

Inside Climate News

[Science](#)

Cleveland's Tree Canopy Is in Trouble

New Efforts Are Afoot to Bring More Trees Back to Forest City to Address Both Climate Resilience and Environmental Justice

By Kathiann M. Kowalski
June 3, 2023



3869. ROCKEFELLER PARK, CLEVELAND, OHIO.

*Thanks for the cards Martha. They are fine. Best regards to you and Will.
Fred.*

A postcard shows Rockefeller Park in Cleveland, Ohio during the early 20th century.

Credit: Sepia Times/Universal Images Group via Getty Images

Cleveland, Ohio has long been called the Forest City, although sources differ on whom to credit for the moniker. Back in 1831, French traveler Alexis de Tocqueville described Lake Erie's shores as a "primeval forest." And in the early 1850s, Mayor William Case, a businessman and horticulturist, actively encouraged citizens to plant trees.

Regardless of the nickname's source, it's clear that Cleveland's tree canopy has been shrinking for decades. Now, local government authorities and private groups are working to stop the decline and restore tree cover to boost climate resilience and promote equity.

"Our canopy as a whole is definitely dwindling," said Jennifer Kipp, Cleveland's manager of urban forestry. On average, the city's tree canopy is [18 percent](#) of its land area, down from 21 percent in 2000. And roughly 75 acres are lost each year, according to a 2020 [progress report](#) on the [Cleveland Tree Plan](#). But the amount of tree canopy varies, with some neighborhoods' percentages in the single digits or low teens and others in the mid-20s up to 30 percent.

The percentage of tree canopy for Cuyahoga County, which includes Cleveland and its surrounding suburbs, is higher, at 34.7 percent. Yet that figure from 2017 data was [6,600 acres less](#) than in 2011—a lost area equal to 5,000 football fields.

"Our trees in the county are facing a lot of risks, from development to plain old age," said Kristen Hall, executive director for the Cuyahoga Soil & Water Conservation District. Land development for businesses and homes has removed many shade trees, and many trees are old. "Trees just have an end life to them," Hall said.

Disease and pests take a toll as well. The emerald ash borer killed many ash trees some years ago, and the spotted lanternfly has now moved into the area, Kipp said. Other pests will undoubtedly be "coming down the pike," she added. Warming temperatures may make it easier for different pests or invasive species to move in.

As climate change persists, excess heat or wide swings in temperatures can stress trees. Severe storms can topple trees or break off large limbs. That risk can be higher if trees haven't been pruned or maintained properly.

Speaking at Cleveland's Decarbonization Summit this spring, Mayor Justin Bibb said he wouldn't have understood the term decarbonization three years ago. Since then, he said, he's learned a lot about what that should look like for the city's people.

"For me as mayor, this is all about how we lift up black and brown communities so that they can truly achieve the economic opportunities that they deserve," Bibb said. For him, that includes "making sure we truly can become the Forest City once again by planting more trees across our city."

That's a huge task as Cleveland works on a 2023 update to its Climate Action Plan.

A goal for 30 percent tree canopy by 2040 calls for planting and establishing more than 26,000 trees annually, as well as maintaining existing trees, according to the 2020 [progress report](#). The challenge isn't just planting and taking care of trees, but doing so in ways that promote environmental justice.

"Trees sit as a piece of infrastructure on the frontline of climate mitigation," said Samira Malone, executive director for the Cleveland Tree Coalition, whose members include various city and county departments, as well as multiple nonprofits and companies. "Heat island protection is major."

Cleveland now has more than 40 [risky heat days](#) when high temperatures can threaten people's health, compared to 1970, data from Climate Central show. Urban heat islands make that risk higher in areas with less shade tree cover.

"On really high heat days our urban areas can be 5 to 8 degrees hotter" than areas with [more tree cover](#), said Valerie Katz, Cuyahoga County's assistant director of sustainability.

One 2016 [study](#) found that areas of Cleveland with higher percentages of Hispanic people tended to have higher land surface temperatures than other areas. That study didn't find a clear link between higher land surface temperatures and the higher percentages of Black people. Yet the only neighborhood within Cleveland's city limits and with at least a 30 percent tree canopy by 2020 was Kamm's Corner, which is [mostly white](#).

More tree cover can also help the Cleveland area cope with increased extreme weather events, Malone said. Tree roots make the landscape “more spongy,” she said, meaning the ground can absorb more runoff that would otherwise erode soils, flood streets or gush into sewers.

Tree canopy also sequesters some carbon from greenhouse gas emissions, by incorporating it into plant growth. Trees can support other climate change mitigation efforts, too. Areas of shade can make heading to the bus stop more palatable or encourage more walking to get around, for example. Walking from place to place with no tree cover was “definitely no fun” in the Central neighborhood where Malone grew up, she said.

“Many of us have heard the term ‘concrete jungle’,” said Keymah Durden, a founder of the Rid-All Green Partnership in Cleveland, whose projects include a tree nursery to help increase available inventory for the area’s urban forestry efforts. As he sees it, increasing tree canopy and green space is essential for people’s health and communities’ well-being.

“We have targeted any tree planting that we’ve done since 2015 in areas of low canopy,” Kipp said. But because the city’s program focuses on public lands and rights-of-way, existing infrastructure can cause problems. When working-class neighborhoods were built, including some in historically redlined areas, the infrastructure didn’t include large tree lawns, she said. In that case, her office tries to focus on nearby parks or other public spaces that can at least provide some ecological benefits.

Kipp’s department also enforces a tree preservation ordinance, which aims to reduce clear cutting when land is developed or redeveloped. Generally, people developing more than an acre of land are supposed to provide her office with a plan for preserving some of the trees, she said.

Cleveland also recently resurrected its Urban Forestry Commission, which Malone chairs. Half of the advisory group’s remaining members come from different city departments. They include Kipp, a city council member and representatives working in the city’s sustainability, water, electric, planning, capital projects and public power departments. Additional members have expertise in arboriculture, health, community development, environmental justice and other fields.

Cuyahoga County's initiatives include its Healthy Urban Forest Tree Canopy Grants program. Interested groups [may submit applications](#) through June 8. Additionally, the Cleveland Tree Coalition has grown in less than a decade to more than 50 public and private member organizations.

"We need more trees everywhere. So we're all committed to doing this work, and it seems to be going really well," Durden said. Yet big challenges remain.

An 'Innate Human Right'

Aside from their role in mitigating and building resilience to climate change, trees improve air quality by lowering levels of particulates and ground-level ozone.

Maintaining and expanding tree cover can enhance those benefits, particularly for historically redlined areas, Malone said. Those areas, which include substantial percentages of Black, Hispanic and other people of color, continue to have higher asthma rates, greater energy burdens from utility bills and other disparities after decades of disinvestment and more exposure to pollution.

Trees can increase property values in a neighborhood and provide a feeling of connection to nature, Malone added. "Having that access to the natural environment, even in an urban ecosystem, is an innate human right," she said. But skinny saplings don't provide the same degree of ecosystem benefits that mature trees do. "One of the things we always say is the best time to plant a tree was 30 years ago."

To that end, the county's Urban Healthy Tree Canopy Grant program is "not just about getting [trees] into the ground. It's about getting them to that stage where they are canopy," said Alison Ball, a planning initiatives specialist with the Cuyahoga County Planning Commission.

Maintenance costs matter, said Vivek Shandas, a Portland State University professor whose work deals with strategies for addressing climate change. He has not worked on the Cleveland area's tree canopy efforts, but has

served on the advisory commission for Portland, Oregon's urban forestry efforts. Especially in low-income areas, it's important to avoid "burdening that adjacent property owner with the caring of that tree," he said. As he sees it, planning ahead to deal with maintenance can make sure inequities are addressed while avoiding millions of dollars in potential loss if trees die.

This year Cuyahoga County's [grant program](#) includes funding for several years of maintenance efforts for new trees. Local governments and organizations also can receive grants through the program to maintain large, mature trees.

The City of Cleveland is responsible for maintaining trees on its public property and rights-of-way along streets. But that's a huge effort in a city with more than 100,000 trees on public property and rights-of-way.

"It would take 26 years to do one round" of preventative maintenance on all those trees, as opposed to responding to problems as they crop up, estimated Phil Kidd, a special projects manager for Northwest Neighborhoods. The community development corporation works in several westside neighborhoods and is a member of the Cleveland Tree Coalition. The industry's recommended standard for tree pruning is every five to seven years, he said.

And while it's not just street trees that make up the tree canopy, urban forestry efforts become more challenging in areas that didn't allow enough room along streets for trees. Then, Kidd said, it's a matter of reaching out to residents, sometimes street by street.

"Many people view trees in general as a liability," Kidd noted. People may have had problems with water lines or electric wires. Or, they might not want to deal with extra work to care for trees. "So there's a big effort on our part to try to educate property owners on the benefit of trees."

All that work matters now and for future generations, Malone said. And, she added, "this is rectifying decades of disinvestment."