



**TREE CITY USA®
BULLETIN**

65

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Dr. James R. Fazio, Editor • \$3.00

Create an Arboretum

We collect stamps, coins, memorabilia and all manner of other things. Why not collect and display trees? An arboretum is a collection with purpose and these living tree museums can be found from coast to coast and in climatic zones from Florida to Alaska. They range widely in size and ownership. If your community does not have an arboretum, now is the time to consider adding this valuable resource.



Arbor Day Foundation

Residents, students and tourists of all ages enjoy and benefit from visiting an arboretum. Creating and managing one of these special places can be an excellent community project.

Author Simon Toomer wrote, “Mankind is an acquisitive species with a strong instinct to gather together things that have a practical use or aesthetic beauty, or simply invoke curiosity.”

An arboretum is all of these things. Its practical use is for scientists to conserve species and learn more about tree growth, and to experiment with characteristics such as ability to withstand cold or hot climatic extremes. Moreover, it is a place visitors can come to view species in their mature form when considering what to plant around their homes. It is a place to study and learn. Arboreta are also places of natural beauty, often surrounded by the concrete and asphalt of our built environment. They provide a respite from our hectic, artificial world and can even aid healing and spiritual development. They invoke curiosity just by their very nature of being different. In fact, designers often incorporate winding paths, water features, gazebos and other features that lend an air of mystery.

Harvard University’s Arnold Arboretum is the first public arboretum in the United States. It was started in 1872 and is maintained in cooperation with the City of Boston. Today, this marvelous, 265-acre site with some 4,000 species and varieties of woody plants is enjoyed by over 250,000 visitors each year. Even earlier, in 1728, John Bartram bought a 102-acre farm near Philadelphia and almost immediately began collecting trees, shrubs and flowering plants to exhibit and sell. Today his gardens and trees form an oasis of beauty and education surrounded by urban development. They are managed privately by the John Bartram Association in cooperation with the City of Philadelphia and are open to the public.

Arboreta are popular community resources that contribute not only to science, education and recreation, but also to tourism and the economy. As can be seen in the following pages, there is no limit on how small or how large an arboretum might be. If this is something lacking in your area, it is a project worthy of any tree board or other organization.

Arboreta Come in All Sizes

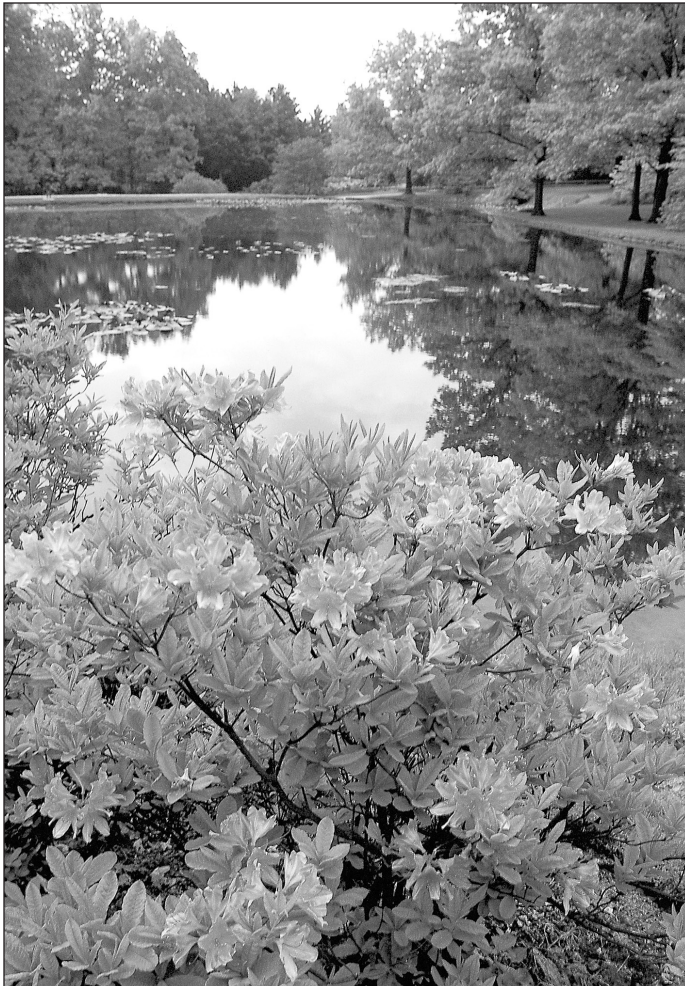
The number of acres in arboreta varies widely. In fact, this is not as important as purpose and quality.

The Big Ones

Size has its advantages and disadvantages. Large arboreta can include more themes and features, diverse wildlife habitat, and a greater variety of events and visitor experiences. On the other hand, management challenges and costs obviously increase with size.

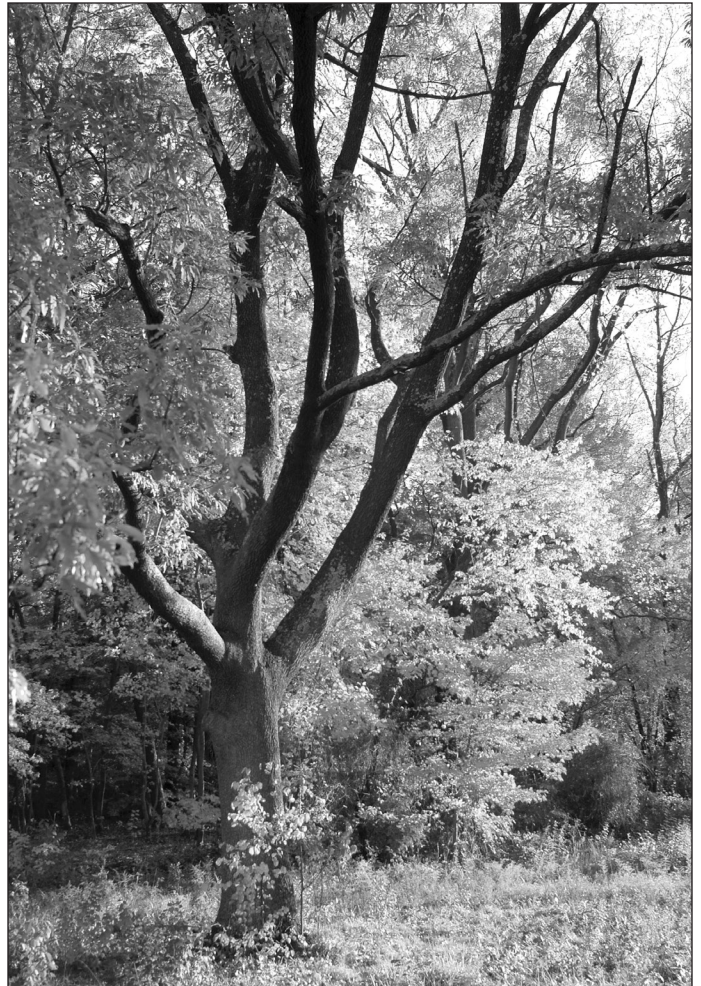
Holden Arboretum in Kirtland, Ohio, is one of the nation's largest at 3,400 acres. It has 20 miles of hiking trails, making it an important recreational facility that even includes a picnic area, and it has been singled out by the Audubon Society as an 'Important Bird Area.' More than 120,000 plants have been documented on this immense tract of land.

The U.S. National Arboretum is one of the wonders of Washington, DC. This 446-acre wooded area sits right in the midst of the city's densely populated neighborhoods. It was established by Congress in 1927 and is a leader in tree research. Its scientists have introduced 678 new plants and two biopesticides. This beautiful oasis in our nation's capitol also includes a herbarium with 650,000 specimens and a library of more than 11,000 plant-related books. Its staff of 76 employees is assisted by 140 volunteers.



Ian Adams and The Holden Arboretum

A large arboretum like Holden can accommodate lakes, roads, hiking trails and a wide variety of plant collections. Azaleas, rhododendrons, magnolias, maples, conifers, nut trees, wildflowers, lilacs and viburnums are among its 120,000 plants in documented collections.



U.S. National Arboretum

Overlooked by most tourists, the National Arboretum in the northeast section of Washington, DC offers trails and 9.5 miles of roads through a wide variety of woodland settings and world-class plant collections. Special features include single-genus groupings, the Fern Valley Native Plant Collection, a dwarf and slow-growing conifer collection, the National Bonsai & Penjing Museum, the National Herb Garden and much more.

The Little Ones

The September/October 1998 issue of *Arbor Day* newsletter carried a centerspread story titled 'Greg's Arboretum.' This was about Greg Samos of Pembroke, Massachusetts, who used his Arbor Day Foundation member trees to start a 1-acre, backyard arboretum. It was a source of great pleasure to Greg and he took annual photos of his daughter on her birthdays next to what he called, "her special tree." Greg's story illustrates that a personal arboretum can enrich lives and serve as a great hobby even in a city or suburban area.

Arboreta can also enrich small communities. Morrison, Oklahoma, is an inspiring example. In 2001 this community of 750 residents converted a dusty city parcel of land into a 3-acre arboretum. Residents say it "looked horrible." Today, more than 100 tree species have been planted and a lighted walkway winds through the peaceful setting. "Now people are out in the arboretum all the time," says retired school teacher Susan Taylor.

The Morrison Arboretum and Botanical Garden is lovingly cared for by the city's 12-member tree board and a young horticulture graduate from Oklahoma State University.

With cooperation from the city's Maintenance Department, a pipeline from distant Kaw Lake has been tapped to provide irrigation for the trees before the water reaches the city's treatment plant. "This is raw water with no chlorine," says Jan McSwain, a proud member of the tree board. Board members have received other assistance from the Oklahoma Department of Agriculture, Food, and Forestry. They have also enlisted local Future Farmers of America students to help label the trees. With instruction from a professor at OSU, the students even created QR codes used with smart phones, bringing today's technology to traditional tree interpretation.

A special tree in the arboretum is what Jan McSwain calls 'our witness tree for the next 100 years.' It was grown from a cutting of the elm in Oklahoma City that survived the horrific bombing of the federal building on April 19, 1995. The blast took 168 lives but the nearby Survivor Tree stands as a reminder of the resilient spirit of the city's residents. Today its offspring grace the arboretum in Morrison and others throughout the state.



Jan McSwain

Even in a small community like Morrison, Oklahoma, it is possible to create an arboretum that will be enjoyed by residents and attract visitors and tourists from out of town.

What's in a Name?

Arboretums or arboreta? Both of these plural forms of the word arboretum are correct, but scientists and many arboretum managers prefer the more formal 'arboreta.' Here are some terms you are less likely to encounter:

<i>Fruticetum</i>	A collection or arboretum of shrubs.
<i>Pinetum</i>	A collection or arboretum that specializes in conifers.
<i>Quercetums</i>	A collection or arboretum that specializes in oaks.
<i>Salicetums</i>	A collection or arboretum that specializes in willows.
<i>Viticetum</i>	A collection of vines.

Planning Your Arboretum

Planting trees is the easy part of creating an arboretum. To assure a quality project that is sustainable over time, it pays to carefully consider all aspects long before the first shovel of soil is turned.

Some Planning Considerations

- ✓ **PARTNERSHIPS** Partners in the endeavor are essential for success. Municipal officials, local nurseries, service clubs, churches and youth organizations are a few of the sources of support that can help. Involve them early in the planning to obtain 'buy-in' and ideas rather than presenting a finished plan to them and asking for help. Surveys and focus groups are ways to get valuable input.
- ✓ **FUNDING** Assuming that land is already available, the biggest expense will be annual maintenance. Planting stock, labels (including replacements), insurance and materials for special events are just some of the recurring costs. Make a list and a budget, and know from where the money will come after any initial grant or donations.
- ✓ **THE SOIL** The better the soil, the easier it will be to plant for variety and to maintain healthy trees. A soil test will indicate such limitations as the pH range and its suitability for various species. Additional investigation may reveal hidden hardpan, excessive moisture or a high water table.
- ✓ **DESIGN** Thousands of dollars can be spent on professionals to lay out arboreta plantings, walkways, entrances, and special features. In a do-it-yourself situation, common sense and lay of the land will suggest where walkways should be. After permanent features are determined, an important decision will be whether or not to group plantings. For example, will all trees in the maple genus be in one section and oaks in another? All conifers together? Shrub beds? Xeriscape plants? Or will all the vegetation be combined in some way, perhaps aesthetically or in ecosystem associations you would find in nature?

- ✓ **TO THEME OR NOT TO THEME** Most arboreta display a wide variety of trees and shrubs, but some focus on a particular theme. These might include:

- Only plants native to the region
- Drought-tolerant species
- Trees appropriate near overhead lines
- Trees related to authors or history
- A collection of state trees
- Flowering trees
- Dwarf trees
- Trees and shrubs that benefit wildlife

- ✓ **WATER** A source of good water is critical.

- ✓ **STAGGERED PLANTING** An uneven-aged stand of trees is more interesting, useful to visitors, and easier to manage. In a new arboretum stagger planting over time and "deaccession" selected trees so there is a mix of ages.



Photo courtesy of Public Service of New Hampshire



James R. Fazio

At the University of Idaho Arboretum and Botanical Garden, plants in the 63-acre site are grouped by geographic region. For example, all plants native to Asia are in one section and North American species in another. Signs and maps inform visitors about the arrangement.

A small arboretum is being created next to buildings at the Portsmouth, New Hampshire Forestry Center. Its purpose is to demonstrate trees that are appropriate beneath, near and at a distance from overhead lines. This project was sponsored by the utility, Public Service of New Hampshire, and includes two 40-foot poles with primary and secondary lines attached to visibly demonstrate the spatial relationship between trees and wires.



✔ **WHAT RULES SHOULD BE MADE (AND PUBLICLY DISPLAYED)?**

- Are pets allowed? Hoyt Arboretum in Portland provides waste bags on posts at entry points and asks visitors to keep pets on a leash and to clean up after them. Allowing pets can sometimes create problems, but the upside is that it builds goodwill and community support among a large, potential user group.
- Will there be ‘open’ hours? Dusk to dawn rules help enforcement actions where improper use is a problem.
- What uses will be allowed or prohibited? Some arboreta prohibit activities such as picnicking, jogging and cross-country skiing, while others allow or even encourage such uses. If there is a prohibition, there should be a reason for it.

✔ **FENCES** Fences are expensive and can present an unwelcoming portrayal of the arboretum. If circumstances are such that a fence is required, consider brown or green chainlink or other materials that will meet the need and also blend in with the surroundings.

✔ **DOCUMENTATION AND RECORDS** If scientific study or education is a purpose of your arboretum, it is important to document the source of your plants. In all cases, accurate identification is essential, which in the case of cultivars is usually difficult without source documentation. A record system compatible with your circumstances should be created prior to planting. The ideal is GIS mapping combined with GPS location of each plant and its records linked to its identification number and location in the database. This allows easy, computerized retrieval and record changes. The desired degree of detail should also be determined during the planning process.



Public use not related to trees is sometimes a good way to broaden appreciation and public support. For example, Holden Arboretum hosts a Woodland 5k Race and Walk along with many other popular events.



Creating an arboretum would be an eligible activity for points toward a Tree City USA Growth Award. Application toward the 10 points required for the year of award could be made under any of the categories: Education; and Public Relations; Partnerships, Planning and Management; or Tree Planting and Maintenance. More information is available at arborday.org.

Maintenance Needs

Maintenance is an ongoing need often overlooked when a community arboretum is being planned. The time required and the necessary number of volunteers or paid staff will vary, but here are some key items to consider.

- **MOWING AND/OR WEEDING** for aesthetics, fire prevention, and to reduce root competition for soil moisture and nutrients.
- **LITTER PICK UP, VANDALISM REPAIR AND LABEL REPLACEMENT.** These unpleasant jobs should be done promptly. “If you show pride in the place, people will respect that,” says Paul Warnick, University of Idaho Arboretum Horticulturist. Letting it go just invites more of the same. Also, planting larger caliper trees has been found to deter at least some vandalism breakage.
- **WATERING.** A source of drip or other irrigation will be essential until the young trees have established their roots. Even after those first several years, watering may be necessary during dry periods, or in dry areas, throughout the life of the arboretum.
- **ROUTINE TREE CARE:** pruning, mulch replacement, leaf removal or mulching, fertilizing (if a soil test reveals a deficiency), storm damage repair, and tree replacement as needed.

Educating Visitors

Sharing the arboretum with visitors ranging from school children to college professors is challenging but important. For some, a label with the plant’s common and scientific names will suffice. When possible, however, interpretation – or additional insights about the plant – is better than simply naming it. See page 8 for how to find sources of plant labels. Some arboretum managers object to the intrusion of signs on the site’s aesthetics. An alternative is to use mobile electronic devices or, more traditionally, brochures and maps.



Inexpensive labels are commercially available in plastic, etched aluminum and other weather-resistant materials. Labels should stand alone on posts rather than being attached to a tree.

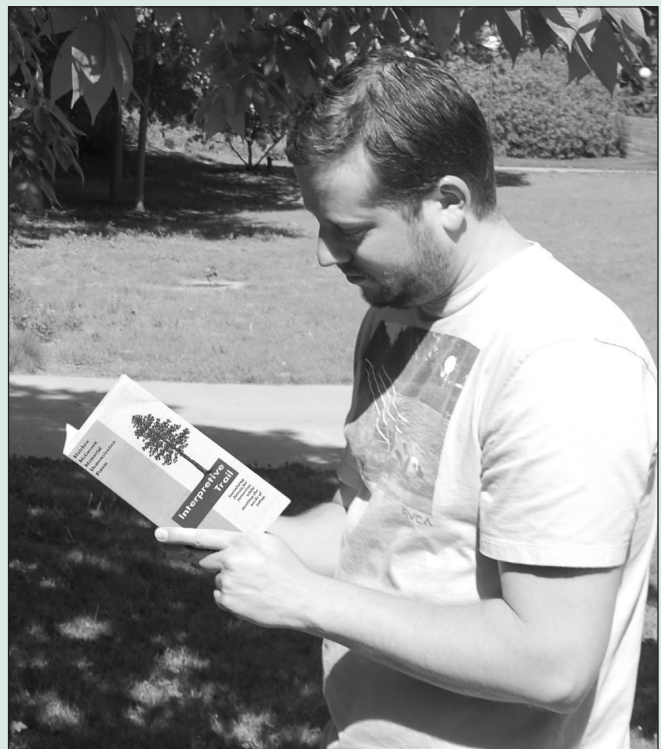
RED MAPLE



Probably the most common of the native maples, this is a soft maple that displays attractive leaves throughout the growing season, changing from green summer foliage to the classic red that gives the species its common name. A popular ornamental, it can grow to 90' high.

Acer rubrum

Interpretive signs are more costly but more educational. Some labels, like this one, are available commercially, or they can be custom made. If vandalism is a concern in your area, keep spare labels stored for quick replacement.



Pamphlets and maps add 'take-home' value for the visitor and reduce sign maintenance. However, keeping a supply available for visitors needs to be an assigned responsibility. An empty dispenser is an all-too-common disappointment.

Special Features

Sometimes an arboretum can be created around a special tree, or a tree of unusual size, structure or history. Other natural features might include a waterfall, a viewing point, or something built like a statue or other appropriate work of art.



© Nature Explore



In lieu of any outstanding natural feature – or in addition to it – any arboretum can be the perfect setting for a Nature Explore Classroom. What better place than an arboretum to begin introducing young children to nature and outdoor activities? The scenes here is at Bailey Arboretum in Locust Valley, New York.



starnesonline.com

A water feature can usually be developed even in small arboreta. Whether a quiet pond or spouting fountain, they help give visitors a sense of special place and are always popular. This one is in Wilmington, Delaware's 7-acre New Hanover County Arboretum.



Special features are limited only by your imagination. This is illustrated by the 'Poet Tree' at James Madison University's Edith J. Carrier Arboretum. Visitors – both children and adults – are invited to place a poem in this basket on a willow tree. Staff periodically collects and archives the poems, many of which reflect inspiration received from visiting the arboretum.

Let Me Remember You

Willow tree...
let me remember you,
your swaying branches
in the gentle breeze.

What a gift you have
given me on this journey.
We have come so far
to meet you.
Yet it seems like a
perfect reunion –
a reminder of strength,

of compassion,
and the way to be.

I will take your gift
with me and share it
with care and honor.
May the branches
of you, willow,
continue to give peace
to your next
welcome visitor.

- Anonymous

Help Through Accreditation

Some states, like Tennessee, Nebraska and Oklahoma, have statewide networks of arboreta. This provides an opportunity for information-sharing, publicity and assistance. In addition, The Morton Arboretum offers listing on its 'Register of Arboreta' for all arboreta in the U.S.

National accreditation takes an arboretum one step higher and can sometimes help in receiving grants or other funds. This, too, is sponsored by the Morton Arboretum and is intended to: (1) foster the establishment and professionalism of arboreta, (2) identify arboreta capable of collaborating in certain scientific collections or conservation activities, and (3) advance the planting and conservation of trees to improve the world. There are four levels of accreditation. The purpose of the levels is to encourage accredited arboreta to seek and achieve higher professional standards. For example, Level 1 requires a collection of 25 woody plant species or varieties, a plan, an organized group or governing board, public access and one event each year. Level 2 requires at least 100 kinds of woody plants, a collections policy, one or more employees, and additional education opportunities. Five hundred kinds of trees or shrubs are necessary at Level 3, as well as networked data-sharing, a substantial outreach program and more. Level 4 requires a scientific staff, a commitment to hold and safeguard plants of conservation value, and collaboration in scientific or conservation activities related to trees.



Photo courtesy Jacob Smithers / Arboretum Foundation

Education about trees, other plant life and wildlife is an important part of the mission at Seattle's Washington Park Arboretum.

For More Information

For links to arboreta organizations, sources of labels, and other information beyond the scope of this bulletin, please visit arborday.org/bulletins and click on Bulletin No. 65.

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