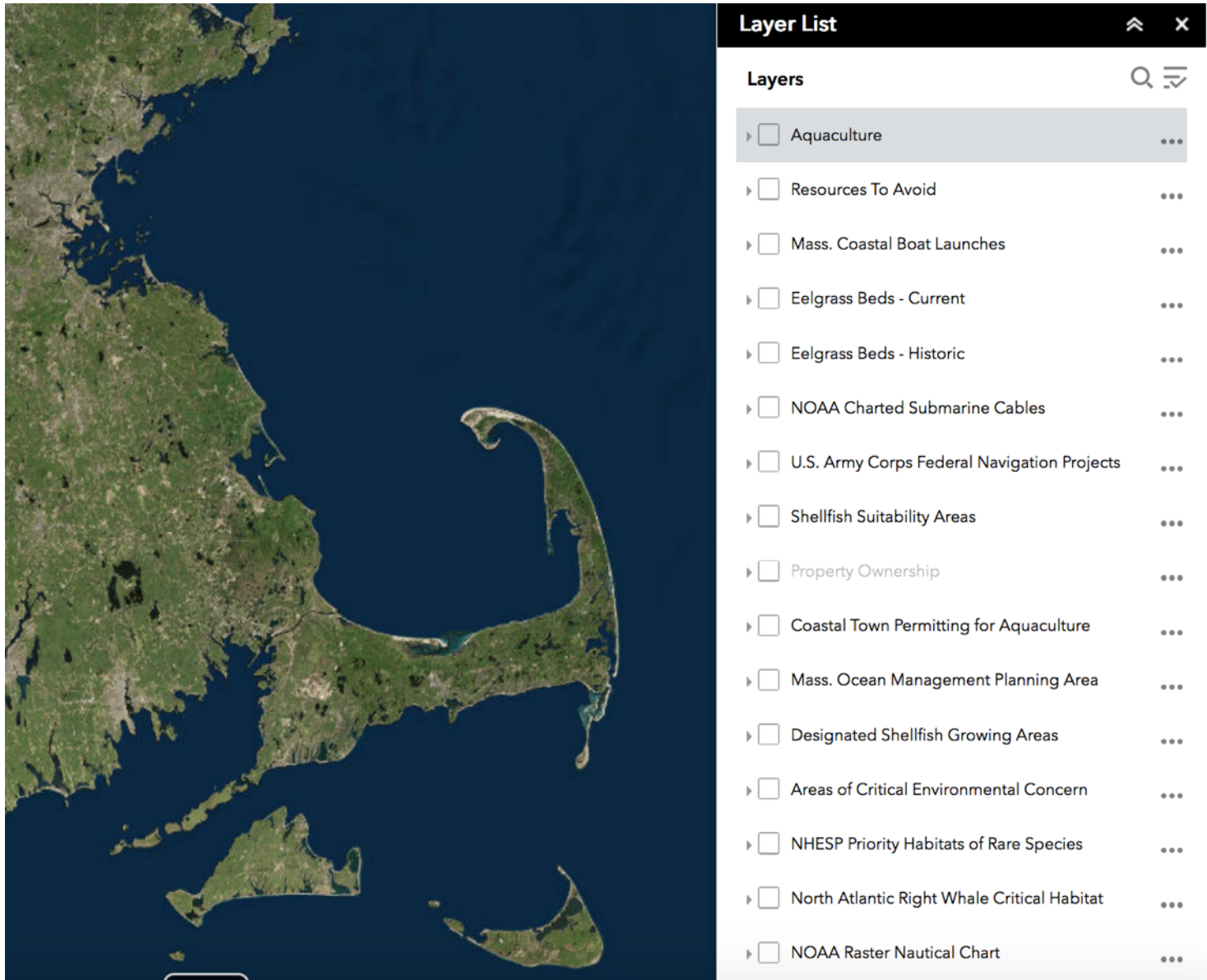
The tool covers all species currently grown in shellfish aquaculture—most notably, oysters (*Crassostrea virginica*) and

Layer List

- Aquaculture
- Resources To Avoid
- Mass. Coastal Boat Launches
- Eelgrass Beds
- NOAA Charted Submarine Cables
- Shellfish Suitability Areas
 - American Oyster
 - Bay Scallop
 - Blue Mussel
 - European Oyster
 - Ocean Quahog
 - Quahog
 - Razor Clam
 - Sea Scallop
 - Soft-shelled Clam

20mi
-69.807 42.372 Degrees
Geographics | This data w

Data Layers in MA-ShellFAST



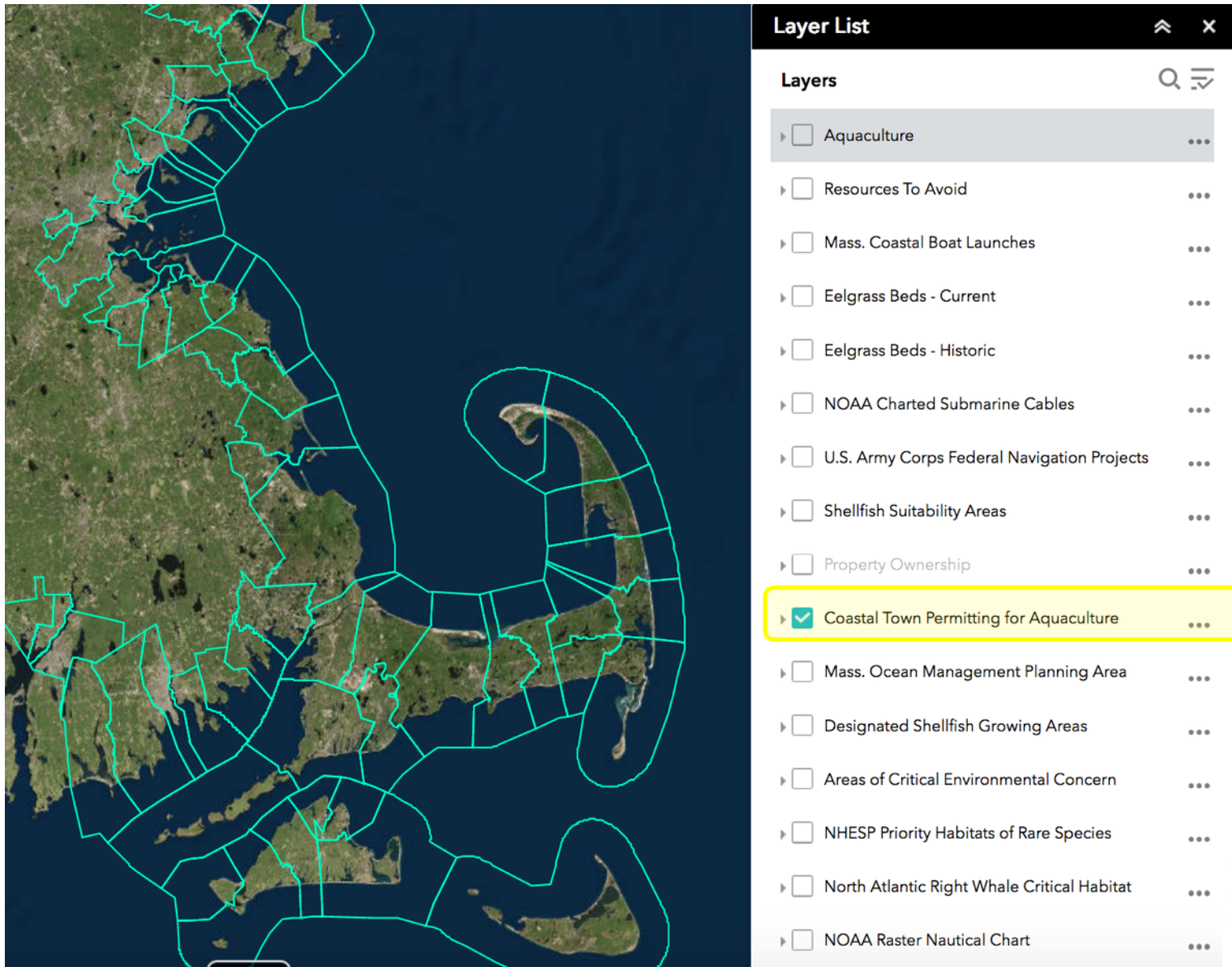
Layer List ⤴ ✕

Layers 🔍 ☰

- Aquaculture ...
- Resources To Avoid ...
- Mass. Coastal Boat Launches ...
- Eelgrass Beds - Current ...
- Eelgrass Beds - Historic ...
- NOAA Charted Submarine Cables ...
- U.S. Army Corps Federal Navigation Projects ...
- Shellfish Suitability Areas ...
- Property Ownership ...
- Coastal Town Permitting for Aquaculture ...
- Mass. Ocean Management Planning Area ...
- Designated Shellfish Growing Areas ...
- Areas of Critical Environmental Concern ...
- NHESP Priority Habitats of Rare Species ...
- North Atlantic Right Whale Critical Habitat ...
- NOAA Raster Nautical Chart ...



Data Layers in MA-ShellFAST



The screenshot displays the MA-ShellFAST interface. On the left is a map of Massachusetts with cyan outlines representing various data layers. On the right is a 'Layer List' panel with a search icon and a list of layers. The layer 'Coastal Town Permitting for Aquaculture' is selected and highlighted in yellow.

Layer List	
<input type="checkbox"/>	Aquaculture
<input type="checkbox"/>	Resources To Avoid
<input type="checkbox"/>	Mass. Coastal Boat Launches
<input type="checkbox"/>	Eelgrass Beds - Current
<input type="checkbox"/>	Eelgrass Beds - Historic
<input type="checkbox"/>	NOAA Charted Submarine Cables
<input type="checkbox"/>	U.S. Army Corps Federal Navigation Projects
<input type="checkbox"/>	Shellfish Suitability Areas
<input type="checkbox"/>	Property Ownership
<input checked="" type="checkbox"/>	Coastal Town Permitting for Aquaculture
<input type="checkbox"/>	Mass. Ocean Management Planning Area
<input type="checkbox"/>	Designated Shellfish Growing Areas
<input type="checkbox"/>	Areas of Critical Environmental Concern
<input type="checkbox"/>	NHESP Priority Habitats of Rare Species
<input type="checkbox"/>	North Atlantic Right Whale Critical Habitat
<input type="checkbox"/>	NOAA Raster Nautical Chart



Data Layers in MA-ShellFAST



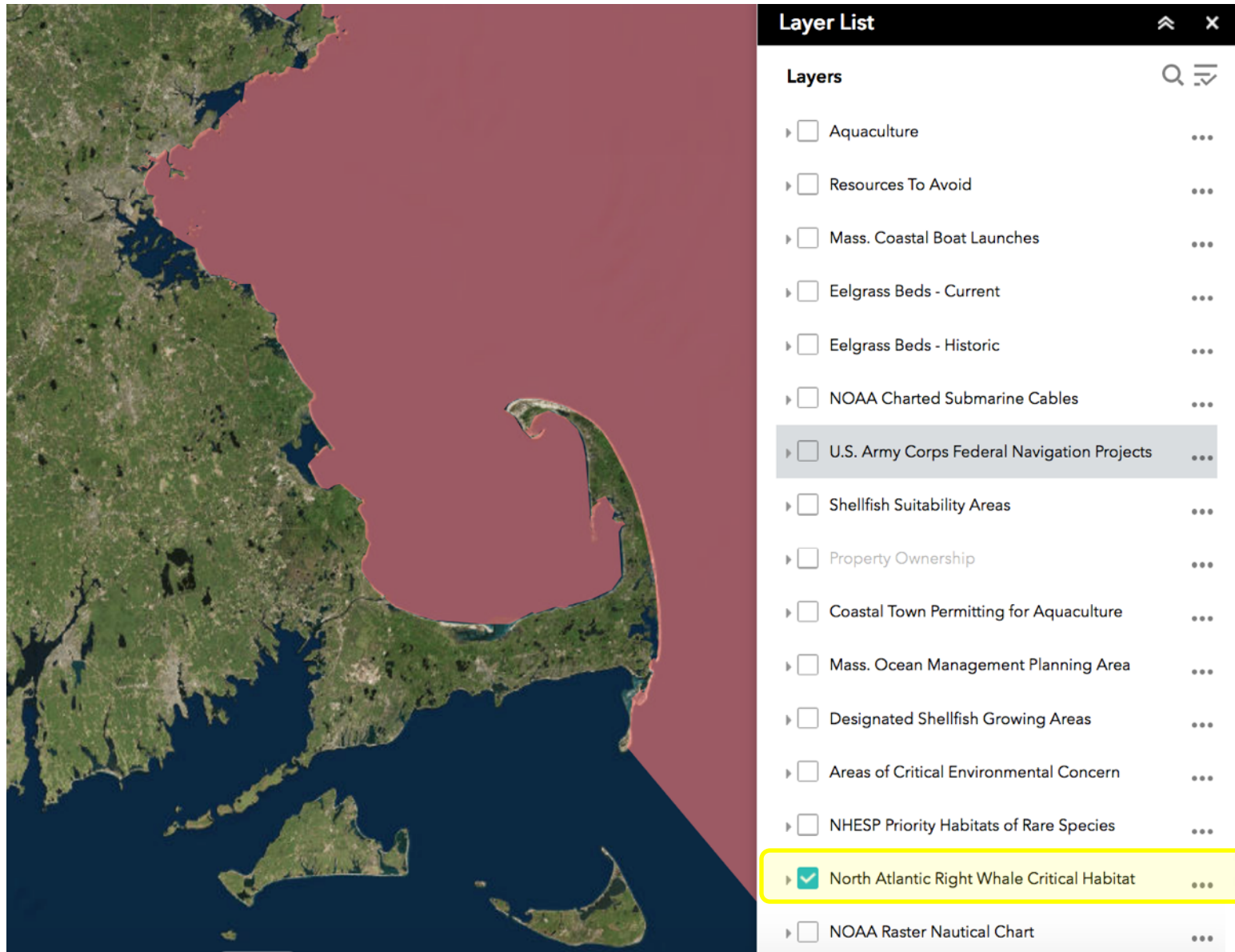
Layer List ⌵ ✕

Layers 🔍 ☰

- Aquaculture ...
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- Mass. Coastal Boat Launches** ...
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Data Layers in MA-ShellFAST



The screenshot displays the MA-ShellFAST web application interface. On the left is a satellite map of the Massachusetts coastline, with a semi-transparent pink overlay indicating a data layer. On the right is a 'Layer List' panel with a search icon and a close button. The panel contains a list of data layers, each with a checkbox and a dropdown menu icon. The 'North Atlantic Right Whale Critical Habitat' layer is selected, indicated by a green checkmark in its checkbox and a yellow highlight around the entire row.

Layer List	
<input type="checkbox"/>	Aquaculture
<input type="checkbox"/>	Resources To Avoid
<input type="checkbox"/>	Mass. Coastal Boat Launches
<input type="checkbox"/>	Eelgrass Beds - Current
<input type="checkbox"/>	Eelgrass Beds - Historic
<input type="checkbox"/>	NOAA Charted Submarine Cables
<input type="checkbox"/>	U.S. Army Corps Federal Navigation Projects
<input type="checkbox"/>	Shellfish Suitability Areas
<input type="checkbox"/>	Property Ownership
<input type="checkbox"/>	Coastal Town Permitting for Aquaculture
<input type="checkbox"/>	Mass. Ocean Management Planning Area
<input type="checkbox"/>	Designated Shellfish Growing Areas
<input type="checkbox"/>	Areas of Critical Environmental Concern
<input type="checkbox"/>	NHESP Priority Habitats of Rare Species
<input checked="" type="checkbox"/>	North Atlantic Right Whale Critical Habitat
<input type="checkbox"/>	NOAA Raster Nautical Chart



Documentation

- Background and context for design and development
- Project Overview
- Legal and Regulatory Context for Shellfish Aquaculture Siting and Permitting in Massachusetts
- Shellfish Aquaculture Licensing, Navigation, and Wetlands Requirements in Massachusetts Coastal Municipalities
- Case Studies for Pilot Municipalities
- Prospects for Application in Other States
- MA-ShellFAST Technical Report

Creating a Spatially Defined Tool for Marine Shellfish Aquaculture Siting and Permitting:

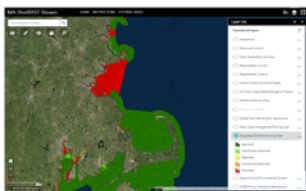
Background and context for design and development

January 2017

Shellfish Aquaculture Licensing, Navigation, and Wetlands Requirements in Massachusetts Coastal Municipalities

June 2018

MA-ShellFAST Technical Document



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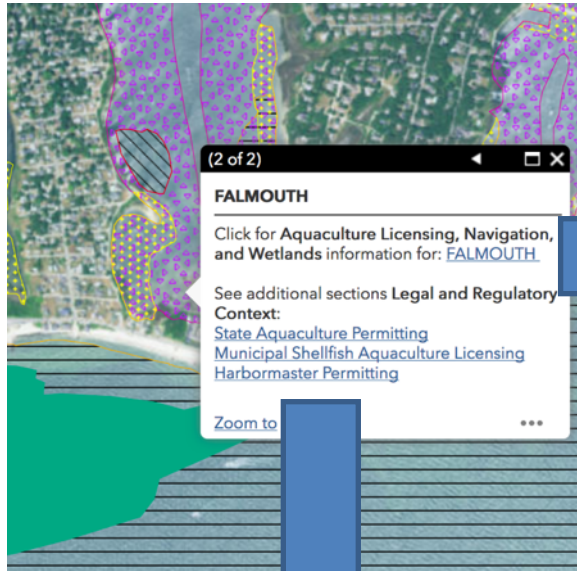
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Date | 5/4/2018



Legal Integration - Context



Falmouth	
Aquaculture Licensing	
Status	Falmouth has issued aquaculture licensing regulations, which are administered by the Shellfish Constable. ^[167]
Eligibility	The regulations do not limit eligibility to Falmouth residents.
Lot Size and Number	Initial inshore license areas can be a maximum of 3 acres, with 2 of those acres reserved for expansion after 5 years. ^[168] Offshore license areas, which include the coastal zone outside the ponds, rivers, and bays up to three miles offshore, can be a maximum of ten acres. ^[169] Adjacent lots must maintain a 50-foot buffer to other licensed areas. ^[170]
Gear Restrictions	The regulations do not specify gear restrictions.
Navigation	
Status	Falmouth has established waterway and mooring regulations, which are administered by the Harbormaster. ^[171]
Channels	No warp or line shall pass across a channel or dock to interfere with vessels in the town's waters. ^[172] Certain fish pots are prohibited "in areas usually used as channels for navigation." ^[173]
Moorings	The Harbormaster approves all mooring locations. ^[174] Boats used for commercial purposes cannot moor at a Falmouth marina without special permission from the Waterways Committee or Harbormaster. ^[175]
Wetlands	
Status	Falmouth has issued wetlands protection bylaws and regulations, which are administered by the Conservation Commission. ^[176] Ocean waters are included in the bylaw. ^[177]
Learn More	
Shellfish & Biological Services	Website Phone: 508-457-2550
Harbormaster	Website email Phone: 508-475-2550
Conservation Commission	Website

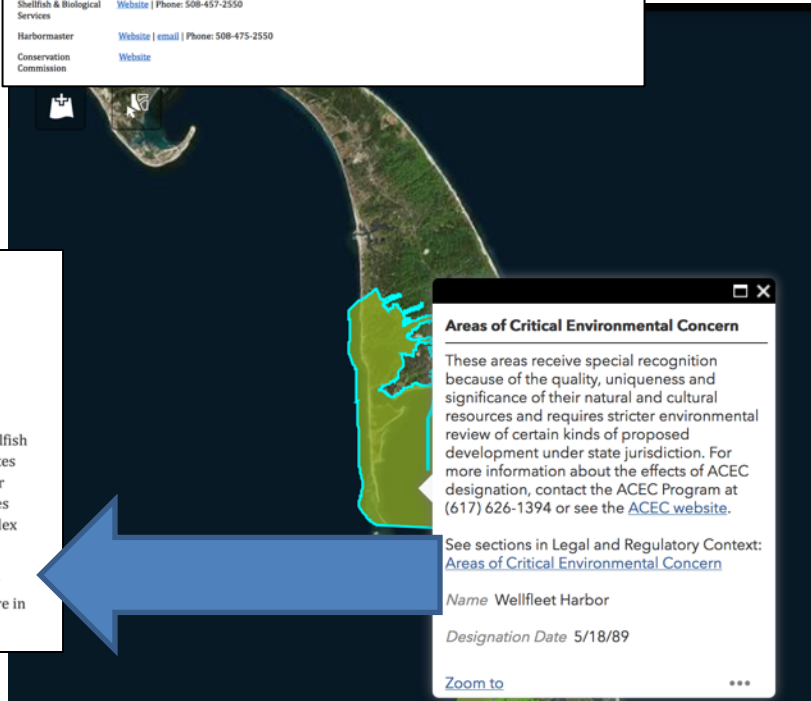
Creating a Spatially Defined Tool for Marine Shellfish Aquaculture Siting and Permitting

Legal and Regulatory Context

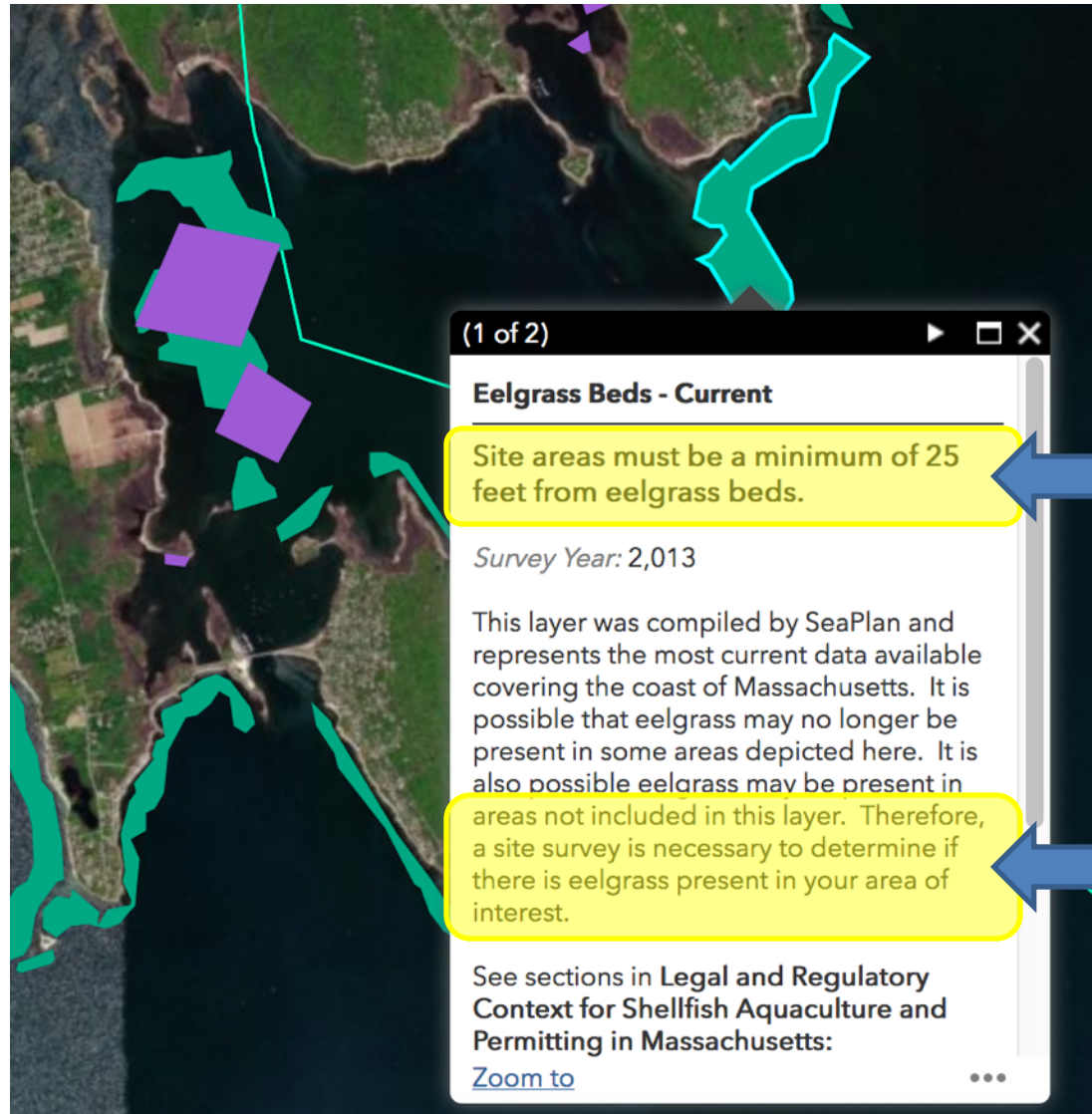
July 2017

Siting and permitting are key barriers to the continued development of the marine shellfish aquaculture industry in New England. When designing projects, growers must select sites that avoid and minimize environmental impacts and conflicts with a wide array of other uses and where they can obtain all required permits. Successful siting therefore requires growers—and the agency staff reviewing applications—to understand and apply complex scientific, practical, and regulatory information.

This report supports development of sustainable shellfish projects in Massachusetts by providing an overview of the legal and regulatory requirements for shellfish aquaculture in state waters.



Legal Integration - Guidance



(1 of 2)

Eelgrass Beds - Current

Site areas must be a minimum of 25 feet from eelgrass beds.

Survey Year: 2,013

This layer was compiled by SeaPlan and represents the most current data available covering the coast of Massachusetts. It is possible that eelgrass may no longer be present in some areas depicted here. It is also possible eelgrass may be present in areas not included in this layer. Therefore, a site survey is necessary to determine if there is eelgrass present in your area of interest.

See sections in **Legal and Regulatory Context for Shellfish Aquaculture and Permitting in Massachusetts:**
[Zoom to](#)

Legal Integration: Permitting

Mass. COAST Viewer HOME

Esri World Geocoder

Layer List

- Eelgrass

Measurement

Degrees

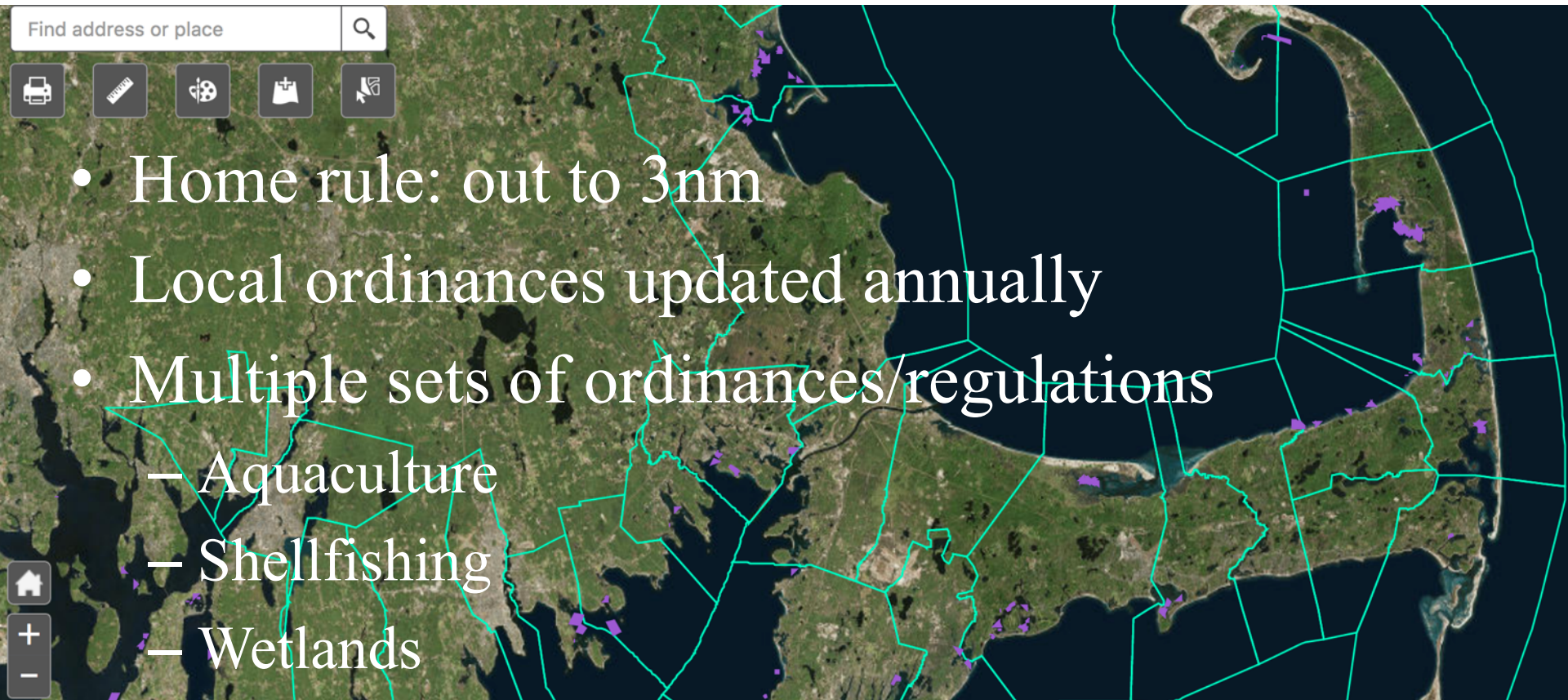
Measurement Result	
Latitude	Longitude
41.532165	-70.677602
41.531827	-70.679598

3.2 Acres 1,574.3 Feet

Mas



Massachusetts Aquaculture: The Local Government Challenge



- Home rule: out to 3nm
- Local ordinances updated annually
- Multiple sets of ordinances/regulations
 - Aquaculture
 - Shellfishing
 - Wetlands

A person is seen from behind, leaning over several blue and black plastic crates floating in the water. The crates are arranged in rows. In the background, another person is visible in the water near a small boat. The water is calm, and the sky is clear. The foreground shows a large pile of oysters on a mesh tray.

Thank you!

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