

FLOOD IRRIGATION INFRASTRUCTURE WETLAND MEADOWS

THE IMPORTANCE OF THE HARNEY BASIN FLOODED MEADOWS

The Harney Basin contains some of the most important wetlands in the Pacific Flyway. Each year, private flooded meadows in the Harney Basin provide critical habitat and foraging grounds for migratory birds. Migrating birds' reproductive success depends heavily on these wetlands. But this habitat is disappearing as producers convert away from flood-irrigation. Conversions are predominantly driven by the need to refurbish infrastructure as well as the perception that flood-irrigation has high labor demands.



ACROSS THE INTERMOUNTAIN WEST PRODUCERS ARE OPTING TO USE OTHER IRRIGATION METHODS BECAUSE IT'S SIMPLER THAN REPLACING THE IN-STREAM STRUCTURE AND DOES NOT REQUIRE COORDINATION AND INVESTMENT BY ALL THE WATER USERS RECEIVING WATER FROM THE STRUCTURE.

OUT WITH THE OLD, IN WITH THE NEW

To protect these wetlands, Harney Basin Wetland Initiative partners are working with landowners to update wet meadow infrastructure. We will be fully replacing old in-stream structures, at no cost to the water users, which back water up in the river channel, raising its elevation and enabling gravity flow across the adjacent fields. The new structures will have full management capability and be outfitted with measures ensuring maximum accessibility and safety, while still increasing water efficiency and maximum distribution. Structures will be designed to endure catastrophic floods and continue to function in the lowest flows. They are designed to last at least 50 years, with the assumption that they will last twice as long.

HOW STRUCTURES ARE SELECTED

Strategically, we are looking to upgrade structures that deliver water across considerable acreage. A good rule of thumb is a minimum of 1,000 acres. Partners also look for structures that serve multiple landowners and water users. Partners want the structure to be located high in the system, based on the principle that water runs down hill, so it maximizes the benefits to habitat and increases aquifer recharge. Through the Oregon Watershed Enhancement Board Focused Investment Partnership we have been awarded funds to replace five such structures.



A LANDSCAPE-SCALE RESTORATIVE PROCESS

Replacement of the in-stream structures is only the first phase of full restoration of the total infrastructure. The in-stream structures service multiple producers in almost every case. However, the structures only deliver water to the targeted operation.

From there, distribution of water across the operation is limited by the state of its in-field infrastructure. Ideally, partners try to match replacement of any in-stream structure with the refurbishment of in-field lateral infrastructure on the operations that receive water from them. Our outreach and funding program for in-field structures is through the Environmental Quality Incentives Program (EQIP) in the Farm Bill administered by the Natural Resource Conservation Service (NRCS).

In most instances, replacement of dilapidated infrastructure is all that is necessary. But there are opportunities to restructure the system to decrease the number of structures to manage, maintain, and operate. Combining the replacement of in-stream diversion structures with the refurbishment of in-field lateral infrastructure is necessary to achieve full potential, in terms of water efficiency and wet meadow productivity.



THE BENEFITS FOR LANDOWNERS

ONE OF THE DESIRED
OUTCOMES OF
HARNEY BASIN
WETLANDS
INITIATIVE PARTNERS
IS THAT PROJECTS
HAVE SOCIAL AND
ECONOMIC BENEFITS
FOR THE COMMUNITY.

In many instances water is currently distributed across the wet meadows both ineffectively and inefficiently. This generally results in reduced acres of functional wet meadows being adequately hydrated, which directly equates to a reduction in resources for spring migratory wetland birds and forage production. Have you ever heard the saying, "What's good for the bird, is good for the herd?" The lack of resources to birds is paralleled with reduced grass for livestock grazing and haying. Flood irrigation enables producers to effectively distribute water, which increases the production of forage and pasturage ultimately enhancing their operation.

With improved infrastructure, traditional flood irrigation practices can still be a great option for many landowners. Increased groundwater pumping contributes to a depleted aquifer and reduced groundwater elevations, which challenges ranchers' ability to irrigate as effectively as they once did. And finally, improved irrigation infrastructure requires less labor to operate and maintain. Many old structures are managed with dozens of boards and tarps and all kinds of ingenious uses of repurposed materials, which increases labor and hazard. New structures will be safe and maximize management capability.



TYLER DAM

The Tyler Diversion on the Silvies River outside Burns was one of those instances where water was being distributed ineffectively and inefficiently. The partnership was already working with a producer that received water from the Tyler Dam and one necessary element for refurbishment of their irrigation infrastructure was restoring the ditch that delivered water to their operation from the Tyler Dam. Consequently, we needed to access the ditch on the Tyler Ranch. This required outreach to the Tyler family, which led to conversations regarding replacement of the Tyler Dam. The structure satisfied our criteria in all respects, was directly tied to an EQIP project, and the Tylers' willingness to be the first replacement with very little outreach effort made this an ideal project.



The Tyler Dam Project will benefit the Tyler family as well as other irrigators reliant upon the structure. In addition, the EQIP Farm Bill funding is programmatically tied to the improvement of the dam, enhancing in-field delivery to an adjacent landowner. The entire diversion structure will be replaced in addition to the replacement and installation of lateral diversion boxes.

Tyler Dam has been designed and is scheduled for implementation in 2018. Two other dams, Sweek and King, have been identified for consideration as the next replacements in the system. Harney Basin Wetlands Initiative partners will be contacting respective water users and working with them throughout the upgrade of these structures to maximize the benefits for landowners and create healthy flood meadows that will continue to support thousands of migratory birds every spring.

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HARNEY BASIN WETLANDS INITIATIVE

ABOUT THE INITIATIVE

The Harney Basin Wetlands Initiative formed in 2011 to find solutions for the ecological challenges that face land management in the Harney Basin. The initiative grew out of the collaborative process used to develop the Malheur National Wildlife Refuge's Comprehensive Conservation Plan. The initiative's partners are supported by High Desert Partnership, a local non-profit based in Harney County.

WHO IS INVOLVED

We have over 20 partners who regularly participate including ranchers, conservationists, scientists, and federal, state and local agency employees.

LEARN MORE

You can find more information on the Harney Basin Wetlands Initiative by visiting <http://highdesertpartnership.org/what-we-do/harney-basin-wetlands-initiative>