



# Under the Oaks

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Friday, March 5, 2010 is Arbor Day in Tennessee. Arbor Day began in Nebraska in 1872 through the efforts of J. Sterling Morton. During this first Arbor Day celebration, over a million trees were planted throughout the state.

In 1972, the Arbor Day Foundation was formed to celebrate the 100th anniversary of this first Arbor Day and to continue the mission of planting trees. Today, the Arbor Day Foundation is the largest non-profit organization dedicated to tree planting. With nearly one million members, the Arbor Day Foundation inspires people to plant, celebrate and nurture trees. Its conservation and education programs are providing hope for future generations to enjoy the beauty and benefits of trees.

According to Arbor Day founder J. Sterling Morton, "Each generation takes the earth as trustees. We ought to bequeath to posterity as many forests and orchards as we have exhausted and consumed".

## A Tree by any other name



- Spanish - Arbol
- French - Arbre
- German - Baum
- Italian - Albero

Tennessee is located in the central hardwood forest region of North America. Almost 90% of the trees in Tennessee's forests are hardwoods such as oak, hickory, tulip poplar, maple, beech and blackgum. The remaining trees are evergreens, mostly eastern redcedar and pines.

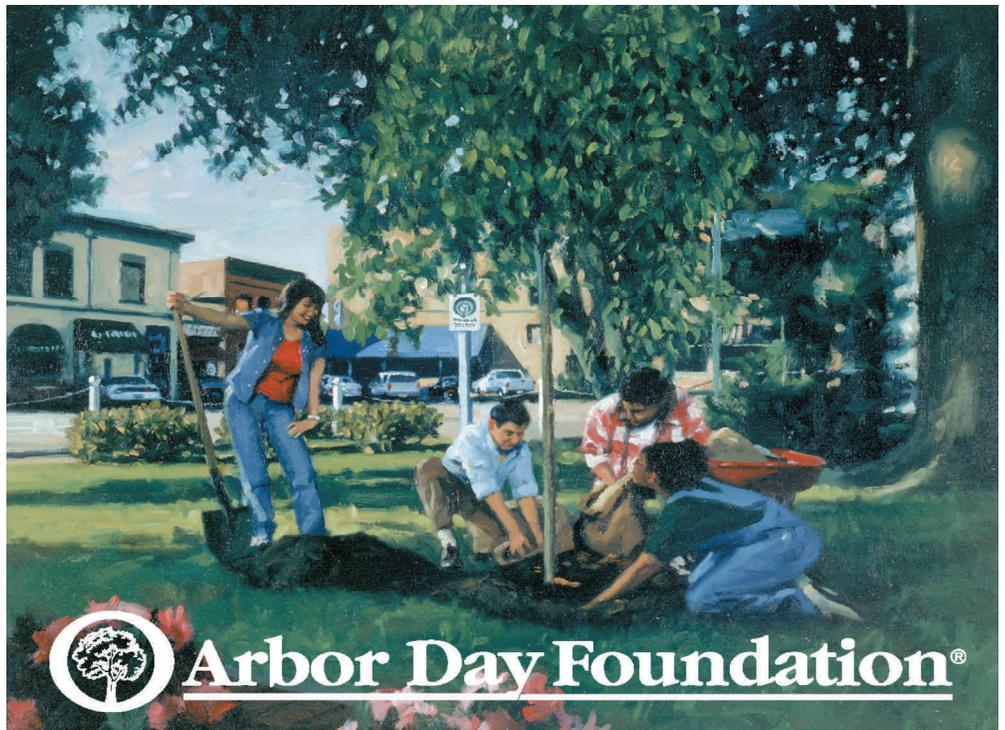


Illustration and logo courtesy of Arbor Day Foundation



In today's world, air pollution is of great concern mainly because of its hazards to human health. Pollution has also been recognized as being harmful to trees. Air pollution damages living tissue, mainly foliage. Photosynthesis may be impaired as well. Weakened trees often become prone to additional damage by disease or insects.

The main air pollutants which are harmful to trees are ozone, sulfur dioxide and nitrogen oxides. Ozone is formed in the earth's lower atmosphere when volatile organic compounds react with nitrogen oxides in the presence of heat and sunlight. Symptoms of ozone stress include purple speckling on leaves' upper surfaces, yellowing leaves, and premature leaf drop. Sulfur dioxide and nitrogen oxides are chemical components of ground level ozone and are the primary cause of "acid rain". Acid rain weakens trees by damaging leaves and limits the uptake of nutrients from the soil.



As fall becomes winter, deciduous trees are considered to be **dormant**. This seasonal process is regulated by changes in photoperiod (increasing darkness). At this time, deciduous trees lose their leaves to conserve water. Also, energy that has been stored as carbohydrates moves downward to aid in new root growth. The tree's activity does not cease, but some processes slow down. During winter dormancy, the tree still takes in water and nutrients. Increasing root activity prepares the tree for spring's new leaf-out.

### A Tree to Know

*Liriodendron tulipifera*

Tulip poplar, tuliptree, yellow poplar

Tulip poplar is the state tree of Tennessee. This tree has a tall and narrow profile, often reaching 100 feet and more. Tulip poplar is a "pioneer species", meaning that it can successfully colonize disturbed areas. In spring, the yellow-green flower is an important nectar source for honeybees. The 3 inch seed pods often remain on this tree throughout winter. Tulip poplar has been reported to be sensitive to ozone pollution.



Tulip poplar—Spring



Tulip poplar-Winter