



Utah State University Extension

# Water Conservation Initiative 2016



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Utah State University Extension is uniquely positioned to do research and educational outreach throughout the state to help Utahns in urban and rural communities understand the need and their ability to conserve water. Extension also provides a suite of tools and programs to help create a sustainable water future.

Irrigated landscapes use most of our urban water and irrigated agriculture uses most of Utah's total water. Our work addresses greater water efficiency in urban and rural areas. Yards and gardens are where most Utahns can make the biggest reductions in water use.

A USDA survey found Utahns involved in irrigated agriculture rely on USU Extension agents and specialists for information on reducing irrigation costs and conserving water more than any other source, including private consultants, conservation districts, irrigation districts, other farmers and the NRCS.

While conservation alone will not provide all the water Utah needs, it remains the most economical source of water and no management portfolio is complete without it. **Currently, using water more efficiently is the least expensive source of 'new' water.** (\$185/af for agricultural and a net savings of \$99/af for urban), as compared with an estimated \$520-\$720/af for new reservoirs. (Pacific Institute, 2010)



# What Utah State University Extension Has Done

## CWEL

**The Center for Water-Efficient Landscaping (CWEL) is an interdisciplinary group working on landscape water conservation issues. CWEL faculty are engaged in:**

- Publishing free, online information to guide homeowners' and landscapers' plant selections and yard care practices at [cwel.usu.edu](http://cwel.usu.edu).
- Evaluating drought-tolerant plants, including turfgrasses, and studying methods of propagating drought-tolerant native plants and releasing new plant varieties.
- Partnering with the Utah Nursery & Landscape Association and the Jordan Valley Water Conservancy District to deliver training on sound landscape and irrigation practices specific to Utah and certification through the Qualified Water Efficient Landscaper (QWEL) program.
- Developing a new model that specifies simple rules to determine the appropriate amount and timing for irrigating trees in urban landscapes.

## WaterMAPS™

Water Management Analysis and Planning Software



Water Management Analysis and Planning Software (WaterMAPS) was developed at USU. It allows water suppliers to tailor conservation education to homeowners who are not irrigating landscapes efficiently. The software combines satellite images, water use data, plat maps and weather data to determine optimum amounts of irrigation and whether areas are being overwatered.



## Agriculture

There are 10,357 irrigated farms in Utah. In 2010 about 78% of the state's fresh water was used for agriculture. USU Extension works with farmers to share information about crop irrigation needs based on weather, crop and soil data and how to conserve water without adverse effects on yield. USU researchers also develop and test crops that may have lower irrigation needs.





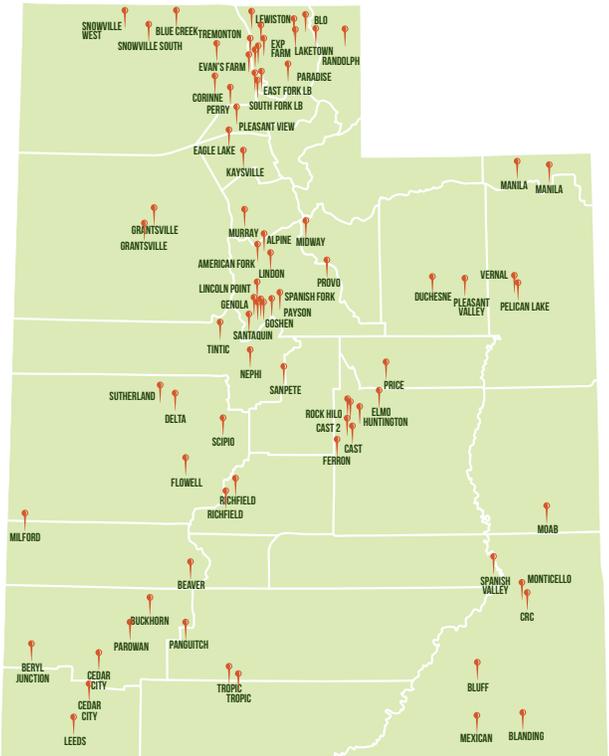
# USU Conservation Partnering Programs

## Utah Climate Center

The Utah Climate Center maintains a network of more than 100 weather stations throughout the state, collecting data that is crucial for building forecasts, developing climate models and managing agricultural pests. The network's data is vital to planning for water resource management and public safety.

## USU Botanical Center

The USU Botanical Center in Kaysville added a water-wise edibles demonstration garden to its outdoor education spaces in 2015, which educates visitors about water conservation and the benefits of producing some of their own food. The center also features demonstration gardens showcasing water-conserving landscapes, and hosts more than 1,000 students each year on field trips that support schools' STEM curricula for each grade level.





# USU Conservation Programs

## USU Water Quality Extension

USU Water Quality Extension programs provide water education training to more than 250 Utah teachers annually, reaching approximately 14,000 students. The program links water quality to land uses and everyday activities and builds important STEM skills.



## Water Check

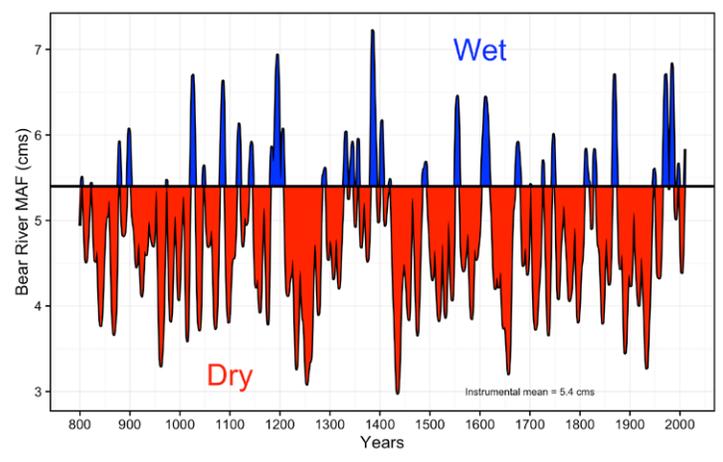
The Water Check program works with municipalities and counties to deploy USU Extension interns to evaluate sprinkler systems and educate homeowners and groundskeepers to improve irrigation efficiency and conserve water. More than 9,400 system checks have been done through the program. Last year the program added a mobile app that notifies users of a watering schedule for their area based on precipitation and temperature. The result was even greater water savings than in previous years.

**Cumulative Savings from Water Checks**  
 (For just 723 households in Salt Lake County for the past year)

Gallons per household	<b>88,000</b>
<b>TOTAL SAVINGS=</b>	
Gallons of potable water	<b>957 Million</b>
Acre feet of water	<b>3,000</b>

## Climate Research

Researchers are using tree ring data to reconstruct Utah's historic climate and river flows, the result of annual snowpack and rainfall. The work reveals wet and dry cycles of past centuries. This graph shows historic volumes of water in the Bear River and illustrates the need to prepare for droughts more extreme than most people now living have experienced.





# USU Extension Water Initiative Plans



## Water Initiative Plans

**In addition to sustaining and expanding efforts that are already underway, this ongoing investment will support important activities, including:**

- **Creation of a fund dedicated to short-term, applied research that specifically targets needs in Utah communities. These projects may be proposed by municipalities, counties or other entities and will be reviewed and selected by a Water Program Advisory Council composed of faculty, USU's Vice President for Extension, and representatives of urban and rural water interests and state agencies.**
- Maintenance and expansion of the critically important network of weather stations across the state and demonstration gardens for research and education.
- Development of aerial and satellite data tools to determine evapotranspiration (ET) rates in specific areas. This ET network will give people in agriculture, land and resource management, landscapers and homeowners information they need to irrigate with much greater precision.
- Expansion of Extension faculty expertise to address agriculture-specific and rural water conservation issues.
- Develop or identify drought-resistant plant cultivars and water management strategies specifically for agricultural production systems.
- Collaboration with the state's green industry to better identify water-saving plants in commercial nurseries and to educate consumers about those plants.
- Expanded opportunities for USU students to engage in substantial applied research focused on Utah water issues.



# Our goals include:

1. Reducing the amount of water used by consumers. We estimate people could reduce landscape water use by 50% without resorting to government mandates governing their landscape choices and damaging the state's green industry. We can conserve water while also maintaining the quality of life enjoyed through landscaping.
2. Helping people enjoy a great quality of life in Utah by empowering them with tools and information that enable them to become better stewards of our natural resources.
3. Supporting agriculture in Utah by promoting efficient agricultural water use.

An ongoing appropriation of \$950,000 will support Utah State University's efforts to improve Utah's water future and address critical issues as they develop.

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