

Water

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where water held out a little bit longer in the system, said Bill Buhrig, an Oregon State University cropping systems extension agent in Ontario.

In areas where water was scarce, a lot of early season crops such as cereal, wheat or triticale were planted.

As a result, Buhrig said, a lot of onions and cereals were planted on the same ground several years in a row and farmers got out of their normal five- to six-year rotations, which is not ideal for soil health.

"To go to a full allotment enables growers to get back into the rotations that really benefit both what their production needs are and soil health," he said.

As a result of the drought, acreage for some water-intensive crops, such as sugar beets, was cut significantly. After falling to 4,725 acres in 2014 and 5,500 acres in 2015, sugar beet acres in the area bounced back to 8,000 this year, which is close to normal.

The ground left fallow the past few years has also been put back into production, said Stuart Reitz, an OSU cropping systems extension agent.

The full allotment "gives



Sean Ellis/Capital Press

A sugar beet field in Eastern Oregon is irrigated in June. A full water allotment for the first time in four years has made a big difference for farmers who depend on the Owyhee Reservoir to irrigate their crops.

people more flexibility on what they can grow and where they can grow," he said. "Having those short water years threw everybody's rotations off."

Dairyman Frank Ausman likes to grow most of his own feed but had to leave one of his three farms idle the past two years to spread what little water he did get

to the other two.

He was able to put all three into production this year.

"It's made a huge difference," he said. "We have basically got back to normal."

When the OID system stopped delivering water Sept. 30, there was 166,000 acre-feet of carryover water in the reservoir, less than

normal but much more than the 5,000 acre-feet left the past two years.

"From the get-go, when we set the allotment, our goal was to try to carry over 100,000 acre-feet and we actually did better than that," Chamberlin said. "We're pretty pleased we were able to carry over that much."

Nuts

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Like Lindauer, most in the industry are taking the lull in prices in stride. The commodity groups are stepping up their efforts to find new customers for nuts, and growers are beginning to make orchard-management decisions that reflect new realities. If there's a ceiling on how many nuts California can produce and still maintain profitability, they remain convinced they haven't yet reached it.

'Demand is strong'

"Leading into the new crop year, demand is strong," said Richard Waycott, the Almond Board of California's president and chief executive officer. "Pricing is at a range where it has rebounded from the lows that we hit back in April."

Finite water resources amid the ongoing drought may slow the expansion a bit, and lower prices may mean tree nuts are less attractive to those who would plant orchards strictly as investments, said Daniel Sumner, director of the Agricultural Issues Center at the University of California-Davis.

"I wouldn't say we're done" expanding, Sumner said. "It partly depends on how we get things organized when it comes to groundwater and (issues surrounding) surface water."

Nut boom

For years, California's nut boom defied gravity. The production, bearing acreage, prices and total value of walnut and almond crops have been rapidly growing for the past two decades — particularly since 2005, according to the National Agricultural Statistics Service.

Bearing almond acreage has more than doubled, from 418,000 acres in 1995 to nearly 900,000 this year. Production has increased from 370 million pounds to an anticipated 2.05 billion pounds this year.

A 2014 study by Sumner and others found that almond production directly and indirectly contributes more than \$21.5 billion annually to the economy and creates more than 100,000 jobs. Almonds account for about one-quarter of all farm exports from the state.

Walnut acreage has been trending upward since 1988, from 177,000 acres to 315,000 this year. Production has more than doubled during that period, to a record 670,000 tons this year, and the total crop value increased from \$193 million in 1988 to \$1.9 billion in 2014.

Pistachios are the other rising star, with 310,000 acres of trees in the state, according to the American Pistachio Grow-



Tim Hearnden/Capital Press

Piles of empty shells and other natural debris that was kicked out of the processor await use behind the Crain Walnut Shelling plant near Los Molinos, Calif. The waste will be used as a soil amendment before a new orchard is planted.

ers. This year's crop — estimated to be as much as 800 million pounds — will easily surpass the record crop of 555 million pounds in 2012. Nearly all U.S. pistachios grow in California.

Even more nut trees will come into production in the next few years. According to NASS, about 220,000 almond acres and 65,000 walnut acres were yet to begin bearing as of last year. About 70,000 acres of pistachio trees in the ground are non-bearing, said Richard Matoian, the Pistachio Growers executive director.

For all three nuts, planting a new orchard is a huge investment. Preparing and planting each acre of trees costs about \$3,768 for walnuts, \$2,327 for almonds and \$1,932 for pistachios, according to the UC Cooperative Extension's most recent cost estimates.

Market correction

In the past year, supply has caught up to demand as international competitors ramped up production. As equilibrium was reached, prices fell. The overall value of last year's walnut crop — \$977 million — was a little more than half the record \$1.9 billion 2014 crop, according to NASS.

"For us, we see the market as still pretty strong," said Dennis Balint, president of the California Walnut Commission. "The problem is we're seeing growth in other countries' crops. China, if you believe what they report, is expecting a 10 percent higher crop."

Chile will probably be looking at a record crop, he said. "We have to be cognizant of the fact that we are competing against other producers."

While last year's almond crop was smaller than the previous year's, it still outperformed expectations, which caused a price slide, Waycott said. The current average price of \$2.50 per pound for nonpareils is still profitable,

industry insiders say.

Meanwhile, large pistachio crops in Iran during the past two years enabled that country to gain market share in destinations such as China. California growers dealt with a small crop last year because of drought and a lack of winter chilling hours, Matoian said.

This year, pistachio growers have been initially guaranteed between \$1.70 and \$1.80 per pound, down from an average of \$3.57 per pound they received in 2014, he said. That price could increase via a negotiated "marketing bonus" that growers usually receive at the season's end, he said.

Despite the price decreases, the average California tree nut farm is still profitable, according to the UCCE estimates. In established orchards, walnuts cost \$4,703 an acre per year to produce and return \$5,875 to the operation each year; almonds cost \$3,890 an acre to produce and return \$5,000; and pistachios cost \$4,984 an acre to produce and return \$7,224.

California unique

What makes California's tree nut industries unique is they either dominate or own a large percentage of the world markets, so they're heavily dependent on trade, said Eric Houk, director of the Agricultural Business Institute at California State University-Chico.

The state supplies 80 percent of the world's almonds and 35-40 percent of the world's walnuts and pistachios, he said.

With almonds, "weaker prices are not usually associated with increased foreign competition but a general decrease in foreign demand" as production continues to rise, he said in an email.

Walnut and pistachio growers face an increase in foreign competition, he said.

With global markets in flux, the commodity groups have also begun to aggressive-

ly court domestic consumers. The Walnut Commission has invested more than \$17 million in the last two years to boost U.S. sales. The goal is to increase walnut consumption from 22 to 30 percent of U.S. households.

The Almond Board is also burnishing the industry's image at home. Facing criticism from some quarters for its water use during the drought, the industry committed \$2.1 million last year to research more sustainable farming practices such as whole-orchard recycling and groundwater banking, and "is really upping the game in terms of precision agriculture for the industry," Waycott said.

Meanwhile, walnut farmers have begun switching to varieties such as Chandler, Howard and Tulare to get the highest yields and nut quality. To help them get the best possible returns, farm advisers have been offering tips on producing higher-quality, lighter kernels by closely monitoring water use and applying a plant growth regulator.

Growers worried

Modesto area almond and walnut grower Paul Wenger, the California Farm Bureau Federation president since 2009, said he has long suspected the state was producing more nuts than could be sustained in the long run.

"A lot of the expansion we're seeing in agriculture isn't the typical family farmer — it's pension funds and hedge fund investors," Wenger said. "If they can get a 2 or 3 percent annualized return, they're OK with that."

It will be interesting to see how family farmers can stand up against the institutional farm owners, he said. "I know down in the (San Joaquin) Valley we've got hedge funds drilling wells where family farmers would never do that. It's a disposable dollar for a lot of these folks."

Lindauer, the Los Molinos walnut grower, said lower

Election

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He said federal policies erect barriers to entering and staying in business, particularly for small farmers and ranchers.

"They feel the government is not trying to protect them, trying to help them, and they're wondering how they're going to stay in business," Clovis said.

He said a Trump administration would support regional regulations to take into consideration different climates, geography, land uses and ownership. "Those 13 states in the Western part of the United States probably ought to have their own rules because so much land is owned by the federal government," he said.

Merrigan said regulations put businesses on equal footing and protect the public. She cited organic standards and marketing orders as examples of farmer-driven rules.

"I think this anti-regulatory drumbeat is not helpful," she said.

Said Clovis: "I can't let that go."

"The fact is we have a burdensome regulatory regime that imposes itself, particularly on smaller enterprises because they do not have the wherewithal to find the compliance staff," he said.

Merrigan said farmers can ensure their survival by participating in government

conservation programs.

"Do everything that good science is saying on the farm, cost-share. And then say to them, 'And now you're not going to be regulated out of business because you've done everything that we've asked of you,'" Merrigan said.

Clinton and Trump both condemn the Trans-Pacific Partnership, leaving the surrogates little room to distinguish their candidates.

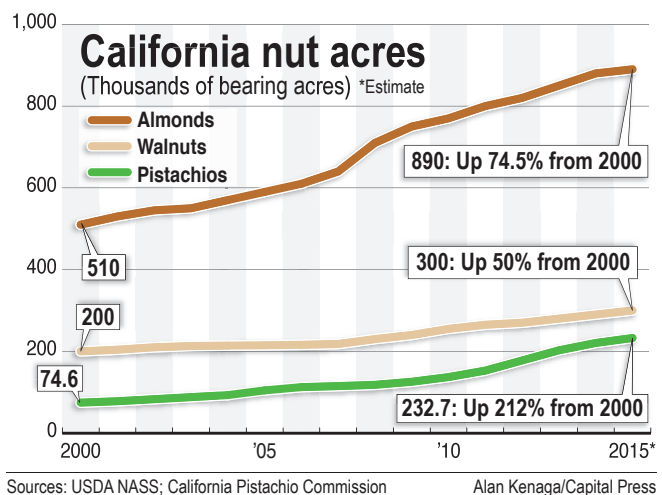
On immigration, Clovis said the H2-A visa program could be streamlined to supply agriculture with workers.

"If they want a legal workforce, we can work with them to make it legal," Clovis said.

Merrigan said agriculture would be better served by immigration reform than building a wall. Clinton "is ready to lead us past the current political impasse, which is crippling the agricultural industry," Merrigan said.

Clovis stressed that the next president will have the opportunity to appoint at least one U.S. Supreme Court justice, maybe more. He also said Trump wants to lower corporate tax rates.

Merrigan listed several government initiatives favored by Clinton, including installing solar panels in rural areas, bringing high-speed internet connections to rural homes and supporting a new generation of farmers, particularly women and veterans. "We can't afford to ignore any tools in our toolbox," she said.



prices make it more difficult to meet increasing expenses, including the state-mandated increase in the minimum wage to \$15 an hour by 2022 and a new law applying the 8-hour work day to agricultural workers. After 8 hours, they will receive overtime pay.

He said the new labor laws will force growers to "invest in enough machinery that we can get everything done in 8 hours that used to take 10 or 12."

"We can't be doing this and losing money," he said.

At the same time, some farms that are heavily leveraged may have a hard time surviving if prices stay low, said Rick Buchner, a UC Cooperative Extension farm adviser in Red Bluff.

A few growers who planted nuts in place of prunes a few years ago when that crop's prices fell may turn around and plant more plums, Buchner said. Prune producers had received an average of less than \$1,000 per dry ton over the five years ending in 2010, but that price shot up to \$2,400 per dry ton in 2014.

"The prune thing looks pretty promising now," Buchner said. "I think we're going to see some interest."

But Buchner and others also point out the price cycles the nut industries have experienced.

For instance, almond prices "peaked around 1995, then again around 2005, and most recently in 2015," Chico State's Houk said.

Each time, the peak was followed by short-term lulls in planting and production, but the overall trend has been an increase in acreage and production and prices have recovered as global demand has increased, he said.

"I think the industry is probably going to focus on increasing its marketing efforts and the lower prices will likely start increasing the quantity demanded in world markets," Houk said. "When or if we get back to the peak prices we saw in 2015 is anybody's guess."

Staying hopeful

While he doesn't see as much interest from investors now that prices are lower, UC Cooperative Extension pomology farm Advisor Roger

Duncan is still contacted almost daily by growers who send him soil and water tests to determine if they can grow almonds, he said.

"I think at this point, you still have to look at almond farming as a profitable business," said Duncan, who is based in Modesto. "I don't see any reason to believe ... it won't continue to be that way. Where the ceiling is, I have absolutely no idea."

"We've always felt like we're approaching the ceiling," he said. "Since then we've more than doubled the industry since I've been here."

For their part, industry leaders remain hopeful. The Walnut Commission's Balint said the domestic market for walnuts rose by more than 11 percent this year because of a variety of factors, including lower prices.

"So although I wouldn't advise people to run out and plant more walnuts, I don't think that we necessarily have what I would call a serious problem," at least yet, Balint said.

Over the past 20 years, the almond industry has "positioned itself well" by promoting the image of nuts as a healthful food, the Almond Board's Waycott said.

"As we look out into the future, people have to eat and what should they be eating? Plant-based proteins are certainly preferred," he said. "It's going to be nutrient-dense products like ours that are going to be very much a part of the dietary mix, and you can't grow them in many places."

Veronica Nigh, an economist for the American Farm Bureau Federation, agrees. Tree nuts are "more of a foodie food" than many other commodities, and they're an important part of many cultures around the world, particularly in the Middle East, she said.

"If you've been using almonds in recipes for thousands of years, that's not going anywhere," Nigh said. "Just like anything else, we're going to have some fluctuations, but it's certainly a good long-term market."

"There's still probably plenty of room for folks to get into the market and have a good business," she said.