UTAH STATE UNIVERSITY EXTENSION

Watering Without Waste Throughout the Irrigation Season

CWEL FIELD DAY 2024

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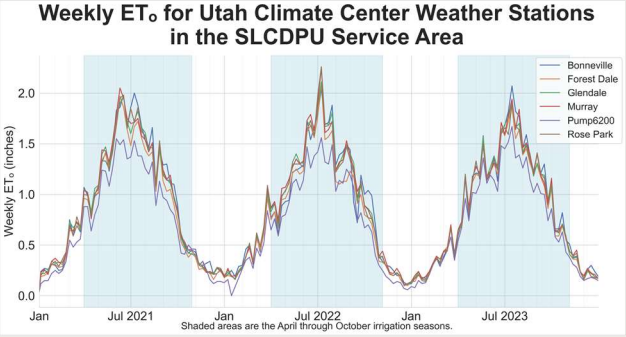
Capacity to conserve water used to irrigate urban landscapes is highest at the end of the summer and throughout fall when plant water needs decline more than most people realize and overwatering occurs.

Seasonal ET_o

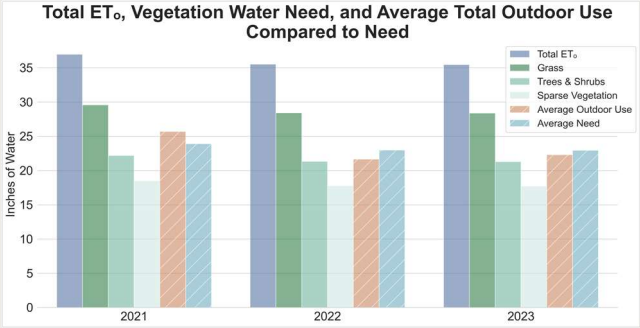


Reference crop evapotranspiration (ET_o) represents the water needs of a hypothetical reference crop.

The annual cycle of ET_o in Northern Utah's montane ecosystems increases rapidly in the spring, peaks in mid-to-late July, then declines rapidly in late summer/early fall as plants begin senescence.

This chart shows measured ET_o at six Utah Climate Center (UCC) weather stations installed in the Salt Lake City Department of Public Utilities (SLCDPU) service area which provide reliable, localized ET_o estimates.

Meeting Plant Water Needs



Water needs of various types of landscape plant material are estimated by applying plant factors to ET_o.

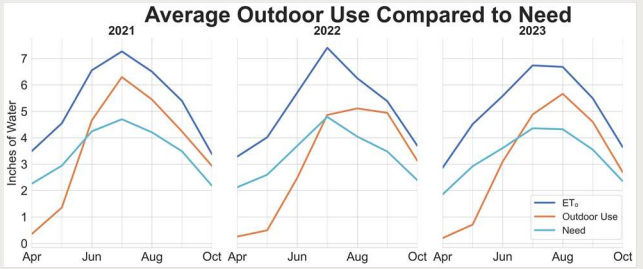
This chart shows total ET_o averaged across single family residential (SFR) locations in the SLCDPU service area, where ET_o values are from the closest UCC weather station (blue bars). Average total plant water need for the same properties and three general vegetation types are shown in green bars.

Comparing average total outdoor water use (thatched orange bars) to average total water need (thatched turquoise bars) shows that, on an annual basis for the 2021-2023 irrigation seasons, these properties watered close to meeting plant water need.

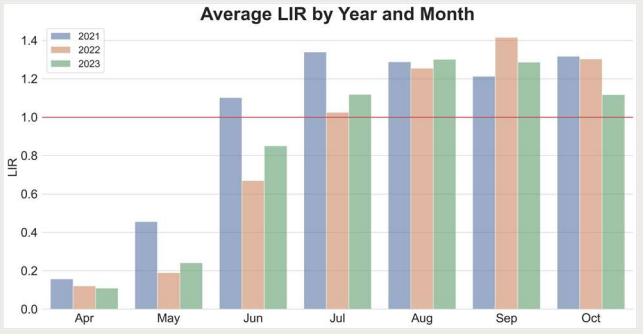
Landscape Irrigation Ratio

WaterMAPS™ is based on individualized parcel-scale landscape water budgets. It uses water meter data, local weather data, and a map of vegetation types on a property to calculate a Landscape Irrigation Ratio (LIR), which is outdoor water use divided by water need. Values over 1 represent water use that is greater than need, indicating water waste and a capacity to conserve.

Late Season Water Conservation Potential



The figure above graphs ETo, average SFR outdoor water use, and average SFR outdoor water need on a monthly basis over the 2021-2023 irrigation seasons. The figure below shows average SFR LIRs by month and year. Outdoor water use is less than landscape need early in the irrigation season as plants utilize water supplied by snow melt and spring rains so people generally need to irrigate less. However, outdoor water use exceeds landscape water need late in the irrigation season as plants respond to declining ET_o but people's watering practices are slow to respond.



Conserve water by observing weather and plant behavior and start reducing irrigation in late July.