



AMERICAN FORESTS

Urban Forests Fact Sheet

American Forests defines urban forests as “ecosystems of trees and other vegetation in and around communities that may consist of street and yard trees, vegetation within parks and along public rights of way and water systems. Urban forests provide communities with environmental, economic and social benefits and habitat for fish and wildlife.”

Approximately three percent of the land in the lower 48 states has been classified as urban, but urban areas support 80 percent of the U.S. population (220 million people).¹ Using the urban growth patterns of the 1990s, experts expect urban land in the lower U.S. to increase 8.1 percent by 2050, an increase in area greater than the size of Montana.²

Nationally, urban forests are estimated to contain about 3.8 billion trees, with a structural asset value of \$2.4 trillion, which doesn't include other ecosystem service benefits.³

Urban trees in the lower 48 states store 770 million tons of carbon, valued at \$14.3 billion,⁴ and remove approximately 784,000 tons of air pollution annually, with a value of \$3.8 billion.⁵

Studies have shown that every \$1 invested in urban trees results in \$2 to \$4 in benefits, including lowered energy costs, reduced stormwater flows, improved aesthetics, higher air quality and reduced carbon dioxide concentrations.⁶ Trees act as natural pollution filters, removing polluted particulate matter from water and absorbing nutrients like nitrogen, phosphorus and potassium, which are all common byproducts of human activities. A single front-yard tree can intercept 760 gallons of rainwater in its crown, reducing runoff and flooding on your property.⁷

Green industries have an annual estimated economic impact of \$147.8 billion and can provide tens of thousands of new jobs.⁸ Shoppers shop more often and longer in well-landscaped business districts and are willing to pay more for parking and up to 12 percent more for goods and services.⁹

Just three large trees around your home — two on the west side and one on the east — can provide enough shade to reduce your air-conditioning costs by 30 percent in the summer. And, when placed properly to reduce wind exposure, they can reduce heating bills in the winter by two to eight percent.¹⁰

Greener urban areas lead to healthier and more social interactions between adults and children, as well as lower levels of graffiti, property crimes and violent crimes.¹¹ Public housing residents with nearby trees and natural landscapes reported 25 percent fewer acts of domestic aggression and violence,¹² and public housing with greater amounts of vegetation had 52 percent fewer total crimes, 48 percent fewer property crimes and 56 percent fewer violent crimes than housing with low vegetation amounts.¹³

Views of nature can reduce the stress response of both body and mind when stressors of urban conditions are present.¹⁴ A Danish study published in 2007 concluded that adults who could easily reach a greenspace had less stress and a lower body mass. Similar results were reported in a study of over 3,000 inner-city children in the United States.¹⁵

Strategic plantings of trees and shrubs in a city can reduce noise considerably. Tall, dense trees with soft ground surfaces can reduce noise by 50 percent or more.¹⁶

¹ United States Forest Service. Open Space Conservation. Sustaining America's Urban Trees and Forests: A Forests on the Edge Report. <http://www.fs.fed.us/openspace/fote/sustaining.html> (accessed Jan. 17, 2013).

² United States Forest Service. Open Space Conservation. Sustaining America's Urban Trees and Forests: A Forests on the Edge Report. <http://www.fs.fed.us/openspace/fote/sustaining.html> (accessed Jan. 17, 2013).

³ United States Forest Service. Open Space Conservation. Sustaining America's Urban Trees and Forests: A Forests on the Edge Report. <http://www.fs.fed.us/openspace/fote/sustaining.html> (accessed Jan. 17, 2013).

⁴ Nowak, D.J. and Crane, D.E. Carbon Storage and Sequestration by Urban Trees in the USA. *Environmental Pollution*. 2002, 116(3), 381-389.

⁵ Nowak, D.J.; Crane, D.E.; and Stevens, J.C. Air Pollution Removal by Urban Trees and Shrubs in the United States. *Urban Forestry and Urban Greening*. 2006, 4, 115-123.

⁶ United States Forest Service. Pacific Southwest Research Station. Urban Ecosystems and Social Dynamics Program. Urban Ecosystems and Processes Team. Trees Are Money: Realizing the Benefits of Trees. http://www.fs.fed.us/psw/programs/cufr/products/powerpoint/cufr_653_35_Selling%20U.F._St.Louis.swf (accessed Jan. 17, 2013).

⁷ U.S. Department of Agriculture. U.S. Forest Service. Pacific Southwest Research Station. Center for Urban Forest Research. Urban Forest Research March 2001. <http://www.fs.fed.us/psw/programs/uesd/uep/products/newsletters/UF1.pdf> (accessed Oct. 15, 2012).

⁸ Sustainable Urban Forests Coalition. Fact Sheet. http://www.urbanforestcoalition.com/doc/SUFC_FactSheet.pdf (accessed Jan. 17, 2013).

⁹ Wolf, K.L. In *Building Cities of Green*, Proceedings of the 1999 National Urban Forest Conference, Seattle, Wash., Aug. 31-Sept. 3, 1999; Kollin, C. Ed.; American Forests: Washington, D.C., 1999.

¹⁰ Simpson, J.R. and McPherson, E.G. Potential of Tree Shade for Reducing Residential Energy Use in California. *Journal of Arboriculture*. 1996, 22(1), 10-18.

¹¹ Kuo, F.E. The Role of Arboriculture in a Healthy Social Ecology. *Journal of Arboriculture*. 2003, 29(3), 148-155.

¹² Kuo, F.E. and Sullivan, W.C. Aggression and Violence in the Inner City: Effects of Environment via Mental Fatigue. *Environment and Behavior*. 2001, 33(4), 543-571.

¹³ Kuo, F.E. and Sullivan, W.C. Environment and Crime in the Inner City: Does Vegetation Reduce Crime? *Environment and Behavior*. 2001, 33(3), 343-367.

¹⁴ Parsons, R.; Tassinary, L.G.; Ulrich, R.S.; Hebl, M.R.; and Grossman-Alexander, M. The View From the Road: Implications for Stress Recovery and Immunization. *Journal of Environmental Psychology*. 1998, 18(2), 113-140.

¹⁵ Golden Gate National Parks Conservancy. Park Prescriptions. Profiles and Resources for Good Health from the Great Outdoors. <http://www.parksconservancy.org/assets/conservation/environmental-sustainability/pdfs/park-prescriptions-2010.pdf> (accessed Aug. 21, 2012).

¹⁶ Anderson, L.M.; Mulligan, B.E.; Goodman, L.S. Effects of Vegetation on Human Response to Sound. *Journal of Arboriculture*. 1984, 10(2), 45-49.