



What Is the Urban Forest?

**TREE CITY USA®
BULLETIN**

January/February 2019 • Editor: Dr. James R. Fazio • \$3.00



An understanding of urban forestry and the stewardship of trees in the community has come a long way in recent decades. The term itself, “urban forestry,” is fairly recent, having been suggested by a professor at the University of Toronto in 1965. It rang strangely on the ears of some, and still does. The urban forest itself, as something to be understood, appreciated, and managed, is also not wholly accepted. So, what is the urban forest that is at the heart of what we call urban forestry?

The answer to this question is an important one. First, it sets the parameters of what might fall under the stewardship of tree boards and municipal forestry departments. This, in turn, has taken on far more importance in recent years as scientists have quantified the ecoservices provided by the greenery in our communities. These significant contributions include cleaner air and water, energy savings, asphalt surface protection, crime reduction, mental health benefits, and more.

In smaller communities, some are troubled by the word “urban.” This concern has been circumvented by adoption of the words “community” in its place. Sometimes the usage is “urban and community.” The concepts are the same and the usage is simply a matter of community size and preference. In this issue, we use “urban forest” as a matter of convenience.

There are an estimated 5.5 billion trees in the urban forests of the United States, providing a value of more than \$2.4 trillion in environmental services and other benefits. About 80–85 percent of the trees are on private property and the rest are found along streets, in parks, and around large buildings or on campuses. As illustrated in the following pages, all comprise the urban forest and all contribute not only to their owners or managers, but to society as a whole.

“Precious” is a fitting term for a community’s trees. Together they are part of the urban ecosystem that can sustain and add quality to life. Defining all that this encompasses is essential to the management of resources in communities of all sizes.

Defining the Urban Forest

Author Robert W. Miller in his book, Urban Forestry: Planning and Managing Urban Greenspaces, defines the urban forest as “the sum of all woody and associated vegetation in and around dense human settlements, ranging from small communities in rural settings to metropolitan regions.” His definition is widely accepted and is the basis for this bulletin.

Trees along our city streets are what most people think of as the urban forest. This is surely an important part of it and the portion that usually receives the most management. This is because most street trees are in rights-of-way and the city can use ordinances to specify such things as:

- Who has the responsibility for care of the trees such as watering, pruning, public safety, etc.
- What can and cannot be planted, sometimes specified using approved and prohibited lists, and sometimes based on the width of the space between sidewalk and street.
- When or under what conditions a tree can be removed.

According to research scientist David Nowak, there are more than 60 million street trees in the United States providing ecoservices valued in the billions of dollars. But in nearly every community, there is room for more. For example, in a study of 50 cities in California, Dr. Greg McPherson of the U.S. Forest Service reported that only 36 percent of the city streets were at full stocking. Here and in communities throughout the nation there is much more room for trees.

Street trees are a major part of the urban forest and the portion most subject to control by city ordinance.



Trees Around Private Residences and Businesses

It has been estimated that about 80 percent of the trees in a community are in residential yards. Some “private” trees also grace the properties of businesses. Managerial control of these trees is at the other end of the spectrum from street trees. Ordinances usually do not provide for municipal intervention unless a private tree poses a threat to public safety. Generally, the care — and planting — of this important part of the urban forest is entirely up to the volunteer action of citizens.

WHAT HELP IS AVAILABLE?

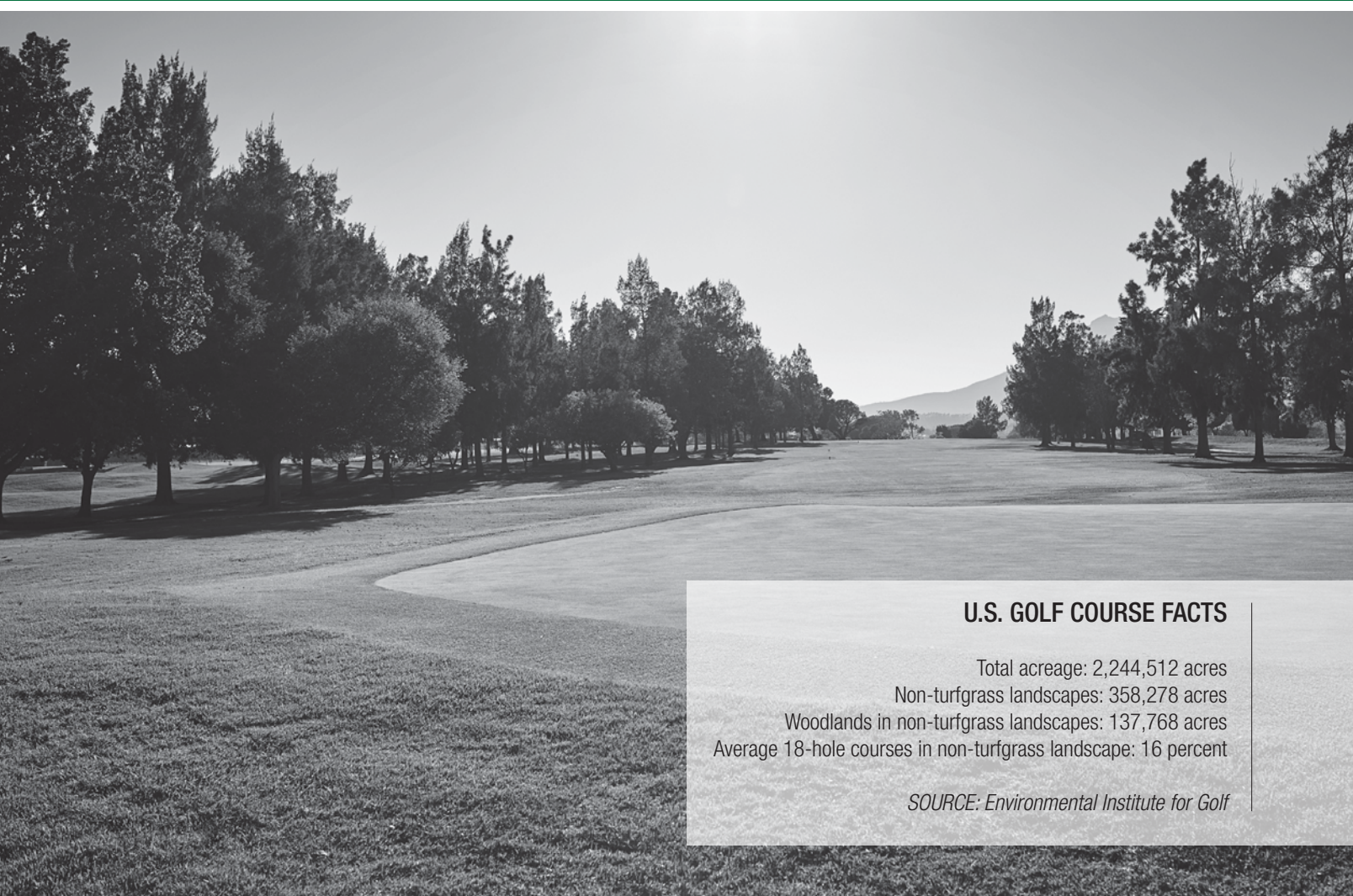
Tree owners have plenty of options for obtaining tree care advice and sometimes even free or low-cost trees to plant. Here are some sources of assistance:

- ✔ Cooperative Extension, under the auspices of the U.S. Department of Agriculture and the state land grant university in each state, is usually located in the county office complex. Master Gardeners is an Extension program that uses trained volunteers to help with public information.
- ✔ Arborists certified by the International Society of Arboriculture are an excellent source of information. A list can be found at treesaregood.org/findanarborist. Reputable tree care companies will also offer advice, often at no charge on a first visit.
- ✔ City foresters and state foresters. A list of contacts in each state can be found at arborday.org/foresters.
- ✔ For those who prefer self-help, Ask an Arborist is a popular and helpful section of arborday.org. Other helpful pages are the Tree Nursery and Energy-Saving Trees.

Millions of trees and even more empty planting sites are found around homes and businesses. Together these trees form a huge part of the urban forest — with the potential for much more.



Parks, Campuses, and Cemeteries



U.S. GOLF COURSE FACTS

Total acreage: 2,244,512 acres
Non-turfgrass landscapes: 358,278 acres
Woodlands in non-turfgrass landscapes: 137,768 acres
Average 18-hole courses in non-turfgrass landscape: 16 percent

SOURCE: Environmental Institute for Golf

What is a city park without trees? Generally, park trees are highly appreciated for their shade and beauty and receive care accordingly. From tiny pocket parks to iconic expanses like New York's Central Park, park trees benefit millions of recreationists. Even more people benefit from the purification of air provided by these oases in urban settings.

PARKS AND GOLF COURSES

PARKS What is a city park without trees? Generally, park trees are highly appreciated for their shade and beauty and receive care accordingly. From tiny pocket parks to iconic expanses like New York's Central Park, park trees benefit millions of recreationists. Even more people benefit from the purification of air provided by these oases in urban settings. Adequate budgets are often a problem with parks, but trees here deserve the best of attention and care. Some communities have adopt-a-tree programs that help finance tree care and

Trees on golf courses shade rest areas, provide wildlife habitat, help separate fairways, delineate borders, and contribute to air quality and other ecoservices of the urban forest.

give citizens a greater sense of ownership. Memorial trees can supplement regular planting programs.

GOLF COURSES With more than 16,000 golf courses in the U.S., these spaces cannot be overlooked when considering the urban forest. Some are rural, but others are part of municipalities or urbanized counties. All offer the potential for environmental benefits. According to the Environmental Institute for Golf, 29 percent of 18-hole golf facilities currently participate in a voluntary environmental stewardship program. Many more are moving toward improvements that include planting native species, enhancing wildlife habitat, and controlling erosion.

COLLEGES AND OTHER CAMPUSES

There are more than 4,500 higher education institutions across the United States, many with sprawling campuses. These offer not only a place for trees but also a place for education about the benefits of trees and the need for their care. The Arbor Day Foundation's Tree Campus USA® program is designed to address both. Criteria for an institution to receive this honor include having a management plan and budget for campus trees and a committee consisting of campus personnel, students, and a local tree community member — often this is the city forester. More information about the program is available at arborday.org/treecampus.

Similarly, K-12 schools offer enormous opportunities for both tree planting and related education. In fact, the first Arbor Day ceremonies were at schools and the tradition is worth continuing each year. In recent years, science has revealed a new benefit — the importance of shading play areas to prevent skin cancer later in life.

Around hospitals and other institutional grounds, trees provide the healthful benefits of solace, stress reduction, and healing. Business campuses with trees have been found to provide greater worker satisfaction and job retention.

CEMETERIES

One of the earliest uses of trees to improve American cemeteries was the idea of a physician, Dr. Jacob Bigelow, in 1825. With help from the Massachusetts Horticultural Society, Mount Auburn Cemetery near Boston was soon founded and remains today an outstanding example of what is possible.

Cemetery trees help provide beauty and solace and lend a feeling of dignity. But University of Illinois Extension Educator Rhonda J. Ferree points out that they offer even more. She wrote, “For me cemeteries are also a place to see outstanding trees. There are many reasons why cemeteries offer superior trees. Cemetery trees are not disrupted by power lines, sidewalks, driveways, or other urban features that impact a tree’s growth. Trees are often left alone in a cemetery and allowed to grow to their natural height and spread. For this reason, cemetery trees are often found on big tree registers, and some cemeteries also serve as an arboretum.”

Students attending the more than 350 Tree Campus USA institutions receive a hands-on education about trees, tree planting, and tree care.



Parking Lots and Transit Stations



Estimates reveal that there are nearly 40 million acres of parking lots in our country and the count is growing. Without trees, these areas are what have been called “asphalt deserts.” Worse than a desert, bare parking lots are a significant contributor to the heat island effect and air pollution in our communities.

Trees in parking lots are part of the urban forest and can take a huge bite out of the necessary evil of surface space used for parking our ever-increasing number of cars and trucks. The resulting benefits of using trees include:

- Welcome shade for visitor and shopper comfort
- Beauty and visual variety
- Reference points to help visitors locate their cars
- Reduction of the heat island effect
- Visual screens and noise reduction
- Absorption of polluting gases and provision of oxygen
- Reduction of gas fumes from parked cars
- Protection of the asphalt surface material and extension of its life
- Speed control and traffic flow direction
- Separation of cars and pedestrians
- Stormwater runoff reduction
- Increase in property values and quality of the neighborhood

Trees planted around transit stations, as well as along bike lanes, help encourage the use of mass transportation instead of individual cars and trucks.

When trees are part of a parking lot, they become a beneficial feature of the urban forest.

An alternative to the need for more parking lots is mass transportation. However, regardless of the economic and environmental benefits of buses and trains, waiting at bus stops and other transit stations is rarely a favorite part of city life. Trees can take the sting out of the daily wait, providing pleasant shade in the summer and a visual distraction at any time of the year.



Arboretums and Natural Areas

Residents in communities that are fortunate enough to have an arboretum need no reminder of how this part of the urban forest contributes to the quality of life. Whether visitors are there to enjoy a pleasant stroll or to find information about how a tree will look if planted at home, arboretums offer important services. Generally, care is provided by an organization or city specialist with an extensive knowledge of trees.

On a continuum of management intensity, arboretums are on one end of the scale and most natural areas are at the other. Nonetheless, these

important little parcels of woodlands make significant environmental and social contributions. They are part of the urban forest and for maximum benefit require protection and management. The latter should include the control of invasive species, tree risk evaluations near trails or other “targets,” inspections for disease or insect outbreaks, and policing to prevent littering and other undesirable uses.

Arboretums — like the Finch Arboretum in Spokane, Washington — are an important part of the urban forest.



Summarizing the Importance of the Urban Forest

As urban areas continue to expand, the urban forest becomes ever more important for sustaining human health and livable environments. After years of research, Dr. David J. Nowak and Eric J. Greenfield summarized some interesting statistics in the March 2018 issue of the *Journal of Forestry*.

- At the turn of this century, 2.6 percent (57.9 million acres) of the country was urban land. By 2060, it is projected to be 8.6 percent (163.1 million acres).
- It is estimated that there are 5.5 billion trees in urban areas.
- The nation's urban trees produce a total of more than \$18 billion in value related to air pollution control, reduced energy use, carbon sequestration, and avoided pollutant emissions.

Add to this the human health services of the urban forest:

- Stress reduction that helps people restore their cognitive functions and ability to cope with the demands of life.
- Social support that comes from having the kind of inviting places that trees provide. This encourages positive interactions that reduce neighborly annoyances and prevent crimes.
- Enhancement of healthful outdoor activities such as walking, jogging, and bicycling.
- Physical health that comes from cleaner air and water and reduced summer temperatures.



For quick links to more information about urban forests and some of the features in this issue, visit arborday.org/bulletins.

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A BRIEF HISTORY OF URBAN FORESTS AND URBAN FORESTRY IN AMERICA

- 1700s Americans begin planting trees in villages, importing species such as Lombardy poplar, Norway maple, Norway spruce, English elm, and Tree of Heaven.
- 1831 The creation of Mount Auburn Cemetery near Boston begins a nationwide scenic cemetery movement.
- 1860 Designed by landscape architect Frederick Law Olmsted, Central Park is developed in New York City.
- 1870s Olmsted's ideas spread; 30-foot setbacks for houses are recommended to allow space for trees.
- 1872 J. Sterling Morton's idea for a tree planting holiday is adopted, and the first Arbor Day is held in Nebraska.
- 1924 First International Shade Tree Conference; International Society of Arboriculture is founded.
- 1964 Society of Municipal Arborists is founded.
- 1965 Professor Erik Jorgenson suggests the term "urban forestry" — "not ... single tree management, but rather ... tree management in the entire area influenced by and utilized by the urban population."
- 1971 The U.S. Forest Service designates four pilot study states (Florida, Georgia, Kansas, Missouri) to receive assistance with community trees.
- 1972 The Arbor Day Foundation is founded, with the Tree City USA program initiated in 1976.
- 1978 Public Law 95-313 gives U.S. Forest Service responsibility for disbursing technical assistance funds to states and for urban forestry research.
- 1978 The first National Urban Forestry Conference is held.
- 1987 *An Introductory Guide to Urban and Community Forestry Programs* is published by the U.S. Forest Service.
- 1990 Farm Bill provisions expand the U.S. Forest Service's authority and funding for urban forestry; the National Urban and Community Forestry Advisory Council is created.
- 1990s The use of computers for tree inventories becomes commonplace; nonprofit and volunteer groups proliferate.
- 2006 The first iTree software is released.
- 2007 The first annual Partners in Community Forestry Conference is held.

In support of urban forest management across America, the Arbor Day Foundation has curated a plethora of supplemental information on more than 90 topics. Learn more at arborday.org/bulletins.

