

When you improve Coastal Wetlands, you also improve...

Public Safety

Wetlands reduce wave energy, protecting coastal areas from flooding

50% of flood exposure to people and property is reduced by coastal wetlands absorbing run-off & water



Hazard Adaptation

During Hurricane Sandy, salt marshes prevented over **\$6.3 MILLION** in property damages and protected over **59 MILES** of major roads in Massachusetts



Beaches & Public Health

Filtering bacteria reduces safety risks & beach advisories, which have a negative impact on tourism



Property & Infrastructure

 real estate values up to **30%** from since healthy habitats improve water quality, aesthetics and recreation

 costs and provide infrastructure alternatives

Clean Water

Coastal wetlands filter pollutants before they can reach coastal waters



Fisheries

Many species of fish rely on estuaries during their life cycles
Coastal and estuarine recreational fishing brings up to **\$1.5 BILLION** annually to Massachusetts

Air Quality & Climate

Coastal wetlands absorb carbon **3-5x FASTER** than tropical forests



Wildlife

Each year, Massachusetts receives up to **\$2.5 BILLION** from visitors viewing coastal birds
These habitats support rich & diverse species

Coastal Wetlands: A Carbon Bank in Your Backyard



**Absorb carbon
3-5x faster than
tropical forests**



**Preserve carbon
for centuries**

Locally improve air quality

Globally reduce greenhouse gasses

Threats add up and reduce benefits provided by these habitats

- Pollution
- Runoff
- Development
- Tidal Restrictions
- Erosion
- Intense Storms
- Sea Level Rise



**What
Can
You
Do?**

Speak up. Elected officials respond to you – Call them or attend a public meeting to show you want wetlands to be considered a priority.

Support organizations & agencies managing these areas.

Learn more about wetland functions. Apply your knowledge of wetland functions including carbon storage to management decisions. Use available decision support tools to help assess and quantify benefits of carbon storage. <http://waquoitbayreserve.org/research-monitoring/salt-marsh-carbon-project/>

Act. Explore and support projects that improve wetland health and function and their ability to continue storing carbon and reducing greenhouse gases. Remove tidal barriers and restore wetlands.

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of restoration or pollution remediation projects in (area) were community sponsored/initiated); 1-2 orgs that sponsor community initiatives (Coastal offices, regional programs, USFWS' sport fish/wildlife habitat grants)

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Climate Mitigation

Coastal wetlands store carbon in plant material and soils. Due to low oxygen levels slowing decomposition, wet soils lock up greenhouse gases.



Locally



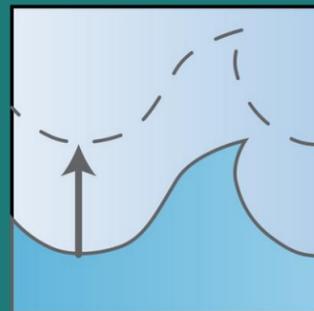
Improves air quality



Globally

Reduces greenhouse gases in our atmosphere and reduces impacts of climate change

Preserving coastal wetlands that store carbon can help meet climate mitigation & corporate social responsibility goals.



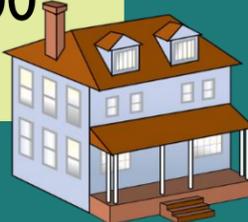
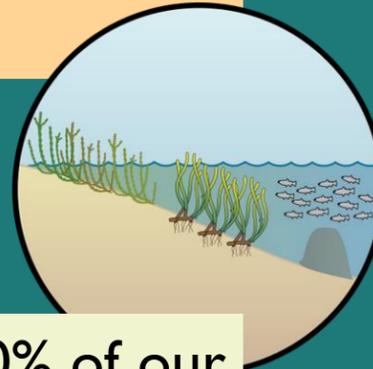
Coastal and Community Resilience

Coastal wetlands reduce erosion and store sediment, critical functions for protecting communities from storms and sea level rise.



In Massachusetts, we have lost more than 40% of our salt marshes since pre-colonial times

By restoring and improving coastal marshes, towns reduce costs of coastal protection, minimize safety impacts, and lessen damage to built infrastructure. Each year, an acre of wetland provides over \$6,800 in storm protection services for Massachusetts



WHAT THREATS ARE COASTAL WETLANDS FACING?

Intense Storms

Stormwater runoff include pollutants from roads, cars and yards and can damage wetland plants



Development



Development limits ability of wetlands to cope with erosion or pollution, or move upland as they respond to rising seas or altered freshwater flows

Pollution

Chemical pollution, pathogens & excess nutrients from agriculture & septic systems are stressors

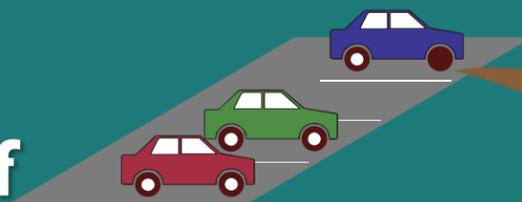


Tidal Restrictions

Damaged or altered wetlands can become a source of greenhouse gases such as methane, when centuries of stored carbon are released back into the atmosphere.

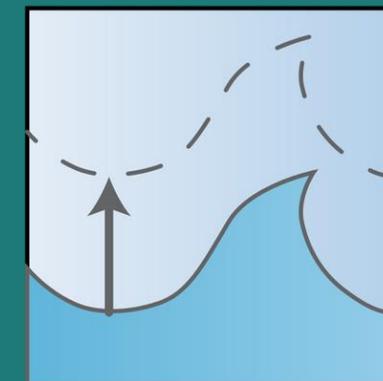
Runoff

Impervious surfaces reduce the ability for these areas to absorb excess water & pollutants.



Erosion

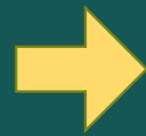
Sea Level Rise



If wetlands have nowhere to migrate, encroaching sea level rise reduces the habitat, threatening carbon stores & reducing protection against incoming waves, along with the other services these areas provide.

These threats add up and diminish the ability of coastal habitats to continue providing benefits

WHAT CAN YOU DO?



CONSERVE wetlands so they can keep doing what they do
SUPPORT activities that help to improve and restore degraded wetland habitat



ROLE

POTENTIAL ACTIONS

Community Member

Speak up. Elected officials respond to you – Call them or attend a public meeting to show them you want wetlands to be considered a priority for protection.
 Support organizations and agencies that protect and manage these areas.

Land Manager

Learn more about wetland functions like carbon storage. Apply your knowledge of these wetland functions to management decisions. Use available decision support tools to help assess and quantify benefits.
<http://waquoitbayreserve.org/research-monitoring/salt-marsh-carbon-project/>
 Explore and support projects that improve wetland health and function and their ability to continue storing carbon and reducing greenhouse gases. For example, remove tidal barriers and restore wetlands.

Planner or Policymaker

Consider wetlands as a part of your strategy for hazard mitigation, stormwater management and more.
 Design, permitting, construction and maintenance of options such as green infrastructure can be more cost effective than other options.
 Earn additional Community Rating System points, and reduce insurance costs, for actions like addressing natural functions in hazard mitigation policies.

Local Officials

Use these previously under-recognized function of wetlands to help support more restoration and conservation of these vital ecosystems.

ABOUT BRINGING WETLANDS TO MARKET

This research was supported by the Bringing Wetlands to Market (BWM) project. For nearly a decade, the BWM project team has been at the forefront of blue carbon science, creating the knowledge and tools that communities need to leverage blue carbon science to support wetlands management, restoration, and conservation goals and explore the integration of coastal wetlands into carbon markets.

The BWM project was led by the Waquoit Bay National Estuarine research Reserve and a multidisciplinary team of partners. To learn more about the project and access other resources, please visit: <http://waquoitbayreserve.org/research-monitoring/salt-marsh-carbon-project/expanding-blue-carbon-phase-2/>

