

# National Capital Region Center for Urban Ecology

National Park Service  
U.S. Department of the Interior



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Cherry blossoms bring thousands of visitors to the city every year.

## Climate Change and the Urban Forest

Washington, D.C., is known not only for its monuments, but also for its trees. This urban forest provides a wide variety of services to the city, including removing air pollution, lowering energy costs, and improving human health. Trees also help mitigate climate change by reducing the city's carbon footprint<sup>1</sup>.

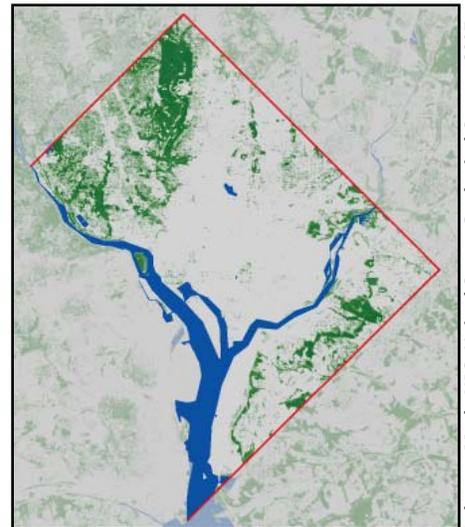
The National Park Service helps protect and maintain the urban forest in Washington, where trees outnumber

human residents by four to one<sup>1</sup>.

In 1990, USDA created the Urban Forest Effects Model (UFORE) to calculate the value and benefits of urban trees<sup>2</sup>. In Washington, the nonprofit group Casey Trees and NPS teamed up to study the city's urban forest using this system<sup>3</sup>. Thanks to this effort, we have a good understanding of the benefits we receive from the city's trees and how they help us cope with climate change.

### Analyzing Washington, D.C.'s Urban Forest

- Casey Trees and NPS gathered data on the city's trees in 2004 and 2009, with plans to repeat the process every five years<sup>3</sup>. The full report is available online<sup>1</sup>. Here are some key facts about the value of our urban trees:
- There are 2.6 million trees in Washington, up from 1.9 million in 2004. These trees cover 28.6% of the city. Of all cities analyzed using UFORE, Washington ranked 5th for most tree cover – Atlanta is #1 with 36.8% cover<sup>1</sup>.
- D.C.'s trees reduce the city's carbon footprint by taking carbon dioxide, a key greenhouse gas, out of the air. Each year, our trees take in about 19,000 tons of carbon – the equivalent annual emissions of 11,000 cars<sup>1</sup>.
- The trees help us conserve energy by cooling buildings with shade in the summer and blocking winter winds. They are estimated to reduce energy costs by \$3.45 million per year<sup>1</sup>. In parks and public spaces, shade from trees gives people a break from warm temperatures and heat waves.
- Besides these climate benefits, urban forests help us tackle other problems like air pollution. Trees in Washington remove 492 tons of air pollution per year. In this city, where 1 in 14 residents has asthma, the pollution removal corresponds to \$2.3 million in health care savings every year<sup>1</sup>.
- By conserving these trees, the National Park Service does more than protect the city's environment. Urban forests make cities better places to live and help fight the effects of climate change.



Lehman, Mark, NPS. United States Geological Survey, 2007. NLCD 2001 Canopy Cover.

In this map of Washington, D.C., the color green indicates tree cover. Numbering over 2.5 million, trees cover more than a third of the land in D.C., and much of this land is cared for by the NPS.

### Find Out More

- Visit the Center for Urban Ecology climate change web site at [www.nps.gov/cue/climate](http://www.nps.gov/cue/climate).
- Read the full Washington, D.C., UFORE report at [www.caseytrees.org](http://www.caseytrees.org).
- Find out what you can do to improve Washington's urban forest with Casey Trees and the National Park Service.
- Hike in one of Washington's national parks to get a first hand look at the urban forest we help protect.

### References

1. Casey Trees. "I-Tree Ecosystem Analysis: Urban Forest Effects and Values." <http://caseytrees.org/geographic/tree-inventory/citywide/2004-ufore-model-dc/index.php>. January 2010.
2. USDA. "Urban Forest Effects Model." [www.ufore.org](http://www.ufore.org). N.D. Accessed Aug. 2010.
3. Casey Trees. "Geographic Resources." [www.caseytrees.org/geographic](http://www.caseytrees.org/geographic). 2008.