

Audit faults Water Resources Department management

Improvements needed in planning, data

By **CLAIRE WITHYCOMBE**
Capital Bureau



Sean Ellis/EO Media Group
A sugar beet field in Eastern Oregon is irrigated in June. An audit released Thursday by the Secretary of State's Office calls on the state's Water Resources Department to improve its long-term planning and management of Oregon's water supply.

SALEM — An audit by the Secretary of State's Office calls on the state Water Resources Department to improve its long-term planning and management of Oregon's water supply.

The department is responsible for allocating water rights, enforcing the state's water laws and other aspects of water management. It's overseen by a citizen commission.

Noting that the state's water problems are positioned to

worsen, the secretary of state's findings say the department could do more to "sustain current and future water needs," protect groundwater, and collect and analyze information

about the state's water.

The audit, released Thursday, comes on the heels of the governor's 2015 county drought declarations and state efforts to prioritize water issues in their wake.

A legislative drought task force recently identified gaps in the state's systems and resources for preventing and responding to drought.

While the Water Resources Department gathers a lot of information about water supply, the department hasn't been able to analyze all of it, the audit found.

For example, the department's water availability models are based on decades-old data, although the department has 17 years' worth of information about streamflow measurement collected after 1987.

In other areas of water management, such as water use reporting, the department lacks data altogether, the audit found.

"Only about 20 percent of water rights holders are required to report how much water they use to (the Water Resources Department)," the audit states.

Agricultural users — who account for up to 85 percent of the state's water use — aren't required to report how much they use. As a result, the department lacks "a clear understanding of how much water is actually being used," the audit states.

Additionally, the department has focused more on collecting data on surface water than groundwater, demand for which is growing.

The audit also recom-

mended the department adopt an overarching plan to set long-term water goals, and improve communication and how it manages its workload.

Finally, the audit noted that planning is key to managing the state's water in the long run.

"There is growing pressure on Oregon's water system," the audit states. "The state relies on snowpack and rainwater for its water system, and it is unclear how climate change will affect future precipitation patterns and water availability."

The department's director, Thomas Byler, generally agreed with the audit's findings in a letter to Mary Wenger, the interim director of the secretary of state's audits division.

In many areas, Byler noted, the department had limited

funding to enact all of the recommended changes, although they have already made some strides — such as using technology to improve internal communications and gathering feedback from the state's watermasters on how water use measurement could be improved.

Byler said that the state's 2012 Integrated Water Resources Strategy "provides a long-term blueprint" for helping the state meet its current and future instream and out-of-stream water needs, but that the department intended to set out more detailed goals to align with the broader strategy.

The Capital Bureau is a collaboration between EO Media Group and Pamplin Media Group.

Tastes like popcorn: Eugene man eats, sells cricket snacks

He likes them with chips, salsa

By **ALISHA ROEMELING**
The Register-Guard

EUGENE — Some describe the taste as nutty or having the flavor of a sunflower seed.

Austin Miller of Eugene says the crunchy brown morsels taste like popcorn.

But Miller, a 33-year-old with an unusual new business, isn't describing a typical snack.

He's talking about crickets. Eating crickets.

"The primary way I eat them is on chips with salsa, maybe five or six per chip," Miller said. "Sometimes I put a handful on a salad. They pair well with soft cheeses as well, but their appeal isn't their unique awesome flavor. Really, they just provide a protein-rich crunch."

Miller breeds, raises, freezes, boils, bakes and packages the small insects for humans to buy — and eat.

His business, Craft Crickets

in west Eugene, has started selling crickets through its website.

The thought of eating crickets may be revolting to most Americans, but Miller and others contend that the insects are a nutritious and environmentally friendly food source that will play a larger role in the human diet as the world's population explodes.

"When the world has 9 billion people, we're not going to be able to necessarily feed the population with our current agricultural practices," Miller said. "I'm not sure if it will be in five years or 50, but we'll all be eating insects eventually."

About 30 companies in the United States sell insect-based food items, he said, including a handful of cricket breeding, raising and processing firms.

Cricket Flours, founded in Eugene in 2014 by two University of Oregon graduate students, started by making flour from ground crickets. The founders moved their firm to Portland. Earlier this year, they said they had developed the world's first brownie mix with

milled crickets.

In other states, Aspire Food Group, Exo, Chapul and All Things Bugs sell cricket-based products, ranging from flour to protein bars, cricket powder and whole crickets.

Aspire, based in Austin, Texas, claims to be a "global industry leader in the edible insect movement." The company, with operations in Texas and in Ghana, west Africa, says it works to raise food-grade crickets on a commercial scale as well as normalize the consumption of insects in the Western world.

There's a variety of ways people can consume the tiny, protein-packed bugs, according to Miller, who says he often adds crickets to tacos for extra texture. His life partner, Zoe Anton, 32, grinds them up in a food processor and puts them in shakes or bakes the remains into a cake for added protein.

"It's probably the most protein-rich cake that I've ever eaten," Miller said.

His company's crickets are not seasoned with spices or



Kelly Lyon/The Register-Guard
Austin Miller eats a cricket he raised inside a warehouse in Eugene.

salt. After being baked, they're packaged — antennas, legs, eyes and all — into 2- and 4-ounce resealable bags. The 2-ounce bag costs \$15 and contains about 650 to 750 crickets. The 4-ounce bags cost \$20 each and have about twice the amount of baked bugs.

At Craft Crickets, Miller raises about 500,000 crickets at a time in a 3,000-square-foot, rented warehouse on Conger Street, off West 11th Avenue.

He and Anton became inter-



Kelly Lyon/The Register-Guard
Austin Miller handles some of the crickets he raises inside a warehouse in Eugene.

ested, and eventually passion-

ate about, eating insects following a yearlong trip to such countries as Belize, Guatemala, Honduras and Mexico.

"We did some traveling in South America, where eating

insects is very common," Miller said. "In Oaxaca (Mexico) they sort of pan fry them and season them, and then sell them in large bags and people eat it like candy — they're tasty."

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