



Partnership for Lake Abert and the Chewaucan Meeting #9
June 11-12 in Paisley, OR

Participants present: Erin Wheeler (Water Caucus), Colleen Withers (CWC), Vanessa Loverti (FWS), Ron Larson (OLA), Teresa Wicks (Bird Alliance of Oregon), Cole Hendrickson (DEQ), Tess Baker (CWC), Justin Ferrell (LCSWCD), Philip Milburn (ODFW), Barry Schullanberger (Lake County Commissioner), Matt Anderson (OWRD), Ed Contreras (IWJV), JP Patt (Confederated Tribes of the Warm Springs), Ryan Houston (ONDA), Jack O’Leary (CWC), Scott Hynek (USGS), Quincy Warner (LCRI), Steph Hayes (WaterWatch), Christine Rumsey (USGS), Anton Chiono (CTUIR), Sean Chambers (SONEC/NRCS; Local Producer), Marty St. Louis (ODFW, retired), Ashley Tunstall (Ducks Unlimited), Bonnie Baxter (Great Salt Lake Institute, Westminster College), Ramon Naranjo (USGS)

Oregon State University Team Members present: Aaron Wolf, Henry Pitts, Zoe Rosenblum

Oregon Consensus Facilitation Team present: Bobby Cochran and Jennah Kiefer

Action Items	
Compile outputs from the small group brainstorm during “ Part I: From planning to doing ” into a criteria framework for sorting and prioritizing strategies and actions.	Anton, Ashley, Colleen and Steph
Add clarification around Appendix A.	JFF Team
Incorporate final edits to the JFF Shared Narrative Report and share back to the full group for a final review.	JFF Team
Complete consensus checks on the Charter (following up with voting members who were not present at the meeting) and on the final JFF Shared Narrative Report.	OC
Connect OWRD to SNOTEL site development discussions.	OSU
Explore funding opportunities for marsh assessment.	OC/Planning Team
Discuss long term management plan for JFF database, OSU StoryMap webpage, and SNOTEL site.	All



Breakfast and Welcome

Good food, good coffee, good people!

Agenda Review, and Updates

The group completed a round robin introduction- new additions to our families was a running theme!

Joint Fact-Finding: What Are the Key Facts?

Aaron Wolf, OSU, launched this session by polling the group to see who had and had not read the Joint Fact-Finding Document, also called the Shared Narrative Report. About four people indicated they had not read it. He shared that those who hadn't yet read it would have until the end of the day to do so, and to provide feedback.

The Joint Fact-Finding Team presented updates on the JFF Shared Narrative Report. Henry Pitts provided an overview of the iterative development process, and highlighted new components and major changes since the full group last reviewed the document. He noted that it has gone through twelve different versions to date. The new additions and edits included: an executive summary; land acknowledgement (removed language that potentially erroneously indicated that formal consultation occurred, and now uses the word "engaged"); Glossary; Setting Context (which broadly describes the region's characteristics and includes a brief discussion of the economy in the area); Appendix A (prioritized information and acknowledgements of information not known to consider in the future, as discussed in prior meetings) and Appendix B (additional information that wasn't specifically suited for the database). He noted that additions to the Glossary section are welcome and will be completed during the copy editing phase.

Significant edits in each content chapter were also presented by the respective community lead, where available. Descriptions of irrigated acres in the Water Resources chapter were edited to better represent the numerical data presented in the Phillips and Van Denburgh report. Ron Larson stressed the difficulty of trying to predict and understand climate change with old data and new fires. More context was provided on the role of Lake Abert in the larger system of saline lakes in the Fish & Wildlife chapter. Jack O'Leary and Autumn Muir offered their perspective on the Agricultural Practices and Upland Process chapters respectively. Henry Pitts reminded the group how the Cultural Heritage/Lived Experience chapter was structured, and outlined the language shifts that more accurately reflect Tribal Sovereignty, Reserved Rights, and Claims. Ed Contreras also offered an overview of the Drought Considerations chapter.

The group discussed Appendix A on future actions. It was acknowledged as a good way to capture questions and information that will be important to decision-making down the road but doesn't seem to fit with the purpose of JFF's emphasis on known information. The suggestion was made to separate this information into a different document, or at least include a very clear introduction about what Appendix A is and is not. There was some apprehension expressed regarding the large length of the document and difficult accessibility. Another suggestion was raised, recognizing that some statements are "best guesses" based on observations and should be noted explicitly as such (and not confused with data-driven facts), as well as updated overtime as better information is

known. The group also discussed how the JFF document could function in an editable, “living” format in the future. Henry offered more detail on the Resource Database, which will collect and compile all relevant sources, datasets, and other materials that pertain to the Partnership’s work. This will include all cited sources in the JFF Shared Narrative Report, but is intended to also expand beyond the data in the report. Future discussions should address how to handle future “updates” to the JFF knowledgebase.

Part I: From Knowing to Planning

Bobby Cochran, Oregon Consensus, read statements from the JFF Shared Narrative Report to do a bit of a “fact check” exercise. He then suggested that the group use the day to set some initial goals and targets and then wait until later to get more precise. A few individuals engaged in a discussion cautioning that the group can’t set goals until they have data (and that comparing Lake Abert to Summer Rim just is not adequate). This led to discussion around how to proceed without data and whether the group could help leverage/push agencies for funding to collect more data to manage resources wisely, since about 90% of OWRD gauges are west of the Cascades. Others agreed and also highlighted the importance of articulating how data is a must-have to achieve the goals of the group.

Bobby then showed an example of a theory of change for OWEB Strategic Action Plan. Others weighed in on strategic planning experiences and strategies, noting that the scale of the chain is sometimes not aligned with the focus of the collaborative. Bobby stated that it was important to first define the entire system and then let the collaborative hone in on specific processes or issues within the fully framed system. He encouraged the group to set specific, measurable, achievable, results oriented, timely, equitable (SMART-E) goals. Someone suggested selecting indicators that could then be influenced by the group’s actions.

Part II: From Knowing to Planning

The group then divided into five small groups and collaboratively identified outcomes, objectives and indicators to help form the basis of what could be the Partnership’s future strategic action plan. A table of the results is captured in APPENDIX A of this summary ([and spreadsheet linked here](#)).

Group 1 (*Erin, Colleen, Vanessa, Ron, Teresa*) identified two goals, for Lake Abert to continue its role supporting shorebird populations, and for the Chewaucan Basin & Lake Abert to support ranching & thriving communities.

Group 2 (*Tess, Justin, Philip, Barry, Matt*) stated key outcomes of maintaining lake elevation as many years as possible naturally; maintaining flows in the uplands, and foliage and forest management can have a huge positive impact on those efforts; and sustaining agricultural community over time.

Group 3 (*Autumn, Ryan, Jack, Ed*) divided their activity into three key sections: uplands, the lake, and the marsh. In the uplands, outcomes included a healthier forest and soil stabilization. For the lake, outcomes include a long term, healthy, productive marsh. This could be indicated by X tons of hay every X years, X heads of cattle on the marsh

in different seasons. Other outcomes include supporting riparian habitat, and improving forage quality, wildlife habitat, and water management.

Group 4 (*Anton, Christine, Steph, Quincy, Scott*) outlined a general outcome as a resilient community and ecosystem (defined as a system/community that is healthy and able to bounce back from disturbance), as well as having useful data. Data collection is not the goal in and of itself- it needs to inform management and can answer specific questions. The question was raised of optimizing the system or the lake overall. The group further stressed the importance of communication, trust, and good faith. They also talked about water rights, and expressed concern about over-allocation of water, suggesting that the group not allow Oregon to issue more water rights in the basin.

Group 5 (*Ashley, Marty, Bonnie, Ramon*) discussed three outcomes: increase water usage efficiency through infrastructure replacement, increase understanding of the snow storage term by implementing SNOTEL sites w/ geospatial analysis of lidar (SWE), and further exploring the water budget.

Part I: From Planning to Doing

Bobby then asked the small groups to begin considering criteria to help sort and prioritize potential strategies and actions. The list of potential criteria included:

Group 4 discussed these criteria: cost, urgency, long-term viability, relative simplicity, strategic alignment, timeframe, interdependencies, legal considerations, and interdependencies. They then discussed impacts: positive/negative tradeoffs, resource accessibility & availability, the risk of inaction, consensus or agreement, as well as certainty of outcome.

Group 3 echoed criteria from Group 4, but also discussed the idea of project readiness/ripeness (social/administrative capacity), as well as leveraging opportunities to build off already existing or planned work. This was echoed by Group 1, who also stated the need to consider long-term benefits or harm.. A transparent storytelling process was also outlined as a need, which prompted a call for general visibility of PLACe work. Group 1 and 3 also asked for measurability, and metrics to assess success.

Group 2 discussed the willingness to participate and how decisions will occur, as well as geographic focus within the basin. They made a distinction between holistically beneficial projects, versus specific area focused projects.

Group 1 also echoed this point, wanting to bring the greatest benefit to the system/watershed. They mentioned minimizing adverse effects. The discussion then moved toward future costs and fundability - potentially planning in a way that enables access to outside funding. Ron suggested starting with low-hanging fruit and then building trust over time before getting into more difficult decisions/actions. Group 5 discussed cost, as well as providing further context on the project. Discussions of cost also included a consideration of "fundability," which is connected to broader feasibility overall.

The facilitation team suggested trust-building could also be a useful criteria, with regard to the potential impact on and relationship with the greater community. The group then had a larger discussion about criteria, which included ranking criteria and establishing thresholds needed for action/prioritization. Ryan mentioned that some things are

binaries whereas others will be scalar. An additional suggestion was made to develop a common framework to make a narrative decision rather than a numeric one. A need that arose was a holistic overview of funding opportunities across the state, and comparing the criteria in those applications to the PLACe criteria. Bobby noted that ample funding was available for this phase of work, and that it could be more effective to focus on projects the group can agree to, rather than focus on funding as a limitation.

Anton, Ashley, Colleen and Steph volunteered to work together to compile these criteria-brainstorm outputs into a framework.

Part II: From Planning to Doing in Wet Years

Bobby utilized the conceptual model of the basin to guide feedback from each of the small groups as they reported on the strategies and activities breakout session.

Uplands Discussion

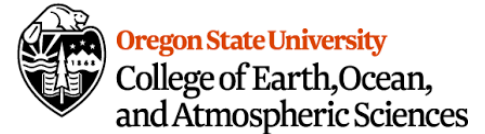
Group 5 mentioned cloud-seeding, focusing on forest health improvement (fire, planting, invasive grass control), and promoting ecotourism. Group 3 defined one strategy as “identifying priority areas for upland restoration.” Group 4 echoed this sentiment, with an emphasis on wet meadow restoration. Beaver related work, specifically beaver dam analogues, were also identified as an action to help keep water in the uplands. There was a broad discussion of water storage in the uplands, and if it could benefit Lake Abert. Autumn also raised the need to reduce fire potential in the uplands by removing the dead wood. Teresa Wicks stated that many closed basin systems in eastern Oregon have uplands with high recharge potential, so it could have a benefit in the Chewaucan Basin. Broad questions were asked about groundwater connectivity, and the potential need for a groundwater report was raised. The broad seasonal needs for the lake, and timing of flow from the uplands through the marsh was also discussed. Bonnie and Ron offered their perspective on food web productivity, and the needs for brine shrimp in Lake Abert.

Brine shrimp cysts won't hatch if the salinity is too high, but they do prefer a freshwater film. Adult brine shrimp have a 3-month life cycle, and high reproductive rates. Questions were raised about the potential benefit of a late-season trickle flow of freshwater to kickstart a second wave of brine shrimp productivity.

A final message on the uplands was “if we don't solve the uplands then we won't have a lake to deal with anyway.”

Marsh/Valley Falls Discussion

There has not been an assessment completed on the marsh yet, though it feels like a logical next step. An application for funding from OWEB for this type of assessment was unsuccessful. Further measuring and monitoring of flow is needed, and could contribute to an assessment. Group 5 also raised the need for a SNOTEL site in the basin, the potential benefit of precision agriculture practices in the marsh, as well as a MODUS tower to aid in a food web assessment of Lake Abert. Other needs included inventorying and assessing alternatives (safety net) and improving the understanding of producers.



Groundwater

Studies that assess the source of groundwater, such as the work being completed on paleo-groundwater by The Nature Conservancy. Colleen stated that similar reports have seemed helpful in the context of the Harney Basin, and could be beneficial here. There is also a system called LESA LEPA that can be applied to center pivots that can conserve up to 15% of water usage. Scott also noted that connectivity between the river and groundwater was critical, as groundwater could either supplement flow rates or detract from them depending on the gradient.

Justin stressed the importance of clarifying the amount of groundwater being used on paper (allocated rights, 9500 acres according to the JFF Shared Narrative Report) versus what is actually being extracted, and explained how the rights process works for groundwater in Oregon. It became clear that groundwater assessment is important now, whereas it was not a priority in the past. A discussion emerged around exploring ancillary benefits. Teresa clarified, and Ryan agreed, that we probably have enough information now to begin projects on the ground while still collecting more data on groundwater.

Strategies not yet on the table: Ryan shared the idea of ensuring compliance with water rights and management, in reference to River's End reservoir, as well as potentially closing the watershed to new water rights (both surface and ground). Justin said that groundwater users in another area voluntarily put a moratorium on groundwater rights (and Ryan said the same happened in Nevada). Tess thinks that producers would not have an issue with this because they haven't been developing groundwater anyway - most of their water rights are surface water rights from the late 1800s and early 1900s. Jack raised the point that agencies shouldn't apply for instream water rights if producers voluntarily moved to restrict new water rights in the basin.

Throughout the discussion, a list of questions/unknowns arose:

- What is the recharge capacity of the basin?
- Evapotranspiration and timing of water for Lake Abert?
 - Month-by-month timing, quantity, location of water for priorities (e.g., to balance brine shrimp and hay)
- Offset annually 40,000 consumptive use - ET from farming
- More options for "dealing with" uplands
- Need assessment of marsh

Anything rising to the top?

Bobby presented a list of key areas that rose out of the post-lunch discussion, and Ryan suggested the schematic from LaMarche & Thomas 2023 in the JFF Shared Narrative Report could be a useful framing tool. Ryan suggested writing a letter to OWRD to ask them to stop issuing water rights - the conversation continued around how to leverage public support to pressure Oregon to respond. Jack advocated for gauges that illustrate the basin holistically, and cautioned against the utility or feasibility of gauging on every ditch and/or diversion. Marty asked a clarifying question on the three weirs: ZX uses the lower weir, and the other landowners utilize the upper two



weirs. Jack noted that gauging at the point of diversion (POD) isn't incredibly helpful without also gauging the return flows. Colleen phrased this as pursuing "strategic gauging." Tess suggested that though additional gauging might be helpful, it doesn't necessarily have an immediate benefit that should push it to the top of a priority list.

Ron stated that there had not yet been any discussion of specific strategies to mitigate for desiccation events, and suggested that water leasing or water rights could be useful strategies. He also suggested that keeping a broader system perspective could help build larger coalitions with other saline lakes groups to lobby the US Congress (e.g., region-wide bird populations; Saline Lakes Act). Further data collection on the lake is necessary, and the volunteer aspect of that collection was noted. A recent Audubon Report showed that birds are using other areas (not just hypersaline lakes). Autumn noted the need for more robust communication and storytelling- both for internal group memory, but also external facing publicity.

Next Steps and Adjourn

Bobby assigned an overnight assignment for voting members to (1) review the Charter and (2) review the JFF Shared Narrative Report, to prepare for a consensus check tomorrow.

Bobby kicked this off by talking about the decision support tool: Ron & Tammy are developing one model to understand the relationship between river, diversions, flows, which will ideally be a tool to help pin down the amount of evaporation and future dynamics of the lake. There is also the John LaMarche model which USGS may be able to build on. In any case, Bobby emphasized that this group needs to help define what questions the tool will help address, and suggested that we identify a small group of people who will get into the weeds of the tool with Ron and Tammy - this team will meet before August.

Aaron then recapped that from an online meeting poll, three ideas surfaced on how to spend \$30k from the Jubitz Foundation: a roadside kiosk & QR code storymap; a SNOTEL site & dissertation; and a list of drought options. Henry mentioned the story map and showed the first page. Hannah Steele's PhD research will explore the relationship between SNOTEL, community decision-making, and streamflow; working with OWRD - she will visit the basin in the fall to poll the group for preferences on SNOTEL location and what information should be collected. Anton expressed excitement about the SNOTEL site and asked whether OWRD would be involved to manage it long-term. [Flag for OSU team to ensure longevity of SNOTEL site and Story Map.] Aaron mentioned that he will meet with Tess to discuss next steps for the roadside kiosk.

DAY 2: Welcome

Bobby asked for any reflections on Day 1 proceedings. Ryan raised the point of timeliness as a criteria for assessing next steps, and pointed out taking action on smaller tasks that are actionable sooner can be beneficial for the overall pace of strategic action. He also pointed out that criteria for assessment can change over time.

Consensus Checks



Bobby reminded the group of the “fist-to five method,” in which members raise their hand and indicate how close they are to consensus by showing a: 5- It’s incredible!; 4- Fully support; 3- Support, but have concerns; 2- Support, but have serious concerns; 1- Really serious concerns, but you won’t block it; Fist- It’s blocked.

He then asked for a consensus check on the group Charter. Based on the voting members present, the Charter was approved with strong consensus. The OC team will follow-up with the additional voting members not at the meeting to get their consensus response as well.

Following this, he invited a preliminary consensus check on the draft JFF Shared Narrative Report to get a sense of how the group felt about the document’s current status and identify any outstanding issues that might get in the way of ultimately supporting the report in its final version. There were a few 3’s who expressed their outstanding concerns that were intended to be addressed in the next round of edits.

Field Tour

The group then went on a field tour with stops at Lover’s Lane, Valley Falls Grange, and the Lake Abert gauge to hear a presentation from USGS about the data collection work underway there.

APPENDIX A ([spreadsheet also linked here](#))

	Outcomes	Objectives	Indicators	Strategies	Actions
1	<ul style="list-style-type: none"> - Increase water use efficiency - Understand snow storage levels - Better understanding of hydrology 	<ul style="list-style-type: none"> - Established water budget for Chewaucan River - Snotel sites coupled with geospatial analysis - Best use of water to ensure it makes to bottom of system and maintains hydrological function and production 	<ul style="list-style-type: none"> Yield by producers - Bird use, diversity, abundance - SWE - Snow depth - Soil moisture - Soil temperature - Stream flow and volume - Diversion volume - Tributary volume 	<ul style="list-style-type: none"> - Irrigation infrastructure improvement (recognizing benefits of current water spreading) - Understanding snowpack and retention and runoff changes with wildfire/climate changes in uplands - Reach optimum lake level and salinity - understanding spring connectivity and input 	<ul style="list-style-type: none"> - Prioritize what systems to start with - LESA / LEPA on pivots - Upgrade headgates on flood irrigation - Offsite water for livestock (not in canals) - Snotel installation - voluntary water leasing - Water storage options - spring enhancements around the lake - Juniper removal above springs or Abert rim - Juniper / invasive species removal - Strategic replanting of conifers - Controlled burning - Stream restoration - Riparian fencing / offsite water development - Soil stabilization through seeding - More water to lake consistently to offset annual evaporation

<p>2</p> <ul style="list-style-type: none"> - Resilience - Useful data - Ability to manipulate salinity levels -Ongoing communication collaboration -Don't exacerbate overallocations 		<ul style="list-style-type: none"> - Healthy communities and ecosystems in response to disturbance - Data used to manage - Prevent further water demands 	<ul style="list-style-type: none"> - Improve ability of upper watershed to capture precipitation - Maximize the benefits of water availability - Avoid desiccation of Abert - Increase habitat suitability across SONEC wetlands 	<ul style="list-style-type: none"> - Reduce juniper - Plant trees in strategic locations to capture precipitation - reestablish native plants and improve soil stability - Assess water storage opportunities in upper watershed - Assess limiting factors in upper watershed that contribute to short-term, high-velocity flows - Develop alternatives - Assess infrastructure (map, modernize, modify) - Assess producer needs - Assess limiting factors in lower watershed - Create a shared understanding of flood timing as it relates to wildlife habitat, forage production, and overall resource management - Water leasing - Water rights purchase - Voluntary reductions in upstream diversions - Physical modification of lake - Improve waterbird habitat region-wide - Better SONEC data for shorebirds
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<p>3 - Sustainable agriculture community (economically viable): sustainable over time: able to adapt to changes</p> <p>- Sustain and / or increase stream flow above Paisley while sustaining and / or improving water quality</p> <p>- Lake elevation of 4250-4258 for as many years as possible</p>	<p>- Improved irrigation efficiencies, especially center pivot (pay for installation for LESA/LEPA irrigation sprinklers)</p> <p>- Analyze area that can sustain replanted forest and prioritize that work</p> <p>- Access funding opportunities for water savings / restoration</p> <p>-</p>	<p>- Tons of hay produced</p> <p>- Head of cattle sustained</p> <p>- Snow pack measurement in uplands</p> <p>- Stream flow above Paisley</p> <p>- Lake water levels</p> <p>- Migratory bird use on lake</p>	<p>- Habitat restoration</p> <p>- Water budget</p> <p>- Increasing irrigation efficiency</p> <p>- Instream flows as beneficial use</p> <p>- optimizing water delivery</p> <p>- Data collection and monitoring</p> <p>- Communication and outreach</p> <p>- Understand groundwater (sources, systems, connectivity)</p>	<p>- Prescribed fire</p> <p>- Wet meadow restoration</p> <p>- Invest in uplands</p> <p>- Quantify water supply and demand</p> <p>- Irrigation upgrades</p> <p>- Leases/transfers of water rights</p> <p>- Instream water rights</p> <p>- Better understanding of timing of water needs</p> <p>- Identify key locations to collect data</p> <p>- Identify key metrics to assess conditions</p> <p>- Groundwater study</p> <p>- Identify water users (messaging, trust building, education)</p>
<p>4 - Lake Abert plays a significant consistent role in supporting shorebird population viability within the broader network of great basin saline lakes</p> <p>- The Chewaucan hosts thriving ranching families and surrounding communities</p>	<p>- Adequate conditions exist that support significant food production for shore birds (algae, brine shrimp and alkali flies)</p> <p>- Communities and producers have the resources needed to support efficient use of water, and ability to manipulate water in a manner that supports grass production and wildlife needs</p>	<p>- Lake elevation</p> <p>- Lake salinity</p> <p>- Waterbird populations/species</p> <p>- Numerical abundance of food resources</p> <p>- Stable human population</p> <p>- Acres of production</p> <p>- Maintained open space</p>	<p>- Continue and expand noxious weed treatment</p> <p>- Identify priority areas for implementation</p> <p>- enhance manageability of water</p> <p>- Reduce erosion</p> <p>- Understand what the water is doing and what is needed</p> <p>- Develop data and information to inform decisions (stream gauging, ground water monitoring)</p> <p>- Adhere to water rights and best water management</p> <p>- Develop decision support tools (hydrologic model)</p> <p>- Close basin to new water rights (surface and ground)</p>	<p>- Weed survey, spray, reseed</p> <p>- Site prep, cone collection, reforestation implementation</p> <p>- Inventory current irrigation network, assess alternatives, design irrigation infrastructure, implement improvements</p> <p>- Streambank stabilization (riparian health)</p> <p>- Replacing annual grasses with natives</p> <p>- Stream gauging</p> <p>- Groundwater</p>

				<ul style="list-style-type: none"> monitoring - Diversion measurements - SNOTEL - Hydrological model - Seek funding 	
5	<ul style="list-style-type: none"> - Healthier forest - Soil stabilization - Abert supports fall functional shorebird habitat over the long term (recognizing interannual variability) - Healthy productive ecological system at Abert - X tonnage of hay produced on the marsh at an average of x/10 years - X head of cattle run on the marsh during certain times of year - Marsh supports functional habitat for water birds/water fowl, riparian 	<ul style="list-style-type: none"> - Potential reforestation - Prescribed fire and thinning - Salinity within the target range of X to Y to support food web - Lake volume remains between X and Y to support the desired salinity for food web - Spray weeds on the marsh - Improve irrigation structure to improve efficiency and manageability - Maintain temporary seasonal wetlands (N/A flood irrigation) - Water management changes have been made (water savings) - More water goes downstream - Improved forage production - We know where water is, when, 	<ul style="list-style-type: none"> - Mosaic tree diversity - Appropriate understory density - Native bunch grass re-establishment - Real-time measurement of hydrology throughout the system (snow pack, discharge, diversions, lake volume) - No weeds - More even distribution of water - Healthy economy 	<ul style="list-style-type: none"> - Improve water use efficiency - Communication and outreach - Ecotourism - Increase capacity of crucial positions - Monitoring sites and activities - Forest health improvement - Squeezing the lemon - Landscape scale strategic planning and prioritization 	<ul style="list-style-type: none"> - Infield and instream infrastructure replacement - Media, papers, workshops, presentations, interpretation, boots on the ground, meetings for producers - Business plan for ecotourism - Higher local individuals, conflict resolution liaison, someone whose job it is - Monitoring at inlet to Abert, Crooked Creek, below UCM, narrows - Monitoring wet years and long-term, bird/forage, Motus towers, foodweb - Thinning, prescribed fire, IAG control, perennial/grass/shrub planting - cloud seeding - Foodweb studies - Snotel sites - precision or smart agriculture (soil water monitoring, ET monitoring) - use geospatial maps

habitat for fish, and other wildlife - Forage quality is improved by improving water management in marsh	and how much on a continuous basis			to pick landscape-level habitat priorities
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