



Natural Climate Solutions: MA Policy Update

Elders Climate Action – September 8, 2020

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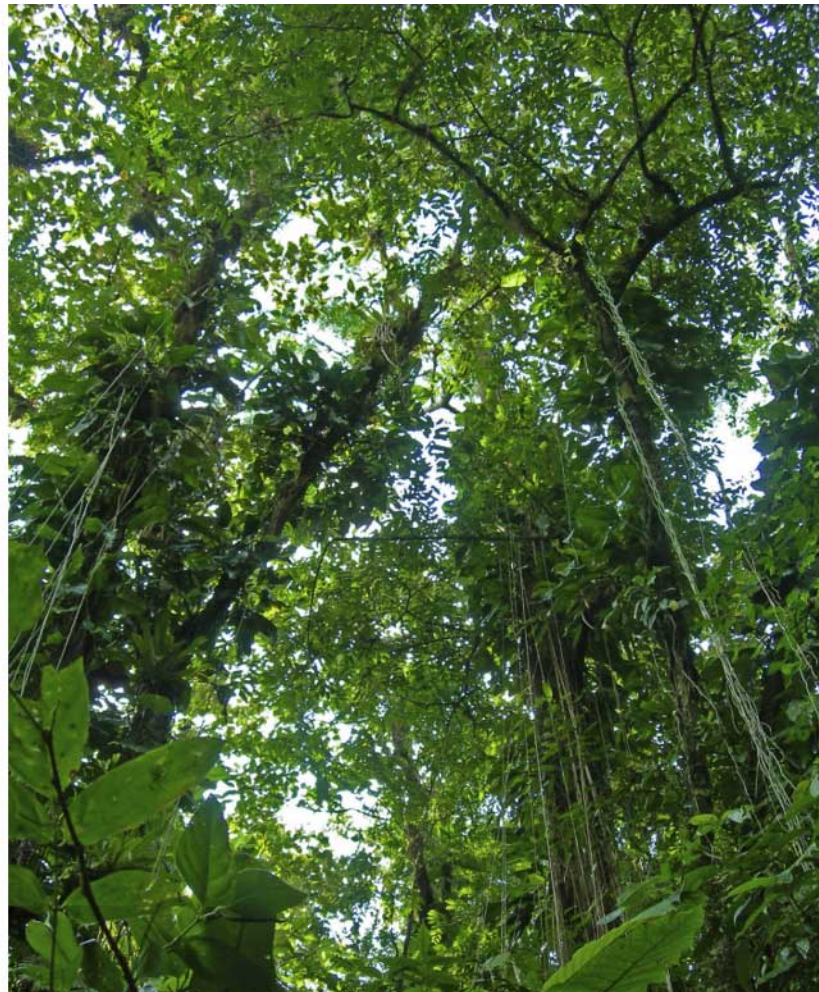


CLIMATE CHANGE -- KEY STRATEGIES

REDUCE EMISSIONS



REMOVE POLLUTION

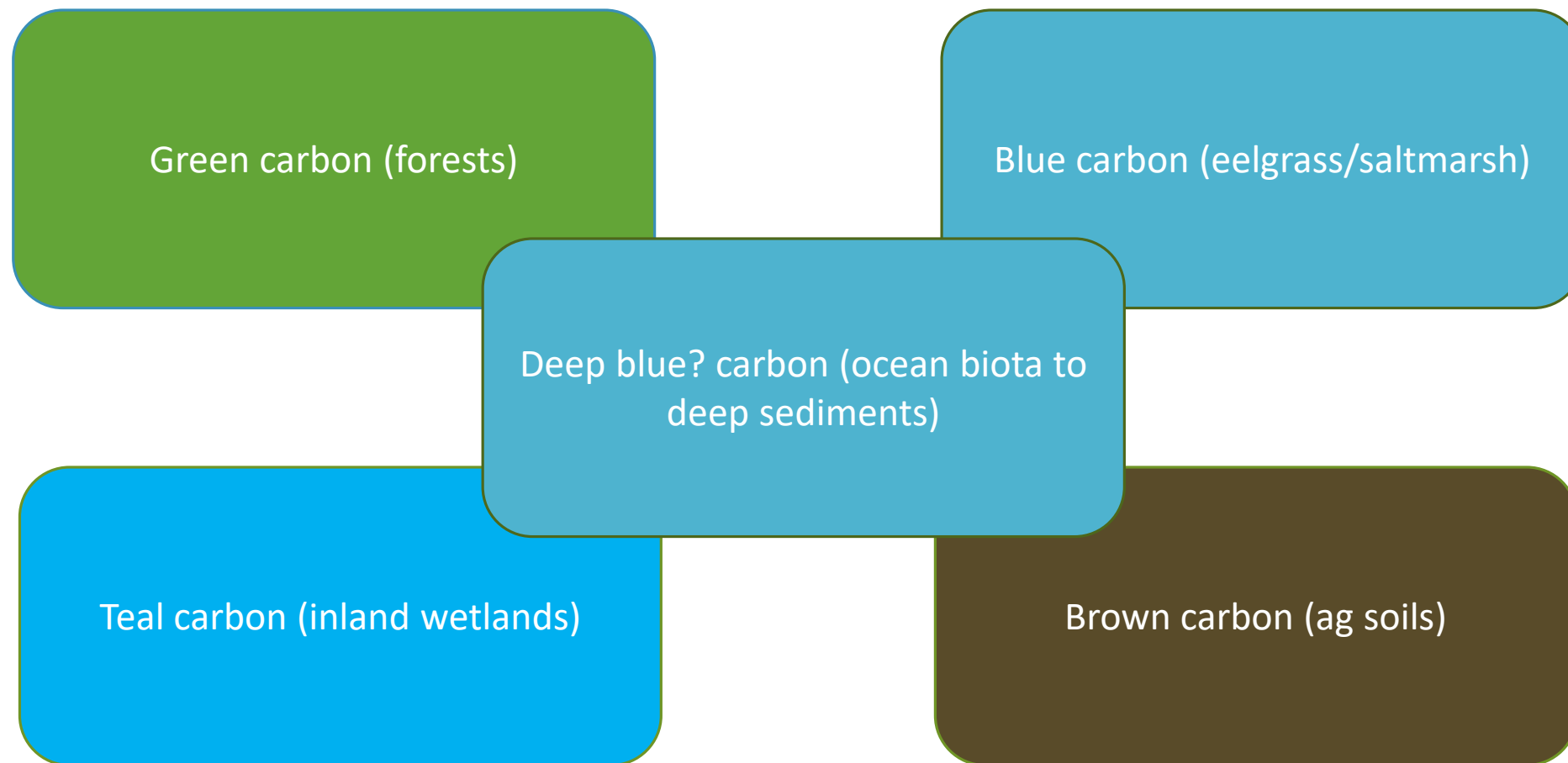


The Nature
Conservancy 

**STRENGTHEN
RESILIENCE**



What?



Forests: a Natural Solution to Climate Change

Forests filter our drinking water, provide homes for wildlife and improve our health. Forests also fight climate change in many ways.

Wildlands

Forest reserves, managed by nature and without harvesting, remove large amounts of carbon pollution from the air and store it in tree trunks, leaves, roots and soils. Protecting forests and allowing them to grow for centuries means they can store more carbon each year.

Woodlands

With careful planning and management, most forests can produce wood products while also increasing the carbon stored in the forest over time. Locally harvested wood can replace building materials that have a larger carbon footprint, like steel and concrete, reducing carbon emissions.

Sometimes, forests have been so damaged by poor forest management, invasive species, or disease that they aren't storing as much carbon as they could. Restarting these forests by harvesting damaged and diseased trees may store more carbon over the long term.

Carbon exists in several places and forms:



In the air: At high concentrations in the air, carbon dioxide is a pollutant and a greenhouse gas that warms the planet.



In plants: Plants turn carbon dioxide into sugar (glucose). In this form, carbon is food for plants and other organisms in the forest.



In wood: Trees and shrubs turn carbon into cellulose. In this form, carbon can be stored long-term in tree trunks or in lumber.

Trees in Cities

Trees planted in cities store carbon as they grow and reduce energy use from buildings shaded and sheltered by the trees. Just as importantly, trees also reduce asthma rates, heart disease and stress.

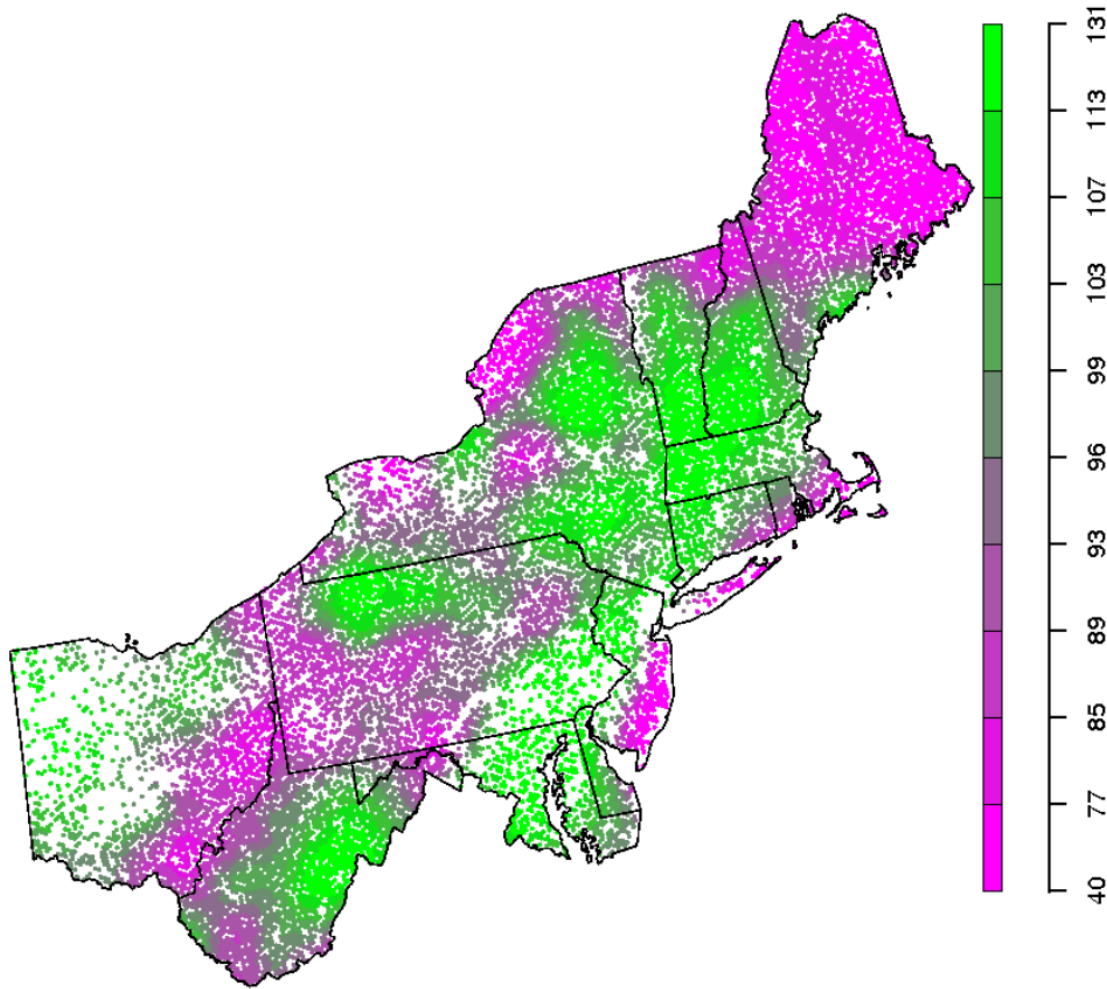


To tackle the climate challenge, we need to grow and protect forests, but that alone is not enough. We must also reduce fossil fuel use and adapt to the changes we're already seeing. [Learn more at: nature.org/climate](https://www.nature.org/climate)

The Nature Conservancy 

The Nature Conservancy 

COLE Map
Total Aboveground Carbon (metric tons/hectare)



Massachusetts Forests and Carbon

Forest cover: ~60%

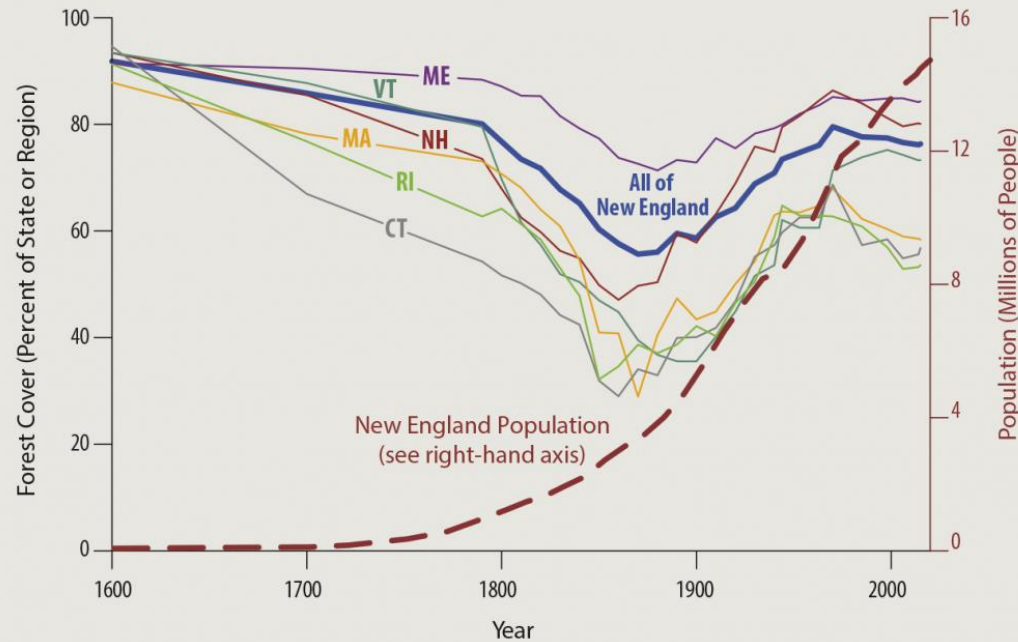
Storage

- 365 million metric tons of natural carbon.
- 67% of total terrestrial carbon storage in Massachusetts is in forests

Sequestration

- Approx. 7% of all carbon generated in MA is absorbed by MA forests

New England Forest Cover and Human Population



The second wave of forest loss now under way in New England jeopardizes the region's environmental success story, which has been characterized by the return of forests following the decline in agriculture in the East.

Wildlands and Woodlands, 2004

MA Forest Trends

Sustained decline over 30 years

Conversion:

- 1980s and 1990s: 15,000 acres/yr
- 1999 and 2005: 7,300 acres/yr
- 2005 and recent: 4,800 acres/yr
- More recent: 7,000 acres/yr

Harvard Forest predicts a ~ 20% loss of carbon storage over the next 50 years if we continue current trends of forest land conversion and management

GWSA: Natural Carbon (2009 – Present):

Counted: Biogenic Emissions

Not counted: Sequestration

Goal: Count both -- Baseline, Goals, Plan and Policy/Funding

Current Policies (2009 – present)

- Smart Growth Program
 - Promote Voluntary Adoption of Municipal By-Laws
 - Natural Resource Protection Zoning
 - Tree Retention and Planting (No Net Loss)
- MA Environmental Policy Act
 - >50 Acres: No Net Loss
- Regional Greenhouse Gas Initiative
 - Offsets: Afforestation

MA: Urban Tree Planting (2015 – present)



Law: Bond Authorization

- \$25M (2014)
- Justification: Energy Savings for Residential Property Owners

Program:

- Urban Tree Planting
- Workforce Development
- Outcome: 26,000 Trees Planted

Natural and Working Lands Challenge (2018)

MA Opportunity Assessment:

- Strategies: Protect, Restore and Manage
- Up to additional 1 to 2 MMT CO₂/year = taking ~215,000 to 435,000 cars off the road
- Action Needed:
 - Reforestation of lands previously forested (urban too!)
 - Forest Carbon Management (in underutilized forests)
 - Avoided Forest Conversion
 - Soil Management

Administration:

Pathways Study (late 2020):

- Scenario Planning: What MA is expected to “look like” in 2050
- Pathways: How we will we achieve GHG emissions reductions goals

2020 Clean Energy and Climate Change Plan

- Goals, Strategies, Timelines, Roles/Responsibilities

Stakeholder Committee:

- Land Use and Nature-Based Solutions Workgroup of the GWSA



Strategy: Avoid Forest Conversion

- Protect forest blocks, especially those that are large or interconnected, with the most carbon stored and the best ability to be resilient.
 - Increase land conservation funding
 - Prioritize carbon stock and/or sequestration
- Streamline and integrate state funding

Strategy: Forest Management

- Provide rebates or other form of ecosystem service payment to landowners who manage land for carbon
- Promote sustainable and local uses of wood for construction



Strategy: Make the value of forest carbon visible and quantifiable in state policies

- No Net Loss of Forest Carbon policy, which requires ecologically equivalent mitigation when protected land is developed.
- Create a mitigation fund for large-scale development
- Improve the current MEPA Greenhouse Gas Policy

Strategy: Blue Carbon

Reduce Nutrient Pollution in wetlands and estuaries, etc.:

- MS4 permit foster green infrastructure : Funding, technical assistance and education
- Strengthen Wetlands Protection Act and local bylaws
 - Buffer zones
 - Climate Risk Zones
 - Restore natural systems (eelgrass)

Municipal

Enhance State Incentive and Funding Programs:

- Smart Growth: Tree planting and retention ordinances; Natural Resource Protection Zoning
- Land Conservation
- Climate Change

Resilient Lands Initiative (EEA)

Feedback Period

- No Net Loss of Farms and Forests
- Food Systems
- Water Resources
- Landscape Conservation and Restoration
- Green Economy
- **Natural Carbon Storage and Climate Resilience**
>>>

Achieve a significant increase in carbon storage and climate resilience in forests, wetlands (coastal and inland) and soils;

- o Incentives to private and municipal landowners for best practices

- o incorporate increased carbon storage in the Global Warming Solutions Act inventory

- o Adopt the recommendation of the Healthy Soils Action Plan including incentives for soil best practices and further reduction of wetland conversions

- o Establish a goal and metric for forest conservation and construction of wood buildings

Healthy Soils Action Plan (EEA)

- Provide evidence-based recommendations that help people better manage soils: Forests, Wetlands, Agriculture, Turf and Ornamental Landscapes (developed open space), and Impervious and Urbanized Lands.
- Strategies: Targeted conservation, soil-smart development, and better soil management
- Coordinated approach to protecting the productivity of our working lands and diverse wild lands, assisting cities and towns to improve resilience and reduce their vulnerability to natural hazards and climate change.

Legislation: Conference Committee 2020

Define “Natural and Working Lands” – the House and Senate adopted nearly identical definitions through both amendments; and

Require the Executive Office of Energy and Environmental Affairs to:

- Determine a baseline and measure the natural carbon stored by and released from natural and working lands across Massachusetts;
- Set a numeric goal for reducing carbon emissions and increasing the carbon sequestered and stored (sink) on our lands;
- Create a statewide plan to reach these goals;
- Conduct a stakeholder process to inform the statewide plan;
- Recommend actions, including but not limited to, land protection, management, and restoration, and state and local legislation, laws and regulations, programs, grants, loans, incentives and public-private partnerships, to achieve goals and implement the plan; and
- Integrate NCS into the Clean Energy and Climate Plan and/or RoadMap process and associated inventory, baseline assessment, plan, reporting requirements and policies and regulations pursuant to revisions to the GWSA.

“Natural climate solutions are vital to ensuring we achieve our ultimate objective of full decarbonization and can simultaneously boost jobs and protect communities in developed and developing countries.”

-- Christiana Figueres, Convener of Mission 2020 and former head of the UN Framework Convention on Climate Change

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