

Suburban yards are not deserts! Even (especially) in the desert

By Peter Groffman

Many people—especially those in the environmental community—think residential yards, and the seemingly endless expanse of suburban landscape are biological wastelands. But multiple lines of scholarship now suggest that this is not true. We need to take a new look at how we think about the American residential landscape. Such a revision in thinking could actually improve the ways that yards are managed for human satisfaction, biodiversity, and air and water quality. We put together a research team to do just that.

More than ten years ago, we began to wonder why the neighborhoods that we all lived in looked so similar, with a common mix of grass, trees, shrubs, flowers, and impervious surfaces. We especially wondered about the arid cities; Phoenix and Los Angeles. We knew that many people had moved from the humid east to these western cities because they had problems with hard winters, allergies and asthma. Did they—we wondered—plant the same trees and grasses in their new yards that were causing their allergy and asthma problems in their old homes? We reasoned that there must be some powerful driver of an apparent “ecological homogenization” of yards and residential landscapes.

We assembled a group of scientists with backgrounds in ecology, soil science, hydrology, geography, sociology and anthropology across six cities: Boston, Baltimore, Miami, Minneapolis-St. Paul, Phoenix and Los Angeles. This blog with Native Plant Trust explains some of our findings.

We wondered about the ecological effects of this vast suburban landscape. The area covered by lawns and yards in the U.S. is huge. Is this vast area subject to heavy applications of fertilizer and pesticides that lead to air and water pollution? Are native species of plants, insects and birds being displaced by a few species favored by humans?

With the help of generous funding from the U.S. National Science Foundation, we set out to determine if this suspected ecological homogenization was real.

The answer, not surprisingly, was yes. Residential yards in Phoenix and Baltimore were more similar to each other than were the Sonoran desert and hardwood forest native ecosystems that they replaced in terms of plant species, soil properties, microclimate, and the distribution of ponds, lakes and streams.

But other results were more surprising. In cities across the country, we found way more species of plants in residential ecosystems than in the native ecosystems that they replaced. We found lots of birds and insects as well. It turns out that many native species can find some place to live in suburban and exurban neighborhoods—tucked into a park or a wooded section of yards. And then there are all the new species that people plant. As a result, the total number of plant

species—and to some extent the insects and birds that depend on plants—is higher in residential than in native landscapes. This effect is most marked in arid regions, where lots of water is added to residential areas, but it also shows up in wetter cities.

One simple result was that people really like their yards. We asked over 9,000 homeowners across the U.S. if they were “satisfied with the quality of the natural environment in their neighborhood?” We defined the natural environment as trees, animals, grassy areas, streams and open spaces. On a scale of zero to ten, responses hovered about eight. Scores were higher in exurban and suburban neighborhoods than in urban neighborhoods—maybe not surprising because people often move to these exurban and suburban areas in search of these environmental amenities.

Environmental scientists and managers take note – yards are not biological deserts. Moreover, they are important to people and play an important role in life satisfaction and in the maintenance of safe and happy communities. If we want to change the way these areas are managed to improve biodiversity, or air or water quality, we are going to have to recognize and reckon with the fact that people derive benefit and satisfaction from their yards. This recognition will be essential to facilitate changes that people both like—and are willing to make.

—Peter Groffman, City University of New York, investigates nutrient cycling in forests and terrestrial ecosystems. He leads the Yard Futures Project Team.

Why do people do what they do in their yards?

What are the ecological and social knowledge, values, and attitudes that cause people to move from Boston and Baltimore to Phoenix and Los Angeles, only to plant Kentucky bluegrass and crabapple trees? These human behaviors are complex. Some social scientists hypothesize that humans evolved in savannas that have a mix of grasses, trees, and dwellings similar to suburban neighborhoods. Others conclude that our middle-class lawns emulate the high-status tradition of crisp green lawns in 18th-century European estates. Still others point to the human desire to dominate the natural world.

More prosaic drivers of standard yard treatments also exist. My favorites are simplicity and laziness. You have to have some vegetation around your house, and the standard mix of grass, shrubs, and trees is the easiest to maintain, even without fertilizer. (Our data show that only about 50 percent of lawns are regularly fertilized.) Another prosaic driver is what our group calls the “whiffle ball” effect: traditional yards provide durable spaces for recreation and social interaction. There might also be more subtle and perhaps nefarious influences, such as social pressures to maintain an idealized (perfect and beautiful) lawn, ordinances designed to support order and property values, and commercial enterprises advertising lawn-bolstering products and services. —P.G.

