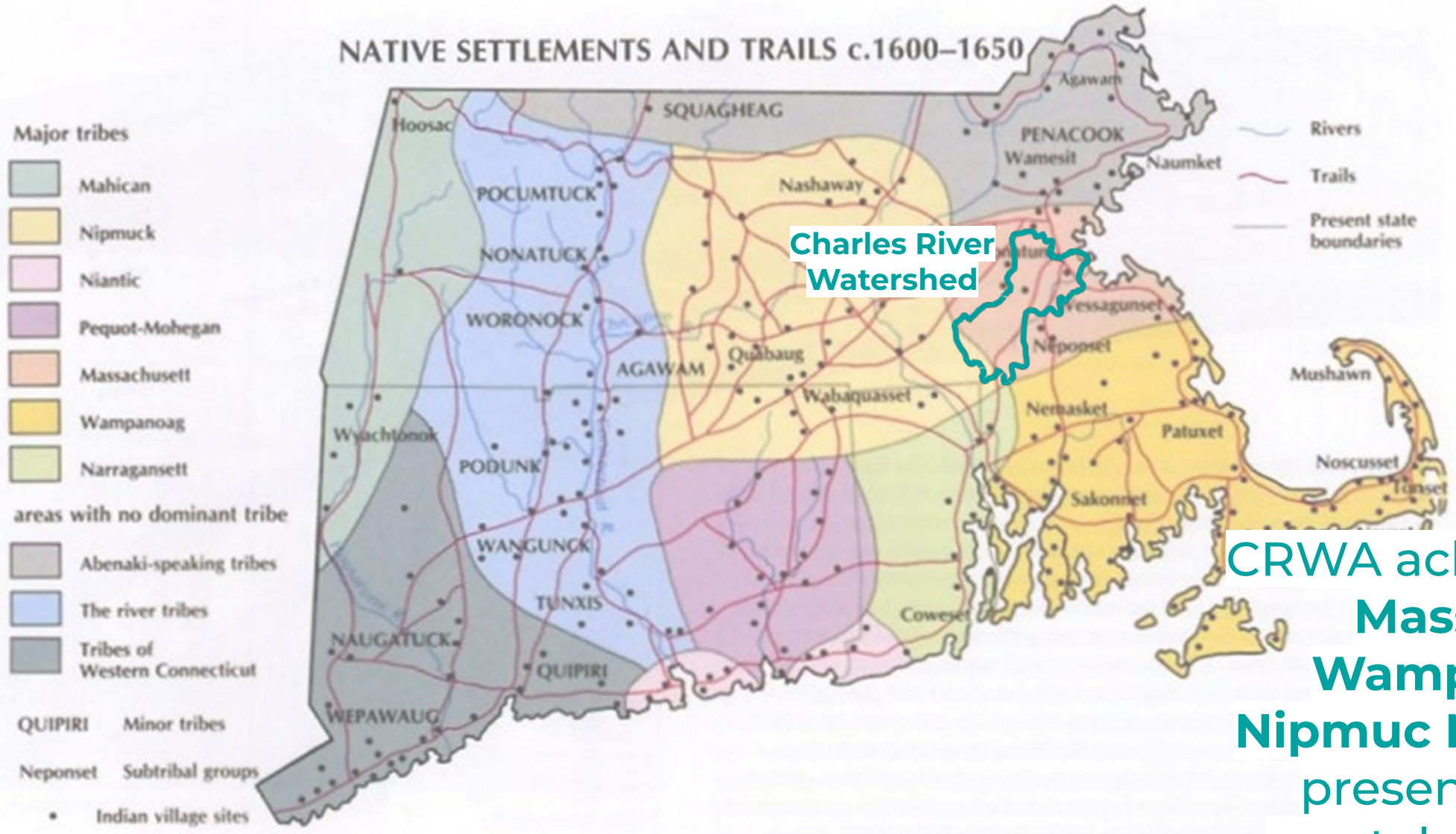
Eagle Dam Public Meeting

Robert Kearns, Climate Resilience Specialist

Charles River Watershed Association

Land Acknowledgement

Charles River Watershed Association



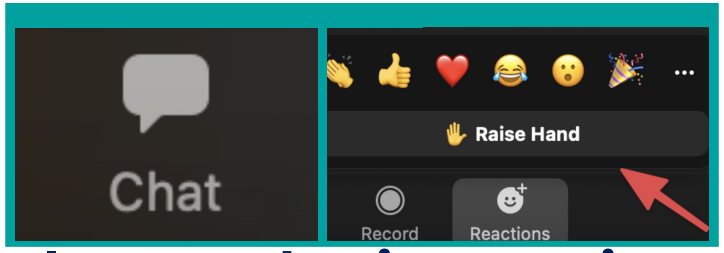
CRWA acknowledges the **Massachusett, Wampanoag, and Nipmuc Nations** as past, present, and future caretakers of this land

Ground Rules

Charles River Watershed Association

- This is an informational meeting . The purpose of this event is to learn more about the project and to answer any questions that people may have.
- Please be respectful of the speakers and hold your questions for the Q&A section as some questions may be answered by the presentations
- Everyone is encouraged to participate and has an opportunity to ask questions via the chat, we ask that one person ask a question at a time. Staff will repeat questions from the chat into the record
- If possible, please focus questions on the presentation and the results from the flood modeling, however we will work best to answer questions either in the meeting or after the meeting in writing.
- Before asking multiple questions, we ask that you refrain and let another person ask a question
- The project team may respectfully enforce the ground rules

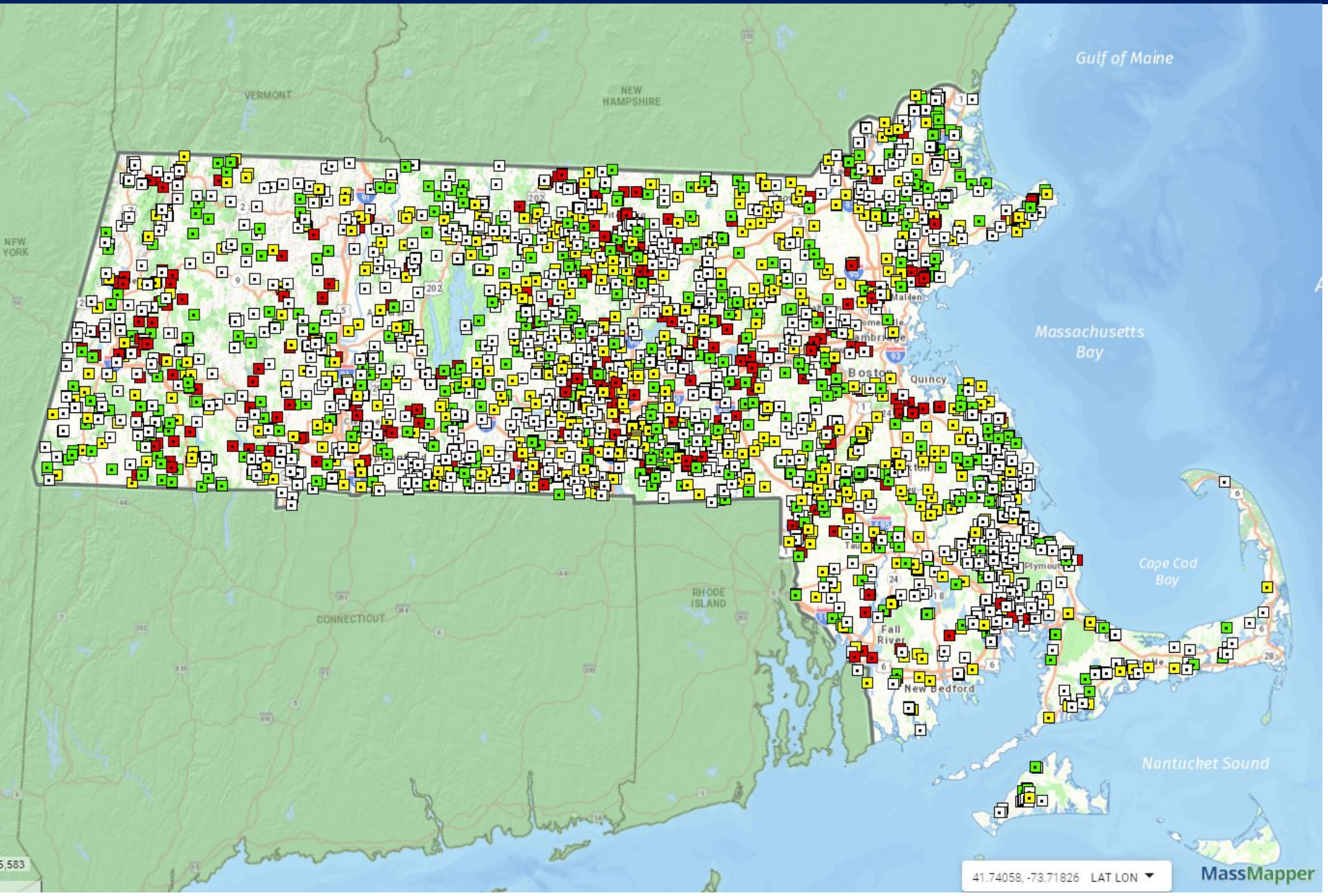
Folks having technical issues please call Conrad at 617-312-4869



Please submit questions through the chat

Over 3000 Dams in Massachusetts Today

Charles River Watershed Association



- Many dams are and do not serve their original purpose like Eagle Dam
- Small number of dams serve flood control, water supply, fire suppression purposes
- In past 12 years, 60 dams removed in Massachusetts
- Over 300 river miles opened
- Per $1million spent on dam removal 13 jobs are created

Dams (by Hazard Code)

- High Hazard
- Significant Hazard
- Low Hazard
- N/A

Climate Change Impacts Are Here

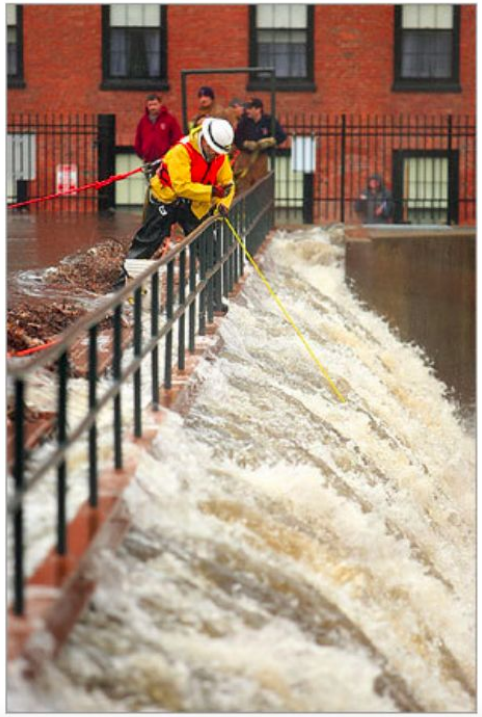
Charles River Watershed Association

Franklin 2010

Dina Rudick / Globe Staff

Boston Seaport District 2018

Boston 2021

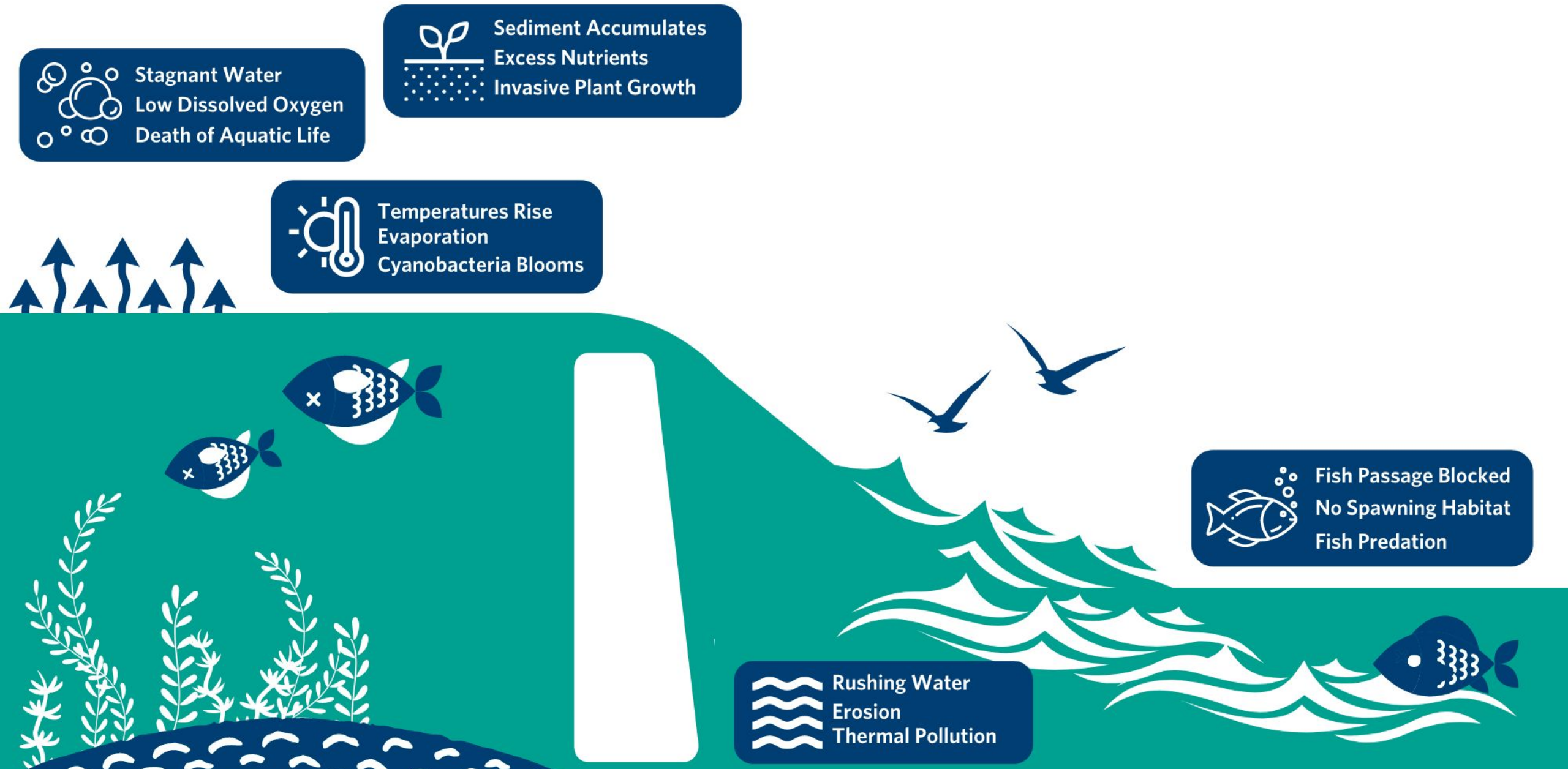


Dina Rudick / Globe Staff

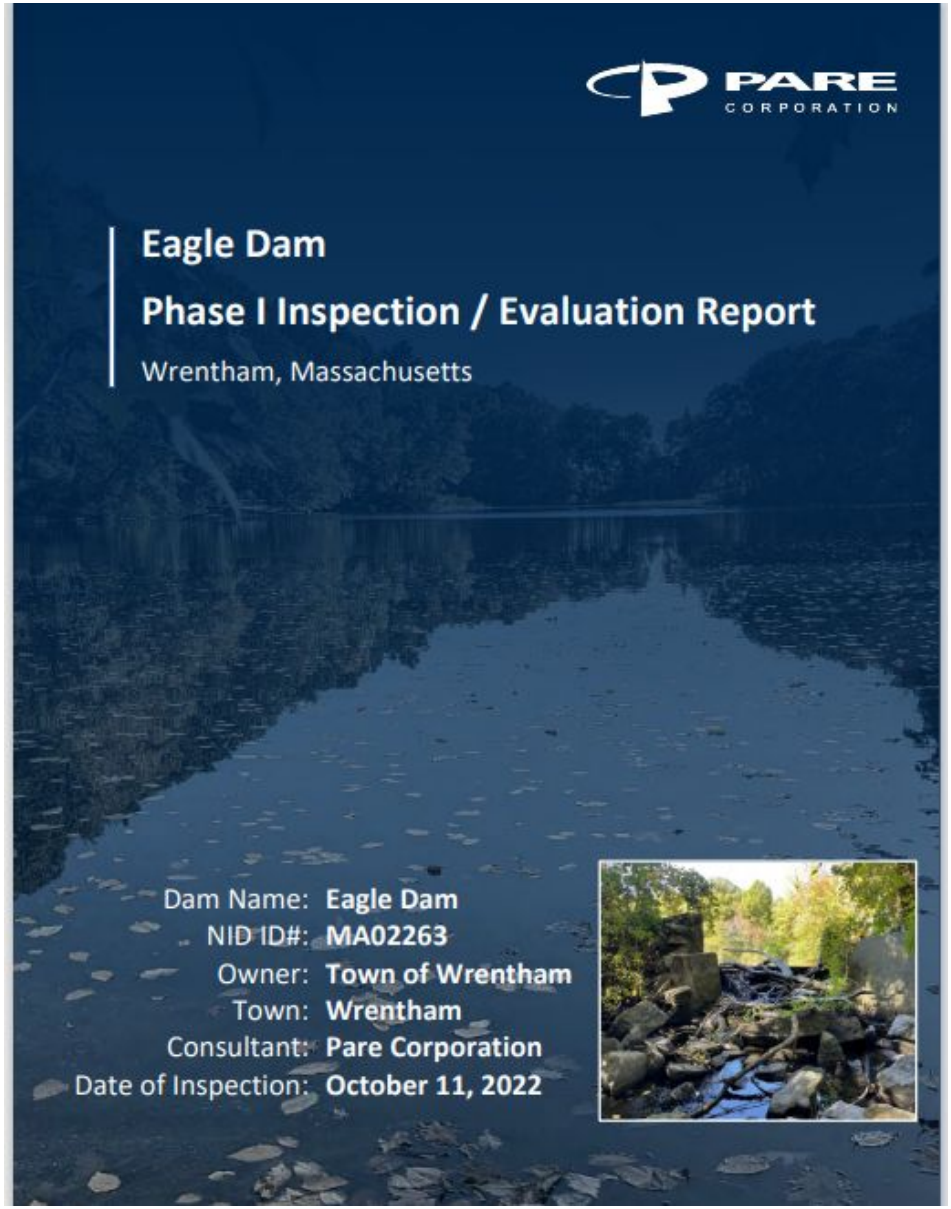
Moody Street Dam Failure Threat 2010 Floods

Dams Destroy the Charles River Ecosystem

Charles River Watershed Association



Costs to the Dam Owner



- Dam owners required to pay for regular dam safety inspections every few years
- Dam Owners Required to comply with repair recommendations/orders out of own Town budget
- Dam removal often less expensive than maintenance and repair of aging dams.
- Federal and state funding and technical assistance available to help finance and support dam removal projects
  - Division of Ecological Restoration
  - NOAA Fisheries Restoration Center
  - US Fish and Wildlife Service
  - Municipal Vulnerability Preparedness Program
  - MA Dam and Seawall Repair Grants/Loans
- One time cost of removal with immediate and lasting benefits

Significance to Indigenous Peoples

- Indigenous people in Natick petitioned state legislature to stop construction of dam in 1735
- Critical food and nutrient source taken away from the Indigenous people
- Dams are a legacy of colonization which favor agricultural settler colonial cultures over fishing-based ones

Damming Fish and Indians: Starvation and Dispossession in Colonial Massachusetts

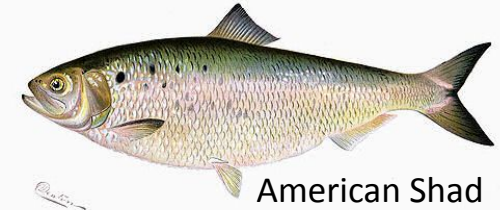
June 18, 2019
By Carla Cevasco
in Food and Hunger, Roundtables, Vast Early America
Tags: environmental history, fish, food history, Land, Native Americans, Technology
9 Comments

Today's post in the Roundtable on Food and Hunger in Vast Early America is by Zachary M. Bennett, who is Visiting Assistant Professor of History at Connecticut College this autumn. He is a Ph.D. candidate at Rutgers University-New Brunswick. His dissertation, "Flowing Power: Rivers, Energy, and the Making of New England," examines the political ecology of waterpower before the industrial revolution.

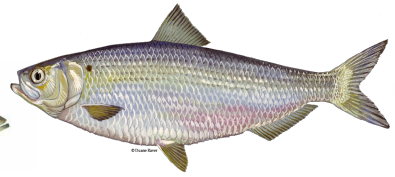
Compared to other Native Americans in southern New England, the Ninnimissinuok community of Natick, Massachusetts seemed to have secure footing going into the eighteenth century. Located only fifteen miles outside of Boston on the Charles River, Natick was the largest community of Native American converts to Christianity —or "Praying Indians"—in mainland New England with a population exceeding two hundred persons. These Praying Indians owned their land in corporation to safeguard their enclave against land hungry colonists. To passersby, Natick residents farmed like their English neighbors, dressed like them, and even worshipped like them too. Yet, in contrast to their English neighbors, this community steadily declined over the course of the eighteenth century.In 1753, Natick's Praying Indians had dropped to "twenty-five families, besides a few individuals." Eleven years later in 1764 there were only "eight or ten families." By the 1790s there were only twenty-some "clear blooded" Indians in Natick.[1]

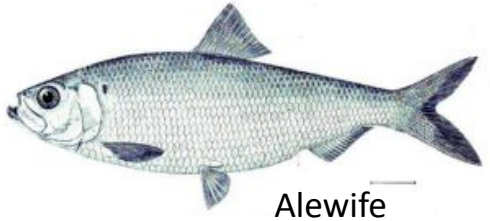
Anglo observers were mistaken in thinking that Natick's Indians disappeared. Many moved, intermarried with African Americans, or became itinerants that were harder to track down.


American Eel


American Shad


Rainbow Smelt


Blueback Herring


Alewife

Bellingham Old Mill Dam Removal 2017

Charles River Watershed Association

- There is precedent for recent dam removal on the Charles River
- Town of Bellingham Removed Old Mill Dam in 2017
- Total of 10 dams on main stem of Charles River have been breached/removed since colonization

Sucker Brook Pepperell

Charles River Watershed Association

Eagle Dam, Wrentham

Charles River Watershed Association

- Low Hazard Potential Structure in unsafe condition
- Owned by Town of Wrentham
- Trees growing in/on dam and water flowing through structure
- Identified in Wrentham Municipal Vulnerability Preparedness Plan

Timeline

Charles River Watershed Association

- 1600s records of Atlantic Salmon migrating from the ocean to Eagle Brook
- 1700s Whiting family built a dam with a grinding mill at the current location of Eagle Dam
- 1870s Dam experienced a catastrophic collapse and flooded Norfolk
- 1968 Eagle Dam failed again due to tree rot
- 1972 Eagle Dam remained breached
- 1977 Army Corps of Engineers reports "Eagle Dam is in such disrepair that it is no longer functional" remains breached
- 2000s Eagle Dam breached and amateur unauthorized repairs made to spillway
- 2018 Town of Wrentham listed Eagle Dam as a hazard in the Municipal Vulnerability Preparedness planning report
- 2021 ESS Group Feasibility Study finds removal feasible
- 2022 Pare Corporation Inspection Finds Dam in unsafe condition
- NOW Evaluation of options for the future of the dam

Atlantic Salmon

1875 Eagle Dam Breach Damage Norfolk City Mills

Charles River Watershed Association

1875 Flood
When the Eagle Brook dam at the foot of Lake Pearl burst, the flood waters raced down the Mill River washing out the railroad tracks and the mill dam on Main Street and a large part of the mill.

Photo Courtesy of Norfolk Historic Commission

1972 Breach (Town of Wrentham)

Charles River Watershed Association

Eagle Dam Breached Condition 1973

Charles River Watershed Association

Photographer:

Halberstadt, Ernst, 1910-1987

Date:

March 29, 1973

Digital Commonwealth

Eagle Dam Breached Condition 1973

Charles River Watershed Association

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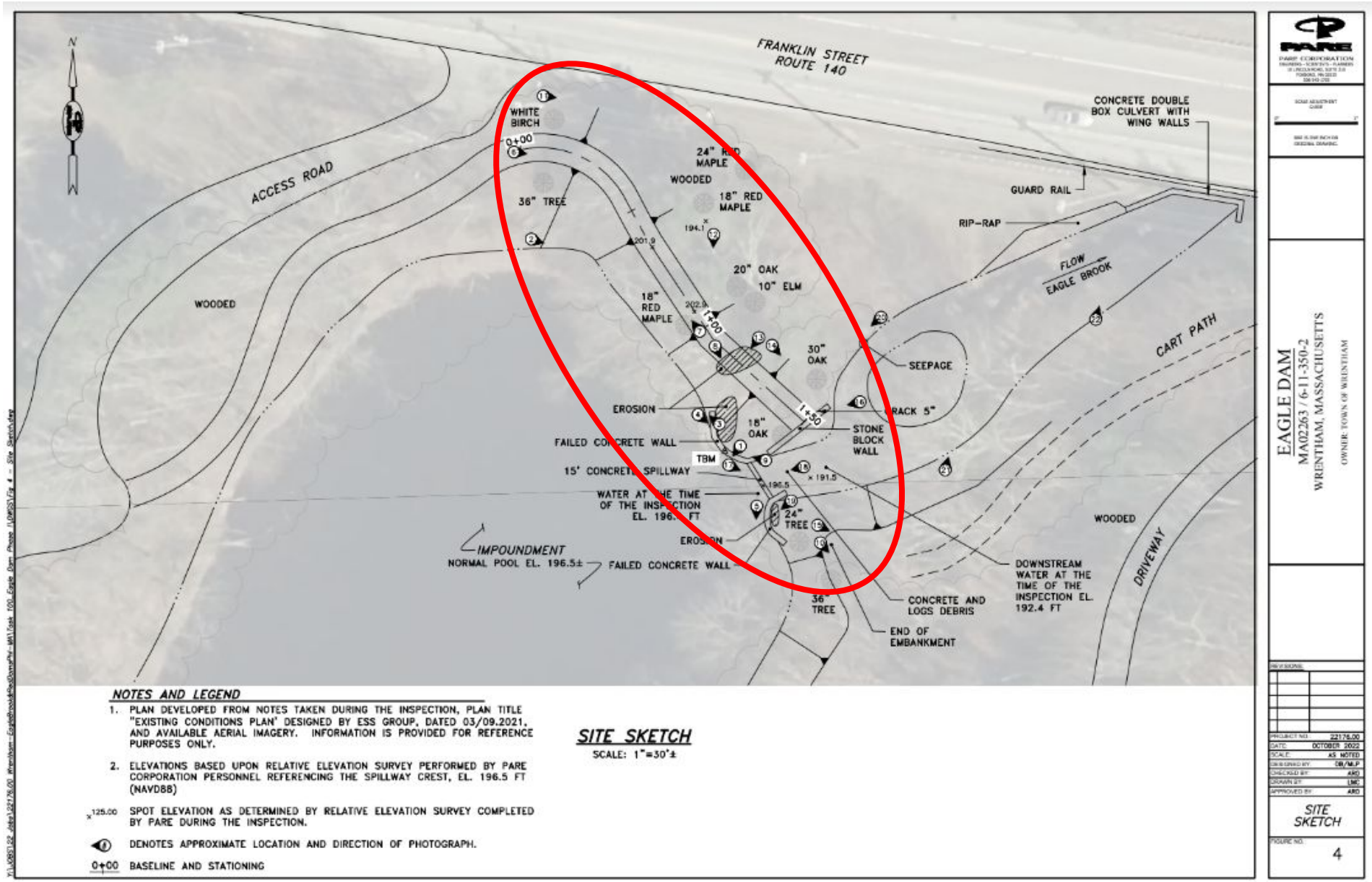
Site Sketch Dam Today

Charles River Watershed Association



NOTES AND LEGEND

1. PLAN DEVELOPED FROM NOTES TAKEN DURING THE INSPECTION, PLAN TITLE "EXISTING CONDITIONS PLAN' DESIGNED BY ESS GROUP, DATED 03/09.2021, AND AVAILABLE AERIAL IMAGERY. INFORMATION IS PROVIDED FOR REFERENCE PURPOSES ONLY.
2. ELEVATIONS BASED UPON RELATIVE ELEVATION SURVEY PERFORMED BY PARE CORPORATION PERSONNEL REFERENCING THE SPILLWAY CREST, EL. 196.5 FT (NAVD88)

125.00 SPOT ELEVATION AS DETERMINED BY RELATIVE ELEVATION SURVEY COMPLETED BY PARE DURING THE INSPECTION.

DENOTES APPROXIMATE LOCATION AND DIRECTION OF PHOTOGRAPH.

0+00 BASELINE AND STATIONING

SITE SKETCH

SCALE: 1"=30'±

PARE CORPORATION

EAGLE DAM
MA02263 / 6-11-350-2
WRENTHAM, MASSACHUSETTS
OWNER: TOWN OF WRENTHAM

PROJECT NO. 22176.00
DATE OCTOBER 2022
SCALE AS NOTED
DESIGNED BY DB/MLP
CHECKED BY ARD
DRAWN BY LMC
APPROVED BY ARD

SITE SKETCH

FIGURE NO. 4

Inspection 2022

Charles River Watershed Association

Pare Inc.

Photo No. 9.: Erosion of the dam crest immediately behind the upstream wall left of the spillway.

Photo No. 12.: Downstream slope from near Sta. 0+80 looking right.

Inspection 2022

Charles River Watershed Association

Pare Inc

Photo No. 16.: Concrete wall left of the spillway. Note the 5-inch crack.

Photo No. 20.: Observed seepages with iron oxide flocculant approximately 15 feet downstream of the downstream channel left wall.

Sediment Sampling

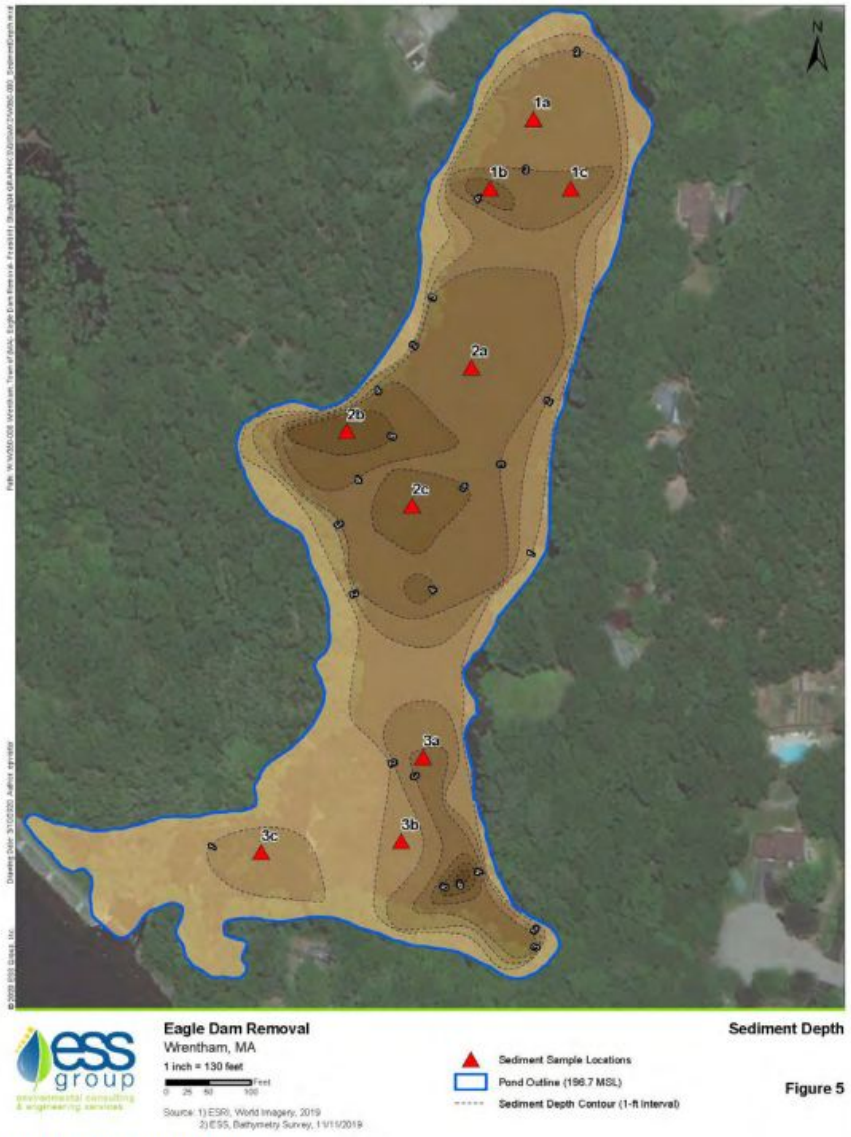
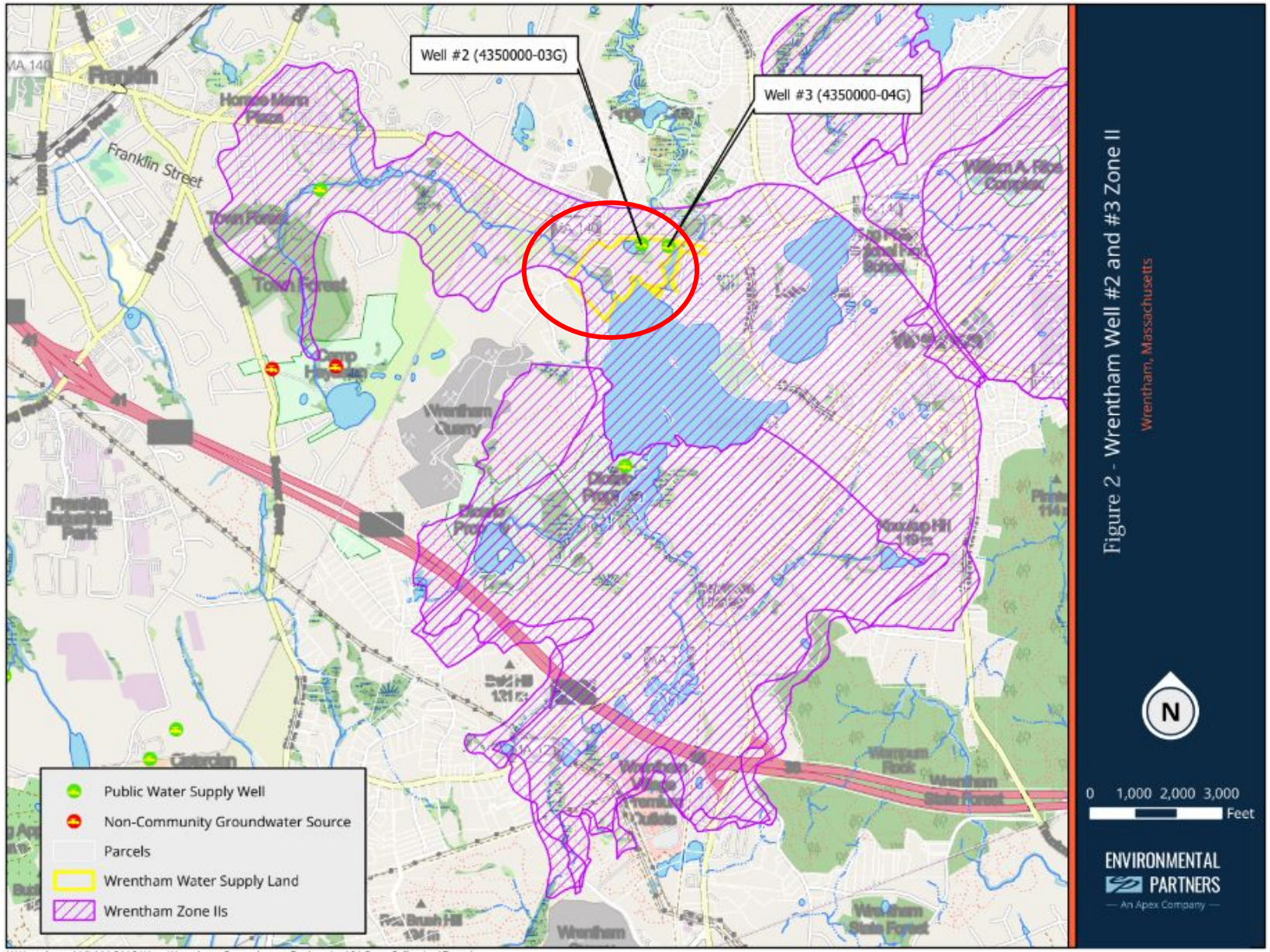


Figure 5. Sediment Depth

2021 ESS Group Feasibility Study - Sediment Sampling

No Measurable Impacts to Water Supply

Charles River Watershed Association



- EP does not believe that the removal of the Eagle Dam will have any measurable impact on the operation of the Town public water supply wells. Both Wells 2 and 3 have Zone II areas that extend well beyond the Old Mill Pond.
- Preliminary testing at the replacement well location Well 3R indicate that even if lowering of water levels in the water supply well were equal to the depth of Old Mill Pond drying up (assumed 10 feet), Well 3R would be able to pump at 1,863 gpm, which is significantly greater than the MassDEP approved well yield of 472 gpm.v

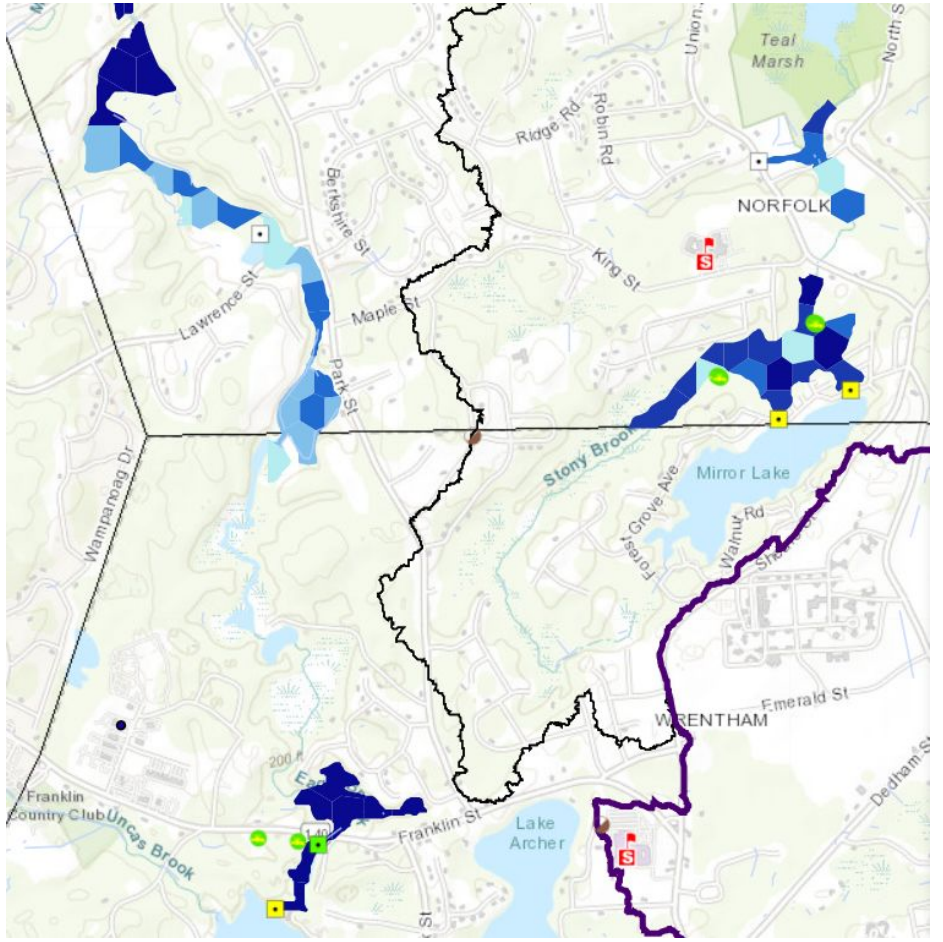
Flood Model

Charles River Watershed Association

- Developed in partnership with CRWA and Weston & Sampson - funded by the **MA MVP Action Grant** program

Computer Flood model: predicts where flooding will occur under future climate scenarios

- Identifies and tests nature-based solutions and how it can reduce flooding impacts
  - Upland Storage, Green Infrastructure and other actions
- Assessing Culverts vulnerability to flooding & wildlife passage
- Created a Flood Model Toolkit Matrix to support local initiatives



Thank You!

Charles River Watershed Association

Take the Survey
bit.ly/eagledam

Email
planning@wrentham.gov

Next Steps - Town of Wrentham

Charles River Watershed Association

Work on future projects

- Address lingering questions
- Bridge scour analysis
- Sediment transport
- Subsurface investigation
- Rehabilitation or removal design/permit
- Funding
- Town meeting vote on funding