



URBAN FOREST HEALTH MONITORING IN THE UNITED STATES — *Part 1*

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Abstract.—To better understand the urban forest resource and its numerous values, the U.S. Department of Agriculture Forest Service has initiated a pilot program to sample the urban tree population in Indiana, Wisconsin, and New Jersey and statewide urban street tree populations in Maryland, Wisconsin, and Massachusetts. Results from the pilot study in Indiana revealed that about 92.7 million urban trees exist with a structural value of \$55.7 billion. These trees removed about 6,600 metric tons of air pollution in 2000 (\$35.4 million value) and store about 8.4 million metric tons of carbon (\$170.2 million value).

People are having an ever-increasing impact on local, regional, and global environments, particularly in and around urban areas (cities, towns, villages). Urban forests (trees in urban areas) can mitigate certain detrimental human impacts and improve environmental quality and human health. Urban forests help provide clean air and water, reduce building energy use, store carbon, protect against ultraviolet radiation, and cool air temperatures. They also provide forest-based products, recreation opportunities, habitat for wildlife, aesthetic enjoyment, and enhance the social and psychological well-being of millions of Americans. This valuable national resource will continue to increase in extent and importance in the years ahead, yet faces numerous pressures such as insects, diseases, storms, and pollution that affect forest health and related benefits.

In 1997, a National Research Council report, "Forest Lands in Perspective," recognized that urban and community non-federal forests are the fastest-growing forests in the United States. It recommended strengthening federal monitoring of the health of these forests. In 1998, USDA Forest

Service Chief Michael Dombeck developed a Natural Resource Agenda that emphasized sustainable development of communities, and Deputy Chief Phil Janik released an action strategy for State and Private Forestry that would increase forest health monitoring in urban areas. In 1999, USDA Secretary Dan Glickman noted, "We still have plenty of work to do to make Americans take notice of the dwindling natural resource base in their cities."

In a survey of forestry professionals regarding the health needs of urban forests, less than 25 percent of the respondents ranked the overall health of the urban forests in their state as good to excellent; 99 percent indicated that preserving the health of community forests should be an integral part of urban and community forest programs; and more than 90 percent identified long-term tree care and maintenance programs as critical to preserving the health and sustainability of urban forests in the northeast (Pokorny 1998).

Although urban forests affect the vast majority of Americans, little is known about them, how they are changing, or the factors that might lead to changes in the structure and health of this valuable resource. Knowing how the urban forest is changing can aid in developing more effective policies for protecting, sustaining, and otherwise enhancing the health of and benefits derived from this resource for future generations. To learn more about urban forests and aid in their management and planning, pilot studies were conducted to evaluate the implementation of a national Urban Forest Health Monitoring (UFHM) program. The purpose of this program is to acquire information about the urban forest while concurrently establishing a nationwide system of pest detection and health monitoring in urban forests (Nowak et al. 2001).

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