

# Nature Based Solutions For a Resilient Connecticut

## THE PROBLEM

Protecting nature is critical to ensuring a resilient Connecticut. Two crises—climate change and loss of biodiversity have collided, are interdependent, and must be tackled simultaneously.

Conversion of natural ecosystems and loss of habitat accelerates climate change by contributing up to 20% of the world's greenhouse gas (GHG) emissions through released carbon into the atmosphere. This number is expected to increase as climate change continues and warming leads to accelerated carbon loss.<sup>1</sup> Climate change also contributes to species' declines.

Natural Climate Solutions (NCS) are part of the solution set. NCS maintain, through conservation and/or sustainable management, and restore natural ecosystems, which in turn act as effective carbon stores and sinks that can actively pull carbon dioxide from the atmosphere and convert it into carbon that gets stored within plants and soils.

Restoring or maintaining natural ecosystems also provides co-benefits to communities and biodiversity, including clean and abundant drinking water from forested watersheds; increased productivity and food supplies from healthy soils and pollinator habitats; flood control and drought resiliency from riparian buffers and functioning wetlands; and temperature moderation and high-quality wildlife habitats and healthy forests.

## A COMPREHENSIVE SOLUTION

### Update State and Municipal Plans of Conservation and Development

Land use planning in Connecticut is implemented at the local level and starts with municipal Plans of Conservation and Development (POCD). All municipalities should be considering the threats of climate change and loss of biodiversity in their planning efforts and incorporate protection of our natural systems into the POCD. Existing state statutes should be updated to require cities and towns to consider the role of nature and natural systems in the POCD as part of resiliency planning.



### Open Space & Forests

Despite the essential role that nature plays in addressing the dual environmental crises of climate change and biodiversity loss, as well as a myriad of other benefits to communities, Connecticut has not met its land conservation goal (protecting 21% of its land base by 2023), and the state's natural and working lands are being lost at an alarming rate. For example, of the 59% of the state that is forested, ~53% is core forest—large blocks fundamental for wildlife habitat, drinking water supply protection, and ecological resilience.

Core Forests of 500+ acres are declining rapidly—losing ~120,000 acres from 1985-2015 to fragmentation and development

Connecticut should enact legislation that prioritizes the support and maintenance of an ecologically functional landscape that sustains biodiversity, conserves landscape connectivity, supports watershed and airshed health, promotes climate resilience, supports farms and forests, provides opportunities for recreation and appreciation of the natural world, and offers resilience while supporting sustainable development patterns.

Such legislation should authorize and incent the use of nature-based solutions as the preferred alternative, where appropriate, across all agencies and appoint an interdisciplinary scientific advisory council consisting of experts in climate science, ecology, forest science, soil science, wildlife biology, environmental economics, and other appropriate disciplines to help establish and inform the use of nature-based solutions, including:

- ❖ Reenacting comprehensive forest conservation policy to keep forests as forests, protect healthy, intact forests, offset planned or permitted forest losses, protect urban forests, and
- ❖ Add more parks, and evaluate and revise the state's land conservation goal as set forth in Section 23-8 et seq. of the general statutes.
- ❖ Revising existing or promulgating new rules and regulations, establishing systems for NBS and ecosystem service data collection

### **Riparian Buffers**

Riparian buffers protect and improve water quality, attenuate flooding, and provide a myriad of additional ecosystem services. Unfortunately, Connecticut's current regulatory framework provides no specific protections for riparian buffers along wetlands and watercourses. Indeed, we have the least protective buffer standards of all the New England states. There must be a comprehensive review of Inland Wetlands and Watercourses and Planning and Zoning statutes and regulations to incorporate protections specifically for riparian buffers. Redundancy should be provided to reduce risk. We must address weaknesses in our inland wetlands and watercourses protection that result in loss of wetlands and cold-water habitat. There are several areas that need to be addressed in our IWWC statutes and within DEEP:

- ❖ Update the required number of members of an Inland Wetlands Agency that must be trained from a minimum of one member to all members being required to obtain training. Utilize conservation districts to assist DEEP with training.
- ❖ Expressly prohibit the merging of Inland Wetlands Commissions with Planning, Zoning, and Planning and Zoning Commissions within a municipality.
- ❖ DEEP's Inland Wetlands and Watercourses program is severely under-resourced, providing little support for local commissions. Dedicated staff at DEEP in the Inland Wetlands and Watercourses program must be increased.

### **Global Climate Solutions Act (Negative Emissions)**

Connecticut should amend the Global Warming Solutions Act to incorporate "negative emissions." According to Commissioner Katie Dykes written testimony date March 10, 2023 to the Environment Committee on Senate Bill No. 11452 (2023):

"Negative emission practices and technologies include but are not limited to reforestation and management, wetland management, soil management, and direct air capture." These techniques not only provide climate change mitigation benefits but can also support critical ecosystem services such as air pollution reduction, biodiversity protection, and water filtration.

Often referred to as carbon capture and storage, these approaches – both bio-based and technology-based – are critical components in most IPCC pathways that keep global warming to below 1.5°C.

Incorporating negative emissions into Connecticut's Global Warming Solutions Act while also adding a net zero emissions target for 2050 will realign Connecticut with the latest science and will support Connecticut's ability to identify the most cost-effective path to a decarbonized economy.

Natural and working lands provide tremendous negative emissions benefits to Connecticut as our climate changes. Numerous scientific reports through various models have documented carbon and other greenhouse gas pollutants sequestered or absorbed and stored underground in soil, roots, and above ground in tree trunks and branches. Avoiding the deforestation or development of natural and working lands is the most effective means of maintaining and enhancing the "negative emission" benefits of this landscape type.

### **MORE INFORMATION**

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