



How Conservation Commissions Can Foster Climate Resilience

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CIRCA: Using multidisciplinary teams to solve challenging problems

Science → Tools → Policy → Communication

PLANNING TOOLS



Innovative planning that incorporates technical knowledge & leads to policy development & project implementation.

TECHNICAL TOOLS



Developing map viewers, storymaps, datasets, & guidance documents to inform planning & decision-making.

FIELD RESEARCH



Deploying instruments, analyzing data, & developing models to better understand site conditions & demonstration projects.

ENGAGEMENT



Working with stakeholders to build capacity & partnerships through events, outreach, & tool development.

CIRCA Legal Team: “Whole Town” approach to Climate Resilience

Example: What municipal boards or commissions can address flooding issues?

	Regulates	Advises leg. or reg. body	Operates/ maintains systems	Can assess fee or tax	Planning function	Can address flooding	Policy/ action on climate resilience
FPCREC Board		Yes	Yes	Yes		Yes	Limited to Flood related action
Planning/Zoning Commission	Yes	Yes			Yes	Yes	Limited to zoning authority
Resiliency Commission		Yes			Yes	Yes	Yes- focused broadly on municipal climate resilience
Stormwater Authority			Yes	Yes		Yes	Limited to stormwater related action
Inland Wetlands Agency	Yes	Yes				Yes	Limited to authority in Inland Wetlands Act
Conservation Commission		Yes				Yes	Conservation/ preservation of natural systems



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CONSERVATION COMMISSIONS

Connecticut Institute for Resilience and Climate
Adaptation (CIRCA)

University of Connecticut

New Conservation Commission Factsheet Release!

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Conservation Commissions and Natural Resource Resilience

"Climate-resilient lands not only protect wildlife but also provide natural defenses against flood, drought and other risks to people." Open Space Institute²

The state of Connecticut is rich in natural resources and diversity of wildlife, plants, and landscapes making it an attractive place to live, work, and play. Climate change poses threat to Connecticut, and through protection of our natural areas, municipalities have the opportunity to implement climate resilience. Conservation Commissions share the responsibility of guiding their municipalities in meeting open space goals as a resilient strategy. Conservation Commissions should consider the effect of climate change on natural resources and the solutions these resources provide when undertaking their duties of protecting and preserving biological diversity and natural resources.

Natural Resource Conservation and Climate Resilience


Natural resource conservation can be used as an adaptation strategy to slow the rate of climate change and its damaging effects by working to protect vulnerable areas that serve as natural buffers to climate impacts.³ Conservation is the protection of natural resources for future generations. Conservation can include wildlife habitat restoration, deterring species extinction, enhancing resilient ecosystem services, and protecting biological diversity. Conservation Commissions can influence nature-based solutions and conservation methods to reinforce climate resilience. Blending natural features with built infrastructure through environmental management, planning, and design can foster climate change adaptation and resilience.³

What is a Conservation Commission (CC)?

Conservation Commissions are volunteer municipal government bodies that are authorized by Connecticut Statute to "conserve, develop, supervise and regulate natural resources (C.G.S. Ch. 97, Sec. 7-131a)." However, the charge of a Commission may vary by municipal ordinance. Commissions may manage open space, land and water resources within their jurisdictional limits. Commissions have the authority to advise other boards and agencies about conservation concerns within municipal projects and development. Conservation Commissions have a role in increasing resiliency by suggesting how climate change may further impact natural resources due to specific land management in vulnerable locations. CC's can portray the significance of how natural features could be part of nature-based solutions to climate impacts such as flooding, excessive heat, erosion, shoreline stabilization, or poor water quality.

Coordination between municipal boards and commissions, non-governmental organizations, and even adjacent towns is imperative when addressing climate resiliency. Municipalities should utilize a Conservation Commission in finding solutions to site-specific concerns. For example, when considering flood solutions, combining best practice stormwater management with a conservation easement that protects open space and allows for natural stormwater infiltration, would be an effective use of a Conservation Commission authority and allow another level of monitoring and enforcement.

Funding for this project is provided by the U.S. Department of Housing and Urban Development through the Community Development Block Grant National Disaster Recovery Program, as administered by the Connecticut Department of Housing.



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Authority and Duties of a Conservation Commission

Establishment & Legal Authority

The statutory authority of a Conservation Commission derives from [Chapter 97, Section 7-131a](#) of the *Connecticut General Statutes*. Commissions are established by vote of the municipal legislature.

Membership

It is important to consider members with diverse interests and knowledge in resource conservation. Commission members serve in part to educate local citizens and officials on conservation issues and present practical and effective recommendations to land use boards and other commissions.

- *Minimum of 3 members; 11 members maximum.*
- *Maximum 3 alternate members; when seated, have all the powers and duties of a member of the commission.*
- *Members appointed, removed for cause, and vacancies filled by the Chief Executive of a given municipality.*
- *Terms served by members are designated by the legislative body establishing commission.*

Powers and Duties


Must do "Shall's":

- ✓ *Conduct research into the possible utilization of land areas within its municipality.*
- ✓ *Keep index of all open areas, publicly and privately owned, including open marshlands, swamps and other wetlands to obtain information on proper use of such land.*
 - *It may, from time to time, recommend to the planning commission or, if none, to the chief executive officer or the legislative body, plans and programs for the development and use of such areas.*
- ✓ *Keep records of its meetings and activities and shall make an annual report to the municipality.*
- ✓ *Administer gifts the same for such purposes subject to the terms of the gift.*

Permissible "May's":

- ✓ *Coordinate activities of unofficial bodies organized for similar purposes.*
- ✓ *Advertise, prepare and distribute books, maps, charts, plans, and pamphlets necessary for its purposes.*
- ✓ *Propose a Greenway plan for inclusion in conservation plan and development per Section 8-23.*
- ✓ *Inventory natural resources and formulate watershed/drought management plans.*
 - *Plans shall be consistent with water supply management plans per Section 25-32d.*
- ✓ *Make recommendations to planning, zoning, inland wetlands or other municipal commissions and agencies on proposed land use changes.*
- ✓ *With approval of municipal legislative body acquire land and easements in name of municipality and promulgate rules and regulations including but not limited to the establishment of reasonable charges for the use of land and easements for any of its purposes.*
- ✓ *Supervise/manage municipal owned open space or parks if authority delegated by entity responsible for such management*
- ✓ *Receive gifts in the name of the municipality for its purposes.*
- ✓ *Exchange information with the Department of Energy and Environmental Protection (DEEP).*
 - *Commissioner of DEEP may assign technical personnel to a commission, per request, for assistance in planning its overall program and for coordinating state and local conservation activities.*

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Natural Resources and Climate Change Impacts

Natural resources refer to living and non-living elements of the Earth system that humans rely on to survive and evolve.⁴ Climate change threatens our natural resources, affects global food security and water supplies, and jeopardizes the livelihood of our public, local and national economies.⁵ Local action by Conservation Commissions and their communities can enhance municipal resilience by preserving present and future natural resources and the ecosystem services they provide.

Climate Change Impacts on Natural Resources⁶


Increased Precipitation & Flooding

- Destroyed crops by silt and sediment threatening food supply
- Uprooted trees/Vegetation due to high-velocity water flow; negatively impacting the benefits of trees
- Contaminated runoff (pesticides, chemicals, sewer and debris) lead to poor water quality and endangered ecosystems
- Increased erosion and flood risks
- Altered landscape and collapsed riverbanks
- Damaged wildlife habitat




Increased Heat

- Migration of invasive pests and diseases harmful to the health of humans and the built environment
- Declined cold-water fish diversity i.e., bass and trout
- Transition of tree species from Maple/Birch to Oak/Hickory; affecting maple sap economies
- Increased toxic blue-green algae blooms in water bodies that affect public health, the environment and economies
- Shifted correlation between pollinator activity and honey production



Increased Drought Periods

- Failed food & crop yields; threatening food supplies and economies
- Declined drinking water resources
- Dropped wetlands; resulting in loss of habitat and carbon sequestration capabilities
- Increased freshwater salinity resulting in toxic marine algae environments for fish and ecosystems
- Adverse forest and agriculture conditions



Picture used with permission © Guarantee Pest Elimination

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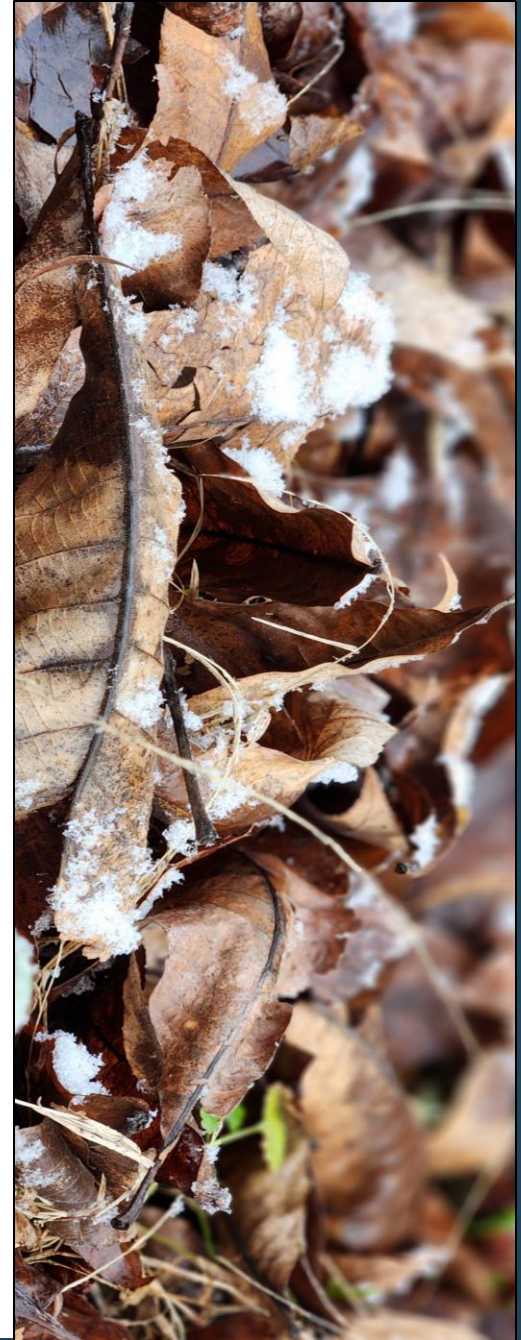
<https://resilientconnecticut.uconn.edu/2023/05/30/new-conservation-commission-fact-sheet/>

Conservation Commissions & Resiliency

Natural resource conservation can be used as an adaptation strategy to slow the rate of climate change and its damaging effects by working to protect vulnerable areas that serve as natural buffers to climate impacts.

- **Climate change poses threat to Connecticut, and protection of our natural areas, provides opportunity to implement climate resilience.**
- **Conservation Commissions share the responsibility of guiding their municipalities in meeting open space goals as a resilient strategy.**
- **May manage open space, land and water resources within their jurisdictional limits.**
- **Have the authority to advise other boards and agencies about conservation concerns within municipal projects and development.**
- **Charge of a Commission may vary by municipal ordinance.**

Conservation Commissions have a role in increasing resiliency by suggesting how climate change may further impact natural resources due to specific land management in vulnerable locations.





Membership Duties

- Members with diverse interests and knowledge in resource conservation.
- Educate local citizens and officials on conservation issues.
- Present practical and effective recommendations to land use boards and other commissions.
- Minimum of 3 members; 11 members maximum.

**Research, Educate, Act
& Repeat!**

Resilient Water Conservation

Rainwater Harvesting

- Not regulated by CT & encouraged!
- Irrigate plants/landscapes, wash cars/home windows, **NEVER** be used for human consumption
- Drought periods, Resource Conservation, Save Energy!

Healthy Soil Practices/Soil Conservation

- Tillage negatives
- Healthy soil practices = carbon sequestration and decreasing drought risks to crops

Resilient! Resilient! Resilient!



Resilient Land Conservation

Conservation Easements

- Acquire land and easements in the name of the municipality

Invasive Plant Species Removal

- Nonnative species that may cause harm to the environment, human health and economies by displacing native species



Japanese Knotweed



Mile-a-Minute Vine



Japanese Barberry



Japanese Knotweed (*Polygonum cuspidatum*) is a shrub-like, upright herbaceous perennial that grows to 10 feet. It spreads vigorously from long, stout rhizomes and forms dense stands. It also produces winged seeds that are carried to new areas. A significant threat to riparian areas.
Control: Cut plants three times per year at ground level during growing season to starve roots and rhizomes.

Mile-a-Minute (*Persicaria perfoliata*) is an annual vine that can grow six inches per day, smothering other vegetation. Seed persists in soil for six years. Seeds are dispersed by birds, mammals and water.
Control: Hand pull plants and roots before fruiting in August. Repeated mowing or weed-whacking will reduce the plants reserves and prevent or decrease flowering. Weevils are effective for bio-control.

Japanese Barberry (*Berberis thunbergii*) is a thorny shrub with a dense twiggy form, growing to five feet. Tolerant of a broad range of soil, moisture and light conditions. Seeds dispersed by birds. Barberry leaf litter changes the chemistry of the soil, displacing many native herbaceous and woody plants. Provides optimum tick habitat. **DO NOT BUY or PLANT**
Control: Pull or dig young plants, making sure to get the roots. Repeated cutting of large plants. Weed wrench® is effective for uprooting.

Text and photos used by permission from Pollinator-Pathway.org and CT Invasive Plant Working Group (CIPWG). Connecticut Invasive Plants Council's List of 12 Invasive Plants that threaten our Environment, Economy, and Human Health. 2023.

<https://www.pollinator-pathway.org/invasives>



Resilient Forest & Tree Conservation

Forest Protection

- Natural landscapes that reduce and store carbon that lessen the effects of climate change
- Advising on municipal policy for open space and park acquisition and management
 - Plans of Conservation and Development
- Supervise/manage municipally owned parks or open space and promulgate rules and regulations
 - Time frames/fees for public use

Tree Warden

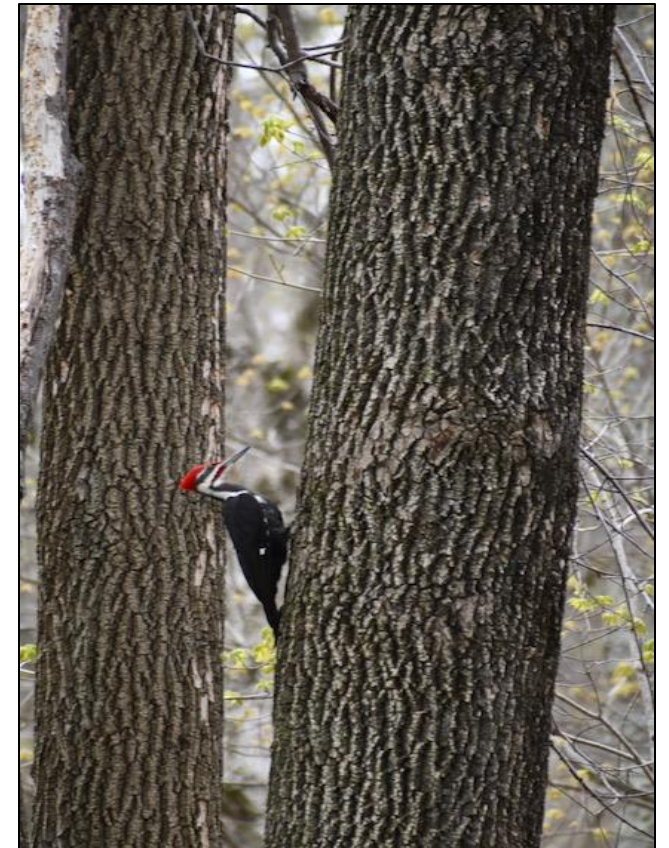
- Each CT municipality required to have one
- Work in collaboration

Did you plant a tree today?

Resilient Wildlife Conservation

Pollinator Gardens

- Generate/enlarge habitats- benefiting bees, butterflies, birds and bats
- Allocating ample nectar and pollen sources = enhanced pollinator populations, **providing resilience to human food supplies**
- Native trees and shrubs such as Flowering Dogwood



Nest Boxes & Bat Houses

- Pest consumption & seed spreading
- Educate the use of nest boxes and bat houses to help protect species/preserve their ecological role

“Pollinators are responsible for 1 out of 3 bites of food we take each day (USDA).”



Influence Nature-Based Solutions

FEMA defines nature-based solutions as, “**sustainable planning, design, environmental management and engineering practices that weave natural features or processes into the built environment to promote adaptation and resilience.**”

- Wetland Conservation & Restoration
- Green Infrastructure
- Reforestation
- Greenways





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Thank you!

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