



Massachusetts Association of Conservation Commissions Massachusetts Envirothon 2017

November 15, 2017

Thinking Globally & Acting Locally: the Role of Conservation Commissions in Protecting Wetlands, Open Space and Water Resources

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November 15, 2017



Overview

- Climate Change for Planet Earth: CO2 levels are increasing, temperatures rising, storm intensity increasing.
- “Thinking Globally – Acting Locally”.
- Wetlands – What are they and how do they protect against climate change?
- Conservation Commissions - Who are they and how do they protect the environment?
- How can you help?





https://climate.nasa.gov/climate_resources/24/



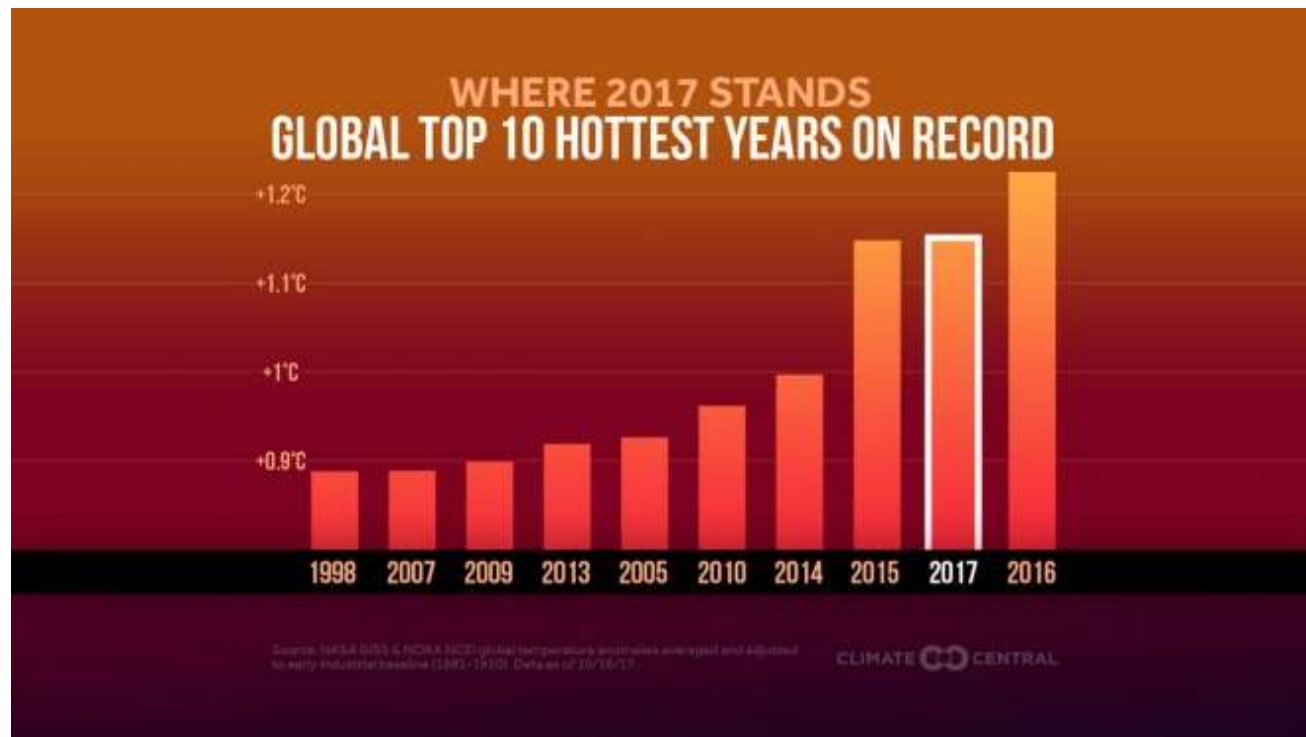
Climate Change for Planet Earth

Temperatures
NOAA website
– state graphs

Climate Central.org
– climate change graphs

Sea level rise in our area

<https://www.epa.gov/raine/resilience-and-adaptation-new-england-raine-maps#2>



Climate Change: How it is impacting the U.S. and Massachusetts?

2017 Flooding in Houston, Texas





2016 Coastal Flooding in Massachusetts



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Climate Change is Impacting Massachusetts



Flooding During High Tide
Winthrop, MA



Mother's Day Storm, 2006

Flooding of the Shawsheen River in Lawrence, Mass



100-Year Flooding Event



Wetlands and Open Space - Help Minimize Climate Impacts

- What are wetlands and why are they important?
- Conservation Commissions are the first line of defense, protecting water resources, preventing storm damage, and minimizing impacts of flooding
- Acting Locally: Ideas for projects to protect wetlands resources and improve your local environment.



Wetland Functions and Values

Wetlands **protect our groundwater**

Wetlands **store floodwater** and release it slowly downstream preventing storm damage

Wetlands **absorb excess nutrients and trap many kinds of pollutants**

Wetlands **provide vital habitat for wildlife.**



What is a Wetland?



What is a Wetland?



Stream and Bordering Vegetated Wetland

Photo: Michael Howard, Epsilon Associates



Forested Swamp

Photo: Matt Schweisberg, Wetland Strategies and Solutions

Examples of Other Resource Areas



Coastal Dunes



Vernal Pool



Land Under the Ocean

Massachusetts Wetlands Protection Act

- Passed in 1972
- First comprehensive wetlands protection law in the nation





Interests of the Act



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Impacts of Development

- Inhibits groundwater recharge
- Provides a surface for accumulation of pollutants
- Provides a faster pathway for pollutants to reach waterways
- Can overtax existing drainage systems
- Prevents natural processing of pollutants



Impacts of Development

The impacts of construction, land disturbance, and the increased rate and volume of stormwater runoff adversely affect:

- ❖ groundwater resources
- ❖ drinking water supplies
- ❖ streams
- ❖ ponds
- ❖ wetlands



Photo: Thomas Maguire, MassDEP



Land Near Wetlands – What happens when wetlands disappear?

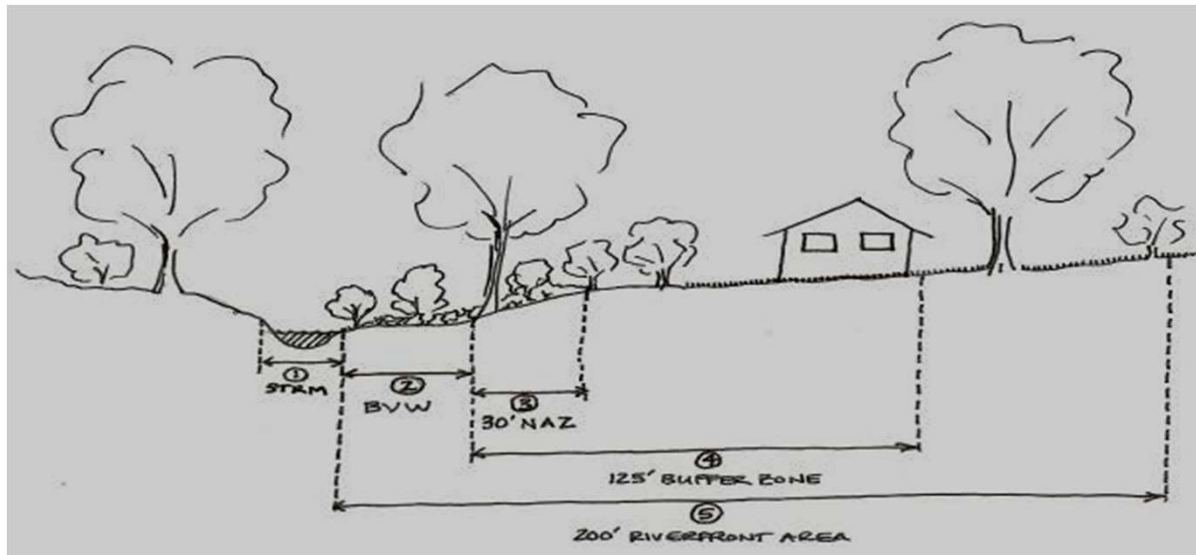


Remember Houston?

Without wetlands and bayous - heavy rains in 2017 caused significant damage to homes, businesses, and infrastructure



How do Commissions protect wetlands?



Anyone wishing to work within 100' of a wetland or 200' of a perennial stream MUST get a permit from the Conservation Commission



Who serves on a Conservation Commission?

Conservation Commissions:

- ❖ 3 - 7 volunteer residents
- ❖ Generally meet 1-2 nights/month
- ❖ Members have varying experience with wetland science, stormwater management, engineering, landscape design, botany, wildlife management, and environmental law



How do Commissions protect wetlands?

Typical questions discussed during a public hearing

- What work is being proposed?
- How will work affect resource areas?
- What alternatives exist?
- Are the erosion controls sufficient?



Work Conservation Commissions do to protect wetlands and water resources

Conduct site visits, verify location of wetlands, and certify Vernal Pool habitat



Work Conservation Commissions do to protect wetlands and water resources

Monitor construction sites to ensure erosion and sediment controls are installed properly and working effectively.





Well-functioning runoff, erosion and sedimentation controls



Work Conservation Commissions do to protect wetlands and water resources



Wet Basin w/Forebay



Bioretention Area

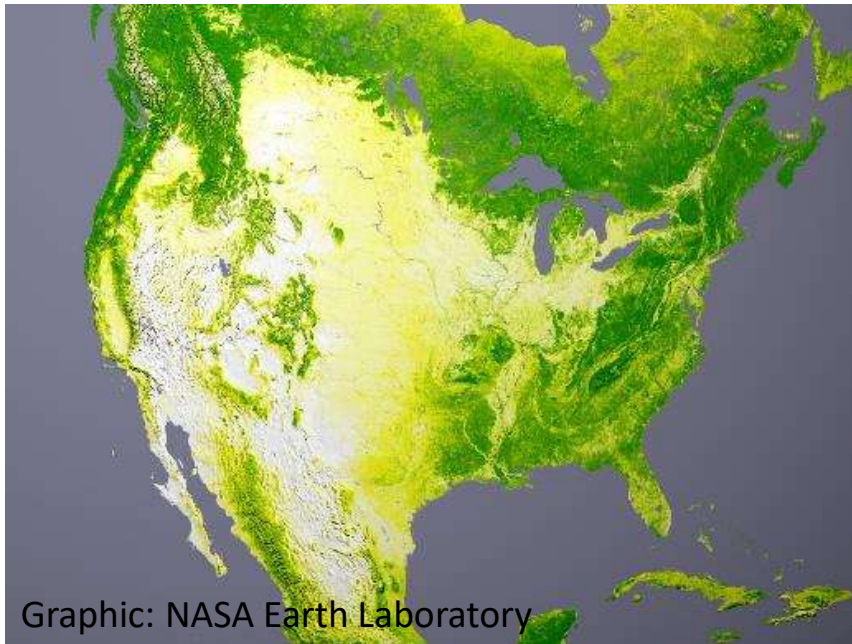


**Vegetated Drainage Swale with
Check Dams**

Typical Best Management Practices
for managing stormwater



Conservation Commissions also protect open space



Acting Locally: Finding Projects that Protect Water Resources in Your Community

- ***Pull out your phones!*** Break up into groups of two.
- UMASS Amherst WIFI Network: **UMASS**
- Username: **32307925**
- Password: **27064318**



Acting Locally: Finding Projects in Your Community

- Some Conservation Commissions have LOTS of information on their websites - members, contact information, next meetings, how to get involved

Newton, MA Conservation Commission:

<http://www.newtonma.gov/gov/planning/conserv/default.asp>

How to get involved:

http://www.newtonma.gov/gov/planning/conserv/public_education_n_involvement/how_to_get_involved.asp



Acting Locally: Finding Projects to Protect Water Resources in your Community

1. Who is the Conservation Agent?
2. What is their telephone number or email address?
3. When is the next Conservation Commission Meeting?



Examples of Projects that support your Commissions' Work

- Build or repair boardwalks on trails through wetlands on conservation land
- Build and install picnic tables
- Sign relocation, repair, maintenance



Project Ideas - Partnering with Conservation Commissions

- Storm Drain Marking
- Build & Install Bird Nesting Boxes
- Planting Trees



Project Ideas - Partnering with Conservation Commissions

- Water Sampling
- Wetlands Mapping



Project Ideas – Partnering with Conservation Commissions

- Trail Maintenance
- Bridge Construction
- GIS Mapping



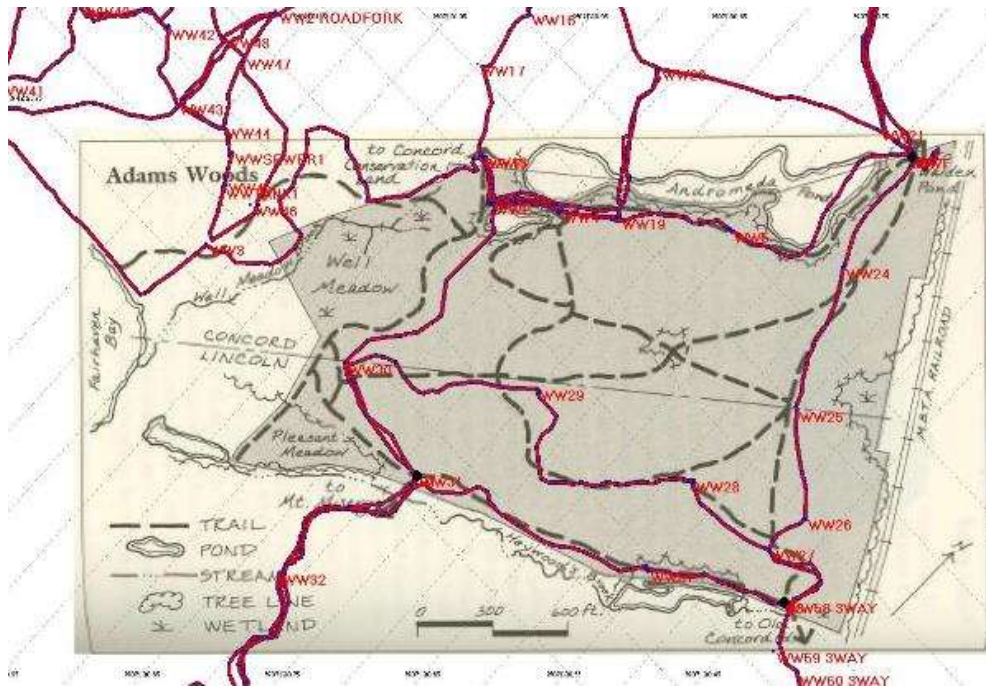
Project Ideas - Partnering with Conservation Commissions

- Invasive Plant Mapping
- Invasive Plant Removal



More Project Ideas

- Prepare Trail Maps



Build Kiosks



Questions?

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