

The Human Dimensions of Conserving Working Wet Meadow Habitats in Sage Steppe Landscapes

Results from landowner-led workshops

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Recommendations

Our findings related to the facilitators and constraints of flood irrigation have important implications for conservation professionals to ensure successful, sustainable engagement of landowners and maintenance of working wet meadows. The trade-offs that ranchers consider in relation to the seven types of community capital (see Table 1) can inform the work of the IWJV staff and partners. In the following sections, we highlight implications from our results as they relate to communications, conservation delivery, and partnerships. These recommendations were co-produced through a day-long discussion of results with the research team, IWJV staff and partners.

Many of the recommendations relate to IWJV's current Working Wet Meadows Initiative (SONEC) and its new, broader Water 4 Initiative (W4). The W4 Initiative focuses on conserving working wet meadows and "water for" agriculture, wildlife and fisheries habitat, groundwater recharge, recreation, and other services that matter to people. The goal of W4 is "to support agricultural producers, public land managers, and other conservation partners with working wet meadow conservation on agricultural lands." This research project provides insights on rancher perspectives on working wet meadow conservation, particularly as relates to flood irrigation, to inform how to best achieve the purpose of supporting agricultural producers. The IWJV's initiative plans to catalyze communication, promote effective conservation delivery, identify conservation program and funding opportunities, and help build partnerships surrounding working wet meadows in the West. In the following sections, we provide recommendations based on our findings to inform these activities.

Communications

Ranchers in both workshops expressed frustration with the misperceptions that the public and policy makers have regarding the ranching community, particularly as relates to flood irrigation. Although flood irrigation is viewed by many outside of the ranching community as an inefficient use of the water, many ranchers see this as the 'myth of inefficiency' that does not take into account many of the place-based benefits of flood irrigation. However, frustrations related to misperceptions went beyond simply flood irrigation to misperceptions about ranching more generally. Many ranchers felt they were not being appreciated for their role in providing food to people, downstream water, and wildlife benefits.

Communicate with the skeptics: Telling the rancher story

To address the misperceptions of flood irrigation and ranching, and to the extent that IWJV science indicates flood irrigation has wildlife and social benefits, greater success may be realized by focusing communication efforts on telling the story of the value of ranches and flood irrigation to the skeptical voting public. Those in surrounding communities (as indicated in the Oregon workshop, a closed system), urban areas downstream (as indicated in the Wyoming workshop), or those moving into rural areas (e.g., resort town new residents) are an important audience for these communication efforts. Another audience to focus on is environmental organizations and their members, given their likely interest in the issue. This story could include communicating specific examples, such as found during the workshops, of the stewardship actions and land ethics of many ranchers (e.g., promoting wildlife habitat such as for birds and big game like elk). This could be done through various formats such as a story map of rancher stewardship stories or publications in diverse outlets (e.g. the news media, conservation organization magazines). In addition to public communications and mass media, potential audiences could include policy makers who make water decisions that influence water availability to ranches (e.g. local water districts/boards and state legislators). Ranchers also expressed concerns that water allocation for the purpose of flood irrigation was not valued by the general public as it was considered an inefficient use of water. Communication with local water districts and decision-makers could help address these concerns by explaining the role of flood irrigation in these communities, both socially and ecologically.

Strategically share research findings with professionals: Social ecological complexity

As part of communications efforts, we recommend that IWJV and its partners emphasize sharing the results of this study, particularly focusing on messaging about the social-ecological complexity of ranch management. Strategic sharing of these findings with agencies and conservation professionals can help practitioners more fully understand the complexity of ranching decisions and that rancher considerations extend beyond simply finances. Further, we found that the scope of ranchers' irrigation considerations goes much deeper than simply irrigation management with a greater value placed on the overall sustainability of ranching operations. Lastly, it is important to share the concerns about potential cascading effects on local communities if ranching operations are lost, as they play a role in sustaining local social and cultural networks.

We recommend a strong focus on the social and cultural piece as it is often overlooked by the conservation community and has yet to be a focus of IWJV communications about working wet meadows, which have largely messaged about biological values. We also recommend stepping back from a framing of the dichotomy of sprinkler versus flood irrigation as that is not how ranchers in these landscapes thought of the issue. Instead, communications could focus on the role of irrigation broadly in sustaining ranches through the complex set of capitals.

Conservation Delivery

In considering new approaches to conservation delivery, IWJV and its partners have the opportunity to incorporate rancher needs and interests into on-the-ground outreach and programs. In both workshops, ranchers expressed that they feel programs do not appropriately incorporate local social and ecological context. We encourage IWJV and its partners to consider the 7 different types of facilitators and constraints, particularly those traditionally less incorporated into conservation design such as human, social, and cultural capital when considering new methods of conservation delivery.

Emphasize increased flexibility in program design at a place-based level

We recommend working creatively to more effectively implement current programs, maximizing facilitators and addressing constraints to flood irrigation and ranching overall. Ranchers emphasized increasing on-the-ground flexibility in program implementation and moving away from the one-size fits all approach of many federal conservation programs. In their outreach to decision-makers, IWJV and its partners could advocate for the need for (or implement, as practical) increased program flexibility given the place-based nature of much of rancher decisions. Ranchers were also frustrated with the one-size-fits-all approach of much of the water regulations (e.g., turn-on dates and appropriations that may not fit with the place-based needs of their operation and fields). While irrigation delivery such as “turn-on” dates is often dictated by state laws and complex policies between federal, state, and local private entities, there may be creative approaches for the IWJV and partners to promote shared water use and exploration of local scale solutions to improve flexibility (within existing water laws and rights). IWJV and partners could explore options related to a watershed-scale water-banking system or program that increases local control over water management. Oregon NRCS is already working to foster a more flexible, community-scale approach to conservation through their “Strategic Approach to Conservation” (<https://www.nrcs.usda.gov/wps/portal/nrcs/detailfull/or/technical/cp/?cid=stelprdb1262209>). This approach could be used as a model as the IWJV and partners look into developing similar programs in other communities.

Emphasize partner positions to connect with ranchers in their place

In developing effective conservation delivery strategies, considering the operation-specific nature of many rancher decisions may be useful. Findings suggested the need for a stronger incorporation of the social-ecological context and complexity in conservation delivery. Partner biologist positions can contribute to conservation delivery that fosters sustainability of ranching operations through locally grounded principles.

That is, given the place-based nature of so many ranching decisions, it is critical that those on the ground delivering conservation programs are versed in local, place-specific constraints and considerations. The value of partner biologists is extended when they are supported in gaining the skills and allocated the time required to build relationships with ranchers. Given the place-specific nature of many rancher decisions (e.g. related to the social and ecological context of the landscape), the role of these positions could vary region to region and community to community, depending on the needs of the specific community.

Foster development of the next generation in agriculture

In both workshops, a critical concern of ranchers was who will be the future stewards of the land. Support in succession planning may be needed to ensure sustainability of ranching in many of these rural communities. Workshops on succession planning or technical assistance on the topic could be appropriate options. Additionally, development of future farmers' programs could also contribute to long-term ranching sustainability, connecting young or new farmers interested in finding a place to ranch with ranchers who may not have family interested in taking over their operations.

One program that is currently in place to foster this development of the next generation of agricultural land stewards is the Rangeland Conservation Internship Program through the Wyoming Stock Growers Association and the Nature Conservancy. Through paid internships, undergraduate and graduate students gain hands-on experience with rangeland conservation principles on The Nature Conservancy's ranches across the state. Related to human capital constraints, programs such as this could be useful for developing skillsets and training that would provide the needed skilled labor and facilitate entry into flood irrigation.

[Conservation Programs and Funding](#)

Offer incentives for infrastructure maintenance

It is also important for IWJV and its partners to consider built capital constraints when prioritizing conservation delivery strategies. Financial and time demands of maintaining old and dilapidated infrastructure (e.g. ditches) were primary constraints to flood irrigation. Several ranchers, particularly in the Oregon workshop, were frustrated that funding is available for new infrastructure, but not for the upkeep and maintenance of old infrastructure. Cost share programs or other opportunities for maintenance and upkeep of old infrastructure would likely be utilized by ranchers.

Explore options for payment for ecosystem services schemes

Related to social and political capital constraints, ranchers in both workshops expressed frustration that the benefits of flood irrigation for the ecosystem were not properly recognized. In the Wyoming workshop, this fed into specific discussion of interest in payment for ecosystem services (PES) related to flood irrigation. PES schemes are incentives for landowners in exchange for providing some sort of ecological service and have been applied around the world in diverse contexts. IWJV may want to explore options for PES schemes related to flood irrigation.

Partnerships

In both regions where we held workshops, collaboration among diverse stakeholders is already occurring, and many ranchers find this cooperation critical to success. They have positive relationships with agency representatives in the local offices and find these relationships important for both conservation success and ranching sustainability. IWJV can further support these efforts and help as needed to ensure the success of these partnerships. Overall, it is important to find ways (e.g. training, coaching, mentoring) to support landowners and partners in key aspects of trust building, partnership development and sustaining collaborative efforts. Strengthening and developing of partnerships particularly taps into social, cultural, and human capital considerations.

Build partnerships with state-level decision-makers (particularly related to water policy)

Ranchers expressed a great deal of concern related to state-level water rights and policy. For instance, ranchers were frustrated with the one-size-fits-all approach of much of the water regulations such as relates to turn-on dates and appropriations that may not fit with the place-based needs of their operation and fields. Thus, it may be useful for IWJV and its partners to consider its role in engaging in state-level policy discussions, especially as part of the W4 initiative, and strengthen partnerships with state legislators and decision-makers. It is important for IWJV and partners to communicate technical information regarding the environmental values of flood-irrigation and ranching land-use practices to these decision-makers, particularly water management agencies. This could provide an additional platform for the ranching community to engage in complex discussions regarding current and future water-use and management. Additionally, to bridge this gap between local management and state and federal policy it could be useful for IWJV to find partners who work at the local or state level and provide them with tools to be involved in policy discussions. It is important to communicate to state policy makers that rancher and landowner input has to happen on the front-end of decision making as opposed to on the back end or not at all.

Build capacity: University extensions, conservation districts, irrigation districts

Strengthening partnerships with diverse local partners can help promote capacity-building surrounding the ranching community. Partners who played a strong role in the local communities but do not tend to be engaged at the state or regional level within the JV are the local soil and water conservation districts, irrigation districts, watershed councils, and university extension programs. These entities tend to be respected and trusted by producers and often play a key role in acting as a champion for agricultural producers and leveraging resources and pushing for necessary local programs. IWJV might consider how their W4 work will engage such local level entities and/or local opinion leaders. Another specific outlet for partnership development, particularly in Oregon, is related to local bird festivals that bring in tourists and birdwatchers across the region. IWJV could support partners' involvement to highlight the agricultural community's contributions to bird habitat conservation and promote bird festivals in these regions through the IWJV communications network and to expanded audiences.

Strengthen Science partnerships for future human dimensions research

This project has been a great model of co-production, incorporating diverse regional and local partners in all phases of the research process. Thus, future human dimensions research through IWJV could benefit from the replication of this co-production model where the project and results are produced and reviewed together between the research team, local conservation professionals, and IWJV staff.