



INTERMOUNTAIN WEST

JOINT VENTURE

WATER 4 SCIENCE

FOR FLOOD-IRRIGATED WET MEADOWS

A strategic approach to conservation is a pillar of the Intermountain West Joint Venture's (IWJV) mission. Emerging science is greatly expanding our understanding of wetland resources and the impacts that [climate change and human water uses are having on finite wetland habitats on public and private lands in the West](#). The data has also elevated the role that [flood-irrigated agricultural lands in natural floodplains are playing a key role in maintaining migratory bird populations in water-limited landscapes](#). The IWJV is building partnerships with agencies, landowners, and conservation organizations across the West to integrate this new science and associated spatial tools into conservation delivery programs aimed at protecting and enhancing key wetland habitats on agricultural lands.

MIGRATORY CONNECTIVITY SUSTAINED BY IRRIGATED AGRICULTURAL LANDS

Cutting-edge IWJV science shows that critically important flood-irrigated landscapes within the Intermountain West comprise a wetland network supported by agriculture and necessary for the survival of migratory birds.

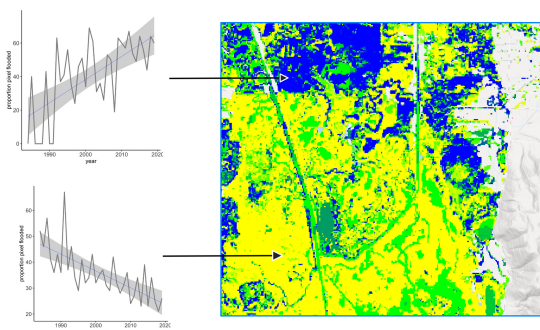
- **62% of the wetlands** in the snowpack-driven systems of the Intermountain West are flood-irrigated pastures and hay meadows (wet meadows) located in floodplains. These key wetland habitats are concentrated in 7% of the irrigated land. Flood-irrigated wet meadows rely on healthy groundwater levels in floodplains to sustain livestock forage productivity. Flood irrigation naturally maintains underlying groundwater that is less vulnerable to warming climate and key to supporting seasonally flooded wetlands on the surface. Filling these sponges through flood irrigation is critical to slowing the movement of water through the system and thus increasing resiliency in the face of drought.
- These habitats are immensely valuable to migratory birds. Recent research shows that roughly **80% of the habitat use by sandhill cranes***, **white-faced ibis**, **cinnamon teal****, and **northern pintails in the Intermountain West is on privately owned, flood-irrigated wet meadows**.
- The IWJV's goal, informed by [human dimensions research](#), is to help landowners continue to mimic natural hydrology through flood irrigation in floodplain systems.

*Research in press. **Research under review.

SCIENCE INTO ACTION

What are the applications to the NRCS?

- Because the key **wetland habitats are concentrated in only 7% of the irrigated land**, conservation investments and payments for ecosystem services can be strategically directed to agricultural producers that own and manage a relatively small—but incredibly special—slice of the agricultural landscape.
- The IWJV's **wetland dynamics modeling enables strategic conservation in space and time**. For example, we can identify private lands that are most reliably wet at the times of year that are synchronous with migration and/or breeding life cycles of birds, like ranches that flood-irrigate in March and support spring-migrating northern pintails in the [Southern Oregon Northeastern California \(SONEC\) region](#). The IWJV's [wetland resiliency modeling](#) supports conservation decision-making by providing habitat trend data that can help target the most climate-resilient areas for long-term protection via conservation easements. These models are **excellent tools for outcome-based evaluations because they can measure wetland habitat over 35+ years**, as well as track conservation achievements and habitat trends.
- This wetland modeling shows a [steep decline in wetland surface water in recent decades, on both public and private lands](#). Helping floodplain irrigators maintain successful agricultural operations is vital for providing crucial migratory bird habitat that is predicted to become even more limited due to climate change. One way this can be accomplished is with informed **investments in modernizing flood irrigation infrastructure**, as is being [effectively implemented by Oregon NRCS](#) with EQIP funds through a science-based Conservation Implementation Strategy.



Wetland resiliency map of the Upper Bear River floodplain in southwestern Idaho, showing 36-year late-spring wetland surface water trend. Graphs depict trends for selected areas of the map. Colors are linked to regression slopes: blue = wetter, green = stable, and yellow = drier.

APPLICATION TO WETLAND PROGRAMS

The power of the IWJV science and Water 4 enables a unique partnership that helps support agricultural producers in sustaining and refining their irrigation practices, which in turn supports landscape function and has continent-wide benefits for wetland-dependent migratory birds.



ACEP-ALE GSS and WRE Grazing Reserved Rights, EQIP, and RCPP.



Conservation Easements for Land Trusts, prioritization for restoration projects.



All of the above, through robust and highly leveraged partnerships!