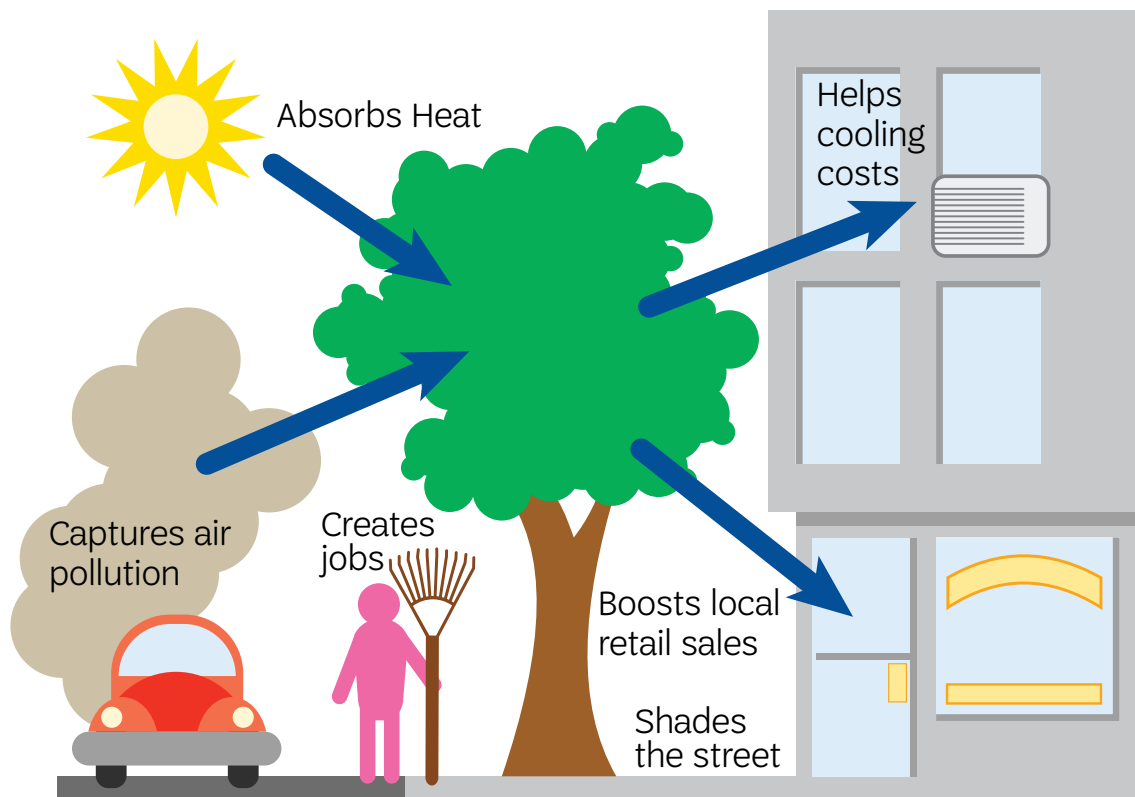


The Power of One Tree



Water

- A tree can capture 10–40% of the rainfall it comes into contact with, depending on species, time of year, and amount of rain that falls in the storm.¹
- Over the course of 20 years, a single red maple tree can intercept 27,000 gallons of rainwater, avoiding 4,800 gallons of runoff.²

Climate

- A large tree absorbs 40–50 pounds of carbon dioxide—a greenhouse gas that causes global warming—per year.³
- Over the course of its life, a single tree can capture and store one ton of carbon dioxide.⁴

Forest Products

- According to estimates calculated by the University of Maine, one tree can produce around 8,333 sheets of paper.⁵ The average office worker uses 10,000 sheets of copy paper each year.⁶
- “An apple tree can yield up to 15–20 bushels of fruit per year and can be planted on the tiniest urban lot.”⁷

People

- A single tree can capture 3.5 pounds of air pollutants—like ozone, dust and particulate matter—per year.⁸ Air pollutants like fine particulate matter are a major cause of asthma and other respiratory problems.
- A mature tree can reduce peak summer temperatures by 2°–9°F.⁹
- “The net cooling effect of a young, healthy tree is equivalent to 10 room-size air conditioners operating 20 hours per day.”¹⁰
- “Trees absorb and block noise and reduce glare. A well-placed tree can reduce noise by as much as 40 percent.”¹¹
- A single large tree can produce approximately 260 pounds of oxygen per year.¹²
- While lifespan varies by species and growing environment, trees generally live to be 50 to 300 years old.
- The tallest tree in the world is a Coast Redwood named Hyperion, growing in Northern California’s Redwood National Park. It’s 380 feet tall!¹³

More general facts/facts about more than one tree:

- In one year, an acre of forest can absorb up to twice the carbon dioxide produced by the average car’s annual mileage.¹⁴
- Trees properly placed around buildings can reduce air conditioning costs by 50%.¹⁵
- Trees increase property value of your home by 10–20% and attract new home buyers.¹⁶
- Trees can reduce crime and improve perceptions of business districts.¹⁷
- One study showed that hospital patients whose rooms had a view of trees recovered more quickly and were less depressed than those looking out at a brick wall.¹⁸
- Students with trees outside school windows have higher test scores and graduation rates after controlling for other factors. High school students with more natural features like trees outside classroom and cafeteria windows showed higher standardized test scores, graduation rates, and intention to attend college, after controlling for socioeconomic status and other factors.¹⁹
- After a walk in the park or playing in green spaces, children with ADD displayed fewer symptoms.²⁰
- Eight in ten species found on land—that’s over five million and counting—live in forests.²¹
- More than half of U.S. drinking water originates in forests. Over 180 million Americans in over 68,000 communities rely on forests to capture and filter their drinking water.²²

This content was provided by American Forests as a resource for the Girl Scout Tree Promise.

¹<https://extension.psu.edu/the-role-of-trees-and-forests-in-healthy-watersheds>

²<https://www.itreetools.org/>

³<https://www.itreetools.org/>

⁴<https://www.itreetools.org/>

⁵<http://conservatree.org/learn/Enviroissues/TreeStats.shtml>

⁶<https://www.pca.state.mn.us/quick-links/office-paper>

⁷<https://www.treepeople.org/tree-benefits>

⁸<https://www.nrpa.org/globalassets/research/nowak-heisler-research-paper.pdf>

⁹<https://www.epa.gov/heat-islands/using-trees-and-vegetation-reduce-heat-islands>

¹⁰<https://www.fs.usda.gov/detail/r9/home/?cid=STELPRD3832558>

¹¹https://www.taketwoenvironmental.com/how_trees_help_the_environment

¹²<https://www.thoughtco.com/how-much-oxygen-does-one-tree-produce-606785>

¹³<https://www.livescience.com/28729-tallest-tree-in-world.html>

¹⁴<https://www.itreetools.org/>

¹⁵<https://ww3.arb.ca.gov/cc/capandtrade/protocols/forest%20old/ctcc.pdf>

¹⁶<https://www.hgtv.com/design/real-estate/increase-your-homes-value-with-mature-trees>

¹⁷Wolf, Kathy. *Journal of Arboriculture* 29(3): May 2003 “Public Response to Urban Forest in Inner-City Business Districts”

¹⁸<https://www.theatlantic.com/health/archive/2013/03/how-nature-resets-our-minds-and-bodies/274455/>

¹⁹Matsuoka, R. (2008). High school landscapes and student performance. Doctoral dissertation, University of Michigan.

²⁰Faber Taylor, A. & Kuo, F. (2009). “Children with attention deficits concentrate better after walk in the park”. *Journal of Attention Disorders* 12(4).

²¹<http://www.wri.org/blog/2015/05/forests-housing-rare-and-endangered-species-lost-12-million-hectares-trees-2001>

²²<https://www.fs.fed.us/managing-land/national-forests-grasslands/water-facts>