



# Under the Oaks

Arboretum Newsletter of the  
Memphis Botanic Garden

## Volume 17

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### Health Benefits of Trees, Nature's Grand Healers

By Linnea West

Tennessee Urban Forestry Council

Trees nourish us in many ways, some only recently validated by science, but known intuitively by humans for as long as we have walked the earth.

Trees purify the air, trapping toxic particles and converting CO<sub>2</sub> to oxygen. Urban trees in the lower U.S. remove nearly 800,000 tons of air pollution from the atmosphere each year (1). Tree roots absorb storm water, preventing run-off and allowing excess water to filter slowly down through the soil. Leaves, roots and bark have been used medicinally throughout history to treat everything from headaches and sore throats to cancer.

Simply being in the presence of living trees and breathing in the phytochemicals they generate enhances our immunity and calms our nervous system (2,3).

Health-giving bacteria, *Mycobacterium vaccae*, are released from the earth when we dig to plant trees, tend them, and relax beneath their boughs. These beneficial microbes stimulate serotonin, promoting enhanced mood, attention, and thinking as well as improved immune function (4).

Mycelial networks (fungi webs) uniting trees underground allow these arbor giants to communicate and protect one another (5). Perhaps one day we, too, can share in this web of peaceful communication.

Trees encourage people to spend time outdoors, enhancing personal and social health. Communities with trees experience lower crime rates. Both violent crime and vandalism decrease; community involvement increases (6,7,8,9).

Trees give us perspective on life, growing gracefully through time and weather, offering us shade and beauty, comfort and encouragement with the opening of buds and emerging new growth. Whether it is a brisk, arm-swinging stride in the cool air of autumn or a slow contemplative meander, walking among the trees bestows a tangible sense of peace and wellness.

*Shinrin-yoku* is a Japanese term that means “taking in the forest atmosphere” or “forest bathing”.

This describes the restorative benefits of walking beneath a canopy of trees, being bathed in the relaxing atmosphere of natural forest aromas, bringing deeper and clearer intuition, a calm flow of energy, and an increased ability to focus. Forest therapy is an established Japanese and South Korean health practice and is gaining recognition in the West.

Join us in the Memphis Botanic Garden and explore our 96 acres, home to thousands of trees, or visit one of our beautiful city's many parks and natural areas. Inhale deeply, stretch your arms up and out, and bask in the rejuvenating presence of Nature's Grand Healers, the Trees.

1)americanforests.org; 2) Moore (Univ. Exeter 2015); 3)Ulrich (TX A&M); 4)M. O'Bryan (Royal Marsden Hospital, London); 5)Mycellium Running, Paul Stamets 2005; 6)Kuo and Sullivan; Hines (Chicago); 7)Townsend et al 2003; 8)Vogt et al 2014 (Indianapolis); 9)Troy, Grove, O'Neil-Dunne 2012 (Baltimore)

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## Trees for Clean Air

All healthy trees contribute to cleaner, fresher air. Trees that thrive without coddling (fertilizer, pesticides, extra water) will, naturally, be the best choices for the environment.

### 10 native trees in our community that lead the way for cleaner air:

#### Tulip Poplar

#### American Sweetgum

**Oaks** – White, Water, Willow, Southern Red, Overcup,

**Maples** – Red,

Silver **Horsechestnut**

**Beech**

Smaller trees:

**Flowering Dogwood**

**Red Mulberry**

Conifers:

**Pines** – White, Loblolly

**Baldcypress**

Nowak et al., U.S. Forest Service research; ugaextension; Ryan, Harmon, Birdsey2010; newurbanforestry.com 2015

## Tulip Poplar (*Liriodendron tulipifera*) - (Yellow Poplar, Tulip Tree)

*By Linnea West*

*Tennessee Urban Forestry Council*

Tulip Poplar is our Tennessee state tree – and what a magnificent choice! A hardy, fast-growing tree able to live 300 years and thrive in tough conditions, Tulip Poplar soars 100 feet or more into the forest canopy.

With its unique 4-lobed leaves and large greenish-yellow and orange 'tulip' flower, this tree is unlike any other! The tall straight gray trunk is patterned in interlacing low ridges. The fruit is a cone-like aggregate of brown samaras – these single-winged seeds sail on the wind from high in the treetops to start new seedlings or become food for wildlife.

The colorful tulip-shaped flowers are cross-pollinated by bees to make a honey fit for the gods! Larval host for the Eastern Tiger Swallowtail butterfly, Tulip Poplar provides delicious nectar as well, and is home

**Sign up now!** September 7, 14, 21, 28, and October 5 - [Urban Forestry Advisor's Class](#). 9 a.m. - 1 p.m. Join the West Tennessee Chapter of the Urban Forestry Council (WTC/TUFC) and the Memphis Botanic Garden for this opportunity to learn about trees and issues facing the urban tree canopy. The class fee (\$85) includes a handbook and dues for both the Tennessee Urban Forestry Council and local chapter. To register call 901-636-4128.

to nesting songbirds and squirrels.



photo by Jan Castillo, Tennessee Urban Forestry Council

Although full sun is favored, this adaptable tree thrives in the partial shade of woodlands, soon stretching up into the canopy. It is pH-tolerant, but prefers a slightly acid, deep, moist, well-drained loam. The leaves turn a cheerful bright yellow in the fall. Tulip Poplar is a champion of carbon sequestration giving us cleaner air to breathe.

Celebrated botanist, Dr. Michael Dirr, describes the towering 200-foot specimens of Tulip Poplar left untouched in Joyce Kilmer National Forest, "...the loggers stood in awe of the magnificent trees with tears in their eyes...simply unable to cut these gentle giants."



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In 2012, the Tennessee Urban Forestry Council designated Memphis Botanic Garden as the first Center of Excellence for Urban Forestry in Tennessee. As a Center of Excellence, the Garden will host educational programs, help with certification of arboretums in the region, and serve as a resource to the community for tree information and education.

The American Conifer Society recognized Memphis Botanic Garden's Conifer Collection as a certified Conifer Reference Garden in 2014.

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