IDWR order requires well monitors in Snake Plain

By JOHN O'CONNELL
Capital Press

John O'Connell/Capital Press

A pivot pump in American Falls, Idaho, is fitted with a closed-conduit measuring device to better monitor water usage. The Idaho Department of Water Resources has issued an order requiring well users on the Eastern Snake Plain Aquifer to install the devices.

BOISE — The Idaho Department of Water Resources has issued an order requiring Eastern Snake Plain Aquifer well users to install closed-conduit measurement devices by 2018 to better monitor their water use.

Idaho Ground Water Appropriators Inc., has obtained a $1.6 million Bureau of Reclamation Smart Water grant to help growers cover up to 45 percent of their costs. IGWA Executive Director Lynn Tominaga estimates the equipment and installation cost at roughly $5,400 per well.

"Everybody we have talked with has said flow meters are good because you have better control over how you manage your water for your crops," Tominaga said.

The requirement for groundwater users to install flow meters by 2018 was included in last summer's water call settlement agreement between IGWA and the Surface Water Coalition. IDWR Deputy Director Mat Weaver said the department opted to make it a general requirement to avoid deterring growers from participating in the settlement.

Small wells irrigating less than 5 acres, or drawing less than 0.24 cubic feet per second, and domestic or stock water wells are exempt from the order.

Weaver explained the order, issued on June 15, replaces previous measurement orders imposed by individual ESPA water districts from 2001 through 2013. Weaver said the previous orders had inconsistent language, allowing many users to "fall through the cracks," and were overly lenient in granting exemptions allowing growers to use a less accurate estimation based on power use.

The department had granted exemptions on 3,500 of 5,500 wells. Under the new order, Weaver said, power calculations will be allowed only under the simplest scenario — involving a single well and irrigation discharge point with no pivot end gun where the aquifer level doesn't fluctuate.

Weaver said closed-conduit measurement devices must be accurate within 2 percent. Utah State University has tested devices for IDWR's approved list of manufacturers. By contrast, IDWR audits have found most power-based calculations are off by at least 10 percent.

The water call settlement also requires groundwater users to reduce their combined average annual consumption by 240,000 acre-feet, and Blackfoot grower Brian Searle said accurate measuring will be critical toward its success. Searle, who already has four measurement devices in place and will have to install five more, noted the order comes at a time when growers are coping with low commodity prices. American Falls grower Klaren Koompin has devices in place on three wells and will have to install 22 more, which he estimates will cost $80,000.

Surface Water Coalition attorney John Simpson said his client has filed a petition for IDWR to reconsider the order, believing it should be expanded by 250,000 groundwater-irrigated acres to encompass the entire territory of the most current ESPA groundwater model. IDWR's order covers only an area known as the Rule 50 boundary, which offered the best understanding of the "area of common groundwater" in 1994, but remains in effect for legal purposes.

"That (updated) model boundary has been identified as the best science available by the court system, and we should be using it to require measuring devices and reporting of data," Simpson said.

Idaho researchers creating 'IdaBot,' an autonomous utility robot

By SEAN ELLIS
Capital Press

Sean Ellis/Capital Press

Northwest Nazarene University researchers and students test drive "IdaBot," a low-cost utility robot they are developing to assist specialty crop growers, in Nampa on July 6.

NAMPA, Idaho — Researchers in Southwestern Idaho are developing a robotic platform they believe could help specialty crop growers manage their crops and reduce labor costs.

The platform, which they have dubbed "IdaBot," will be a low-cost way of helping farmers control input costs through the use of robotic automation, said Northwest Nazarene University engineering professor Joshua Griffin.

"The end goal is to try and save some money for the grower," he said. "We're trying to build a low-cost robot ... that comes in at a cost point where people can use it without having to take out a loan."

The IdaBot project is funded partly through an $81,000 specialty crop grant provided last year by the Idaho State Department of Agriculture.

Farmers spend a lot of money on labor when it comes to spraying, monitoring and harvesting their crops, Griffin said.

"Our thought was anything we can do to automate any of those processes would benefit the grower," he said.

The scope of the two-year project is to create a simple robot that can navigate an orchard or vineyard autonomously and be used to apply chemicals.

Once they figure that part out, Griffin and project partner Duke Bulanon, another NNU professor, hope to program the robot to do other things, such as count fruit on the tree or vine and assist pickers.

"This is just a platform that we can put other technologies on top of," Bulanon said. "Once we teach it to walk, then we can teach it ... to do other stuff."

"Our first goal is to have this thing drive down a vineyard, turn around and come back and on its way apply chemicals," Griffin said. "Once we've done that, then we want to start trying to demonstrate other specific applications."

The robot will be tested in commercial operations, including at Williamson Orchards and Vineyards in Caldwell, where manager Michael Williamson said he's excited about the possibilities.

He said that besides keeping people away from spraying, which is always a good thing, a box could be placed on top of the robot to assist people who are picking fruit. When the box is full, the autonomous robot would take the fruit to a central point and return for the next load.

"You could have a couple of them be runners for you," he said.

Griffin believes the specialty crop industry is an area ripe for automation.

"There is so much agriculture in Idaho that it just seems like a natural fit to pursue some of this," he said. "We feel like (that) is a good niche for us."

The key to the project is to design a platform that the average farmer can afford, said Richie Grindstaff, an undergraduate engineering student who is helping create IdaBot.

"We're trying to keep this low-cost so farmers can use it," he said.

Water efficiency credited for big almond crop during drought

By TIM HEARDEN
Capital Press

Tim Hearden/Capital Press

Bulk-purchased organic almonds from Northern California have been loaded into a bag to be weighed. California almond growers are expecting a big crop this year, as yields are expected to significantly exceed last year's.

SACRAMENTO — An almond industry group is crediting growers for their water efficiency while cultivating what is expected to be a big crop this year.

California's 2016 almond production is expected to be 2.05 billion meat pounds, up from the 2 billion pounds projected in May and up nearly 8 percent from last year's yields, reports the National Agricultural Statistics Service.

The agency cites several factors for the improved crop, including more precipitation and chill hours than last year and a quick and uniform almond blossom.

But Almond Board of California President and CEO Richard Waycott also credits growers' efficiency in their use of water during a fifth straight year of drought.

"This year's almond crop growth … reflects growers' commitment to innovation and sustainable new technologies that reap the most from every drop of water while simultaneously safeguarding precious natural resources," Waycott said in an email. "Since 1994, almond growers have reduced the amount of water it takes to grow a pound of almonds by 33 percent."

Almonds are expected to be harvested from 900,000 bearing acres, up from 890,000 in 2015, according to NASS. The agency reported this spring that the 1.1 million-plus overall acres planted in 2015 was 6 percent more than the previous year, even as about 45,000 acres of trees were removed from orchards.

The Nonpareil variety, which accounts for 38 percent of California almonds, is forecast at 780 million meat pounds, up 7.4 percent from last year's deliveries, NASS reports.

For the almond board-funded measurement survey, NASS scientists use a formula in counting nuts on randomly selected trees. In all, surveyors sampled 1,746 trees in 873 orchards between May 23 and June 23 and found an average nut set per tree of 6,159, up nearly 5 percent from 2015.

Nonpareil almonds showed an even bigger improvement in yields as their average of 5,583 nuts per tree was up 6.6 percent from last year's set of 5,239, according to the agency.

The average kernel weight for all varieties sampled was 1.48 grams, up 3.5 percent from the 2015 average weight of 1.43 grams, NASS reported. Nonpareils' average kernel weight was 1.65, up 2.5 percent from last year.

The almond board has fought diligently in the past couple of years to rebut critics who charge the industry places too much of a burden on the environment. Last summer, the board set aside $2.5 million for research into water efficiency, honeybee health and best practices.

Most nut growers have switched to drip irrigation or micro-sprinklers to save water, and many use technology such as pressure bombs to determine their trees' need before irrigating.

"While growers have made significant advances, as an industry we collectively recognize the need to take a leadership position on pressing issues facing both California's residents and agricultural industry," Waycott said.