Case Study: The Sacramento Shade Tree Program

Summers in Sacramento, California are very hot—often in the 90s (°F)! That's why the Sacramento Shade Tree Program is so popular with the people who live there. By planting trees throughout this sunny Central Valley city, Sacramento residents are trying to make it cooler.

Streets, parking lots, or buildings cover most of the land in and around Sacramento. These dark surfaces hold the sun's heat, causing the Sacramento area to be even hotter than the countryside around it. This heating up is known as the *heat island effect*, because one area—like an island—is hotter than the areas surrounding it. Shade trees help lessen the heat island effect. They cool the city by shading buildings, parking lots, playgrounds, and streets. Trees also make the air cooler by adding water from their leaves to the air.

By keeping things cooler, shade trees help Sacramento residents use their air-conditioners less in the summer. And that means using less electricity. Trees also make the neighborhood more beautiful.

Sacramento residents have planted over 275,000 shade trees through the Shade Tree Program. Each year Sacramento's trees save the community about $18.5 million in energy costs, 1,603 tons of air pollution, and 334,400 tons of carbon dioxide.

Questions:

Using thermometers, measure the temperature in the shade of a tree and in the sunlight. How do trees help save energy?

What might be some problems with planting more trees?

What would your neighborhood be like with more trees?

Sources:

Sacramento Cool Community Program Brochure. Sacramento: Sacramento Tree Foundation and Sacramento Municipal Utility District, 1999.

"SMUD Board Approves 28,000 Shade Tree," *The Urban Forest Monitor*. Sacramento: Sacramento Tree Foundation, Autumn/Winter 2000.