



## About Almonds and Water

## Who We Are

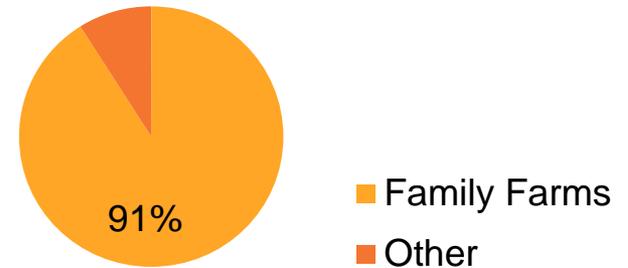
*Multigenerational, family farmers are at the heart of California's Almond community.*

- 6,800 almond growers
- 105 almond processors

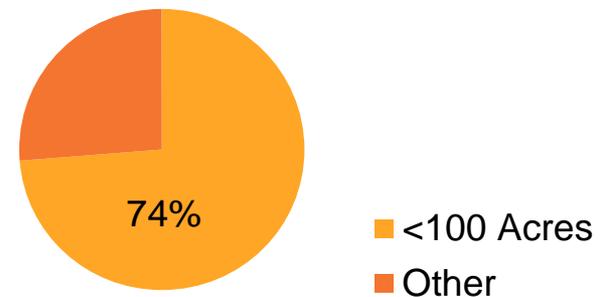


### About California Almond Farms

More than 90% family farms



Nearly  $\frac{3}{4}$  under 100 acres



# The Scope of the California Almond Industry

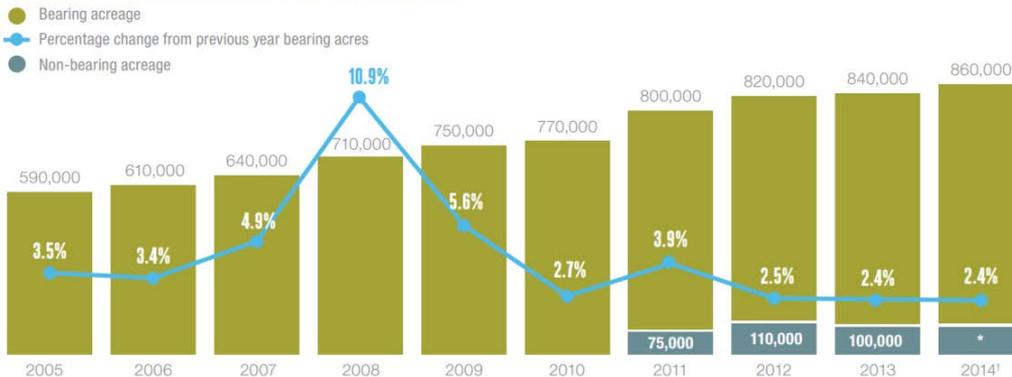
**Almond orchards span 500 miles from north to south through California's Central Valley.**

- 2014 total acreage: 1,020,000 A
- 2014 bearing acreage: 870,000 A
- 3 growing regions: North, Central, South
- 97,000 almond industry-related jobs generated in Central Valley, 104,000 statewide

Almond Production by County 2013/14



## CALIFORNIA ALMOND ACREAGE crop years 2005–2014



# California Almonds by the Numbers

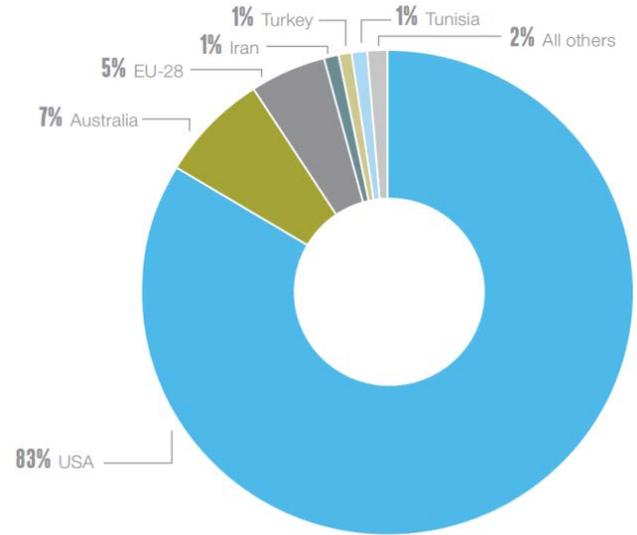
**California grows 100% of the almonds commercially produced in the U.S.**

- Top producer of almonds: 83% of global production
- Shipment destinations: 67% export; 33% domestic
  - U.S. is the largest single market
- CA #2 most valuable crop
- CA #1 agricultural export
- \$11 billion added to CA economy through almond production, processing, and marketing

## Shipments by Region



## WORLD ALMOND PRODUCTION 2013/14



## CROP VALUE + YIELD PER BEARING ACRE

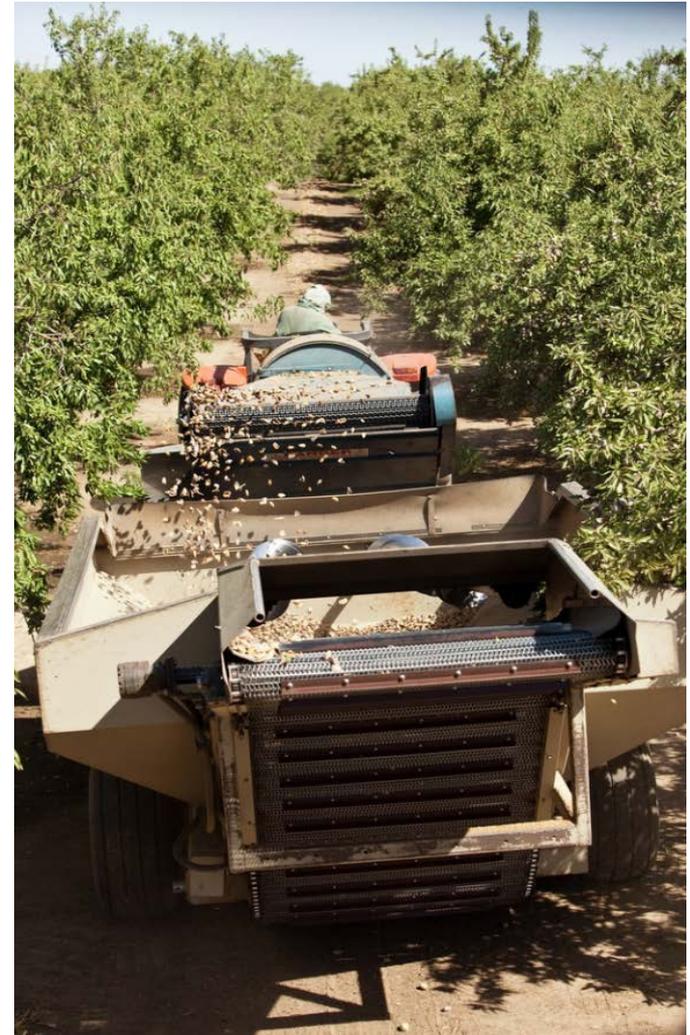
crop years 2004/05–2013/14



# Why California?

***California is the most productive almond growing region in the world.***

- Mediterranean climate ideal for growing almonds
- Central Valley's rich soils
- Water availability and infrastructure
- Highest standards for environmental, worker, and food safety
- Innovative technology and research



## Almond Board of California

***The Almond Board of California administers a federal marketing order enacted by California Almond growers in 1950.***

- Funded by a handler assessment
- Leverages those dollars to promote and research almonds. Research areas include...
  - Nutritional benefits
  - Growing practices
  - Environmental issues
  - Food safety
  - Consumers and markets
- As a marketing order under the auspices of the USDA, the Almond Board...
  - does not track pricing
  - cannot lobby or influence policy
- Collaborates with the Almond Huller and Processor Association (AHPA) who...
  - advocate on behalf of California Almonds
  - represent industry on policy and political issues



# Almond Board Programs + Outreach

## Research + Innovation

Over the past four decades, the California Almond community has invested tens of millions of dollars to research production and environmental issues ranging from water efficiency to bee health to food safety.

## Promoting Almonds

The Almond Board also funds nutrition, market, and consumer research to effectively understand and market almonds worldwide. ABC also conducts advertising and public relations to build awareness.

## Grower Outreach + Education

The Almond Board shares research findings and best practices with growers and the industry.

The collage features several key elements: the 'growing ADVANTAGE' logo with a stylized tree; the UCCE (University of California Cooperative Extension) logo; a 'Water Wise' social media post with the text 'Deep for deep, California Almond growers are true leaders on water efficiency.'; a circular logo for the 'CALIFORNIA ALMOND SUSTAINABILITY PROGRAM'; and a stack of almonds at the bottom. A newsletter titled 'Outlook' is also visible, with the text 'Newsletter of the Almond Board of California' and 'Volume 8, Issue 4'.

## Looking to the Future

Engaging and educating emerging leaders and young consumers, Almond Board programs encourage awareness and understanding.

### Almond Leadership Program

- Young industry leaders participate in year-long almond course
- One-on-one mentorships
- Special projects + presentations

### Ag in the Classroom

- Educating elementary school students about agriculture and almonds

# California Almond Sustainability Program

*The California Almond Sustainability Program (CASP) formalizes grower sustainability practices and ensures continuous improvement through grower self-assessments.*

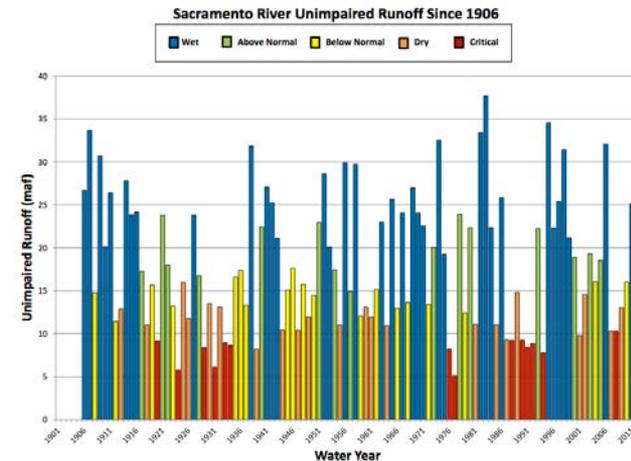
- CASP findings provide a baseline of industry-wide practices
- Modules available include:
  - Irrigation Management
  - Nutrient Management
  - Air Quality
  - Energy Efficiency
  - Pest Management
  - Financial Management
  - Ecosystem Management
  - Workplace and Communities



# Drought Raises Important Questions

- Who uses water in California? How much do they use?
- How much water is needed to grow food?
- How much water does it take to grow almonds?
- Do almond growers use water efficiently?
- The Governor asked cities to cut back water use by 25%; is agriculture getting a free pass?
- What about groundwater?
- Why is almond acreage increasing even during a drought?
- Besides food, how do almonds and agriculture provide value?

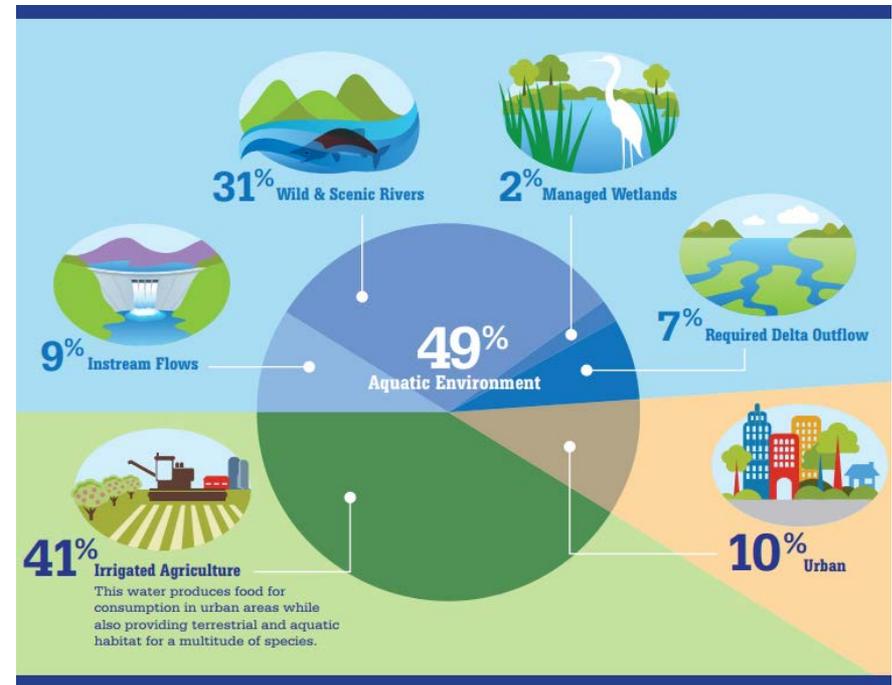
These are important questions, but we should remember that **California is no stranger to drought**. California's Mediterranean climate means we see both wet years and dry years – the key is how we manage those extremes.



# California's Water Uses

*California's managed water is devoted to urban, agricultural, and environmental uses – all of which are important to our State.*

- California's managed water distribution include surface water and groundwater.
  - 10% Urban
  - **41% Irrigated Agriculture**
  - 49% Environment
- According to the California Department of Water Resources, the total amount of water devoted to agriculture has held steady since 2000 and actually declined over a longer period. Meanwhile, the value per gallon has increased.



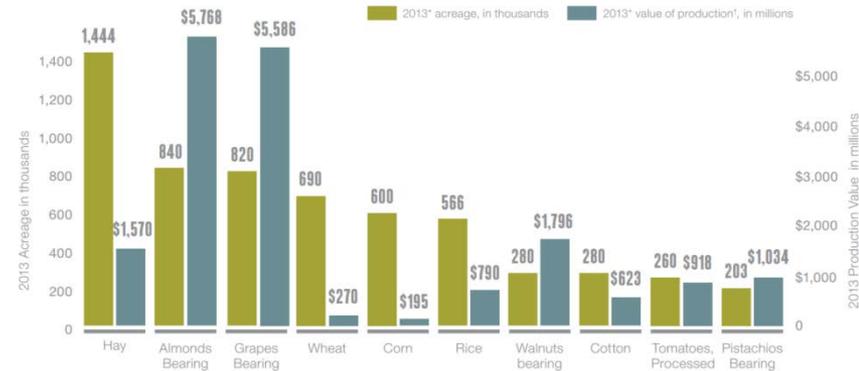
Northern California Water Association, 2015.

# How Much Water to Grow Food?

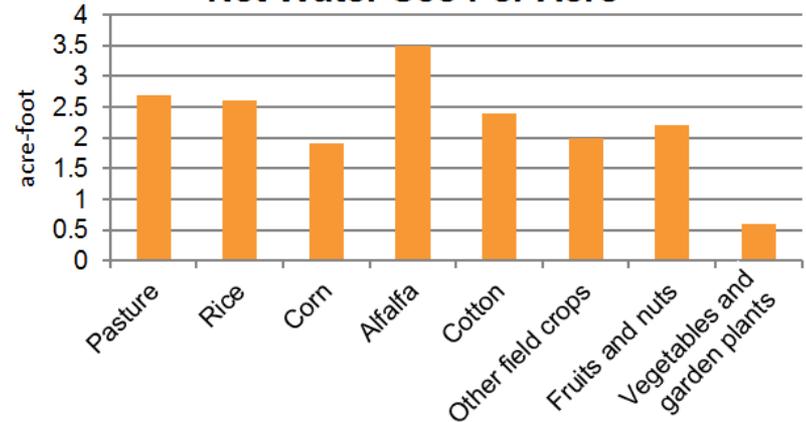
## *All plants need water to grow.*

- California produces 99% of the nation's almonds, artichokes, dates, figs, raisins, kiwifruit, olives, cling peaches, pistachios, dried plums, pomegranates, sweet rice, and walnuts.
- California's top ten acreage crops include hay, almonds, grapes, wheat, corn, rice, walnuts, cotton, processing tomatoes, and pistachios.
- California's fruits and nuts use 34% of the state's ag water and account for 45% of its revenue.

### TOP TEN CALIFORNIA CROP ACREAGE



### Net Water Use Per Acre



## Almond Water Use

*The water used to grow almonds is in line with the per-acre water needs of many other California crops.*

- No, almonds don't use 10 percent of California's water.
- Almonds make up less than 13 percent of the state's total irrigated farmland but use only 9 percent of the state's **ag water** – less than their proportionate share.



Almonds grow on **13% of California's** irrigated farmland...

but use **only 9%** of the state's agricultural water...

9%

or a little less than **4%** of the state's total developed water.

## Water Grows More Than Just Almonds

- **Almonds grow on trees**, which have their own inherent set of benefits like turning carbon dioxide into oxygen for us to breathe and reducing greenhouse gases and other pollutants.
- Almond trees, and the water used to grow them, actually produce three products, two of which are foods.



**Did you know?**  
Each fruit of the almond tree has 3 parts, all of which are used.

**The Hull**  
The hull is the dry and fuzzy fruit. Hulls are sold as livestock feed, which reduces the amount of water used to grow other feed crops.

**The Shell**  
Shells are used as an alternate energy source in co-generation plants and as livestock bedding.

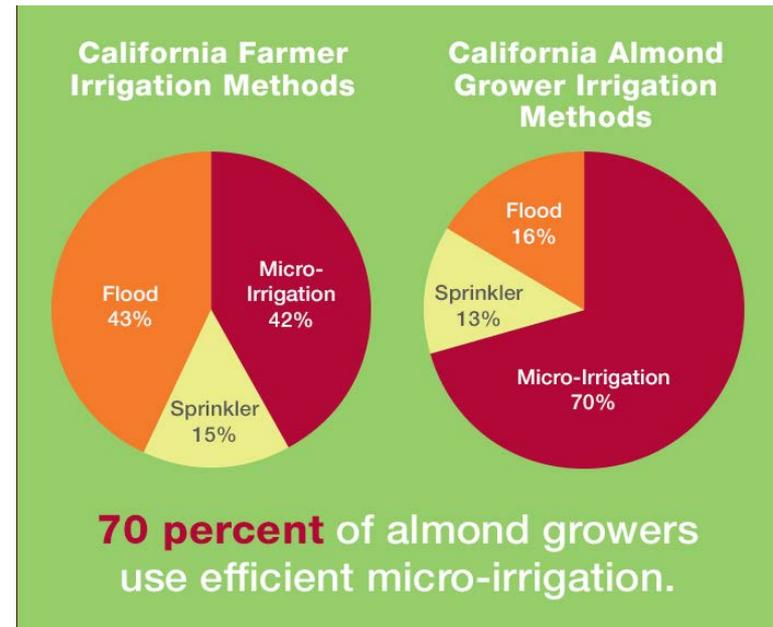
**The Kernel**  
is the nutrient-rich almond we eat. Every ounce of almonds—28g or about a handful—contains 6g of energy-packed protein, 4g of hunger-fighting fiber, 13g of “good” unsaturated fat and only 1g of saturated fat.\*

\*Source: Almond Board of California; Learn more at [almonds.com/blog](http://almonds.com/blog)

# Almond Water Use Efficiency

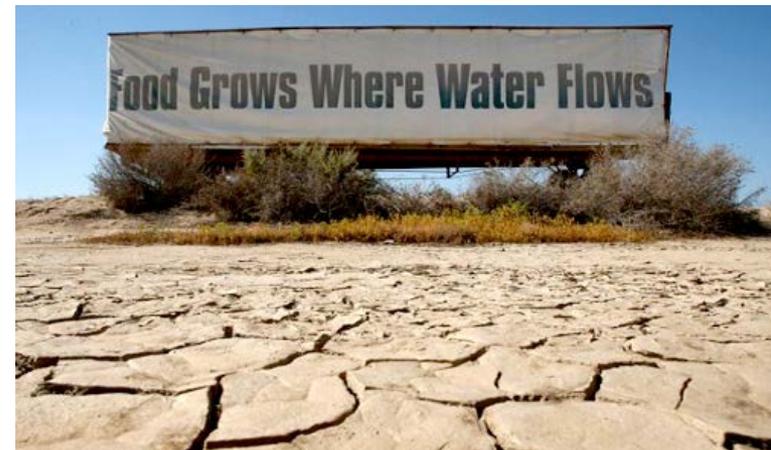
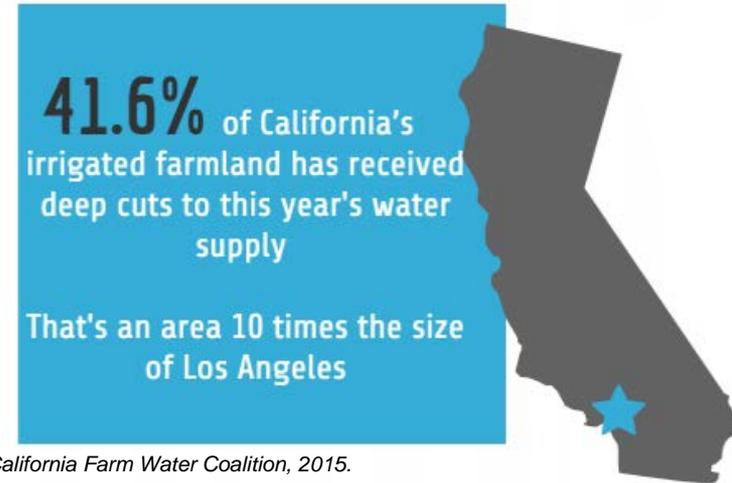
**California Almond growers are lead adapters in efficient irrigation technologies.**

- Through Almond Board research programs, almond farmers have been funding **water efficiency research since 1982** with over **90 projects** funded to date.
- Over the past 20 years, almond growers have improved their water use efficiency by 33%, producing **more crop per drop**.
- **83% of growers practice demand-based irrigation**, tracking things like soil, tree, and weather conditions to make irrigation decisions, instead of using a fixed schedule.
- **70% of almond orchards use micro-irrigation**, decreasing water runoff, applying water directly in the root zone, and allowing for precise timing and rate of irrigation.



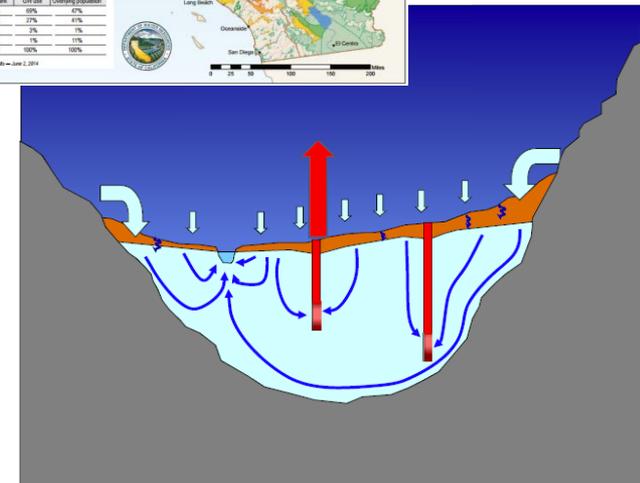
## Drought Restrictions + Impacts

- April 1, 2015: Governor Brown issued executive order mandating cities cut back water use by 25%
  - Noticeably, agriculture was not included in these restrictions. However, agriculture has been dealing with limited water for years.
- A report from University of California, Davis estimates the impacts of the drought in 2015 to include:
  - **48% less surface water** than farmers would receive in a normal water year; net shortage of 2.7 million acre-feet (MAF)
    - 2014 – 25% less surface water than normal; net shortage of 1.5 MAF
  - **540,000 acres** will be fallowed, 6 to 7% of California's average annual irrigated cropland
    - 2014 – 410,000 acres fallowed
  - **\$2.7 billion dollars** in total cost to the California economy
    - 2014 – \$2.2 billion total economic cost
  - **21,000 jobs** (full- and part-time) lost
    - 2014 – 17,100 jobs lost



# “Groundwater is California Agriculture’s Largest Dry-Year Water Reserve” – Public Policy Institute of California

- Of the California’s managed water devoted to agriculture, groundwater supplies 40% of that demand in normal years and 60% or more during drier years.
  - Many cities and rural residents also rely on groundwater.
- California Almond growers have always used some combination of surface and groundwater. Reliance on each source varies from year to year.
- The **Sustainable Groundwater Management Act of 2014** will ensure the sustainable management of California’s groundwater resources.
- The Almond Board of California is funding research to determine the feasibility of using almond orchards for **groundwater recharge** when extra water is available.



## Almond Industry Growth

***Almonds thrive in Mediterranean climates like California. Unlike other crops, there aren't many places where almonds can be grown worldwide.***

- Almond acreage growth can be tied to strong consumer demand and high crop value.
- Commitment to innovation has led to a highly efficient and desirable mechanized production practices.
- While many annual crops are fallowed, almond acreage is increasing. Here are a few reasons why:
  - Almond growers place orders for trees 2 years in advance of planting. Trees planted this year were ordered in 2013.
  - New orchards do not use as much water as a fully established, mature orchard.
  - Replacing older orchards with new ones is an opportunity to install the most current and efficient irrigation systems.



## Almonds Provide Value for Californians

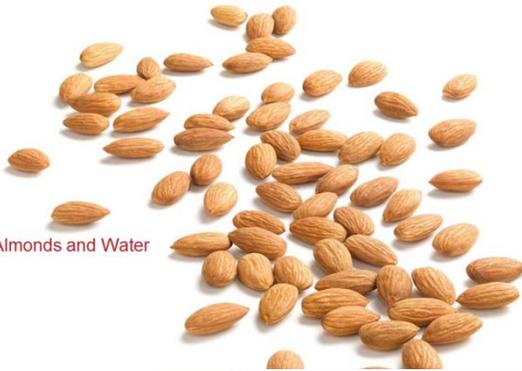
- Almonds directly and positively affect **California's economy** at every stage of production, generating over 100,000 jobs statewide, 97,000 of which are in the Central Valley.
- Almond trees and agricultural lands play an important role in California's effort to **reduce greenhouse gases**.
- Because California produces all the commercially grown almonds in the U.S., buying California Almonds means "**buying local**", supporting American jobs and the U.S. economy.
- Almonds are a **nutritional powerhouse**, perfect for snacking and plant-based diets.



# Telling Our Story

**California Almonds are an important part of our communities and the farmers who grow them are responsible water stewards. Can we count on you to help us share this message?**

- “About Almonds and Water” presentation at organizations you’re involved in
- Newsletter article about this presentation
- Follow and share Almond facts from Almond Board blog, social media
- Stand up for California Almonds
  - Letter to the Editor
  - Op-ed



About Almonds and Water



**BLOG**

**THE BUSINESS OF ALMONDS**  
Posted June 12th, 2015  
The extent of the almond industry's impact on California's economy is wide reaching. According to the LIC Agricultural Issues Center, almonds generate more than 100,000 jobs and add more than \$21 billion gross revenue across all industries 1, since the jobs generated by the almond industry reach far and beyond the... [Read more >](#)

**CALIFORNIA'S MEDITERRANEAN CLIMATE**  
Posted June 11th, 2015  
One of the reasons people love California is for the sunshine. But people aren't the only ones that love California's weather. Almond trees thrive here because California is one of the few places on earth with a Mediterranean climate perfect for growing them. [Read more >](#)

**AGRICULTURE IN CALIFORNIA: WORTH THE WATER IT USES**  
Posted June 3rd, 2015  
New York Times columnist Mark Bittman defended almonds today, noting that people have been asking him whether to stop eating them due to the drought. Bittman tells them no, and says it's typical to focus on a minuscule part of a huge problem and see it as the key to fixing everything. He goes on to say that almonds... [Read more >](#)

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- 2014 (14)
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**STATE ISSUES** APRIL 28, 2015

## Karen Ross: What happens to ag water? Eventually, people eat and drink it

BY KAREN ROSS

A recent survey by the Farm Water Coalition indicated that 41 percent of California's irrigated farmland will lose 80 percent of its surface water in 2015 due to cutbacks because of the drought. Add that to a reduction of more than 30 percent last year and it's obvious that farmers and ranchers have suffered the brunt of drought-related losses, so far.

That's why the reactions to Gov. Jerry Brown's announcement earlier this month were eye-opening, with the farming community in the spotlight in an entirely new way. While there are many of the assumptions that have emerged, I see this new significance of California food production - especially

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## Closing Thoughts

*California Almonds are unique for many reasons, but water use isn't one of them.*

- Growing and processing California Almonds generates over **100,000 jobs for Californians**.
- All of those involved in the California Almond community are **proud to grow** tasty, crunchy, nutritious almonds that consumers around the world enjoy.
- California's abundance of fruits, nuts, and vegetables all need water to grow. But **almond water use is in line** with many other California crops.
- The California Almond industry is committed to sustainability. Growers have increased almond water use efficiency, or **crop per drop, by 33%** over the past 20 years. Ongoing research will generate further innovations and efficiencies.



## Speaker Guide Available

To receive an editable PowerPoint version of this presentation, along with speaker guide, please contact [staff@almondboard.com](mailto:staff@almondboard.com) with “Speakers Bureau” in the subject line.

