

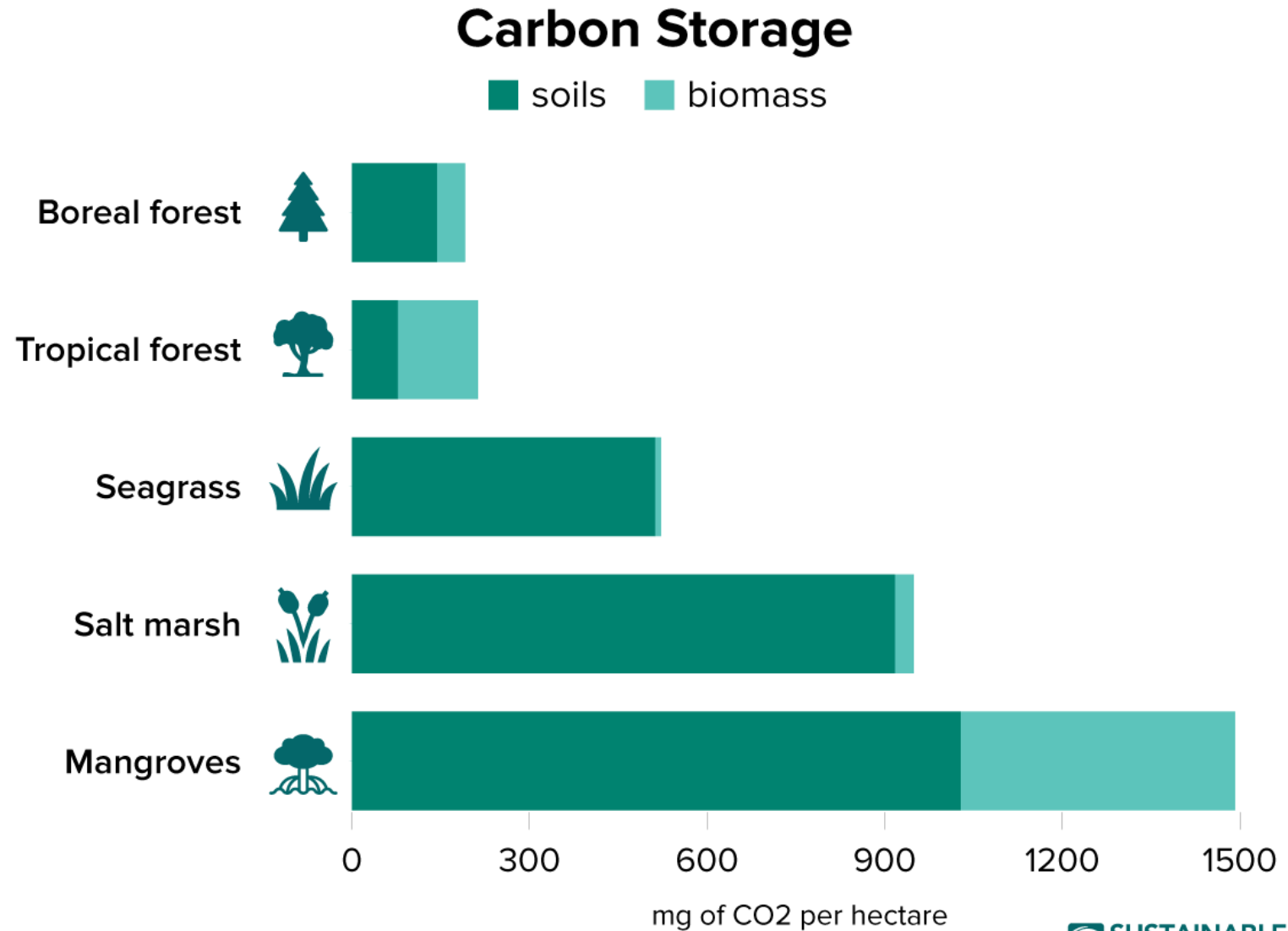


**DEPARTMENT OF FISH & GAME**

# Blue Carbon Program

# What is Blue Carbon?

**Blue carbon** is the term for carbon captured by the world's ocean and coastal ecosystems.



# The importance of salt marshes

- **Carbon storage**

- Store up to 10x the carbon of forests on a per-acre basis

- **Biodiversity**

- Vital habitats for countless species of fish, crustaceans, and birds (vulnerable species like the Saltmarsh and Seaside sparrows)

- **Coastal resilience**

- Coastal wetlands saved Massachusetts \$625 million in damages during Hurricane Sandy in 2012

- **Marine fisheries**

- Provide shelter, food and nursery grounds for more than 75% of commercial/recreational coastal fisheries species



GOAL #3

## Store & Sequester Carbon with Nature

Protect and restore our coastal estuaries, wetlands, and forests to help meet the Commonwealth's ambitious net zero emissions goals

### MARINE & ESTUARINE HABITATS

Marine and estuarine habitats, such as eelgrasses and salt marshes, are essential elements of climate mitigation. They store disproportionate amounts of carbon dioxide in plants and soils. The Department will develop a greenhouse gas inventory for salt marsh, submerged aquatic vegetation, and marine macroalgae. We will establish a Blue Carbon Incentives Program to support a statewide vision for carbon sequestration and coastal resilience.

2025–2030 | FIVE-YEAR STRATEGIC PLAN

# CONNECTIONS

WORKING TOGETHER FOR NATURE

## DEVELOP INNOVATIVE FUNDING MECHANISMS



### BIODIVERSITY CREDITS

Biodiversity credits are an economic instrument that allow private companies to finance conservation activities. Explore the potential to develop frameworks to quantify net-positive benefits of biodiversity conservation and leverage private financing to support these goals.



### BLUE CARBON PROGRAM

Expand the Department of Fish & Game Blue Carbon Program to increase investments in protection and restoration of coastal wetlands by quantifying their ability to store and sequester carbon.



### 1% FOR MASSACHUSETTS BIODIVERSITY

Encourage companies to meet sustainability and climate goals by donating 1% of their annual revenue to fund local biodiversity conservation efforts, following the national model of 1% for the Planet.

# BIODIVERSITY CONSERVATION GOALS FOR THE COMMONWEALTH

A whole-of-government approach to conserve biodiversity in Massachusetts for 2030, 2040, and 2050

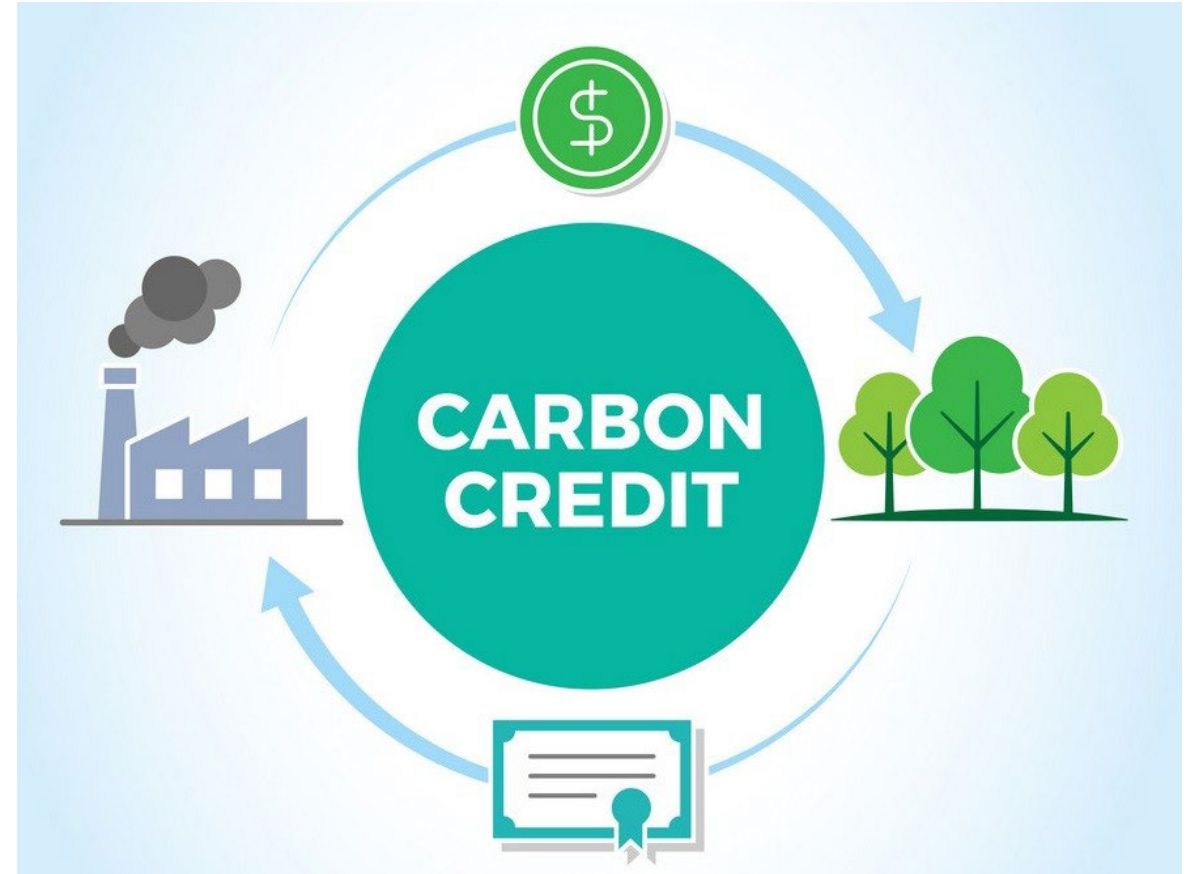
# DFG's New Blue Carbon Program

- Created in early spring 2025
- First state-run blue carbon finance program in the U.S.
- Initial focus on salt marshes
- **Goal:** generate and sell investable, high-integrity carbon credits to fund critical salt marsh restoration at scale



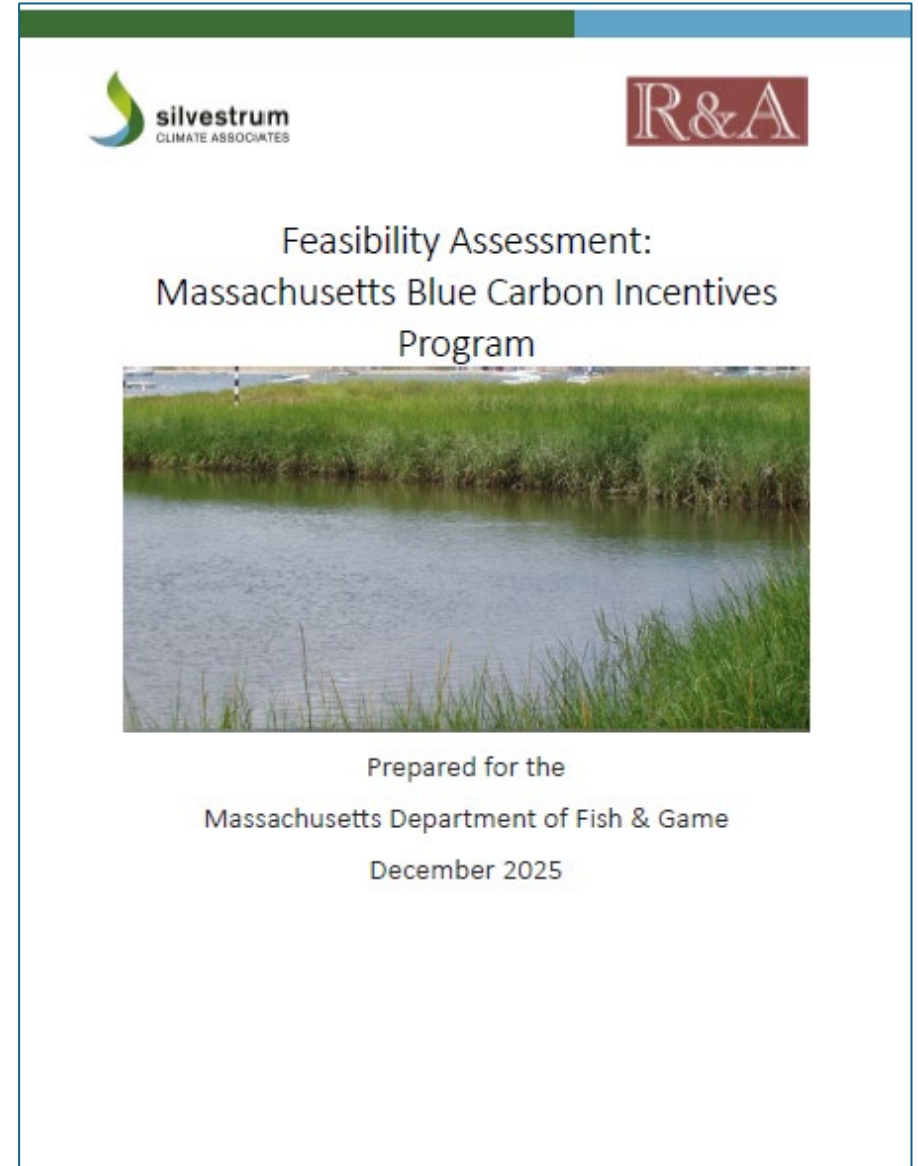
# What is carbon finance?

- Financial mechanism that put a price on greenhouse-gas emissions and carbon reductions
  - **Compliance** - a government-regulated system where polluters must buy offsets for their greenhouse gas emissions
  - **Voluntary** - an optional system where companies, organizations, and individuals buy and sell carbon credits to help meet their sustainability goals



# Blue Carbon Program Feasibility Study

- Feasibility study conducted February-December 2025
- **Key findings:**
  - Significant restoration potential across Commonwealth, especially trio projects
  - Strong emissions reductions & removals potential
  - Viable pathway using Verified Carbon Standard, voluntary carbon market
  - Opportunity to aggregate parcels into large project
  - Potential revenue likely to cover a significant portion of restoration costs



# An agricultural legacy

- Our salt marshes have been modified for agriculture for centuries
  - Ditching
  - Embankments
- Legacy infrastructure and recent mosquito ditching have degraded marshes and increased vulnerability to sea-level rise
- Restoration can establish a more natural hydrology, halt degradation and enhance carbon storage



# Trio restoration

## Ditch Remediation

- Technique using mowed hay staked into select ditches to facilitate accretion
- Restore hydrology, stop subsidence, and promote revegetation



## Runneling

- Creation of small channels to drain standing water off marsh surface
- Promotes revegetation and prevention of mega-pool formation



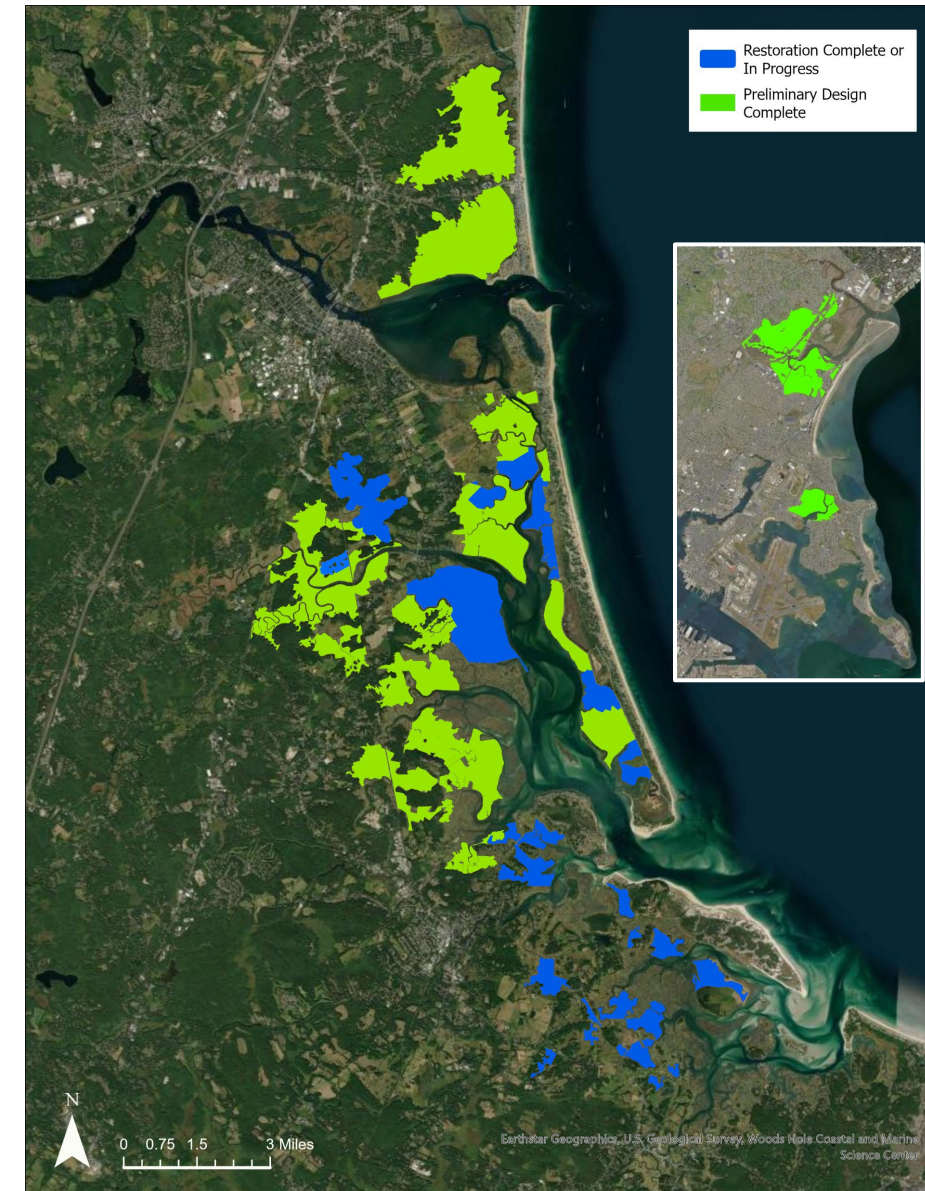
## Marsh Habitat Islands

- Strategic placement of material excavated during runneling to create higher elevation marsh areas for nesting birds, like the state-listed Saltmarsh Sparrow



# Restoration momentum

- Thousands of acres already in restoration pipeline
  - 2,700+ acres complete or implementation in progress
  - 6,500+ acres designed and in need of funding
- Coordinate, standardize, and expedite
  - DEP [permitting guidance](#)
  - MassMarsh – monitoring standardization and efficacy studies
- Need for funding for implementation outpaces what is traditionally available



# Preliminary reductions and removals analysis

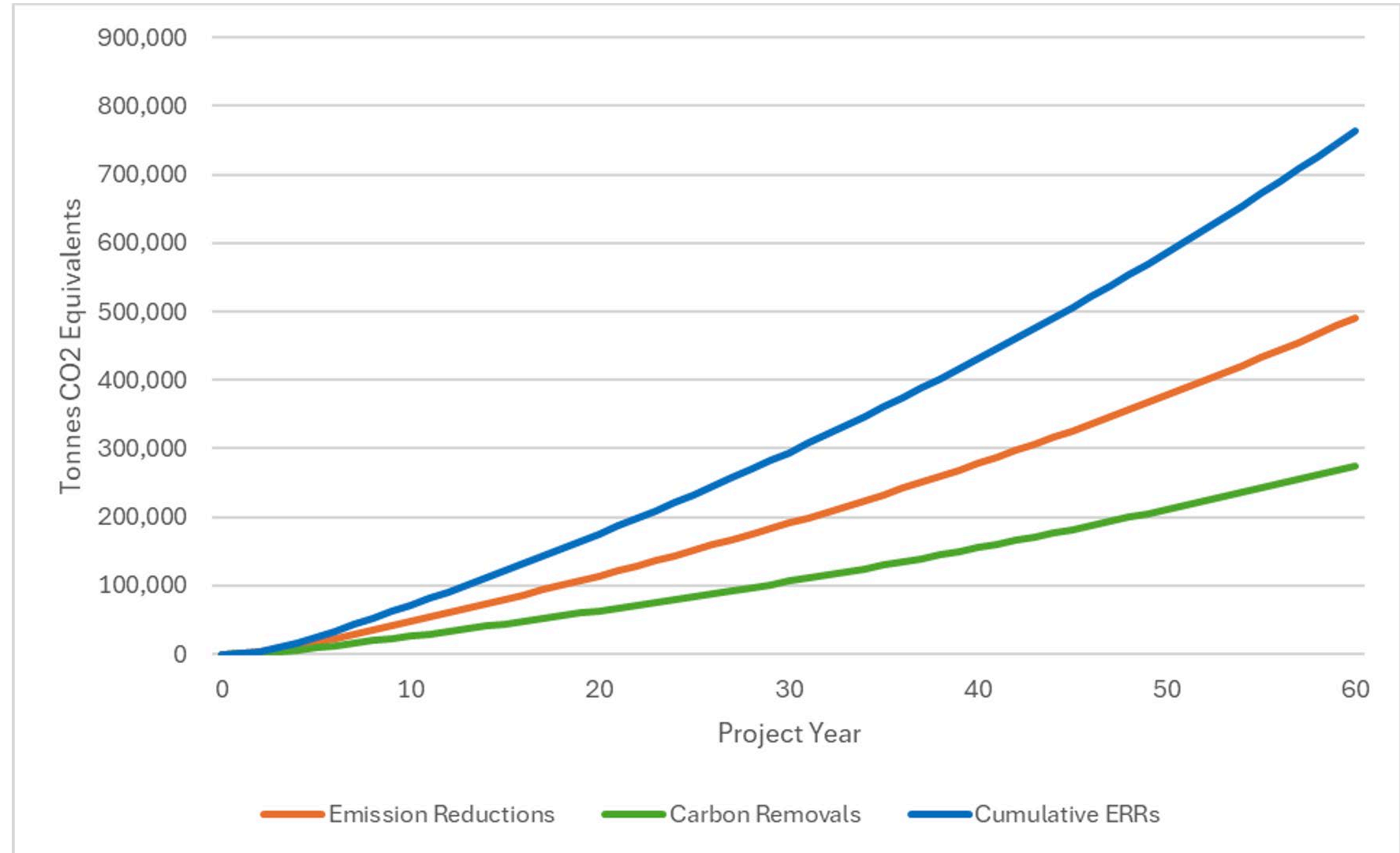
## Pilot project

- 6,500 acres
- Focus on parcels with restoration underway in Great Marsh and Boston areas
- Up to 60-year project period (shorter project likely)

**Emissions reductions (ER):** decrease in the amount of greenhouse gases (GHGs) released into the atmosphere

**Carbon Removals (CR):** removal of carbon from the atmosphere and stored plants, soil, etc.

**Cumulative ERRS:** ERs + CRs



*Preliminary results based on best available data*

# Filling data gaps

- Carbon fluxes (both vertical and lateral) from degraded, restored, and reference marshes
- Emissions from ditches
- Pond expansion rate and emissions from ponds



# Next steps

- **Program development** - Formalize team structure, partnerships and institutional arrangements
- **Data collection** - Refine models by collecting additional data
- **Pilot project** boundary refinement
- **Restoration project** development, permitting and implementation
- **Verified Carbon Standard** - project development and validation

2027

2028

2029

2030+

Program Development

Data collection

VCS Project Development and Validation

Restoration permitting

Restoration implementation

A wide-angle landscape photograph showing a dirt path that stretches from the foreground into the distance, flanked by lush green marshland. To the left of the path is a calm body of water, and to the right is a more extensive marsh area with some water channels. In the far background, a line of trees and a small town are visible on the horizon under a clear, bright blue sky.

# Thank you!

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