

# Landscape coefficients prove useful for urban water conservation efforts

June 23 2011

---

Although water consumption and conservation are widely recognized as significant environmental concerns in the United States, most Americans are still unaware of the major impact of landscape irrigation on their regional water supplies. One startling example: a 2004 study of homeowners in College Station, Texas, estimated that more than 24 to 34 million gallons of excess water were used annually for landscape irrigation alone.

According to the authors of a study published in *HortScience*, end-users lack understanding of best management practices for [landscape water management](#), thus contributing to excess [water use](#). To gain insight into innovative water-saving strategies, the researchers tested the use of landscape coefficients as a tool in irrigation decision-making and resulting [water savings](#) in urban landscapes.

"Significant [water](#) use savings may be achieved if landscape irrigation is based on reference evapotranspiration—the amount of water lost through evaporation from the soil and plant surface plus that lost through plant transpiration", explained the study's corresponding author Tim Pannkuk. The research team measured landscape crop coefficients (KL) for landscapes comprised of different vegetation types and irrigation water quality differences affecting KL. The KL values were determined for landscape vegetation sites in College Station and San Antonio, Texas.

"In our study, St. Augustinegrass KL increased seasonally in San Antonio. The untrimmed native grasses increased in height and girth

from spring until the first frost in November, whereas the mowed St. Augustinegrass had a relatively constant plant height and density during this time period", said Pannkuk. "The data showed that the mean KL for native grass was not statistically different from the KL of St. Augustinegrass with or without a tree. This implies that a seasonal KL could be used in irrigation recommendations for amenity landscapes with mixed species". Pannkuk noted that "it appears that the native grasses are opportunistic plants in regard to water use."

Municipalities and water planning agencies rely on several proven methods to promote water conservation. The new research shows that the use of a landscape coefficient for irrigating mixed-species landscapes has potential to enhance regional planning and conservation efforts. The study concluded that seasonal landscape water demand could be closely predicted with a landscape coefficient, weather station data, and number of irrigated acres in the region.

**More information:** [hortsci.ashspublications.org/c ... /abstract/45/10/1529](https://hortsci.ashspublications.org/c.../abstract/45/10/1529)

Provided by American Society for Horticultural Science

Citation: Landscape coefficients prove useful for urban water conservation efforts (2011, June 23) retrieved 23 June 2024 from <https://phys.org/news/2011-06-landscape-coefficients-urban-efforts.html>

This document is subject to copyright. Apart from any fair dealing for the purpose of private study or research, no part may be reproduced without the written permission. The content is provided for information purposes only.