URBAN FORESTS

mitigate air pollution by intercepting particulate matter and absorbing gases like ozone, nitrogen dioxide and sulfur dioxide with their

LEAVES

WELL-MAINTAINED LANDSCAPES AND HEALTHY TREES
CAN INCREASE PROPERTY VALUES BY

5-20%

— Project —
DESERT CANOPY
AZ | NM | TX
Growing a Healthier Community

GROWING A HEALTHIER COMMUNITY

Discover how trees clean the air and cool the environment.

— Project —
DESERT CANOPY
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YOUR KEY TO CLEANER AIR

Trees – one of our most important natural resources – provide numerous environmental, economic and social benefits.

Desert Canopy is a project funded by the USDA Forest Service in Arizona, New Mexico and Texas. Utilizing the urban forestry analysis and benefits assessment tool i-Tree Eco, the communities of Phoenix, El Paso, Las Cruces and Albuquerque partnered to complete urban forest assessments that define the benefits trees provide in relation to greenhouse gases, air quality, energy consumption, water conservation and human health.

Greenhouse Gas
Trees reduce greenhouse gas emissions by:

1. Absorbing atmospheric carbon dioxide (CO_2) as they grow, storing carbon in their roots, wood and leaves.
2. Reducing energy use (for heating and air conditioning) and subsequent pollutant emissions from power plants.
3. Lowering air temperature, which reduces the production of ozone.

Water Benefits
Urban forests slow stormwater runoff and reduce water pollution by:

1. Intercepting and holding rain on leaves, branches and bark.
2. Reducing soil erosion by slowing rainfall before it strikes the soil.
3. Increasing infiltration and storage of rainwater through the tree's root system.

Energy Benefits
Trees in an urban forest reduce energy use by:

1. Shading buildings and streets, thus reducing the amount of heat absorbed and stored by structures and asphalt.
2. Converting liquid water to water vapor, which cools the air – also called evapotranspiration.
3. Reducing wind speed, thereby reducing heat loss during the winter.

Air Quality
Urban forests can mitigate the health effects of pollution by:

1. Absorbing pollutants like ozone, nitrogen dioxide, and sulfur dioxide through leaves.
2. Intercepting particulate matter like dust, ash and smoke.
3. Releasing oxygen through photosynthesis.

Social Benefits
Trees growing in urban areas contribute to social well-being by:

1. Increasing property "curb appeal", which increases property values.
2. Improving local economies – people tend to spend more money in shopping districts with trees.
3. Absorbing traffic noise, increasing privacy and alleviating mental fatigue.
4. Providing a natural habitat for birds and insects, while creating a sense of place.

*Sources: Center for Urban Forest Research (www.fs.fed.us/psw/programs/cufr/); Trees are Good/ISA (www.treesaregood.com); National Tree Benefit Calculator (www.treebenefits.com/calculator); Sustaining America's Urban Trees and Forests. USDA-FS Gen. Tech. Rep. NRS-62.

SUMMARY OF KEY FINDINGS

DATA	PHOENIX	EL PASO	LAS CRUCES	ALBUQUERQUE
Number of Trees	3,166,000	1,281,000	275,000	1,504,000
Project Study Area	384.5 sq mi (996 sq km) 246,064 acres	158.2 sq mi (410 sq km) 101,238 acres	44.0 sq mi (114 sq km) 28,171 acres	132.2 sq mi (342 sq km) 84,626 acres
City Land Area	519 sq mi (1,344 sq km) 332,160 acres	256 sq mi (663 sq km) 163,840 acres	47 sq mi (122 sq km) 30,080 acres	181 sq mi (469 sq km) 115,840 acres
Number of Species Sampled	60	50	36	76
Tree Cover	9.0% - 12.9 trees/acre	5.1% - 12.7 trees/acre	3.7% - 9.1 trees/acre	13.3% -22.2 trees/acre
Most Common Species	Velvet Mesquite 8.3% California Palm 7.5% Sweet Acacia 6.7%	Italian Cypress 25.8% Afghan Pine 10.8% Mexican Fan Palm 7.3%	Desert Willow 18.0% Italian Cypress 15.8% Afghan Pine 11.8%	Siberian Elm 24.6% Desert Olive 5.6% Desert Willow 5.6%
Percentage of Trees less than 6" DBH* DBH is the diameter at 4.5 feet above ground	44.8%	53.4%	64.3%	59.9%
Pollution Removal	1,770 tons/year ($5.76 million/year)	318 tons/year ($247 thousand/year)	92 tons/year ($235 thousand/year)	366 tons/year ($1.1 million/year)
Carbon Sequestration	35,400 tons/year ($2.52 million/year)	7,430 tons/year ($529 thousand/year)	1,580 tons/year ($112 thousand/year)	9,710 tons/year ($692 thousand/year)
Carbon Storage	305,000 tons ($21.7 million)	92,800 tons ($6.61 million)	$17,800 tons ($1.26 million)	226,000 tons ($16.1 million)
Avoided Carbon Emissions	$2.96 million/year	$384 thousand/year	$75 thousand/year	$448 thousand/year
Oxygen Production	89,200 tons/year	14,100 tons/year	3,290 tons/year	21,300 tons/year
Building Energy Savings	$22.9 million/year	$2.7 million/year	$563 thousand/year	$3.31 million/year
Avoided Stormwater Runoff	91,700,000 cu ft ($6.11 millon)	32,867,000 cu ft ($2.19 million)	898,000 cu ft ($59.8 thousand)	51,386,000 cu ft ($3.42 million)
Replacement Values	$3.82 billion ($1,207/tree)	$1.02 billion ($796/tree)	$205 million ($798/tree)	$1.93 billion ($1,283/tree)