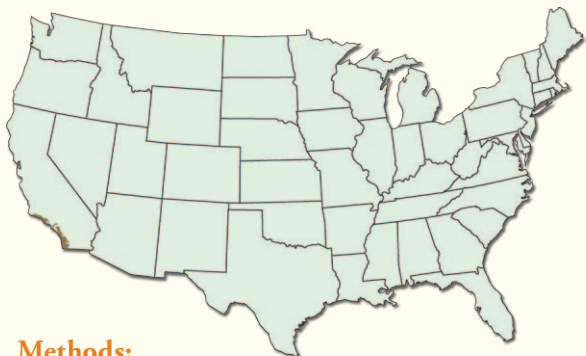


*Pacific Southwest Research Station
scientists show that...*

It pays to care for trees

Santa Monica, California, is the reference city for the i-Tree Streets program's Southern California Coast climate region. Base data were collected there during the summer of 1999. To learn how to use this information to calculate costs and benefits for any community in the Southern California Coast (shown on the map in brown), refer to the Tree Guidelines for Coastal Southern California Communities at http://www.fs.fed.us/psw/programs/uesd/uep/tree_guides.php. To learn more about i-Tree Streets, visit <http://www.itreetools.org>.



Methods:

- ✦ Benefits and costs were quantified for typical large, medium, and small broadleaf trees
- ✦ The analysis assumed that trees were planted in a residential yard, public park or street side with a 77.5-percent survival rate over 40 years
- ✦ Tree care costs were based on results from a survey of municipal and commercial arborists
- ✦ Benefits were calculated by using tree growth curves and numerical models that consider regional climate, building characteristics, air-pollutant concentrations, and prices

Benefits analyzed:

- ✦ Energy savings (electricity and natural gas)
- ✦ Air pollution reduction (carbon dioxide, nitrogen dioxide, sulfur dioxide, ozone, airborne particles, and volatile organic compounds)
- ✦ Runoff reduction (rainfall interception)
- ✦ Property values

Costs analyzed:

- ✦ Tree purchase and planting
- ✦ Pruning
- ✦ Irrigation
- ✦ Pest and disease prevention and control
- ✦ Removal and disposal
- ✦ Sidewalk repair
- ✦ Leaf litter cleanup
- ✦ Liability, legal aspects, and administration

Project partners included the city of Santa Monica Community and Cultural Services Department, Public Landscape Division; Local Government Commission; University of California, Davis, Department of Land, Air, and Water Resources; USDA Forest Service, Pacific Southwest Research Station.

Resources:

Anderson, L.M.; Cordell, H.K. 1998. Residential property values improve by landscaping with trees. *Southern Journal of Applied Forestry*. 9: 162–166.

McPherson, E.G.; Simpson, J.R.; Peper, P.J.; Scott, K.I.; Xiao, Q. 2000. Tree guidelines for coastal southern California communities. Sacramento, CA: Local Government Commission. 144 p.

Neely, D., ed. 1998. Valuation of landscape trees, shrubs, and other plants. 7th ed. Urbana, IL: International Society of Arboriculture. 50 p.

Sullivan, W.C.; Kuo, F.E. 1996. Do trees strengthen urban communities, reduce domestic violence? *Arborist News*. 5: 33–34.

Wolf, K.L. 1999. Nature and commerce: human ecology in business districts. In Kollin, C., ed. *Building cities of green: proceedings of the 1999 national urban forest conference*. Washington, DC: American Forests: 56–59.



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Department of
Forestry and
Fire Protection

May 2011

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TREES

Pay Us Back

In the Southern California Coast Region

Cover photo by Drew Patocki



United States
Department of
Agriculture



Forest
Service



Pacific Southwest
Research Station



Walt Warriner

\$3,720

The Value of a Tree on the Southern California Coast

A large tree in the Southern California Coast Region will provide \$3,720 in environmental and other benefits over its lifetime. That's over a 325-percent return on investment!

Properly cared for, trees are valuable and growing assets worth over three times the investment.

Trees produce benefits for us when we plant and nurture them in our urban environments. The Urban Ecosystems and Social Dynamics Program at the USDA Forest Service Pacific Southwest Research Station is assessing the ways that trees pay us back and their value to us.

Drew Potocki



Healthy trees mean:

Healthy people

Each year, 100 large, mature street trees

- ✧ Remove 7 tons of carbon dioxide (CO₂)
- ✧ Remove 328 pounds of other air pollutants
- ✧ Catch about 212,000 gallons of rainwater

Walt Warriner



Healthy communities

Tree-filled neighborhoods

- ✧ Report lower levels of domestic violence
- ✧ Are safer and more sociable
- ✧ Reduce stress of body and mind
- ✧ Decrease need for medication, and speed recovery times



Homeowner savings

One well-placed large tree

- ✧ Provides average savings of \$9 on home air conditioning costs each year

Better business

In tree-lined commercial districts, shoppers report

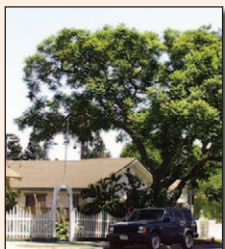
- ✧ More frequent shopping
- ✧ Longer shopping trips
- ✧ Willingness to pay more for parking
- ✧ Willingness to spend 12 percent more for goods



Higher property values

Trees increase the resale value of houses

- ✧ Each large front yard tree adds 1 percent to the sales price of a house
- ✧ Large specimen trees can add 10 percent to property value



It pays to care for trees

Landscape trees provide benefits that far exceed the costs of planting and care over their lifetime.

Environmental and aesthetic benefits, such as energy savings, stormwater runoff reduction, cleaner air, and higher property values, are consistently many times greater than tree care costs.

The greatest benefits are air quality improvement and higher property values.

One large public tree, 40 years after planting, averaged:

Annual benefits	93
Annual costs	\$28
Annual net benefit	\$65

Over 40 years, 100 large public trees total:

Benefits	\$372,000
Costs	\$113,560
40-year net benefit	\$258,440