



# **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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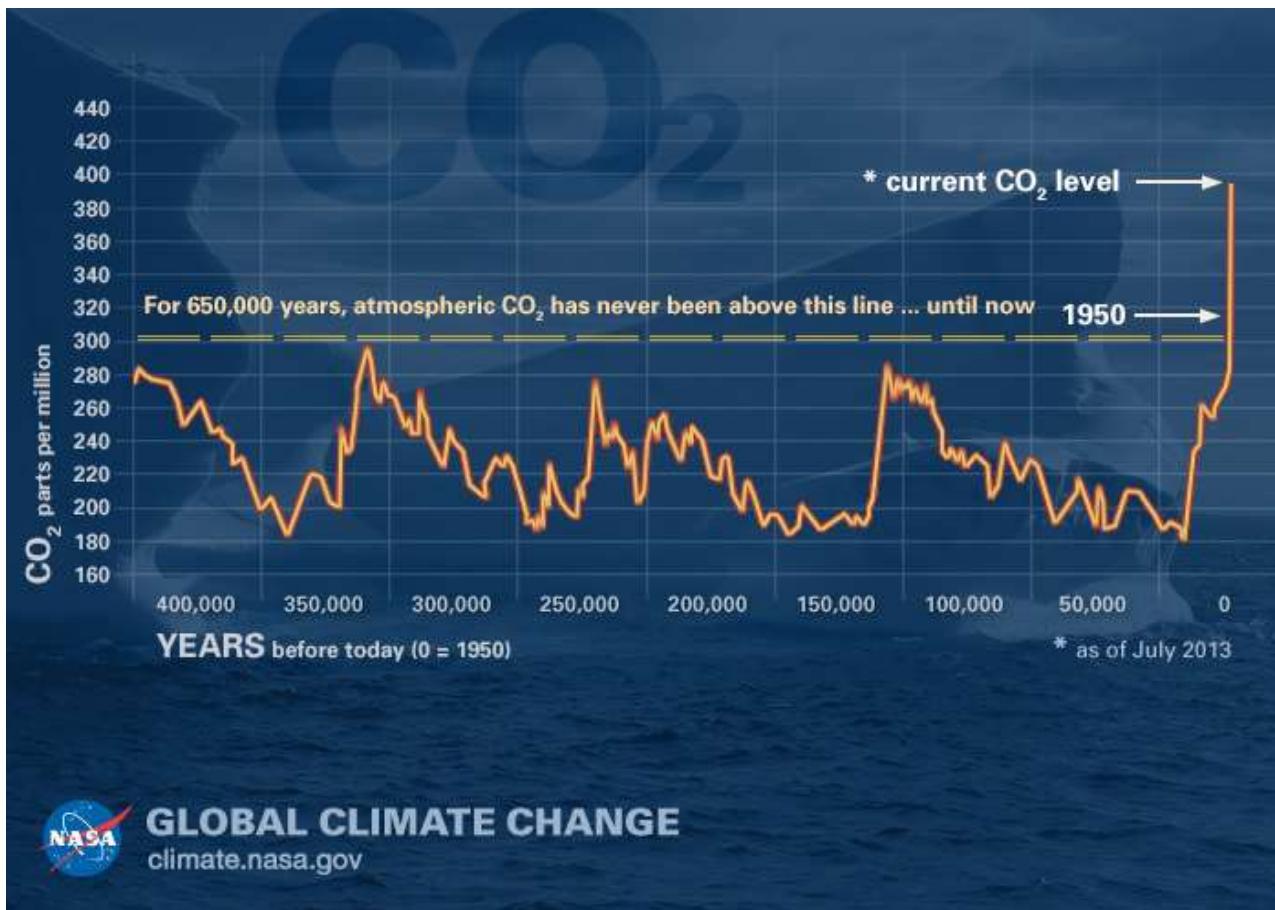
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# Overview

- 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/](https://climate.nasa.gov/climate_resources/24/)

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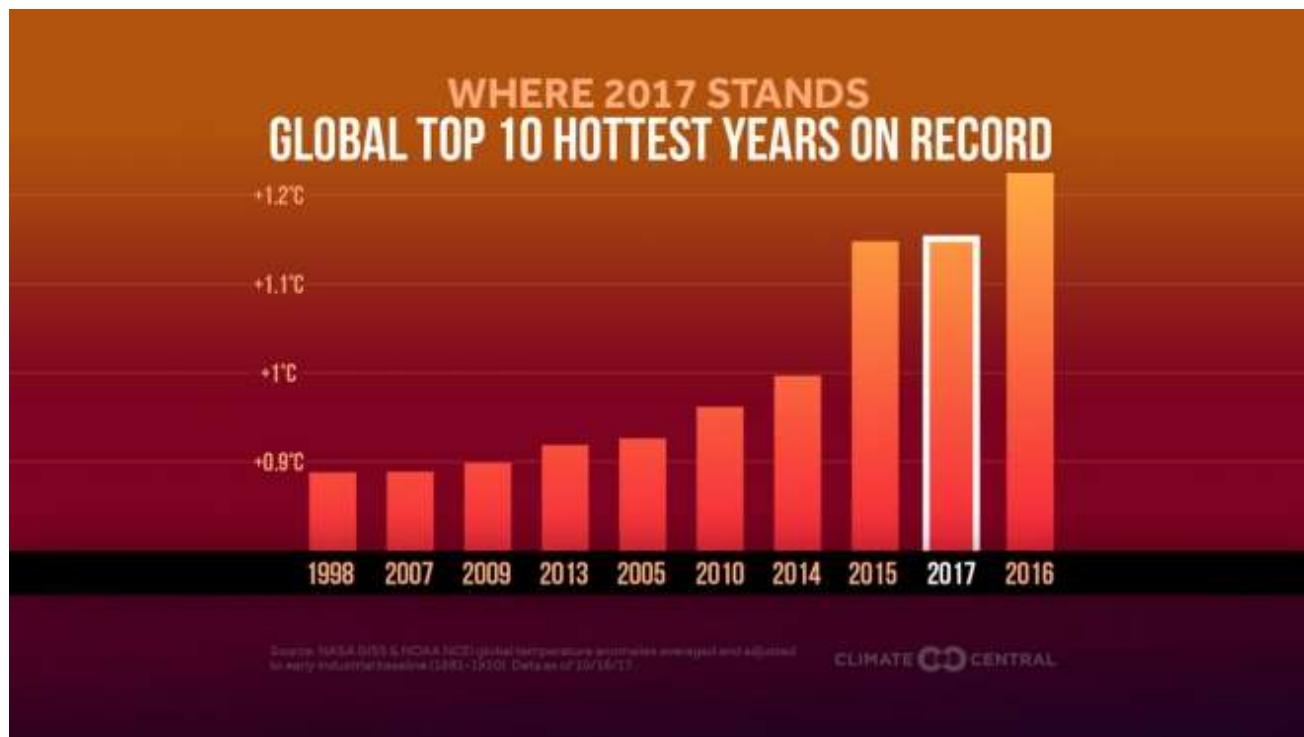
# Climate Change for Planet Earth

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

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Flooding of the Shawsheen River in Lawrence, Mass



100-Year Flooding Event



# Wetlands and Open Space - Help Minimize Climate Impacts

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- 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

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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?

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# What is a Wetland?

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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



Land Under the Ocean



Vernal Pool



# Massachusetts Wetlands Protection Act

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



## Interests of the Act



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# Impacts of Development

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- 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

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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?

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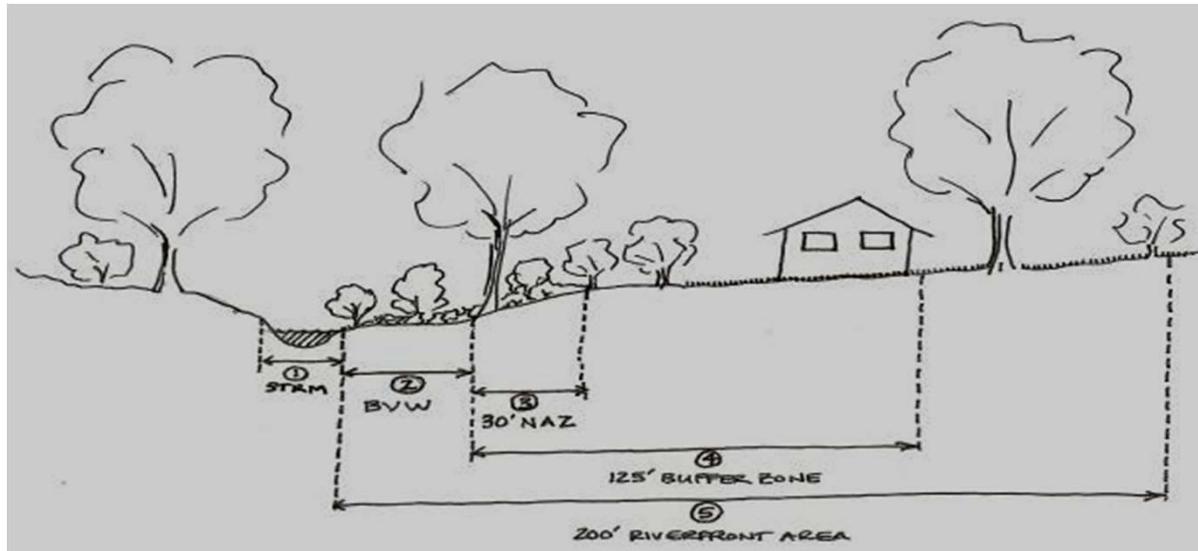


Remember Houston?

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?

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## 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?

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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

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



# Work Conservation Commissions do to protect wetlands and water resources

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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**

Typical Best Management Practices  
for managing stormwater



**Vegetated Drainage Swale with  
Check Dams**



# Conservation Commissions also protect open space

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# 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](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

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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



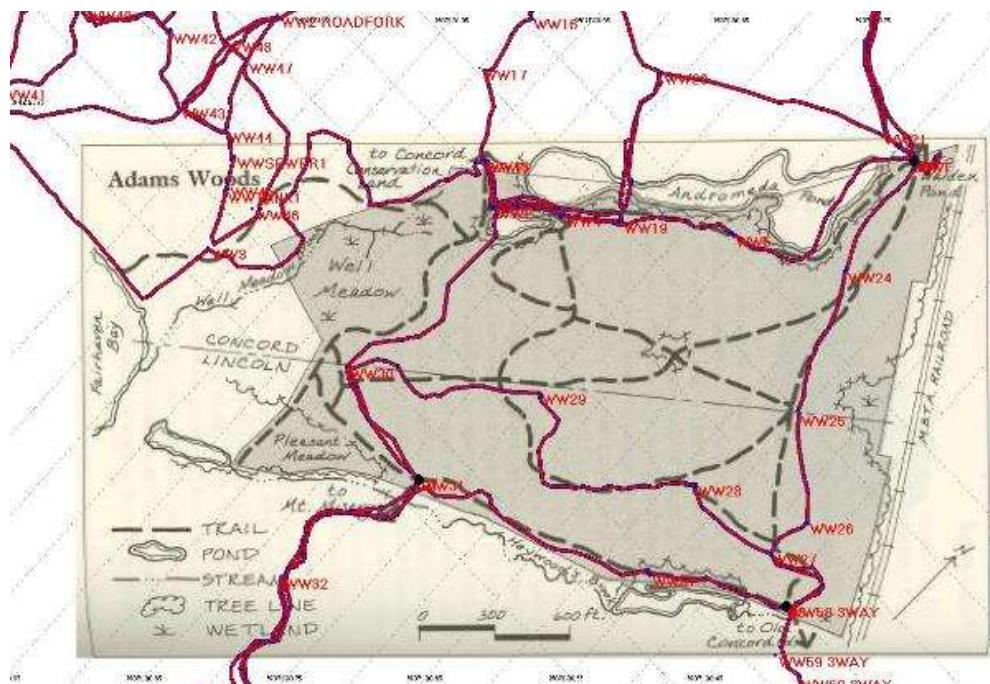
# Project Ideas - Partnering with Conservation Commissions

- Invasive Plant Mapping
- Invasive Plant Removal



# More Project Ideas

- Prepare Trail Maps



**Build Kiosks**

A wide-angle photograph of a forest in autumn. The trees are densely packed, with a variety of colors including deep reds, bright oranges, and golden yellows. Some green pine trees are interspersed among the deciduous ones. The sky above is a clear, pale blue with a few wispy white clouds. The overall scene is a rich, warm palette of fall foliage.

# Questions?

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