

CBWP Surface Water Strategy List - Draft 2, Tracked Changes
Last Updated: February 26, 2024

INTRODUCTION

This document is organized first by Working Groups, then by critical issues, and finally by draft strategies. The Collaborative will review the Coordinating Committee's draft process for building strategies during the January Full Collaborative meeting. Once all Collaborative members are comfortable with the process, the group will undergo an iterative editing process of Desired Outcomes, strategies, and recommended actions. Following the process, the Collaborative may add strategies to the list, combine repetitive strategies, or remove strategies as they see fit. Each issue needs to have at least one associated strategy that can address it. The Collaborative will seek consensus on this list when appropriate (hopefully March 2024) and then move onto the [Draft Implementation Framework](#) where details of each strategy, including cost to implement, timeline, roles/ responsibilities, etc., will be outlined and discussed.

Strategies were drafted first by Working Groups as evidenced in their respective issue submission forms, which can be accessed [here](#). Holly and Ken worked together to draft Desired Outcomes for each strategy.

KEY DEFINITIONS

Critical Issues: The main surface water resource challenges that the community faces

Criterion for Critical Issues:

- Existing and sufficient data to develop a solution to start to address the issue
- Rooted in Step 2 and 3 reports

Data Gap: Part of a critical issue necessary for solution development

Criterion for Data Gap:

- Relates to information needed to make reasonable decisions
- Prevents an issue from getting addressed, prevents a solution from being implemented.

*Timeline for addressing data gap should be defined.

Desired Outcome/ Objective: Result after strategy implementation

Strategy/Solution¹: The overarching action that must occur to achieve Desired Outcome

Recommended Action(s): The step(s) required for the strategy/solution to progress

SECTION 1: SURFACE WATER-GROUNDWATER INTERACTION (2)

Draft Issue 1: There is uncertainty about groundwater recharge in the Silvies, Donner und Blitzen, and Silver Creek floodplains. (Surface Water - Groundwater Interaction)

Desired Outcome 1: An understanding of the locations and rates of recharge across the floodplain so that recharge can be effectively managed.

Strategy: Conduct an evaluation of the floodplain characteristics that affect recharge (soil type, depth, location, etc.)

Recommended Actions:

1.1 Seek funding for a scientific study of groundwater recharge

Issue 2: There are concerns that groundwater withdrawal has an adverse effect on surface water as expressed by declining or halted spring flow, declining stream flow, and possibly lake level effects. (Surface Water - Groundwater Interaction). *It should be noted that we don't know the full impacts of groundwater withdrawal***

Desired Outcome 2: Obtain data on changes in spring and river base flow

Strategy 2: Conduct an evaluation on the local-scale effects on springs and river baseflow that are near large groundwater withdrawal areas

Recommended Actions:

2.1 Increase monitoring of spring flows

2.2 Conduct regular monitoring of gaining reaches of Harney Valley streams

SECTION 2: SURFACE WATER MANAGEMENT (4)

Issue 3. Some parts of the irrigation system need improved in-field and diversion infrastructure (Surface Water Management)

¹ Step 4 of place-based planning guidelines: Develop integrating solutions for meeting Long-Term Water Needs by “recommend[ing] a suite of actions to address the community’s water-related challenges with the goal of meeting both instream and out-of-stream needs.”

Desired Outcome 3a: Identify infrastructure improvement projects

Strategy 3a: Develop a strategic approach to improve irrigation infrastructure that optimizes water distribution and considers ecological effects.

Recommended Actions 3a:

3.1a Agencies collaborate with private landowners to identify potential projects

3.2a Develop a plan to inform private landowners of available funding and technical support for improvement projects.

Objective 3b: Improve potential for groundwater recharge, coverage for spring runoff, hay and pasture production, and habitat for migratory waterfowl.

Strategy 3b: Explore feasibility of installing stream gages to assist with accurate gross division of water.

Recommended Actions:

3.1b Install four stream gages at Five Mile Dam, Mill Dam, Upper East and West Fork.

Issue 4. There is illegal use of water in the basin (Surface Water Management)

Desired Outcome 4a: Reduce the number of complaints by ending illegal water use

Strategy 4a: Stop all forms of illegal use via regulation at any location necessary to achieve the objective.

Recommended Actions:

4.1a Use available staff and resources to stop illegal use at the point of use

4.2a Monitor use by priority dates

4.3a Respond to complaints in a timely manner

4.4a Establish significant fines for non-compliance, and an increasing fine structure for habitual illegal use

Objective 4b: Obtain documentation for optimal water distribution

Strategy 4b: Utilize modern technology to monitor water distribution

Recommended Actions:

4.1b Develop remote sensing protocols for monitoring water use

4.2b Utilize Open ET

4.3b Use drones to determine water distribution and potential illegal use

Issue 5. Timely and effective communication with and between irrigators is deficient (Surface Water Management)

Desired Outcome 5: To have timely information provided to the public concerning water regulation with priority dates

Strategy 5: Develop an electronic process to communicate with the public

Recommended Actions:

5.1 Create a water users group text and email for each system (Silvies, Silver Creek, etc.) enabling irrigators to know the current priority date allowed to irrigate whenever the priority date changes

5.2 Immediately post changes of priority date on OWRD and County webpages.

5.3 Announce priority date on local radio station and weekly newspaper

Issue 6. Ditches are not being adequately maintained. (Surface Water Management)

Desired Outcome 6: Enhance the ecology and optimize irrigation by conveying water more easily throughout the system.

Strategy 6: Surface Water Management Working Group collaborate with Rep. Owens and/or Senator Findley to draft legislation granting OWRD authority to mandate ditch maintenance, including penalties for non-compliance.

Recommended Actions:

6.1 Create voluntary agreements between users on shared/partnership ditches, where concerns have been raised.

6.2 Set up meetings with water master, irrigators on shared ditches, and a facilitator to achieve workable agreements.

SECTION 3: VEGETATION MANAGEMENT (2)

Issue 7: Conifer infilling of large areas of forestland and rangeland has led to increased tree density, distribution, and cover which decreases the surface water supply (Vegetation Management).

Desired Outcome 7a: Increased later season flows of surface water and potentially increased availability of groundwater resources. Our ability to quantify the potential magnitude of impacts, particularly to groundwater resources, is limited with current information.

Strategy 7a: Targeted conifer (ponderosa pine, mixed conifer, and juniper) reduction in snow accumulation (higher elevation) areas of the Silver Creek, Silvies, Malheur-Harney Lakes, and Donner und Blitzed Sub-basins receiving over 17.7 inches of annual precipitation to decrease losses associated with evapotranspiration and promote snow distribution patterns that contribute to improved capture, storage, and safe (slow) release of water in the Basin.

Recommended Actions:

7.1a Increase the scope and scale of conifer stand thinning

7.2a Increase the scope and scale of juniper clearing

7.3a Create opportunities for conifer thinning and juniper clearing on private lands

Desired Outcome 7b: To obtain data needed to inform strategic application of tree reduction treatments to improve watershed function

Strategy 7b: Generate information critical for informing the location and level of conifer reduction treatments designed to decrease water losses associated with evapotranspiration and promote snow distribution patterns that contribute to improved capture, storage, and safe (slow) release of water in the Basin

Recommended Actions:

7.1b Cooperate with USFS in identifying priority areas for conifer thinning for water yield purposes

7.2b Cooperate with BLM to identify priority areas for juniper clearing for water yield

Issue 8: There is a lack of a comprehensive assessment of riparian conditions in the Basin to inform prioritization of strategic restoration actions is needed to address impaired watershed function, which could include riparian habitat conditions. (Vegetation Management)

Desired Outcome 8 (part 1): The proposed assessment will result in high level information useful for characterizing the relative proportion of functional vs impaired conditions in a watershed and for identifying and prioritizing related maintenance or restoration efforts. It will also provide information on the general recovery potential of impaired stream reaches that can be used to further refine restoration priorities. Cooperative assessment of riparian conditions by an interagency workgroup should also result in improved communication about restoration needs and better coordination of future efforts.

Desired Outcome 8 (part 2): Improved water quality, higher quality riparian vegetation, reduced erosion, and more natural functionality of rehabilitated river reaches. This includes flow of water from the river to the floodplain in spring and flow of water from the floodplain to the river in summer months, creating better redband trout and breeding bird habitat.

Strategy 8: Conduct a comprehensive assessment of riparian conditions in the Silver Creek, Silvies, Malheur-Harney Lakes, and Donner und Blitzen Sub-basins.

Recommended Actions:

8.1

SECTION 4: ECOLOGICAL WORKING GROUP, LAKES AND RESERVOIRS (2)

Issue 9: Malheur Lake is highly turbid and the source of turbidity appears to be partially from tributary streams and partially from resuspended bottom sediments. (Lakes and Reservoirs)

Desired Outcome 9a: To obtain a better understanding of the sediment source conditions affecting Malheur Lake turbidity that lead to opportunities to manage the conditions to improve refuge resources

Strategy 9a: Continue investigations of sediment sources to Malheur Lake

Recommended Actions:

9.1a Monitor and evaluate sources of sediment entering Malheur Lake

Desired Outcome 9b: To obtain a better understanding of the sediment source conditions affecting Malheur Lake turbidity that lead to opportunities to manage the conditions to improve refuge resources

Strategy 9b: Develop a sediment source control plan

Recommended Actions:

9.1b Using data on sediment sources, develop a plan to manage sediment coming into Malheur Lake

Issue 10: Malheur Lake is affected by water use in the tributary streams affecting the volume and fluctuation of water levels. (Lakes and Reservoirs)

Desired Outcome 10a: To obtain a better understanding of the flow conditions affecting Malheur Lake conditions that lead to opportunities to manage the conditions to improve refuge resources.

Strategy 10a: Continue investigations of watershed influences on Malheur Lake conditions that include flow, sediment, contribution, etc.

Recommended Actions:

10.1a

Desired Outcome 10b: To obtain a better understanding of the flow conditions affecting Malheur Lake conditions that lead to opportunities to manage the conditions to improve refuge resources.

Strategy 10b: Continue the evaluation for placement of flow measurement devices in the lower portion of the contributing watersheds

Recommended Actions:

10.1b Evaluate the potential for continuous flow monitoring devices near the discharge to Malheur Lake

SECTION 5: ECOLOGICAL WORKING GROUP, RIVERS AND STREAMS (6)

Issue 11. There is a lack of adequate streamflow to provide for instream needs in certain streams and rivers. (Rivers and Streams)

Desired Outcome 11: Streamflows that support fish, other aquatic organisms including freshwater mussels, wildlife, and healthy riparian areas, and help alleviate high stream temperatures. Increasing streamflows during the summer and dry season will help mitigate changing hydrology resulting from climate change.

Strategy 11: Complete an analysis applying the presumptive standard for stream reaches with no OWRD Surface Water Availability Reporting System (SWARS) data, using StreamStats (or similar), incorporating diversion amounts

Recommended Actions:

11.1 Evaluate the stream reaches not meeting the presumptive standard or instream water right application amount with criteria such as importance as redband trout habitat, supporting freshwater mussels, and supporting other species/ecosystem functions (to be developed by task force/work group).

11.2 Evaluate potential opportunities for restoring streamflow, including but not limited to use of the Conserved Water Act, instream leases (including split season leases), instream transfers and other tools.

11.3 Depending on what opportunities exist, identify or design a program to achieve.

11.4 Continue to refine instream flow demand approach.

11.5 Fill in the gaps where instream water rights are absent; secure funding for and support ODFW work to determine instream flow needs and apply for instream water rights; resolve the three protested instream water right applications (pending since the early 1990's)

11.6 As identified in data gaps, advocate for securing additional streamflow gages in the Harney Basin.

Issue 12. There is a need for additional streamflow data and surface water use data (Rivers and Streams)

Desired Outcome 12: Better water management, including allocation by seniority of water right; better understanding of opportunities to maintain and restore instream habitat across the basin and a better managed system under which that could be implemented.

Strategy 12:

Recommended Actions:

12.1 Identify and prioritize additional stream gage locations, including lower in the watersheds. See La Marche (2011) for a map of identified locations.

12.2 Seek state and federal funding (such as OWRD Water Use Measurement Cost Share grant), and/or identify existing funds, to use to pay for gages, gage installation and operation.

12.3 Establish water use measurement and reporting requirements for surface water diversions in Harney Basin

Issue 13. There is a need to address fish passage barriers and impediments to fish movement. (Rivers and Streams)

Desired Outcome 13: Stream habitat that is better connected, allowing fish and other aquatic organisms to access and utilize the best habitat. Cooler streams, likely with increased flow in certain seasons.

Strategy 13:

Recommended Actions:

13.1 Conduct a robust assessment of passage barriers and impediments (incorporate state and federal agencies)

13.2 Prioritize which passage barriers and passage impediments to work to address first

13.3 Design and implement a plan that translates the assessment and prioritization into action

13.4 Create a process to identify passage barriers and impediments not currently included in inventories

Issue 14. Stream temperature and DO conditions exceed Oregon water quality standards in some places. More data are needed. (Rivers and Streams)

Desired Outcome 14: Improved riparian habitats that support a diverse community of animals and moderates stream heating

Strategy 14: Improve riparian habitats

Recommended Actions:

14.1 Identify and prioritize riparian conditions and areas for riparian restoration that would have the most effect on stream temperatures

14.2 Determine stream reaches where flow restriction affects water temperatures

Issue 15. The lack of fish screens on some irrigation diversions harms native fish and contributes to the spread of invasive fish. (Rivers and Streams)

Desired Outcome 15:

Strategy 15:

Recommended Actions:

15.1

Issue 16. Riparian habitat conditions need to be improved wherever possible to provide stream habitat, shading, nutrient uptake, bank stability, and other ecological values. (Rivers and Streams; Wetlands) – This can occur without an assessment.

Desired Outcome 16: Cooler streams with higher summer and dry season flows that are better able to support fish, wildlife and invertebrates that rely on Harney Basin rivers

and streams. Greater resilience for stream ecosystems as the climate changes. Better habitat for species that rely on the riparian areas.

Strategy 16:

Recommended Actions:

16.1 Robust assessment identifying riparian habitat conditions across the basin.

16.2 Prioritize areas for restoration (e.g. applying criteria such as importance of stream for redband trout, fresh water mussels, and other species; areas of water quality violations; ability of riparian restoration at the site to impact stream temperatures (list to be developed by task force/work group?))

16.3 Design and implement a plan that translates the assessment into action.

SECTION 6: ECOLOGICAL WORKING GROUP, WETLANDS (3)

Issue 17. There is a lack of locally-based information about current distribution of persistent wetlands, by type, throughout the Basin to aid in conservation and management. (Wetlands)

Desired Outcome 17: An understanding of how surface water irrigation can be used to benefit diverse wetland types in the Harney Basin, particularly as water availability becomes increasingly uncertain.

Strategy 17: Malheur NWR has done some work with Open Range Consulting (ORC) to map the refuge by select habitat types. With the IWJV Wetland Evaluation Tool (WET), these vegetation information could provide information about wetland types and persistence. WET data exists for the entire Harney Basin, but the ORC data currently only exists at Malheur NWR. Expanding the ORC mapping off Refuge will allow for a fuller understanding of on-the-ground conditions, which will allow for vetting climate resiliency planning.

Recommended Actions:

17.1 Obtain WET data clipped to the Harney Basin

17.2 Contract to expand the Open Range Consulting work to the entire Blitzen River

Issue 18. There is a lack of information needed to manage the changing quantity of water needed to maintain diverse wetlands types, including semi-permanent marshes and other seasonal wetlands. (Wetlands) ‘

AND

Issue 19. Rivers and streams are disconnected from floodplains in some parts of the basin. (Wetlands)

Desired Outcome 18: Development of a quantity metric for understanding how much water is needed manage wetlands for diverse bird species and for other wildlife. This will help with future water planning.

Strategy 18: Install flow meters at points of diversion to understand how much water is need to irrigate specific wet meadows and associated seasonal and semi-permanent wetlands.

Recommended Actions:

18.1 Identify appropriate locations for water measurement

SECTION 7: CLIMATE CHANGE (1)

Issue 20. Future climate conditions in the Harney Basin are likely to be warmer and drier than current ones, which will likely impact surface water resources. (Drafted by Holly + Ken)

Desired Outcome 20: Improved knowledge of limitations and ability of of irrigators to adapt to changing conditions, protection of Burns/Hines from repeated flood damages, maintenance of ecolgoical and geomorphological conditions of streeams entering the Harney Valley, Increased upland surface water storage in beaver ponds

Strategy 20: Prepare for and strategically manage surface water resources during climate change/drought events in a way that helps to meet the short-term needs of the Harney basin's people, ecosystems, and economy, while helping to keep the basin on track with long-term groundwater-level goals.

Recommended Actions:

20.1 Improve communication on water availability to irrigators

20.2 Implement flood mitigation measures to protect Burns/Hines properties

20.3 Restore riparian and stream conditions to adjust to changed flow conditions

20.4 Consider reintroduction of beaver to the upper watersheds in the basin