

Massachusetts In-Lieu Fee Program

Five Year Review

Aisling O'Shea
ILFP Administrator



Elisabeth Cianciola
Aquatic Mitigation Specialist

Overview of today's webinar

- What is an in-lieu fee program?
- Structure of the MA In-Lieu Fee Program
- Ongoing in-lieu fee mitigation projects in MA
- Future of in-lieu fee program in MA

What is an In-Lieu Fee Program?

- Under Section 404 of the Clean Water Act, the Army Corps of Engineers requires compensatory mitigation for impacts to aquatic resources
 - The Corps authorizes 22,000 acres of wetland impacts and requires 49,000 acres of compensatory mitigation annually (Mitigation Rule Brochure 2018)
- ILFP allows Corps permittees to make monetary payment “in-lieu” of mitigation
 - ILFP Sponsor uses fees to fund mitigation projects
- Avoid/minimize impacts before payment is allowed

What is an In-Lieu Fee Program?

Operate under:

- 2008 Federal Mitigation Rule
- Corps District SOPs
 - *New England District 2016 SOPs currently under revision*
- Corps-approved instruments
 - *Vary across programs*
- Program sponsor
 - *Typically a state agency or regional conservation organization*
 - Establishes fees, collects payments and assumes responsibility for mitigation
- Oversight of Interagency Review Team (IRT)

What is an In-Lieu Fee Program?

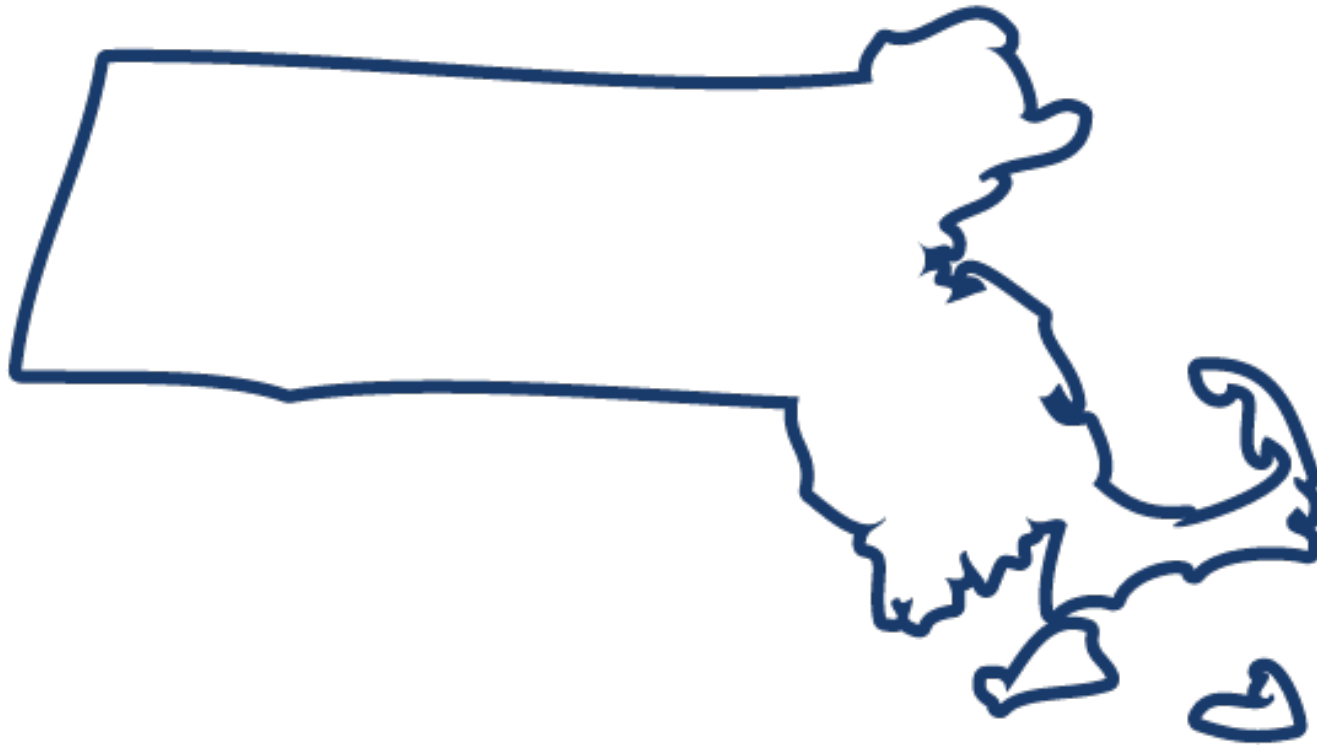
Credit Sales

- Permittees purchase credits per acre or linear foot of impact using ratios set by Corps
- Mitigation is required at greater than 1:1 ratio to account for time lag between credit sale and initiation of mitigation project and success rate

What is an In-Lieu Fee Program?

Credit Sales

- New programs sell advance credits up to maximum amount set in program instrument
- Advance credits allocated by service area and resource type
 - Service areas typically defined geographically by physical boundary such as HUC or political boundary such as county
 - Wetland and stream credits typically separated
- After mitigation for advance credit sales is complete, those credits are available for sale again



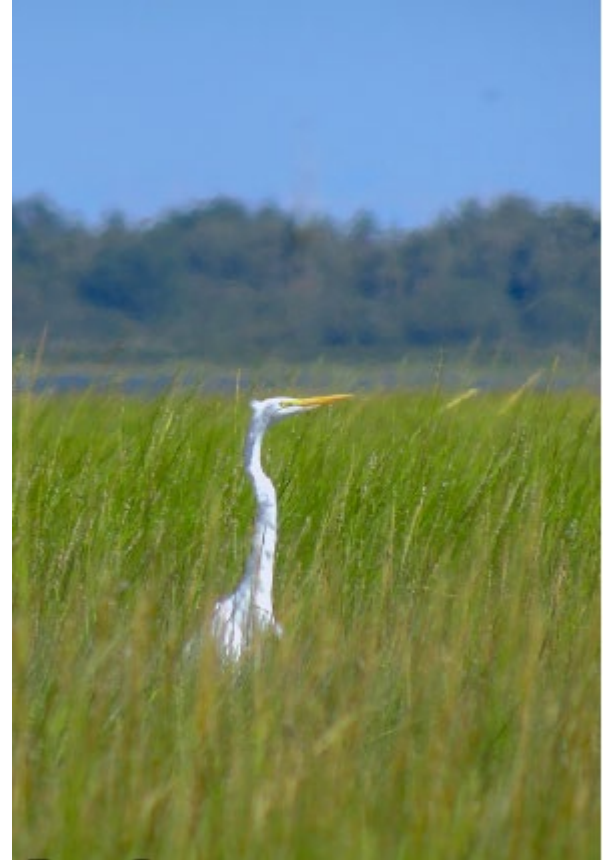
About the MA ILFP

- Established in 2014
- Sponsor = Department of Fish and Game (DFG)
- Four service areas
 - Berkshire/Taconic
 - CT River
 - Quabbin/Worcester
 - Coastal
- Sell wetland and stream credits

PROGRAM GOALS

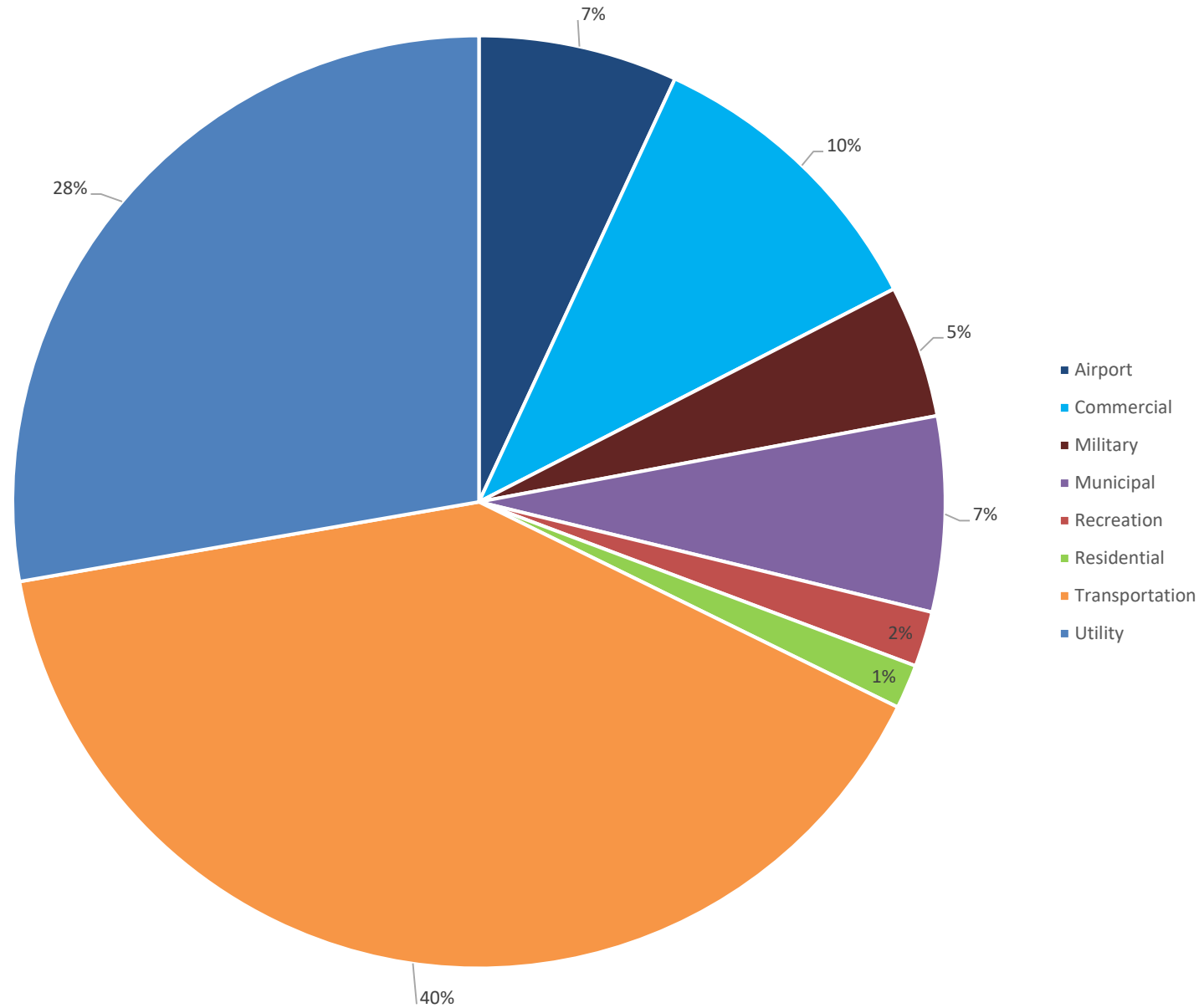
To establish an ILFP that utilizes and benefits from the existing technical expertise, analytical tools and programmatic experience of DFG's three divisions, and its habitat protection and restoration programs

- Permanent protection of priority areas containing high-quality aquatic resources under threat of loss or adverse modification
- Restore degraded wetlands and coastal habitats connected to high-quality aquatic habitats
- Restore riparian buffers in active agricultural lands
- Increase fish passage in rivers that drain directly to the Atlantic Ocean or high-quality coldwater streams
- Restore habitat continuity in high-quality streams and along the coast by removing dams and replacing culverts with those that meet NAACC stream crossing standards
- Facilitate coastal wetland migration to adapt to sea level rise

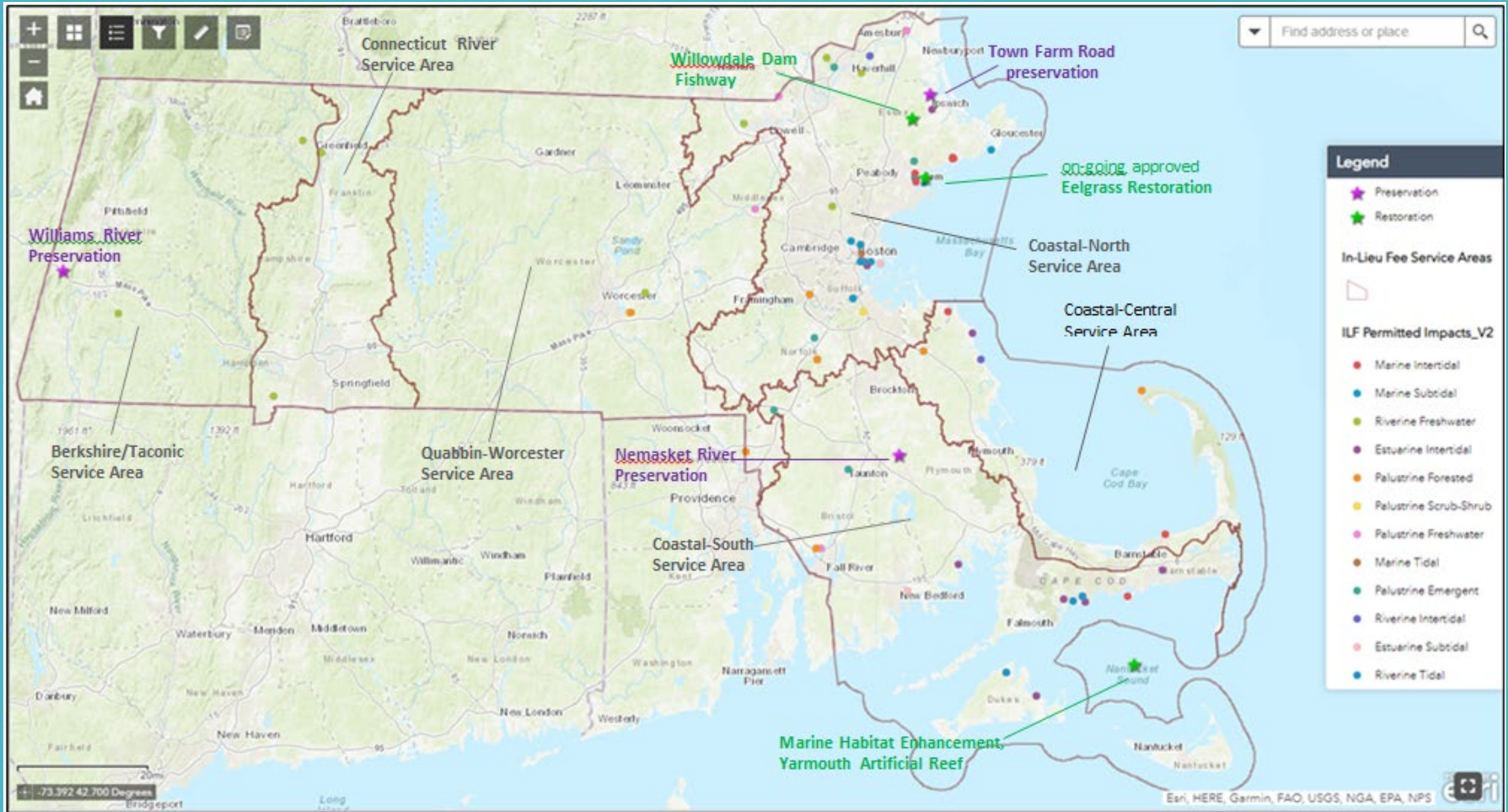


Google Images, 2019

MA ILFP Revenue by Permittee Type



MA DFG IN-LIEU FEE PROGRAM: Service Areas, Corps-Permitted Impacts & Approved Projects to Date



ILF Mitigation Projects in MA

- Funded 10 projects to date
 - 4 restoration vs. 6 land preservation
 - *All restoration projects are in tidal environments*
 - *2 projects are being used to mitigate stream impacts*
 - 2 service areas

Coastal Service Area

- Coastal resource fees are charged to compensate for the following impacts:
 - Winter flounder
 - Sedimentation
 - Fill
 - Dredging
 - Shading
- Examples of potential coastal ILF project types
 - Remove tidal restrictions, structures & debris
 - Enhance/restore saltmarsh, eelgrass, fish and shellfish habitat
 - Permanently protect resources, allow for salt marsh migration

Coastal Service Area

- Most active service area
- 9 projects to date
 - 5 land conservation projects
 - *2 external partners this year*
 - 4 restoration projects
 - *No external project sponsors to date*

Eelgrass Restoration Middle Ground Salem Sound

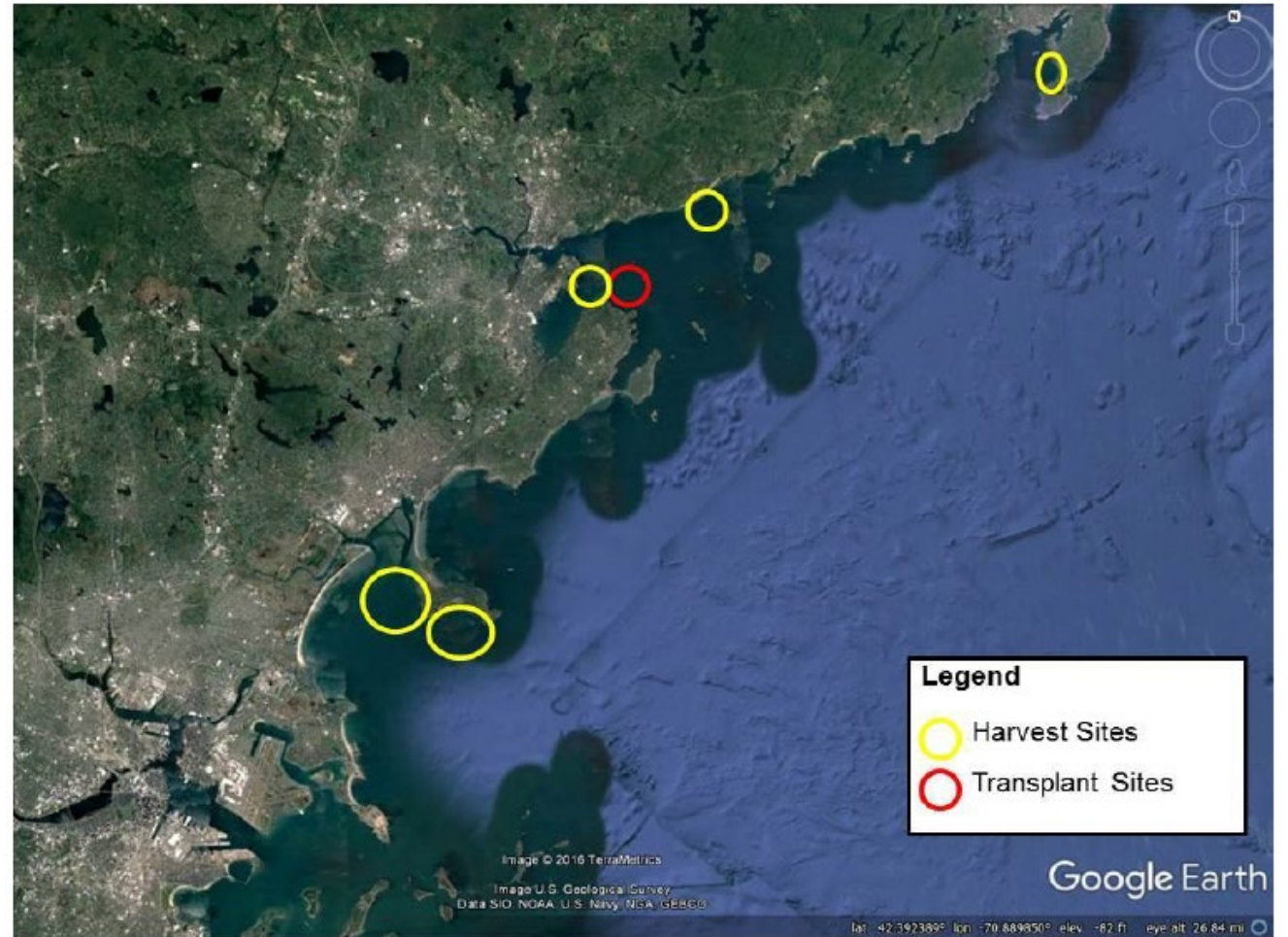


Eelgrass Restoration Middle Ground Salem Sound

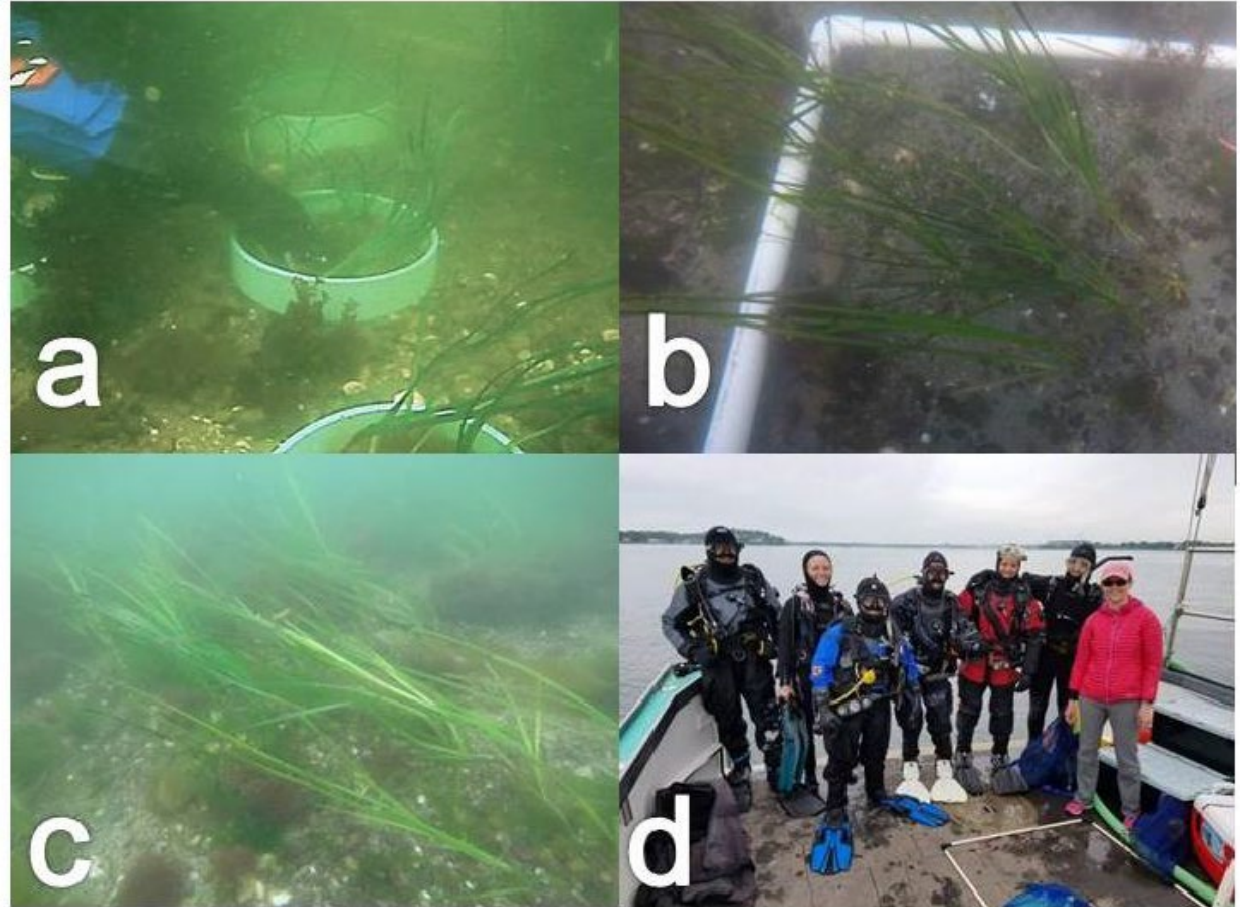
Table 1: Planting Dates (1 plot=6 planted m²). Original sets were MGW and MGE. MGS and some plots in MGW are supplemental/ adaptive management shown in red. Note: Mono indicated donor plants are from one site and Poly indicates donor plants are from multiple sites

Event	Date	Notes
MGW Mono	4/20/2017	2 plots planted
MGW Mono	5/4/2017	2 plots planted
MGW Mono	5/10/2017	2 plots planted
MGW Mono	5/12/2017	2 plots planted
MGW Mono	5/19/2017	2 plots planted
MGW Poly	5/24/2017	8 plots planted
MGE Mono	8/31/2017	10 plots planted
MGE Poly	9/7/2017	8 plots planted
MGW Mono	5/2/2018	4 plots planted
MGS Mono/Poly	5/10/2018	6 plots planted
MGS Mono/Poly	5/17/2018	6 plots planted
MGW Mono	5/23/2018	1 plot planted
MGS Mono/Poly	5/23/2018	6 plots planted
MGW seeding test plots	10/12/2018	1 seed plot planted

Eelgrass Restoration Middle Ground Salem Sound



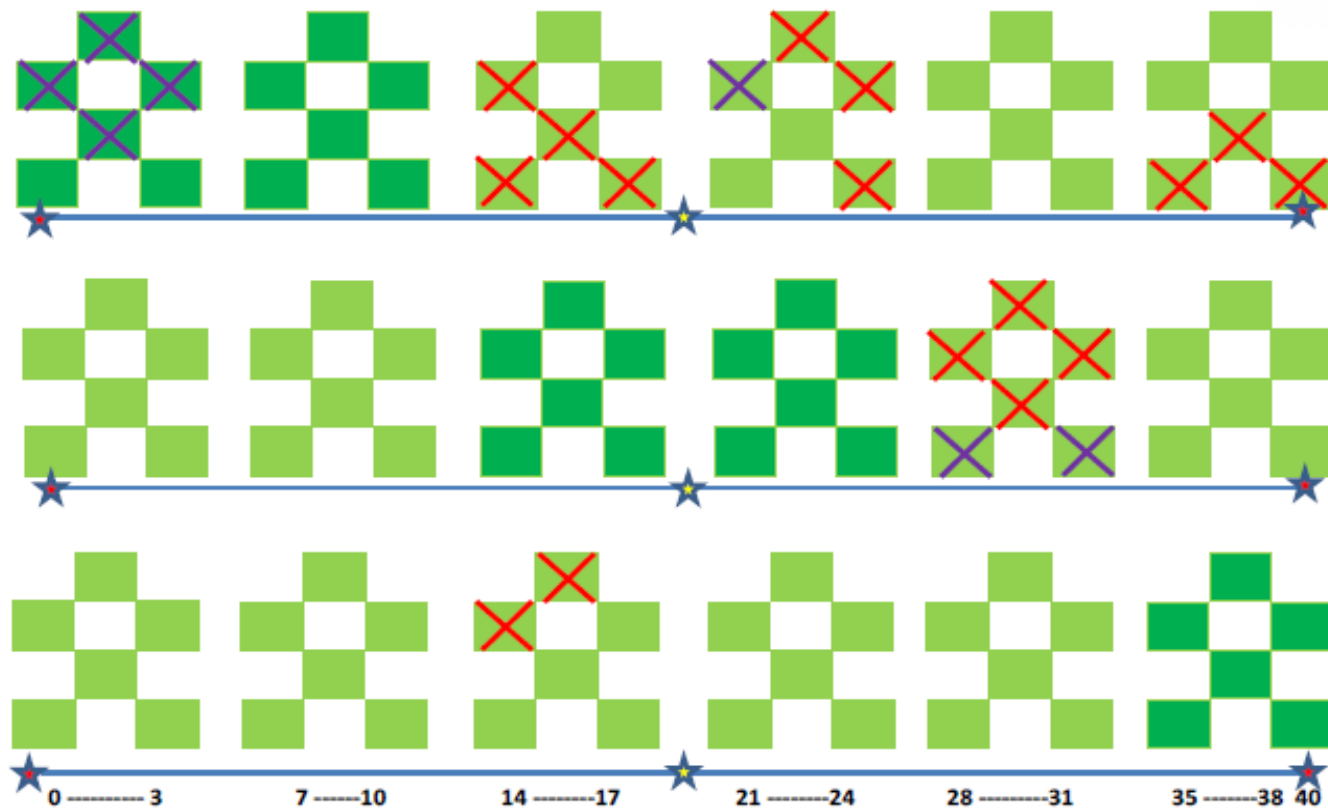
Eelgrass Restoration Middle Ground Salem Sound



Eelgrass Restoration Middle Ground Salem Sound

Middle Ground West

Planted Spring 2017, supplemental planting May 2018



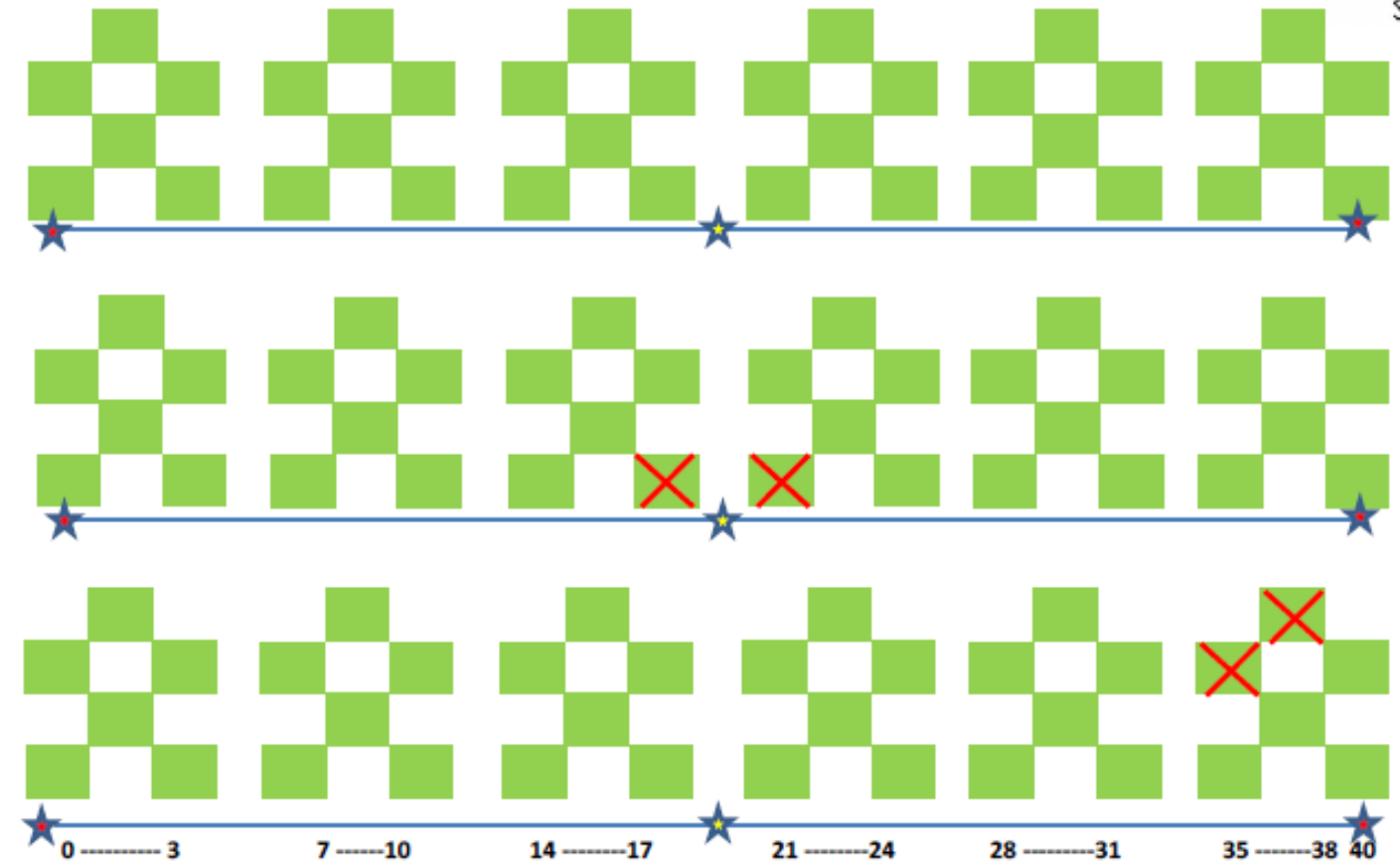
50 shoots per quadrate
300 shoots per plot
5,400 shoots total site

Planted spring 2017
Lost in 2018, replanted 2018

Lost in 2018, not replanted
Lost in 2019

Eelgrass Restoration Middle Ground Salem Sound

Middle Ground South
Planted May 2018



50 shoots per quadrate
300 shoots per plot
5,400 shoots total site

Planted spring 2018 Lost in 2019

Eelgrass Restoration Middle Ground Salem Sound

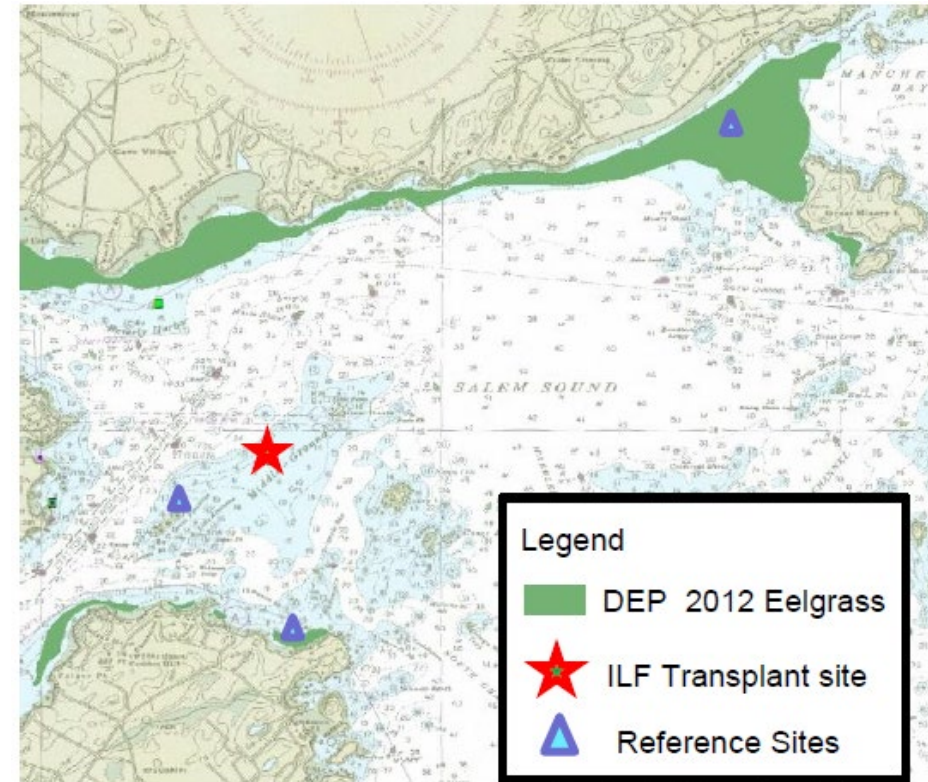
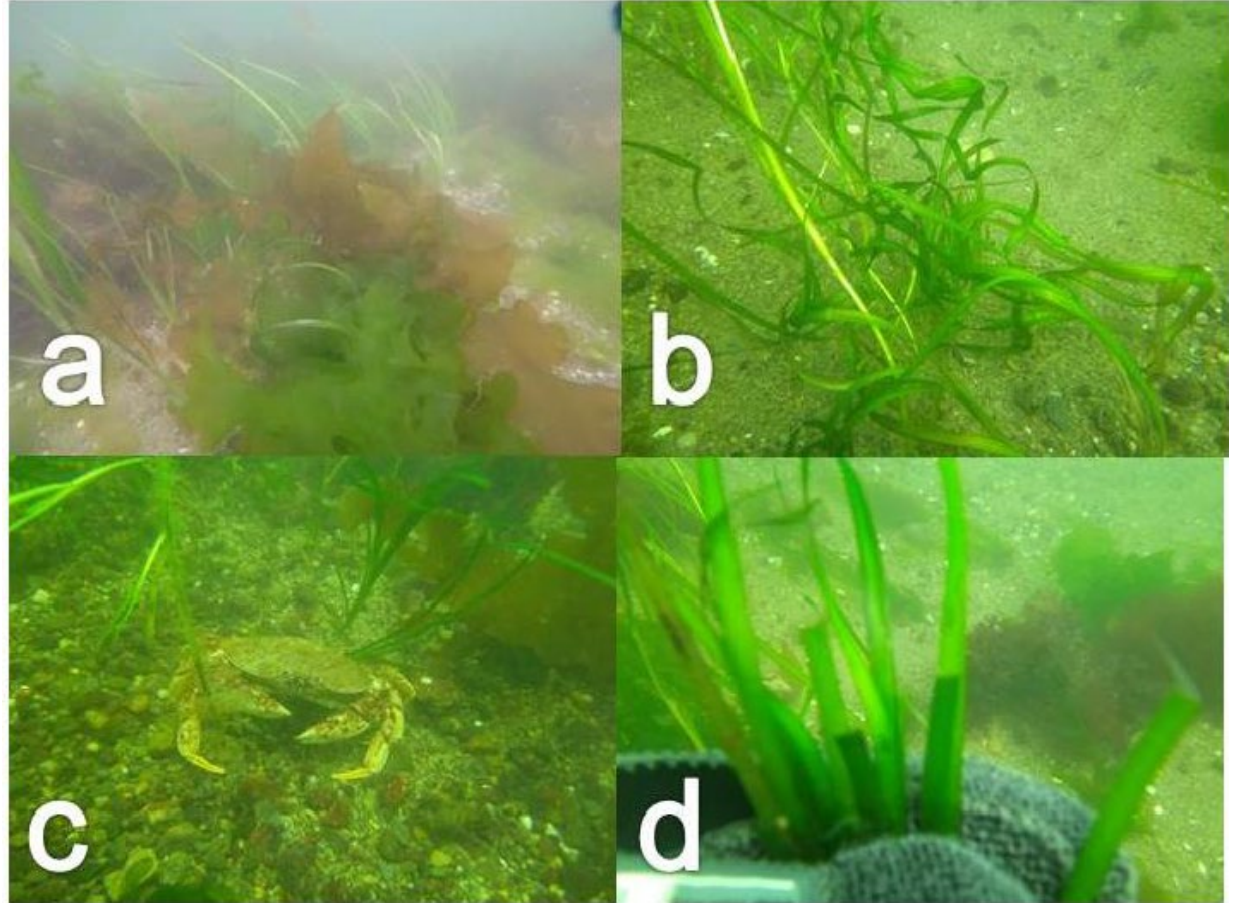


Figure 1. Middle Ground eelgrass restoration site and reference meadows (Aquavitte, Peachs point and West Beach) in Salem Sound

Eelgrass Restoration Middle Ground Salem Sound

Table 2: Monitoring Dates. Dates in red represent anticipated monitoring events. Contract ends in 2021.						
Site	1 month	6 month	1 year	2 year	3 year (anticipated)	4 year (anticipated)
MGW	6/12/17	11/14/17	4/9/18 post- storm 7/11/18	7/18/19	7/20	7/21
MGW (2018 supplemental)	7/11/18	NA	7/18/19	7/20	7/21	---
MGE	10/12/17	4/2/18	7/11/18	—	7/20	7/21
MGS	6/14/18	NA	7/10/19	7/20	7/21	---
West Beach	NA	NA	7/18/17, 7/24/18	8/6/19	7/20	7/21
Peachs Point	NA	NA	8/9/17, 7/3/18	7/24/19	7/20	7/21
Aquavitae	NA	NA	7/3/18	7/24/19	7/20	7/21

Eelgrass Restoration Middle Ground Salem Sound



Eelgrass Restoration Middle Ground Salem Sound

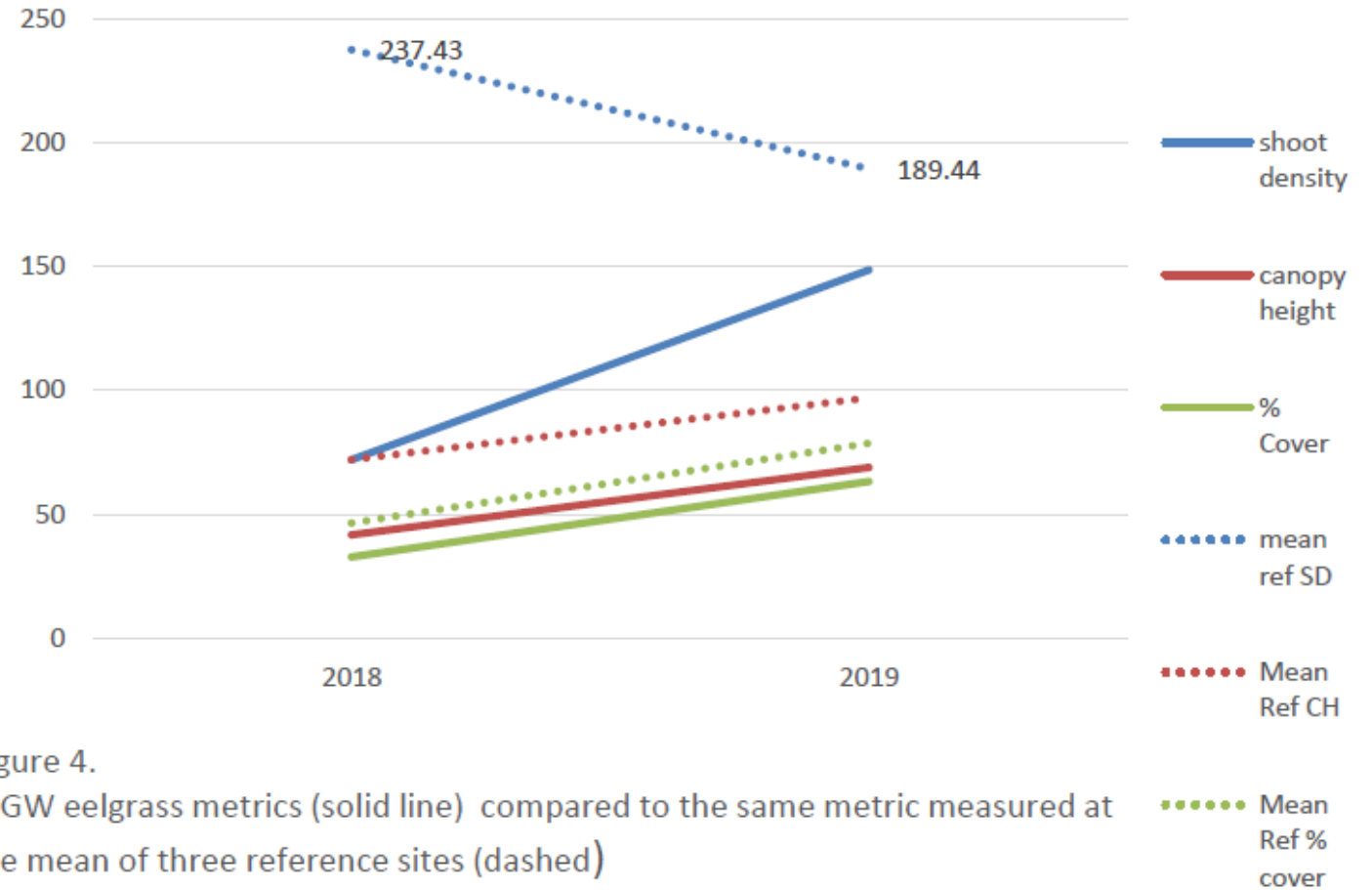


Figure 4.

MGW eelgrass metrics (solid line) compared to the same metric measured at the mean of three reference sites (dashed)

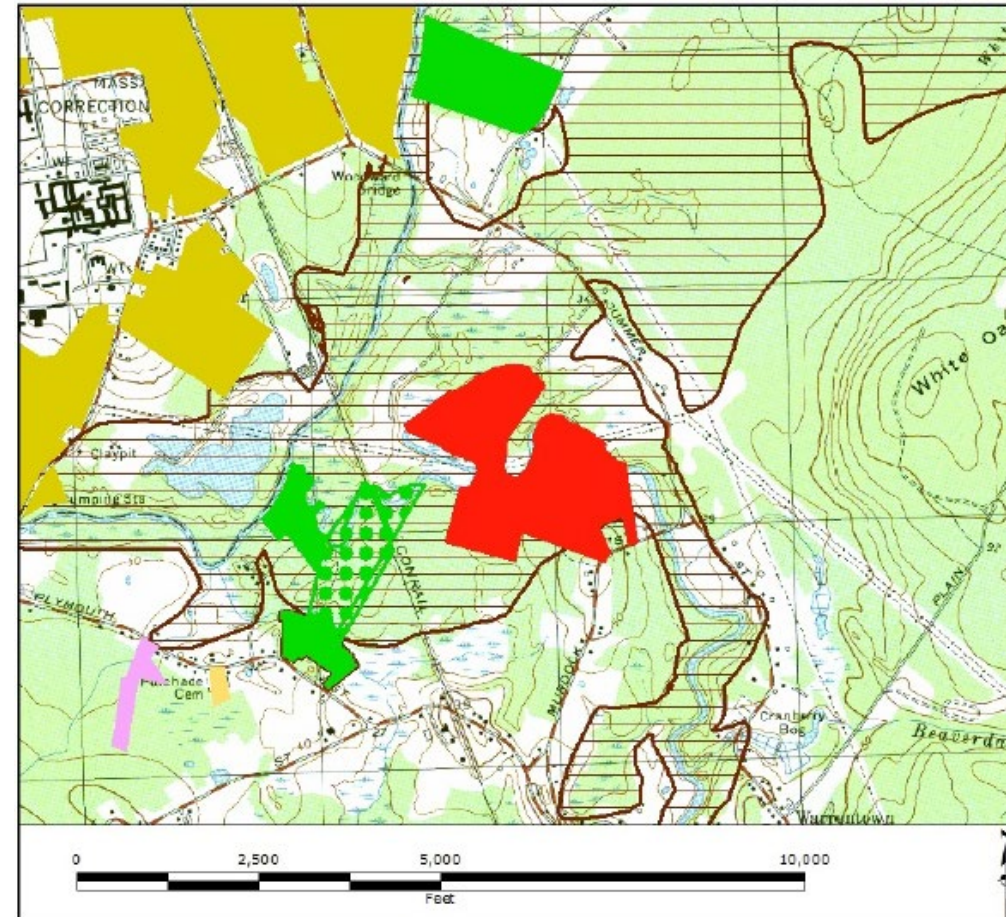
Credit Release Schedule		
	Credit release (%)	Completed activity/deliverable
Project planting (years 1 & 2)	40%	½ acre transplanted eelgrass (as proposed, across two sites) – progress report and maps
Monitoring year 1	10%	Year 1 monitoring report
Monitoring year 2	10%	Year 2 monitoring report
Monitoring year 3	10%	Year 3 monitoring report
Monitoring year 4	10%	Year 4 monitoring report
Monitoring year 5	10%	Year 5 monitoring/Final Report – including proposed hydroacoustic mapping results
Final sign off	10%	DMF and the Corps agreed that project performance standards have been met

Eelgrass Restoration Middle Ground, Salem Sound

Nemasket River Preservation



Nemasket River Preservation

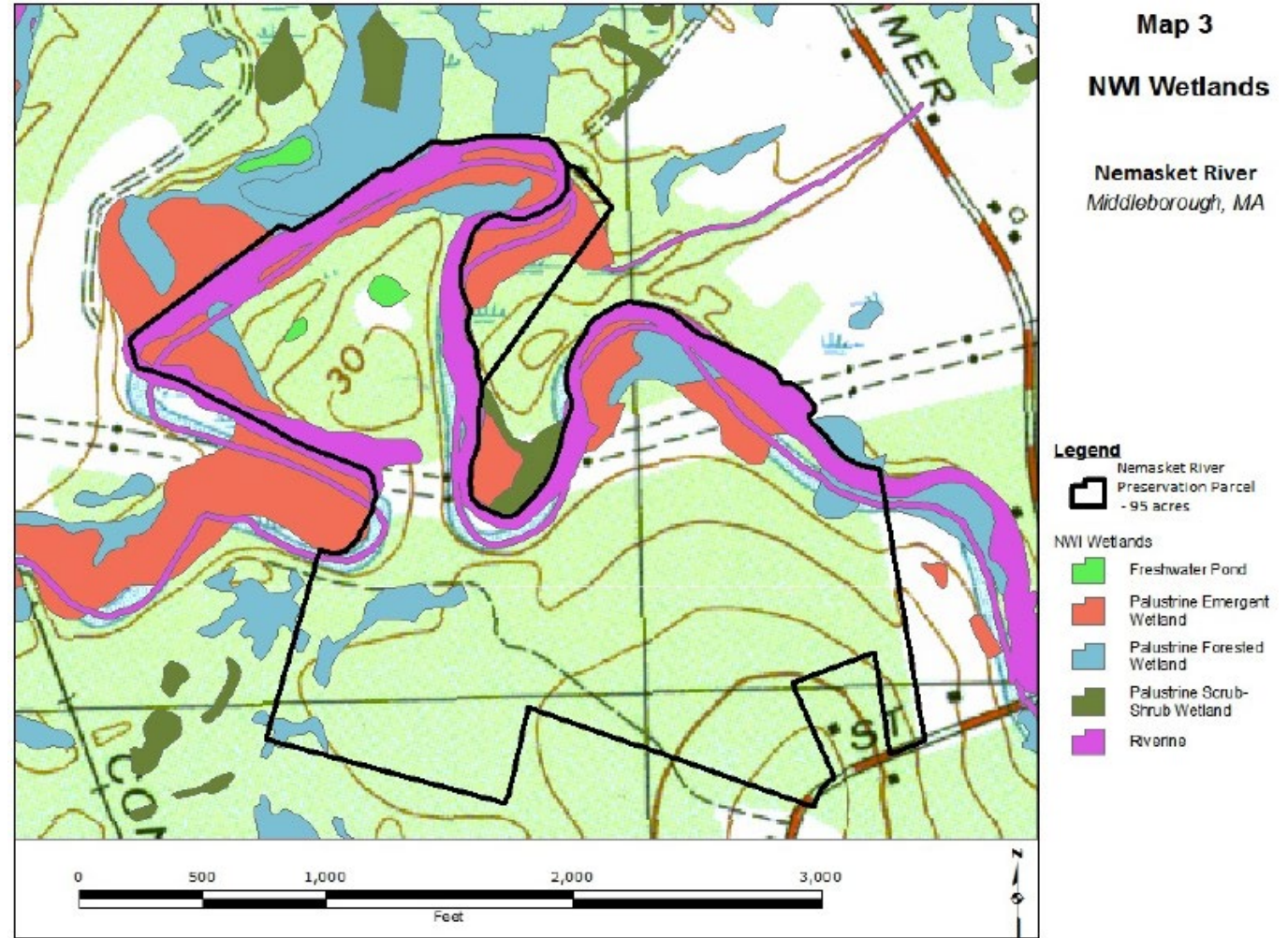


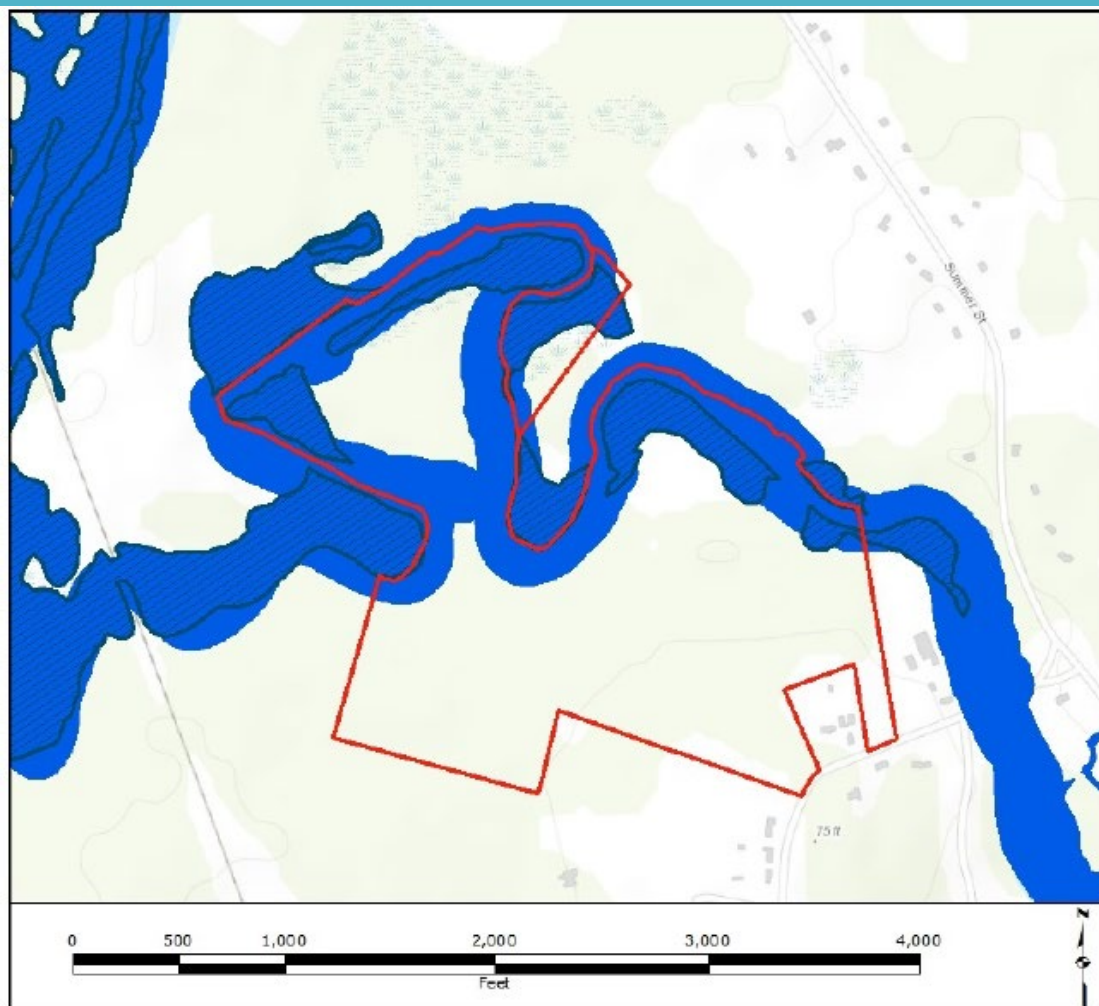
Nemasket River Preservation

87.5 acres

22.9 acres freshwater wetlands

64.6 acres upland



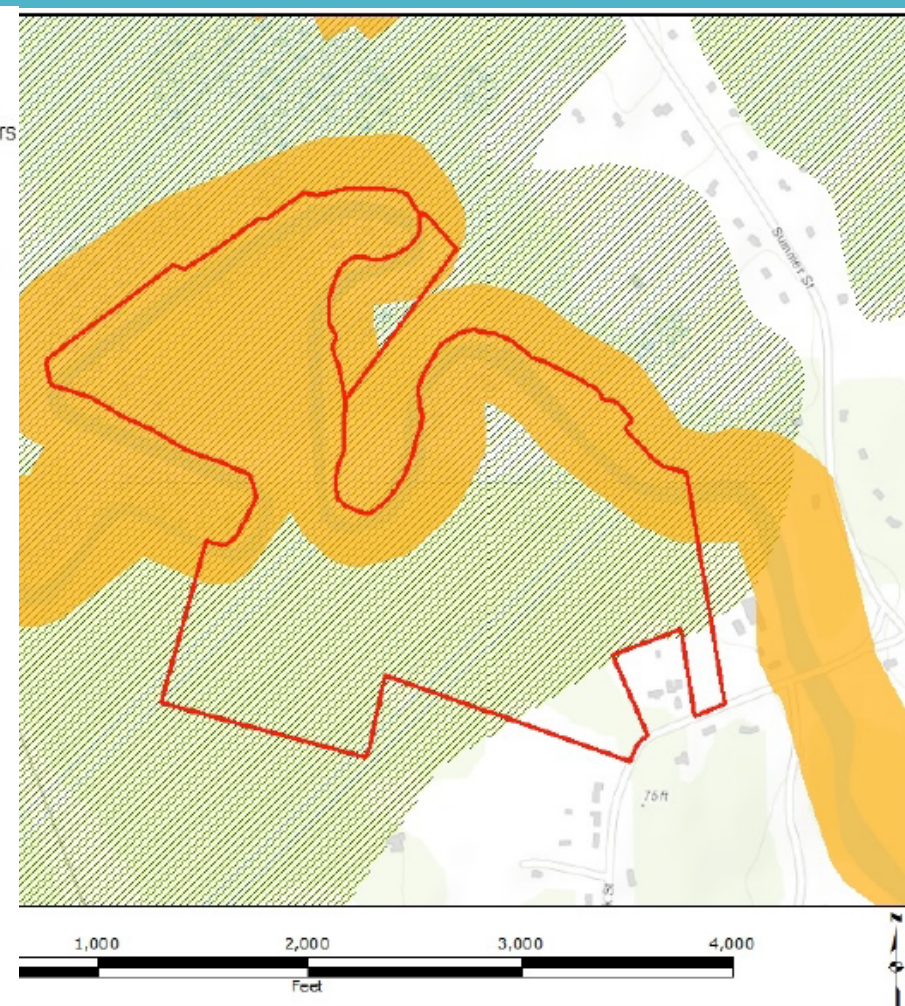


Map 4
BioMap2 Core
 Aquatic Resource Layers

Nemasket River
 Middleborough, MA

Legend

- Nemasket River Preservation Parcel - 95 acres
- BioMap2 Wetlands Core
- Least-disturbed Wetland Complex
- BioMap2 Aquatic Core
- BioMap2 Aquatic Core

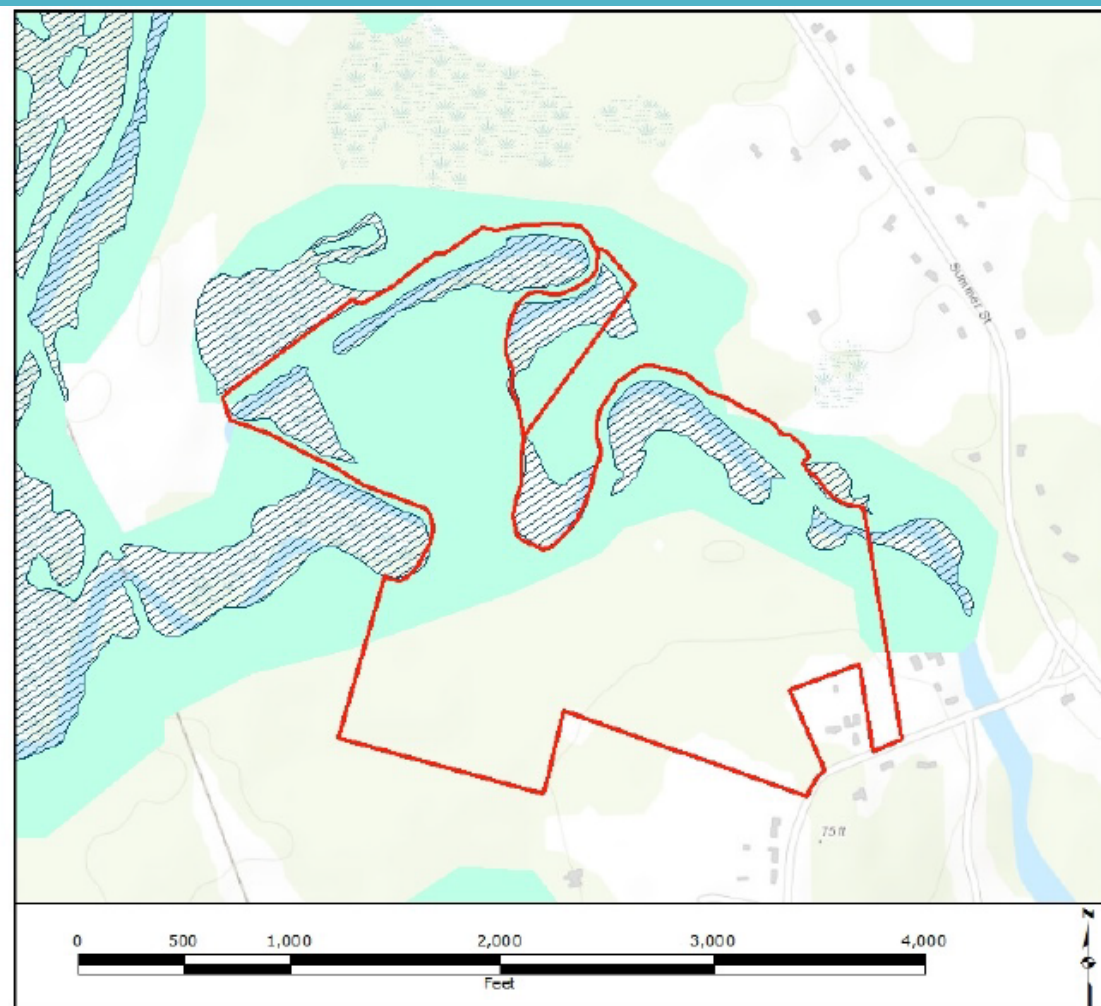


Map 7
BioMap2 Core and CNL
 Non-Aquatic Resource Layers

Nemasket River
 Middleborough, MA

Legend

- Nemasket River Preservation Project - 95 acres
- BioMap2 Species of Conservation Concern Core
- BioMap2 CNL Landscape Blocks

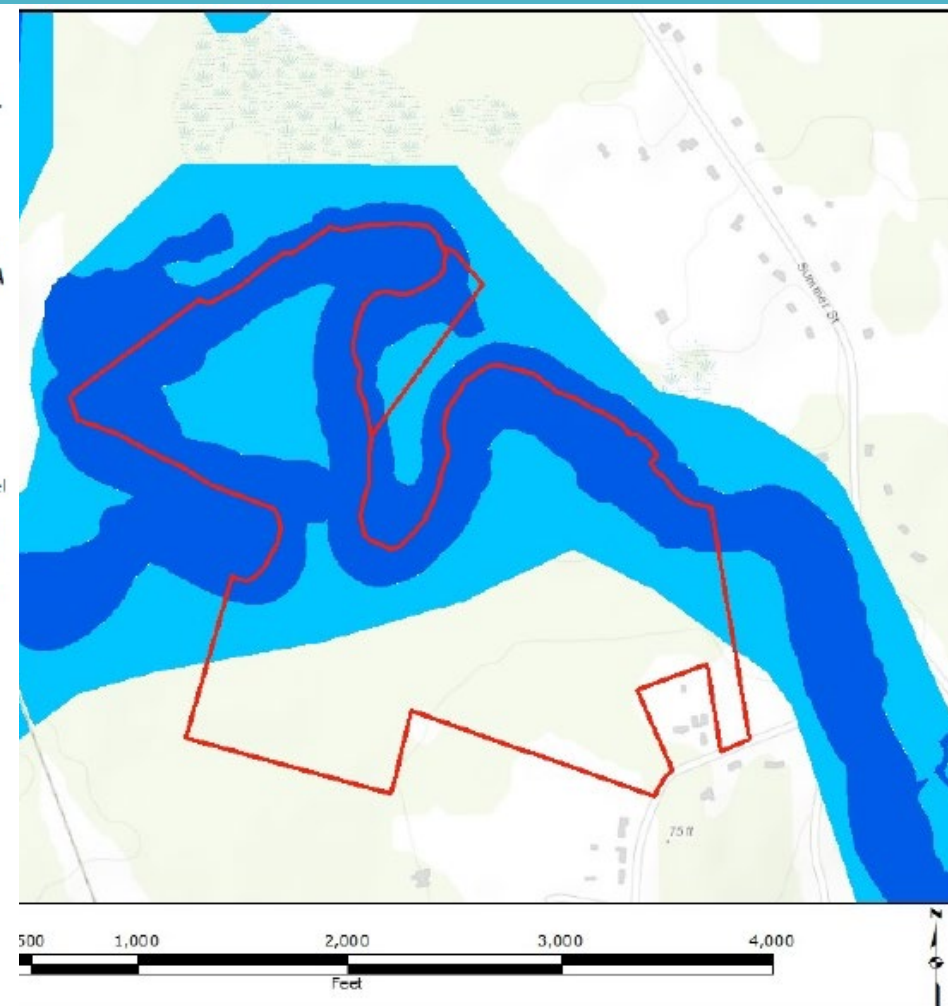


Map 5
BioMap2 CNL
Wetland Buffer

Nemasket River
Middleborough, MA

Legend

- Nemasket River Preservation Parcel - 95 acres
- BioMap2 CNL Wetland Buffer
- Least-disturbed Wetland Complex
- Upland Buffer



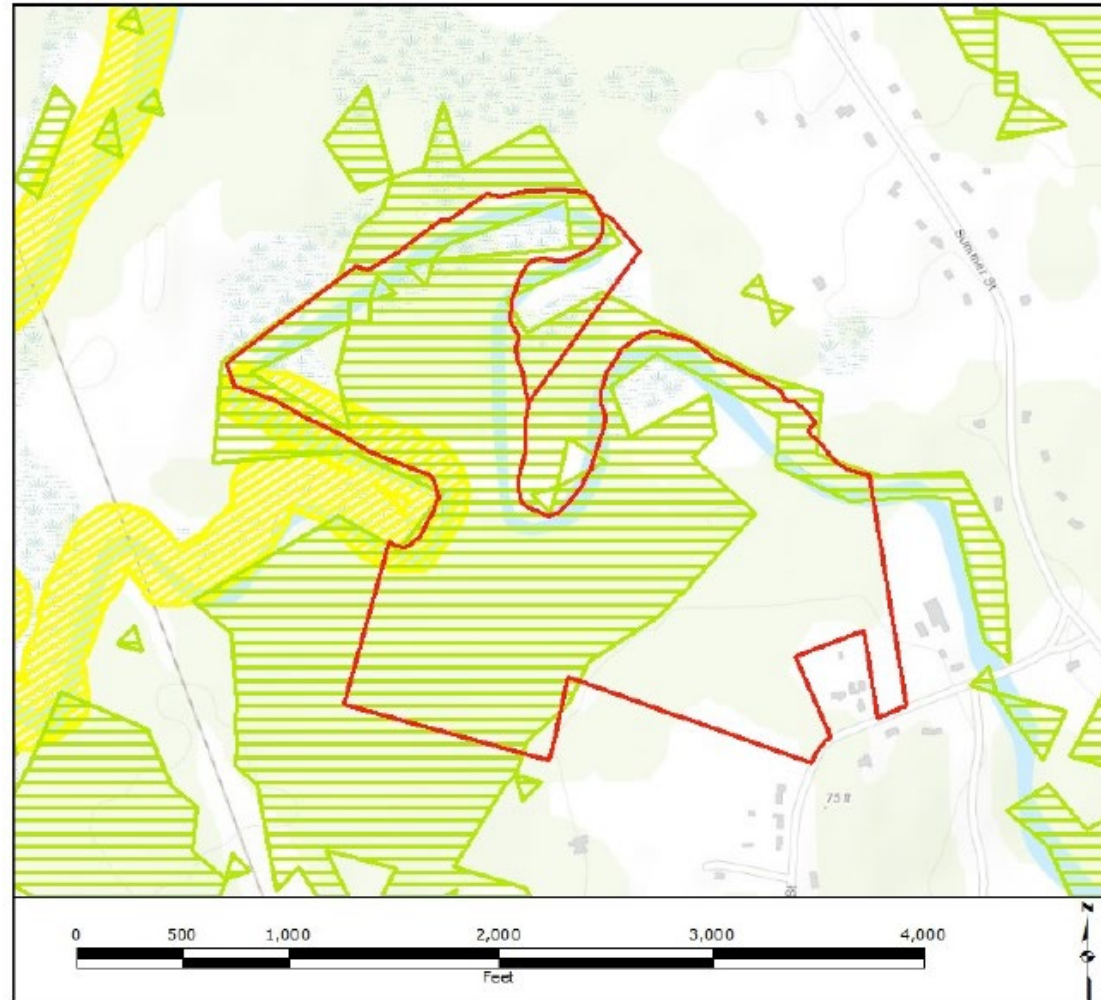
Map 6
BioMap2 CNL
Aquatic Buffer

Nemasket River
Middleborough, MA

Legend

- Nemasket River Preservation Project - 95 acres
- BioMap2 CNL Aquatic Buffer
- Aquatic Core
- Upland Buffer

Nemasket River Preservation

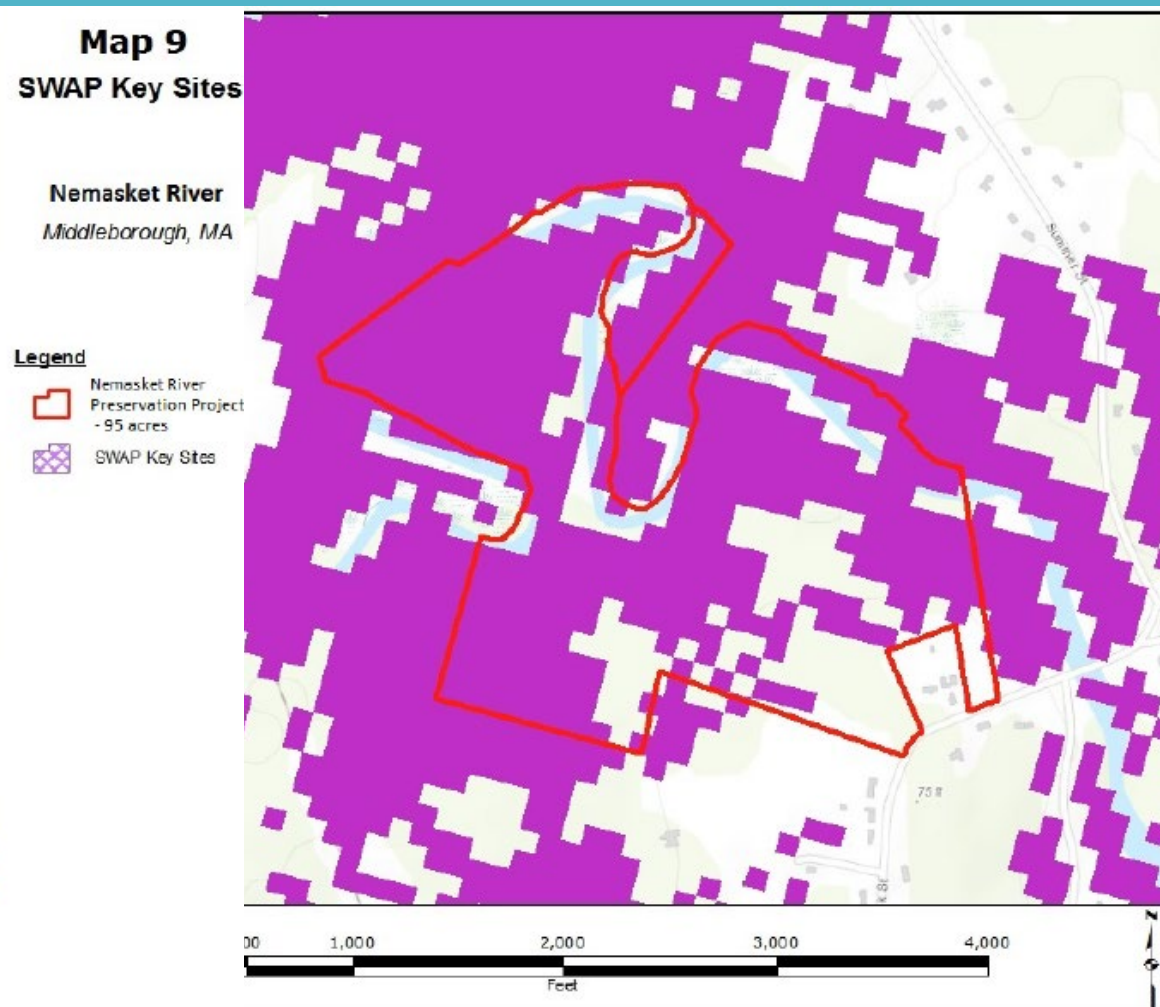
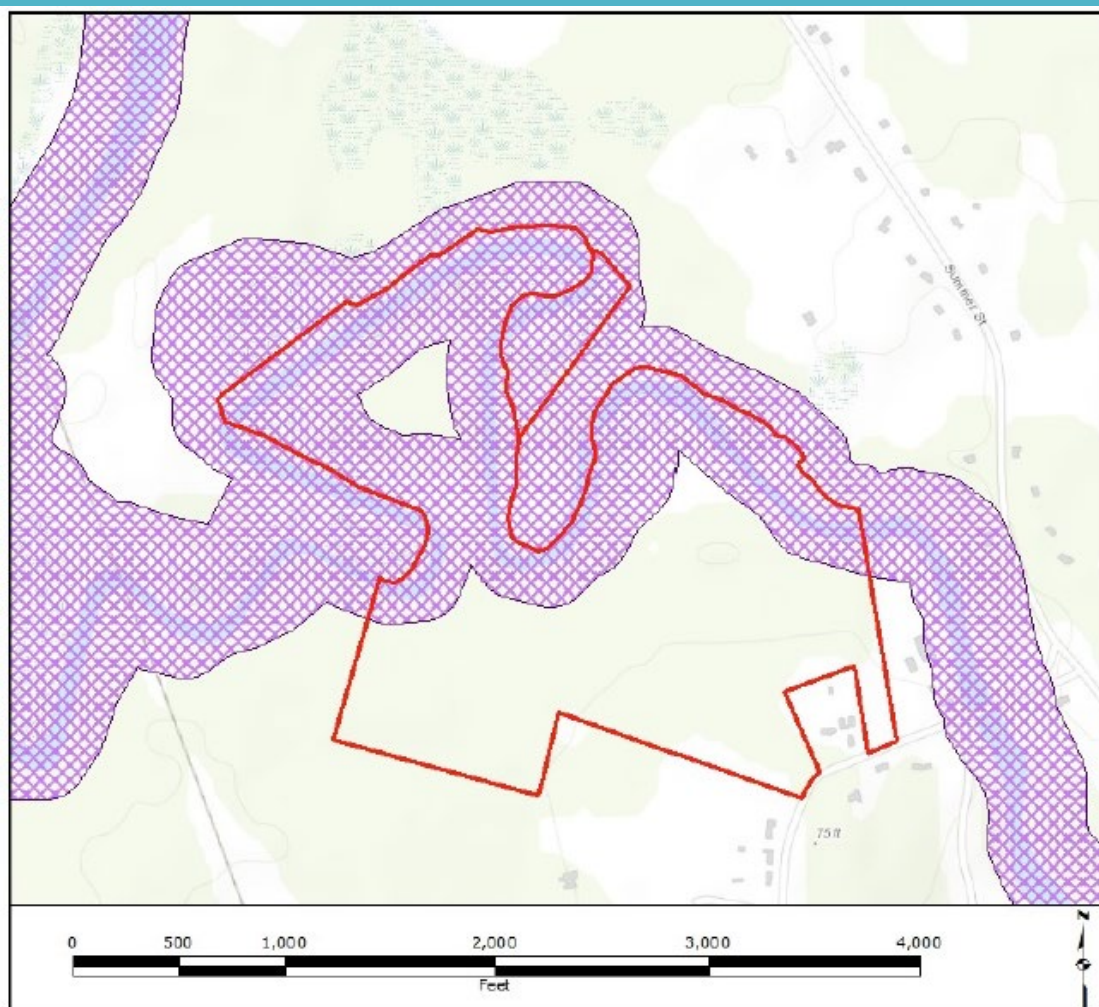


Map 8
NHESP Priority
Habitat/
MassDEP
Important Habitats

Nemasket River
Middleborough, MA

Legend

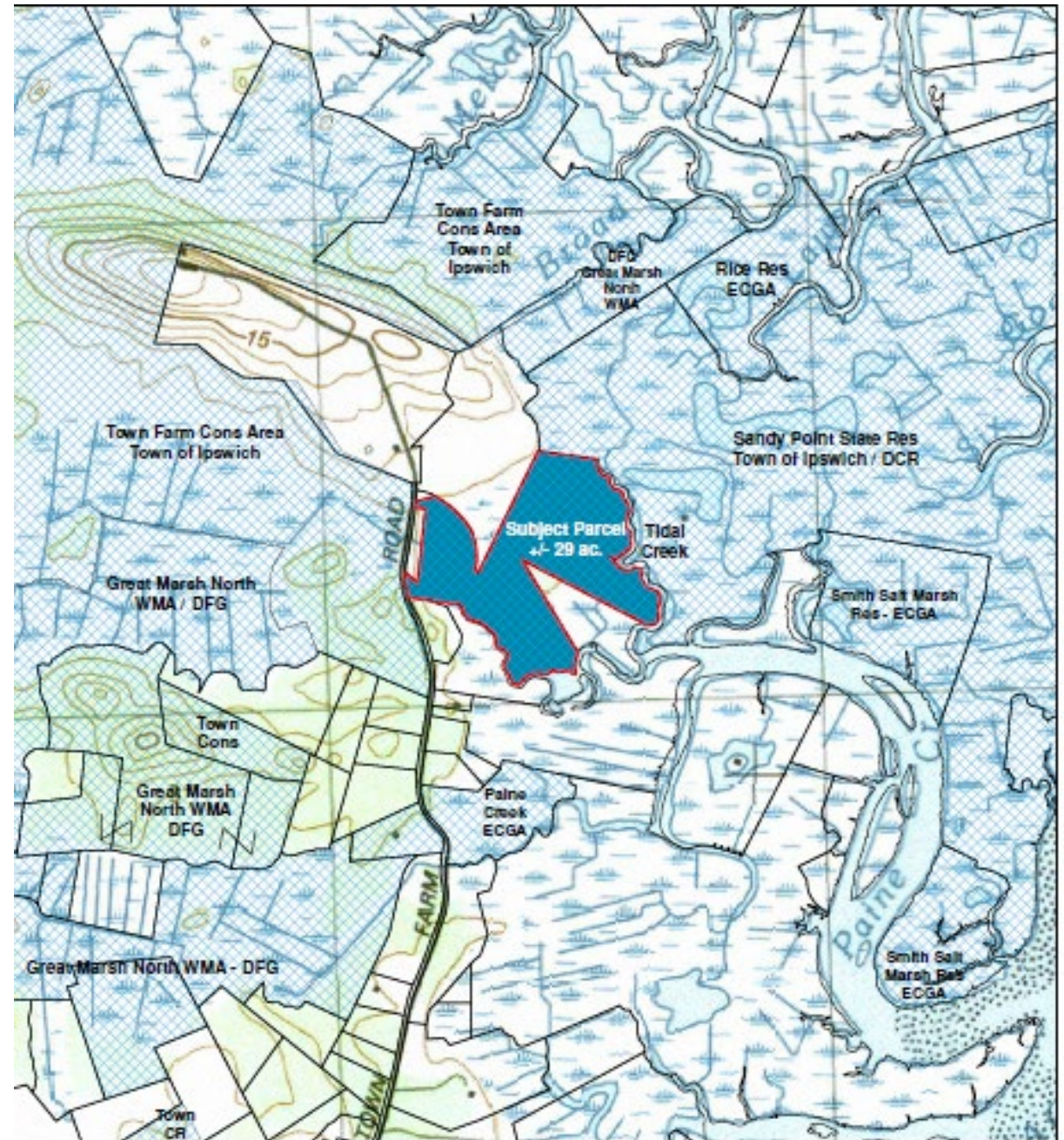
-  Nemasket River
Preservation Project
- 95 acres
-  MassDEP Important
Habitats
-  NHESP Priority
Habitats of Rare
Species





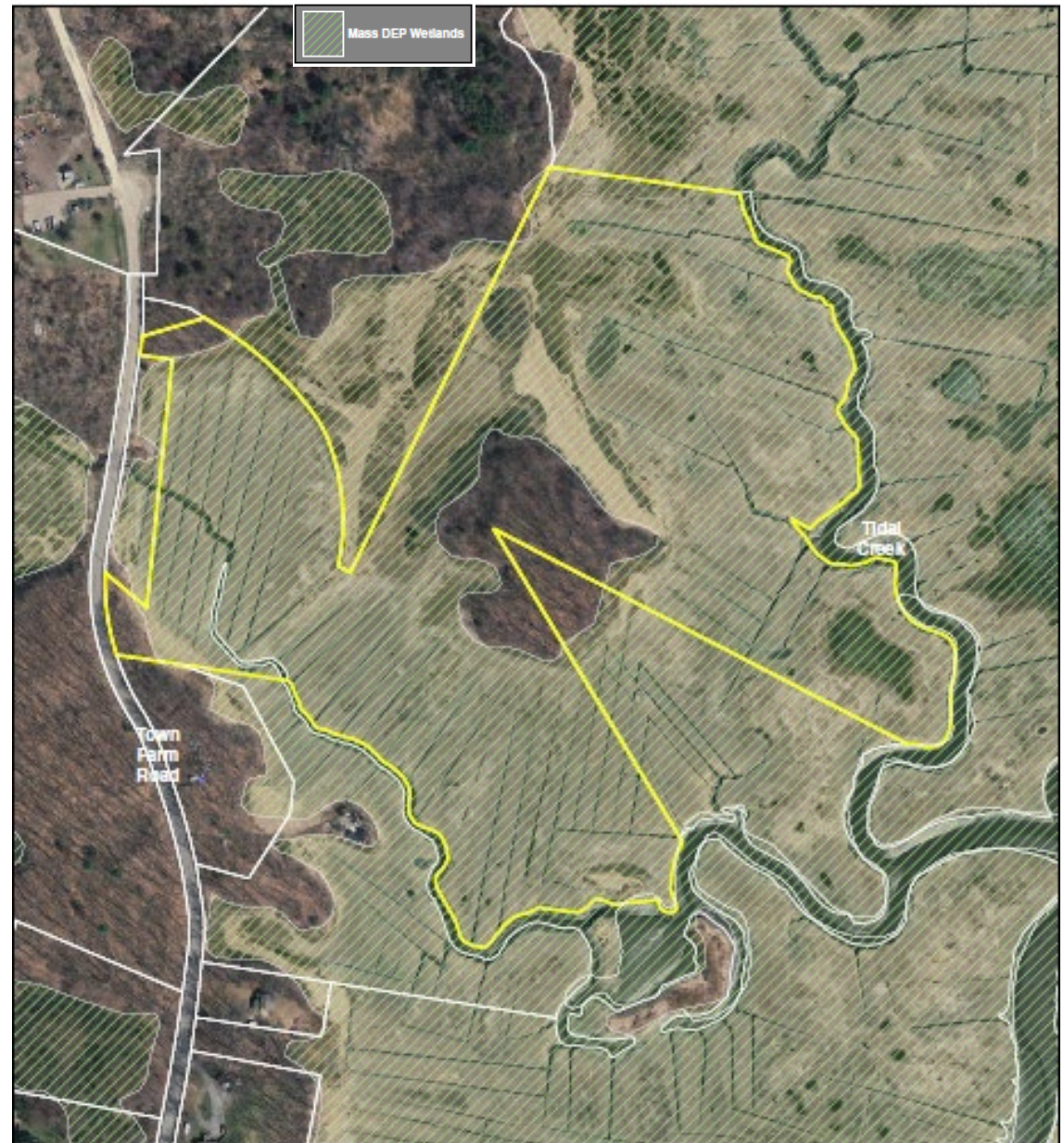
Town Farm Road Saltmarsh Preservation

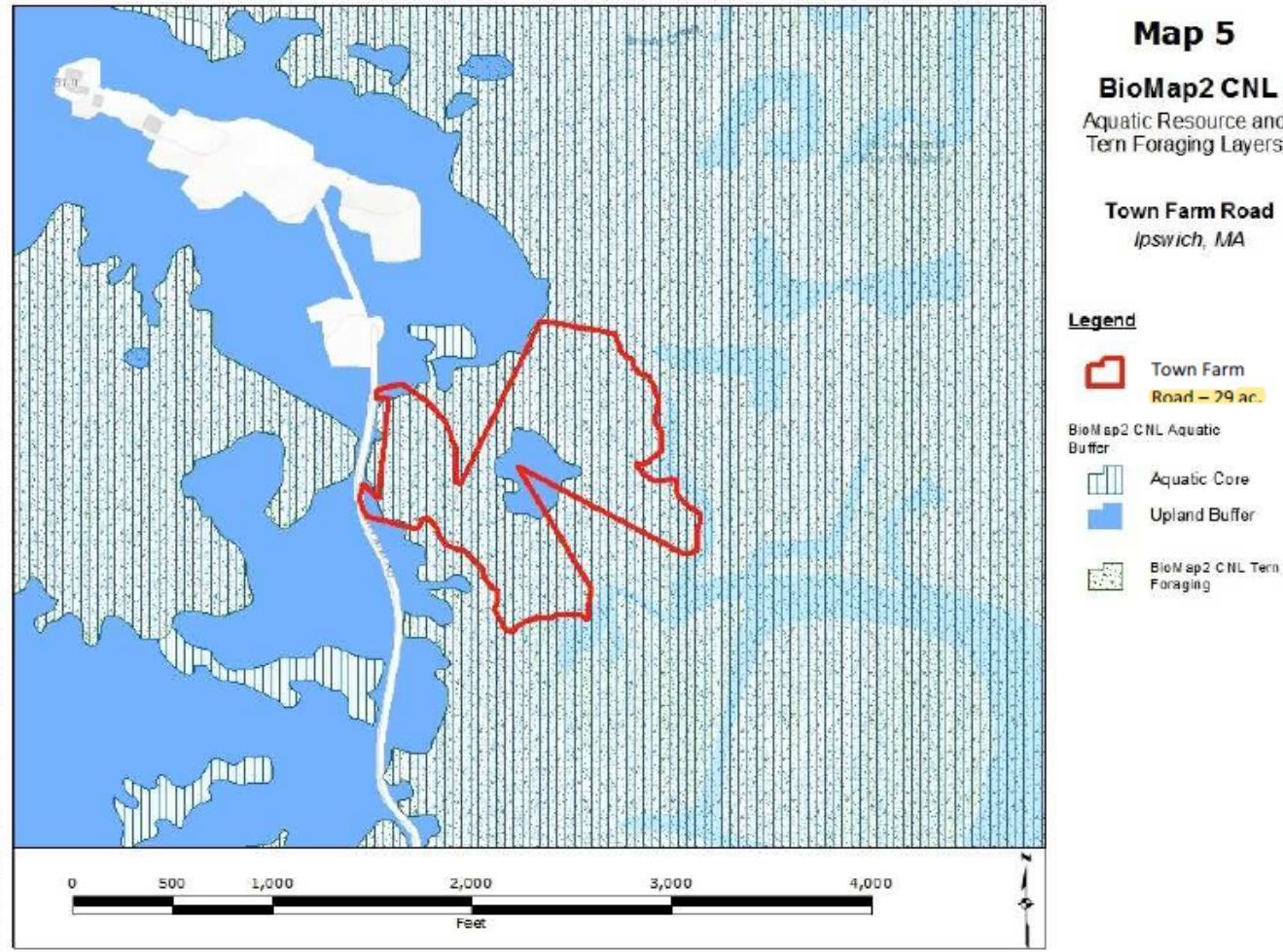
Town Farm Road Saltmarsh Preservation, Ipswich



Town Farm Road Saltmarsh Preservation

24 acres saltmarsh
5 acres upland

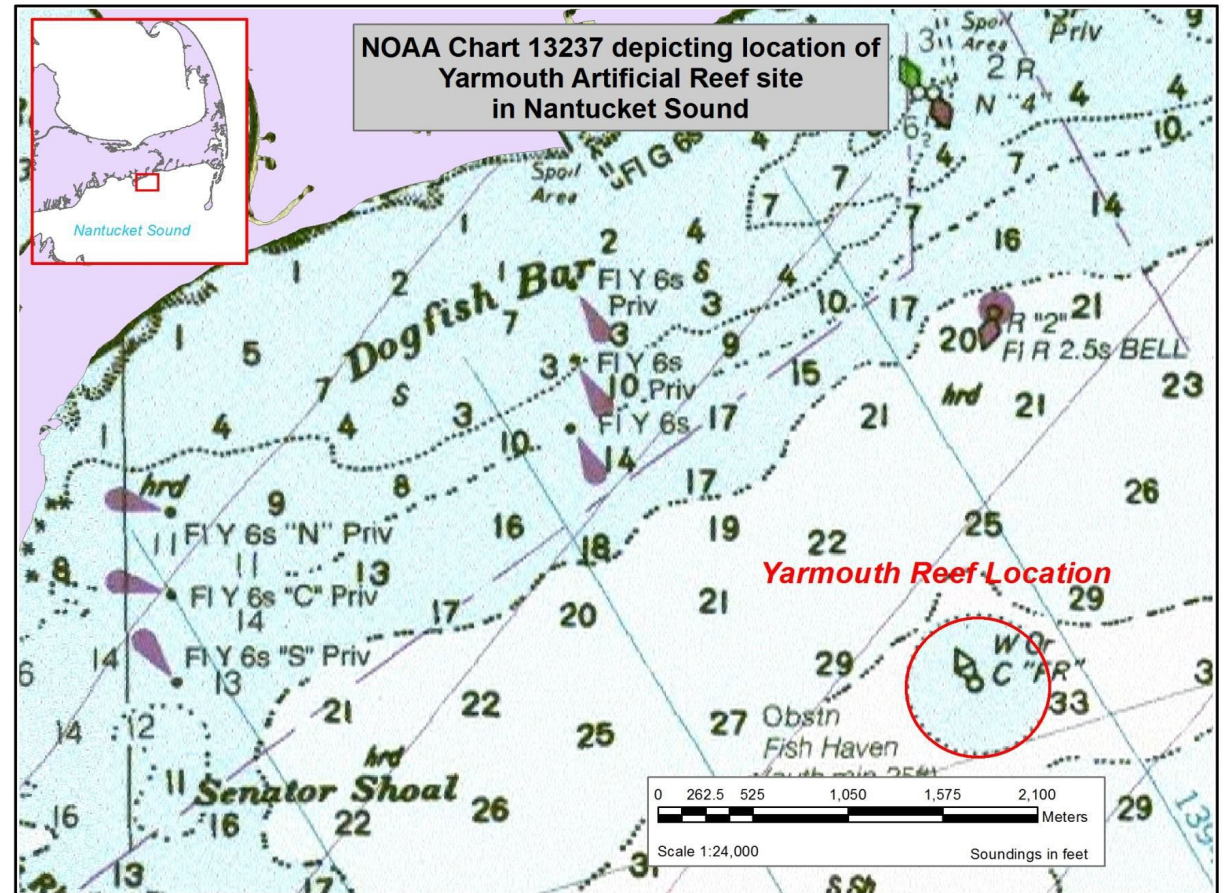




Town Farm Road Saltmarsh Preservation



Yarmouth Artificial Reef



Type of mitigation	Project Footprint	Proposed Habitat Area	Proposed Credits
Artificial Reef Habitat	(Proposed) 1.1 acres	Reef structure – 0.35 acres Undisturbed	.366* wetland (marine
		sandy bottom – 0.66 acres	subtidal) credits
		Within Proposed Area: 14,426 ft ² (0.33 acres)	Within Proposed Area:
		Total (including enhancement outside proposed area: 30,838 ft ² (0.71 acres)	Total (including enhancement outside proposed area)

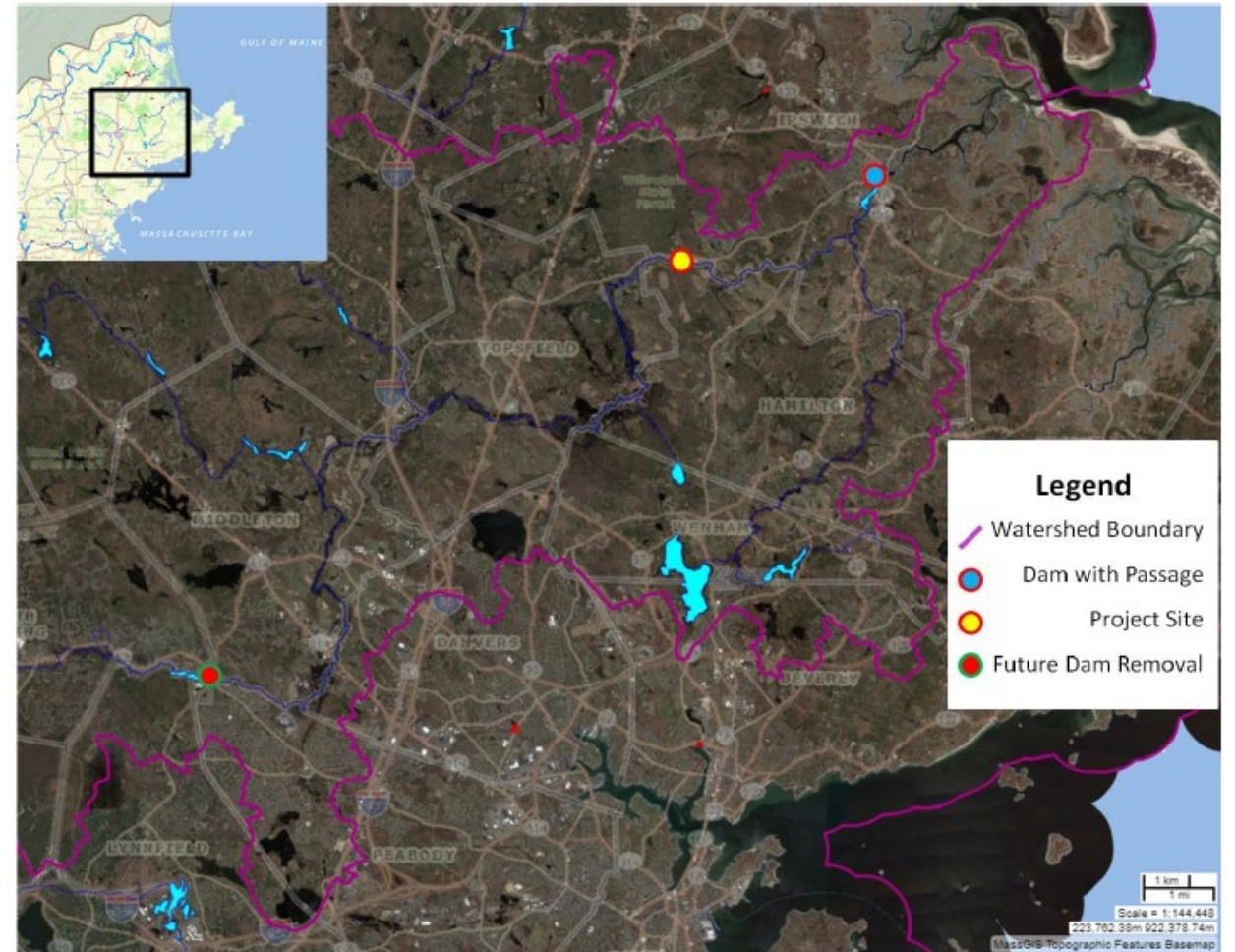
Yarmouth Artificial Reef

Yarmouth Artificial Reef



Performance Standards & metrics	% total Credit	Credit amount	Timeline -credit release	
Design & Construction Parameters:	50%	0.1830		
Materials deployed to site as specified in design	40%	0.1464	2019 / 2020	Post-construction
Material remains within proposed site and remains stable in accordance with permit conditions	10%	0.0366	2024	Post 5-year monitoring report
Monitoring: Conducted as per monitoring plan				
Ecological Performance: Diversity	25%	0.0915		
Species diversity – mobile species	12.5%	0.04575	2020-2024	Percent similarity exceeds 60% in two monitoring periods
Species diversity – sessile species	12.5%	0.04575	2020-2024	Percent similarity exceeds 60% in two monitoring periods
Ecological Performance: Production	25%	0.0915		
Size/age class similarity of mobile species – upper-level consumers	12.5%	0.04575	2020-2024	Percent similarity exceeds 60% in two monitoring periods
Size/age class similarity of sessile species –benthic community/ lower level producers	12.5%	0.04575	2020-2024	Percent similarity exceeds 60% in two monitoring periods
Total Credit Potential	100%	0.366	2020-2024	

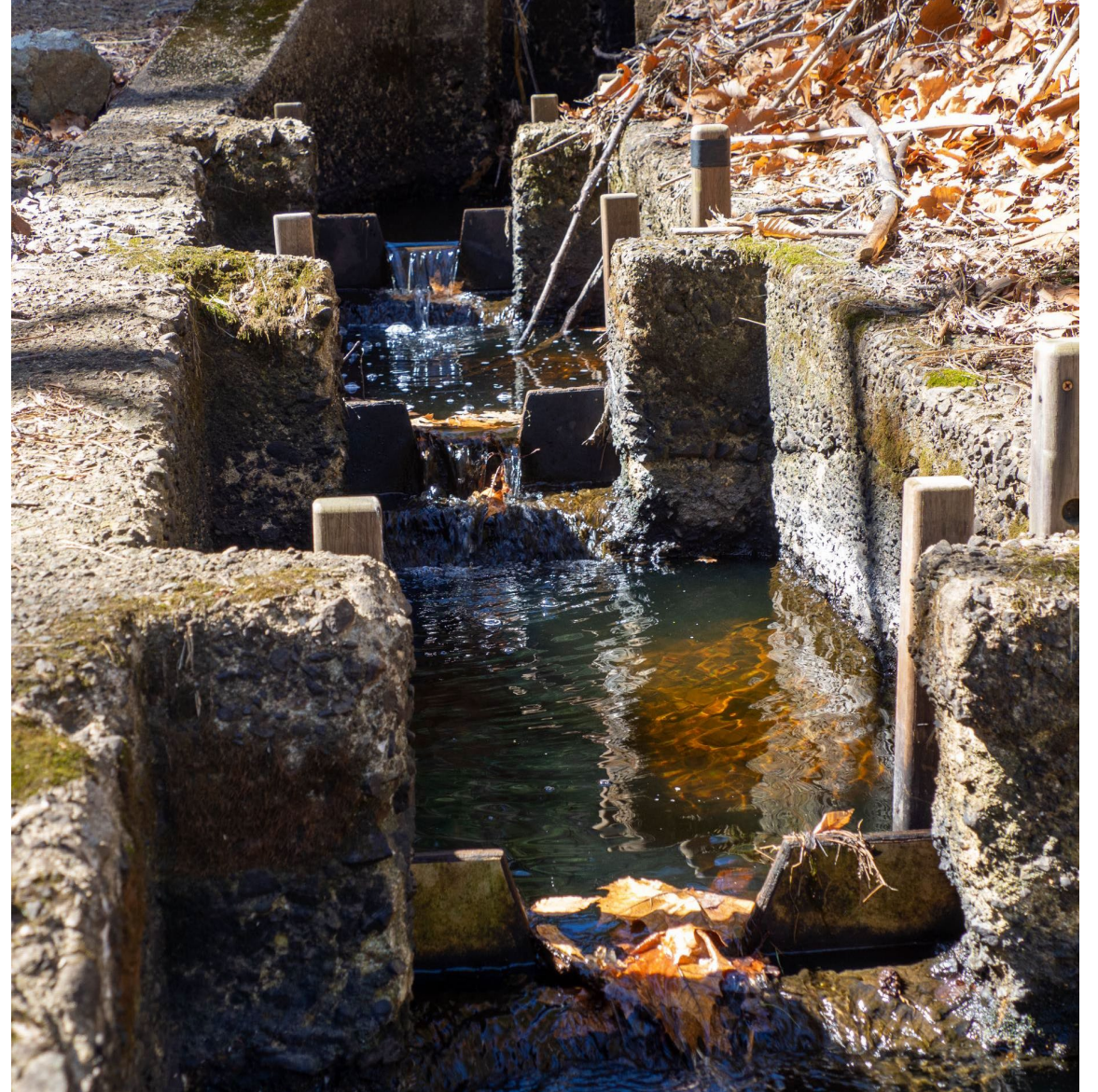
Willowdale Dam Fishway, Ipswich





Willowdale Dam Fishway, Ipswich

Willowdale Dam Fishway, Ipswich



Type of Mitigation	Area	% of Total Area	Potential Credits*	Stream Mitigation Required in Coastal-North
Restoration of fish passage	14.5 river miles	100%	343.2 Stream Credits <u>Miles 1-10</u> 0.03 miles = 158.4 LF (miles 1-3 at ratio of 0.01) + 0.035 miles = 184.8 LF (miles 4-10, ratio 0.005))	247.66 stream credits

** credit calculations based on Corps NE District Compensatory Mitigation Guidance, Table C5*

Willowdale Dam Fishway, Ipswich

PERFORMANCE STANDARDS	% total Credit	Credit amount	Timeline – credit release
1. Design & Construction: The fishway is designed and constructed to maximize its potential to function effectively as a fish passage structure, in accordance with the Final Design Plans	40%	137.28 Stream Credits	Upon completion of construction and submittal and approval of as-built documentation by the Corps
2. Operations & Maintenance: Conducted as per O&M Plan and submitted annually (Year 1-5)	35%	120.12 Stream Credits	7% each, Years 1-5, (2020-2024) based on O&M documentation submitted to and approved by the Corps
3. Use of steppass by anadromous fish species (minimum of 10 individuals)	25%	85.8	When use of steppass occurs
Total Stream Credit potential	100%	343.2	

Willowdale Dam Fishway, Ipswich

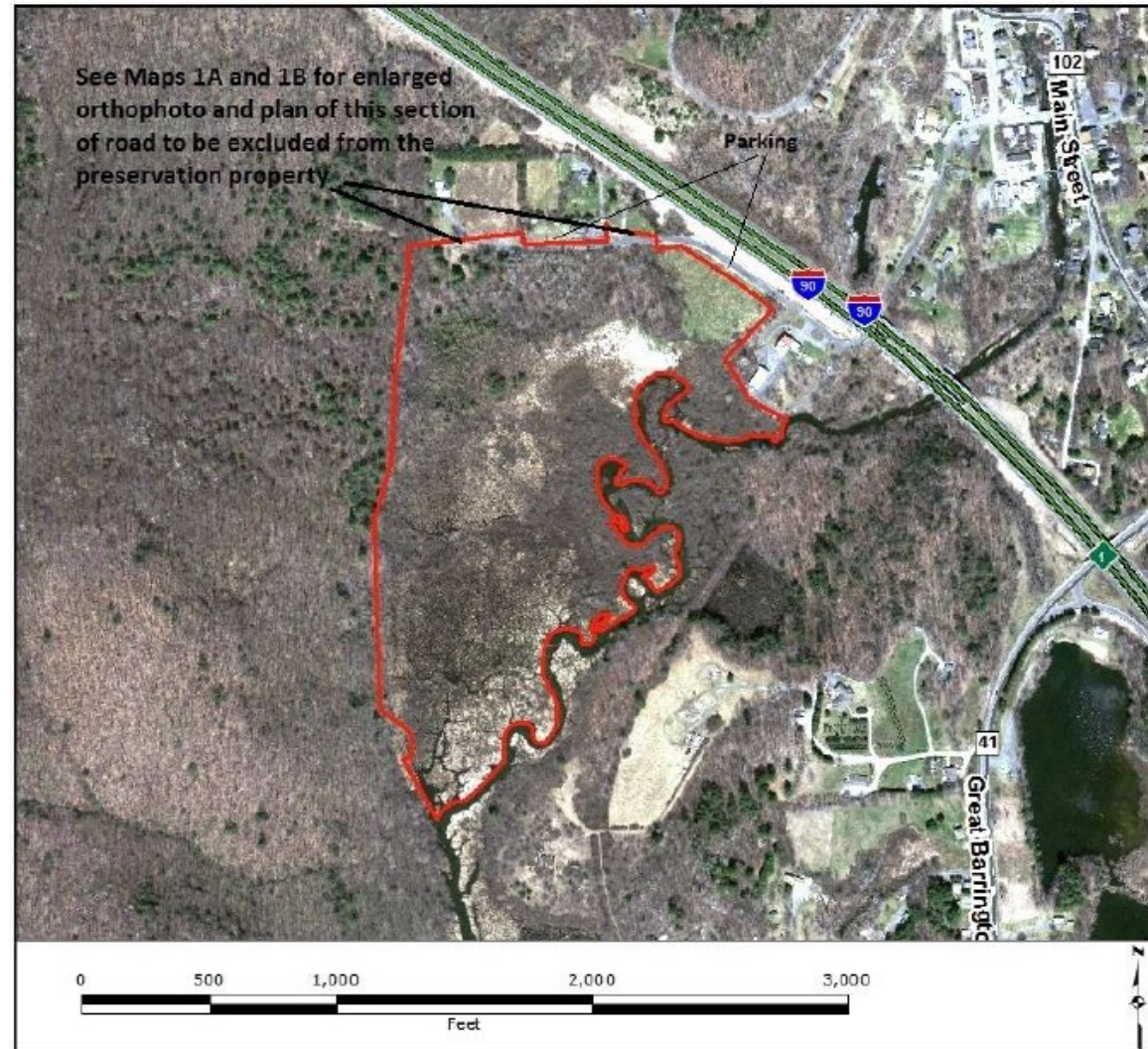
New Projects Approved in 2020

- 3 land preservation projects
 - Rattlesnake Hill Preservation, Sharon, MA
 - *Acquired January 2020*
 - *Contracting Baseline Documentation Report*
 - Parker River Connector Saltmarsh Preservation, Newbury, MA
 - *Acquisition anticipated imminently*
 - Lyons Brook Coldwater Stream Preservation, Westport, MA
 - *Acquisition anticipated June 2020*

Berkshire/Taconic Service Area

- Least active service area
- 1 project to date
 - 1 land conservation project
 - *No external project sponsors to date*
 - No restoration projects
- Insufficient funds available to support a new project at this time

Williams River Preservation



Map 1

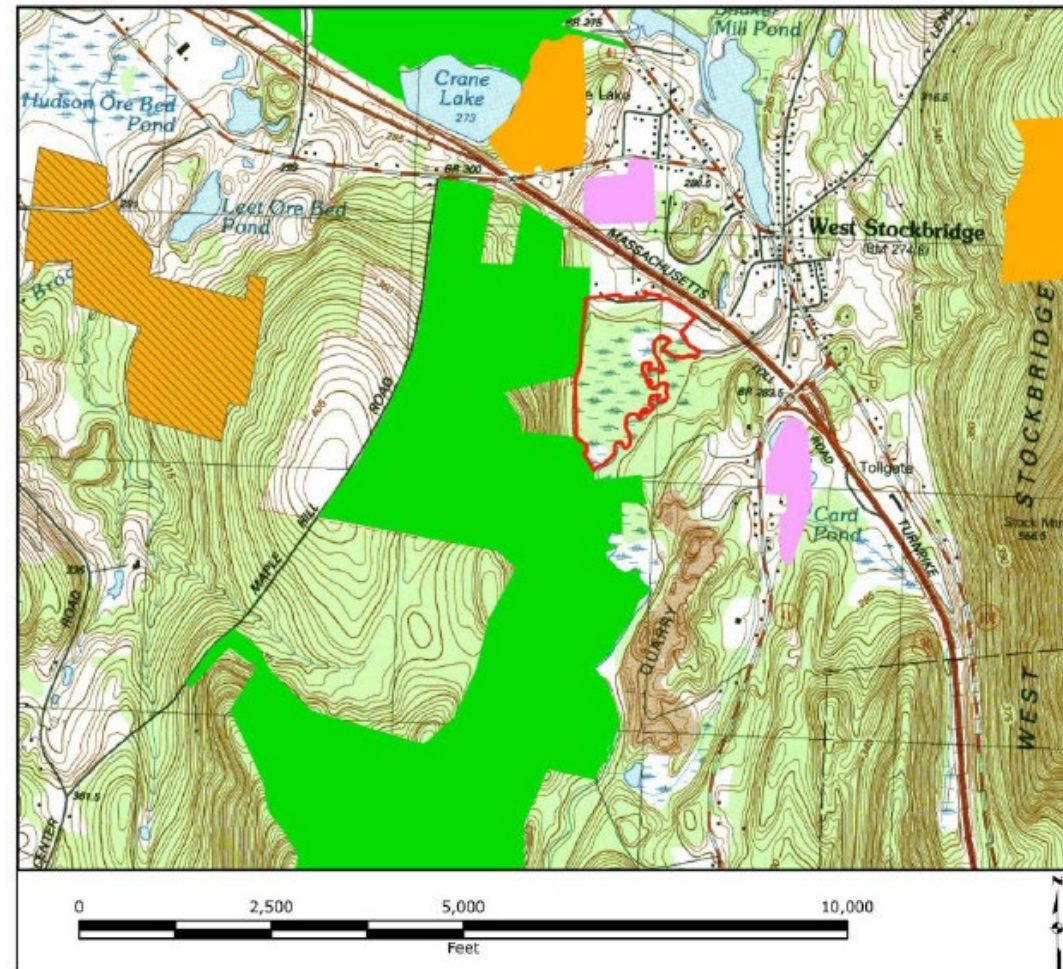
Project Location
Williams River

Naventi
West Stockbridge, MA

Legend

Williams River Preservation
Parcel - 49 ac.

Williams River Preservation



Map 2
Project Location
with
Open Space

Williams River
West Stockbridge, MA

Legend

Williams River
Preservation Parcel
49 acres

OpenSpace: Restrictions

Agricultural
Preservation
Restriction

OpenSpace: Lands

Department of Fish &
Game
Municipal
Private

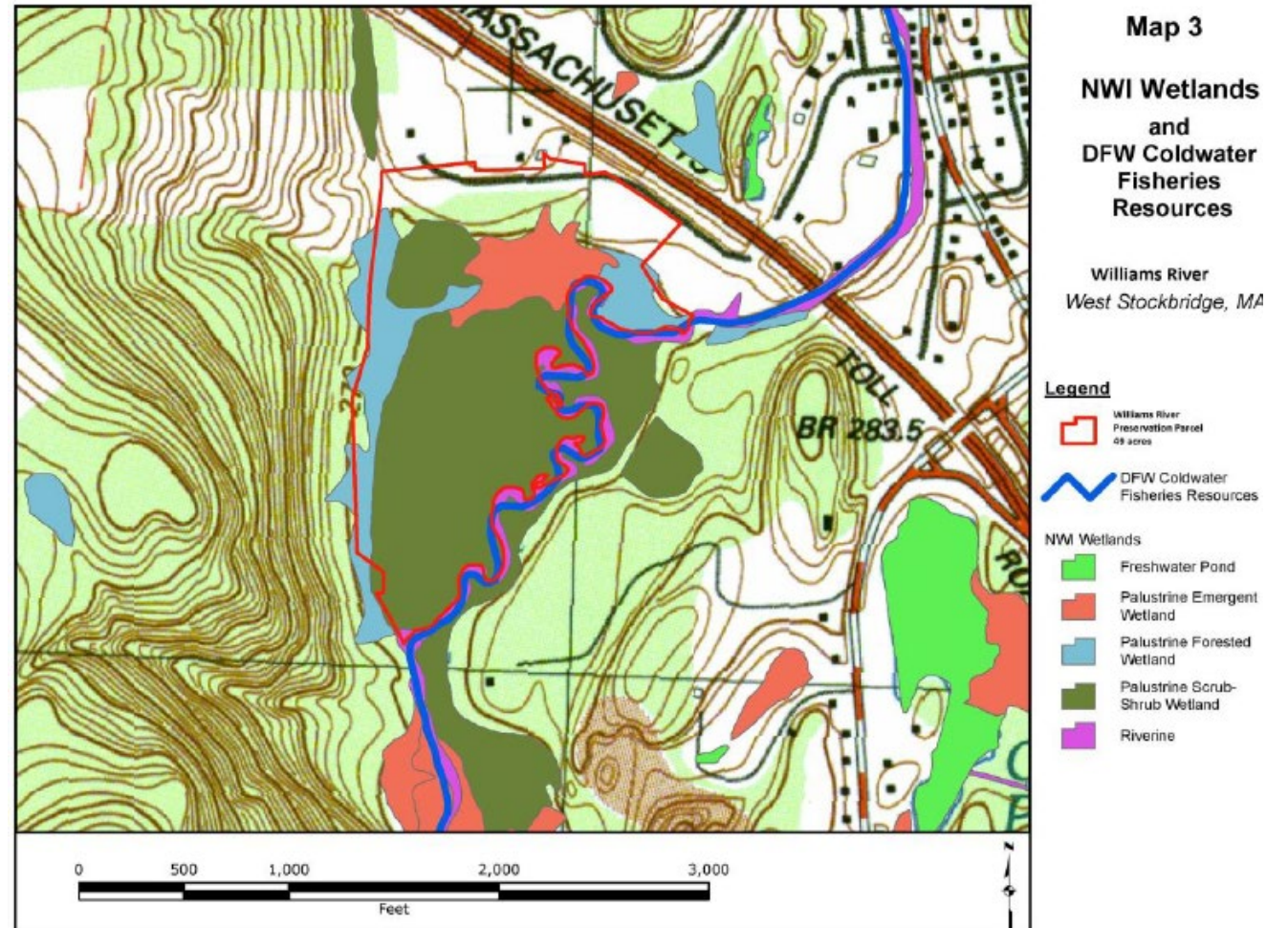
Williams River Preservation

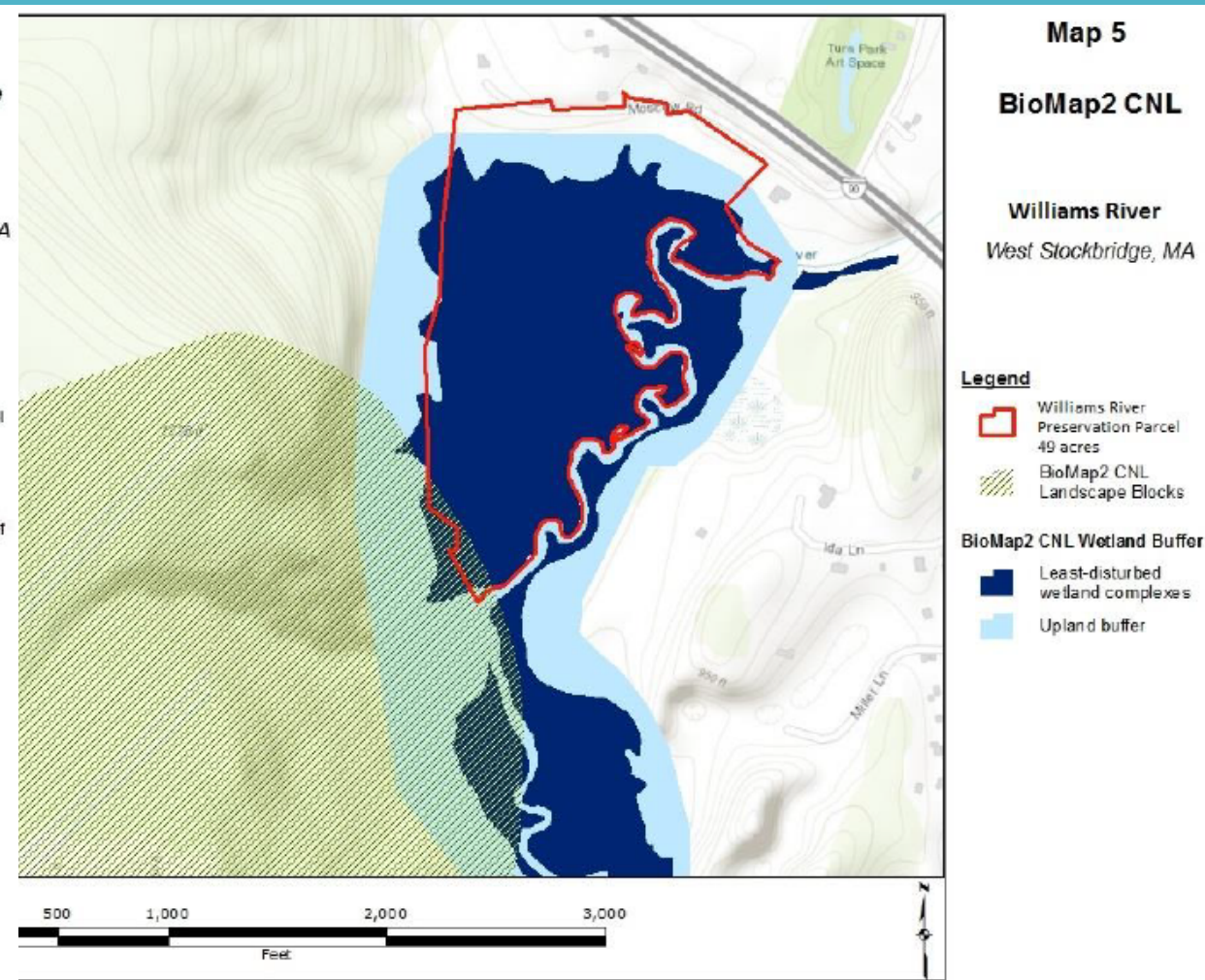
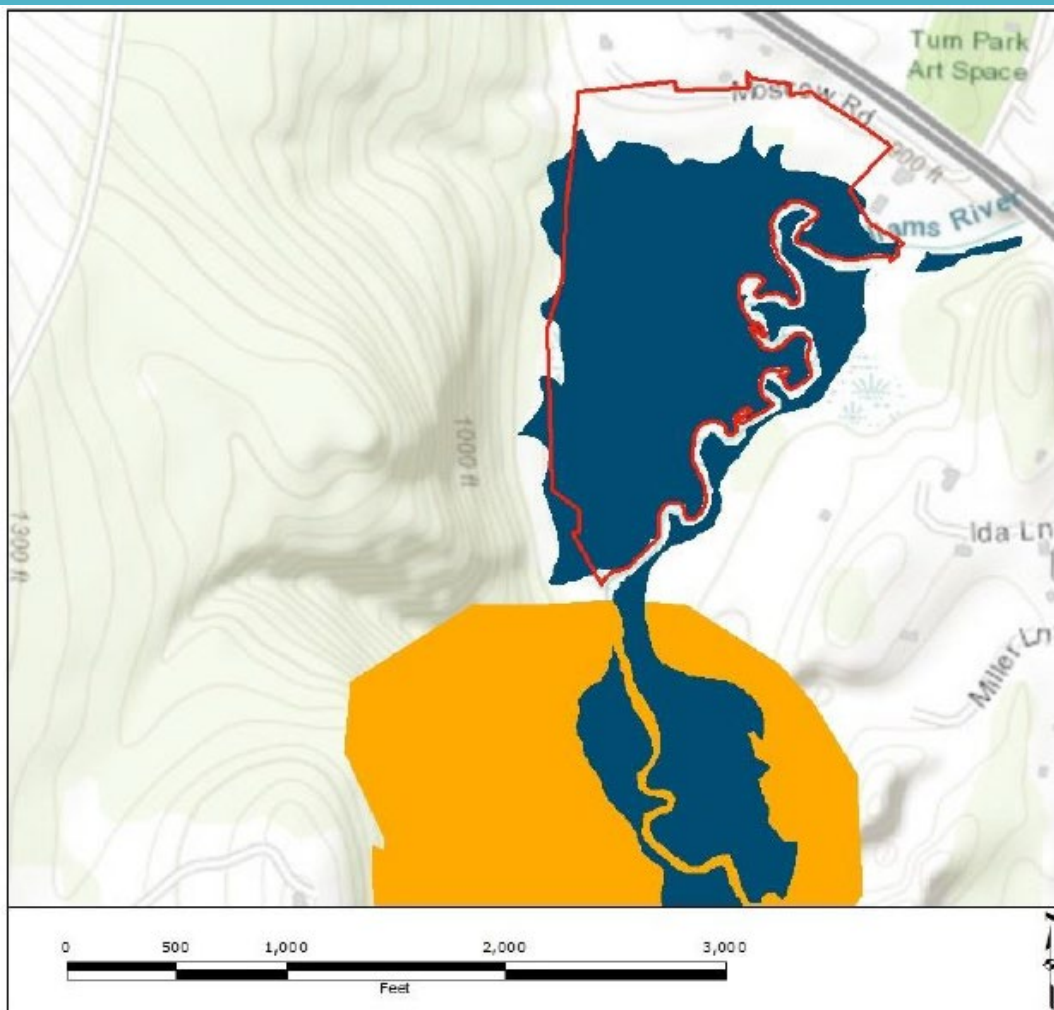
49 acres

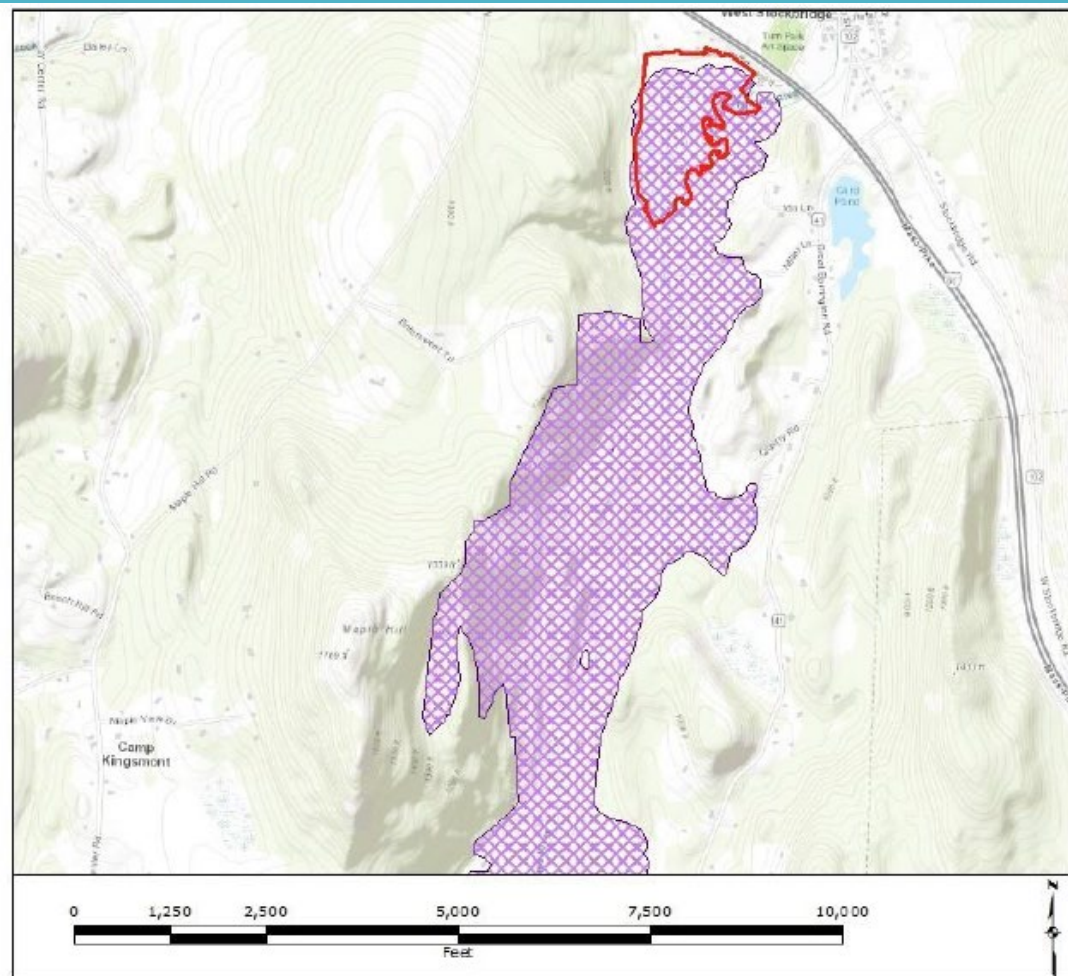
28 acres forested wetland

11 acres upland

0.95 river miles





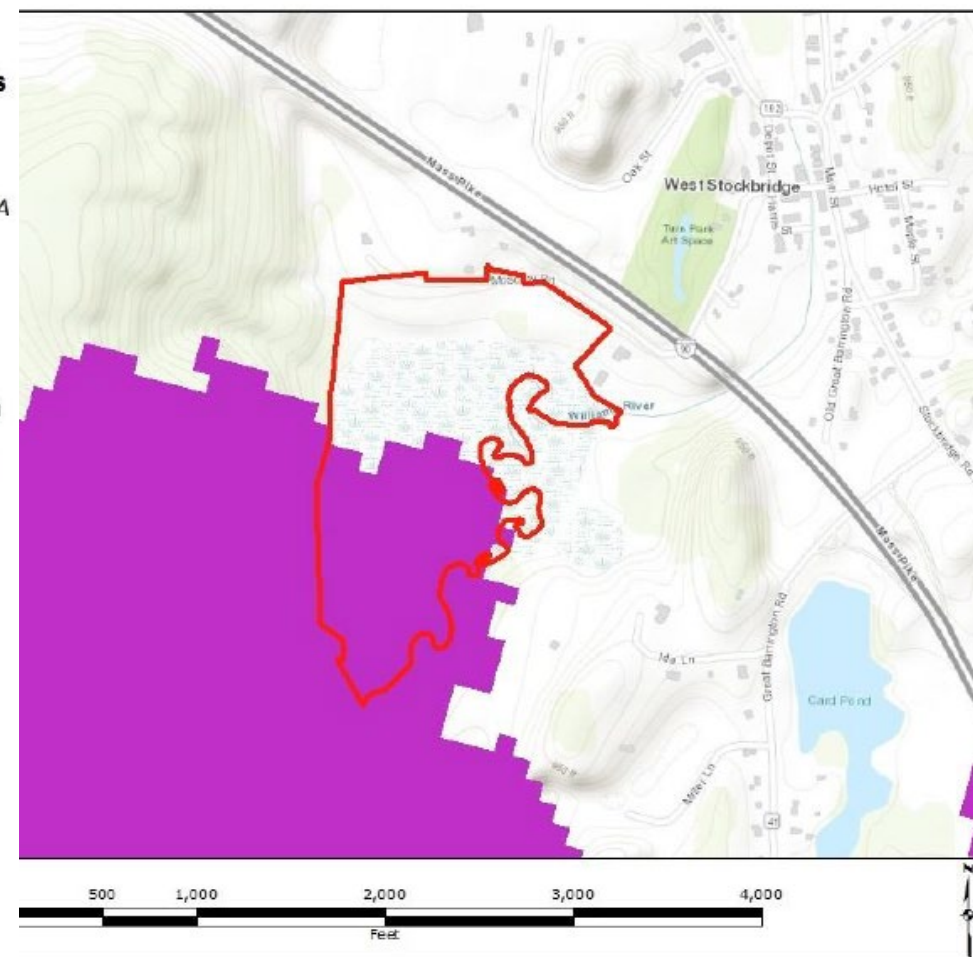


Map 7
SWAP Key Sites

Williams River
West Stockbridge, MA

Legend

- Williams River Preservation Parcel 49 acres
- SWAP Key Sites



Map 9
TNC Resiliency

Williams River
West Stockbridge, MA

Legend

- Williams River Preservation Parcel 49 acres
- TNC Above Average Resiliency

New Challenges and Opportunities for ILF Mitigation

- 3-year timeline for implementing mitigation from receipt of fees
 - Difficulty accruing sufficient fees to fund projects in 3 years
 - Opportunity to collaborate with partners to leverage funds
- Trends in development
 - Anticipate increase in permitting around I-495 belt
 - *Quabbin/Worcester Service Area*
 - Potential to develop relationships with planning agencies to better anticipate fee payments and line up mitigation projects
- Adjust program goals to capture best mitigation opportunities