

We need to highlight critical and sustainable steps to reduce the high cost of increasing electricity to cool residents in response to managing forecasted 3-day-100-degree heat waves. The simple idea is to look toward nature for an answer of how to quicken up carbon sink.

The Modern Carbon Cycle¹ looks at the “exchange of CO₂ occurring over the scale of months to a few centuries that are important for the cycling of C over **years to decades** with the focus on human influence starting from Industrial Era (1750).” “*The contemporary global carbon (C) cycling involves the exchanges of C within and between the atmosphere, the oceans, and biosphere. The C may be transferred from one reservoir to another in **seconds** (e.g., the fixation of atmospheric carbon dioxide (CO₂) by photosynthesis) or **over millennia** [e.g., the accumulation of fossil carbon (coal, oil, gas) through deposition and diagenesis of organic matter (OM)].*” (**emphasis added**)

But the Recarbonization of the Biosphere Ecosystems and the Global Carbon Cycle go one step more. By doubling down on greening, with the added **requirement of regular maintenance routines**, the level of carbon sinks and biodiversity will increase and help offset current levels of heat island effects. “*Ever **increasing amounts of carbon dioxide (CO₂)** are added to the atmosphere by fossil fuel combustion but the biosphere is a potential C sink. Thus, a comprehensive understanding of C cycling in the biosphere is crucial for identifying and managing biospheric C sinks. **Ecosystems with large C stocks** which must be protected and sustainably managed are wetlands, peatlands, tropical rainforests, tropical savannas, grasslands, degraded/desertified lands, agricultural lands, and urban lands. However, land-based sinks require long-term management and a protection strategy because C stocks grow with a progressive improvement in ecosystem health.*”² (**emphasis added**)

This means greening and using green infrastructure (GI) as much as possible in all landscapes and hardscapes can energize to the point of creating: 30 to 50% protected forest, local GI, wetlands, **sediment replacement**, and 520 miles of natural shoreline in NYC. Evidence and attribution of the enhanced land carbon sink describe the model we need to adapt.³ “*Continued long-term land carbon sequestration is possible through the end of this century under multiple emissions scenarios, especially if nature-based climate solutions and appropriate ecosystem management are used. A new generation of globally distributed field experiments is needed to improve understanding of future carbon sink potential by measuring belowground carbon release, the response to carbon dioxide enrichment, and long-term shifts in carbon allocation and turnover.*” (**emphasis added**)

The simple idea is to look toward nature for an answer of how to quicken up carbon sink. In conclusion, we should be choosing to increase natural and green parks and open space because green works faster to sink carbon – clean air, manage runoff, reduce flooding, lower the risk of fires in our natural areas. To meet the City’s goal of reducing greenhouse gases, these valuable natural features must be restored and protected.

In NJ, for instance, the RGGI funding Scope identifies two interesting initiatives:

¹ Ussiri, D.A., Lal, R. (2017). The Modern Carbon Cycle. In: Carbon Sequestration for Climate Change Mitigation and Adaptation. Springer, Cham. https://doi.org/10.1007/978-3-319-53845-7_6

² Recarbonization of the Biosphere: Ecosystems and the Global Carbon Cycle Book (2012),

³ Ruehr, S., Keenan, T.F., Williams, C. et al. Evidence and attribution of the enhanced land carbon sink. *Nat Rev Earth Environ* 4, 518–534 (2023). <https://doi.org/10.1038/s43017-023-00456-3>

Initiative Three: Promote Blue Carbon in Coastal Habitats This initiative will promote, protect and maintain the beneficial role of New Jersey’s tidal marshes in the carbon cycle. Blue Carbon ecosystems, such as salt marshes, tidal wetlands, seagrass beds and mangroves, are particularly important in the fight against climate change.⁴ “Blue carbon” is the carbon stored by the soils and plants in these marine systems. Coastal ecosystems such as tidal marshes and seagrass meadows sequester more carbon per unit area than terrestrial forests and the carbon can be stored for millennia.⁵ Although salt marshes cover only a small percentage of the United States, it has been estimated that they account for 21% of the carbon sequestered by ecosystems.⁶ New Jersey has an estimated 191,178 acres of Blue Carbon resources.⁷ However, as these ecosystems are degraded and lost, their carbon sink capacity declines, and existing stored carbon can be released, resulting in emissions of carbon dioxide that contribute to climate change. Modeling shows that between 9 and 19% of the State’s existing salt marshes could be lost by 2050 due to sea level rise.⁸ Furthermore, 67% of New Jersey’s shoreline is ranked for vulnerability to erosion as high or very high.⁹ As the soil erodes in these systems, the carbon stored in sediments can be exposed to oxygen and released back into the atmosphere as carbon dioxide.¹⁰ To meet the State’s 2050 goal of 80% reduction in greenhouse gases below 2006 levels, these valuable natural features must be restored and protected.⁴

Initiative Four: Strengthen New Jersey’s Forests This initiative is designed to maintain and/or increase the amount of carbon sequestered in the State’s natural sinks by managing them to promote, protect, and maintain their beneficial role in the carbon cycle. Both traditional forests and urban and community forests play a critical role in the carbon cycle as existing stocks of sequestered carbon and by continually removing and storing additional carbon from the atmosphere. Additionally, New Jersey’s urban and community forests store carbon and contribute to demand side energy reductions and avoided emissions. Trees and vegetation mitigate the urban heat island effect and can reduce energy costs for cooling of adjacent buildings through shading and evapotranspiration. Additionally, the creation of new preserved forested lands, and park development and revitalization projects can also support direct job creation, as well as provide lasting economic value through improved public health, expanded opportunities for recreational activities, and increased community attractiveness. The increase in urban tree canopy and forested lands through this initiative also results in environmental benefits such as reduced stormwater runoff, decreased localized air pollution; and expanded wildlife habitat. In certain settings, protected forests and parkland area can also help promote active transportation modes (walking, cycling, etc.) that can reduce vehicle usage and, conserve energy.⁵

While NY has a good RGGI Scope Plan and conversation, but no solution. Hearing Feb 9.

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Karen Argenti

⁴ <https://nj.gov/rggi/docs/rggi-scoping-document.pdf> page 10

⁵ NJ DEP Scoping document, page 12

New Information – April 21, 2026

The City article - <https://www.thecity.nyc/2026/04/21/tree-planting-heat-mamdani-parks-canopy/>
Heat map from above article - <https://a816-dohbsp.nyc.gov/IndicatorPublic/data-features/hvi/>

Old info from BCEQ's work

Things of interest to our discussion

BCEQ REPORTS:

- Amalgamated Hilltop Project and Research
<http://www.bceq.org/wp-content/uploads/2018/10/Harlem-River-Hilltop-online-1.pdf>

- Treat Rain like a Natural Resource
<https://bceq.org/2022/04/02/treat-rain-like-a-natural-resource/>

PARKS REPORTS: benefits of Tree Canopies, Natural Areas, Stormwater Management, Wetlands

- Trees - <https://tree-map.nycgovparks.org/tree-map>
- Natural Areas - <https://naturalareasnyc.org/nyc-nature-map/>
- Stormwater Management - <https://naturalareasnyc.org/stormwater-management-nature-steps-up-where-city-infrastructure-falls-short/>
- Wetlands - <https://naturalareasnyc.org/4-different-types-of-wetlands-and-where-in-nyc-to-visit-them/>

DEP REPORTS – Green Infrastructure from CSOs to Cloudburst Management, including Tibbetts Brook

- Green Infrastructure: <https://www.nyc.gov/site/dep/water/green-infrastructure.page>
- Tibbetts Brook – Stream daylighting is the process of restoring a stream to a more natural state by removing any obstructions covering it, such as concrete or pavement. <https://www.nyc.gov/site/dep/whats-new/tibbetts-brook-daylighting-project.page>