

Statewide Summary of South Dakota's Urban Forest

Number of trees	5,414,000
Tree cover in communities (%)	17.0
Pollution removal	
tons/year	1,350
\$ million/year	10.0
Carbon storage	
tons	697,000
\$ million	14.4
Carbon sequestration	
tons/year	28,400
\$ per year	588,000
Building energy reduction	
\$ per year	519,000
Reduced carbon emissions	
\$ per year	7,300
Compensatory value	
\$ billion	5.1
5 most common species (%)	
ponderosa pine	21.3
ash	20.4
willow	9.3
other pine	8.3
elm	5.7
Land uses (%)	
residential/farms	28.8
other	27.3
commercial/industrial/transportation	24.7
agriculture	19.2
Pests	
Asian longhorn beetle (% of trees)	54.4
compensatory value (\$)	3.4 billion
Gypsy moth (% of trees)	16.4
compensatory value (\$)	285 million
Emerald ash borer (% of trees)	20.4
compensatory value (\$)	1.7 billion
Dutch elm disease (% of trees)	5.7
compensatory value (\$)	451 million



Resources:

1. **Benefits of Trees.** Retrieved November 1, 2012 from Friends of the Urban Forest website: <http://www.fuf.net/resources/treeBenefits.html>
2. McPherson, E.G.; *et al.* 2003. **Northern Mountain and Prairie Community Tree Guide: Benefits, Costs, and Strategic Planting.** Gen. Tech. Rep. PSW-GTR-258. Davis, CA: US Department of Agriculture, Forest Service Pacific Southwest Research Station. 19 p.
3. Nowak, David. J.; Hoehn, Robert E. III; Crane, Daniel E.; Bodine, Allison R. 2012. **Assessing Urban Forest Effects and Values of the Great Plains: Kansas, Nebraska, North Dakota, South Dakota.** Resour. Bull. NRS-71. Newtown Square, PA: U.S. Department of Agriculture, Forest Service, Northern Research Station. 75 p.
4. U.S. Department of Agriculture Forest Service. (2011). **Trees Pay Us Back in the Northeast Region** [Brochure].



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Urban Forest Benefits



What Do Urban Trees Do For You?



≡ \$942

The Average Value of an Urban Tree in South Dakota*

South Dakota's Community Forests

- ❑ Improve quality of life
- ❑ Raises property values



- ❑ Save energy
- ❑ Clean the air
- ❑ Reduce noise pollution
- ❑ Improve water quality
- ❑ Reduce erosion
- ❑ Improve business foot traffic

It Pays to Care for Trees!

One large public tree, 40 years after planting averaged:

Annual benefits	\$40.00
Annual costs	\$12.00
Annual net benefits	\$28.00
Annual net benefits for 500 trees	\$14,000

"The greatest benefits are higher property values and energy savings from heating and cooling."

Building energy reduction
value per year: \$519,000*



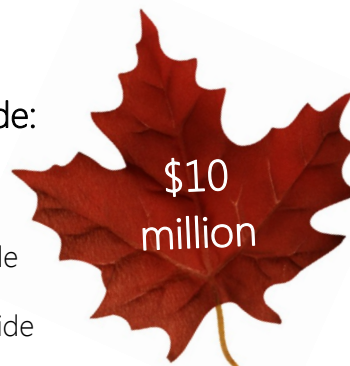
* Based on Reference 3.

The 5.414 million trees that compose South Dakota's urban forests provide these benefits

W Remove 1,350 tons of total pollutants per year at a value of:

Pollutants include:

- ❑ Ozone
- ❑ Nitrogen dioxide
- ❑ Carbon monoxide
- ❑ Sulfur dioxide
- ❑ Particulate matter



W Store⁺ 697,000 tons of carbon per year at a value of:



W Sequester⁺⁺ 27,200 tons of carbon per year at a value of:



*Calculated by:

$\frac{\$5.1 \text{ billion value (all trees)}}{5.414 \text{ million trees}} = \942 per tree

* Carbon Storage: storing carbon (as biomass) - this is considered long-term storage.

**Carbon Sequestration: removing carbon from the atmosphere (through photosynthesis).