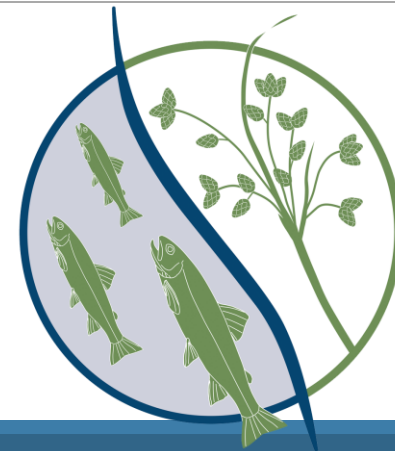


Dam Removal and Ecological Restoration

JOSEPH GOULD — DAM REMOVAL PROGRAM

07/22/2025

JOSEPH.GOULD@MASS.GOV



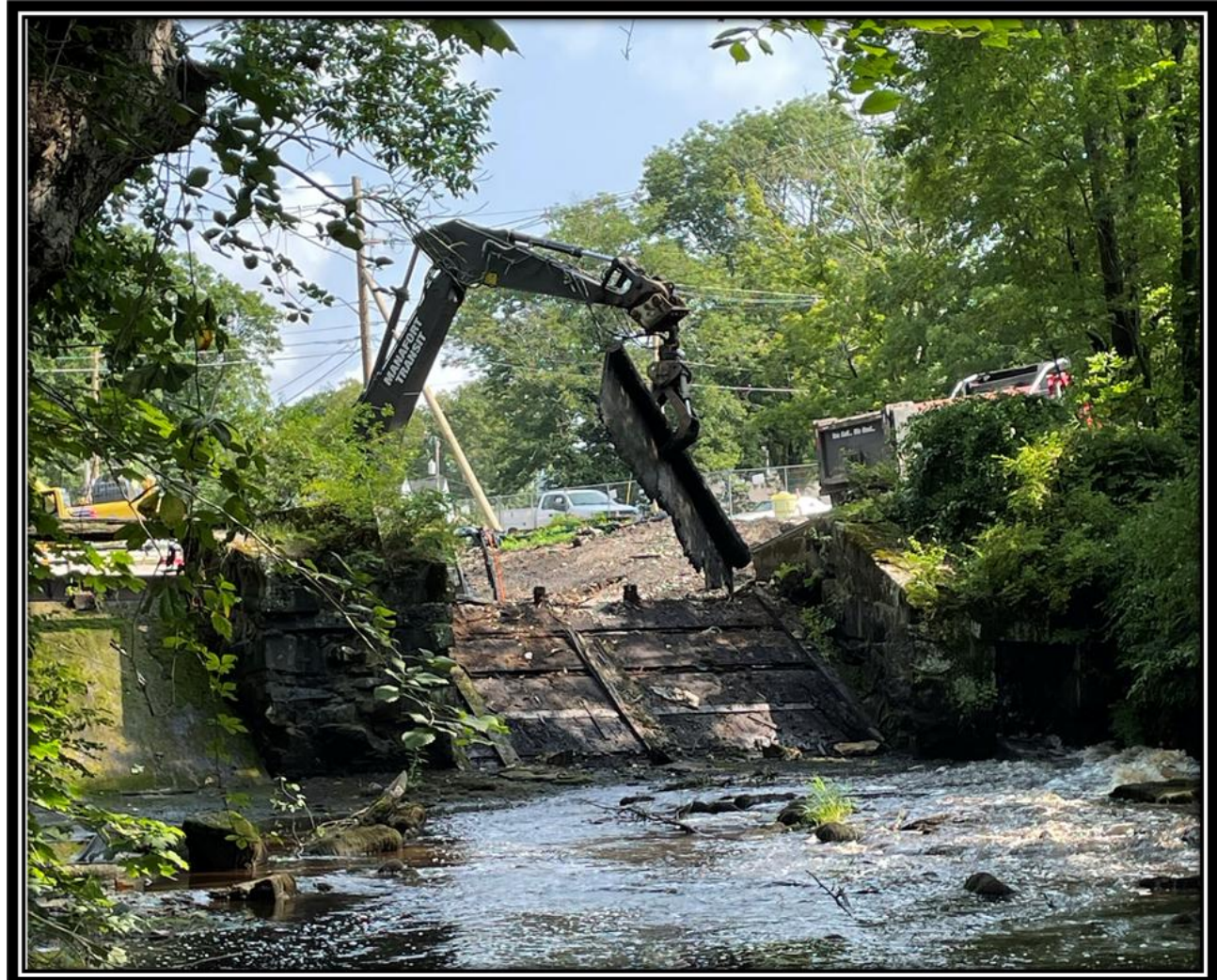
Massachusetts Department of Fish and Game

**Division of
Ecological
Restoration**

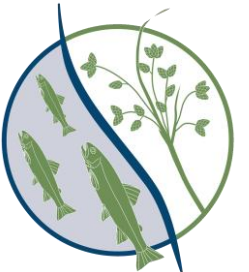
Invested in Nature and Community

Agenda

1. Introduction to DER
2. What's the dam problem?
3. Project Showcase



High Street Dam Removal, Bridgewater – Photo Credit: DER



DFG- Division of Ecological Restoration



Mission Statement and Approach

DER's mission is to restore and protect rivers, wetlands, and watersheds in Massachusetts for the benefit of **people** and the **environment**.

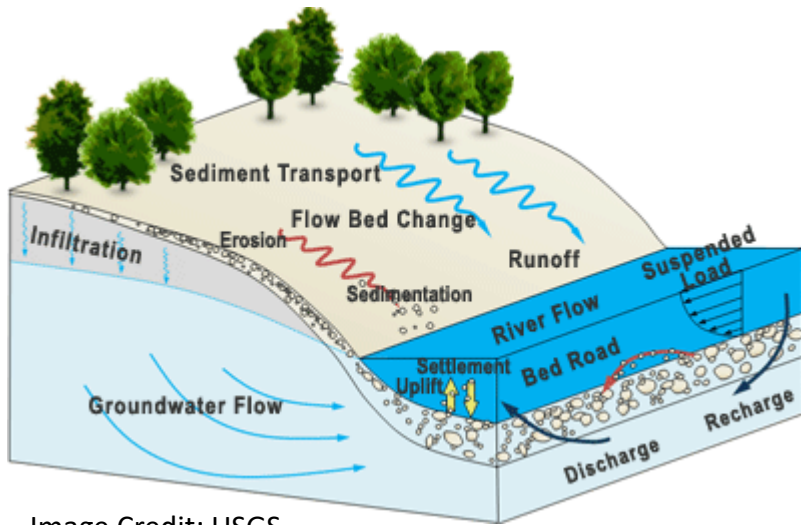


Image Credit: USGS

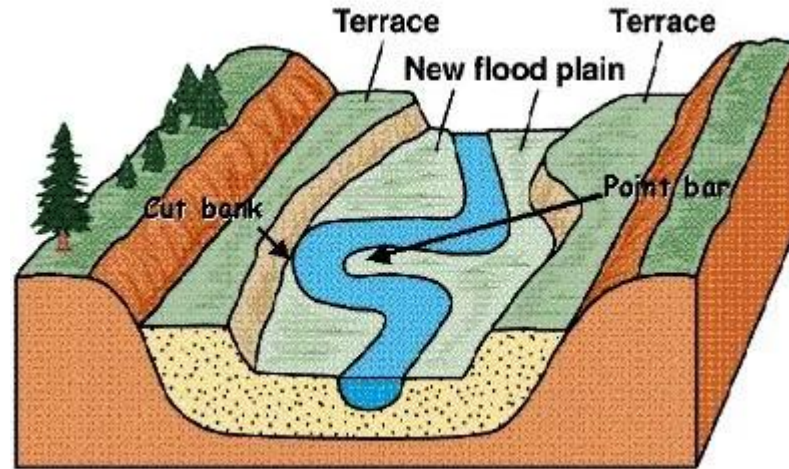


Image Credit: Kent.edu

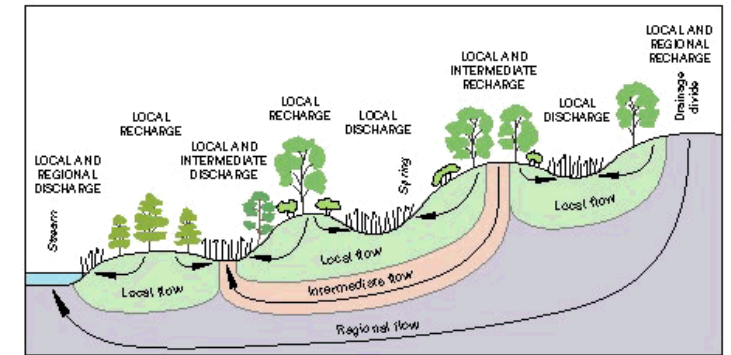
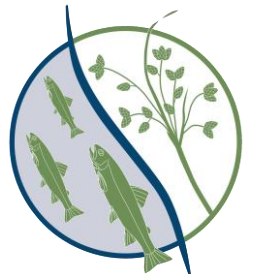
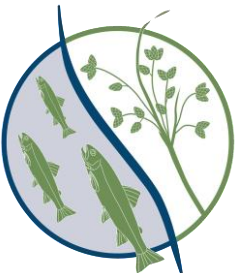
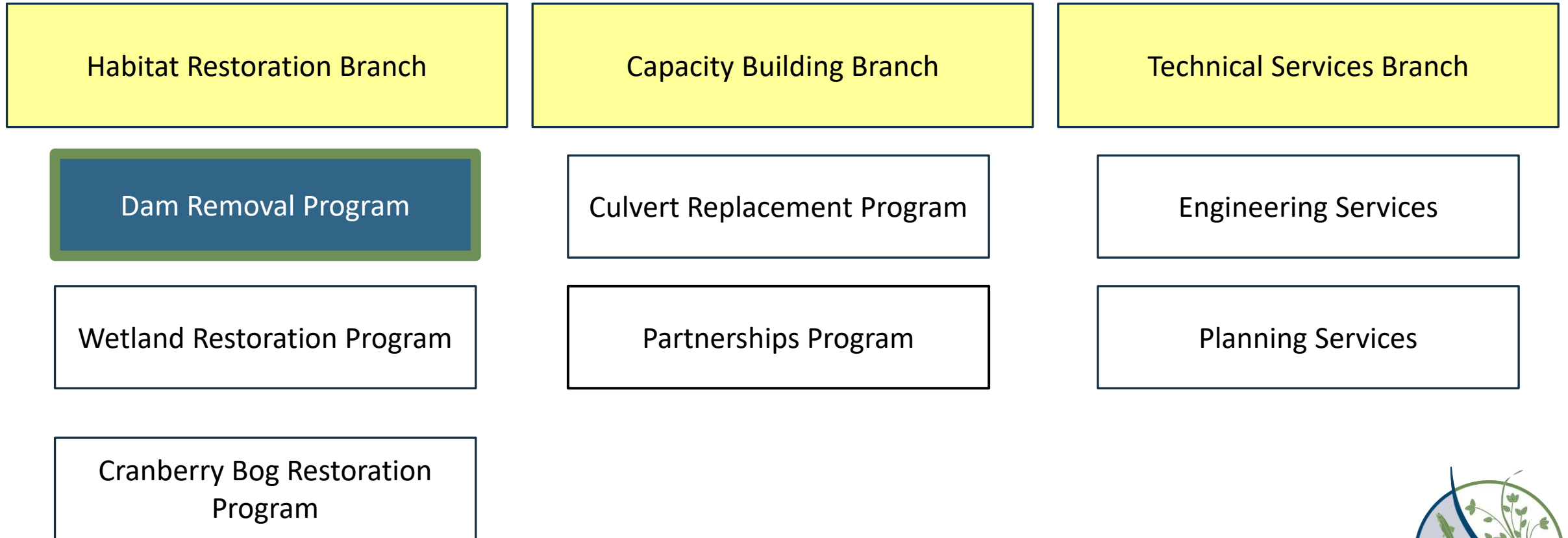


Image Credit: USGS

Process Based Approach to Restoration

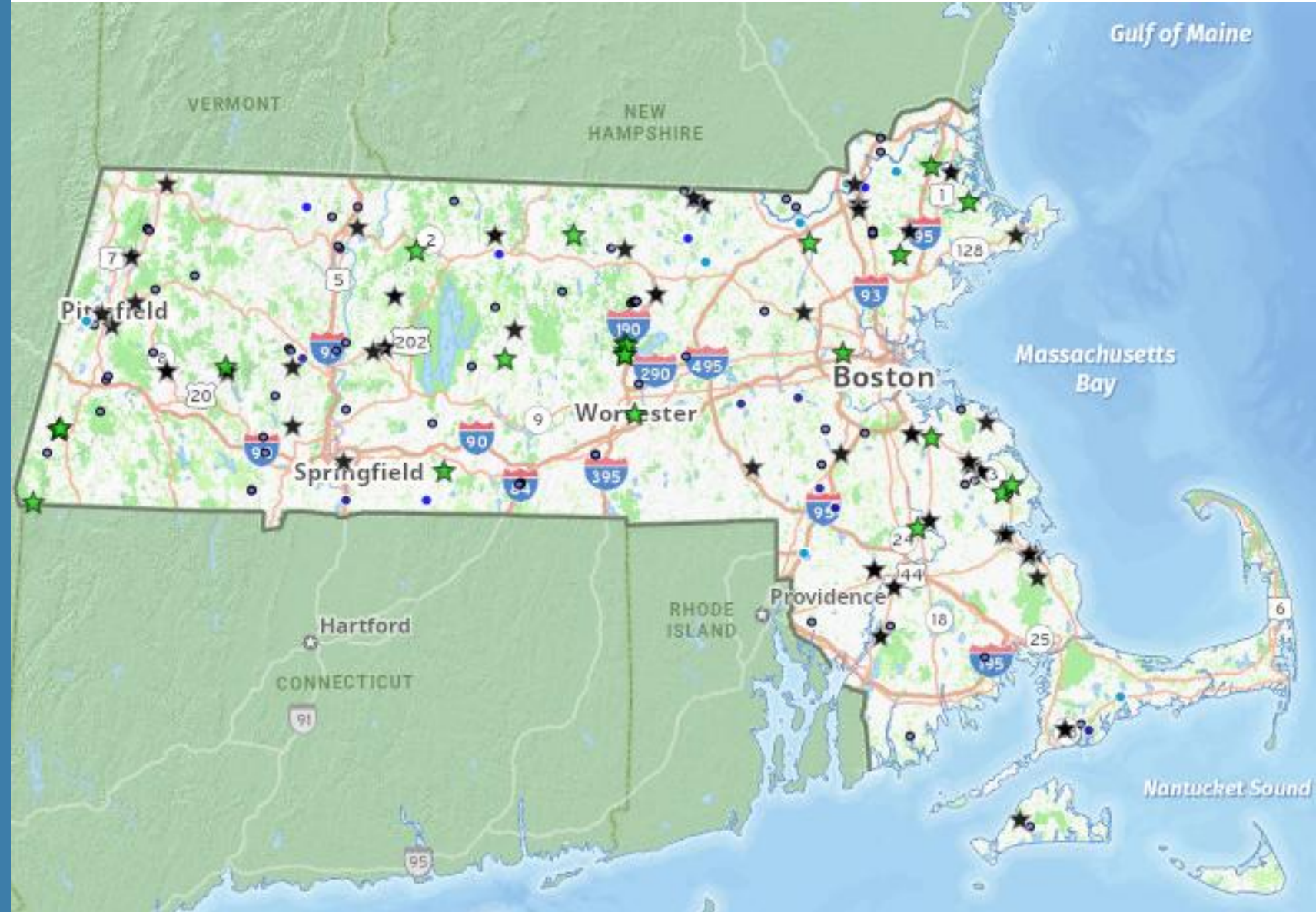


DER's 3-Branch Programmatic Structure



DER Dam Removal Program

- 70+ dams removed
- 90+ recon studies completed
- 22 active projects
- Hundreds of river miles reconnected/restored



Program Services

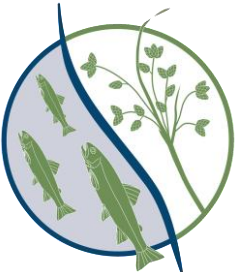


Dam Reconnaissance

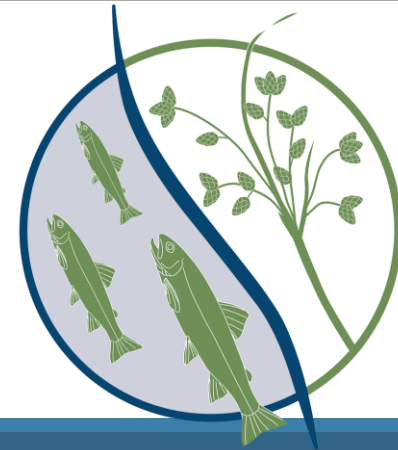
- For dam owners who are interested in exploring dam removal as an option
- Produce conceptual level design, sediment management recommendation, and cost estimate
- Our current funding has required that the project is in partnership and sponsored by a Municipality

Priority Projects

- For dam owners committed to dam removal
- Assist a dam owner with planning, permitting, and removing their dam
- Priority projects are eligible for technical and financial assistance from DER
- Non-profits, Municipalities and private dam owners are eligible



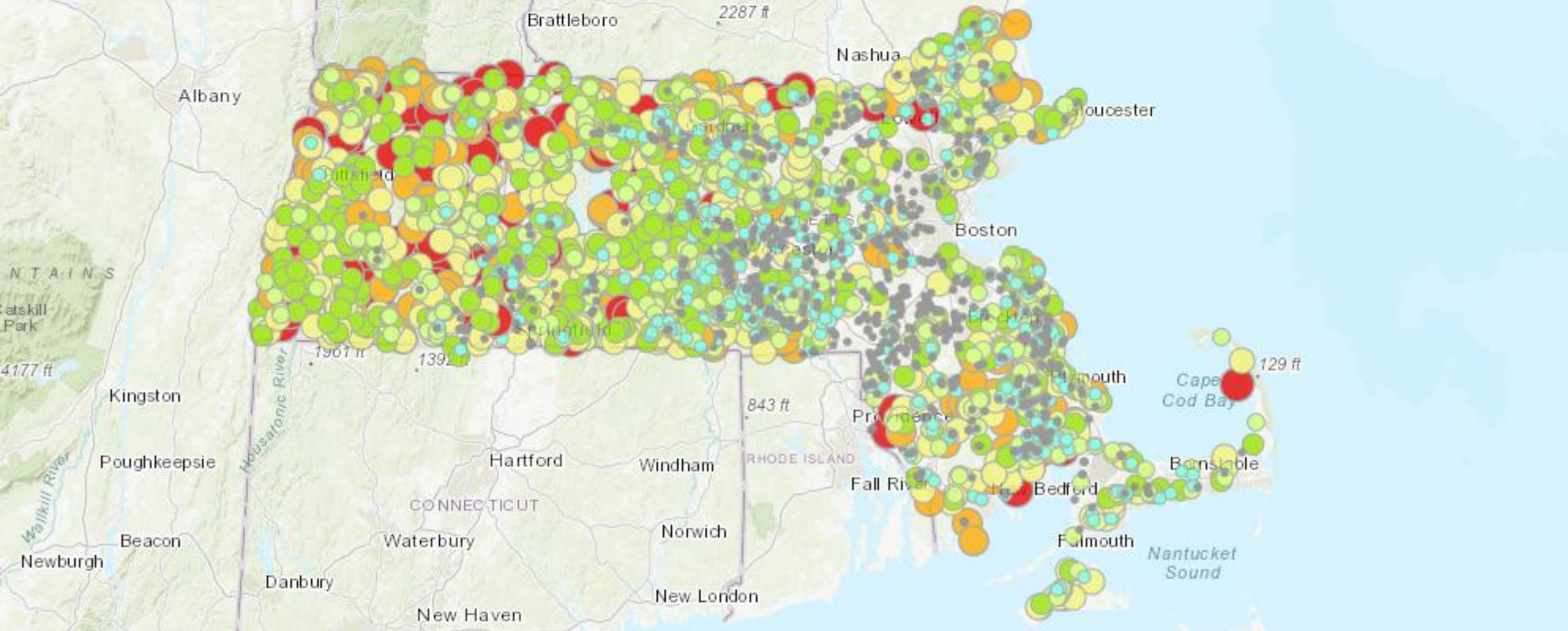
What's The Dam Problem?



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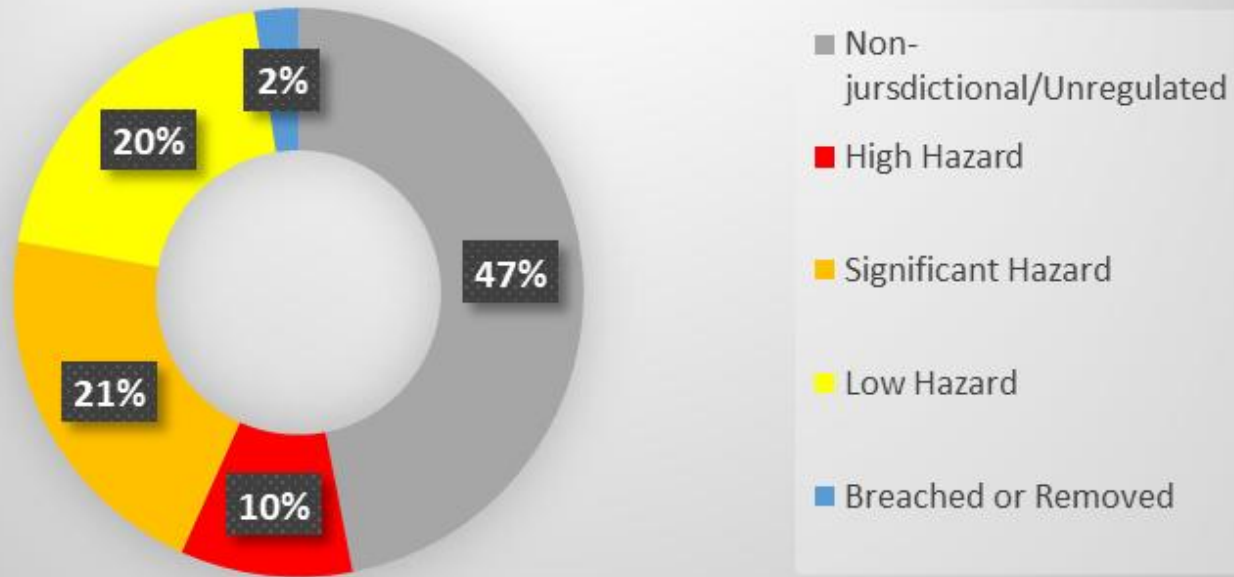


There are over 3000 Dams in Massachusetts fragmenting and disrupting our rivers processes and often creating public safety hazards



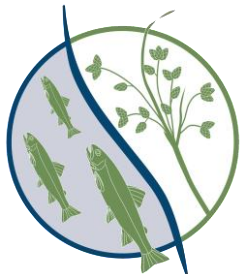
The State of Dams in Massachusetts

Massachusetts Dams by Category



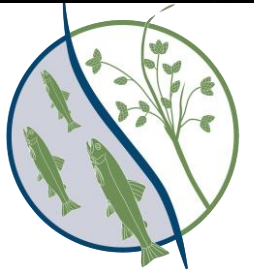
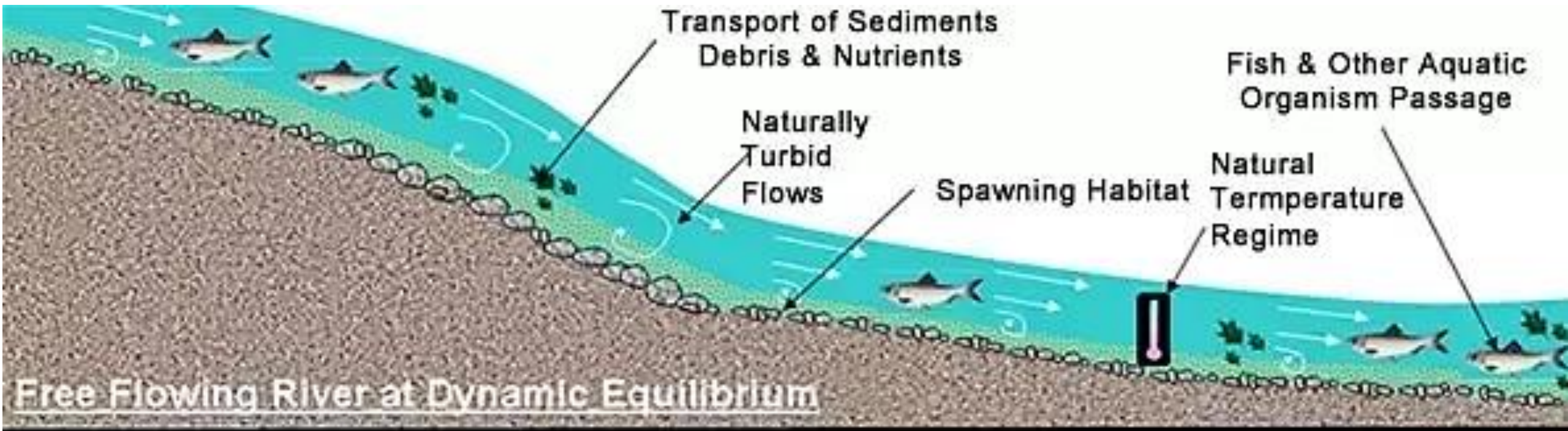
541 Dams (~18%) are in poor or unsafe condition

207 high and significant hazard dams in poor or unsafe condition



Source: Office of Dam Safety Inventory Report 4/14/2022

Natural River Functions



How Dams Impact Rivers

UPSTREAM IMPACTS*

Reduced:

Natural Function, Water Quality, Oxygen, Turbid Flow, Circulation, Available Habitat
Rivers ability to adjust horizontally and vertically (reduced resilience to change)

Increased:

Pollutant Accumulation, Stratification, Temperatures, Algae Blooms

Loss of:

Natural Transport Processes of Sediments, Nutrients and Debris
Self-sustaining Nature

DOWNSTREAM IMPACTS*

Reduced:

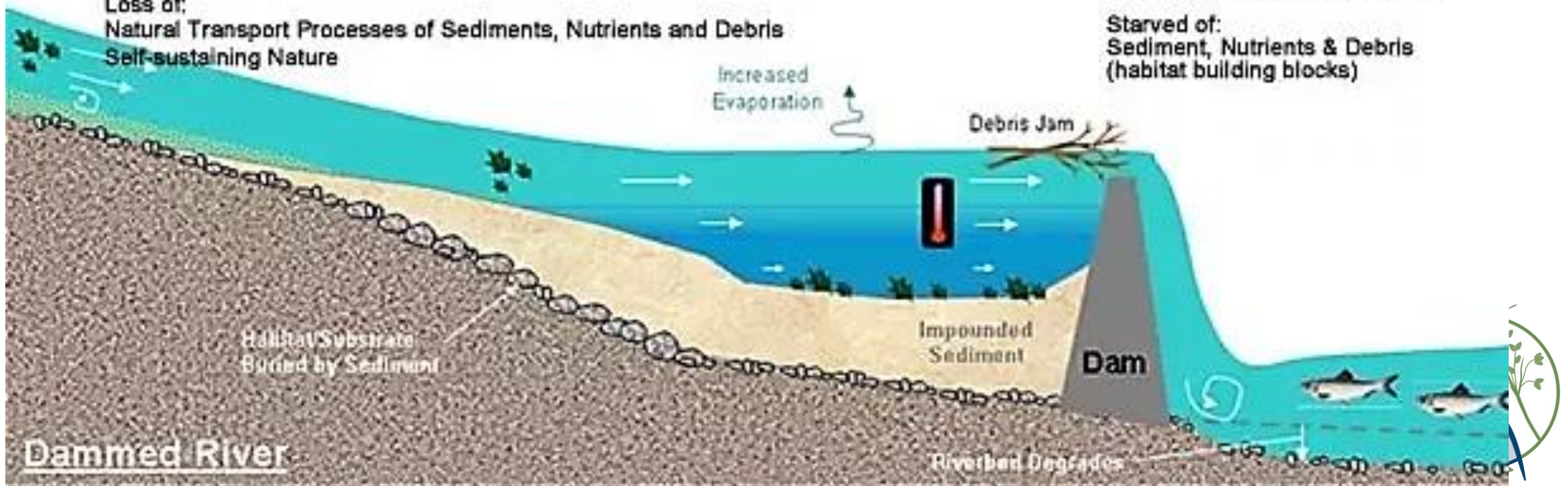
Water Quality & Riverbed Elevation

Altered:

Flow Regime & Temperatures

Starved of:

Sediment, Nutrients & Debris
(habitat building blocks)



Benefits of Dam Removal - Ecological



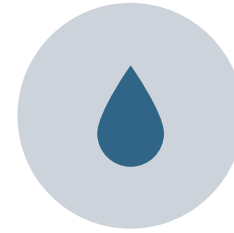
INCREASES HABITAT
CONNECTIVITY



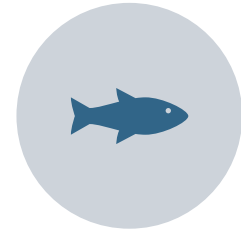
RESTORES NATURAL
MOVEMENT OF
SEDIMENT AND WOOD



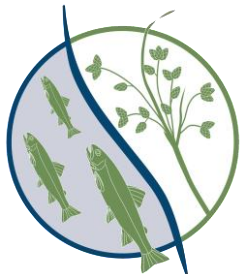
RESTORES NATURAL
THERMO-REGULATION



IMPROVES WATER
QUALITY



IMPROVES AND
MAINTAINS RIVER
HABITAT



Benefits of Dam Removal – Public Safety

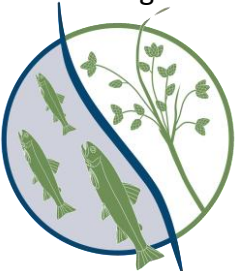
- Reduce Flood Elevations Upstream
- Increase Flood Storage Capacity Upstream
- Reduce Flood Risk Downstream
- Protects Nearby Infrastructure



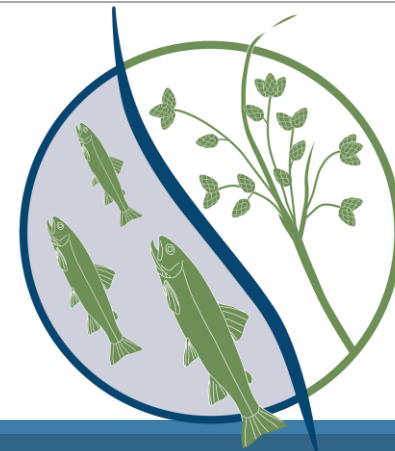
2023 Dam Breach flooded road downstream in Bridgewater Image Credit: WBZ Boston



2022 Dam Breach in Hinsdale Image Credit: Tony Dobrowolski – The Berkshire Eagle



Recently Completed Projects



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Before



After

High Street Dam – East Bridgewater

Town River -Taunton River Watershed



BEFORE



AFTER



Armstrong Dam- Braintree

Monatiquot River - Fore River Watershed



After

Before



Quinapoxet Dam— West Boylston

Wachusett Reservoir Watershed

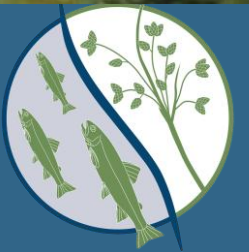
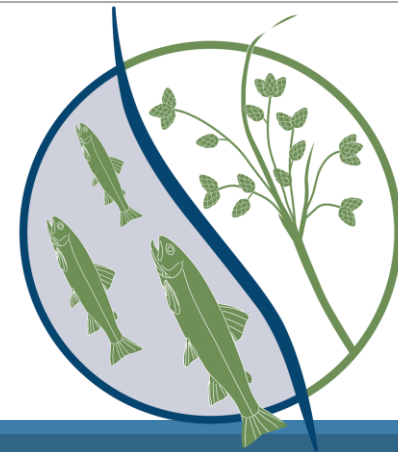


Photo Credit DER

Current and Upcoming Construction Projects



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Whitney Pond- Ashburnham

Whitman River



Photo Credit DER



Removed Top 2ft
Spillway Crest

Removed 3ft of Stop
Logs from 6 Bays

Wheelwright - Hardwick

Ware River





Veterans Park - Marshfield

South River



Photo Credit DER



Larkin Mills - Newbury

Parker River



Photo Credit DER



Church Mft. Co. - Monson

Chicopee Brook



Photo Credit DER



Temple Street Dams - Duxbury

South River



Photo Credit DER

Thank you!

[Division of Ecological Restoration | Mass.gov](#)

[River Restoration: Dam Removal | Mass.gov](#)

What you need to know

Deciding to Remove Your Dam
→

Become a DER Priority Project
→

Locate your dam & evaluate its
ecological benefit if removed →

Explore DER's Interactive
Project Map →

Dam Removal Preliminary
Design Services →

Water Quality Impacts of Small
Dams →

[Collapse all](#)

Additional Resources

(5) —

- [Dam Removal in Massachusetts: A Basic Guide for Project Proponents](#) →
- [Massachusetts Department of Environmental Protection's Dam Removal and the Wetlands Regulations](#) →
- [Project Data for Select DER dam removal projects](#) →
- [Sign up for DER's newsletter](#) →
- [Sucker Brook Restoration Video](#) →

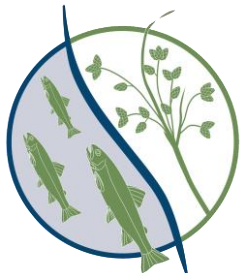
Joseph Gould

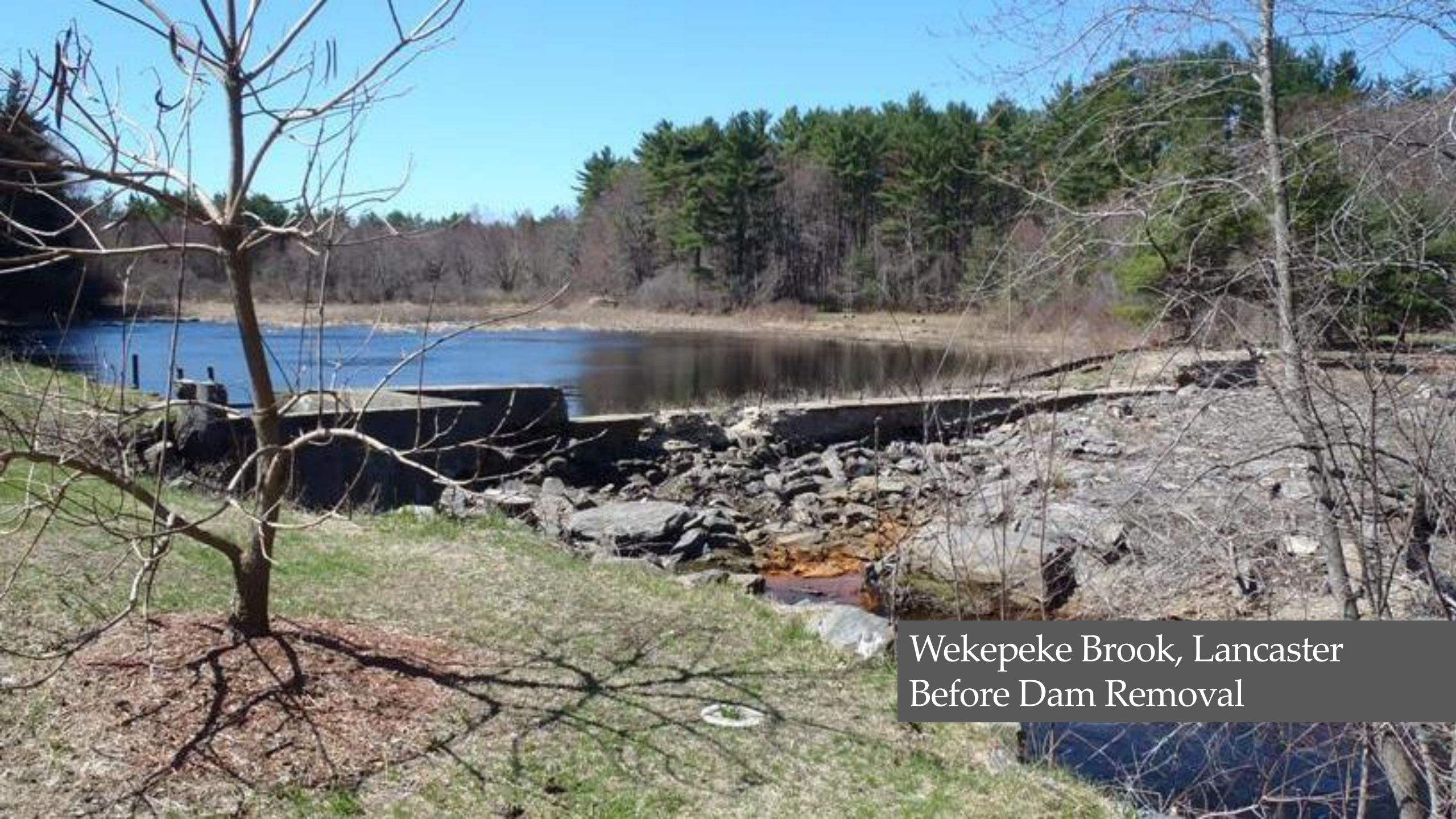
Restoration Specialist PM

Division of Ecological Restoration
Massachusetts Department of Fish and Game
100 Cambridge Street, 6th Floor
Boston, MA 02114

Cell: 617-595-6593

joseph.gould@mass.gov





Wekepeke Brook, Lancaster
Before Dam Removal



Wekepeke Brook, Lancaster
Immediately After Dam Removal



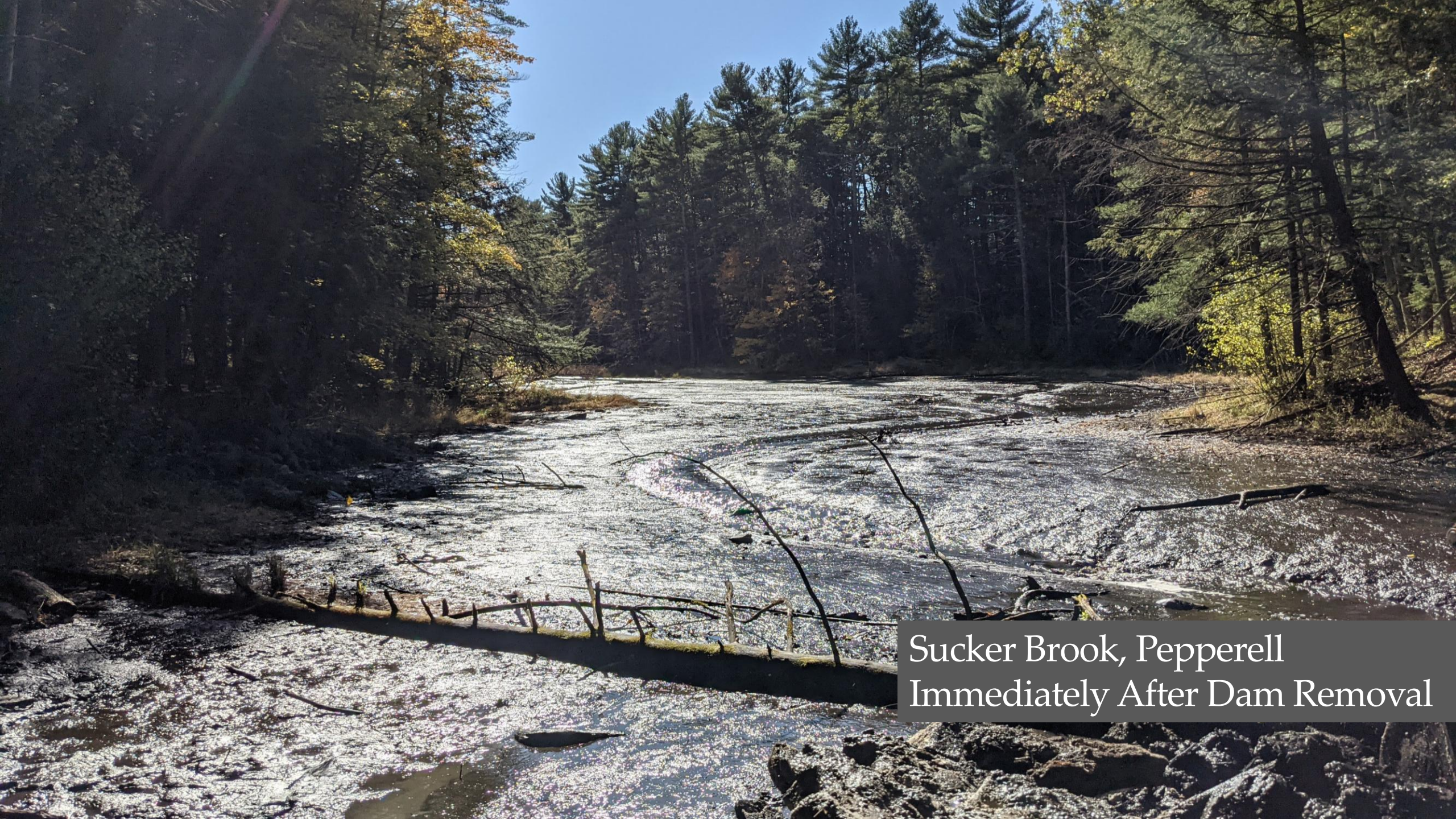
Wekepeke Brook, Lancaster
3 months After Dam Removal



Wekepeke Brook, Lancaster
1- Year After Dam Removal



Sucker Brook, Pepperell
Before Dam Removal



Sucker Brook, Pepperell
Immediately After Dam Removal



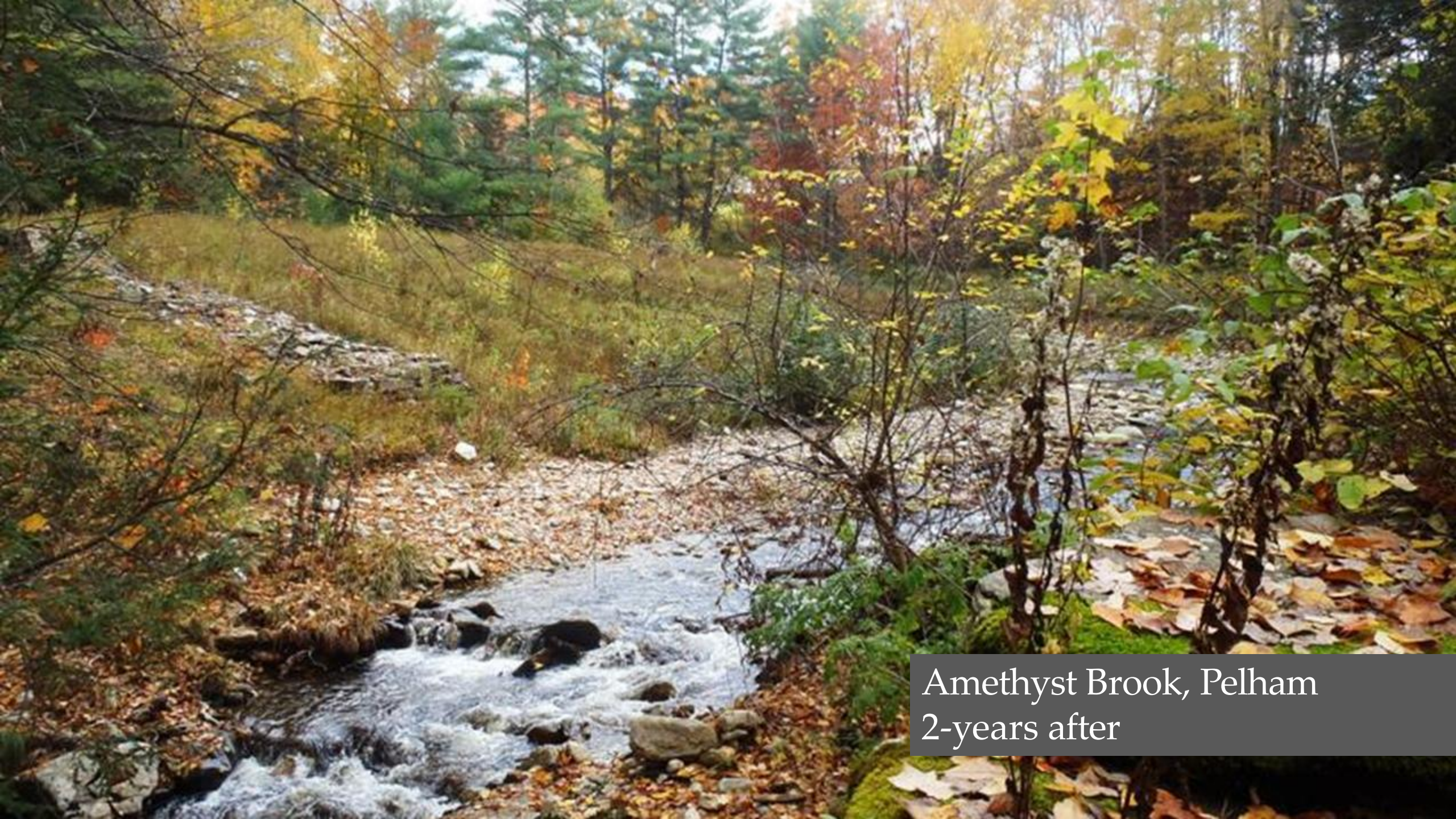
Sucker Brook, Pepperell
1- year After Dam Removal



Amethyst Brook, Pelham
Before Dam Removal



Amethyst Brook, Pelham
Immediately After



Amethyst Brook, Pelham
2-years after



Briggsville Dam, Clarksburg
Before Dam Removal



Briggsville Dam, Clarksburg
After Dam Removal