

Water & the California Farmer

Productivity, Conservation, Stewardship and Innovation in Agricultural Water Use

- California has nearly 78,000 farms and \$42 billion in annual revenue¹ – about 12% of the U.S. total.²
- California is responsible for about “16% of national cash receipts for crops and 7% of U.S. revenue for livestock and livestock products.”³
- California’s agricultural abundance includes “more than 400 commodities,” and produces “nearly half of the fruits, nuts, and vegetables grown in the United States.”⁴
- Export revenue reached \$18 billion as recently as 2012, up from \$6.5 billion the previous decade.⁵
- “\$1 billion in agricultural exports supports roughly 8,400 jobs.”⁶
- California applied water use by category:^{7,8}
 - Urban: 10%
 - Irrigated Agriculture: 41%
 - Managed Wetlands: 2%
 - Required Delta Outflow: 6.5%
 - Instream Flow: 8.5%
 - Wild & Scenic Rivers: 31%
- Lettuce, tomatoes, strawberries, cucumbers, and many other fruits and vegetables are made of 90% water or more.⁹
- “Inflation-adjusted gross revenue for California agriculture increased about 88 percent between 1967 and 2010, from \$19.9 billion to \$37.5 billion.”¹⁰
- During that period, the total applied water use to crops in California was reduced by 20 percent, from 31.2 million acre-feet (MAF) to 24.9 MAF.”¹⁰
- “The ‘economic efficiency’ of agricultural water use in California more than doubled in the last half century, from \$638 per acre-foot in 1967 to \$1,506 per acre-foot in 2010.”¹⁰
- In an average year, “agriculture will irrigate about 9.6 million acres with 34 MAF of water, or about one-third of the available surface water supplies.”¹⁰
- Between 1970 and 2010, low-volume techniques were used to irrigate nearly 3 million acres, whereas the use of gravity irrigation fell substantially.¹¹
- Low volume irrigation techniques boast an efficiency rate of between 80% and 90%.¹²
- In 1991 gravity irrigation was used by 67% of farmers. By 2011 that number fell to 43%.¹³
- The Agricultural Water Management Council (AWMC) has so far united 78¹⁴ “agricultural water suppliers and 4 environmental organizations committed to implementing efficient groundwater management plans.”¹⁵
- These water suppliers “represent more than 4.6 million acres of retail irrigated acreage and a total of 5.86 million acres of agricultural land.”¹⁶
- According to 2012 data, CA is home to 6,841 almond farms covering about 935,000 acres.¹⁷
- In the last twenty years almond growers have reduced their water use per pound of almond production by 33%.¹⁸

Citations

- ¹ U.S. Dept. of Agriculture (USDA) – 2012 Census of Agriculture, 2014 (URL: http://agcensus.usda.gov/Publications/2012/Full_Report/Volume_1,_Chapter_1_State_Level/California/st06_1_001_001.pdf)
- ² California Dept. of Water Resources (DWR) – Water Plan Update, 2013 – Volume 3, Chapter 2: Agricultural Water Use Efficiency (p. 2-2) (URL: http://www.waterplan.water.ca.gov/docs/cwpu2013/2013-prd/Vol3_Ch02_AgWUE_%20PublicReviewDraft_Final_PDFed_co.pdf)
- ³ *ibid.*
- ⁴ *ibid.*
- ⁵ California Dept. of Food and Agriculture (CDFA) – Agriculture Statistics Review, 2013-2014 (p. 7) (URL: http://www.cdfa.ca.gov/Statistics/PDFs/ResourceDirectory_2013-2014.pdf)
- ⁶ U.S. Senate Committee on Agriculture, Nutrition, and Forestry – News Release: “The Farm Bill is a Jobs Bill”, 2014 (URL: <http://www.ag.senate.gov/newsroom/press/release/the-farm-bill-is-a-jobs-bill>)
- ⁷ California Dept. of Water Resources (DWR) – Water Plan Update, 2013 – Volume 1, Chapter 3: California Water Today (Appendix: Table 3-2) (URL: http://www.waterplan.water.ca.gov/docs/cwpu2013/2013-prd/Vol1_Ch03_CA-Water-Today_PubReviewDraft_Final_JW.pdf)
- ⁸ Applied water use is the official terminology used by DWR. “Applied water refers to the total amount of water that is diverted from any source to meet the demands of water users without adjusting for water that is used up, returned to the developed supply, or considered irrecoverable.” (Source: Dept. of Water Resources (DWR) – Water Plan Update, 2013 – Volume 1, Chapter 3: California Water Today (Appendix: Box 3-5) (URL: http://www.waterplan.water.ca.gov/docs/cwpu2013/2013-prd/Vol1_Ch03_CA-Water-Today_PubReviewDraft_Final_JW.pdf)
- ⁹ University of Kentucky Cooperative Extension Service – “Water Content Fact Sheet”, 1997 (URL: <http://www2.ca.uky.edu/enri/pubs/enri129.pdf>)
- ¹⁰ California Dept. of Water Resources (DWR) – Water Plan Update, 2013 – Volume 3, Chapter 2: Agricultural Water Use Efficiency (p. 2-2) (URL: http://www.waterplan.water.ca.gov/docs/cwpu2013/2013-prd/Vol3_Ch02_AgWUE_%20PublicReviewDraft_Final_PDFed_co.pdf)
- ¹¹ California Dept. of Water Resources (DWR) – Water Plan Update, 2013 – Volume 3, Chapter 2: Agricultural Water Use Efficiency (Appendix: Figures 2-2, 2-3) (URL: http://www.waterplan.water.ca.gov/docs/cwpu2013/2013-prd/Vol3_Ch02_AgWUE_%20PublicReviewDraft_Final_PDFed_co.pdf)
- ¹² Blaine Hanson, Professor – U.C. Davis – Presentation: “Irrigation of Agricultural Crops in California” (Slide #37) (URL: <http://www.arb.ca.gov/fuels/lcfs/workgroups/lcfs-sustain/hanson.pdf>)
- ¹³ California Dept. of Water Resources (DWR) – Water Plan Update, 2013 – Volume 3, Chapter 2: Agricultural Water Use Efficiency (Appendix: Figure 2-4) (URL: http://www.waterplan.water.ca.gov/docs/cwpu2013/2013-prd/Vol3_Ch02_AgWUE_%20PublicReviewDraft_Final_PDFed_co.pdf)
- ¹⁴ Agricultural Water Management Council (AWMC) – AWMC Website, 2014 (URL: <http://www.agwatercouncil.org/index.php/about-us/signatories/8-about-us/signatories/16-group-one>)
- ¹⁵ California Dept. of Water Resources (DWR) – Water Plan Update, 2013 – Volume 3, Chapter 2: Agricultural Water Use Efficiency (p. 2-2) (URL: http://www.waterplan.water.ca.gov/docs/cwpu2013/2013-prd/Vol3_Ch02_AgWUE_%20PublicReviewDraft_Final_PDFed_co.pdf)
- ¹⁶ California Dept. of Water Resources (DWR) – Water Plan Update, 2013 – Volume 3, Chapter 2: Agricultural Water Use Efficiency (p. 2-2 & 2-3) (URL: http://www.waterplan.water.ca.gov/docs/cwpu2013/2013-prd/Vol3_Ch02_AgWUE_%20PublicReviewDraft_Final_PDFed_co.pdf)
- ¹⁷ U.S. Dept. of Agriculture (USDA) – 2012 Census of Agriculture, 2014 (URL: http://www.agcensus.usda.gov/Publications/2012/Full_Report/Volume_1,_Chapter_2_US_State_Level/st99_2_031_031.pdf)
- ¹⁸ Robert Curtis, Associate Director for Agricultural Affairs – Almond Board of California – “Improved Almond Water Use Efficiency 1990-94 vs. 2010-14”, 2014.