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Water Wise

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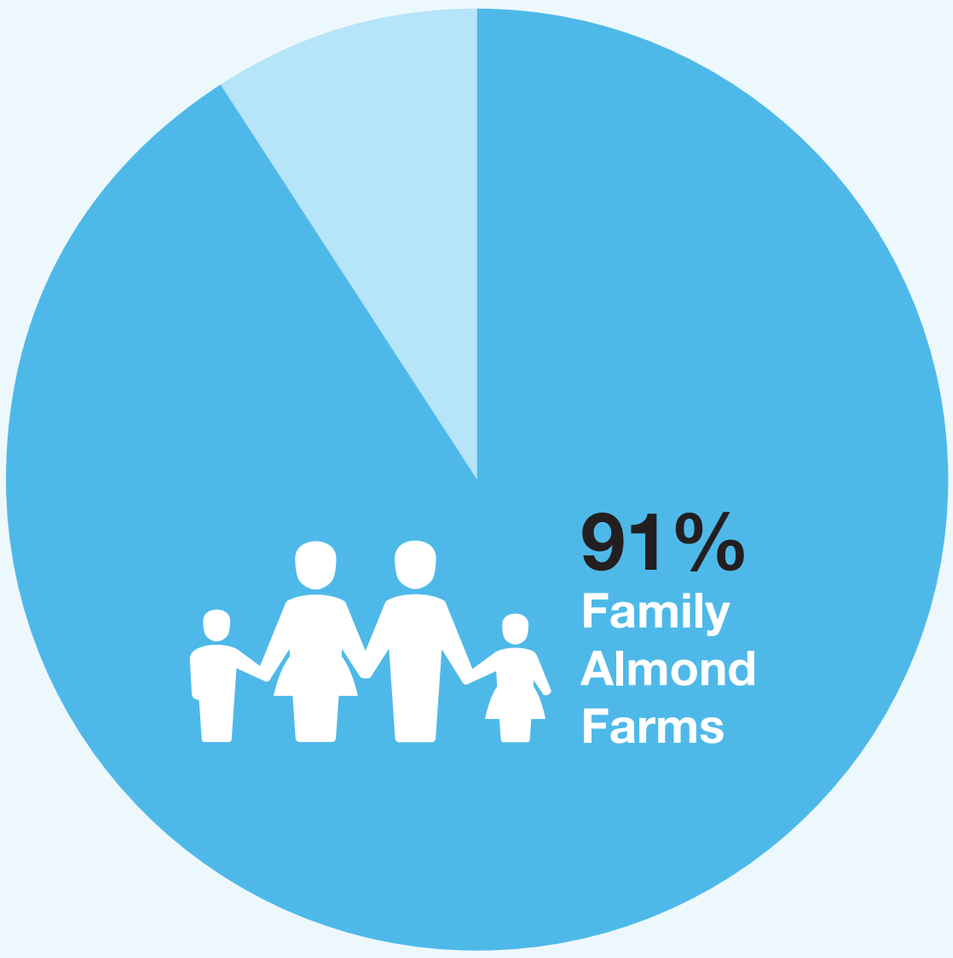
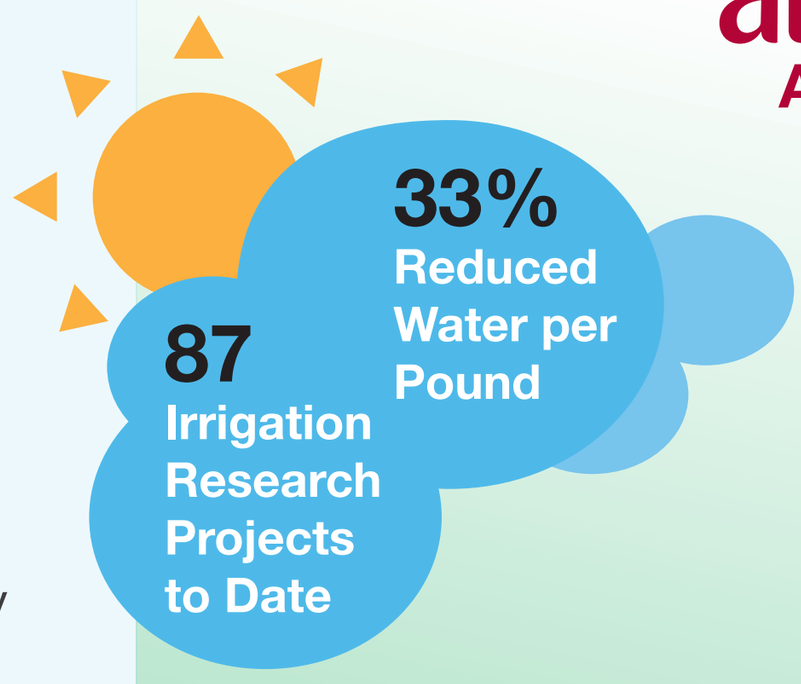
DROP FOR DROP, CALIFORNIA ALMOND GROWERS ARE TRUE LEADERS ON WATER EFFICIENCY.

Almond growers know first-hand that water is a precious natural resource, and they recognize that smart water use is smart business. But they also know that conservation is about more than just their livelihood – it's about preserving their way of life. **More than 90% of California almond farms are family farms** – many owned by third and fourth generation family farmers.[1] They don't just farm the land - they live on it and expect to sustain it for their children and grandchildren.





The Almond Board of California has **funded 87 irrigation research projects** over a period of **more than three decades**, leading to dramatically increased water use efficiency. Key strategies have included advances in irrigation scheduling and management as well as micro-irrigation systems. **In fact, in the last 20 years, almond growers have reduced the amount of water they use per pound of almonds grown by 33%.**[2]

DID YOU KNOW?

Almond trees and the water used to grow them actually produce two separate products. In addition to the nut itself, the almond's hull is used to feed livestock, reducing the amount of land and water that would otherwise be used to grow feed crops like hay. Even the shell of the almond is used for livestock bedding and alternative energy.

Leading by Numbers

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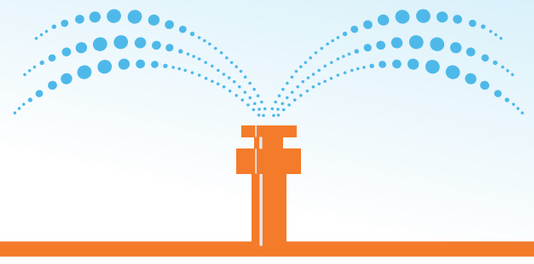
ALMOND GROWERS HAVE PROACTIVELY AND CONSISTENTLY MADE CHANGES TO THEIR ORCHARDS BOTH IN YEARS OF PLENTIFUL WATER AND IN DROUGHT.

More than 70% of almond orchards surveyed report using micro-irrigation systems which conserve water by:

+ Decreasing water runoff
+ Applying water directly to the root zone to avoid waste
+ Allowing for precise timing and rate of irrigation [2,3]

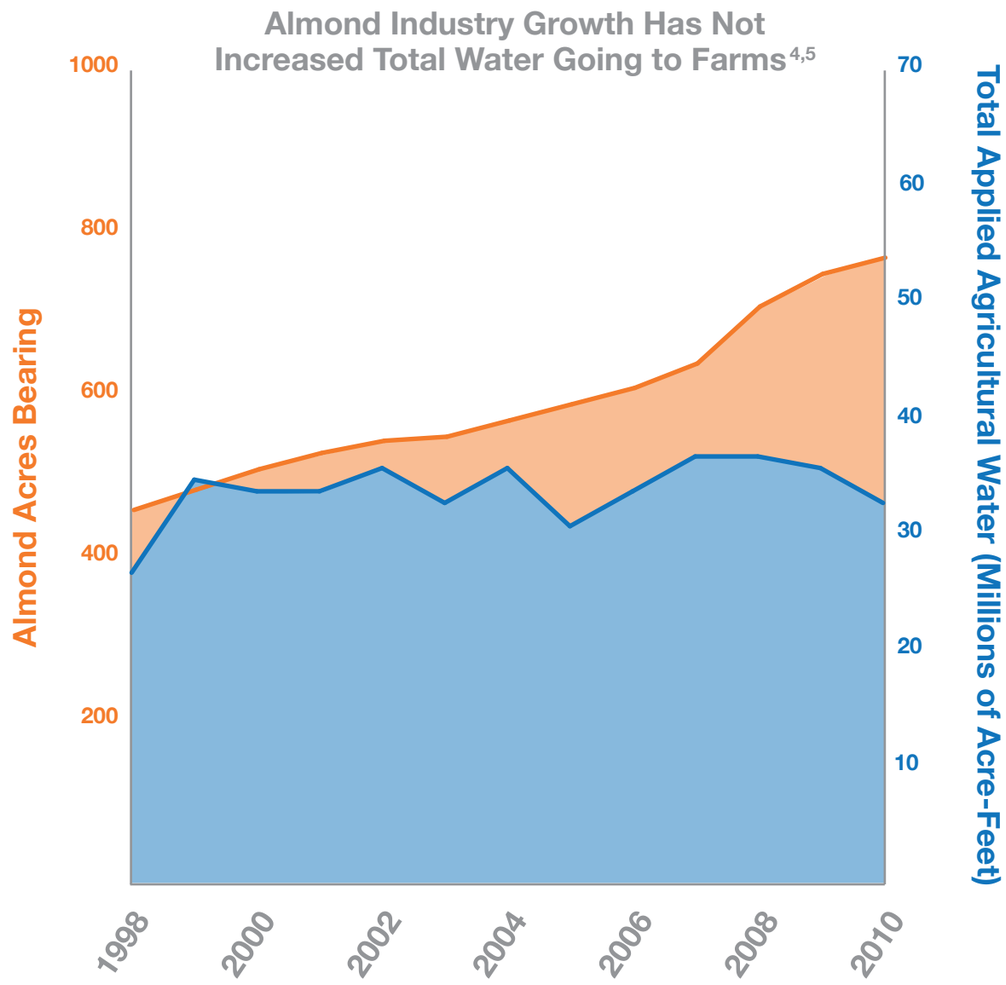
83% of surveyed growers report using demand-based irrigation rather than scheduled irrigation, which means they monitor a combination of weather, soil moisture, and tree needs to determine efficient irrigation rate and timing strategies.[3]

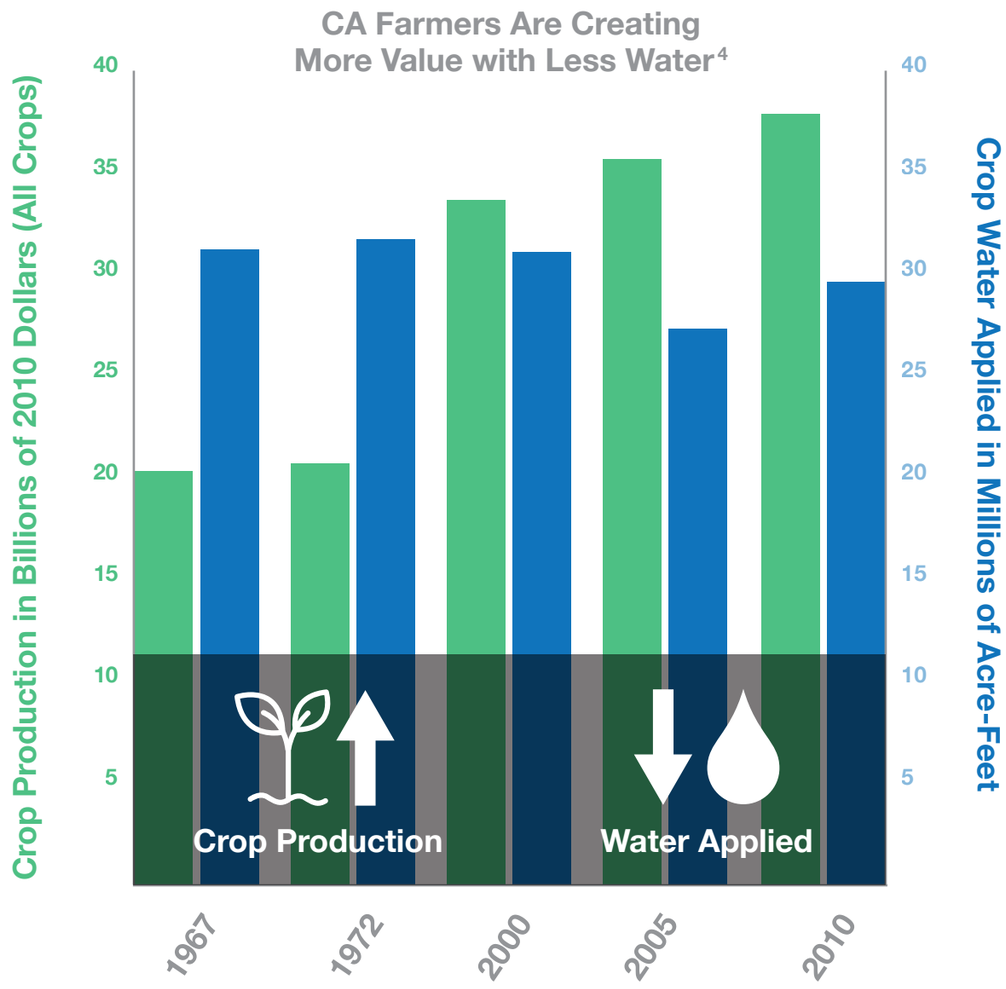


CALIFORNIA'S CHANGING AGRICULTURAL LANDSCAPE HAS NOT IMPACTED MANAGED WATER DISTRIBUTION

Agricultural acreage in California has been undergoing a change, with a shift toward specialized crops that take advantage of California's Mediterranean climate. These high value perennial crops such as nuts and wine grapes have grown in acreage but have not led to an increase in agricultural water use. Even though the acreage of perennial crops in California, including almonds, increased during the 2000s, the total amount of managed water that went to farms held steady – so a shift in crops grown hasn't meant more total water going to agriculture.[4,5]

Looking at the longer term trends, California farmers have steadily done more with less. Between 1967 and 2010 farm revenue in the state grew by more than 85 percent while the total applied water to crops was reduced by more than 5 percent.[4]





ONGOING EFFICIENCIES

The grower-directed Almond Board of California invests more than $2 million a year in researching farming and environmental issues such as air and water quality, water management, pest management, and other related topics to help almond growers make the most responsible decisions possible. Ongoing research subjects range from continued study of soil and tree conditions that can improve irrigation efficiency to long-term efforts like identifying almond tree and root varieties that require less water.

[1] United States Department of Agriculture, 2012 Census of Agriculture: Subject Series, Typology, Table 6.
[2] UC Davis Drought Management - Historical Almond ET. Evapotranspiration rates from 2010 – 2014 updated to new almond crop coefficients: Goldhamer, David. 2012. Almond in Crop Yield Response to Water. FAO Irrigation and Drainage Paper No. 66, P. Steduto, T.C. Hsiao, E. Fereres, and D. Raes, eds.
[3] Almond Board of California. 2014 Almond Sustainability Program Report.
[4] California Department of Water Resources (DWR)
[5] CDFA 2013 California Almond Acreage Report

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