

## Outdoor Water Use Strains Resources

by Pat Gober

*Arizona Republic: Environment* Sept 1, 2007

*This article is one in a series contributed by Arizona State University's Global Institute of Sustainability. The institute catalyzes and advances interdisciplinary research and education on environmental, economic and social sustainability.*



**W**ater is the key resource for growth in a desert city like Phoenix. The Valley is blessed with a diverse portfolio of water sources, including the upland watersheds of the Salt and Verde rivers, the Colorado River Basin and, when surface waters are in short supply, a vast network of underground aquifers.

Over the years, our region has built sophisticated water-storage and delivery systems to capture excess water in wet years for use in dry years.

Twentieth-century Phoenicians created an oasis in the desert, with backyard pools, lush lawns and outdoor gardens, golf courses, water features, and desert-landscape treatments.

Two climatic conditions, however, challenge today's urban dwellers to rethink how water is used to create, maintain and market our region: climate change and the expanding urban heat island.

Although residences account for only around one-quarter of the region's water use, it is the sector over which individual consumers have some control. Here are the facts about water use:

**Outdoor water use accounts for 60 to 70 percent of home water use.** Although we can reduce water use by installing low-flow showerheads and toilets, the real action is outside, in the sizes of our lots, how we landscape and manage water on those lots, and whether we have a pool.

**People who live at higher densities have smaller yards with less landscaping.** The typical household with 2.6 members living on a 1-acre lot

uses 0.5 to 0.6 acre-feet (an acre foot is 325,851 gallons) of water annually. A high-density development with 10 to 15 units per acre requires only 0.13 acre-feet of water per year.

**High-tech watering systems lead to higher water use.** Homes with in-ground sprinkler systems use 35 percent more outdoor water than those that employ hand-led hoses. Why? Lawn and garden irrigation are not sensitive to the variations in nature's demand for water.

Every year, a pool loses the equivalent of its total volume through evaporation. Many Phoenicians are unaware of the fact that their pools lose almost 0.5 inch of water per day in June and July because they have automatic refill devices to maintain the water level.

Although we can agree on the need for indoor water conservation, meaningful reductions in outdoor water use cut to the core of Phoenix's identity as an oasis city. Our cultural history relies upon using water to re-create the look and feel of the Midwest and California. Plentiful and cheap water (and air-conditioning) made it possible to enjoy the desert climate while creating an urban landscape that looks nothing like a desert.

Phoenix's best bet at becoming a "green city" may mean moving past an identity based on Eastern lawns, private pools and low-density living in favor of xeriscaping, a more compact city and community pools.

*Patricia Gober is a professor of geography at Arizona State University and co-director of the Global Institute of Sustainability's Decision Center for a Desert City.*