What's at the root of urban forest decline?

save the
shade

By Charles Lockwood / Illustration by Harry Campbell

Houston, Texas: In what some environmentalists dubbed The Texas Chainsaw Massacre … of Trees, part of a much-loved 90-year-old "tree canopy" over a busy avenue was chopped down several years ago, leaving a blocklong row of stumps and sun-baked sidewalks on one side of the street. ¶ San Diego, California: A recent study by American Forests, a nonprofit conservation organization, found that San Diego has just a 13 percent tree cover. American Forests recommends a minimum of 40 percent tree cover for most urban areas. ¶ Atlanta, Georgia: A NASA-sponsored study found that the continued destruction of Atlanta's trees has ▶▶▶

raised temperatures in the city 5 to 8 degrees higher than in outlying areas—which has generated increasingly violent thunderstorms over the metropolitan area and more-severe flooding.

"The media keeps reporting on the alarming destruction of unspoiled forests around the world, like Brazil's Amazon Basin," says John E. Cutler, a principal in the Houston office of The SWA Group, an international landscape architecture, planning, and urban design firm. "But the media is basically ignoring the equally disturbing disappear-ance of our 'urban forests'—the trees along streets, in residential yards, and in parks—in metropolitan areas around the world."

How serious is the problem? A study by American Forests shows that the 448 largest urban areas in the U.S. lost more than 3.5 billion trees in just the past 10 years.

Second, trees greatly lower energy consumption. The shade from trees prevents heat islands—the build-up of heat from sunlight pouring onto dark, nonreflective surfaces such as roofs, roads, and parking lots. Three strategically placed trees around a house can cut air-conditioning usage—and costs—in half. A recent study by the USDA Forest Service Center for Urban Forest Research found that adding 50 million new trees in California would eliminate the need for seven new 100-megawatt power plants.

Third, trees reduce the need for (and cost of) storm water management facilities. One hundred mature trees capture about 250,000 gallons of rainwater per year by absorbing rain and slowing the flow of storm water, allowing some water to evaporate and the rest to soak into the ground. San Antonio, Texas, plans to increase its tree cover from 27 percent to 35 percent to reduce storm

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The U.S. isn't alone in destroying its urban forests. Satellite maps show that the green canopy over many of the world's cities is vanishing daily.

Why should we care about the accelerating decline of urban forests? The answers could surprise you.

The Many Benefits of Trees / "Urban trees are far more than window dressing that beautifies streets and makes neighborhoods more attractive and desirable," says Susanna Hecht, a professor of urban planning at the University of California at Los Angeles.

First, trees generate significant, measurable environ-mental benefits. Trees clean pollutants from the air, including sulfur dioxide, nitrogen dioxide, ozone, and carbon monoxide. Just 100 trees, for example, remove 5 tons of carbon dioxide from the air a year, and about 1,000 pounds of pollutants.

water runoff, rather than build a $200 million storm water facility.

Fourth, one scientific study after another has proved that trees significantly improve human mental and physical health. Office workers who have a view of trees, for example, like their jobs more and enjoy better health, which leads to less absenteeism and greater productivity. Significantly, a Texas A&M University study found that abdominal surgery patients who could look out their hospital room windows at trees recovered faster, had fewer complications, and required less pain medication than patients whose windows looked out onto brick walls or who had no views at all from their beds.

Fifth, in the Third World, city trees are a vital means of economic survival. "In poorer areas of big Latin American, African, and Asian cities, it is common to find fruit trees

cyber**sidebar**

Where are writer Charles Lockwood's favorite urban forest areas? Join us at our Web site for a tour of some top sylvan cities. Click on Cyber Sidebar at **hemispheresmagazine.com**.

growing in backyards," says UCLA professor Susanna Hecht. "This subsistence agro-forestry feeds the households and provides produce to sell or trade in local markets."

Finally, trees give a city a unique character and create a distinctive sense of place. Try to imagine Paris without its tree-lined boulevards.

Cities vs. Trees? / Cities and developers often take the easy way out—cutting down trees and building what they want—rather than finding a creative architectural or

engineering solution that would preserve existing urban trees and still enable them to construct the desired project.

Cutting down trees is only part of the problem. Many communities aren't planting trees to replace those that have been lost. "New neighborhoods in outlying areas have virtually no trees," says Cutler. "The developers don't want to spend the extra money. Many municipal regulations also prohibit planting trees between sidewalks and curbs."

Developers, in particular, often object to preservation measures. When Shelby, Michigan, strengthened its Tree and Woodlands Protection Ordinance in 2002, requiring developers to inventory every tree on a property and meet tree replacement requirements, one developer said bluntly: "I don't think it's necessary. It adds so much time and money [to a project]."

Saving Urban Forests / But there is good news.

Protecting existing city trees and planting millions more is the goal of diverse private, nonprofit, municipal, regional, state, and national efforts.

Across the U.S., a variety of local nonprofit organizations are now pursuing urban forest campaigns. Greening Milwaukee, for example, gives one free tree each year to any resident who takes the group's tree-planting and -maintenance classes.

Other community organizations stand at the forefront of the effort to restore urban forests. Los Angeles–based TreePeople not only has planted more than 2 million trees in its metropolitan area but also focuses on proper tree care. "It's very hard for any large city to provide the kind of protection and care needed to get trees established," says TreePeople president and founder Andy Lipkis. "Most newly planted trees survive only seven years. Through citizen forestry, however, 95 percent of the trees we plant are alive after five years—the people are out there protecting, watering, and maintaining them."

Some city governments also have become urban foresters by enacting stronger municipal codes to plant and protect more trees. In Scotland, the City of Edinburgh Council has planted 250,000 native trees throughout the city over the past four years.

The Bigger Picture / National organizations, meanwhile, are providing the necessary research, resources, and networking to local, regional, and state urban forest groups. American Forests, founded in 1875, is the oldest nonprofit citizens' conservation organization in the U.S. The group's research and scientific endeavors include development of the CityGreen GIS computer software that helps local groups and cities evaluate planting and restoration strategies.

Many of the most important battles for urban forests are being fought in the world's fastest-growing cities in Asia, Africa, and Latin America, where automobile use is rapidly increasing. Some traffic engineers are greedily eyeing tree-shaded sidewalks for road-widening programs rather than expanding public transit that functions so effectively in densely populated cities.

More and more people, fortunately, are recognizing the importance of city trees, and they are becoming defenders of endangered urban forests. In Portland, Oregon, a row of handsome sequoias on 72nd Street opposite an elementary school was becoming stressed because their roots didn't have enough space. Rather than chopping down the sequoias, Portland narrowed the street to give the tree roots more room to grow. ///

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