

California has lost flexibility in managing for drought

State officials are increasing pressure on Californians to further reduce water use as they run up against barriers in a water system that has lost flexibility for adapting to scarcity over the last two decades. Farmers, water districts and residents have already cut back significantly on water use, while environmental protections for endangered species have led to rigid rules for water management.

“We don’t have the flex in the system that we did when we had droughts in the ‘90s or even in the last route,” Department of Water Resources (DWR) Director Karla Nemeth told reporters last week. “Some of that reduction has carried forward into permanent. So everything left on the table takes a little more oomph, a little more preplanning.”

CDFA Secretary Karen Ross acknowledged the considerable strides agriculture has made in water use efficiency over the decades. Growers have reduced farm water use by 14% while increasing productivity by 38% since 1980, according to the Public Policy Institute of California. The state altogether has maintained a 17% reduction in water use since then-Gov. Jerry Brown mandated a 25% reduction during the last drought.

Gov. Gavin Newsom in July asked Californians to voluntarily reduce water use by another 15%. Early data has shown urban water districts were slow to respond, raising concerns a statewide



Gov. Newsom and DWR Director Karla Nemeth stand in an empty Lake Mendocino in May. (photo: DWR)

mandate could be next. Natural Resources Secretary Wade Crowfoot said the administration will be closely watching voluntary efforts over the coming months but will take further steps if needed.

“The governor has been clear that we need to consider additional actions,” said Crowfoot. “Mandatory restrictions need to be on the table, if and when the drought worsens.”

State Water Resources Control Board Chair Joaquin Esquivel added that any mandatory order would be a stress test for how far the

existing conservation efforts have come. Out of California's nearly 3,000 water agencies, about 400 manage water for urban needs and have created drought contingency plans aimed at stretching supplies and conservation efforts across a five-year drought.

“If we were looking at mandatory, we'd really just be accelerating much of the outcome- and data-specific work that we're already doing with our water agencies,” said Esquivel.

Crowfoot explained that the administration has avoided a statewide mandate because the last drought showed that each region faces scarcity differently. In a similar approach to the implementation of the Sustainable Groundwater Management Act (SGMA) and the state's investment in water infrastructure, the administration stepped into a support role and is following the leadership of local agencies.

“[Water agencies] have explained to us that one-size-fits-all mandates from Sacramento sometimes have unintended consequences,” said Crowfoot. “Our focus has been: How do we support these water agencies to actually weather through this drought?”

The governor declared drought emergencies by watershed, rather than as a statewide emergency—against the requests of state agriculture committee chairs and other lawmakers. All but eight urban counties, nevertheless, have fallen under emergency declarations.

Crowfoot also explained that the implementation of SGMA is creating a new dynamic for this drought, with 250 local groundwater agencies launched following the act's passage in 2014.

“We've got much better reporting on both the status of groundwater aquifers and use across our communities,” he said.

This year was also the first time the state has seen 22% of the projected snowpack disappear on the journey to reservoirs and the first time the snowpack dropped from 70% to nearly zero within six weeks. It also broke expectations in terms of statewide impacts.



Jeanine Jones, DWR interstate resources manager

“This is the first drought where we've had such an extensive landscape impacted by the drought conditions,” said Ross. “So the curtailment process has been especially painful this year. It came late in the year, when many of our annual crops were already in the ground. People were just trying to finish out the crops that they have.”

Assuming the drought continues, the preplanning will be critical next year, she explained.

“While it would come with great economic impact, we can prevent crops from going into the ground,” she said, adding that the water would be used in alternative ways.

This has been one of the biggest lessons the state has learned from the drought. Limiting allocations earlier in the water year and maintaining curtailments longer into the spring will largely affect growers with senior water rights, according to Nemeth. Her department is collaborating with the Bureau of Reclamation to establish an earlier and more intensive schedule through June for the federal Central Valley Project (CVP) as well, she said.

Part of that collaboration includes resolving differences between state and federal operations for pumping water through the Sacramento–San Joaquin Delta. In 2019 the federal and state administrations parted ways on pumping operations for the first time in history. Then-President Donald Trump approved new biological opinions that offered more flexibility with environmental flows for endangered species protections. The Newsom administration then filed a lawsuit against the environmental review and eventually the state approved a new incidental take permit for the State Water Project that volunteered more flows for the Delta to compensate for any reductions on the federal side.

With President Joe Biden in office, the agencies have been looking to return balance to the system under a single, coordinated approach. In a letter to wildlife directors last week, Bureau of Reclamation Regional Director Ernest Conant pledged to reexamine the biological opinions and outlined goals for protecting species, supporting operational flexibility and providing regulatory certainty. While the new plan would likely not affect pumping operations in 2021, a unified system would offer the state more options for protecting the environment in dry water years.

At the Colorado River end of water deliveries, the Newsom administration is allocating \$220 million over three years to restore the Salton Sea. This has been a sticking point in negotiations over drought contingency plans for the river. In 2019 Imperial Irrigation District (IID) demanded the state follow through on funding commitments for the restoration work after the Salton Sea fell into an ecological crisis when farmers reduced irrigation, leading to little freshwater runoff into the basin. The Metropolitan Water District of Southern California volunteered to contribute IID’s share of cuts to Colorado River allocations to move the temporary drought contingency plan forward, which led to a lengthy court battle between the two agencies.

Last month the two parties settled the legal dispute, setting the stage for negotiations to continue for a drought plan that extends beyond 2026 and for more immediate actions next year. While Arizona farmers are suffering severe cutbacks in allocations due to the drought in the West, California farmers stand to take a hit next year.

“The Colorado River Basin obviously is in a world of hurt regarding water supply,” said Crowfoot.

Esquivel added that he was heartened to see the agreement between the two districts and that shows the other basin states that California is serious about its obligations, including stabilizing the Salton Sea and efforts to bring more water recycling and resiliency to Southern California.

“It's not lost on us that it's not just our Delta up here that is challenged but also the Colorado River Delta,” he said.

Jeanine Jones, who represents DWR for Colorado River affairs, shared that discussions are already underway for how the states and other stakeholders can more quickly respond to the evolving crisis.

“With respect to the immediacy of what we learned in the last drought in California, we're seeing the same kind of lessons on the Colorado River system, with drought impacts being much worse than were expected back at the time the existing guidelines were negotiated,” said Jones.

As a more immediate response to both droughts, the Newsom administration has been expanding efforts to persuade Californians to save more water, especially when it comes to lawn irrigation and other outdoor uses.

“Save the Drop, Angelenos—we need your drought leadership once again,” tweeted Crowfoot from Los Angeles last week, with a photo next to a water conservation mascot known as the Drop.

Vilsack offers support to farmworkers and small producers, encourages next generation in virtual event for CSU Monterey Bay

The secretary of agriculture encouraged young people to give back to their rural communities through government service, pledged to use procurement dollars to support climate-smart food products and expressed support for farmworkers during a virtual meeting with California students.

Tom Vilsack joined former Congressman Sam Farr, a Democrat from the central coast, in a “fireside chat” as part of Greater Vision, a program sponsored by California State University Monterey Bay and the Grower-Shipper Association Foundation. The program, which was open to the public, had more than 400 participants, according to CSUMB President Eduardo Ochoa. This is the first time in its 15 years the Greater Vision program has featured a sitting secretary of agriculture.

Vilsack said he was “very disappointed” that the Senate parliamentarian didn’t allow the Farm Workforce Modernization Act to remain in the senate reconciliation bill “because that would have helped, basically, provide stability for this ag workforce.” What especially struck him, Vilsack said, was that the provisions to help farmworkers came from a joint effort of unions and growers “and they worked out a very solid compromise” that passed the House with a bipartisan vote.



Secretary of Agriculture Tom Vilsack appears in a Zoom webinar for CSU Monterey Bay students and the public.

But Vilsack expressed confidence in two of the department’s priorities, climate and equity. “We continue to deal with equity issues in terms of unserved and underserved populations,” he said, adding that with nearly 90% of farm families relying on off-farm income, he wants to make sure developments in climate-smart agriculture present financial opportunities. He also wants to increase the resiliency of the food system and reduce consolidation, which are weaknesses made plain during the early weeks of the pandemic. He said a grower who can show a fruit or vegetable “has been generated through sustainable practices” needs a market destination that will reward those practices. And he added that USDA can support that type of market by “using our procurement dollars.”

Vilsack also offered listeners a broad description of USDA’s myriad career opportunities from agronomic support for farmers to servicing home and business loans to climate research and he said USDA is the cabinet department that serves the most rural residents.

“Young people go into the service of their government and their country in an effort to give back,” Vilsack said, adding that at USDA “you’re making a difference every single day you come to work.”

California eases on-farm slaughter, but meat supply chain still strained

Small producers raising goats, sheep and swine will likely benefit from a bill signed into law last week that will make it easier to sell livestock at the farm where it was raised. Gov. Gavin Newsom approved the measure soon after a new report revealed how meat processors have continued to face steep challenges due to the pandemic, drought, wildfires and a marketplace in flux.

In praising the passage of Assembly Bill 888, Jamie Johansson, president of the California Farm Bureau, which sponsored the legislation, said that providing an exemption from inspections for mobile slaughter operations targets systemic weaknesses within the food supply chain.

“AB 888 will help address meat processing bottlenecks by providing more options to safely slaughter goats, sheep and swine locally,” said Johansson. “By allowing for diversification in ranch revenue streams, this bill ensures that small ranchers can stay on the land, bringing down fuel loads while feeding families.”



A mobile slaughter operation in Washington cuts travel time for livestock producers. (Photo: USDA)

Sheep ranchers have urged lawmakers to provide more support for their efforts to graze down dry vegetation to prevent wildfire spread.

Marcia Barinaga, who runs a traditional Basque sheep ranch along the eastern shores of Tamales Bay in Marin County, helped the Farm Bureau craft the measure. It gained broad support from livestock trade groups as well as the Natural Resources Defense Council and sailed through both houses with no opposition.

AB 888 rode a wave of support by serving as an extension of a popular 2018 bill signed into law that delivered the same exemption for beef cattle.

And USDA has already granted this exemption for all livestock producers at the federal level.

The bill allows ranchers to sell an animal directly to the consumer. This offers added animal health benefits by alleviating stress during transit and reducing the potential risk of injury, according to Robert Spiegel, a policy advocate for the Farm Bureau. He added that it would meet new and growing preferences for California consumers, who are increasingly seeking local relationships with sustainable producers to learn about farm practices and animal husbandry, and to support local businesses.

“The bill develops and encourages these new business opportunities for small-scale agriculture and leads to dynamically changing food preferences for all Californians,” Spiegel told the Assembly Agriculture Committee earlier this year. “So let’s continue to support producers and consumers looking for a safe and sustainable solution to locally raised livestock.”

The bill’s author, Assemblymember Marc Levine of San Rafael, shared similar arguments, adding that AB 888 will create a much-needed opportunity for craft butchery operations and will strengthen local food systems.

“Providing these small businesses with more flexibility through on-farm harvest is a more humane way to treat the animals and is better for our environment,” said Levine.

The proponents acknowledged the bill provides limited relief to producers and in specific circumstances it could help to avoid the sort of food disruptions that took place in 2020 during the COVID-19 pandemic.

The UC Davis Food Systems Lab last month published a study revealing, among many other hurdles, a lack of access to slaughtering services for small and midsize meat producers. Already faced with a market concentration that favors major meat companies, small producers have struggled to stay in business.

“Remote or mobile slaughter operations are extremely important to small-scale producers,” the authors write.

Yet California has just 56 such operations, which “is likely to be insufficient capacity to serve the needs of the high-value meat sector.” Along with passing AB 888, the report recommends CDFA work with the Legislature to create a California meat inspection program, which would level the playing field for the small to mid-scale producers within this sector.

USDA’s CCC takes on big role as presidents look to fund priorities

Following the lead of former President Donald Trump, the Biden administration is looking to carry out policy priorities and pour billions of dollars into the farm economy without having to go to Congress to get directions on how to spend the money.

The key is the Agriculture Department’s broad legal authority, which dates back to the Great Depression, to use its Commodity Credit Corp. account to support farm income, protect the environment and develop new markets.

Last week, Agriculture Secretary Tom Vilsack announced plans to potentially tap the CCC to fund large-scale projects that would help develop markets for “climate-smart commodities,” including carbon offsets and biofuels.

“The CCC resources can be used to fund this effort, and if they are used, they will be used at a significant level that will allow us to accomplish the purpose of this initiative without compromising CCC’s other important role to support farm bill programs and emergency needs as they arise,” Vilsack said in a speech at Colorado State University.



Ag Secretary Tom Vilsack

Vilsack also announced plans to spend \$3 billion from the CCC for efforts to combat African swine fever, promote agricultural drought resilience, relieve agricultural supply disruptions and assist schools in dealing with supply issues related to the COVID-19 pandemic.

Republicans, who slapped restrictions on Vilsack’s use of the CCC when he was serving under then-President Barack Obama, don’t control Congress now and have shown little inclination to seek new restrictions on his use of the account.

For farm groups, the CCC provides a rich source of funding to address concerns outside the farm bill. Ag groups lobbied for increasing the CCC’s spending limit in 2020, and the Food and Agriculture Climate Alliance, a coalition that includes many of the largest farm organizations, has called for using the CCC to assist farmers in addressing climate change.

The top Republican on the Senate Agriculture Committee, Arkansas Sen. John Boozman, told *Agri-Pulse* on Tuesday that he wanted to see more details on Vilsack’s planned use of the CCC for climate-related projects.

“My first goal there is that whatever we do is producer-driven. That’s so so very important,” he said.

He added, “We will be supportive ... as long as it’s producer-driven” and steers clear of imposing any mandates on farmers.

The CCC is something of a revolving account from which USDA can borrow up to \$30 billion a year. Congress annually reimburses whatever amount the department spends from the fund.

Before Trump, recent administrations had largely used the account for dispensing commodity and conservation program payments, extending farm loans and providing relatively limited amounts of disaster assistance or other aid.



Sen. John Boozman, R-Ark.

From fiscal 2007 through fiscal 2018, spending from the CCC exceeded \$15 billion once, in 2016, according to an analysis by the Congressional Research Service.

Then, Trump authorized the use of CCC to compensate producers for the impact of his trade war in China, effectively using CCC as a political counterweight to China’s retaliatory tariffs through the direct payments offered under the Market Facilitation Program. The Trump administration also relied heavily on CCC again when the COVID-19 pandemic struck in 2020 and the Coronavirus Food Assistance Program was unveiled. CCC spending topped \$27 billion in FY19 and exceeded \$40 billion in FY20. (Congress provided a special, \$14 billion appropriation to the CCC at the outset of the pandemic to enable USDA to exceed the \$30 billion borrowing limit.)

USDA hasn’t provided an accounting of its CCC spending for FY21, which ended last Thursday, but earlier this year the department estimated that Congress would need to reimburse the fund for about \$26 billion.

Trump’s heavy spending from the CCC went off with “almost no criticism. I’m sure that message wasn’t lost on Secretary Vilsack,” said Joe Glauber, who served as USDA’s chief economist from 2008 to 2014. What congressional criticism there was of Trump’s CCC-

funded initiatives was focused primarily on how the programs were structured rather than his use of the CCC to pay for them.

As a testament to USDA's expansive authority under the CCC Charter Act, the late House Appropriations Chairman Jamie Whitten, D-Miss., once said that "nobody needed anything but CCC to provide any assistance a farmer might need," according to Bill O'Conner, a longtime GOP aide to the House Agriculture Committee.

"USDA has justified some rare and unusual things with CCC funds, (but) they have all centered around direct assistance to farmers," O'Conner said.

Congressional Republicans imposed restrictions on the account after Vilsack, who served all eight years of President Barack Obama's administration, tapped the CCC to provide disaster assistance to farmers in Arkansas ahead of the 2010 congressional elections. At the time, then-Senate Agriculture Committee Chairwoman Blanche Lincoln, D-Ark., was unsuccessfully running for reelection against Boozman, then a member of the House of Representatives.

The restrictions weren't lifted by Congress until 2018, when Trump was launching his trade war with China.

Despite the restrictions, Vilsack still managed to use the CCC for some novel purposes, both of which had support among many lawmakers: To promote the usage of higher blends of fuel ethanol, he tapped the account in 2015 to provide \$100 million to subsidize blender pumps.

In 2016, he provided \$327 million in payments to cotton producers in lieu of declaring cottonseed eligible for farm bill programs, something he said he couldn't do legally.

As a practical matter, the \$30 billion cap will limit the size and duration of the Biden administration's climate-related spending. USDA must manage the fund to ensure it has enough money to cover payments that need to be made to farmers; payments under farm bill commodity programs rise and fall depending on commodity prices and production.

Vilsack provided no estimate of how much he might use in CCC funding for climate projects, but he made clear in his speech that he wasn't proposing to use the CCC to set up a carbon bank that would buy and sell carbon credits, an idea that has drawn sharp criticism from Republicans on the House and Senate Ag committees.

Creating a long-term program to pay farmers for reducing greenhouse gas emissions would be hard to do, given the \$30 billion cap on the account and the variability in funding needed for farm bill programs and disaster assistance, said Glauber.

But one-off expenditures for projects such as installing methane digesters on livestock operations "or putting GHG-reducing technologies in place would not necessarily entail a long-term commitment of funds," Glauber noted.

A former congressional aide said it remains to be seen whether lawmakers will try to reimpose some restrictions on the CCC down the road.

"It all comes down to whether the Ag committees want to reclaim the driver's seat. It's so hard for them to get stuff done in a farm bill, that these other pathways have seemingly been given a pass," the former aide said.

'Middle ground' on WOTUS elusive if not impossible

EPA Administrator Michael Regan has said repeatedly he wants to craft a “durable” definition of “waters of the United States” in the Clean Water Act — one informed by Supreme Court precedent and input from a variety of stakeholders.



EPA Administrator Michael Regan (Photo: Joy Philippi)

The goal is to get a rule that could survive multiple administrations and inevitable court challenges. But it will be challenging, if not impossible, to come up with a definition that can satisfy all sides in the ongoing debate.

"That's the million-dollar question," said Ryan Yates, managing director of public policy at the American Farm Bureau Federation, when asked whether a definition could be written that could be accepted by farmers, environmentalists and the federal agencies themselves.

“I can't really tell you a middle ground that could even have the possibility of having support among the different interest groups,” says retired Justice Department Clean Water Act attorney Stephen Samuels.

“Everyone’s got their own agenda,” he says. “And if you do anything to make one of those groups a little happier, you're making all the other groups less happy.”

The dividing line has been pretty clear from early in the latest round of rewriting. Environmentalists were, for the most part, happy with the Obama administration’s 2015 Clean Water Rule (aka “WOTUS”) while industry groups, including most farm organizations, preferred the Trump administration’s Navigable Waters Protection Rule (NWPR).

“We’ve learned lessons from both, we’ve seen complexities in both, and we’ve determined both rules necessarily did not listen to the will of the people,” Regan told House appropriators in April.

The 2015 Obama rule was struck down by courts covering about half the states in the country. The NWPR was invalidated nationwide by a federal judge in Arizona. Even before that decision, however, EPA and the Corps said that the NWPR “is leading to significant environmental degradation,” Regan said in June.

The hope of all involved in the process is that the next regulatory attempt will result in a solution that can stand the test of time. Ideally, Congress would rewrite the ambiguous law, which aims to “restore and maintain the chemical, physical, and biological integrity of the nation's waters,” but given the difficulty of getting just Democrats to agree on the issue, the chances of that happening are slim if not non-existent.

The law emphasizes protection of “navigable waters,” but then defines that as “waters of the United States, including the territorial seas,” but without any further explanation, which has led to decades of confusion over the extent of the government’s jurisdiction.

For Scott Yager, chief environmental counsel at the National Cattlemen’s Beef Association, a “durable” rule means one that can survive Supreme Court review.

“They’re going to have to be very thoughtful, and insightful, and collaborative, and inclusive in the process,” Yager said of the EPA and Army Corps of Engineers, which have joint jurisdiction over the CWA’s Section 404 program. “Because we know that this issue is so politicized, one false move and it's going to get capsized.”

Regan has emphasized repeatedly that he wants input from farmers, and the agency has announced it will hold regional roundtables this winter on the WOTUS rewrite.

"Can compromise be found? I don't know," Yates said. "I don't know what that looks like." He said he could not comment in detail until EPA and the Corps release a proposal, but said, "We thought [the NWPR] was a very good compromise rule."

The ag sector, and U.S. industry in general, have embraced the idea that “navigability” must be essential to any definition of WOTUS. That’s why they liked the Trump administration's Navigable Waters Protection Rule and its emphasis on navigability in defining the scope of regulated waters. The NWPR also eliminated protection of ephemeral streams — those that flow only as the result of snow melt or rainfall — and regulated intermittent streams only if they contributed flows to navigable waters.

“The Navigable Waters Protection Rule is a rule a lot of these groups wanted,” National Wildlife Federation Director of Legal Advocacy Jim Murphy said. “And they feel, whether it's genuine or not, that the Clean Water Act interferes with their ability to do business.”

Murphy, however, points to exemptions already in the law for “normal farming” activities such as plowing, seeding and cultivating, and holds out hope that some in the farming community will come around to the view that strong Clean Water Act protections are needed, particularly with climate change-caused flooding and drought which “is only going to get worse.”

Asked about ag’s opposition to protections for ephemeral streams, Yager says farmers and ranchers “do want to preserve water features and use them,” but they also don’t want those features to prevent them from making necessary improvements to their operations.

He said he’s concerned that EPA and the Corps “are justifying this whole ‘repeal and replace’ of the Trump rule based on the arid Southwest, and a number of negative jurisdictional determinations that came out of Arizona and New Mexico.”

That suggests to him that EPA and the Corps want to regulate ephemeral features. “If that's the case, we're going right back to 2015,” he said. “And we're going to fight the same exact battle.”

It was a federal judge in Arizona who struck down the NWPR, citing the risk of “serious environmental harm,” particularly in the dry Southwest states.



Scott Yager, NCBA

Yager would like to see EPA conduct a “meeting of the minds” with agricultural representatives to work out a deal that both sides could live with.

EPA also should meet with environmentalists, he said, but added he thinks “environmental groups have the home base advantage with the people who are running the EPA right now.”

Samuels doesn't buy that. Citing his own experience dealing with EPA, he said, “They would lean over to not upset farmers more than they would to not upset environmentalists.”

Samuels thinks there needs to be a broad effort to gather information from “people who are actually on the ground and understand what's going on with the flow of water — people who run farms.”

Steve Moyer, vice president of government affairs at Trout Unlimited, agreed, saying it would be a "really good step" to bring together knowledgeable people on all sides of the issue.

Moyer also said he does believe a compromise can be reached and that "there's a cadre of really good agency people in place" who want to come up with a lasting solution.

Samuels, however, said, “I'm a strong believer in making an attempt to get a proposal either for ultimate rulemaking or for legislation that has the support from the beginning of the regulated community, as well as environmentalists,” he said, but added, “It’s pretty much wishful thinking, right?”

USDA bets big on OIE to help protect US pork trade amid ASF fears

The U.S. is counting on an expensive campaign to protect nearby territories from African swine fever as well as international respect for the World Organization for Animal Health to protect American pork production and exports.

ASF has been detected in the Dominican Republic and Haiti, and if it reaches the U.S. territories of Puerto Rico or the U.S. Virgin Islands — just short boat rides away — major pork importing countries would be within their rights to ban all U.S. pork. That is, unless the U.S. successfully uses a new provision in the World Organization for Animal Health’s chapters called the “protection zone.”

“Think about it as an insurance policy in case Puerto Rico or the U.S. Virgin Islands gets infected,” said Jack Shere, associate administrator of USDA's Animal and Plant Health Inspection Service. “Those (OIE) rules are the basis for that protection zone. ... It allows countries that know foreign animal disease is on their borders to protect themselves by putting in this protection zone.”

APHIS is spending millions of dollars to help the Dominican Republic and Haiti stamp out ASF, the virulent and deadly swine virus that can devastate a country’s pork industry, as well as erect the protection zone around the two nearby U.S. territories, Puerto Rico and the U.S. Virgin Islands.

The World Animal Health Organization, which also goes by the French acronym OIE, is now reviewing the U.S. claim that it has properly installed the protection zone by taking measures to prevent the entry of the disease, establishing a surveillance system to detect the virus and

erecting barriers that would prevent the disease from spreading to the U.S. mainland if it were detected on the islands.

Agriculture Secretary Tom Vilsack announced last week \$500 million in funding that USDA will use to combat ASF. A portion of those funds will go to helping the Dominican Republic and Haiti stamp out the disease as well as maintain the protection zone, according to an APHIS spokesperson.

The spokesperson said “USDA is transferring \$500 million from the Commodity Credit Corporation to APHIS to support activities related to African swine fever findings in pigs in the Dominican Republic and Haiti. The funding allows APHIS to work with our international partners to conduct monitoring, surveillance, prevention, removal, and other activities to prevent the spread of ASF and protect the health of the nation’s swine herd and U.S. trade,” the spokesperson said. “Additionally, the funding will support enhanced exclusion, surveillance, testing, laboratory, and response preparations on the mainland, Puerto Rico, and the U.S. Virgin Islands.”



Jack Shere, APHIS

Keeping ASF out of Puerto Rico and the U.S. Virgin Islands is key, and that’s why APHIS says it is doing everything it can to help eradicate the disease from the Dominican Republic and Haiti, but the protection zone and the layer of insulation it places between the U.S. territories and the U.S. mainland is even more important, according to U.S. industry officials. That’s why the U.S. banned all pork and live pigs from the territories even though the disease isn’t there.

If the disease does spread there, APHIS is counting on the protection zone to make sure that U.S. pork exports are not impacted.

But there is no guarantee. The OIE is recognized by the World Trade Organization and the Food and Agriculture Organization of the United Nations but does not have any regulatory authority over its 182 member nations, which can choose to disregard its standards and procedures.

The National Pork Producers Council is also hopeful that foreign pork-importing countries will respect the protection zone, says Liz Wagstrom, the organization’s chief veterinarian.

“NPPC has been very supportive of the actions that USDA is taking to protect the U.S. pig industry from potential loss of exports, were ASF to be found in Puerto Rico or the U.S. Virgin Islands,” she told *Agri-Pulse*. “Our trading partners are members of the OIE and we should expect they will abide by the OIE code and accept the protection zone.”

Shere tells *Agri-Pulse* he is certain the APHIS submission of a protection zone plan to the OIE is complete and the organization will soon post it for all members to read. But USDA representatives will also be contacting major pork importing countries to make sure they are aware of the zone to ensure trade will continue.

“Now that the dossier has been submitted to the OIE to establish the protection zone, APHIS will work to confirm that individual countries recognize and accept the zone,” the USDA agency said in a statement. “APHIS is confident that its many existing preventive measures and mitigations, along with the protection zone, will protect our livestock industry from ASF and ensure the continued export of pork.”

Virtual fencing allows producers flexibility for cattle grazing

It can be costly and time-consuming for ranchers to keep their cattle inside the pasture using just traditional and electric fencing, but researchers are looking into a possible virtual solution.

The “fence” isn’t actually a physical fence at all. Instead, it comes in the shape of collars — called “cattle riders” by Vence, one of the start-ups that produces the technology — that hang on the necks of cattle and use GPS and cellular capabilities to warn the cattle when they get too close to a boundary set by the producer.

The collars communicate a cow’s location to a nearby base station, which then uploads the cow’s coordinates to the cloud and into an app. Producers can use the app to draw the fence’s perimeter wherever they want.

“We provide the flexibility to bring in a lot of different grazing ideas that you can autonomously adapt to,” Josh Zimmerman, Vence’s director of business development, told *Agri-Pulse*. “You can pivot on the fly, so to speak.”

The technology allows ranchers to digitally track their herds and rotate them through certain areas of the pasture. It’s being eyed by researchers and federal agencies as a potential way to practice more effective rotational grazing, improve water quality by keeping cattle from overusing riparian areas, and eliminate physical fence boundaries that are a hindrance to local wildlife.

Paul Meiman, an associate professor and extension specialist at the University of Nevada, Reno, sees a lot of potential for virtual fencing on the large, sprawling pastures of western states. Once the physical fences, which cover miles and miles of land, are erected, they can’t be easily moved.

“Once you make the investment, money and time and you build that fence, it’s in one location and it stays in that location,” Meiman said. “The virtual fences are dynamic — you’ve got a lot more flexibility in managing the distribution of animals across a landscape if you can move the boundaries.”

Meiman is part of a team of researchers at the university that — with funding from several agencies including the U.S. Fish and Wildlife Service — has been studying the potential uses for virtual fencing.



Paul Meiman, University of Nevada, Reno

They’ve been corralling cattle into an area at varying densities and have noticed that the fence seems to work equally well in all of their tests. Additionally, he believes that the cattle would stay in those areas long enough to eat down to four to six inches of stubble.

“There wasn’t an obvious relationship between increasing stock density and fence effectiveness,” he said.

In order for virtual fencing to be effective, cattle need to be trained to understand where the boundaries are. Vence has been working with the producers and universities to train the livestock to respond to the collars on their devices.

For a one- or two-week period, the cattle are equipped with collars and kept inside a traditionally fenced enclosure, and the virtual boundary is set along the fence line. When cattle approach it, they hear a beep and, if they move closer, they get a shock.

Then the cattle are moved to an area with no real fence and are just exposed to the audio and electric stimulation.

During this training period, the cattle learn that when they hear the beep, they should turn around. Meiman said cattle consistently respond to just the audio alone; even if one or two head leave, the rest of the herd stays in.

“These are more porous boundaries,” he said. “They're not a hard and fast thing. If an animal or a small number of animals get out but the rest of the herd is still inside, the herd is enough of a draw to pull those animals back in.”

The shock the cattle receive is less than that of a traditional electric fence, and if an animal does get out, it will not continue to be shocked, according to Ryan Reuter, a professor of animal and food sciences at Oklahoma State University.

Oklahoma State has around 80 cows currently equipped with collars. Reuter said most of them respond to the training.

“There are a few animals that don't, and so we have to work with training those animals or potentially removing them from the herd so that they're not exposed to the collar too much,” he said.

With an \$800,000 grant from the EPA, Oklahoma State has been studying how the technology can be used to improve water quality. Kevin Wagner, director of the Oklahoma Water Resources Center, said overgrazing in riparian areas can negatively impact water quality.

However, he also said landowners with large ranches typically don't want to build a fence along a stream to close off those areas to cattle.

“You don't have to worry about building a fence and then getting washed out by a big flood event,” Wagner told *Agri-Pulse*. “And if you need to provide cattle access to water for certain periods of time, you can change the fence as conditions change in your pasture.”

According to Wagner, the impact of cattle on riparian areas can be a particularly big issue for the 155 million acres of public lands where grazing is allowed in the West. The Bureau of Land Management and the U.S. Forest Service have become increasingly aware of water quality issues on these lands.

Rather than having producers buy the collars, Vence operates off an annual service charge — \$35 per cow per year. The company provides support and maintenance for the technology.

In addition, producers pay to erect base stations, which can range from \$7,000 to \$12,000. However, these are one-time installations and the stations are entirely owned by the producers.

Colin Tobin, a research animal scientist at North Dakota State University, said from what he's seen, virtual fencing is being adopted at a slow rate because the technology is still being developed and currently comes at a fairly high cost. He believes prices may decrease in the next few years as the technology improves and more companies enter the marketplace.

However, some producers, like Jorgensen Land and Cattle in South Dakota, are already testing and integrating virtual fencing into their operations.

Zimmerman, the director of business development for Vence, said despite the product just getting started commercially, it has seen quite a bit of interest from producers. He says Vence has applied for conservation innovation grants through USDA's Natural Resources Conservation Service with the goal of getting the product eligible for the Environmental Quality Incentives Program. Producers can get EQIP grants to offset the cost of equipment.

Aside from Vence, other companies developing virtual fencing technology include Gallagher and the U.K.-based Nofence.

Meiman said aside from a few problems with collars breaking or falling off the cattle, the technology has been effective. He doesn't believe that it will completely eliminate the need for traditional fencing, but he does see it as an appealing alternative for producers.

"I think there's a lot of potential," he said. "It's probably best viewed as another tool for the toolbox — not the answer, the silver bullet or 'the tool.' ... All the things that we have to use for grazing management already, we'd have those still and hopefully an additional one."

Farmers accept earlier, larger role in ag tech development

Farmers have long played a part in bringing new seeds and other technologies to market by trying things out on a small scale before a company makes a new product widely available. But now some ag tech startups are leveraging the knowledge and creativity of farmers to engage them earlier and more broadly in new product development.

Both Sound Agriculture and InnerPlant, Silicon Valley companies aimed at bringing climate solutions to millions of agricultural acres, have publicly engaged farmers to help them develop and fine-tune their offerings.

Brandon Hunnicutt, a farmer in Giltner, Nebraska, says he and his family always look for new, better ways to farm. They've been involved with trials through university extension projects and try to keep abreast of what's on the horizon. Social media led him to connect with InnerPlant CEO Shely Aronov, whose company used existing molecular biology and ecophysiology research to develop genetically engineered seed traits that allow the plants to reveal when they have a stress response and what kind of stressor. Whether a pathogen or a lack of water, Aronov says when a plant's in trouble her company's technology will cause a color change that can be picked up with satellite imagery.



Brandon Hunnicutt

"There are technologies that intrigue me and then there are technologies that *really* intrigue me," Hunnicutt said. "This got into the really intriguing category." He said the idea that the plants themselves could alert the farmer to their needs "is fitting my mindset of where I see ag going."

Hunnicutt said 25 years ago, the intersection of GMOs and technology launched a new era. "We're now at that next intersection of biologics and sensor technology," he said.

While InnerPlant's goal is for farmers to treat plants early and specifically to improve results with fewer chemicals (such as fungicide or insecticide), Sound Ag has a focus on nutrient efficiency.

Through both companies, Hunnicutt has gotten to meet other farmers who are similarly open to new products.

"Obviously we'll kind of be that front line," he said, of early adopters. Getting to know some of the others has been fun and also helpful, he said, because eventually, they will be the ones who bring a product to many others.

"There's multiple things to try and you realize that all it takes is finding that one thing that has benefit for what you're trying to do," he said.

With InnerPlant, Hunnicutt is one of about 60 farmers who collectively manage 300,000 acres and have agreed to a \$500 annual subscription for a product that won't be available for another couple of years.

Aronov said once they had confidence their trait would work, they decided on a "go to market" strategy that would engage these farmers, with skin in the game, early on. She faced naysayers. She told them the farmers "might say no, but if they say yes, then we know that they want us to exist."

With enough participants in what the company calls its InnerCircle, she says InnerPlant can incorporate farmer feedback early and often. Her goal, she said, is to "design something that's really simple for the user so there's no barrier to entry." To achieve that, she's counting on farmer contributions all along the way, rather than only expecting feedback near the end of the process when it might be too late to make requested changes.



Shely Aronov, InnerPlant

Hunnicutt says the annual fee is "not terribly high to end up getting with a good network of farmers and other people and start making connections."

He said early access to the product when it eventually comes to market may be a tangible result, but participation is giving him "ancillary benefits that to me probably mean as much as anything else." The upfront cost, he says, means people have a reason to pay attention and get involved. Some are like him and willing to try anything while others have an attitude of "we'll do it incrementally." The combination of approaches makes for good discussion, Hunnicutt said.

Farmers told InnerPlant which stressors they wanted identified first, Aronov said. The InnerCircle will also guide the company on decisions about the level of detail farmers want in the data, how often they want images taken, whether they want a new stand-alone software package or something that fits with another they're already using, and other details. She said what the farmers have in common with each other and with the company's mission is that "they want to see change in the industry."

Aronov said InnerPlant has some seed company partners, though she would not say which ones. In June of 2021, the company closed on \$5.6 million in pre-Seed funding led by MS&AD Ventures, the investment arm of Japanese insurance giant MS&AD Insurance Group, according

to Global AgInvesting. Other participants in the round included Bee Partners, Up West and TAU Ventures.

InnerPlant debuted its first product, the InnerTomato, in 2020 and then moved to expand the technology to soybeans and cotton. She hopes to expand into wheat and corn in the coming years. If successful, she says the products will mean vast acres of major crops are “using less inputs and getting better results.” She expects to bring her GM seeds to market at a price point matching or lower than existing stacked-trait seeds so farmers “can do what’s better for them economically. And it happens to be better for everyone else on an environment and climate level,” she said.

Adam Litle, CEO of Sound Ag, also focuses on row crops for the sheer number of acres they account for. Source, a non-microbial soil enhancer applied as a foliar spray, is the company's first commercial product. Hunnicutt tried it and his corn saw a bump of about 10 bushels per acre the first year, and that was in terrible conditions, he said. Like InnerPlant, Sound Ag wants its innovations to be seamless and easy for farmers to adopt. But unlike InnerPlant, Sound didn’t engage farmers until it was sure it had something that works.

“We waited for three full years of data,” Litle said, before asking a small number of farmers to take a chance on their fields. Litle hopes ultimately Sound will “scale up with credibility because word-of-mouth is so much more effective in ag than some Silicon Valley startup trying to tell farmers what to do.”

Hunnicutt said Sound swayed him not only because they took care of running the trial but because they told him “we’ll use a third party to analyze the data.” Hunnicutt said he liked that because “you knew you weren’t just getting a sales pitch, which was very refreshing.”

Hunnicutt also liked the notion that Source would increase nutrient efficiency, which could lead to higher yields or reduced dependence on fertilizer or, eventually, both. “There’s that long-term play as well,” Hunnicutt says, such as soil health benefits and potentially even carbon market participation, so the time invested now could have myriad dividends.

Litle says farmer-members of the company’s Advisory Council decide how much Source they want to use and Sound gives them an incentive. “We guarantee you will get at least 1x ROI (return on investment),” he said, even though the company expects closer to a 3x ROI. Litle said it was important to be able to say to early adopters, “there’s no way you’ll lose money on this thing” because he knows “how much snake oil has been sold in the past.”

Advisory Committee members come from several states, which Hunnicutt appreciates because it means the aggregate data isn’t too skewed to a particular location. Litle said giving farmers a few years of early access to the product and data on their own fields is key to launching a word-of-mouth rollout. “Farming is local and most growers will not trust data unless they see it on their own fields,” he said. Advisory Council farmers need to see results from Source “before they go evangelize it.”

Whether they are cautious early adopters or zealous evangelists for a new company’s products, farmers who spend time with each other working out the details and discussing the data are prepared to answer questions from their neighbors. For Hunnicutt, it’s a role that comes naturally.



Adam Litle, Sound Ag

“You have a product, I’ll try it. If you give me the product, great, if you want 10 acres, 20 acres of trial and I’ve got to pay for the product, that’s also cool,” he said, because “usually it works out.”

That’s certainly what the startups are hoping.

News Briefs:

Winter weather forecast offers low likelihood of drought relief in the west. Federal weather officials are predicting a 70-80% chance that this winter will bring a La Niña weather system to the northern hemisphere. That could mean dry conditions continue across the west. The most recent reporting from the National Oceanic and Atmospheric Administration shows neutral conditions, meaning Pacific Ocean water temperature is at or below average, but that is expected to transition into the cooler ocean temperatures associated with La Niña during the coming months, potentially through February. In practical terms, NOAA projections show fall and winter precipitation will likely be lower than normal in much of the country. The outlook is for a 40-50% chance of below-normal precipitation for all of Texas and New Mexico and parts of Arizona, Utah, Colorado, Nebraska and Oklahoma. A far greater swath of the country — including southern California and Nevada, much of the Mountain West and Great Plains, all of Louisiana and Florida and most of Arkansas, Mississippi, Alabama, Georgia and South Carolina — has a slightly better forecast of “leaning below” (33-40% chance) normal precipitation. The Pacific Northwest, Michigan, Vermont and the northern reaches of Indiana, Ohio, Pennsylvania, New York, New Hampshire and Maine could see above-normal precipitation this winter. As California begins a new water year with the start of October, the projections suggest the traditionally wetter winter season may not bring enough rain and snow to pull the state’s driest areas out of drought, though much of northern California falls under the “neutral” prediction. That’s having an equal chance of a wetter or drier winter than normal.

Invasive pests threaten to make inroads to California. CDFA pest prevention experts have been busy fending off several threats to California agriculture, according to CDFA Secretary Karen Ross, who presented updates to the State Board of Food and Agriculture on Tuesday. Topping the list was the spotted lanternfly, which poses a grave threat to grapes and stone fruit. CDFA border stations and inspection programs recently found carcasses of the invasive planthopper. “But it’s a close call,” said Ross. “My heart stops every time we have a call from someone who thinks they have a spotted lanternfly that’s a live one.” Another threat to vineyards has been the glassy-winged sharpshooter, which has been active in the state since 1994. The department confirmed a case on urban properties in Solano County last weekend, with Ross calling that “too close to winegrape growing country for everyone’s comfort.” On Friday, the animal health division identified the possibility of avian influenza. While it was the low-path form of the virus, Ross cautioned that this is the time of year for bird flu to spread. “This kind of vigilance is what really prevents massive impacts to our animal health and our livestock programs as well as what we do on the plant side,” said Ross of her department’s efforts.

New partnership aims to reduce synthetic fertilizer use. Two companies that focus on environmentally friendly solutions to modern problems have formed a partnership they say will reduce agriculture’s dependence on synthetic fertilizer. Anuvia Plant Nutrients and Novozymes plan a suite of products that “will require less synthetic fertilizer per acre, while achieving equivalent or better crop performance,” the companies said in a press release. The partnership plans to start with a combination of Novozymes’ phosphate solubilizing microbial solutions and Anuvia’s sustainable bio-based fertilizer. The new product will focus on macro-nutrient efficiency and the partners hope it will add up to 10 units of phosphorus in the first generation. The companies say they will expand into reducing the use of synthetic nitrogen and potassium as

they develop future products. Novozymes creates innovations with enzymes and microbes while Anuvia is in the business of bio-based fertilizers. Working together, the two expect to develop products from microbes and enzymes that will increase nutrient efficiency and plant health in agriculture.

Farm Hands West: Fraser promoted at the California Avocado Commission

The California Avocado Commission advanced **Angela Fraser** to director of trade and legal affairs. Previously working for CAC for the past 21 years, Fraser previously served as the director trade affairs. She joined the commission in 2000 as merchandising administrative coordinator.



Angela Fraser

Taylor Farms has brought on **Joe Pezzini** as its new senior director of agricultural operations, effective Oct. 11. Pezzini joins Taylor Farms from Valley Pride, Inc. where he held the role of general partner. Before that he served as the CEO of Ocean Mist Farms, an organization he had worked for since 1983.

The Department of Agriculture has announced new key staff positions. **Linda Delgado** was appointed to senior adviser in the office of the secretary. She most recently served as the director of government affairs at Oxfam America. **Marni Karlin** is now the senior adviser for organic and emerging markets. Karlin previously served as the vice president of government affairs and general counsel of the Organic Trade Association. She also served as the founding executive director of the Controlled Environment Agriculture Food Safety Coalition. **Marcia Moore** will serve as the director of the Office of the Executive Secretariat. Moore most recently served as the chief of personnel and administration and was also a committee management senior analyst at the Department of Defense. Moore returns to USDA where she previously managed the Agricultural Research Service's Office of Scientific Quality Review, USDA's Committee Management Program, and environmental policy analysis. **Shawn Campbell** was hired to be a legislative analyst in the Office of Congressional Relations. Campbell most recently served as a special assistant to Sen. **Michael Bennet**, D-Colo.

The Senate has confirmed the nomination of **Tracy Stone-Manning** as director of the Bureau of Land Management.

Dorothy DeWitt, division of market oversight (DMO) director at the Commodity Futures Trading Commission, has stepped down as director. DeWitt has served in the position since she joined the agency in September 2019. **Meghan Tente**, associate director of the office of international affairs, will take over DeWitt's responsibilities and serve as acting director. Tente began her CFTC career in the division of clearing and risk and previously served in several different capacities in DMO from 2017-2020, including acting deputy director.

The U.S. Highbush Blueberry Council and North American Blueberry Council have hired **Leslie Wada** as senior director of nutrition and health research. For the past 20 years, Wada has worked as an independent consultant for companies in the food and agriculture industry. She is a registered dietitian with an undergraduate degree in nutrition and dietetics from the University of California, Davis, and a Ph.D. in nutritional sciences from the University of California, Berkeley.



Leslie Wada

The National Association of Conservation Districts has tapped **Jen Nelligan** as the organization's chief program officer and **Karla Maldonado** as its chief operations officer. Nelligan is the founder and president of Alitheia Advisors and has previously worked at USDA as an adviser to the Farm Production and Conservation deputy chief operating officer for business services. Maldonado joined NACD in 2017 as the organization's senior staff accountant.

After six years at NACD, **Sara Kangas** is leaving and heading to American Forests to be the new director of policy communications. Her first day with American Forest will be on Oct. 18. Kangas has served as the director of communications at NACD for the past two years.

Jen Daulby has left the Consumer Brand Association and has joined Indigov as its new chief of staff. She most recently served as the senior vice president of government affairs at CBA.



Marni Karlin

House Agriculture Committee Chairman **David Scott** has added and promoted three people on this staff. **Kelcy Schaunaman** was promoted to associate counsel and legislative assistant after previously serving as a legal clerk for the committee. **Paul Babbitt III** joins Scott's team as the subcommittee staff director for the conservation and forest subcommittee. Babbitt previously worked for Rep. **Tom O'Halleran**, D-Ariz., as his deputy chief of staff. **Chu-Yuan Hwang** will now serve as deputy chief counsel. She has been with the committee since March 2020 as senior counsel and before that worked as an attorney for the Office of the General Counsel at USDA, providing legal advice on the Supplemental Nutrition Assistance Program.

Ellen de Brabander has joined Elanco as the executive vice president of innovation and regulatory affairs. de Brabander succeeds current executive vice president **Aaron Schacht** on Oct. 18. de Brabander previously worked for PepsiCo as senior vice president for research and development, technical insights, digital solutions, and compliance. She has also held roles with Merial, now Boehringer Ingelheim Animal Health; Intervet, now Merck Animal Health, and the specialty chemical company DSM.

Prairie Farms Dairy has announced **Ed Mullins** has decided to step down as chief executive officer and executive vice president to assume a new role as senior executive officer. Mullins has a 40-year tenure with the company. **Matt McClelland** has been promoted to succeed Mullins as chief executive officer. McClelland was serving as senior vice president of sales.

Rania Khalaf now serves as Inari's first chief information and data officer. Khalaf joins Inari from IBM Research, where she created and led the global research strategy on AI-infused automation.

Patrick McDonnell has been appointed chief business officer for Biotalys, an AgTech company focused on enabling a sustainable and safer food supply chain. McDonnell comes to Biotalys from BASF where he was global lead business development for agricultural products.

Whole Foods co-founder and CEO **John Mackey** has announced he will retire in September 2022. In the next year, Mackey will transition his responsibilities to current chief operating officer **Jason Buechel**, who will then become Whole Foods Market's next CEO. Buechel has been COO since 2019 when he moved up from executive vice president. He joined Whole Foods in 2013 as global vice president and chief information officer.

Best regards,

Sara Wyant
Editor

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