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Backstory: What is the value of a tree?

Antoinette Campbell loses an oak: Her a/c bill goes up \$120 a month - the toll on her city is even bigger.

By Ethan Gilsdorf

Antoinette Campbell was justifiably shocked when city workers mistakenly chainsawed a 60-foot oak tree last May that shaded the eastern facade of her Washington, D.C., home.

"It was a personal something I had with that tree," says Ms. Campbell.

Besides the emotional distress, the error had an unexpected consequence: She noticed her air conditioner began running a couple hours earlier each morning.

Conventional wisdom is that just one shady tree can save a homeowner \$80 a year in energy costs, but Campbell claims her bills skyrocketed once the oak disappeared - up to \$120 more some months.

Yes, humble street trees cool the air, reduce pollution, and absorb storm-water runoff, say forestry experts. But the benefits aren't only ecological, they say. Property values are 7 percent to 25 percent higher for houses surrounded by trees. Consumers spend up to 13 percent more at shops near green landscapes. One study even suggests patients who can see trees out their windows are hospitalized, on average, 8 percent fewer days.

Events around the country for Friday's National Arbor Day will highlight the fact that citizens and civic leaders are finally investing in the so-called "urban tree canopy."

But efforts like these aren't a moment too soon. Overall, urban trees in America are threatened, says Deborah Gangloff, executive director of American Forests. "Every city we've looked at, about three dozen, shows a decline of about 30 percent of the urban tree canopy in the past 10 to 15 years," she says. In some cities, the loss from disease, development, and neglect has been catastrophic. In Washington, D.C., for example, 64 percent of heavily forested areas disappeared between 1973 and 1997 - forest that once covered a third of the district now covers a tenth.

And the creep of suburban sprawl seems unstoppable. In the next 50 years, total American land mass reclassified from forest to urban is expected to equal the size of Montana, suggests US Forest Service data. To reverse the trend, cities like Jacksonville, Fla., San Francisco, Albuquerque, N.M., Des Moines, Iowa, and Indianapolis have ambitious reforestation plans. Los Angeles wants to plant 1 million trees. The Sacramento region has a goal to double the urban canopy in 40 years; Baltimore plans to double its own a decade sooner. Washington, D.C. is partnering with tree-planting groups and nonprofits like the Casey Trees Endowment Fund, an organization with a \$50 million grant to combat the precipitous canopy decline.

The fund's urban forester program trains volunteers like Campbell, who lost her oak, to conduct on-site censuses that, combined, will locate, measure, and identify every tree in the city. The data is crunched by a US Forest Service computer model, which produces a precise environmental and economic value for each tree. For example: A 50-foot American linden at the corner of Potomac Ave. and E Street in the southeast quadrant of Washington stores 1,476 kilograms of carbon and removes 124 grams of sulfur dioxide from the atmosphere each year. To remove that same amount of pollution would otherwise cost society \$5.44 annually. Multiply that by D.C.'s 1.9 million trees and the benefits add up.

Urban trees also reduce the runoff of pollutants into waterways, a problem caused by impervious surfaces like concrete. Foliage slows rain so it gets absorbed better, rather than overwhelming drainage systems, explains Ms. Gangloff. For example, a 2005 study of municipal trees in Boulder, Colo., found that the average tree intercepts 1,271 gallons of precipitation annually, saving the city \$523,311 in storm-water retention costs.

For cities struggling to meet the Environmental Protection Agency's air quality goals and build adequate wastewater treatment facilities, trees offer high return on investment. The Boulder report estimates the city gets a \$3.67 return on every dollar spent on the urban forest.

"It's worth considering the value of these trees when making policy decisions," explains Dan Smith, a Casey Trees spokesman. The value of tree maintenance, for example, can't be minimized, he says, because a 30-inch-diameter tree removes 70 times more pollution per year than a 3-inch tree does. This is why he's unhappy that over the past five years, federal support of urban greening - such as tree-cover analysis, goal-setting, and technical support - has declined.

Like the urban trees themselves, the programs must also be nurtured. And that's nothing to shake a stick at.

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1. Why are trees so important? *
2. What has happened to trees in many urban areas?

* This ought to be a somewhat lengthy response since this is what the entire article is about.