



Effects of the Ongoing Drought

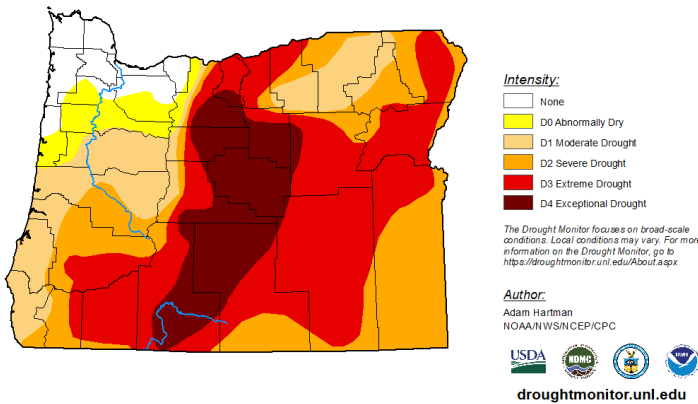
By Kasey Yanna
Photos by Susan Doverspike

According to researchers, the American West is experiencing a [22-year megadrought](#)—the driest conditions it’s seen since the 1500s. Nearly 73% of the entire U.S. West—a group of nine states—and 76% of Oregon are in [severe drought](#). In Harney County, all but a slither is in extreme drought.

A. Park Williams, a climate hydrologist at UCLA, began studying the current drought a few years ago and labeled it a “megadrought” due to its length and depth. Megadroughts tend to fizzle out after 20 years, Williams said, and in 2019 it looked like this one might, but the region dried up again in 2020 and 2021. This makes 2000–2021 the driest 22-yr period since at least the year 800, according to [Williams’ latest study](#).

U.S. Drought Monitor
Oregon

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Reactions to the drought

Depending on who you talk to, some Harney County residents are surprised at the extent of the drought, others are not.

“This year is the first I’ve seen it this dry in January and February,” says Tony Svejcar, a participant of the Harney Basin Wetlands Collaborative and retired research scientist for the U.S. Department of Agriculture, Agricultural Research Service. Last year, most hay producers in the area said they got about half as much production as usual and Svejcar notes the trend isn’t looking good for this year’s production cycle.

“December through February are typically our most dependable months for snowpacks,” Svejcar says, but precipitation levels have been far below normal. February precipitation was 34% of the historic median and as of March 1, the [Harney Basin snowpack](#) was 73% of median (median is the middle number in a list of numbers).

Svejcar says Harney County residents depend on winter precipitation to get through summer droughts. The snow that builds up during the winter months typically begins to melt and flow to the basin’s meadows in mid-to-late March. With lower than normal snowpack levels, Svejcar is concerned there won’t be enough runoff to keep the meadows flooded for their typical three-month period. This would have ripple effects on the basin’s ecosystem and impact hay production, cattle grazing, bird migration and land management.

Dan Nichols is also a member of the Harney Basin Wetlands Collaborative but is less surprised by drought conditions. He’s a rancher and says people in production and agriculture deal with the weather on a daily basis, year in and year out. “Weather affects everything we do,” says Nichols, so he’s no stranger to adapting to weather changes. He’s had to make adjustments

on his ranch for the past two years and is making huge adjustments this year. He notes that the impacts of the drought vary from business to business.



Pictured: A dry meadow in the Harney Basin. Photo by rancher Susan Doverspike.

Gary Marshall, one of the founders of High Desert Partnership, is another rancher that's familiar with drought conditions. He and his wife Georgia experienced long periods of drought prior to the megadrought. "Georgia and I came [back to Harney County] in 1979. In the early 80's we had a series of years that were very wet. The Malheur and Harney Lakes rose to levels that were the highest in recorded history. Those years were followed by a

very dry period. Our memory is that it was as dry as it is now," says Marshall. "But that's really where we live, in a low-moisture area, and we've been through this before."

Forecasts offer no sign of relief for Harney County

The latest [three-month forecast](#) from Pete Parson, the Oregon Department of Forestry's lead meteorologist, predicts a cooler, wetter-than-average March and April for much of Oregon. Harney County, unfortunately, isn't included in that prediction. The forecast for Harney County predicts near-average precipitation for March and April and below-average precipitation for May. Temperatures are also expected to be warmer than average for March and May.

After two years of drought, reservoir and snowpack levels are both below normal and climatologist Larry O'Neill doesn't have much hope for the reservoirs in [eastern and southern Oregon](#). Last spring was the second driest on record and he's not optimistic that this spring will provide enough precipitation to get reservoir levels back up to normal. After two dry years in a row, the soil is soaking up any precipitation so it's not flowing to the creeks and into the reservoirs.

"We're facing something of an unprecedented water season in the summer," O'Neill said. The water supply outlook for the Harney basin doesn't offer up much hope. The [streamflow forecasts](#) for the basin range from 60% to 92% of median for April-September.

Ranchers are forced to make tough decisions

Dry conditions and record-low reservoir levels impact landowners in multiple ways, forcing farmers and ranchers to make some tough decisions. "We're delaying turnout," says Nichols, which is the process of moving his cattle from winter calving pastures on the ranch ground to permitted grazing land. The federal lands need to recuperate and get as much growth as possible, which is harder to do during a drought. Keeping cattle on private land and feeding them hay comes at a huge cost for Nichols.

"When we started this particular very dry cycle a couple of years ago, we knew some adjustments had to be made," says Marshall. He's learned from previous droughts and made cuts to the number of livestock on his ranch. "Destocking and selling cattle on the market provides some income but it also gives the land a break and balances the amount of forage that you are producing with the land you have," Marshall explains. "If the rain isn't coming, the grass is not growing and so the livestock cannot be there because they don't have something to eat."

What's next? Waiting, and watching the weather. Marshall says they are waiting to see what develops over time before determining how to restock and at what level. "It all depends on how the ground, range and meadows recover," he says. "It's pretty complex," he adds, referring to monitoring how the plants and animals recover, how healthy and active the soil microbes are and how much precipitation they get and when.

A lack of adequate runoff from snowpacks disrupts the hay production cycle, forcing ranchers to buy hay in the winter and sell cattle. "But if everyone's doing that, hay costs more and the price of cattle goes down," says Chad Boyd, a scientist with Eastern Oregon Agriculture Research Station and member of the Harney County Wildfire Collaborative. "Selling cattle in a drought year is the worst time to sell because everyone is selling," he adds.

The disruption to the hay production cycle impacts cattle production, which has been a part of the Oregon landscape since 1824. In 2019, the beef cattle industry was Oregon's [third-largest commodity](#), valued at over \$625 million.

Bird migration and tourism



*Pictured: Pintail Ducks feeding at a ditch' edge.
Photo by rancher Susan Doverspike.*

The Harney Basin is an important spring stopover point on the Pacific Flyway for migratory birds. "Over 300 species of bird use the Malheur National Wildlife Refuge at one point or another during the year, to rest, feed or nest before moving on," says Chad Karges, who spent 20 years working at the Malheur National Wildlife Refuge. In [a video](#) on the Harney Basin Wetlands Collaborative's website, Karges states that up to 5 million ducks, a million geese and half of the world's Ross's Geese population visit the area every year.

The annual Harney County Migratory Bird Festival began in 1981 and is scheduled for April 21-24. Locals and visiting bird watchers anticipate the spring migration but Boyd and Svejcar worry there won't be enough water for the birds. Flood irrigation in the Harney Basin provides the habitat that birds need during their spring migration but the system is dependent on spring runoff. That's where the low snowpack levels present another problem. If there's not enough runoff, there will be no meadows for the birds.

This issue is part of a larger problem for birds. "About one out of every four bird species in North America is experiencing very significant long-term declines," says Bob Sallinger, who serves as the Director of Conservation for Portland Audubon. He

notes that diminishing habitat and fragmentation of habitat are the primary causes for this decline. This year, the Harney Basin may be a part of that fragmentation.

The disruption in bird habitat will likely impact tourism. Without meadows, there will be no birds for traveling bird watchers that would normally contribute to the tourism economy. Losing tourism dollars is a more direct impact of the drought on local business owners.

Pictured: A Sandhill Crane taking off from a dry meadow. Photo by rancher Susan Doverspike.



Mitigation efforts and dealing with climate change

“The best defense that we have is good rangeland management,” says Boyd. The collective research at the Eastern Oregon Agriculture Research Center (EOARC) includes identifying ways to manage wildfire fuels. Management measures include using cattle grazing to keep fuels under control, reducing the population of non-native annual grasses and restoring native perennial grasses that are harder for fires to burn through and are adapted to surviving drought conditions. EOARC's customer-centered research provides valuable information for ranchers and landowners.

Marshall is one rancher implementing these management practices. He says covering the land with plants increases the water-retaining properties and organic matter, making the ground more drought-resistant. “There’s nothing there to make it rain, but we can prepare the land for when the rain comes,” says Marshall. Another resource that helped Marshall prepare for the drought is Ranch Management Consultants. He says the organization is made up of advisors for ranchers worldwide and has connections in Australia, which has a lot of experience with droughts.

When asked what ordinary citizens can do to help keep a bad drought situation from getting worse, Marshall's top piece of advice is to use public lands carefully. “The land out there is in a very fragile state during a drought, native plants may seem dead but oftentimes they simply stay dormant to survive current drought conditions.” he says. People driving through and accessing public lands should be mindful of their actions so that they don't unintentionally start a wildfire.

Marshall also noted that people that come across a gate should leave it as they found it. If the gate is open, leave it open. There are areas that have very little water for stock or wildlife and it's very important that animals have access to that water. Closing an open gate could prohibit access and have deadly consequences for animals.

This article is provided by High Desert Partnership; a Harney County nonprofit convening and supporting six collaboratives including the Harney Basin Wetlands Collaborative.

