

MA Critical Coastal Habitat Restoration Project

An NRCS funded partnership to
restore wild oyster reefs, seagrass,
and saltmarsh



Project Overview

Goals

- Plan and implement nature-based solutions and farmer supported habitat restoration
- Improve coastal ecosystems while supporting fisheries, economic growth, and resilience in coastal communities.

Deliverables

- Develop a statewide critical coastal habitat restoration plan
- Identify, permit, and plan at least five new restoration sites in MA
- Provide critical habitat restoration training to NRCS
- facilitate information-sharing and develop best practices/SOPs

Partners



Initial Funding

- \$599K Over 5-Years
- TNC Salaries: \$22K
- DMF Restoration Specialist: \$352K
- CCCD: \$8K
- Environmental Consultant: \$109K
- Indirect: \$108K

Timeline

2025: Suitability Analysis
Community Outreach

2026: Site Selection
Plan-Permit Projects

2027: Implementation
Plan-Permit Projects

2028: Implementation
Restoration SOPs

2029: Implementation
Final Report

Habitat Loss

- Oyster reefs were once prolific throughout MA coastal waters
- Foundational species for productive and diverse marine and estuarine ecosystems
- After dramatic declines, they are now functionally extinct in MA
- Restoration brings broad ecological benefit including, cleaner water, fisheries and wildlife habitat, and shoreline protection



Goals

- Partner with local communities to restore wild oyster reefs and other critical habitat
- Plan and implement farmer-supported oyster reef restoration through NRCS EQIP
- Conduct restoration at a system scale to achieve self-sustaining wild oyster populations
- Improve coastal ecosystems while supporting local aquaculture, fisheries, economic growth, and resilience



3 guiding principles for sanctuary reefs:

8-16% of historic reef habitat needs to be restored to effect a significant change

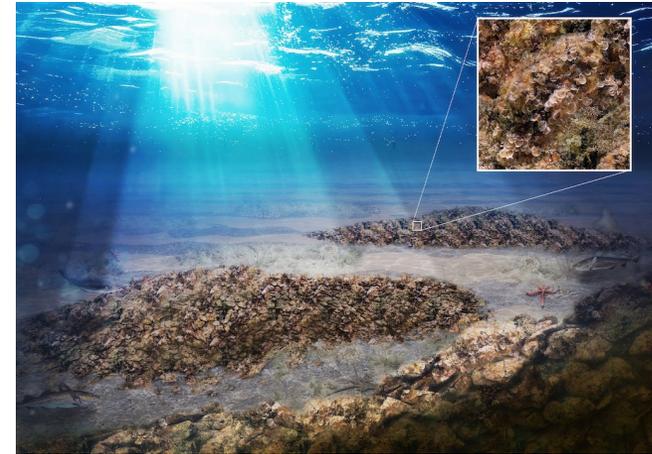
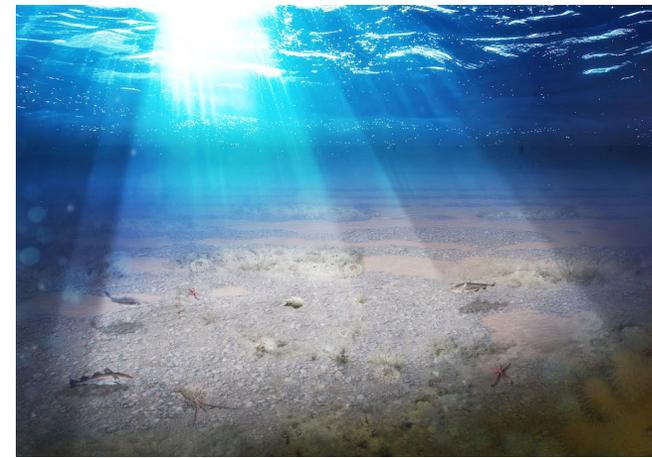
50 -100% of currently restorable oyster habitat represents a reasonable target for system-level restoration

Cultch and oyster planting should result in a minimum of 30% of coverage of the restoration reef



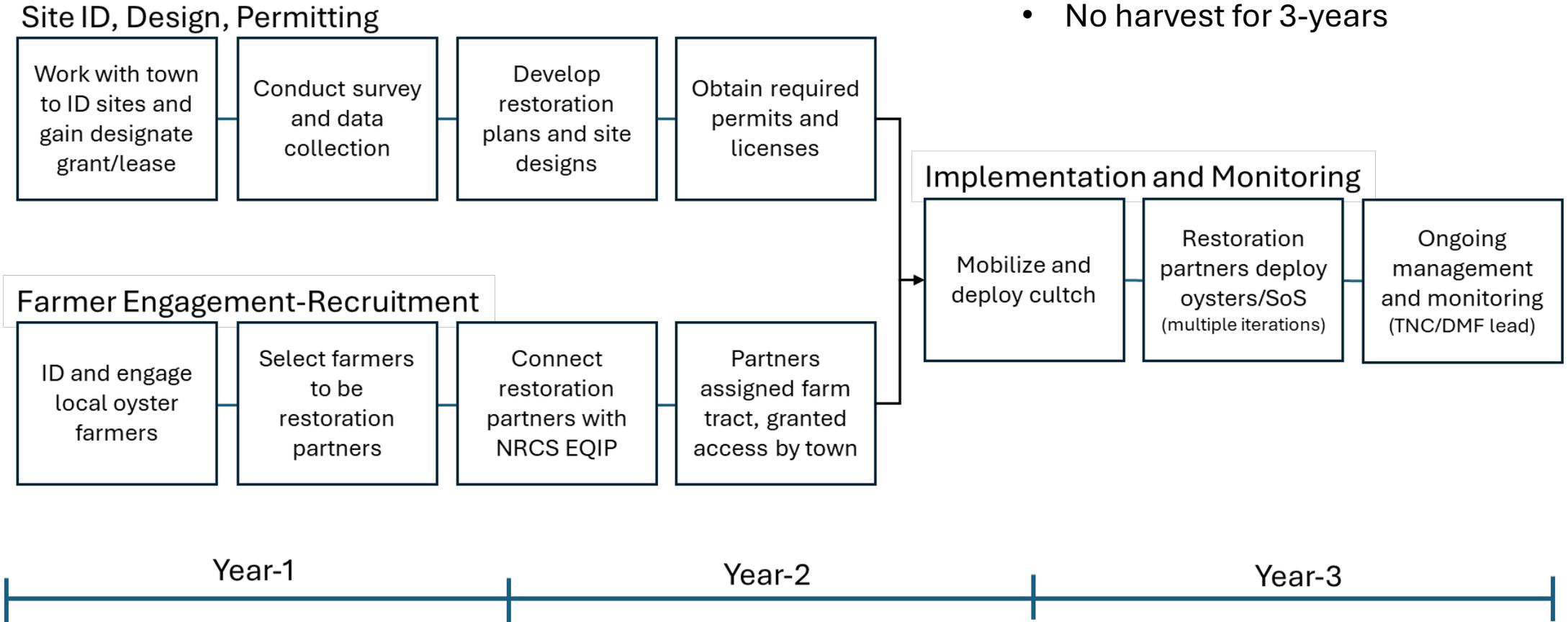
Reef Building 101

- Historic oyster habitat in MA is largely silted over, so the first step in creating a new reef is placing a base of cultch
- The amount and configuration is different for each site but a 1-acre site generally takes about 500-1000 cubic yards
- Once cultch is laid, local growers supply live singles and spat-on-shell, which is placed on the cultch
- This usually takes place twice a year in Spring and Fall and adds 100,000 – 200,000 oysters per year at each site
- The site is monitored and deployments of live singles and spat continue until the reef begins to grow and spawn
- As this happens the reef is colonized by fish, seaweeds, macroinvertebrates, and other marine organisms
- More cultch could be added around the living reef to catch wild spat and expand the footprint. The wild reef may remain off limits to harvest to maximize its value



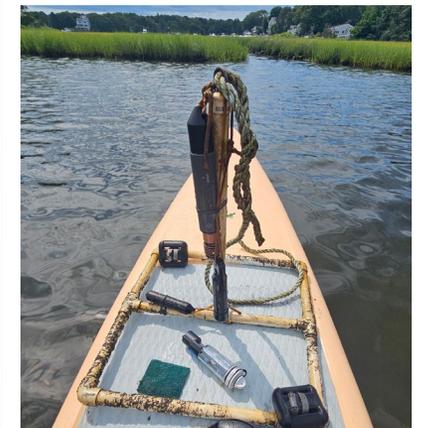
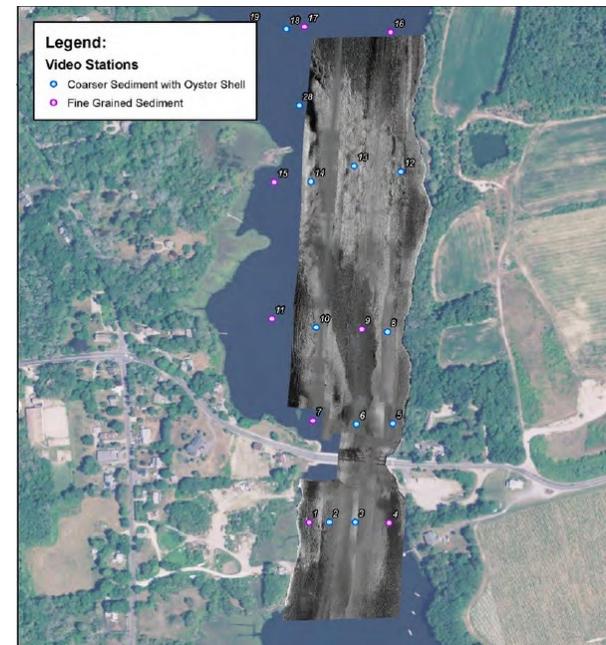
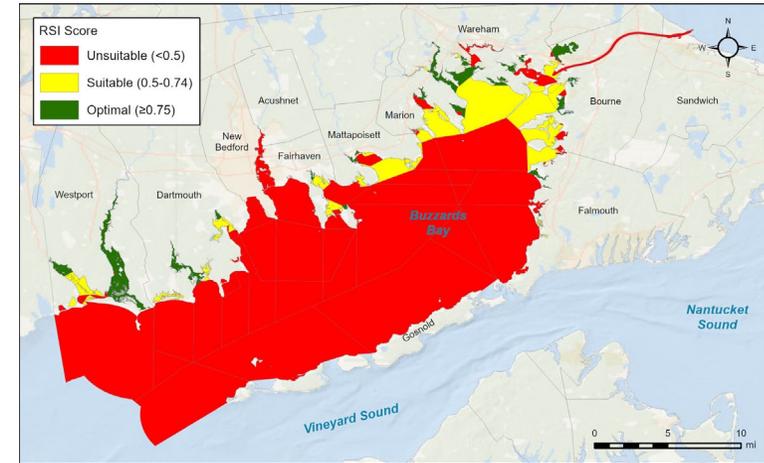
Project Approach

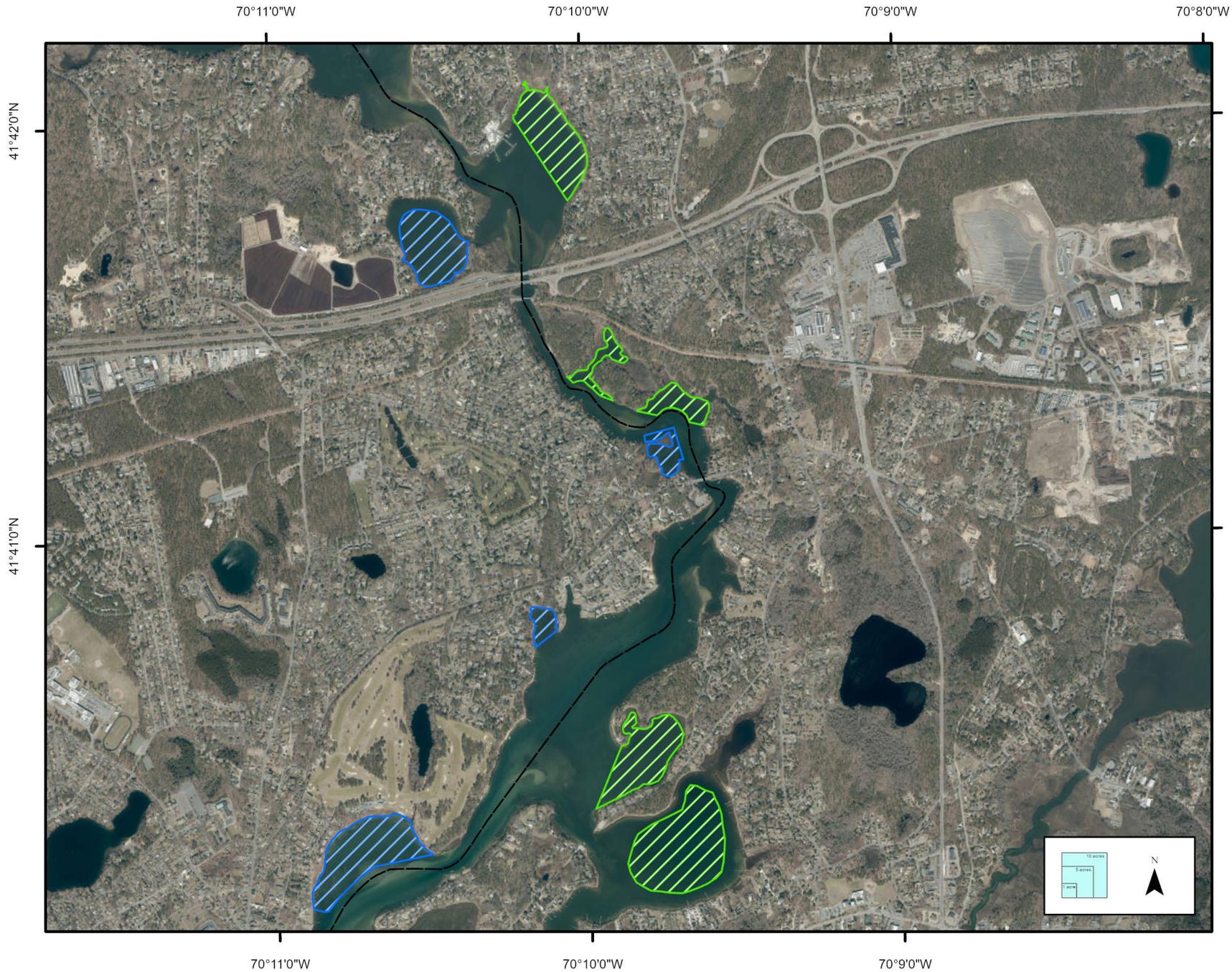
- Town approves restoration sites
- Restoration supported by local growers
- Under town propagation program
- No harvest for 3-years



Site Suitability 101

1. Restoration Suitability Index (RSI) modelling to identify optimal areas for restoration statewide
2. Site visit with Shellfish Constable to identify general project areas that do not conflict with fishers and other stakeholders
3. DMF/TNC site assessments including bathymetric and sidescan sonar surveys, sediment sampling, water quality sampling, and larval recruitment studies
4. Identify areas with optimal water depth, salinity, dissolved oxygen, substrate, and recruitment
5. Generate restoration site polygons
6. Acquire municipal approval and start permitting





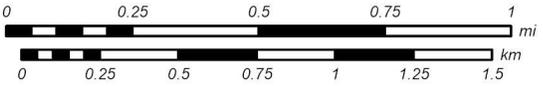
BASS RIVER **OYSTER RESTORATION** **INVESTIGATION AREAS**





Legend

 Scale Diagram	 Yarmouth Investigation Areas
 Town Boundary	 Dennis Investigation Areas



0 0.25 0.5 0.75 1 mi

0 0.25 0.5 0.75 1 1.25 1.5 km

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Closing Thoughts

- Thinking Beyond the 5-Year Project
- Project Scale, 16% of historic extent to achieve restoration
- Self-Sustaining Sites and Healthy Coastal Ecosystems
- Expanded Partnerships with Communities and Aquaculture