



The best friend of earth of man is the tree. When we use the tree respectfully and economically, we have one of the greatest resources on the earth.

- Frank Lloyd Wright

Trees provide a range of benefits to society. These benefits are both tangible and non-tangible. Tangible benefits are marketable resources that we can measure. Intangible benefits are difficult to measure, but improve our quality of life.



Most trees in cities or communities are planted to provide beauty or shade, which are two excellent reasons for their use.

Woody plants also serve many other purposes, and it is often helpful to consider these other functions when selecting trees for the landscape.

The benefits of trees can be grouped into four categories; social, community, environmental, and economic benefits.



The social benefits of trees include health benefits, crime reduction, and educational and recreational opportunities.

People have strong emotional ties to trees. We resist removing trees to widen streets. We applaud the heroic efforts of individuals and organizations to save large or historic trees in a community. Trees are planted as living memorials. We often become personally attached to trees that we or those we love have planted. Big, strong, old trees have a reassuring sense of endurance.



Trees can affect the day-to-day moods, activities, and emotional health of people. We like trees around us because they make life more pleasant. Most of us respond to the presence of trees beyond simply observing their beauty. We feel peaceful, restful, and tranquil in a grove of trees. We are “at home” there.

Hospital patients have been shown to recover from surgery more quickly when their hospital room offers a view of trees.

A pleasing urban forest can encourage people to walk in their neighborhood. Tree’s make our city’s streets, public spaces, and homes more comfortable we want to be outside enjoying the greenery.

Physical activity can help reduce high occurrences of obesity and weight-related diseases. Trees provide shade and cooling effects, and help lower the risk of heat related health problems, such as heat stroke, dehydration, and skin cancer. Trees also freshen the air we breathe. Their leaves take in carbon dioxide and release oxygen for us to breath.



Recent studies suggest trees can reduce crime in two important ways.

Overall nature can help to soothe violent temperaments. Trees help to lessen mental fatigue which can cause outbursts of anger and lead to violent activity. Healthy urban forests, can diminish feelings of fear and reduce incidences of crime and violence.

Trees on the street will encourage more people to use the outdoor space and thereby defend the community against crime. Well maintained vegetation and trees imply that residents care about their home and community, signaling that an intruder could be noticed and reported.



Trees provide a setting that encourages outdoor activities and provides for educational opportunities for people of all ages. Outdoor recreational activities, such as picnicking, hiking, or just sitting outside are more enjoyable in and around trees. We connect with nature when we are around trees and we want to learn more. Trees play an essential role in teaching about nature: natural cycles, seasons, animals and plants.



City trees often serve several architectural and engineering functions. Even though trees may be private property, their size often makes them part of the community. Since trees occupy considerable space, proper planning is required if both you and your neighbors are to benefit. With proper selection and maintenance, trees can function on one property without infringing upon the rights and privileges of neighbors, while enhancing the whole neighborhood.



Trees provide a frame or background that softens and complements our homes and city structures. Trees provide us with a wide variety of beautiful colors, flowers, shapes, forms, and textures to enhance the environment of our neighborhoods and cities.

Trees provide engineering functions



Trees provide privacy, emphasize scenic views, and screen out objectionable views. They reduce glare and reflection and direct pedestrian traffic. Trees help to reduce noise levels, the rustling of leaves and branches in the wind help masking other sounds.

Environmental benefits

- Moderate our climate
- Improve air quality
- Conserve water and reduce erosion
- Provide habitat for wildlife

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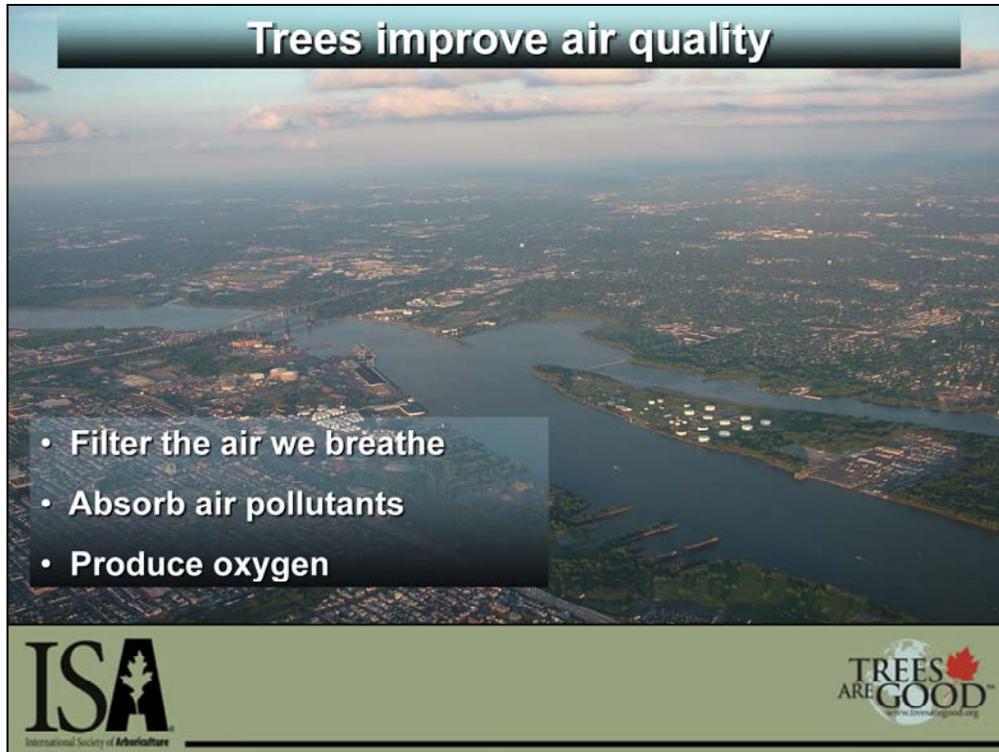
Trees alter the environment in which we live by moderating the climate, improving air quality, conserving water, and supporting wildlife.



Radiant energy from the sun is absorbed on deciduous trees in the summer and is only filtered by branches of deciduous trees in winter. We are cooler when we stand in the shade of trees and are not exposed to direct sunlight. In winter, we value the sun's radiant energy and, because of this, we should plant only small or deciduous trees on the south side of homes.

Wind speed and direction can be affected by trees. The more compact the foliage on the tree or group of trees, the greater the influence of the windbreak.

The fall of rain, sleet and hail is initially absorbed or deflected by trees. Trees can significantly slow the movement of storm water, which lowers total storm runoff, and reduces flooding.



Air quality can be improved through the use of trees. Leaves filter the air we breathe by removing dust, ash, and other solid particles. Leaves absorb carbon dioxide from the air to form carbohydrates that are used in the plant's structure and function and give off oxygen in return. Through this process, some tree species can absorb other air pollutants such as ozone, carbon monoxide, and sulfur dioxide.



Trees slow down rainwater, allowing stormwater to soak into soil rather than runoff. Slowing the rate of runoff also reduces soil erosion and sedimentation of streams and lakes. Tree roots hold soil in place preventing erosion and stabilizing hillside slopes. Toxins and impurities are filtered and the amounts of chemicals transported to streams are decreased.



By planting trees and shrubs, we return to a more natural environment. Birds and other wildlife are then attracted to the area. The natural cycles of plant growth, reproduction, and decomposition are again present, both above and below ground. Natural harmony is restored to the urban environment. When the right trees are planted in appropriate places, they provide food and shelter to animals, two critical elements for the survival of wildlife.



Individual trees have value, but the variability of species, size, condition, and function makes determining their economic value difficult. The economic benefits of trees can be both direct and indirect.

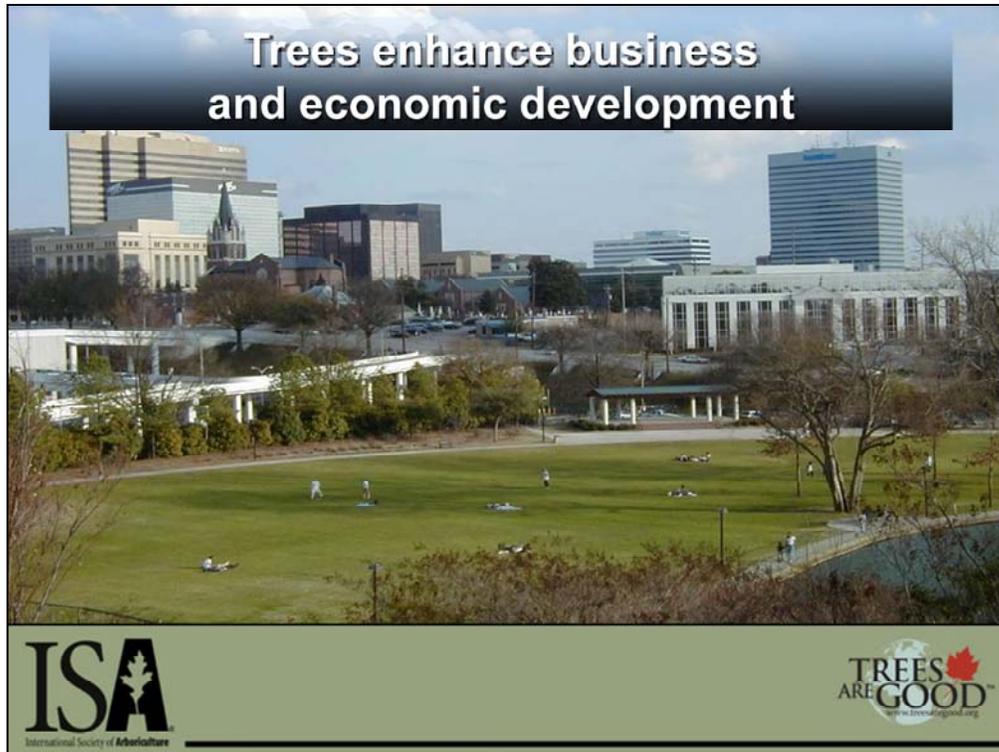


A direct economic benefit is found in decreased energy use and associated cost reductions. Air conditioning costs are significantly lower in a tree-shaded home. Heating costs are reduced when a home has a windbreak.

Trees increase real estate values



If an appropriate species for a particular site is well planted and maintained, it increases in value from when it is planted until it dies. Trees are a wise investment of time and money since landscaped homes are more valuable than non-landscaped homes. Homes on tree-lined streets sell faster and at higher prices than homes on barren streets.



Trees enhance economic stability in a community by attracting business and tourists. Tree-lined business and retail districts encourage patrons to linger and shop longer. Cities with forested parks, streets, and neighborhoods help businesses recruit and retain employees.



The presence of trees in a community affects the cost of government services in many ways. Trees have the potential to reduce electric bills that are paid by customers and power companies are able to use less water in their cooling towers, build fewer new facilities to meet peak demands, use reduced amounts of fossil fuel in their furnaces, and need fewer measures to control air pollution. Communities can also save if fewer facilities must be built to control storm water in the region. To the individual these savings are small, but to the community, reductions in these expenses are often in thousands and hundreds of thousands of dollars.



Benefit-cost ratio of trees

- Communities receive substantial benefits from trees; however, costs of maintaining this resource must be considered

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Determining a benefit-cost ratio is a useful way to evaluate the public investment in their tree population. This ratio is an indicator used to summarize the overall value of trees compared to the costs of planting and maintaining a community's tree population.



Trees require an investment to provide the benefits that you desire.

The first cost of trees occurs when they are purchased and planted. Trees also require periodic maintenance to function well in the landscape. Informed homeowners can do some maintenance themselves, like mulching, watering, and minor pruning. Shade trees however, quickly grow to a size that may require the services of a professional arborist. Arborists have the knowledge and equipment needed to prune, apply chemicals, fertilize, and otherwise maintain a large tree.

Your, cooperative extension agent, community forester and/or certified arborist can answer questions about tree maintenance, planting, and suggested treatments.

Monetary benefit of trees

- Air quality
- Energy conservation
- Real estate value
- Stormwater capture

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Many studies have been done to place a monetary value on the benefit of trees. A cost/benefit model developed by the U.S. Forest Service has initially shown that for every \$1.00 invested in the planting and care of public trees, the city and citizens received an average of \$4.00 in services and benefits.

To learn more about
the benefits of trees

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