

# **SITE SELECTION FOR SUBTIDAL AQUACULTURE DEVELOPMENT AREAS: A COMPREHENSIVE HABITAT MAPPING APPROACH**

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# Background

- Stakeholders express support for Provincetown/Truro community subtidal Aquaculture Development Area (ADA)
- Outreach conducted among current and prospective growers, town Shellfish Committees – lots of support!
- Proposal submitted to Northeast Sustainable Agriculture Research and Education (SARE) Sustainable Community Grant Program to provide technical support to towns



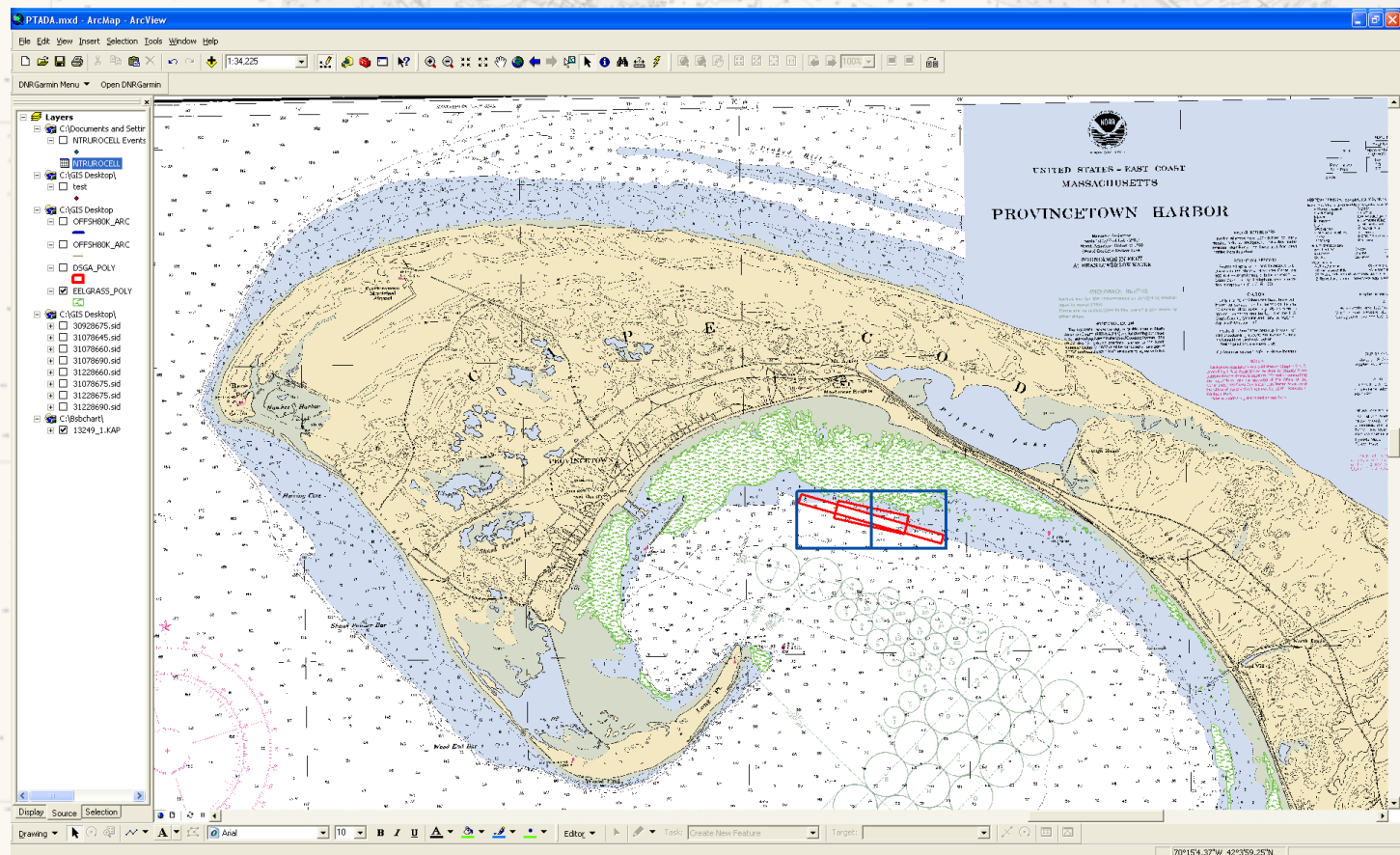
Project Grants for • Farmers • Researchers • Educators





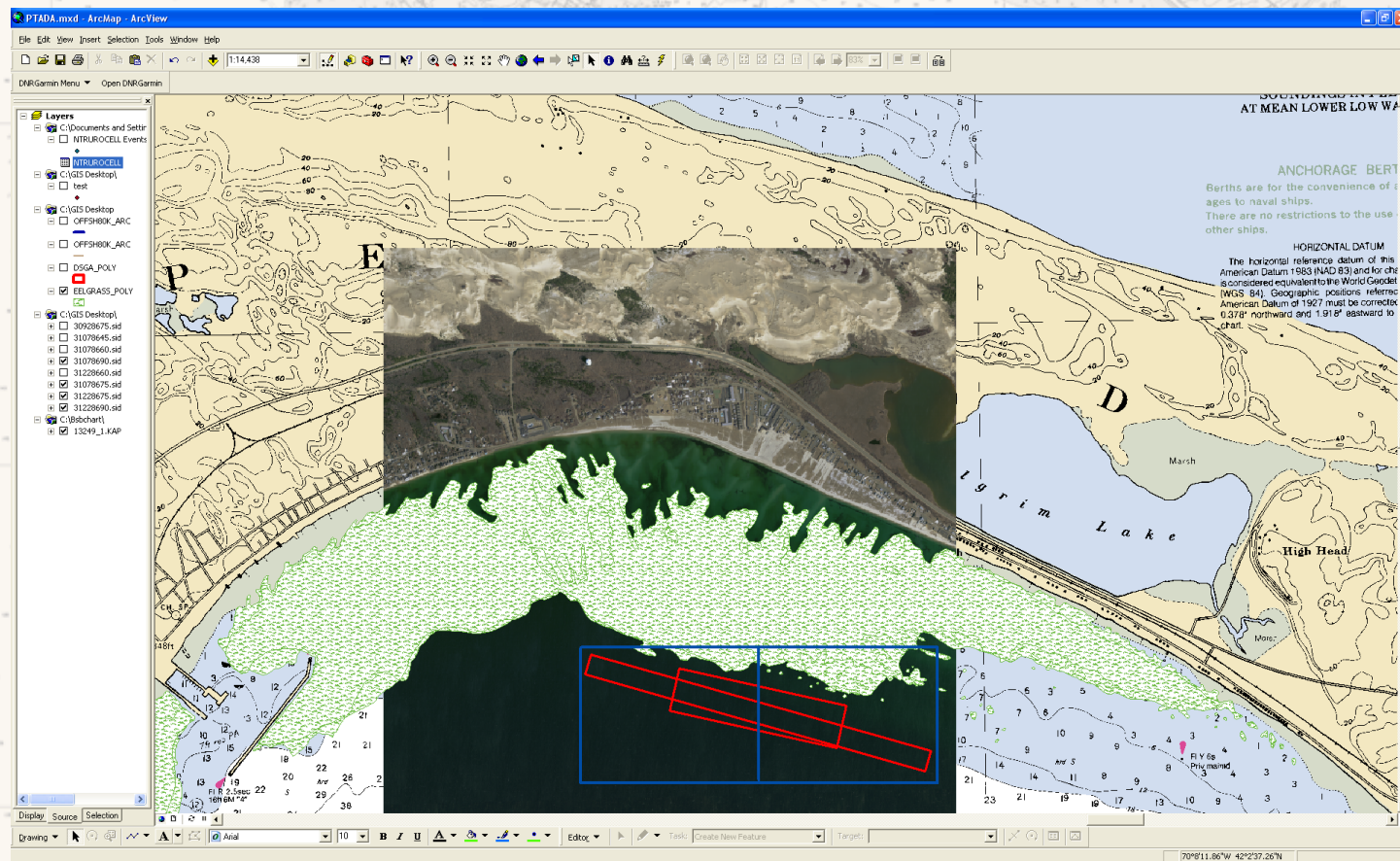
# Mapping Approach

- Geographic Information System (GIS) – based approach to preliminary mapping:



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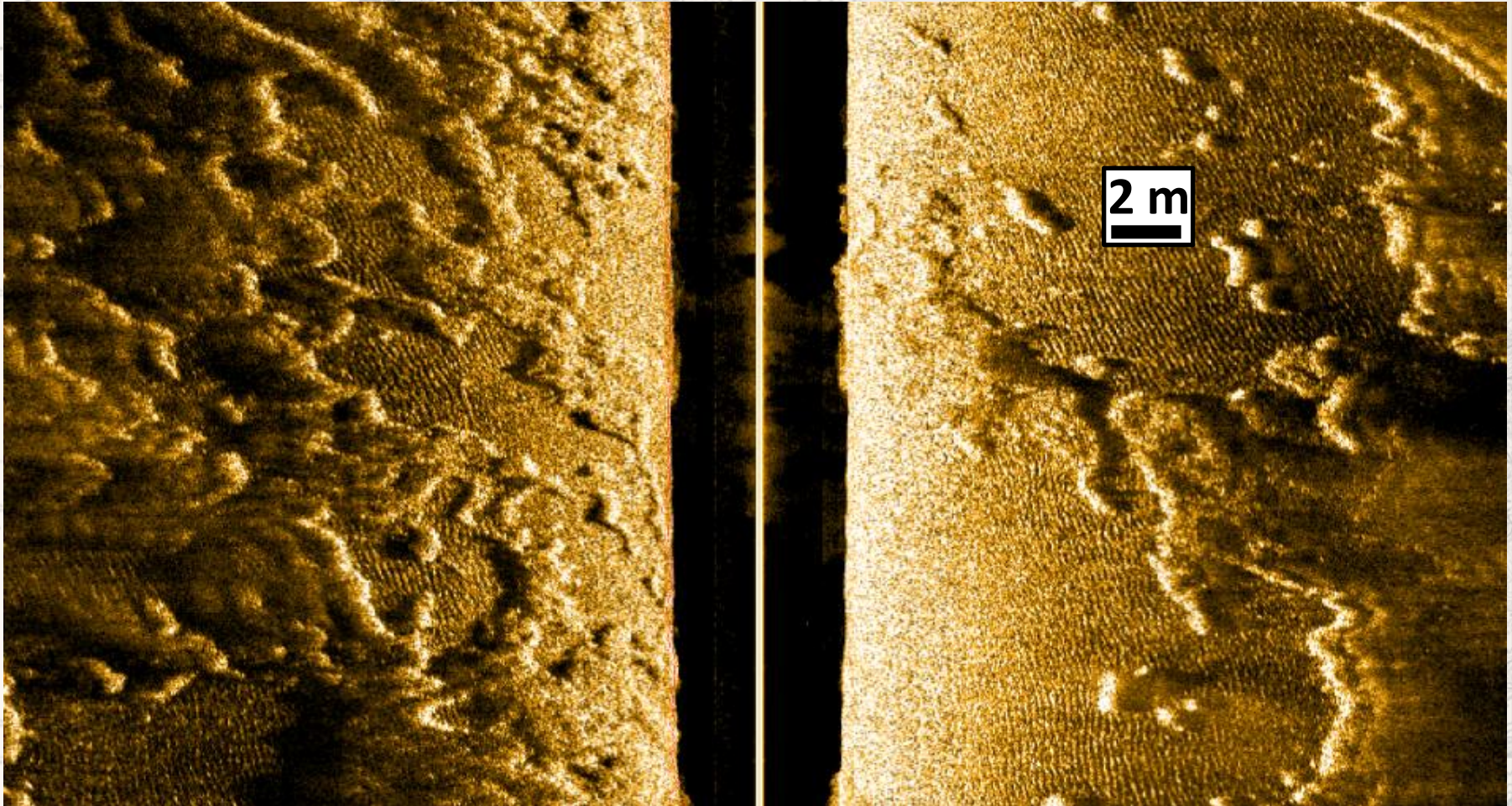
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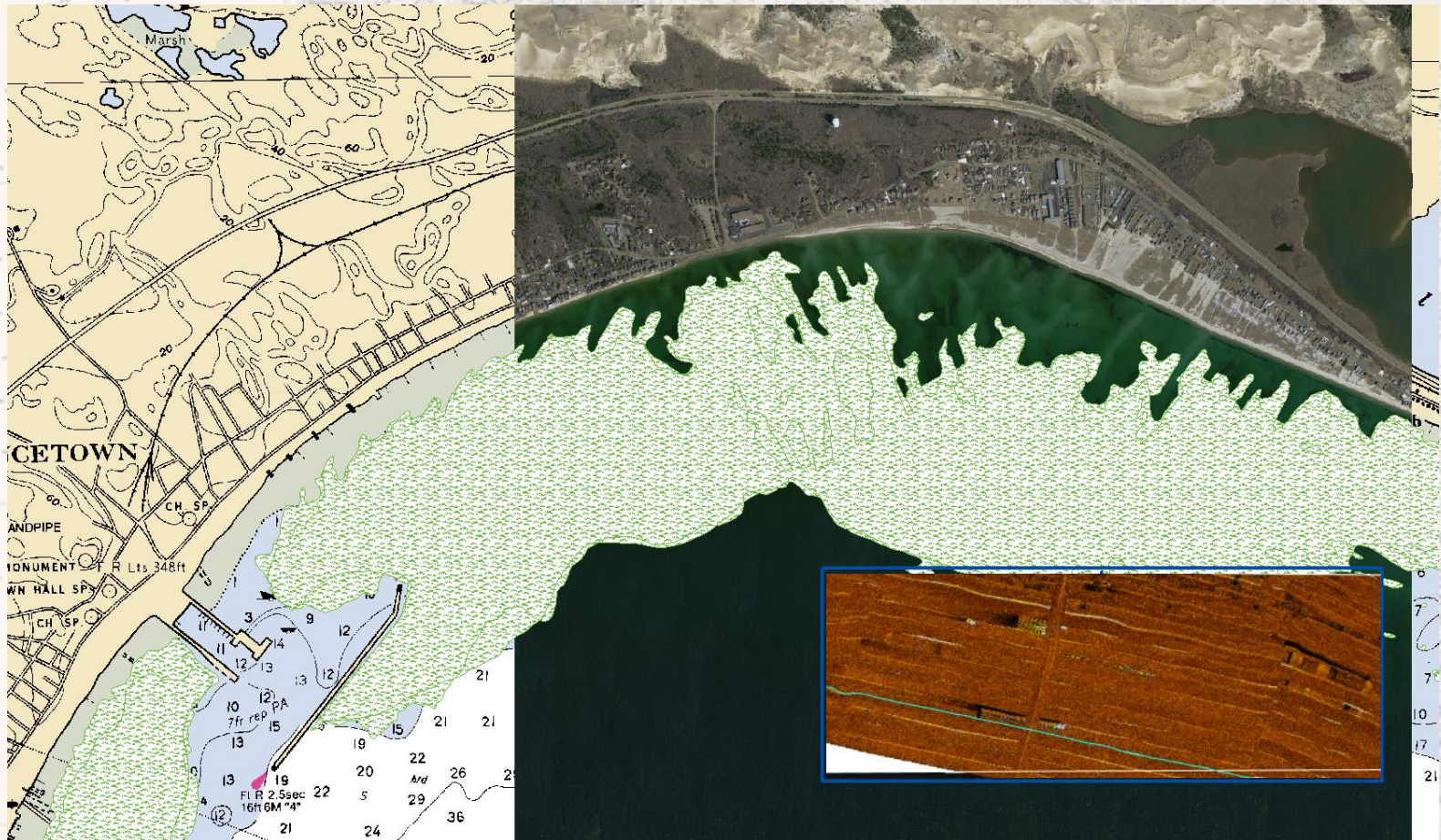
- Habitat characteristic identification: eelgrass, sand waves





# Mapping Approach

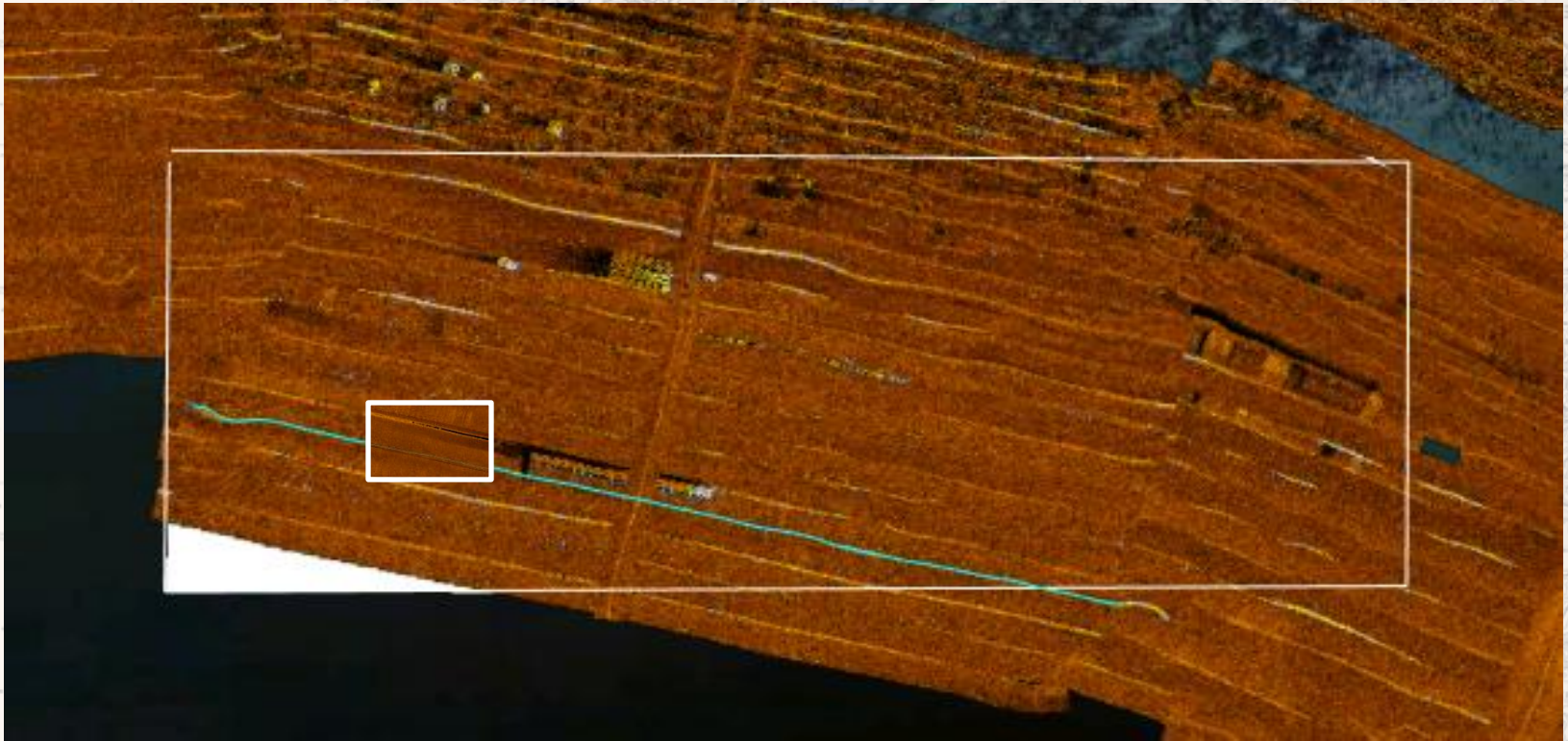
- Data processing ongoing – preliminary results





# Mapping Approach

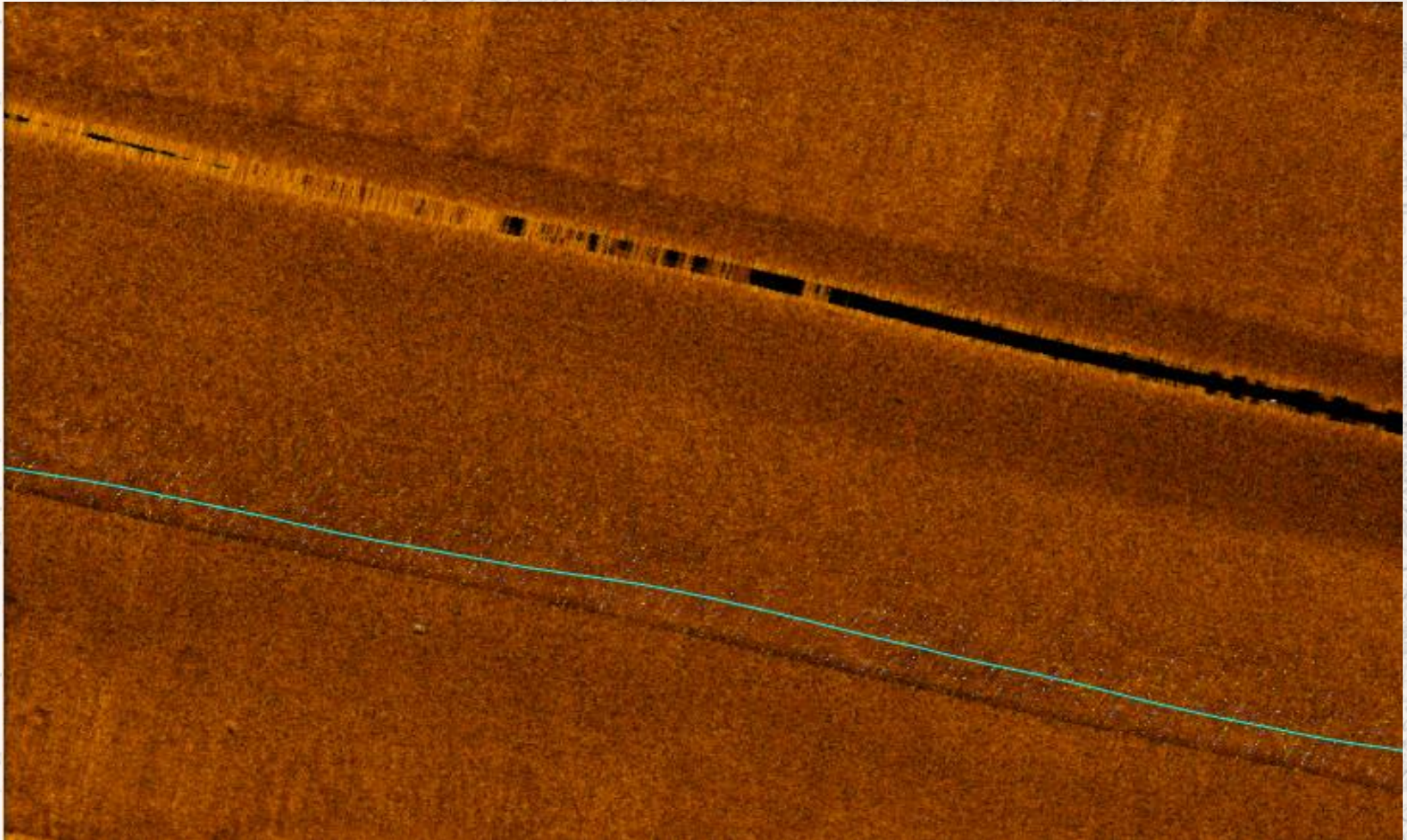
- Preliminary data adequate for general characterization





# Mapping Approach

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# Mapping Approach

- 1.5 days of dive surveys completed (25 stations)



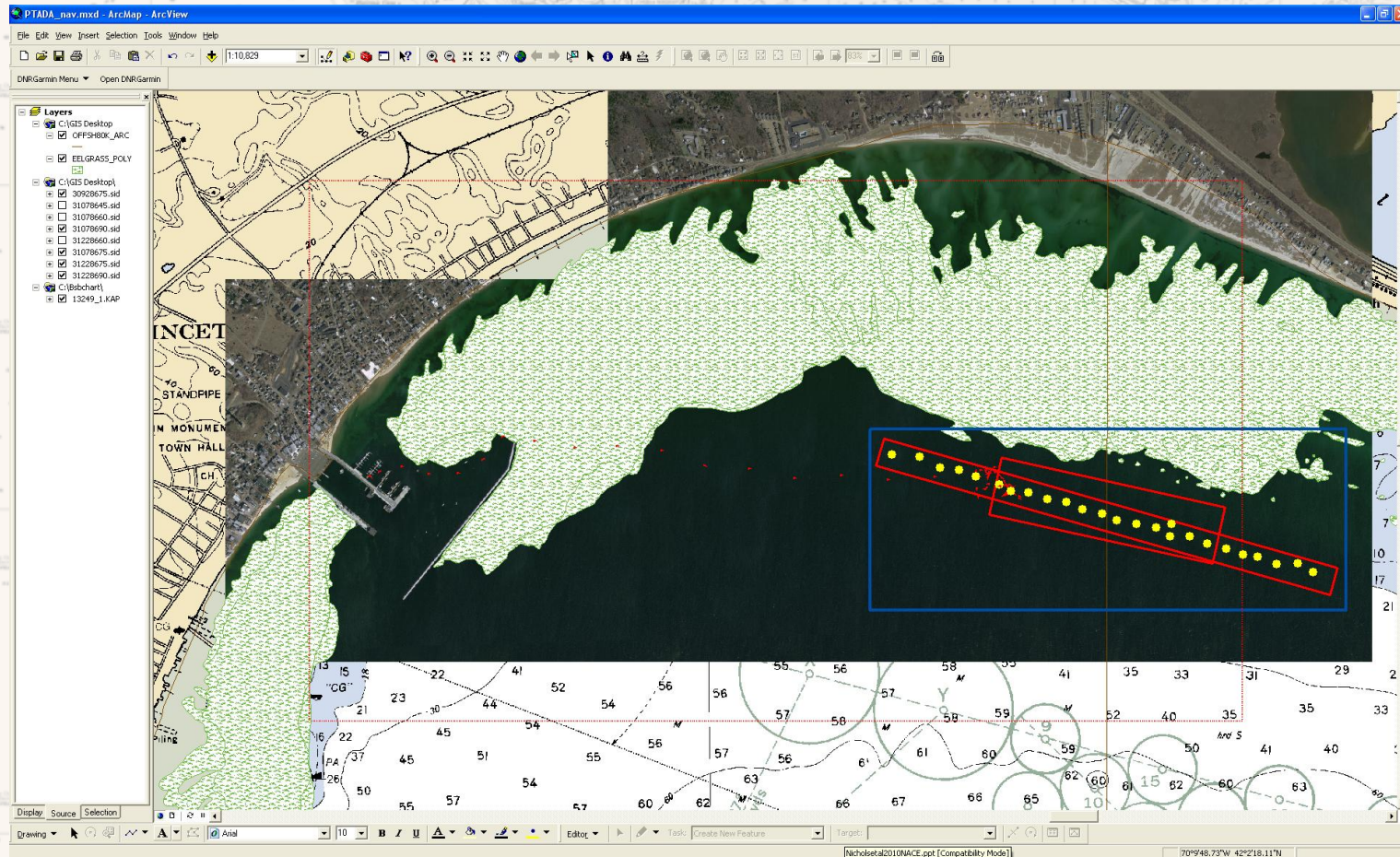
F/V Chase (Seafood Divers, Inc.)





# Mapping Approach

- 1.5 days of dive surveys completed (25 stations)



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# Mapping Approach

- 1.5 days of dive surveys completed (25 stations)
- Transects (qualitative bottom characteristics)
- Quadrat sampling (1 m<sup>2</sup>, existing shellfish abundance)
- Photographs (more qualitative data)



# Mapping Approach

- Transects and photographs support sonar data





# Mapping Approach

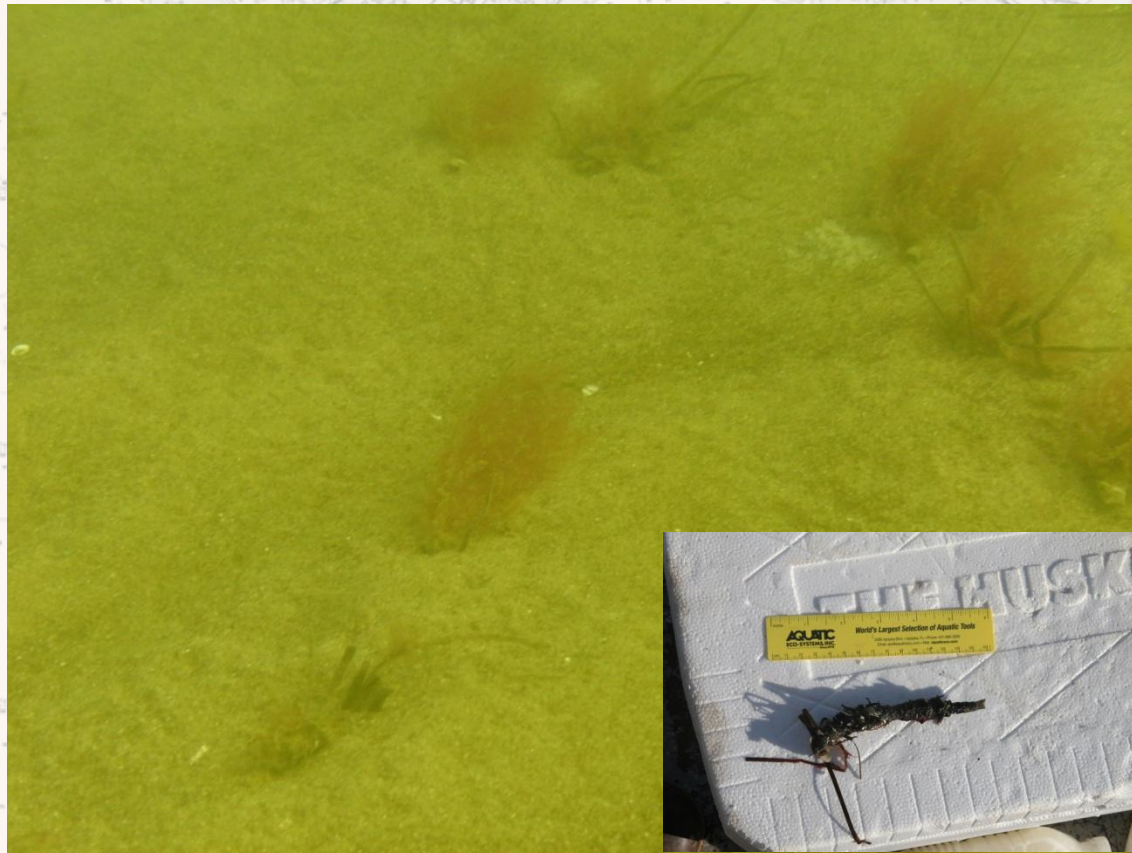
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# Mapping Approach

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# Mapping Approach

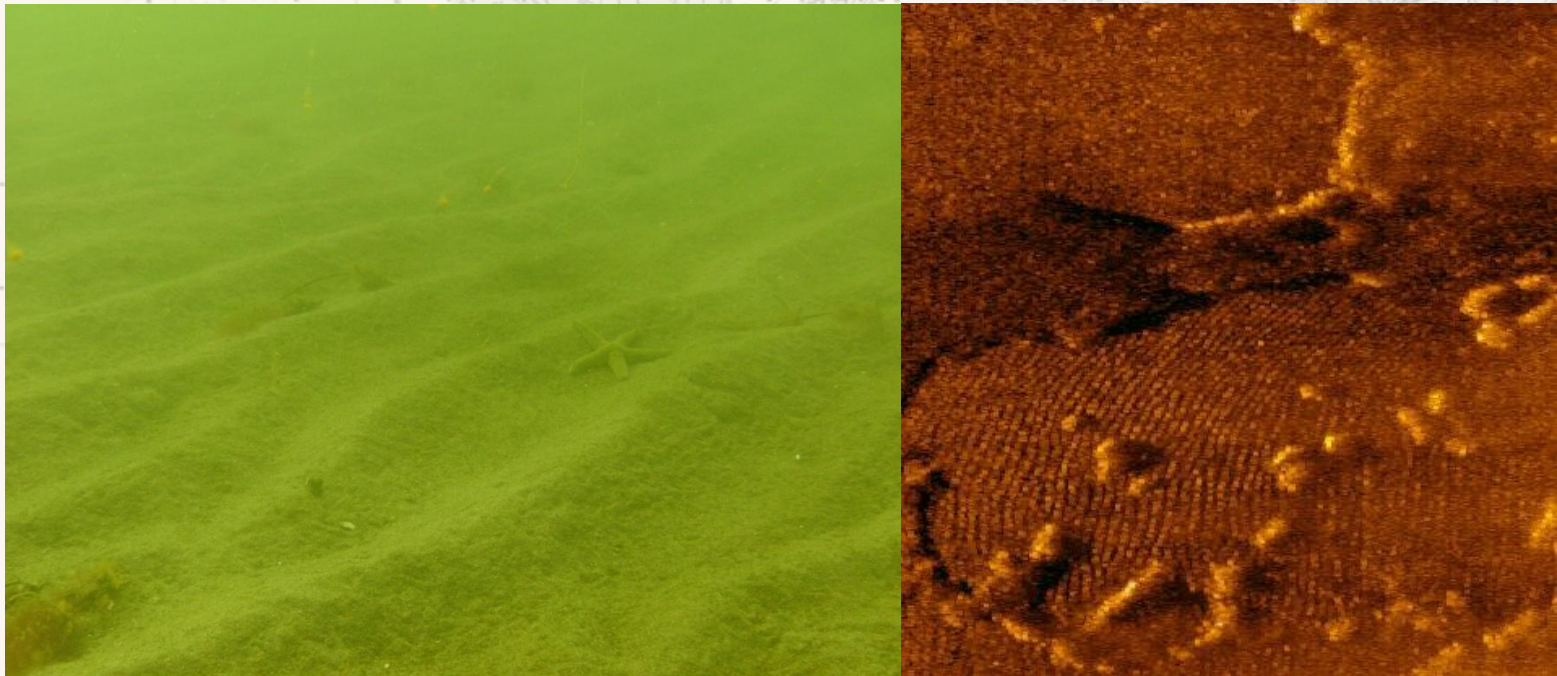
- Transects and photographs support sonar data
- Existing shellfish abundance at all stations  $< 1$  org./m<sup>2</sup>





# Next Steps

- Full integration of geo-referenced sonar data
- Look for fine-scale (ephemeral) features





# Next Steps

- Place findings in the context of shellfish biology, aquaculture practices, and management



Redraw boundaries, conduct more surveys  
(if needed)



# Next Steps

- Maps to town committees and then selectmen – if towns choose to move forward, continue technical support through regulatory and state/federal permitting processes
- Follow up: outreach and extension





# Thank You!

Special thanks to our supporters, Provincetown and Truro Selectmen and Shellfish Committees, GIS staff at the Cape Cod Commission and MassGIS, Ricky Macara (Seafood Divers, Inc.), Ashley Norton, Taylor Brown, Amy Costa, and PCCS staff



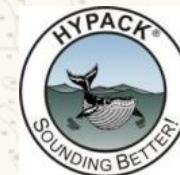
Massachusetts  
Coastal Zone  
Management



Teledyne  
Benthos



Cape Cod  
National  
Seashore



HYPACK  
Inc



Hemisphere  
GPS



Trimble