

## Lawn-Watering Issue Is Complicated: Keeping Grass Green Drains Resources, but also Helps Keep Landscapes, Nearby Homes Cool

by Chris Martin

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It's October in Phoenix, and the public's attention has once again turned to overseeding, ryegrass, and winter lawns. Phoenicians are blessed with a year-round growing season. This favorable climate gives residents the luxury of growing lush summer and winter lawns. Soft, deep-green ryegrass winter lawns are particularly attractive to residents and winter visitors because the level of people's outdoor recreation and lawn play dramatically increases as the weather cools.

Recently, the annual fall scalping of Bermuda grass summer lawns and overseeding with ryegrass to grow a winter lawn has been scrutinized. Pressure mounts to increase water-conservation efforts in response to a rapidly expanding population base. In the last several years, our municipalities have encouraged residents to conserve water resources – to allow their heat-loving

Bermuda grass lawns to go dormant and brown during winter and to not overseed.

Consumptive water-use patterns by all outdoor landscape greenery, including lawns, are driven by temperature, and not surprisingly, are highest during warm weather. On average, total water demand by summer lawns in Phoenix from May to September is equivalent to about 35 inches of precipitation, or roughly 61% of a lawn's annual water requirement. In contrast, average water demand by winter lawns during the normally cool months of November to March is equivalent to about 10 inches of precipitation, or roughly 29% of a lawn's annual water needs. It predictably follows that the irrigation requirements of lush winter lawns are normally lower than that of their summer counterparts.

Should our desert cities encourage residents to forgo winter lawns to conserve water? Or does it make more sense to encourage a winter lawn and forgo a summer lawn to conserve considerably more water? If only it were that simple. Summer lawns have value, too, especially when the monsoon is not present and the weather is very hot. Summer lawns create cool landscape microclimates, pockets of cooler air, by a process called evapotranspiration.

Evapotranspiration, or “ET,” from a lawn surface involves the consumption of heat energy that cools the surrounding air as water changes from a liquid to a gas. This process is similar to the experience of getting out of a swimming pool and feeling the cool sensation of water evaporating from your skin. Recent studies at Arizona State University (ASU) have shown that during hot summer afternoons, the surfaces of homes next to a healthy summer lawn can be as much as 10 degrees cooler than similar homes surrounded by desert landscaping. The effects of this microclimate effect could mean less demand for air conditioning and less electricity use.

Landscape water conservation might not mean doing without a healthy summer or winter lawn, but instead could be brought about through more efficient control of irrigation watering schedules, proper mowing

and fertilization practices, and/or use of gray, or reclaimed water. For example, major irrigation companies now sell “smart” electronic irrigation controllers that adjust lawn-watering schedules to account for daily changes in landscape ET water loss.

Though the popularity of desert landscaping in the Phoenix metro area is strong, ASU researchers have found that people's preferences for lawns in their home landscapes is even stronger. If we can apply the best lawn-

management practices and optimize lawn size and placement within a landscape, we can attain our landscape water-conservation targets without eliminating lawns as an element of residential landscapes.

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