

# Restoring Conserved Lands

A person wearing a dark jacket and a hat is crouching in a field of tall, dry grasses. They are holding a small, light-colored object, possibly a piece of paper or a small animal, in their hands. The background shows a line of trees under a hazy sky. The overall scene is a natural, outdoor setting, likely a wetland or a similar ecological area.

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MA Department of Fish and Game

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Southeastern Massachusetts

Land Trust Convocation, Bourne, MA

# Department of Fish and Game

Mary Griffin, Commissioner



# Division of Ecological Restoration (DER)

- Physical Restoration
  - Freshwater and Salt Water
- Flow Restoration
  - RIFLS, Dam Management, Comprehensive Water Planning
- Technical Assistance (Riverways Program)
  - Adopt-A-Stream, Scenic Rivers, Water Quality, etc.

**“To restore and protect the health and integrity of the Commonwealth's rivers, wetlands and watersheds for the benefit of people, fish and wildlife.”**

# Aquatic Ecosystem Restoration is...

...activity that assists in the recovery of the natural processes of an aquatic ecosystem that have been:

- degraded
- altered
- destroyed

Such activities will

- restore natural processes
- remove ecosystem stressors
- increase ecosystem resiliency
- create no lasting harm



“Ecological restoration is an intentional activity that initiates or accelerates the recovery of an ecosystem with respect to its health, integrity and **self-sustainability.**”

# Ecological Challenges

- One-third of wetlands lost to filling and alteration
- Coastal marshes are impacted by road and rail crossings
- Sea Level Rise, Climate Change
- Low flow in rivers and streams
- Urban sprawl and development pose a continued and growing threat to river and wetland health
- Over 3,000 dams fragment and degrade our rivers and an estimated 30,000 culverts exist in the state



# Restoration Solutions

- Replacing culverts to restore full tidal passage and natural hydrology
- Fill removal and stream daylighting
- Removal of dams, dikes, and other barriers
- Reduce and remove stormwater pollutants
- Water conservation measures (including reducing irrigation and creating riparian buffers)
- Invasive species control



# Social Challenges

- Dovetailing human-use and ecological goals
- Great restoration opportunities may have strong community resistance or technical complications
- Ecological restoration projects are time consuming and require significant staff resources



# Restoration of Conservation Land

- Of DER's 70 active projects, **54% directly impact conservation properties** – (most indirectly impact conservation land on a larger watershed scale)
- Of the 46 active coastal wetland restoration projects **28 directly impact conservation land**
- DER and partners have removed sixteen dams, **five were owned by land trusts**, nine were owned by municipalities, one was on a state land, the other was privately owned
- DER has embarked on flow restoration that will have watershed scale impacts

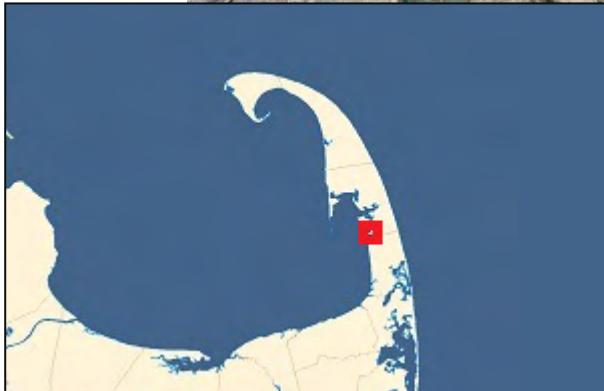




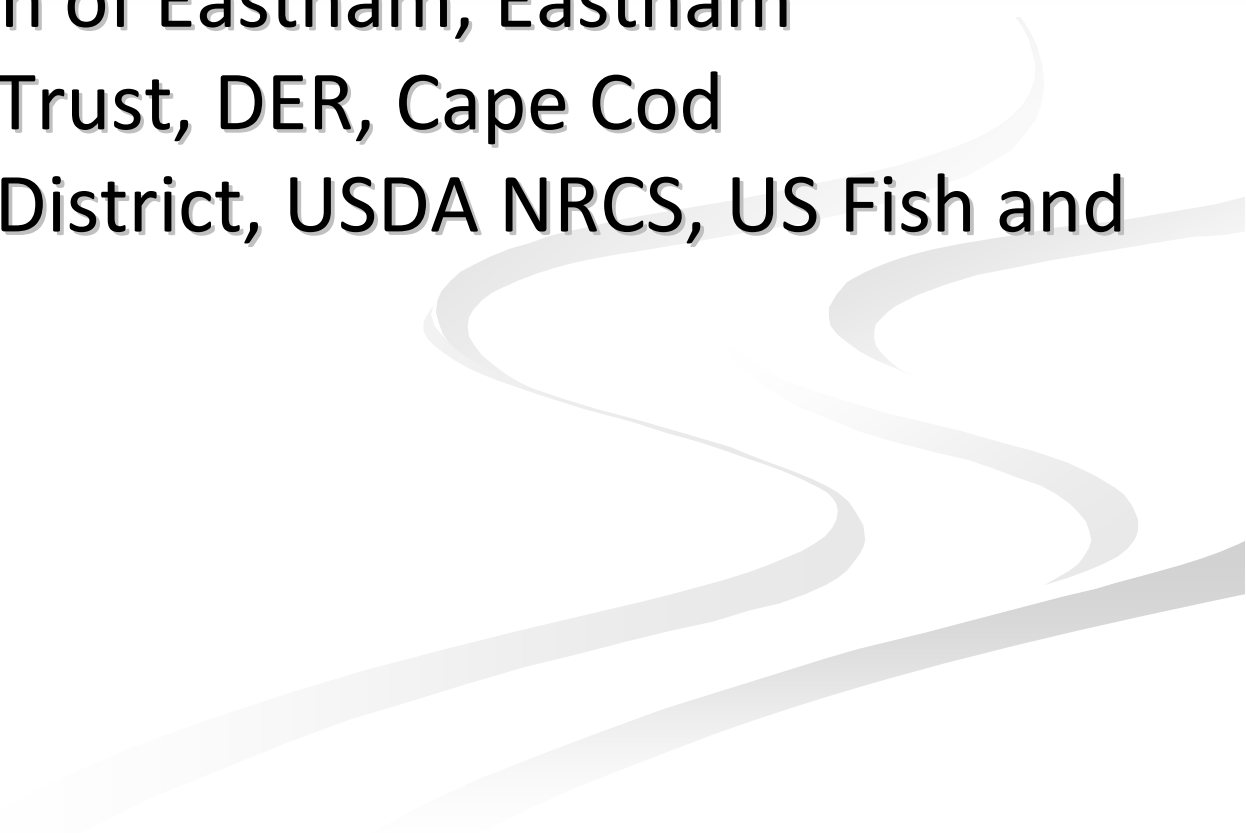
# Funding Sources

- Federal – NOAA, US Fish and Wildlife, USDA Natural Resources Conservation Service, US Army Corps of Engineers
- State – Very limited. DER, Mass Environmental Trust, DEP 604B grant, DCR Recreational Trails Grant
- Private Foundations – Eddy, Wharton, NFWF, Usually limited funding
- Matching funds often required. Land match?

# Sunken Meadow, Eastham



# Sunken Meadow

- Funding –\$117,000 with in-kind labor from Eastham DPW
  - Partners: Town of Eastham, Eastham Conservation Trust, DER, Cape Cod Conservation District, USDA NRCS, US Fish and Wildlife
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# Restricted Flow



# Berm – Filled Marsh



# Removing the culvert



# Restored channel



# Restored Marsh Plain






# Lower Red Brook, Plymouth



# Lower Red Brook

- Funding: \$215,000 with lots of volunteer labor!
  - Partners: NOAA, USFWS, DER, American Rivers, TTOR, DFW, Trout Unlimited
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- The bottom right portion of the slide features several thick, light gray, wavy lines that curve and flow across the page, resembling a stylized representation of water or a riverbank.

# Before and After



August 19, 2009



October 9, 2009

# Ecological Stream Crossing




# Naturalized Habitat



# Cold Brook, Harwich



# Cold Brook, Harwich

- Funding: Estimated \$1.5 million, seed money from DER and USFWS
  - Partners: Harwich Conservation Trust, DER, US Fish and Wildlife, MA Marine Fisheries
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# Remove Berms and Flumes

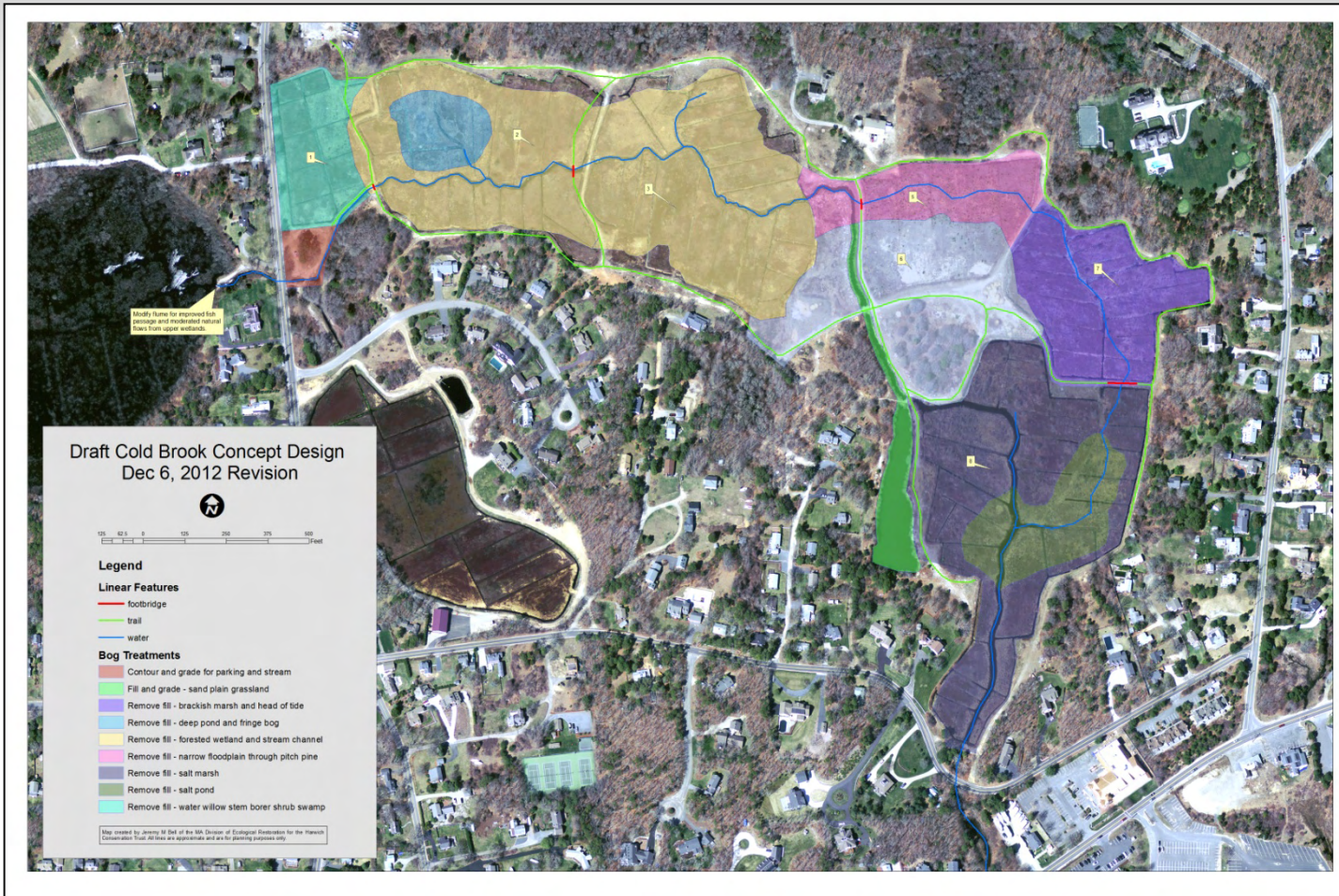




# Restore the stream channel



# Stream Naturalization



# Eel River - Before



# Eel River - After



A large flock of birds, possibly geese or ducks, is captured in flight against a bright, overcast sky. The birds are scattered across the frame, with some in sharp focus and others blurred due to motion. In the background, a line of trees is visible, and the foreground shows a field of dry, brownish grass. The overall scene conveys a sense of natural activity and movement.

Questions?

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