



## SPOTLIGHT ON: Water

### LEADERS IN EFFICIENCY

Decades of Almond Board-funded research and innovation has led to impactful on-farm improvements and provides the foundation for continuing advancement.

### TRANSFORMATIVE CHANGE

The California Almond community began investing in research in 1982 to determine if a new irrigation method—microirrigation—could work in almond orchards. The results were positive and, by targeting water applications directly to the trees' roots instead of uniformly across the field, farmers have conserved water and created other operational efficiencies.

Today nearly 80% of California Almond orchards are using microirrigation and, as older orchards are replaced, we expect that number to grow.

### A ROADMAP TO CONTINUED IMPROVEMENT

While almond farmers have made strides in irrigation efficiency, there's more everyone can do, which is why Almond Board and almond irrigation experts developed the Almond Irrigation Improvement Continuum in 2017.

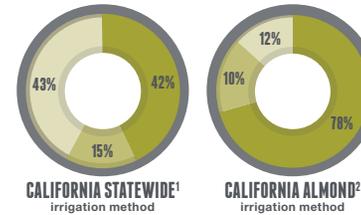
The Continuum provides a path to improvement for every almond farmer across varying stages of irrigation precision using five key management areas.

#### EFFICIENT ALMOND IRRIGATION REQUIRES:

- 1 CALCULATING ORCHARD WATER REQUIREMENTS
- 2 MONITORING IRRIGATION SYSTEM PERFORMANCE
- 3 MEASURING APPLIED WATER
- 4 MONITORING SOIL MOISTURE
- 5 MONITORING PLANT WATER STATUS

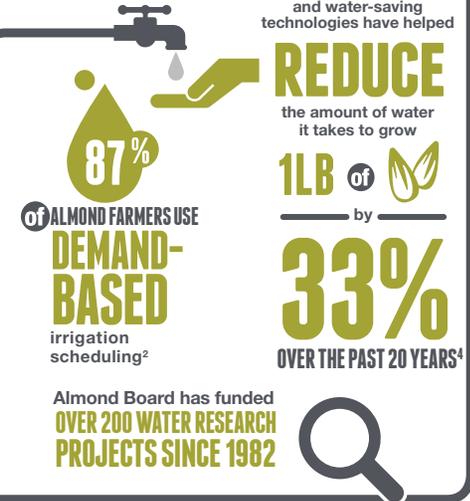
## Almond farmers are AHEAD OF THE CURVE FOR EFFICIENT IRRIGATION ADOPTION

microirrigation  
sprinkler  
flood



**675,000 ACRES** OF CALIFORNIA ALMOND ORCHARDS have moderately good or better soil suitability for groundwater recharge³

**10** ALMOND FARMERS REPRESENTING 2,200 ACRES have been recruited to host on-farm recharge demonstration trials



1. California Department of Water Resources. California Water Plan Update 2013: Volume 3, Chapter 2. 2. California Almond Sustainability Program. August 2017. 3. Land IQ. Groundwater Recharge Suitability Analysis. November 2015. 4. University of California, 2010. Food and Agriculture Organization of the United Nations, 2012. Almond Board of California, 1990–94, 2000–14.

### ON-FARM RECHARGE

Groundwater is a vital resource in California, held in underground aquifers that are collectively California's largest water storage system. In addition to surface water, which is moved around the state via rivers, aqueducts, reservoirs and canals, groundwater plays an important role in growing food and providing drinking water for Californians.

Overreliance on groundwater means that many of the state's aquifers are under pressure. That's why, in 2015, Almond Board launched an initiative to explore to what extent almond orchards can be used to replenish underground aquifers. A number of orchard research trial sites are being flooded with excess winter storm water to determine how recharge may affect orchard health, water quality and other factors.

Water recharged through this program would benefit all Californians, not just farmers. Research findings will be used to develop best practices for almond farmers to participate in on-farm recharge and promote groundwater sustainability.



*"These aquifers are a shared resource between farmers, families and businesses, so the act of replenishing them through recharge brings benefits to a much wider community, including cities and urban areas. My hope is that when the next drought comes, we will have made fundamental changes to our water infrastructure for the better."*

— Nick Blom, second-generation almond farmer  
Modesto, California

FARM PROFILE: alfalfa, almonds, grapes, peaches, walnuts  
ACRES OF ALMONDS: 650