



## Harnessing nature to fight climate change

02 November 2020



Many of us love huge old trees. Their beauty, size and feeling of the passing of time leave us in awe. But they also contribute to life on this planet and make it livable for humans and so many incredible life forms.

But they also absorb harmful carbon dioxide from the air and release oxygen. The carbon is stored, or sequestered, in the wood of the tree's trunk, branches and roots, and in its leaves and the organic components of soil.

With the advent of a rapidly changing climate, the ability of trees and forests to sequester carbon is getting some attention in this state we're in.

A new report on the state's climate change response by the New Jersey Department of Environmental Protection (DEP) is highlighting the role of natural solutions – that is, using the power of nature – as a key strategy in addressing climate issues.

The 80×50 refers to the state's target of reducing carbon emissions 80% from 2006 levels by 2050. The state's Global Warming Response Act requires the DEP to track emissions with respect to the target, lay out a strategy and adopt measures to ensure the targets are met.

The 200-page report describes various carbon reduction strategies for transportation, electricity generation, homes, commercial businesses and industry.

But it also focuses on the need to protect and enhance the amount of carbon stored in New Jersey's lands.

The report outlines five important ways that trees, forests, wetlands, marshes and farms can offset emissions by sequestering more carbon:

- **Reforestation** – Planting new trees can significantly boost the amounts of carbon stored in soil and woody biomass.

Reforestation can take many forms, including planting trees in urban and suburban neighborhoods, planting more trees on pastures and croplands at New Jersey farms, and reforesting wetlands and other lands that were previously covered in forest.

Efforts are underway to plant trees in cities, including the New Jersey Tree Foundation's ongoing project in Camden, but much, much more is needed.

- **Avoiding the conversion of natural lands** – Unfortunately, the trend in New Jersey over the course of the last several decades has been to cut down forests and pave over farms and natural areas for residential and commercial development and other land uses.

Between 1986 and 2015, the state saw a 360,000-acre increase in land categorized as urban or developed, and decreases in acreage of upland forests, cropland, grassland and wetlands.

But the good news is that the state, through Green Acres and other land preservation initiatives, is actively protecting forests for their ecological value.

- **Conservation management of agricultural lands** – New Jersey has more than 411,000 acres of harvested cropland which could benefit from improved land management practices to help reduce carbon losses.

Best management practices such as little or no tilling of fields, planting cover crops in winter and increasing the organic carbon content of soils can enhance “carbon sinks” and reduce greenhouse gas emissions.

Between 2012 and 2017, New Jersey saw a 25% increase in acreage of cover crop, with more than 63,000 acres of planted cover crops in 2017. And in 2017, New Jersey farmers employed no-till practices on 104,499 acres of cropland.

- **Salt marsh and seagrass restoration and enhancement** – Salt marshes and seagrass store carbon at a rapid rate and can sequester carbon in the soil for thousands of years.

Wetland ecosystems are excellent at storing carbon because their wet soils are low in oxygen, which slows down decomposition and allows organic material to build up.

The report warns that the state's tidal salt marshes could decline between 5% and 9% by 2050 due to sea level rise and recommends steps to protect these marshes by allowing them to migrate inland.

- **Proactive forest management** – Critical “carbon sinks” in New Jersey's forests are at risk from wildfires, invasive plants, pests, diseases and overabundant deer, as well as sea level rise.

Proposed innovations include adopting carbon sequestration criteria as part of the Community Based Deer Management Plans and expanding deer population management tools on private forest lands.

Carbon defense, which is protecting carbon already sequestered in forests, especially via selective thinning in the Pine Barrens to prevent catastrophic losses due to insect infestations and wildfires, can also promote rare species.

Protecting existing forests through carbon defense and growing new forests and healing soil with a carbon offensive strategy can “deliver significant reductions in New Jersey's net carbon emissions cost-effectively,” according to the report.

The report concludes that natural solutions have the potential to increase carbon sequestration in the landscape by 33% by 2050. The state can't meet its 2050 emissions targets without them.

Source: <https://centraljersey.com/2020/11/02/harnessing-nature-to-fight-climate-change/>