

US urban trees store carbon, provide billions in economic value

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From New York City's Central Park to Golden Gate Park in San Francisco, America's urban forests store an estimated 708 million tons of carbon, an environmental service with an estimated value of \$50 billion, according to a recent U.S. Forest Service study.

Annual net [carbon uptake](#) by these [trees](#) is estimated at 21 million tons and \$1.5 billion in [economic benefit](#).

In the study published recently in the journal *Environmental Pollution*, Dave Nowak, a research forester with the U.S. [Forest Service](#)'s Northern Research Station, and his colleagues used urban tree field data from 28 cities and six states and national [tree cover](#) data to estimate total [carbon storage](#) in the nation's urban areas.

"With expanding urbanization, city trees and forests are becoming increasingly important to sustain the health and well-being of our environment and our communities," said U.S. Forest Service Chief Tom Tidwell. "[Carbon](#) storage is just one of the many benefits provided by the hardest working trees in America. I hope this study will encourage people to look at their neighborhood trees a little differently, and start thinking about ways they can help care for their own urban forests."

Tens of thousands of people volunteered to plant and care for trees for Earth Day and Arbor Day this year, but there are opportunities all year long. To learn about volunteer opportunities near your home, visit the Arbor Day Foundation.

The Forest Service partners with organizations like the Arbor Day Foundation and participates in programs like Tree City USA to recognize and inspire cities in their efforts to improve their urban forests. Additionally the Forest Service is active in more than 7,000 communities across the U.S., helping them to better plan and manage their urban forests.

Nationally, carbon storage by trees in forestlands was estimated at 22.3 billion tons in a 2008 Forest Service study; additional carbon storage by urban trees bumps that to an estimated 22.7 billion tons.

Carbon storage and sequestration rates vary among states based on the amount of urban tree cover and growing conditions. States in forested regions typically have the highest percentage of urban tree cover. States with the greatest amount of carbon stored by trees in urban areas are Texas (49.8 million tons), Florida (47.3 million tons), Georgia (42.4 million tons), Massachusetts (39.6 million tons) and North Carolina (37.5 million tons).

The total amount of carbon stored and sequestered in urban areas could increase in the future as urban land expands. Urban areas in the continental U.S. increased from 2.5 percent of land area in 1990 to 3.1 percent in 2000, an increase equivalent to the area of Vermont and New Hampshire combined. If that growth pattern continues, U.S. urban land could expand by an area greater than the state of Montana by 2050.

The study is not the first to estimate carbon storage and sequestration by U.S. urban forests, however it provides more refined statistical analyses for national carbon estimates that can be used to assess the actual and potential role of [urban forests](#) in reducing atmospheric carbon dioxide.

More urbanization does not necessarily translate to more [urban trees](#). Last year, Nowak and Eric Greenfield, a forester with the Northern

Research Station and another study co-author, found that urban tree cover is declining nationwide at a rate of about 20,000 acres per year, or 4 million trees per year.

Provided by USDA Forest Service

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