

Land Trusts as Partners in Ecological Restoration

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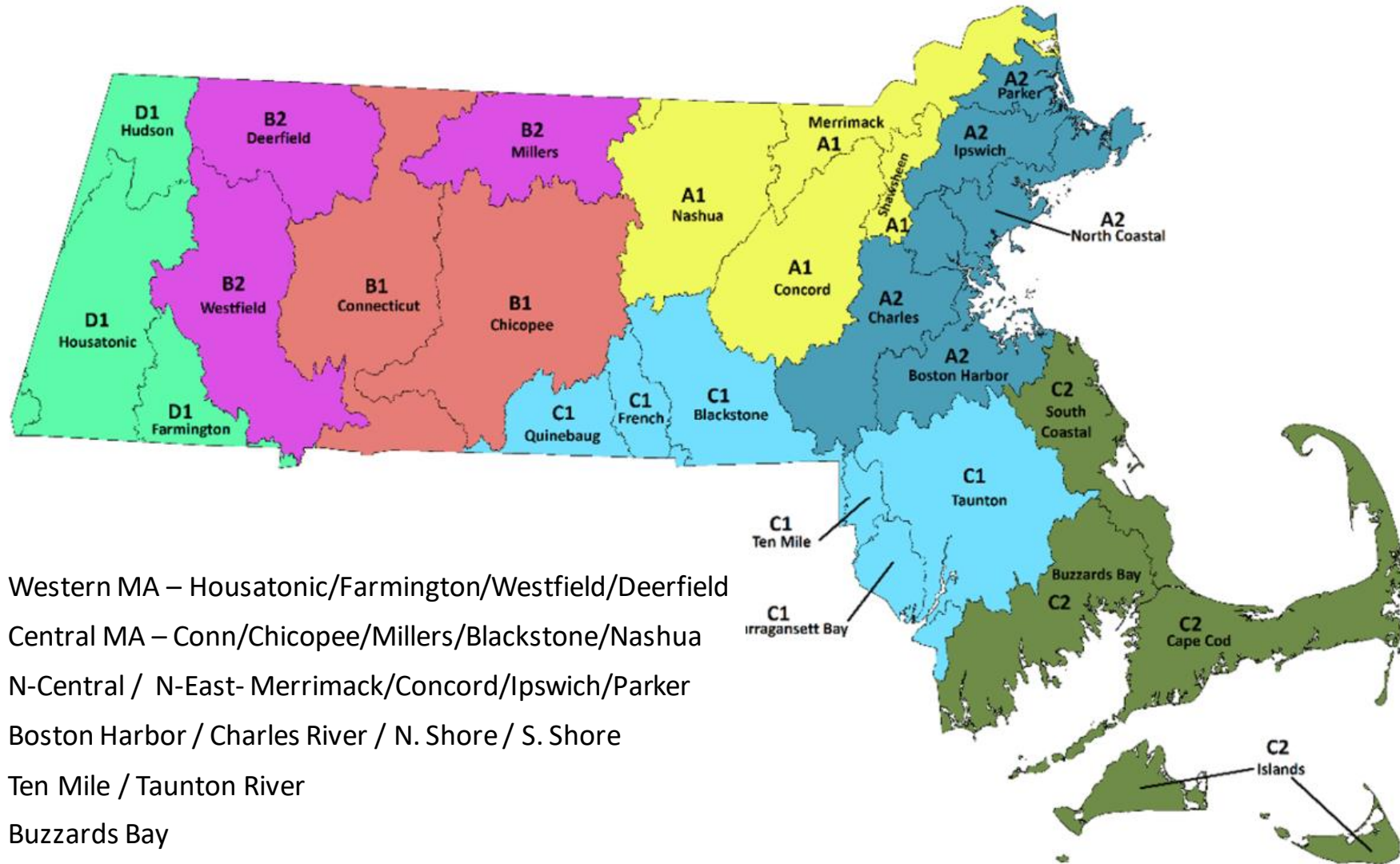
Land Trusts as Partners in Ecological Restoration



- Broad understanding of ecological restoration
- Restoration partnerships
- Role of land trusts in ecological restoration
- Examples – Land trusts leading ecological restoration!
- Identify some of the challenges for land trusts to engage in restoration
- Facilitate discussion on SOLUTIONS!



Roll Call



- Western MA – Housatonic/Farmington/Westfield/Deerfield
- Central MA – Conn/Chicopee/Millers/Blackstone/Nashua
- N-Central / N-East- Merrimack/Concord/Ipswich/Parker
- Boston Harbor / Charles River / N. Shore / S. Shore
- Ten Mile / Taunton River
- Buzzards Bay
- Cape/Islands

Ecological Restoration

Restoring ecological function to an altered ecosystem

Invasive species removal,
riparian plantings

Large-scale construction projects
(e.g., dam removals, wetland restoration)

Cost / Complexity



Ecological Restoration

Benefits

- Improved water quality
- Restoration of habitat
- Tempering extreme flows
- Increased public safety
- Climate Resiliency
- “Sense of Place”

Constraints

- Landowner permission
- Social acceptance
- Capacity
- Resources
- Built infrastructure



Ecological Restoration

Optics

- Restoration can be “messy”
- Temporary disturbance
- Long-term benefits
- Requires good communication

Trade a temporary disturbance for lasting ecological improvement





Horseshoe Mill Dam Removal - Weweantic River Reserve Wareham, MA



Before



After

Eel River Restoration Plymouth, MA



Pilchuck River Dam Removal

Granite Falls, WA



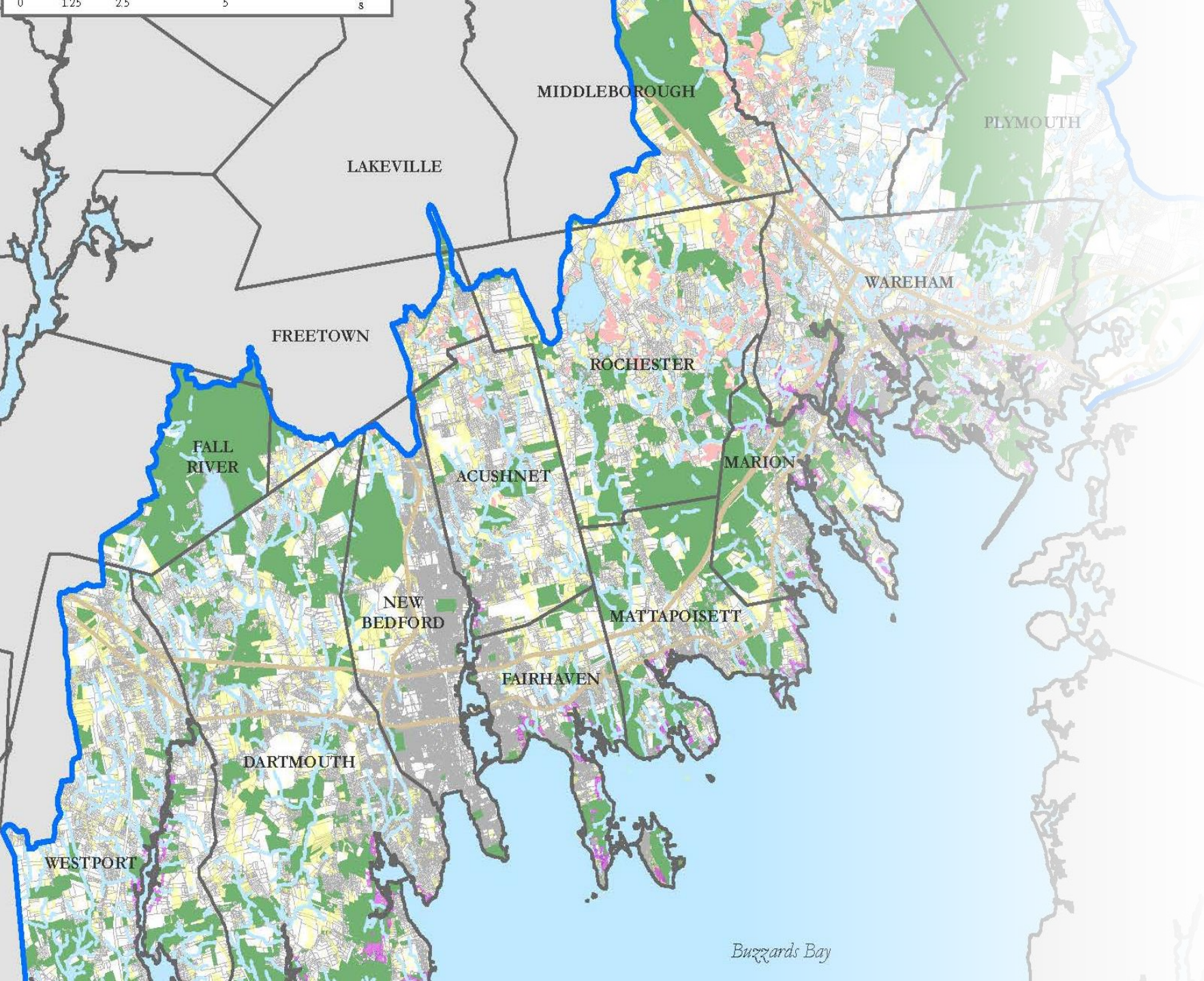
Buzzards Bay Watershed Restoration Partnership

- MA DER Supported
- Led by BBC
- Regional focus



**Restoration Capacity
Watershed Wide**





Partnership Reach

- Acushnet
- Bourne
- Carver
- Dartmouth
- Fall River
- Fairhaven
- Mattapoissett
- Marion
- Middleborough
- New Bedford
- Plymouth
- Rochester
- Wareham
- Westport

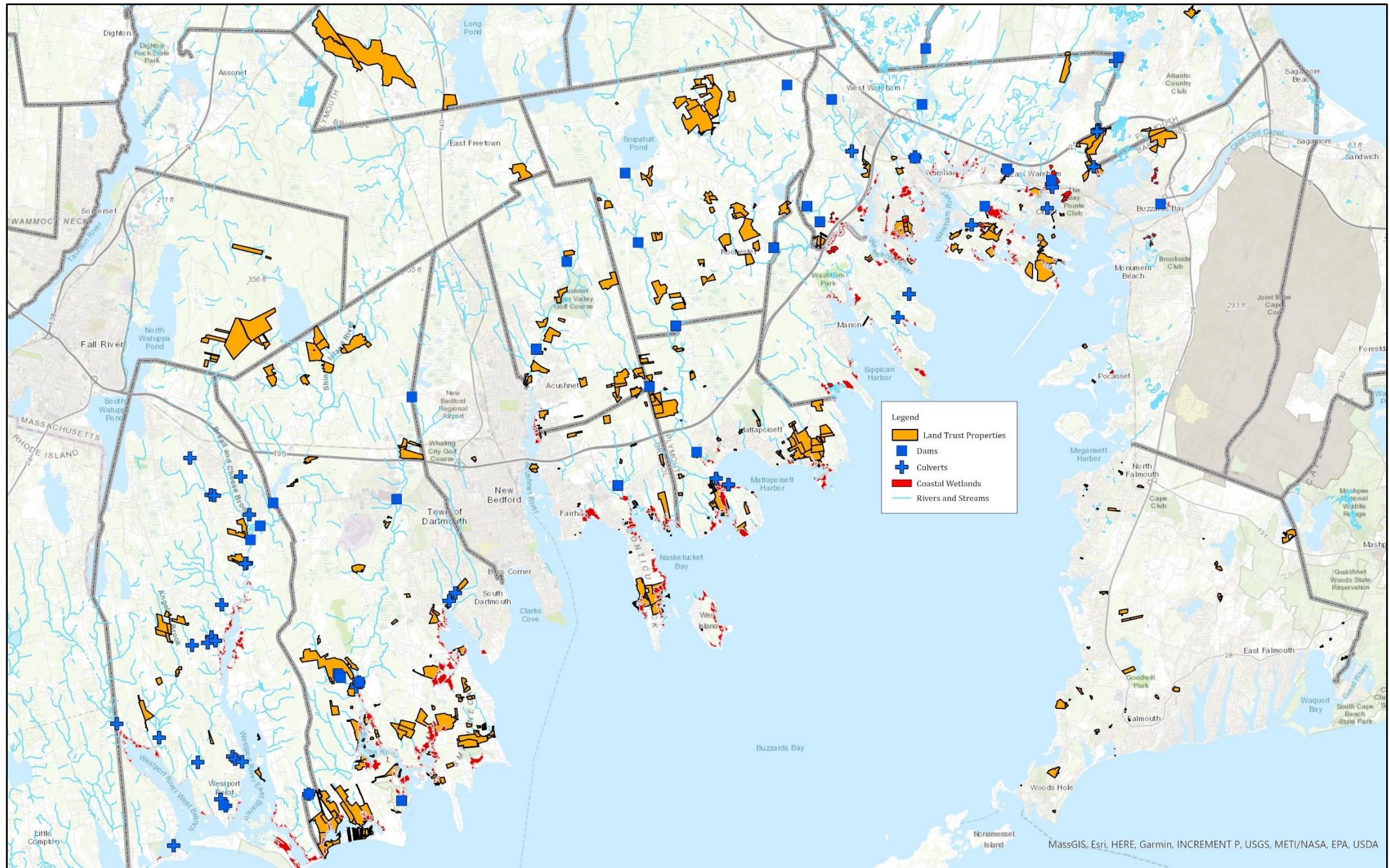
Buzzards Bay Watershed Restoration Partnership

- Municipalities
- State Agencies
- County Agencies
- Federal Agencies
- Tribes
- **Land Trusts**





The Land Trust – Restoration Connection



Importance of Land Trusts to Restoration Partnerships



- Willing landowners = site control
- Expertise and experience
- Municipal personnel / political landscape
- Good standing in community
 - Leverage Land Trust supporters
 - Social acceptance

Importance of Restoration Partnerships to Land Trusts



- Info sharing / Visibility
- Increased opportunities for land protection
- Increases capacity to do restoration
 - Opportunities to improve trails etc.
 - Mitigate risk

Wheelwright Pond Dam

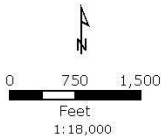


Ecological Restoration of the Ware River
in Hardwick, New Braintree and Barre

**FIGURE 1
SITE LOCATION**

LEGEND

LOCUS MAP



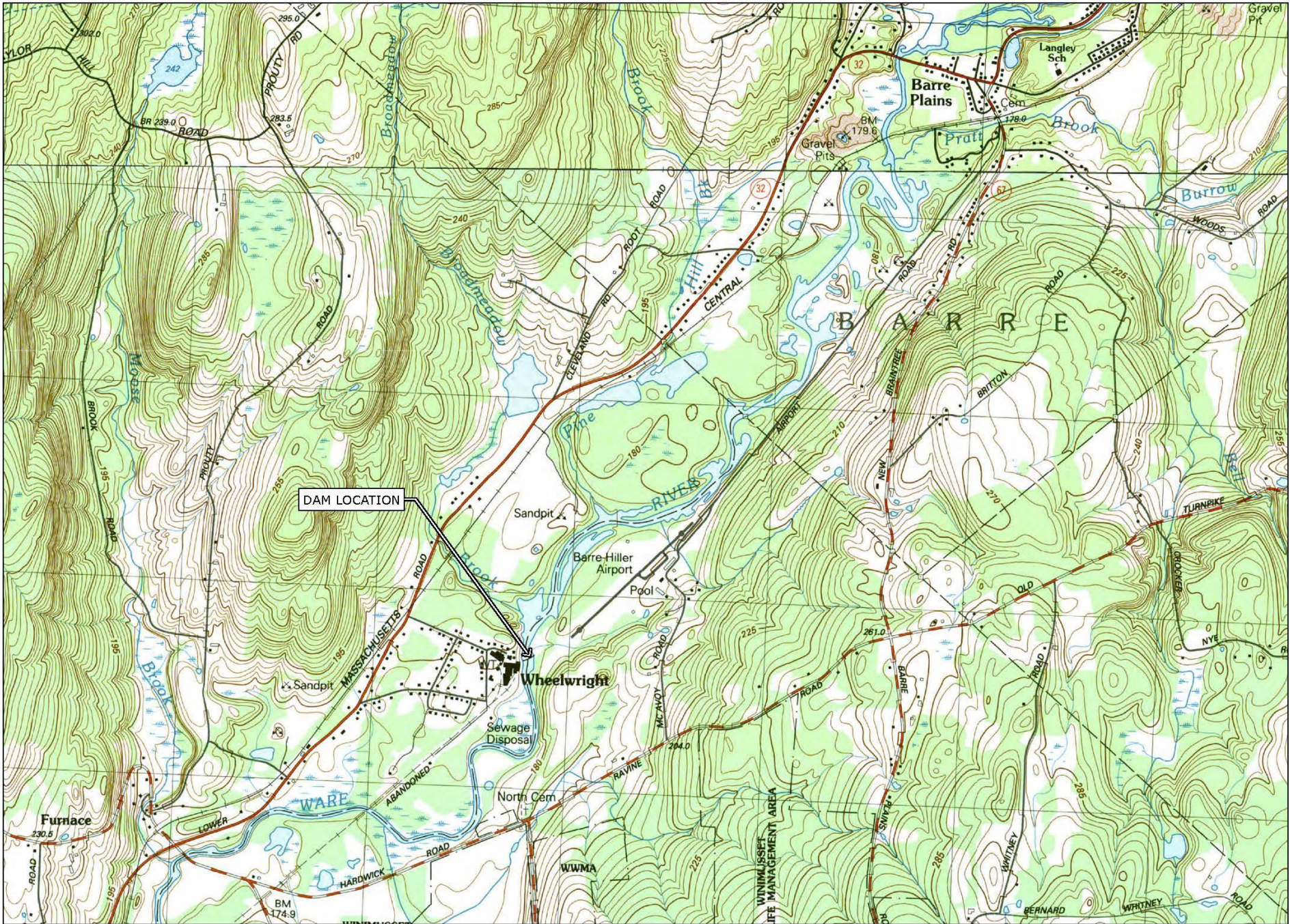
NOTES

Based on USGS Topographic Map for Ware, MA Revised 1982. [Site Quad]
North Brookfield, MA Revised 1982.
Peterborough, MA Revised 1988.
Barre, MA Revised 1988.
Contour Interval Equals 3-meters.

**Wheelwright Pond Dam
Ware River
Hardwick & New Braintree,
Massachusetts**

May 2019

Tighe & Bond
Engineers | Environmental Specialists



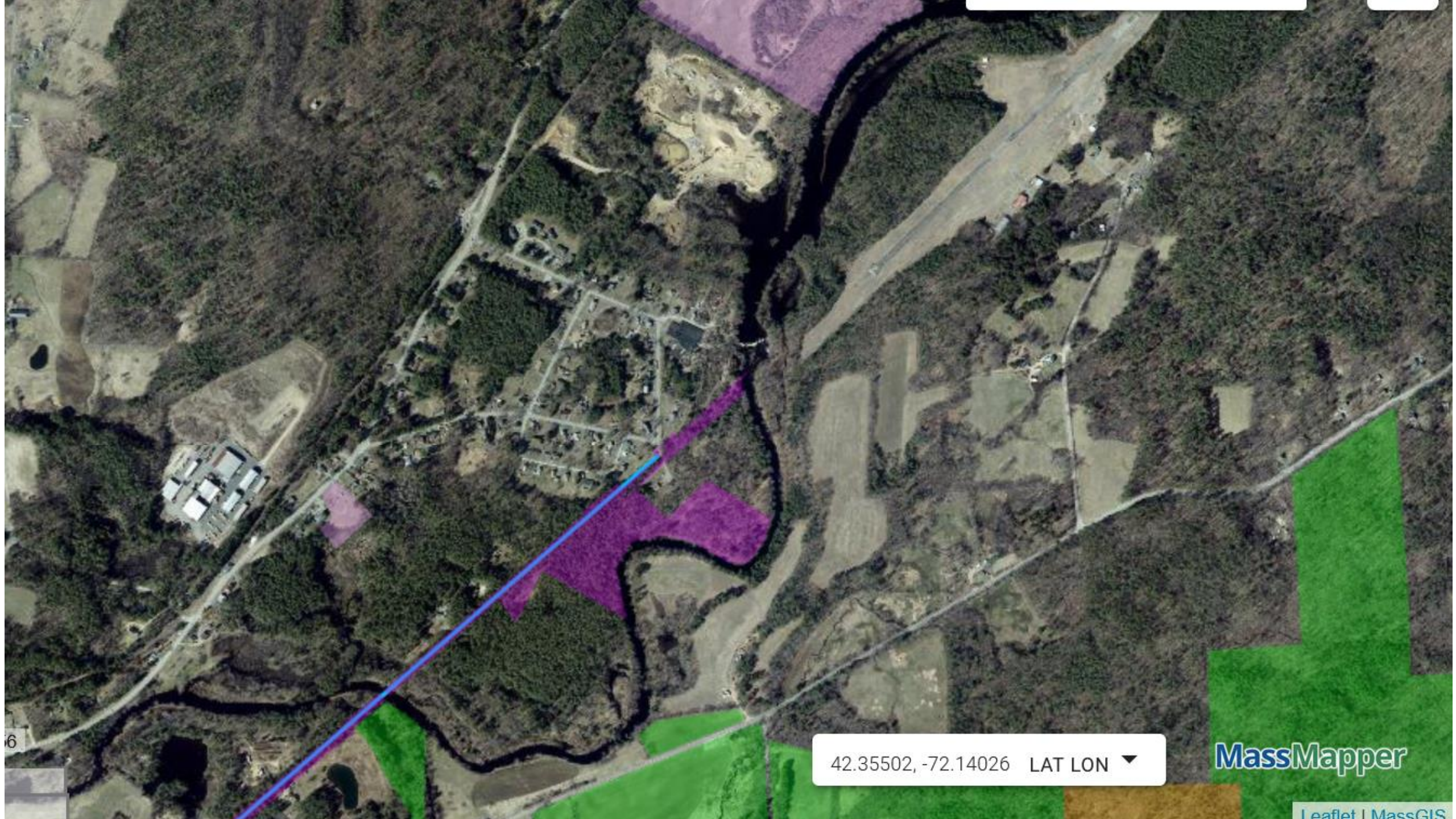


Dam removal benefits

- Obsolete infrastructure – the dam no longer powers the mill operation and isn't suitable for hydropower
- Remove dam to avoid failure and catastrophic flooding
- Eliminate annual maintenance costs
- Expanding Estimated Habitat for Rare Species
- Reconnecting cold water fisheries streams



Emergency spillway



42.35502, -72.14026 LAT LON ▾

MassMapper

Leaflet | MassGIS

Partners

- Landowner – Raitto Industrial Park
- Division of Ecological Restoration (Mass. DFG)
- Contractor – Tighe & Bond
- East Quabbin Land Trust

Impacts

- Wheelwright Water District
- RJ McDonald gravel washing operation
- No housing or homeowner impacts

Basic Restoration Steps

- First step - DER Priority Project designation
- Funding from Mass. Dam & Sewall Program
- Lots of reports (sedimentation, hydrology, bridge design etc.)
- Permit alphabet soup:
 - Mass Endangered Species Act
 - Wetland Protection Act Notice of Intent
 - Clean Water Act 401 Water Quality Certification
 - Chapter 91 license
 - Mass Environmental Policy Act

EQLT's primary roles

- Landowner negotiations
- Contacts with local boards and citizens
- Logistics for public information meeting and site visits
- Grant funding for design elements and project management





Mattapoissett Neck Saltmarsh Habitat Restoration: Partner Studies

Colleen Andrews

Operations Manager

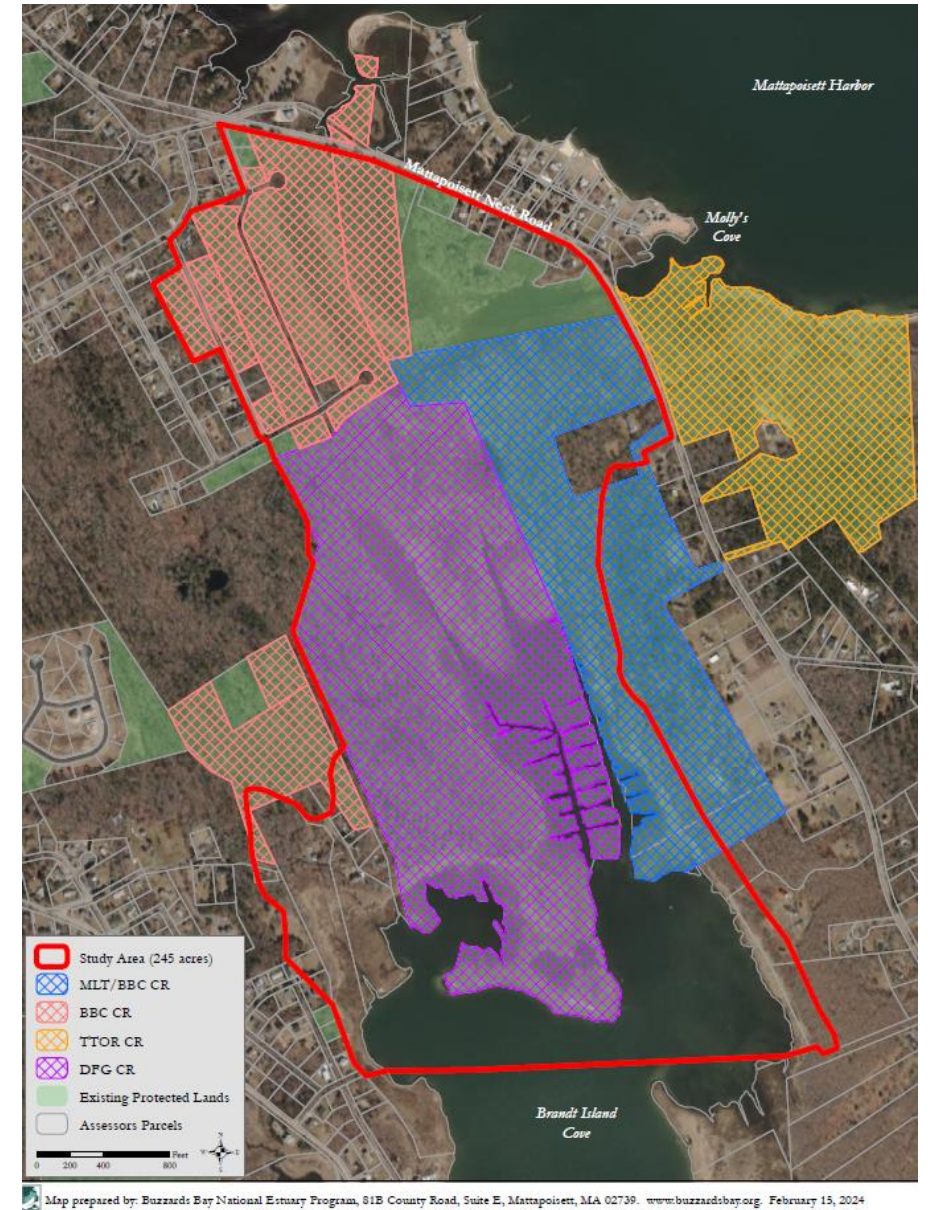
Mattapoissett Land Trust



Site Overview



View of mudflat expansion via PCMCP plane



Study area & land ownership

Problems

- Current state
 - 250-acre saltmarsh suffering damage from:
 - prolonged tidal attenuation
 - vegetation dieback
 - persistent ponding
 - low elevation and marsh subsidence
 - crab herbivory
 - freshwater inputs
 - old agricultural features
 - **sea level rise**

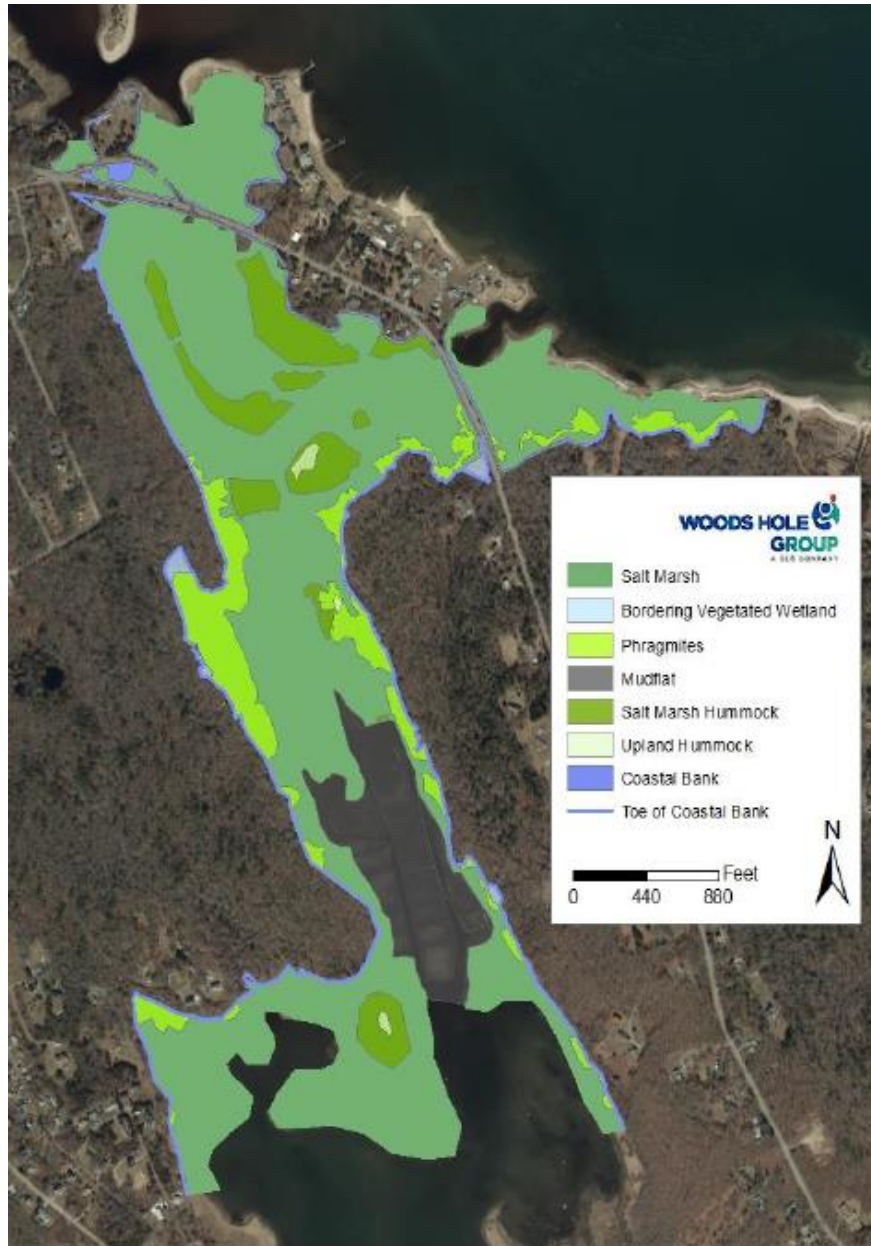




Tandem studies on the Mattapoissett Saltmarsh

- **Buzzards Bay Coalition:** Hydrologic & Hydraulic Study
 - **Goal:** redesign of undersized culvert causing tidal attenuation
- **Mattapoissett Land Trust:** Saltmarsh Restoration Study
 - **Goal:** comprehensive marsh study (**leveraging H&H study results**) producing 5 actionable and permissible restoration options

Saltmarsh Restoration Study Maps



Current conditions



Figure 2. Mean High Water benchmark under 2030, 2050, and 2070 sea level rise scenarios, from the MC-FRM.

MC-FRM 2030, '50, '70 mean high water

Solutions

- Restoration possibilities
 - Resized culvert
 - Pathways for marsh migration
 - Reestablishing drainage pathways on marsh surface via runnelling
 - Stormwater management
 - Invasive phragmites management
 - Crab management



Funding and Partners



Funding:

1. Mass Coastal Zone Management's Coastal Habitat & Water Quality Grant
2. MA Division of Ecological Restoration (DER)



Partners:

- Project leads:** Mattapoissett Land Trust, Buzzards Bay Coalition
- Municipal:** Town Administration, Public Works
- State/Federal agencies:** Mass CZM, MA DER, National Estuary Program, Plymouth County Mosquito Control Project



Why it works:

- Land ownership
Municipal buy-in/benefit
- Partnership support**



Thank you

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Creating Pathways: Land Trusts as Restoration Partners

Hurdles / Challenges

- Capacity
- Not traditional part of mission
- Understanding the process!



Creating Pathways: Ecological Restoration Process

Project Kickoff

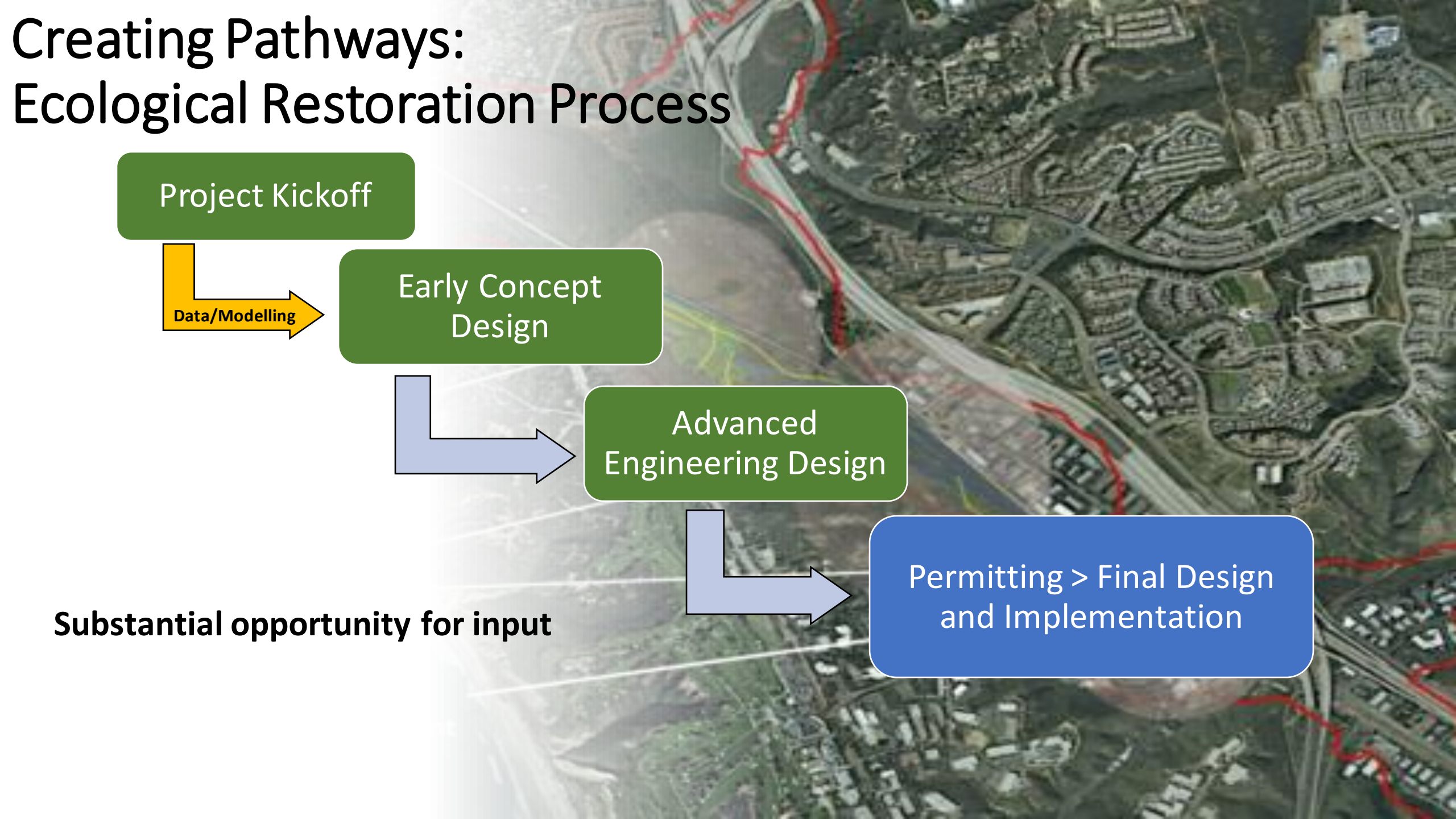
Data/Modelling

Early Concept
Design

Advanced
Engineering Design

Permitting > Final Design
and Implementation

Substantial opportunity for input



Creating Pathways: Land Trusts as Restoration Partners

Hurdles / Challenges

- Capacity
- Not traditional part of mission
- Understanding the process
- Understanding benefits and outcomes
- Disturbance of properties

Pathways

- Partnerships
- Communication
- Other Strategies?



Thank You!

