Oregon Water Coalition
Member Newsletter

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Owyhee Irrigation District: East Oregon water outlook tight for 2014

The 200 or so farmers who packed the Boulevard Grange Hall outside Ontario March 4 for an annual water supply update came there expecting to hear bad news. They did.

"This year you will understand the value of water," said Jay Chamberlin, who manages the Owyhee Irrigation District, which services 120,000 acres of irrigated land in eastern Oregon.

Snowpack levels in other nearby basins in Idaho have improved significantly in the past month. But average snowpack in the Owyhee drainage, which is high desert and stretches much further south, is below 50 percent of average.

The Owyhee reservoir system only had 130,000 acre-feet of usable storage as of March 4, well below the 30-year average of almost 500,000 acre-feet.

"Compared with where we should be based on the 30-year average, we're low; we're very low," Chamberlin told the farmers, who grow a lot of high-water crops like onions, corn, sugar beets and potatoes.

Based on what is now in storage, farmers are looking at being allotted 1 acre-foot of water this season, 25 percent of what they get in a normal water year.

That has raised the level of concern to a height not reached in recent memory, said Mike Petterson, who has farmed in the area for almost 50 years.

"It's the worst I've ever seen," he said shortly after leaving the meeting. "It's going to be a bad year. It's going to be tough."

Petterson said it takes about 3 acre-feet to grow onions. If farmers in the area can only look forward to receiving 1 acre-foot, "That's not even worth planting."

A series of rainstorms that has improved the water supply outlook on the Idaho side has done little to improve the situation in eastern Oregon, said Bruce Corn, a member of the Owhyee Irrigation District's board of directors.

"The Idaho watershed has changed a lot but the Owyhee is still not looking good at all," said Corn, who grows sugar beets, onions, wheat, corn and alfalfa.

The rains have helped with soil moisture, Chamberlin said, but they will do little to fill the reservoirs.

"It takes snow in the drainage to (put) water in the reservoirs," he said. "Rains alone won't do it."

The system needs about another 200,000 acre-feet of water for farmers to receive a 3 acre-foot allotment, Corn said.

It's too late in the year for snowpack levels to catch up, he said, but some heavy rains could make a difference. However, they need to happen quickly because there is only about four weeks left before onions and other crops need to be planted.

"Right now, we're running out of days," Corn said. "It's going to take some real sustained, above-average rains now to get what we need for the growers."

Sean Ellis, Capital Press

Surface water issued for some Odessa Subarea farmers in Columbia Basin

Some Columbia Basin farmers soon will be able to use Columbia River water to irrigate crops on 80,000 acres, instead of rapidly declining groundwater.

Federal, state and local officials met March 6 with farmers near the East Low Canal to mark several milestones in the lengthy, complicated process of fulfilling promises made to Odessa Subarea farmers. Switching to surface water is vital to save irrigated agriculture worth about $200 million annually and about 4,500 jobs, said Maia Bellon, director of the state Department of Ecology.

Bellon delivered a secondary use permit that will allow the federal Bureau of Reclamation to bring 164,000 acre-

feet of Columbia River water to 70,000 acres of Odessa Subarea farmland through the East Low Canal. The bureau already had a 1938 water right to store the water in Lake Roosevelt.

Another 10,000 acres will receive water thanks to a contract Lorri Lee, the bureau's Pacific Northwest Regional Director, and Don Osborn, East Columbia Basin Irrigation District president, signed March 6. The contract will allow the district to deliver 30,000 acre-feet of water from Lake Roosevelt using the East Low Canal and the Weber Siphon.

That siphon, finished in 2011, solved a bottleneck at Interstate 90, allowing more water to be delivered to farmland south of the interstate.

Officials are still working on the criteria that will be used to determine who will receive the new water, said Stephanie Utter, the bureau's Ephrata field office manager.

Warden farmer Eli Wollman is among those who have been hoping and waiting for canal water.

Wollman, who farms potatoes, mint, beans, peas, wheat, onions and sweet corn, has been watching his groundwater wells drop about 10 feet in a single year.

"That water right is so important," Wollman said.

Deep wells are expensive and it takes a lot of power -- 600 horsepower for 1,500 gallons a minute -- to pump water to the surface. And as the levels drop, the alkaline and sodium levels climb, he said.

"We have the best ground in the world for growing potatoes," said Wollman, who started growing spuds in 1967.

For the farmers just east of the East Low Canal, surface water has been a long time coming. Groundwater never was supposed to be a long-term irrigation water source for those farmers in Adams, Grant, Franklin and Lincoln counties.

The Bureau of Reclamation had planned to build a second canal -- dubbed the East High Canal -- which would have served these farmers in the unfinished portion of the Columbia Basin Project.

In the meantime, aquifer levels have continued to decline, causing farmers to dig deeper and more expensive wells. The aquifer has declined by about 200 feet during the past 30 years, Bellon said.

Some of the new water -- the 30,000 acre-feet from the contract signed March 6 -- might be watering crops as soon as this year.

Wendy Christensen, the bureau's Yakima office technical projects program manager, said it might be delivered to irrigators north of I-90 who already have the necessary pumps. That will decrease what those farmers draw from the aquifer.

It's a day Alice Parker said she was told she would never see in her lifetime. The Columbia Basin Development League board of trustees member said she was glad to prove all the naysayers wrong.

Parker, the league's former executive secretary, recalls how plans got shelved when the bureau put a moratorium on Columbia River water in 1993. That moratorium wasn't lifted until about 10 years later.

But Parker, who owns a farm near Royal City, said she knew something had to happen. Otherwise, the impact to the Adams County tax base would be devastating. Even for crops that could be grown dryland, yields would drop, she said.

As Parker and others celebrated the news, excavators nearby were removing dirt and rubble from the sides of the East Low Canal as part of a $31 million state-funded project to widen the canal south of I-90 so more farmland can receive river water.

"We are here to celebrate moving dirt and moving water," said Derek Sandison, director of Ecology's Office of Columbia River.

Craig Simpson, East Columbia Basin District secretary-manager, said they are still working on getting enough funding to finish the needed canal improvements. Construction is ongoing on widening the first 13 miles south of I-90. And widening will start later this year on the next 31 miles.

"There is still a substantial amount of work to be done," he said.

A contract will need to be negotiated between the bureau and the irrigation district, Christensen said.

The pumps and pipelines to deliver the water from the East Low Canal to farms also still need to be funded and built. Sandison said there are two efforts to address that need. The Columbia-Snake River Irrigators Association is

proposing a privately built system where the landowners involved would get their own loans to pay for their portions of the project.

And the East Columbia Basin Irrigation District is working on an effort to build the connections, which would be paid for using assessments from the landowners who benefit, said Mike Schwisow, a lobbyist for the Washington State Water Resources Association. In all, eight pipelines are planned to connect some farms in Adams, Grant and Lincoln counties to the canal. The project was outlined in an environmental impact statement approved almost a year ago.

Kristi Pihl, Tri-City Herald

Officials assess crack in Wanapum Dam, reservoir drawn down 26 feet

Fear of a blowout has been reduced, but Grant County Public Utility District officials are still puzzling over what to do about a worrisome 2-inch, 65-foot long horizontal crack discovered late last month along one of the 12 spillways at central Washington's Wanapum Dam on the Columbia River.

The damage was first discovered on Feb. 24 by a dam worker who noticed a section of the spillway deck had shifted slightly. Utility engineers then examined the area and found that one of the spillway pier monoliths had moved 2 inches out of alignment.

Divers inspecting the spillway on Feb. 27 saw a horizontal fracture about 2 inches wide at the base of the monolith. To take pressure off the damaged spillway pier, the utility began to draw down the reservoir behind the dam by about 26 feet. The reservoir above the dam is now at its lowest since the hydro project began operating.

The drawdown is intended to take pressure off the damaged structure, and allow better assessments of the damage and judge what might be done to correct the problem. Overall the structure, with 10 turbines and generators, is 8,637 feet long and 180 feet tall. Its construction began July 1959 and was completed in October 1963.

"It's something that we're taking very seriously," said Grant PUD spokesman Chuck Allen. "It's going to be this low until we come up with a long-term plan."

On Tuesday, Grant PUD lowered its Emergency Action Plan classification for the Wanapum Dam spillway incident to a "non-failure emergency." The utility had been operating under the condition of a "developing failure" since Feb. 28.

Grant announced Wednesday that its Emergency Action Plan (EAP) includes the notification procedures in the event of a "non-failure emergency" at Wanapum Dam, including situations that would necessitate the utility maintaining low water levels behind the dam to prevent a more serious emergency. The EAP describes the initial roles and responsibilities of Grant PUD personnel and other agencies based on the capabilities of each agency to respond in the event of an emergency situation at Wanapum Dam.

The news of a downgrade comes as a result of engineering surveys conducted March 3 and 4 that show continued stabilization of the fractured area found on the spillway. As of 6 p.m. Tuesday, survey results show that the impacted area is stable, according to a Grant press release. The fracture has closed and the damaged section of the spillway monolith has moved back upstream by nearly 1.75-inches as a result of the utility's actions to lower water above Wanapum Dam and reduce pressure on the damaged spillway.

Grant PUD continues to work in conjunction with the Federal Energy Regulatory Commission as well as upstream dam operators and stakeholders to monitor and evaluate this incident. Public safety and the safe operation of the dam is the utility's top priority.

Grant PUD in collaboration with other entities is also actively studying options to assure safe passage of adult and juvenile salmon and steelhead past Wanapum Dam if the current drawdown of the Wanapum reservoir continues into the migration season.

Adult upstream passage begins in April and continues into mid-November. Juvenile salmon and steelhead begin to swim downstream around the third week of April. In the event that water remains low into the migration season, options to provide upstream passage include modifications to existing Wanapum Dam fish ladders as well as the potential to trap and haul fish via trucks around the reservoir, according to a Grant PUD press release.

At current water levels, the Wanapum Fish Bypass would be operational, allowing juvenile salmon and steelhead to safely pass over the dam. The utility will continue to coordinate with partner agencies, tribes and Chelan PUD

to determine the best options moving forward. Wanapum Dam, 415 river miles from the mouth of the river at the Pacific Ocean, is the sixth dam that, as an example, migrating salmon and steelhead must negotiate on their way up the Columbia to spawn.

Those fish include wild spring chinook salmon and steelhead stocks that are listed under the Endangered Species Act. Listed bull trout also travel up and down the system.

Wanapum is located downstream of Vantage, Wash., and 18 miles upstream of Priest Rapids Dam, which is also owned by Grant PUD.

Priest Rapids Dam is located on the Columbia River, 24 miles south of Vantage and 200 miles downstream from Grand Coulee Dam.

The next hydro project, nearly 40 miles upstream, is Chelan County PUD's Rock Island Dam at Wenatchee.

Chelan County PUD announced Tuesday that it has stopped generating power at Rock Island Dam in response to drawdown by Grant County PUD at Wanapum Dam. With the lowered river level below Rock Island Dam, Chelan PUD is taking steps to protect its generating equipment and to safely operate its generators within design criteria during the Wanapum drawdown.

For the time being, the river flow will be managed by spilling water through the spillways at Rock Island. Rock Island Dam has a generating capacity of 629 megawatts.

If the Wanapum pool is drawn down for any length of time, it could cause problems for spawning salmon and steelhead that need access to Rock Island fish ladders. Those spring chinook and steelhead are headed for such rivers as the Wenatchee, Entiat, Methow and Okanogan. Such fish runs typically start showing up in number in mid- to late April. Runs of summer chinook and sockeye salmon come later.

The two PUDs, and others, are "having multiple daily conversations" to plot strategy to assure that fish can proceed up and downstream unimpeded, according to Keith Truscott, Chelan PUD's Natural Resources director.

"We don't want to have that happen," he said of the possibility that fish can't access fish ladder entrances or safely exit such systems.

"We're going to look at the entire system," Truscott said of juvenile and adult passage routes at Chelan's Rock Island and Rocky Reach dams. The Wanapum reservoir situation should not impact juvenile fish migrations. With the impacted portion of Wanapum now stable, Grant PUD staff, consultants and regulators are developing a plan to determine the root cause of the spillway monolith fracture, which was discovered on Feb. 27, and how best to repair the structure.

The utility has reopened public-access sites below Wanapum Dam, including the Priest Rapids Recreation Area at Desert Aire and the Buckshot Recreation and Wildlife Area. Those sites had been closed shortly after the crack discovery and Wanapum drawdown.

The Wanapum Lower Boat Launch, the Wanapum Heritage Center and day-use park remain closed. However, the Wanapum Dam Overlook is open.

Working under the authority of its federal license, the utility has temporarily closed the Wanapum reservoir shoreline. Article 18 of the utility's operating license with the Federal Energy Regulatory Commission states that Grant PUD "… may reserve from public access such portions of the project waters, adjacent lands, and project facilities as may be necessary for the protection of life, health and property."

Only authorized personnel are allowed access to the Wanapum reservoir shoreline. Sections of the shoreline, including the riverbank and mud flats are extremely unstable and have proven to be a serious safety hazard.

The utility continues to post signs informing the public of the shoreline closure and is actively working to patrol the area. State and local law enforcement agencies will be notified whenever anyone is observed trespassing in areas closed to the public. All boat launches on the Wanapum reservoir are closed to the public.

Grant PUD remains able to meet customer needs with its current power supply portfolio. Wanapum Dam continues to generate electricity, yet at a reduced rate.

Under normal river conditions, and considering that three of the dam's 10 turbines are offline because of maintenance and turbine replacement, the dam has the capacity to generate roughly 700 megawatts. Given the drawdown in the water levels behind Wanapum Dam, capacity has been reduced to approximately 360 megawatts.

A spillway is the portion of the dam that allows water to "spill" past the dam as opposed to running through the

turbines. The spillway consists of multiple, independent structural sections that support the spillway gates.

After drawing down the level of water behind Wanpum Dam, if two of the dam's 12 spillway sections failed now, the amount of water that would flow through the spillway sections is 100,000 cubic feet of water per second.

"This amount of water is significantly less than under normal operations and would be within the range of average river flow, approximately 120,000 cubic feet per second," according to a Grant PUD press release.

Columbia Basin Bulletin

Host of ag bills make their way through Oregon's legislature

Legislation that would give Oregon farmers a tax credit for crop donations has unanimously passed the state Senate.

It is one of a host of agriculture and natural resource bills making their way through the legislature.

The bill, SB 1541, would allow growers to claim a tax credit of 15 percent of the crop donation's value until 2020, up from 10 percent under a previous statute that expired in 2011.

Legislation that would affect the authority of Oregon water regulators to restrict the use of irrigation wells has failed to advance in the House and Senate.

The bills would have prohibited the Oregon Water Resources Department from shutting down an irrigation well unless it is individually proven to interfere with surface water.

The legislation was prompted by fears that the agency would shut down more than 100 wells in the Upper Klamath Basin this year due to drought.

However, the bills proved divisive in the agricultural industry. They drew support from the Oregon Farm Bureau and Oregon Cattlemen's Association but the Oregon Water Resources Congress and Oregon Association of Nurseries opposed them.

Proponents claimed the legislation would prevent water regulators from overstepping their authority and regulating wells based on regional models.

Opponents were concerned the bills would diminish the agency's ability to enforce senior water rights.

Rep. Gail Whitsett, R-Klamath Falls, supported the legislation and said many irrigators in the region could be economically devastated by water shut offs this year.

The legislation didn't win favor with the Oregon Water Resources Department, which estimated the testing would have cost $80,000 per well, she said.

Two identical House bills dealing with the issue — HB 4044 and HB 4064 — received a public hearing but died in the House Agriculture and Natural Resources Committee.

An identical Senate bill — SB 1572 — was referred to the Senate Environment and Natural Resources Committee but never received a public hearing.

Mateusz Perkowski, Capital Press

February storms rain optimism on Pacific Northwest water outlook

Mountain snowpacks across the Pacific Northwest got a welcome boost from February storms, though most levels remain well below average, and California's water outlook improved slightly despite the drought that grips the state.

In Oregon, the statewide average snowpack increased from about 37 percent of average to 57 percent of average during February, said Melissa Webb, a hydrologist with USDA's Natural Resources Conservation Service.While Oregon got a lot of snow and rain this month, precipitation would need to stay at an elevated level through spring to make up for the earlier dry months, she said. Temperatures in southern Oregon didn't drop as low as other areas of the state, which means the region got more rain than snow, Webb said.

"They saw a lot of moisture but their snowpack is still at about a third of normal," she said.

For irrigators with access to reservoirs, rainfall is still good news, but growers in some areas rely mostly on snowpack for water storage, Webb said. Washington got an even bigger reprieve courtesy of the February storms.

The statewide snowpack increased from 55 percent of average to 78 percent of average, said Scott Pattee, a water supply specialist with NRCS. "We've seen some major increases," he said. "It definitely has improved."

Even so, snowfall would have to stay 50 percent higher than normal to bring Washington up to average by April 1, the typical peak for mountain snowpacks, he said.

In areas with snowpacks hovering above 80-90 percent of average, like the Upper and Lower Yakima basins, the water supply outlook is decent, Pattee said.

Mateusz Perkowski, Capital Press

Tropical Pacific warming patterns, winds hint at turn to El Niño conditions

At least one particular climatic condition that seems to influence weather conditions in the Northwest, as well as around the globe, has for the past year or more been stuck in neutral -- the El Niño/Southern Oscillation index that considers sea surface temperatures and wind in the equatorial Pacific.

But conditions are changing with most prognosticators saying that a shift neutral conditions toward El Nino conditions as likely as not over the next several months. El Niño conditions generally tilt Northwest weather toward drier, warmer trends.

"An examination of monthly averaged temperature and precipitation values for El Niño versus La Niña years (1931-1999) in the PNW finds that El Niño winters tend to be warmer and drier than average. La Niña winters tend to be cooler and wetter than average," according to the University of Washing-based Climate Impacts Group.

"The El Niño–Southern Oscillation (ENSO) remains neutral -- neither El Niño nor La Niña," according to Australia's Bureau of Meteorology.

However, international climate models surveyed by the Bureau indicate that warming of the tropical Pacific is likely, with most models showing temperatures approaching or exceeding El Niño thresholds during the austral (southern hemisphere) winter, according to the Australian agency's March 11 ENSO update.

"Recent observations indicate that warming of the tropical Pacific is occurring. The tropical Pacific Ocean sub-surface has warmed substantially over the past few weeks, which is likely to result in a warming of the sea surface in the coming months.

A recent burst of westerly winds over the far western Pacific is the strongest seen since at least 2009 – the last time an El Niño developed," the bureau says. The warming SSTs and westerly winds are among the common signs attributed to the onset of El Nino conditions. The SST anomaly map for February shows cooler-than-average SSTs in the eastern equatorial Pacific. Large areas of the surface waters of the western Pacific are warmer than average, extending from the area north of Indonesia and east of the Philippines to the South Pacific Convergence Zone well to the east of Australia.

NOAA's Climate Prediction Center/NCEP/National Weather Service and the International Research Institute for Climate and Society on March 6 issued an "El Niño Watch" that mirrors the Australian assessment.

ENSO-neutral is expected to continue through the northern hemisphere spring 2014, with about a 50 percent chance of El Niño developing during the summer or fall," the March 6 NOAA synopsis says.

ENSO-neutral continued during February 2014, with below-average sea surface temperatures (SST) continuing in the eastern equatorial Pacific and above-average SSTs increasing near the International Date, the synopsis says.

The model predictions of ENSO for this summer and beyond are relatively unchanged from last month. Almost all the models indicate that ENSO-neutral (Niño-3.4 index between -0.5°C and 0.5°C) will persist through the rest of the Northern Hemisphere spring 2014.

"While all models predict warming in the tropical Pacific, there is considerable uncertainty as to whether El Niño will develop during the summer or fall. If westerly winds continue to emerge in the western equatorial Pacific, the development of El Niño would become more likely," the NOAA update says. "However, the lower forecast skill during the spring and overall propensity for cooler conditions over the last decade still justify significant probabilities for ENSO-neutral.

"The consensus forecast is for ENSO-neutral to continue through the Northern Hemisphere spring 2014, with about a 50 percent chance of El Niño developing during the summer or fall…."

Columbia Basin Bulletin

Agencies sign contracts to bring Odessa irrigation water to farmers

Federal, state and local agencies on Thursday signed contracts to divert water from the Columbia River to irrigation-thirsty farms in the Odessa Subarea, but the cost farmers will have to pay remains to be determined.

U.S. Bureau of Reclamation Northwest Regional Director Lorri Lee signed a contract with the East Columbia Basin Irrigation District to deliver 30,000 acre-feet of water through the East Low Canal from the Lake Roosevelt Project to 10,000 acres of cropland.

Washington Department of Ecology Director Maia Bellon then presented Lee with a secondary use permit allowing 164,000 acre-feet of Columbia River water to be delivered to 70,000 acres of farmland that now rely on the declining Odessa Subarea aquifer. She said the aquifer had declined 200 feet over the last 30 years.

The water will support $200 million of irrigated crops annually, Bellon said. "We're delivering today real, wet water as early as the end of this year for farmers in the Odessa Subbasin," she said. "We're assuring that others down the line will also receive much-needed, valuable water."

East Columbia Basin Irrigation District manager Craig Simpson said more than $26 million from the state was available to begin improving the East Low Canal.

The district is looking for additional funding to complete the construction. The total cost is unknown, Simpson said, until bids for construction of additional siphons, radial gates and work on bridges have been received.

Any infrastructure improvements that the government isn't paying for will be paid for by landowners, irrigation district development coordinator Levi Johnson said. The district will use a revenue bond to install pump stations and pipelines and complete siphon or bridge work.

A U.S. Bureau of Reclamation feasibility study estimated the cost of the project at $700 million, meaning landowners would have to pay roughly $10,000 per acre.

"From our anecdotal evidence and questionnaires and surveys of the landowners we're going to be serving, it's too expensive for them," Johnson said. "If we can bring that down to half, they might be willing to consider it."

The district has identified most landowners who are interested and eligible, and is drawing up preliminary designs and estimating costs.

The board of directors wants to consider the costs of delivering water to every eligible farm in the Odessa Subarea, which totals about 102,000 acres. The current project can deliver water to 88,000 acres, Johnson said.

"We will continue to try to find solutions to deliver water to all of the congressionally authorized lands in the Columbia Basin Project," Simpson said.

There could be an option to give a point of delivery a mile or two from the property of farmers who are too far out to be economical. The farmer would be responsible for acquiring easements and installing his system.

Johnson hopes to present rough cost estimates at the next landowner meeting, which has yet to be scheduled.

Matthew Weaver, Capital Press

University of Idaho creates drought website for growers, irrigators

University of Idaho has launched a comprehensive new website with links to new, updated and commonly used resources to help irrigators stretch their water supply and make better planting decisions for a dry season.

UI researchers linked the Idaho Drought Resources site, **www.uidaho.edu/extension/drought**, to the UI Extension website on Feb. 11 and will continue to add content.

The site has links to scientific studies on water usage specific to livestock, range, potatoes, sugar beets, cereals, alfalfa, corn, lawn and trees. Another section on irrigation scheduling includes tables specifying the amount and timing of water application to avoid crop stress. There are also links to external drought resources such as the Idaho Snow Survey, the National Weather Service and reservoir storage diagrams.

Steve Hines, UI Extension educator for Jerome County, led the project, which was started in late fall when a tight storage water outlook became apparent. It will be updated weekly throughout this season.

John O'Connell, Capital Press

Oregon Water Coalition
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www.oregonwatercoalition.org · owc@eotnet.net

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