

# Trees and Their Benefit\$



**Graphic-1:** A simple picture of a tree-lined street accentuates the *Benefits of Trees* by illustrating the cooling, pollution reduction, energy conservation and habitat creation (for people and wildlife) that urban tree cover provides.

Trees provide a myriad of benefits and enrich our quality of life in many ways. These benefits are even more valuable when provided in the urban environment.

Trees provide the following essential benefits to all of us regardless of where we live:

**1. Improved Air Quality:** A single tree 10 inches in diameter improves urban air quality by removing 200 lbs of carbon dioxide, 1.1 lbs of ozone and 2.2 lbs of sulfur dioxide, particulates and nitrogen dioxide every year. How much cleaner is the air around the tree lined street shown in graphic 1 as a result of the trees planted 50 years ago?

Trees capture and remove or "sequester" tremendous amounts of carbon dioxide ( $CO_2$ ) from the earth's atmosphere every year. Many scientists believe that  $CO_2$  concentrations in the atmosphere are too high due to the burning of

fossil fuels and the reduction in tree cover in the rain forests of the world. Regardless of whether you believe in the global warming connection to high  $CO_2$  emissions, trees can help you breathe easier as they remove  $CO_2$  through the photosynthetic process and produce Oxygen ( $O_2$ ) as a by-product. If every American family planted just one tree, the amount of  $CO_2$  in the atmosphere would be reduced by 1 billion pounds annually. Hey, who can argue with a low cost machine that cranks out oxygen for all of us to breathe while at the same time removing harmful pollutants?

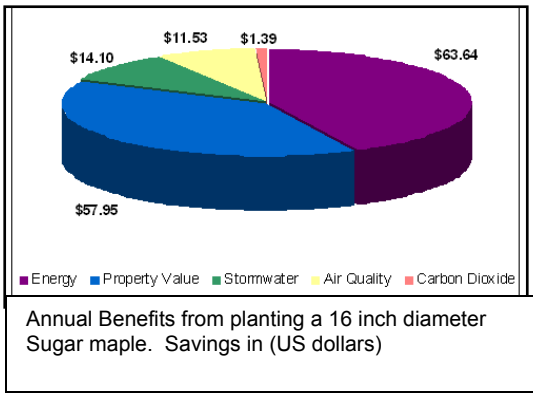
For every ton of wood an urban forest grows, it removes 1.47 tons of carbon dioxide and replaces it with 1.07 tons of oxygen. *Now those are some bottom line benefits!*

**A single tree produces approximately 260 pounds of oxygen per year. That means two mature trees can supply enough oxygen annually to support a family of four!**

For more information about the monetary benefits provided by trees, you can access the National Tree Benefit Calculator at: <http://www.treebenefits.com/calculator/index.cfm> or find additional references at <http://na.fs.fed.us/urban/treespayusback/vol2/index.html>.

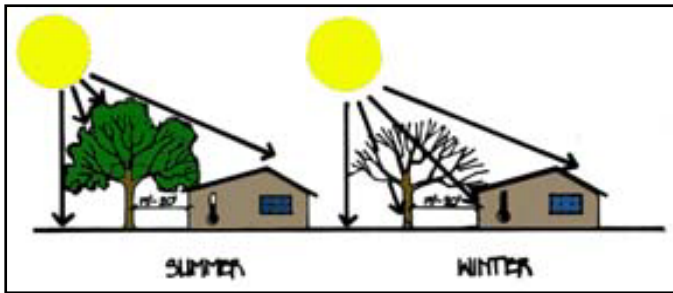


**2. Trees Cool our Cities and Towns:** Even if you don't agree with the global warming theory, no one disputes the fact that America's cities are hot and getting hotter as a result of the "heat island effect". Cities contain disproportionate amounts of blacktop and concrete and these surfaces absorb and retain the sun's heat creating temperatures significantly higher than temperatures in rural/wooded areas. For NYC the difference in summer is 10 degrees, in Atlanta it's 12 degrees hotter in the city than the surrounding wooded areas. A one-degree rise in temperature equals a 2% increase in peak electricity consumption. Trees planted in urban areas naturally cool cities in two ways; by intercepting the sun's rays and shading the buildings'/air conditioners, and through the process of "evapo-transpiration". This is the process by which trees act like a giant siphon, pulling water from the soil through its roots and releasing it into the atmosphere through the leaves. This natural process, when combined with a comprehensive urban tree canopy can reduce the effects of the urban heat island effect by 50-90%.



**3. Energy Conservation Benefits:** Large trees provide the most benefits. Average annual benefits increase with mature tree size:

- 🌳 \$26 to \$30 for a small tree
- 🌳 \$69 to \$79 for a medium tree
- 🌳 \$125 to \$147 for a large tree



Strategically place deciduous trees around your home to shade the house and A/C units in summer, while allowing the warming rays in winter. These steps can significantly reduce cooling and heating costs during each season. Placing evergreen trees as a windbreak to block cold prevailing winds in winter can also reduce home heating costs.

reduce indoor air temperatures in summer and increase indoor

For more information about home energy savings go to the National Arbor Day website at: <http://www.arborday.org/TREES/benefits.cfm>

**4. Increased Property Values:** Properties with trees have consistently shown increased value over similar properties without tree cover. Studies have revealed an increase of up to 20% for property values with trees present. There is an increase in appraised land values of 27% for properties with trees.

"Studies have shown that 83% of realtors believe that mature trees have a "strong or moderate impact" on the salability of homes listed for under \$150,000; on homes over \$250,000, this perception increases to 98%." —Arbor National Mortgage & American Forests

The benefits of trees include a significant increase in the quality of our lives, a cleaner environment, lower energy costs and a higher value to our homes and communities. Do we need better reasons than those to go out and plant a tree or to protect the mature trees in our community? Trees have more benefits that you might have realized. Is it any wonder people maintain such a close connection to the trees around them?

