

# Economic Benefits - DRAFT -

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## Overview

Trees, green spaces, and nature provide significant economic benefits to communities, including reduced healthcare expenses, increased economic opportunity, and reduced energy expenses.

## Interesting Information

### Health Costs

- A study in Portland found an association between tree planting and the reduction of cardiovascular deaths. This reduction was even greater as trees aged and grew (Donovan et al., 2022).
- The Trust for Public Land (2022) conducted a study across 10 US cities and county lands and estimated that physical activity in parks may be associated with health care savings between \$4 and \$69.4 million per year.
- Access to natural elements (even passive views) has been associated with faster surgical recovery and patient healing and higher pain thresholds. For example, patients having a view of nature during surgery recovery had, on average, a 1-day shorter hospitalization – resulting in considerable savings (Wolf et al., 2015).
- Elderly patients participating in nature therapy programs have reported pain reduction, improvement in attention, reduced stress, lowered need for medications and antipsychotics, and reduction of falls. All benefits resulting in significant health care savings (Detweiler et al. 2012).

### Work Life Balance and Job Retention

- Nature views and indoor plants have been associated with improved employee morale/satisfaction, decreased absenteeism, and increased efficiency (Wolf et al., 2015).
- Green spaces help employees handle stress and recharge. This supports work and life balance for people who live and work in busy cities (Wolf et al., 2015).
- Trees, green spaces, and nature in a community can attract and retain talent.

### Shopping Districts

- Research shows that shoppers respond to the overall aesthetics of their shopping experience; they will travel farther to shop in tree-lined business districts and tend to spend more time and money once they are there. They report more frequent shopping and willingness to spend 12% more on goods (Goodwin, 2014).

## Tourism

- Urban forests and parks may play a significant role in attracting tourism and associated revenue. A Savannah, Georgia study showed urban forests can significantly contribute to city beauty and a more positive tourist experiences and satisfaction. They can function as a main draw for tourists (Deng et al., 2010).

## Job Creation

- Tree planting initiatives provide employment opportunities, from the initial planting to ongoing maintenance. In many regions, agroforestry practices, which combine tree planting with agricultural activities, offer sustainable livelihoods to rural communities.
- The Detroit Tree Equity Partnership is creating 300 jobs through its program to plant 75,000 trees. Many program participants are coming out of incarceration - demonstrating the potential of this investment to remove barriers and change lives, especially in under-resourced communities. (Greening of Detroit, 2022).
- One study led by Key-Log Economics (2020) found 25.7 direct, indirect and induced jobs for every \$1 million invested resulting in significant employment opportunities especially in under-resourced communities. For example, the direct employment impact of an increase in reforestation funding would be more jobs for people planting trees. An indirect impact would be more jobs for tree nursery workers because the tree planters would buy the seedlings from the nursery. And an induced impact would be more jobs in the grocery stores where tree planters and nursery workers buy their goods.
- In New York City, during the 2007-2015 MillionTrees NYC Campaign, the MillionTrees Training Program was created. The program offered training, wraparound social services, and assistance with job placement in urban forestry for young adults who were previously disconnected from the workforce (Campbell, 2022).
- The Nature Conservancy and American Forests have national programs focused on educating and growing the green workforce (Campbell, 2022).

## Energy Savings

- Trees offer shade, improve air quality, and provide natural cooling, reducing the need for air conditioning and lowering energy consumption. Trees can reduce the need for air conditioning, benefiting both homeowners and businesses. Urban forests and green roofs can aid in reducing urban heat. Parks can be up to 2°F cooler than the surrounding urban area in the day, large numbers of trees and expansive green spaces across a city can reduce local air temperatures by up to 9°F (Wolf et al., 2015).
- Evergreens that block winter winds can save 3% on heating. This reduction also means that fewer greenhouse gases need to be produced in generating power (The Morton Arboretum, n.d.).

## Market and Non-market Values

- Trees can be used to produce products (market value) like wood furniture, paper, and lumber. However, the non-market value from services such as carbon storage and air

- pollution filtration—far exceeds their commercial value. Between 2010 and 2012, trees in US forests, orchards, and plantations provided nearly \$114 billion. Climate regulation benefits via carbon storage in tree biomass represented 51% of this net annual value, while preventing human health damages due to air pollution filtering by trees, i.e., air quality regulation, represented 37% of the annual net value (Cavendar-Barres et.al, 2022).
- Experts have determined that every dollar invested in tree planting and management returns up to 500%. (The Morton Arboretum, n.d.).
  - According to a study by the American Forests, a single tree can provide \$20,000 worth of benefits over its lifetime (*The Social Benefits of Trees: How Trees Provide Value for Our Economy, Health, and Environment*, n.d.).

### Property Values

- Studies have found that nearby trees, particularly large ones, can boost the price of a home from 2% to 15%. Local governments capture those price effects in sales or property taxes across neighborhoods, providing the revenue needed to manage trees so they remain healthy and vital for decades (Goodwin, 2014).
- Trees and shrubs can significantly reduce noise and have a positive impact on property values (Nowak et al. 2010).

### Air Pollution

- Air quality improvements and CO<sub>2</sub> sequestration by vegetation can be expressed in monetary terms. Nowak et al. (2006) modeled total air pollution removal by urban trees and shrubs across 55 U.S. cities at 711,000 metric tons, estimating the removal value at \$3.8 billion in annual public value.

### Storm Water Run Off

- Trees and soils improve water quality in that they can remove harmful substances washed off roads, parking lots, and roofs during rain or snow events. Vegetation can also reduce the need for costly stormwater treatment by retaining or slowing the flow of precipitation reaching the ground. These systems reduce the risk of major flooding and water treatment costs. In addition, vegetation can be planted to reduce the risk of negative effects from drought (Wolf et al, 2015).

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