

Summary

Understanding an urban forest's structure, function and value can promote management decisions that will improve human health and environmental quality. An assessment of the vegetative structure, function, and value of the City of Mesquite urban forest was conducted between February and August 2012. Data from 225 field plots located throughout the City of Mesquite were analyzed using the i-Tree Eco model developed by the U.S. Forest Service, Northern Research Station.

Key findings

- Number of trees: 2,091,000
- Tree cover: 24.4%
- Most common species: Sugarberry, Green ash, Cedar elm
- Percentage of trees less than 6" (15.2 cm) diameter: 75.8%
- Pollution removal: 288 tons/year (\$1.54 million/year)
- Carbon storage: 145,000 tons (\$10.3 million)
- Carbon sequestration: 13,000 tons/year (\$927 thousand/year)
- Oxygen production: 31,900 tons/year (\$0 /year)
- Building energy savings: \$773 thousand/year
- Avoided carbon emissions: \$108 thousand/year
- Annual Rainfall Interception: 30.2 million ft³/year (\$2.01 million/year)
- Structural values: \$996 million

Ton: short ton (U.S.) (2,000 lbs) Carbon storage: the amount of carbon bound up in the above-ground and below-ground parts of woody vegetation
Carbon sequestration: the removal of carbon dioxide from the air by plants Carbon storage and carbon sequestration values are calculated based on \$71 per ton Structural value: value based on the physical resource itself (e.g., the cost of having to replace a tree with a similar tree) Pollution removal value is calculated based on the prices of \$1136 per ton (carbon monoxide), \$9110 per ton (PM10). Ozone, sulfur dioxide, nitrogen dioxide and particulate matter less than 2.5 microns are calculated based on US EPA BenMAP model. Energy saving value is calculated based on the prices of \$114.9 per MWH and \$10.15 per MBTU Monetary values (\$) are reported in US Dollars throughout the report except where noted

For an overview of i-Tree Eco methodology, see Appendix I.