

Blockchain: From bitcoins to blueberries

Intel partners with Oregon-based distributor on pilot project

By **GEORGE PLAGVEN**
Capital Press

BROOKS, Ore. — Blueberry harvest may be winding down across Oregon's Willamette Valley, but there is still plenty of activity happening at the Curry & Co. processing plant north of Salem.

Forklift drivers stacked crates of berries from local farms into large freezers on Aug. 21, while workers finished sorting and packaging the fruit as it passed along automated conveyor belts. From there, 8 million pounds of fresh blueberries will be shipped to major retailers such as Walmart, Costco and Kroger, as well as overseas to countries including South Korea, Taiwan and Singapore.

Aaron Ensign, president of Curry & Co., said it can be difficult to track so much produce through such a large supply chain. That's why the



From left, Aaron Ensign, president of Curry & Co. in Brooks, Ore., Darwin Sinn of Sinn Farms and Laura Rumbel, of technology company Intel, explain how remote sensors can trace the supply chain for fresh blueberries and upload real-time data using blockchain technology.

company recently partnered with technology giant Intel on a pilot project to test a new logistics platform using blockchain technology — the same tool responsible for tracking cryptocurrencies like Bitcoins.

"Blockchain is relatively new to us," Ensign said. "We were intrigued by the prospect of working with Intel to explore its value in agriculture."

Results of the project showed how blockchain can

help to deliver blueberries faster and fresher, providing near real-time data from the grower's field to the supermarket shelf.

Intel began developing its Connected Logistics Platform in 2017. The design works by placing remote sensors with shipments that continuously monitor the location and environment, such as light, temperature and humidity.

Temperature and humidity are especially important for perishable produce like

blueberries, which have to be chilled quickly after harvest to prevent them from over-ripening.

The data is then uploaded to blockchain, which acts as a digital ledger for every transaction in the supply chain. Each record — or block — is essentially a timestamp that shows where the shipment has been and how it was handled.

Because the data is shared over a network of computers, Ensign said they can closely

track berries and respond to potential issues in minutes, not days or weeks.

"Our goal is to provide customers with the most fresh and delicious product possible," Ensign said. "That ability to react in real-time I think is significant value, because blueberries are an expensive commodity. The value of some of these shipments is well over \$100,000."

Oregon was the top blueberry-producing state in 2018, with production hitting 131 million pounds. Washington was second at 127 million pounds.

Curry & Co. works with Oregon growers, including Sinn Farms in Silverton, which raises 150 acres of blueberries and blackberries. For the pilot project last summer, Intel placed 33 sensors with blueberries harvested from Sinn Farms and followed the shipments through processing at Curry & Co.

Kenton Sinn, co-owner of Sinn Farms, said he believes the technology has significant benefit for farmers as well as consumers. He pointed to the outbreak of E. coli in romaine lettuce in 2018 that sickened people in several states.

With blockchain, Sinn said the industry could pinpoint the source of the problem much faster than before, minimizing damage and improving transparency.

"If you can pinpoint disease outbreaks quickly, that's good for the whole industry," he said. "That shotgun approach now, it kind of shuts down the whole industry until they can figure out what's going on."

Ninette Vaz, Intel's global supply chain internet of things manager, said the project was successful in helping the company develop the second-generation of its Connected Logistics Platform model, which is now available commercially.

"We see a huge value for this industry," Vaz said. "You also know the quality has been guaranteed with data along the way."

Though Curry & Co. has not adopted blockchain record-keeping yet, Ensign said they are "absolutely interested" in the technology. He described it as the future for food safety and handling, and said this pilot project with Intel has given them a solid foundation.

Washington wildfire season less intense, lands chief says

By **MATTHEW WEAVER**
Capital Press

Washington was lucky to have a less intense fire season this summer due to cooler, wetter conditions, the state's commissioner of public lands said.

"While we have seen lots of fires start this year, with over a thousand fires, we have done a very good job of preventing any of these fires from becoming large and severe," Commissioner Hilary Franz said. She spoke during a Sept. 9 telephone town hall meeting in Spokane.

Nearly 129,000 acres burned in Eastern Washington and 679 acres burned in Western Washington this year. The department doesn't distinguish between land types, so the total number of acres that were agricultural or grasslands isn't known, spokeswoman Bobbi Cussins said.

Two of the most significant fires were in Grant County, much on sagebrush and cheatgrass, Franz said. One burned more than 25,000 acres and the other burned more than 40,000 acres.

On the second fire, irrigated agriculture helped keep the fire from spreading, Franz said.

Plenty of fuels remain on the landscape, "still vulnerable to even the smallest spark," Franz said.

"We think we are on the downhill slide of fires here in Washington," said Chuck Turley, wildfire division manager for the department. "We will start to spend less time on fire sup-



Hilary Franz, Washington state commissioner of public lands.

pression and more time on fire preparedness for next year."

Franz said the department also wants to address 2.75 million acres of unhealthy forests in Eastern Washington.

These forests have lost their natural resistance to wildfire, "which means they burn easier and more severely," she said.

The department has a 20-year plan to restore 1.25 million acres in Eastern Washington, treating 35,000 acres last year and 50,000 acres this year. The goal is to ramp up efforts and treat 70,000 acres each year, she said.

Franz said DNR has identified areas in Eastern Washington that represent the highest risks for fire, treating federal and state lands, and providing resources for local property owners.

"We're going in and we're removing the dead and diseased trees, the smaller diameter trees that are on that landscape that

weaken larger, healthier trees because they're all competing for water and soil nutrients," Franz said.

Removing weak or dead branches on the lower parts of trees reduces fuel that can lead to catastrophic fires.

"What we're trying to do is get back to the original healthy state of those forests," she said.

The timber is not going to waste, she said.

Franz pointed to Vaagen Timbers in Colville and Kattera in Spokane as examples of companies using smaller-diameter trees and dead and diseased trees to manufacture products such as cross-laminated timber and other types of engineered-wood building materials.

"If we invest proactively and address the problem of why we're seeing more catastrophic fires, rather than reactively in the face of smoke and flames, we can actually not only protect the environment, we can create local jobs and create more affordable and sustainable building products," she said.

More timber sales are also planned.

In the last five years, the department has offered more than 86 major timber sales on land it manages, with 41,000 acres of timber harvested. Last year the department generated \$94.8 million on common school trust land, which helps pay for school construction.

In the next two years, 40 timber sales are planned in Eastern Washington, covering 17,000 acres.

9th Circuit revives Clean Water Act lawsuit involving tile drains

By **MATEUSZ PERKOWSKI**
Capital Press

A federal appeals court has revived a lawsuit that alleges tile drains in California's Central Valley discharge pollutants in violation of the Clean Water Act.

The complaint was originally filed about eight years ago by a coalition of fisheries and environmental groups that claimed the Grasslands Bypass drainage system doesn't qualify for an agricultural exemption to the Clean Water Act because not all the discharged water originates from irrigation.

While "return flows from irrigated agriculture" aren't considered "point sources" of pollution under the law, the plaintiffs argued the project's tile drains also collected water containing selenium and other pollutants from land that's not used for crop production.

Due to the Grasslands Bypass system, water with those contaminants flows away from farmland — preventing the pollution of groundwater — and into a drainage canal that directs it into a slough and the San Joaquin River instead of local wetlands.

The system is regulated as a "non-point source" of agricultural discharge, but the plaintiffs claim it should require a federal permit under the Clean Water Act because it also serves fallowed farmland as well as non-agricultural property.

After those claims were dismissed, the plaintiffs challenged the relevant rulings before the 9th U.S. Circuit Court of Appeals, which has now determined a federal judge

committed legal errors in the case.

The 9th Circuit hasn't entirely rejected the judge's reasoning. Because separate environmental litigation required irrigators to fallow land in the area, finding that such retirements violated the Clean Water Act would now lead to "contradictory and illogical results," the appeals court said. Retired and fallowed lands are thus considered part of the crop production that's exempt from Clean Water Act permitting requirements.

However, the 9th Circuit has disagreed with the judge's opinion that requiring discharged water to consist "entirely" of return flows from irrigation would be "absurd."

Under the previous ruling, the judge found it was enough for a majority of the water to come from irrigation, but the 9th Circuit has ruled that "entirely" must be understood literally in this context.

"Given the many activities related to crop production that fall under the definition of 'irrigated agriculture,' Congress's use of 'entirely' to limit the scope of the statutory exception thus makes perfect sense," the appellate ruling said. "The text demonstrates that Congress intended for discharges that include return flows from activities unrelated to crop production to be excluded from the statutory exception, thus requiring an NPDES permit for such discharges."

The judge's interpretation led to the erroneous dismissal of the claim that a solar project in the area discharged pollutants that didn't qualify for a Clean Water Act exemption, the appellate ruling said.

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