

Bringing
Water *to* **Life** 



Water is all around us.

Whether it is up in the sky as clouds, under the ground in aquifers or right in front of us in lakes, rivers and oceans, we could not survive without this precious resource. Although water is all around us, demand continues to outpace supply. We have a growing population, which means more strain on our food and energy supply, as well as increased demand for drinking water and other public health needs. We have a changing climate, which means droughts are getting worse, as are floods. Finally, we have a duty to ensure that our water resources are used in a responsible and sustainable manner, including water that is allocated for agricultural, urban and environmental purposes.



Irrigation ensures that crops and landscapes get the water they need to grow and thrive, thus bringing water to life. But, where does irrigation fit into our water cycle and is this water used in a beneficial manner? Let's explore just how irrigation water is used and the benefits that come from our farms and landscapes.

Smart Irrigation = Smart Water Use

While there are no easy answers facing our global water supply challenges, smart irrigation is the smart use of water.

Irrigation (agricultural and turf-landscape) accounts for approximately 65%-70% of total freshwater use in the United States, excluding that used to generate thermoelectric power. Implementing modern irrigation methods and upgrading landscape, turf and agriculture systems have the potential to save more than 16 million acre feet of water each year — enough water annually for

- domestic use by 130 million people, or over 40% of the projected U.S. population in 2010.
- more than 11 million acres of irrigated cropland.
- 80% of the water needed for U.S. livestock production.





The True “Green” Solution

According to the Environmental Protection Agency’s WaterSense program, the average American family uses more than 300 gallons of water per day at home. Roughly 30% of this use occurs outdoors, but it can be much higher in drier parts of the country.

Green spaces, including landscapes, lawns, parks, golf courses and more, provide places to live, work and play, while offering real environmental payoff:

- Trees, vegetation and green roofs can reduce heating and cooling energy use and associated air pollution and greenhouse gas emissions, remove air pollutants, sequester and store carbon, help lower the risk of heat-related illnesses and deaths, improve stormwater control and water quality, reduce noise levels, create habitats, improve aesthetic qualities, and increase property values.
- Trees properly placed around buildings can reduce air-conditioning needs by 30% and can save 20%-50% in energy used for heating.

In many areas of the United States, irrigation is necessary for these green spaces to thrive. Without water, these landscapes would die, thus losing the economic, social and environmental benefits associated with living plants. Because of this, the irrigation industry is making strides with efficient irrigation technology and practices to ensure we are not wasting water in our landscapes.

- Efficient landscape irrigation systems and practices dramatically reduce water currently lost or wasted due to consumer misapplication, evaporation and wind.
- Efficient irrigation conserves water and can mitigate the effects of drought, which causes economic losses of \$6 to \$8 billion annually.



Improving Quality, Quantity & Availability

Efficient irrigation is more than just promoting conservation and increasing yield:

- **quality** — Efficient irrigation significantly reduces runoff, which transfers pollution (pesticides/growth chemicals) to local environmentally sensitive watersheds.
- **quantity** — Efficient irrigation promotes conservation of water resources, which allows for water to be saved and either kept in the watershed or used for other purposes.
- **availability** — Efficient irrigation increases productivity, while using less water, which decreases the strain on our aging infrastructure.

Driving Alternative Water as the Primary Source

Irrigation is driving much of the recycling and reuse opportunities throughout the United States, which are critical to preserving America's finite water resources:

- Irrigation increases water quantity through
 - decreased diversion of freshwater from wetlands and other ecosystems.
 - reduced use of potable water by industrial, housing and recreational development projects that use reclaimed water.
 - reduction in the amount of groundwater withdrawal, which impacts base flow in many rivers and streams.
- Irrigation increases water quality through the reduction in the amount of nutrients entering the watershed.
- Water not suitable for human consumption can be used for some agricultural and virtually all landscape irrigation with only limited treatment.

Taking a Position on Tough Issues

The Irrigation Association supports planning and policymaking that recognizes the environmental, economic and social benefits of efficient irrigation. We support water resource planning that

- rewards efficient water use.
- supports sustainable economic and population growth.
- develops, maintains and manages needed infrastructure.
- emphasizes the value of water reuse strategies.
- educates stakeholders about water-use efficiency.
- includes the promotion of best practices.

For the IA's complete policy goals, visit www.irrigation.org.



Agriculture in the United States

According to the U.S. Department of Agriculture's 2013 Farm and Ranch Irrigation Survey, more than 55 million acres are irrigated in the United States. This accounts for approximately 14% of the total cropland in the United States. While this may seem like a lot, less and less land and water are available for farming, and as a result, our nation's farmers have responded by working to become more productive with the land and resources available.

The Nexus of Conservation & Productivity

To ensure our nation has a safe and reliable food supply, we need to look to double our agricultural output by 2050, which will require increasing the rate of productivity growth by 25%:

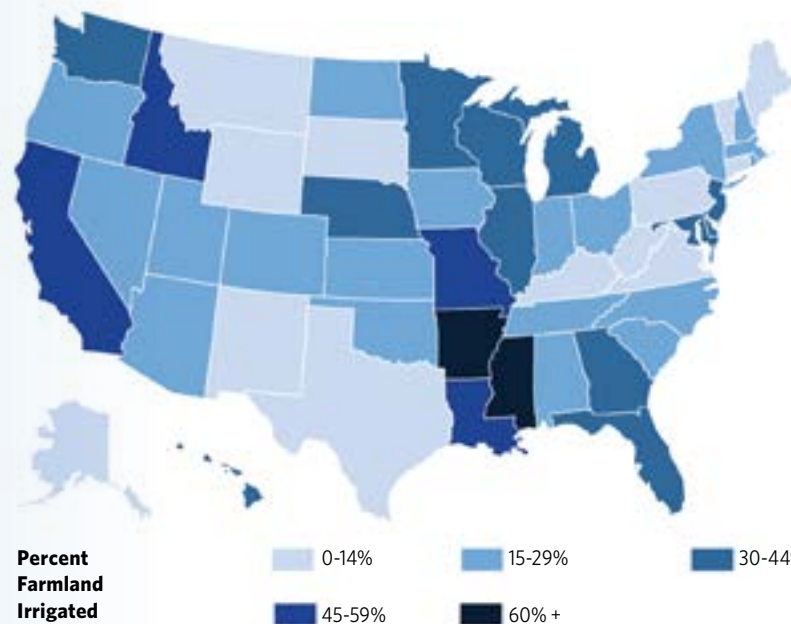
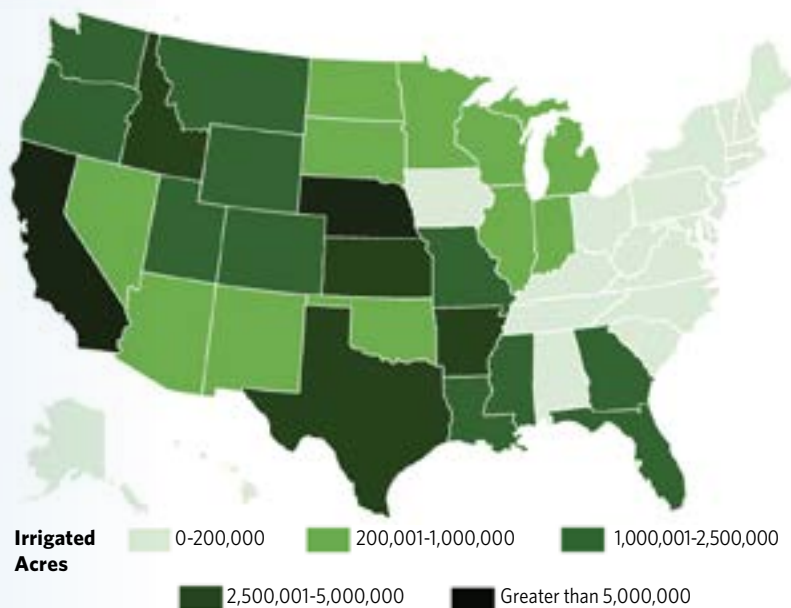
- The level of U.S. farm output in 2009 was 170% above its level in 1948, growing at an average annual rate of 1.63%. The rate of input use increased by a mere 0.11% annually, so the positive growth in farm sector output was substantially due to productivity growth.
- Efficient irrigation is part of the solution. Efficient irrigation promotes productivity of food, feed, fuel and fiber, while preserving our water resources.

Real Return on Investment

The ROI on efficient irrigation is real and significant:

- A 10% improvement in agricultural water-use efficiency reduces irrigation pump fuel consumption, saving approximately 80 million gallons of diesel fuel and \$240 million per year nationwide.
- Irrigated farmland in the 17 Western states accounted for an estimated \$25 billion in agriculture production in 2012 and \$172 billion in annual regional household income.

Agricultural Irrigation in the United States



U.S. Department of Agriculture, Farm and Ranch Survey 2013
(2012 Census of Agriculture, November 2014)

The Irrigation Association is the leading membership organization for irrigation equipment and system manufacturers, dealers, distributors, designers, consultants, contractors and end users.

The IA is dedicated to promoting efficient irrigation technologies, products and services. The association serves its members and the irrigation industry by

- educating the public on sound practices and water management.
- serving as a centralized clearinghouse for research and innovation.
- improving industry proficiency through continuing education.
- recognizing and promoting experience and excellence with professional certification.
- lending expertise to water-use public policy at the local, state, regional and national levels.

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