# About Almonds and Water

california almonds
Almond Board of California

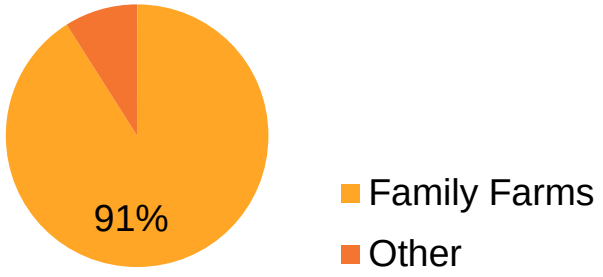
# Who We Are

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

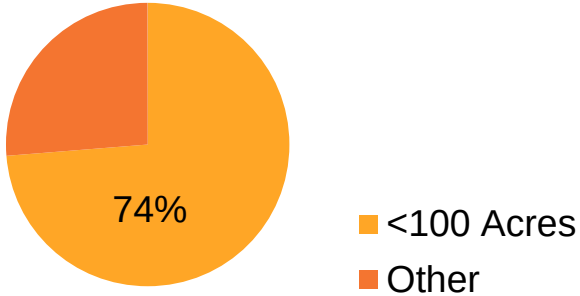
- 6,800 almond growers
- 105 almond processors

## About California Almond Farms

More than 90% family farms



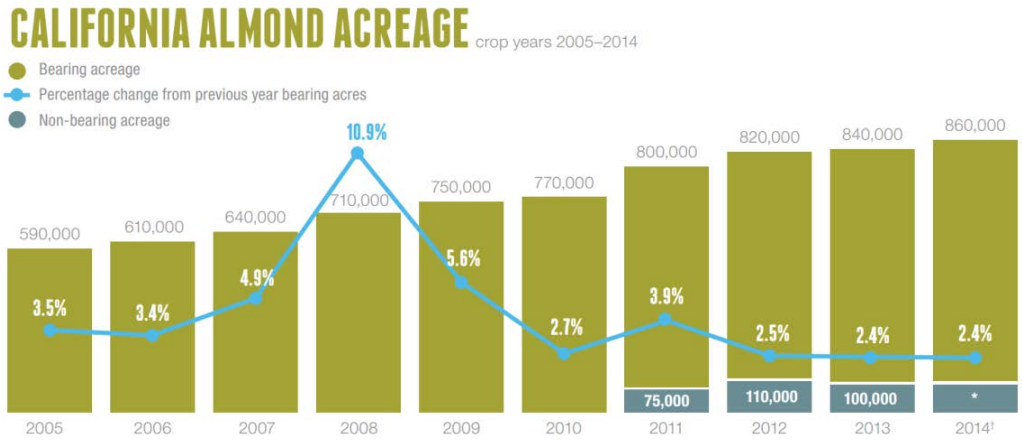

Nearly ¾ under 100 acres

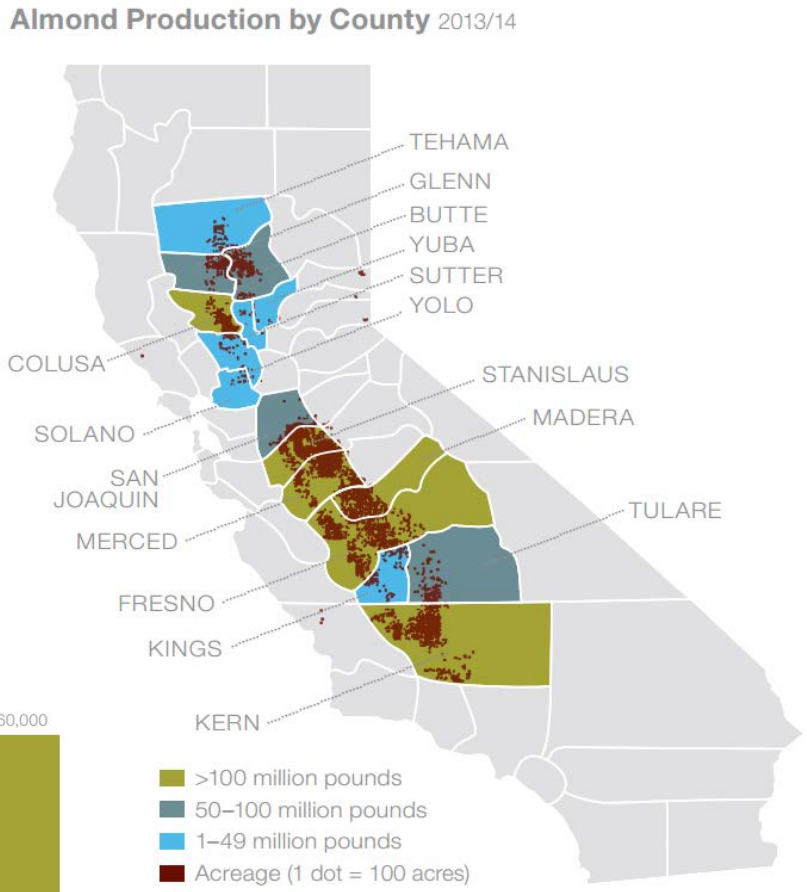


# The Scope of the California Almond Industry

***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

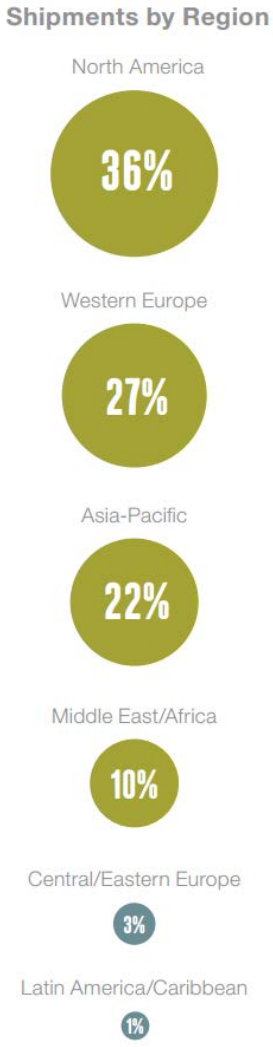


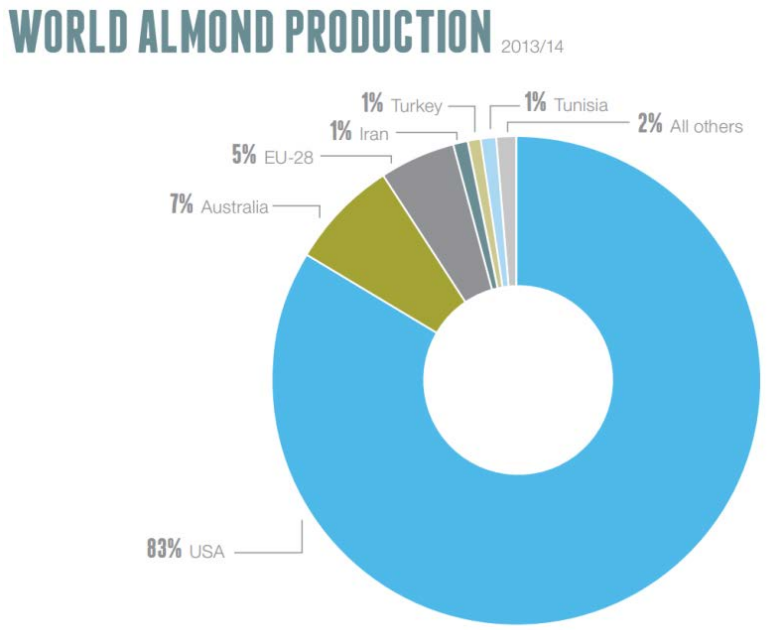



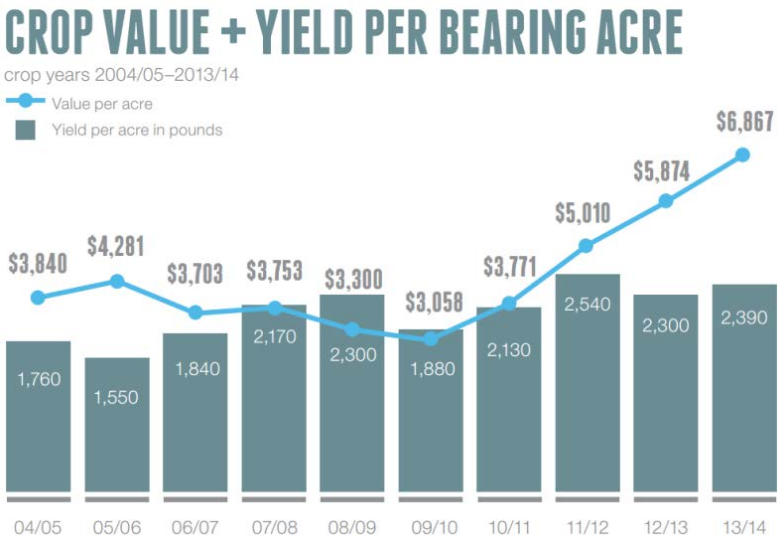
# California Almonds by the Numbers

***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



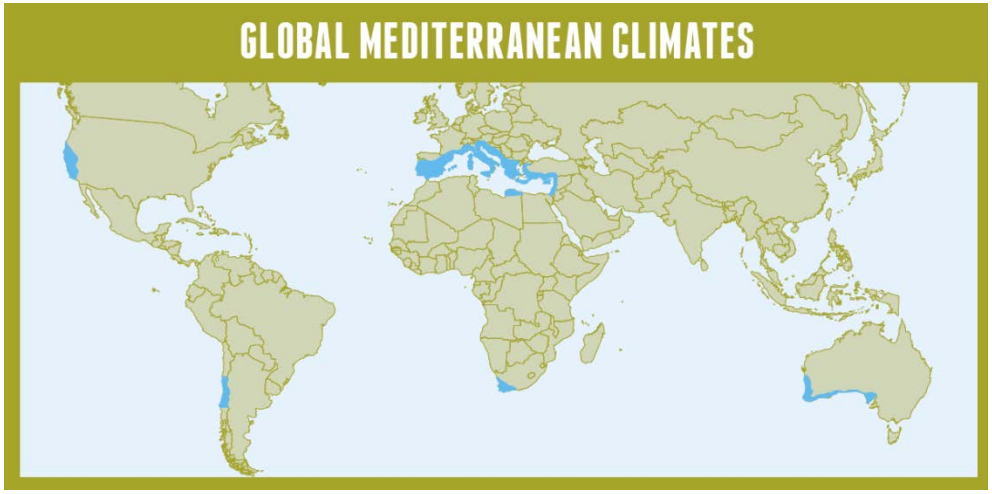



# Why California?

***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.


## 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.***

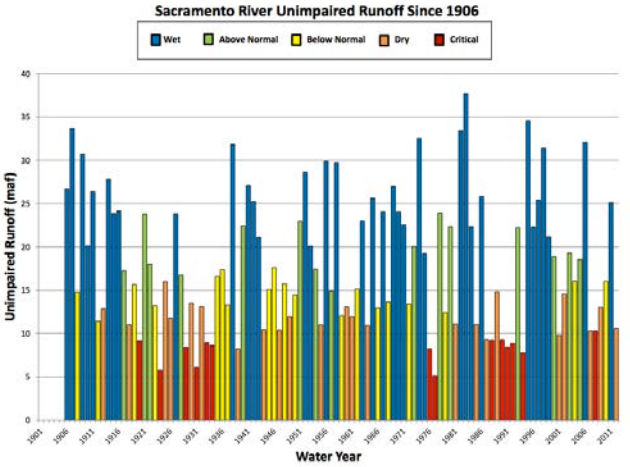
- CASP findings provide a baseline of industry-wide practices

- 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?

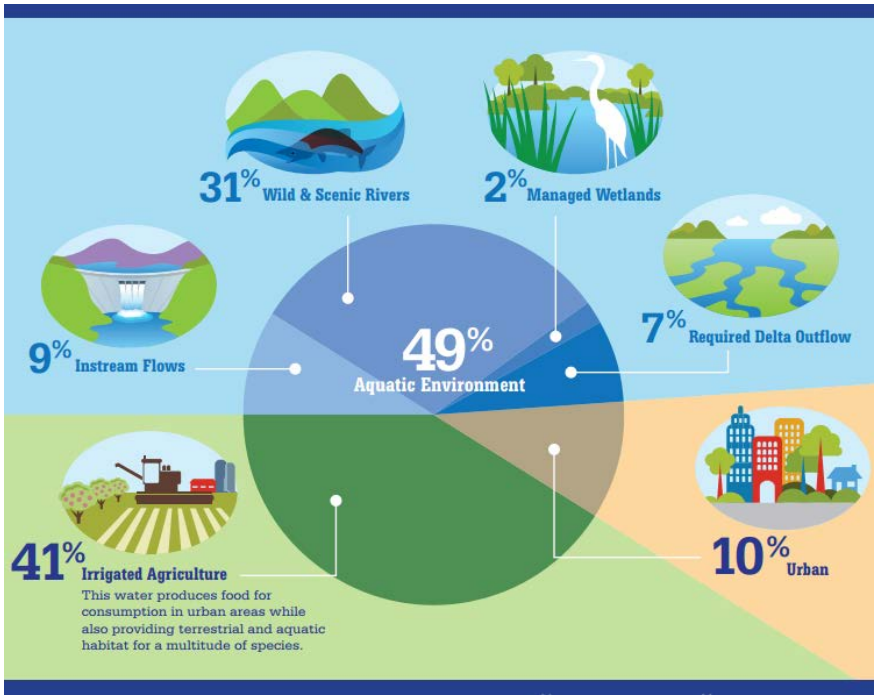
These are important questions, but we should remember that ***California is no stranger to drought*.** California's Mediterranean climate means we see both wet years and dry years – the key is how we manage those extremes.




# 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.

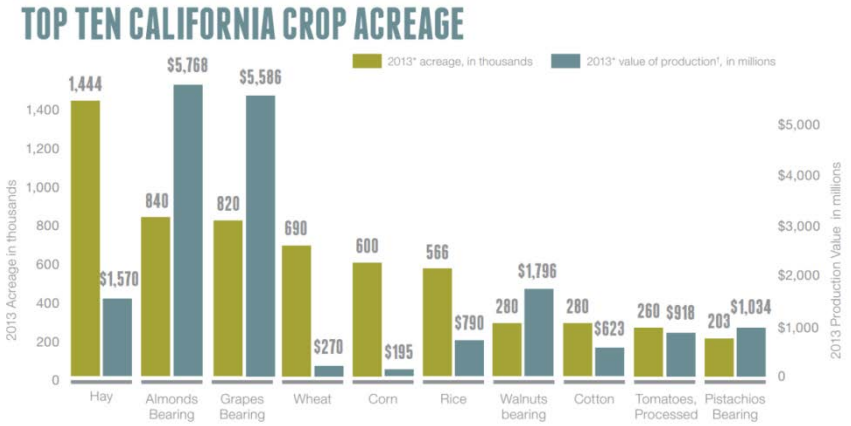


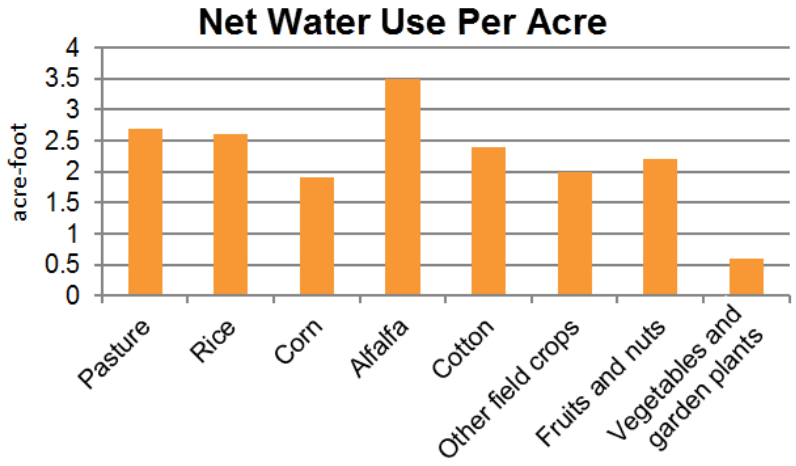

*Northern California Water Association, 2015.*

# 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 it's revenue.

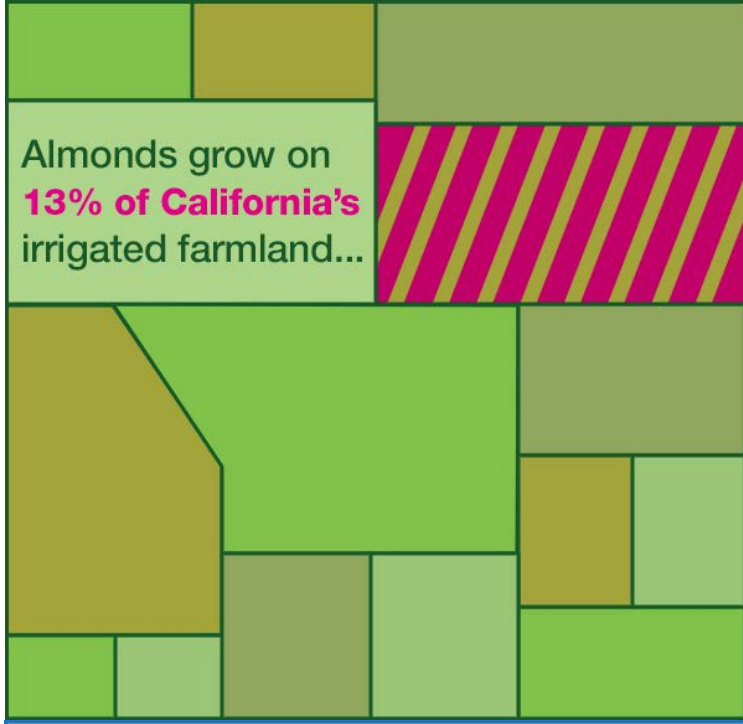


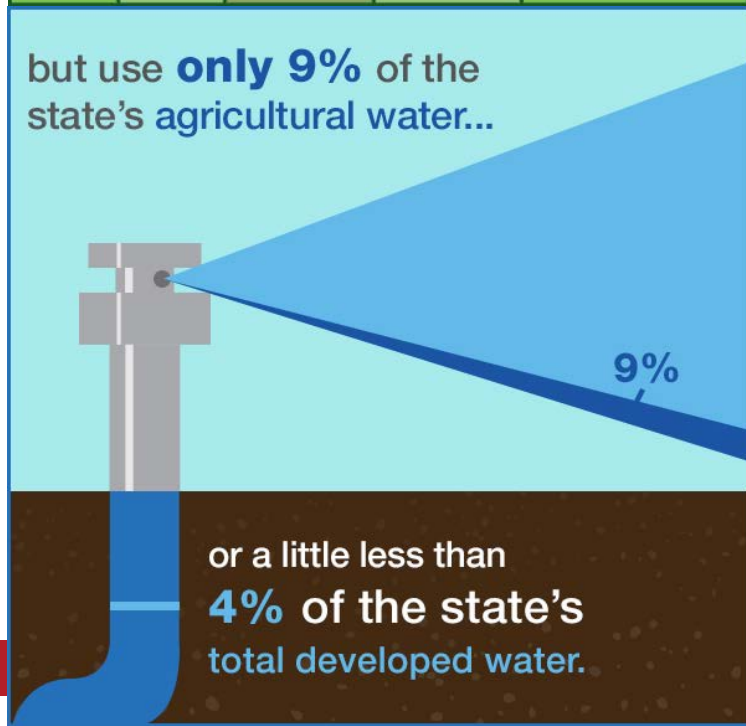



# Almond Water Use

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

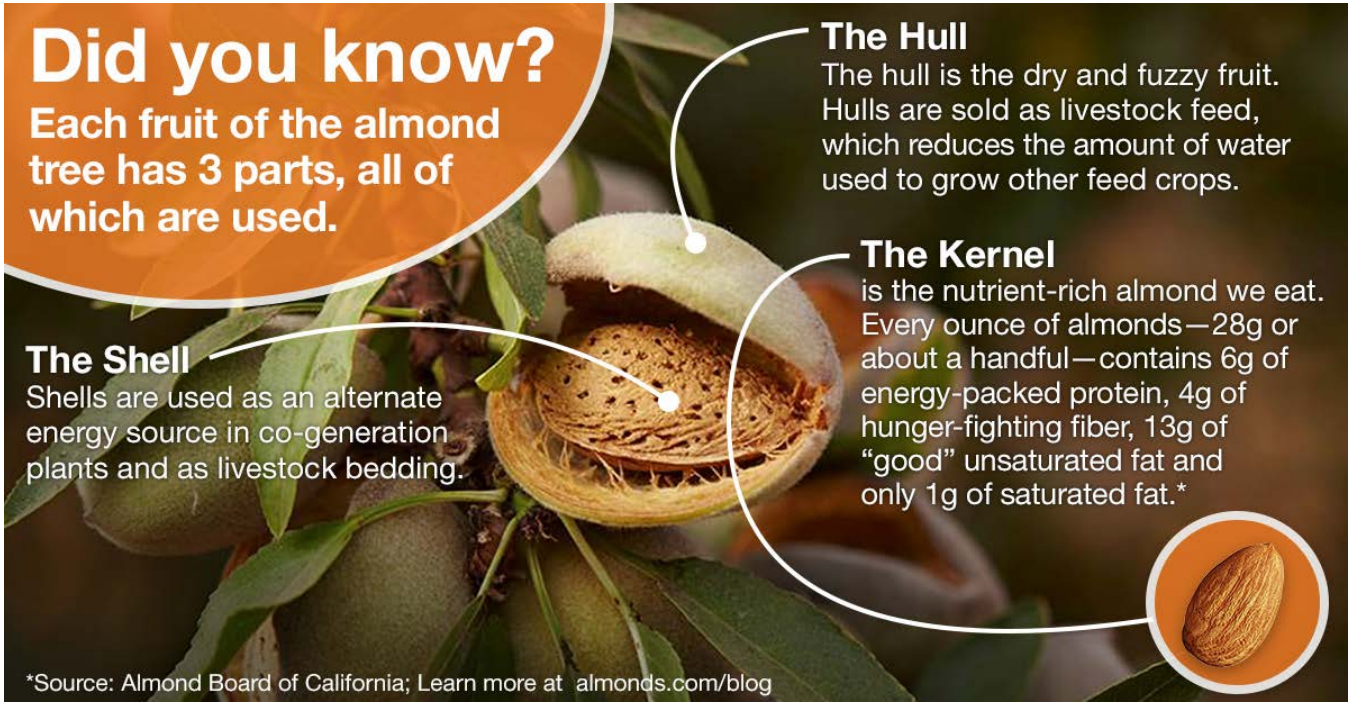
- No, almonds don't use 10 percent of California's water.
- Almonds make up less than 13 percent of the state's total irrigated farmland but use only 9 percent of the state's **ag water** – less than their proportionate share.



# Water Grows More Than Just Almonds

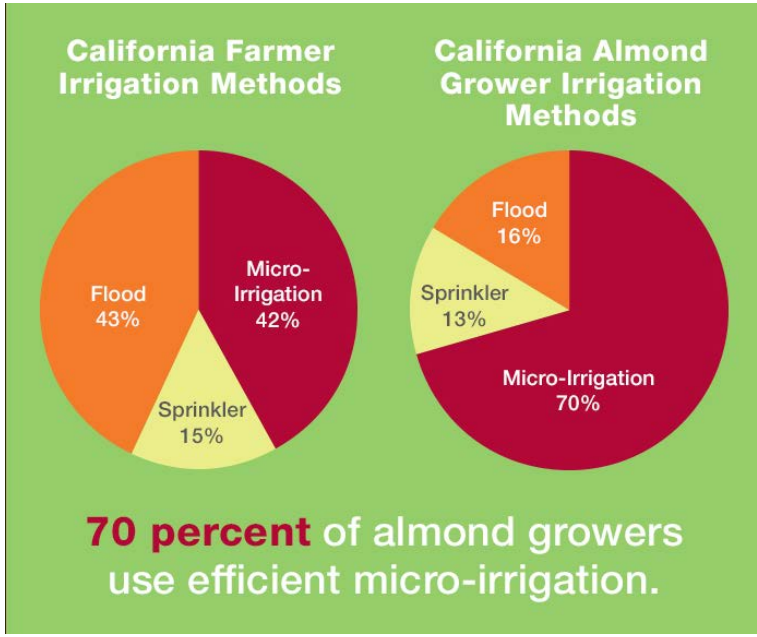
- ***Almonds grow on trees***, which have their own inherent set of benefits like turning carbon dioxide into oxygen for us to breathe and reducing greenhouse gases and other pollutants.
- Almond trees, and the water used to grow them, actually produce three products, two of which are foods.



# Almond Water Use Efficiency

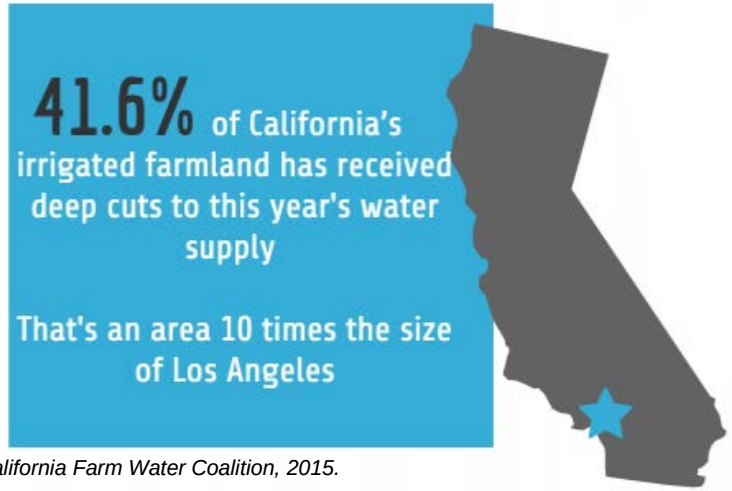
***California Almond growers are lead adapters in efficient irrigation technologies.***

- 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

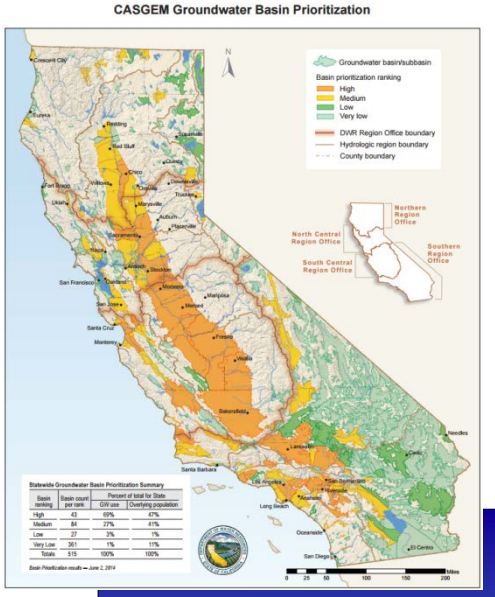
- April 1, 2015: Governor Brown issued executive order mandating cities cut back water use by 25%
  - Noticeably, agriculture was not included in these restrictions. However, agriculture has been dealing with limited water for years.
- A report from University of California, Davis estimates the impacts 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

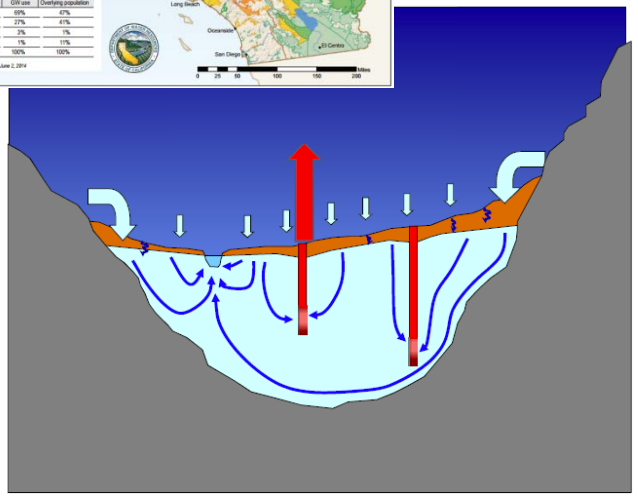



*California Farm Water Coalition, 2015.*

# “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.

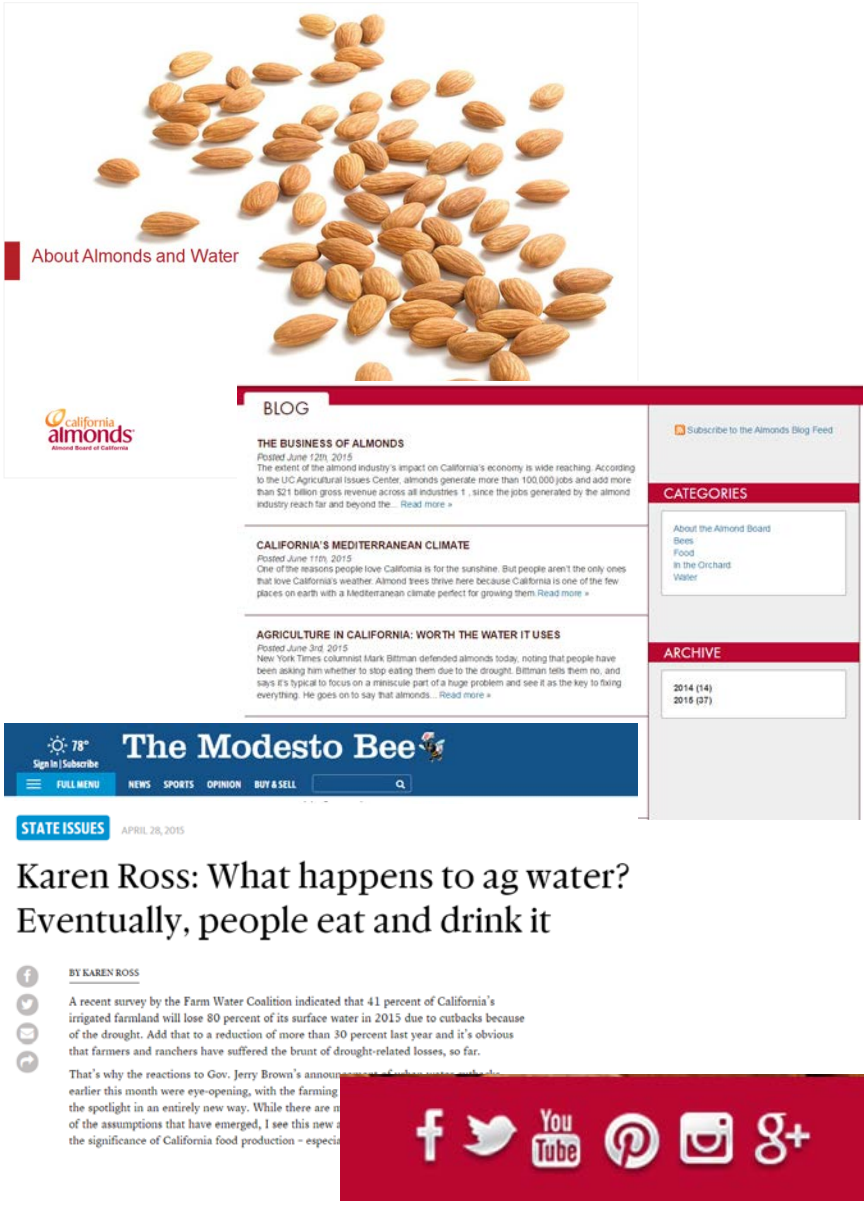
# Almonds Provide Value for Californians

- 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



# 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 with “Speakers Bureau” in the subject line.

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