



Wild Flood Irrigation Helps Maintain Harney Basin Habitat That Is Disappearing Across The West

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by Lauren Brown

In a normal year, bird watchers flock to Harney County to witness the spring migration of birds that stop here to refuel on their journey north. While Covid-19 might have put a stop to the influx of birders, the birds still came and took advantage of the wet meadow habitat provided by the practice of wild flood irrigation each spring.

The Harney Basin Wetlands Initiative, a collaborative of the High Desert Partnership, strives to sustain these wet meadows by supporting the traditional practice of flood irrigation. It works with private landowners to encourage the continued use of flood irrigation by addressing infrastructure issues.

Tony Svejcar, a consultant for the High Desert Partnership and a retired rangeland scientist and research leader with the [U.S. Department of Agriculture](#), said that the flood irrigation in the Harney Basin is less controlled than the flood irrigation taking place in Ontario, Ore., where there is more row crop agriculture. "In the Harney Basin, it's much more like it would have been historically, and that's why it's more what we call wild flooding," he said. "There is the very structured form of flood irrigation as you would see with row crop agriculture, and then there is something that is much less structured." He noted that the amount of water can vary. In places where there is more structure, a very specific amount of water can be delivered to a ditch and then distributed. The wild flood irrigation taking place in the Harney Basin happens more naturally. "It's much more like what probably happened with beaver dams and the natural processes that occurred in this basin before we came along," he said.



Pictured: Ross' Geese in a Harney Basin wet meadow. Photo by Teresa Wicks.

The wet meadows that are flood irrigated in the basin provide both a wetland habitat and an agricultural product. The perennial grass species now growing in the meadows provide habitat similar to the plants that grew in the basin long ago. "These perennial grasses provide the cover in the habitat that a lot of nesting birds and birds that use this flyway need," Svejcar said. "Whether they're just stopping over or whether they're nesting here and then moving on, the meadows provide habitat that you wouldn't find in standard row crop agriculture."

While a variety of birds and wildlife enjoy the initial flush of water and the habitat the flood irrigation provides, it also benefits the landowner who will still be able to get one cutting of hay from what remains after the birds leave and the meadow dries out.

Mitch Baker runs a cow-calf operation just outside of Burns and utilizes flood irrigation from both the Silvies River and a nearby creek. Baker turns the water out after April 1 and uses it until the end of June when he begins haying. This, of course, all depends on the snow melt and how much water is flowing. Baker said that as long as there is some kind of ground moisture, they'll be able to hay the meadows and use it to feed their cattle in the winter.

Baker said that flood irrigation is the only system that makes sense for the wild meadows that he flood irrigates and noted the additional benefit to migrating waterfowl. Cranes, geese and ducks all make use of the wet meadows and while some continue on their way north, some stay the whole summer and leave in the fall. The migratory birds and cows don't seem to mind each other. "One compliments the other," he said. "What the cows leave behind, that's what the birds like and all the green tender shoots."

[Carlton Strough](#), a biologist who works with the local [Natural Resource Conservation Service](#), said that flood irrigation is the only feasible option for a lot of landowners. "Flood irrigation is an affordable way forward to irrigate your property and maximize your productivity in your operation," he said. It's a way people have irrigated historically in this region. "The layout of the basin makes it an easy, efficient and affordable way to water," Strough said. "For your meadow grass, it's a good practice to use."

For many in the Harney Basin, wild flood irrigation doesn't require a lot of hands-on involvement, according to Strough. "More or less you have your head gates, and you have your certain water control structures," he said. At different times of the year, landowners can move water around using slide gates, flash boards, ditches or other means to facilitate movement of water around a property.

However, because the Harney Basin is a closed lakes basin, the amount of water is entirely dependent on the snowpack and any other precipitation. "This is also our main limiting factor, which is what we're fighting right now due to our environmental changes, whether it be climate change or whatever you want to call it," Strough said. "Obviously, we're seeing more variable snow, and so that truly dictates the amount of acreage that is covered and the quality of forage that's going to be available." In a low water year this means there will be a reduction in the productivity of an operation and less habitat for migratory birds. "It's truly a cascade trickle-down effect," Strough said. "The main limit we're facing is the lack of water or the variability of water from the snowpack."

There are programs that can help landowners who flood irrigate better manage with the variability of water. "There's state funding available to help landowners renovate their infrastructure or clogged ditches or inefficient turnouts or whatever the situation may be," Strough said. State and federal funding can help landowners renovate these systems. "We help them increase water efficiency and increase water control so that when we do get less water than is ideal, we can help control that water to maximize the water that's available. That's ultimately our objective," he said.

According to a scientific paper titled "[Western Ranchers' Perspectives on Enablers and Constraints to Flood Irrigation](#)" and published in *Rangeland Ecology and Management*, critical flood-irrigated wetlands have been disappearing across the west as landowners convert to center pivot and sprinkler irrigation. The paper noted that research suggests that surface-irrigated acres in parts of the west have declined 23 percent between 1995 and 2010.

Strough stressed the importance of maintaining the wet meadows. "Within snowmelt driven watersheds, we've seen about a 47 percent reduction in wetlands across the Intermountain West region since 1984. That's substantial," he said. This statistic comes from a 2019 research paper, *Climate and Human Water Use Diminish Wetland Networks Supporting Continental Waterbird Migration* (Donnelly et. al.) He noted that 70 percent of the birds flying through the Pacific Flyway

have to stop in these private wetlands to refuel. “It’s really reducing the amount of forage and habitat available to these birds. It’s a conservation program that I truly believe in, and we’re doing good work toward.”

This is why the Harney Basin Wetlands Initiative is working to maintain the basin’s wet meadows through flood irrigation. As surface water flows from ditch systems and as water trickles from fields and ditches into groundwater, flood irrigation recharges the wetlands. It creates valuable wildlife habitat while still giving landowners a cutting of hay to use to feed their cattle in the winter.

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

