



## Benefits of Trees

Some benefits of trees and why it is important for us to preserve and/or plant trees:

- Trees increase our property values.
  - The aesthetic value of trees adds to the desirability of urban areas for personal and business relocation. (*U.S. Department of Health, Education and Welfare publication*)
  - Trees can add between 7 and 20% to a home's value. (*U.S. Forest Service*)
  - In a 1981 Federal Tax court case (in Virginia), it was determined that the loss of a 100-year-old oak tree on a property that was initially valued at \$164,000, reduced that property's value by \$15,000 or 9%.
  - A 1983 study showed that homes with trees sold for an average of \$9,500 more than homes without trees. (*Davey Resource Group: Urban Forest Benefits*)
  
- Trees have positive effects on consumers
  - Most retail environments have 5% or less canopy coverage.
  - Consumer ratings are significantly higher for business district/retail centers with trees.
    - Amenity and Comfort ratings were 80% higher for a tree-lined sidewalk compared to a non-shaded street.
    - Quality of Products ratings were 30% higher in districts having trees over those with barren sidewalks.
    - Customer service issue ratings were 15% higher for districts having trees.
  - Consumers are willing to pay more for parking in a well-landscaped business district.
  - Surveys indicate that consumers were more likely to spend more for goods in landscaped/treed businesses than in businesses with no trees.  
(*Study by University of Washington, Center for Urban Horticulture, Dr. Kathy Wolf*)
  
- Trees beautify our homes, neighborhoods and cities and improve our quality of life.
  - A study conducted at the University of Delaware showed that surgical patients who had a view of trees and landscaping outside their windows shortened their hospital stays by 8%, received fewer negative comments in nursing reports and took fewer pain killers than patients who had no views.
  - Patients took up to 40% less extra-strength pain medication when they had views of trees and landscaping outside of their windows. (*Ulrich 1984*)

- A Texas A&M research project found that subjects in a psychological experiment reported feeling more positive and relaxed when they were in an environment with trees. (*Ulrich 1991*)
  - Studies found that nature and forest scenes tend to decrease stress in drivers and also tend to improve thought processes and problem solving skills. (*Ulrich 1991*)
  - People in cities (in different countries) get more daily exercise, are healthier and live longer, if they live in close proximity to streets having both sidewalks and nature. But people walk or exercise less frequently and are less healthy if they live next to urban streets that lack nature but have sidewalks. (*Ulrich 1991*)
  - In a Chicago study focusing on low-income government subsidized housing developments, apartment buildings with high levels of greenery had 52% fewer total crimes, including 48% fewer property crimes and 56% fewer violent crimes. (*University of Illinois study, researchers Frances Kuo and William Sullivan*)
- Trees clean our air by reducing and filtering pollutants.
  - **Trees in the Houston region remove 60,575 tons of pollutants, valued at \$295.7 million, annually.** (*Houston's Regional Forest: Structure- Functions- Values, 2005*)
  - **Trees in the Houston region store more than 39 million tons of carbon, worth an estimated \$721 million.** (*Houston's Regional Forest: Structure- Functions- Values, 2005*)
  - Researchers determined that in the Chicago area, trees removed about 650 tons of air pollutants at a value that was estimated to be in excess of \$1million. This study found that in general trees with a 30 inch trunk removed greater than 200lbs/year of pollutants (including carbon dioxide, ozone and sulfur dioxide). This rate is 60 –70 times greater than what is removed by smaller trees and vegetation. In our area of Texas where the growing season is much longer, trees are likely to remove even more pollutants. (*U.S. Forest Service: Chicago Study, 1994*)
  - Trees in Fort Worth remove approximately 623 tons of pollutants worth an estimated removal value almost \$1million. Of this, 592 tons is particulate pollution, which has been linked in numerous studies with increased respiratory disease, asthma, and even cardiovascular mortality. (*Davey Resource Group: Urban Forest Benefit and Cost Analysis in Fort Worth, 1997*)
  - In Sacramento CA it was estimated that the typical or average tree produces about 23kg of oxygen a year (12% of the typical person's annual uptake) and reduces atmospheric CO<sub>2</sub> by about 26 kg/yr (less than 1% of annual per capita CO<sub>2</sub> emissions). CO<sub>2</sub> reductions can be much greater if trees are strategically located to obtain energy savings and associated avoided emissions from power plants. *More info on CO<sub>2</sub> reductions are in the 1998 Journal of Arboriculture article (Vol 24, No. 4, pp 215-223). Greg McPherson.*
  - In 1994 in NYC, trees removed an estimated 1,821 metric tons of air pollution at a value of \$9.5 million, Atlanta- 1,196 tons at a value of \$ 6.5 million, Baltimore- 499 tons at a value of \$ 2.7 million. (*Dr. Nowak, The Effects of Urban Trees on Air Quality*)
  - Large healthy trees remove 70 times more air pollution annually than small healthy trees. (*Dr. Nowak, The Effects of Urban Trees on Air Quality*)



- In Austin trees provide \$122 million in stormwater benefits. (*AF: UEA, in calculating stormwater retention costs, American Forests used a national average of \$2/cubic foot of storage*)
- The canopy of a single large live oak can intercept up to 28% of a major rainfall. (*AF: UEA executive summaries*)
- In addition the root systems of trees act as a filter by trapping pollutants that could contaminate our water.
  - 47% of surface pollutants are removed in the first 15 minutes of a storm, this includes pesticides, fertilizers, etc. (*University of Georgia, Dr. Coder*)
  - 37,500 tons of sediment per square mile per year comes off of developing and developed landscapes- trees could reduce this value by 95%, \$336,000 annual control cost savings with trees. (*University of Georgia, Dr. Coder*)
  - In 1997 NYC decided against constructing a new water filtration plant that would have cost \$ 6-8 billion to construct and \$ 500 million/year to operate and instead is spending 1.5 billion over 10 years to improve watershed forest protection. By securing the source of the water, the forests will naturally filter and purify the drinking water at a significantly reduced investment. (*Associated Press 9/1/03*)