

≡ Powder Basin Watershed Council ≡

2025-2035 Watershed Restoration Action Plan



Adopted by the Powder Basin Watershed Council Board of Directors May 14th, 2025

Powder Basin Watershed Council

2025-2035 Watershed Restoration Action Plan

Executive Summary

The goal of the Powder Basin Watershed Council's (PBWC) Watershed Restoration Action Plan (WRAP) is to provide a 10-year road map for future Council work to efficiently and effectively pursue our vision and mission. The WRAP builds on the Council's 2023-2027 Strategic Plan by outlining how broad goals and strategies will be implemented through specific objectives and actions in prioritized focus areas to address limiting factors. The Council will use the WRAP to develop and implement monitoring, engagement, and restoration projects throughout our operating area (Burnt River, Powder River, and Brownlee Subbasins) during 2025-2035. The geographic focus areas prioritized during this planning process will establish a pathway for focused Council actions across our nearly 2-million-acre operating area, shifting action implementation from opportunistic to strategic. Focus areas were identified with assistance from a Technical Team of local natural resources experts and a Stakeholder Group with representatives from each subbasin.

Specific prioritization criteria and a scoring matrix were developed to assist action planning participants in selecting focus areas and prioritizing geographies for immediate, future, and opportunistic actions. Three tiers were developed to plan the Council's implementation of actions within geographic focus areas over the next decade. Tier 1 priorities include geographies where the Council has dedicated resources and capacity for community engagement, monitoring, and project development. Tier 2 priorities include areas where the council plans to expand community engagement to provide funding and capacity for future project development. Tier 3 focus areas include geographies identified by the Technical Team and Stakeholder Group for opportunistic actions. Mesic habitat opportunities were identified in partnership with the Baker Sage-grouse Local Implementation Team (Baker LIT) and the Sage-grouse Candidate Conservation Agreement with Assurances (CCAA) Coordinator. Priority focus areas are described by subbasin on pages 8-24 and limiting factors for each focus area are detailed on pages 25-38.

Specific actions, goals, and measurable objectives provide direction for future project implementation, project development, community outreach, and monitoring work in prioritized geographies to achieve desired outcomes. 13 Action Types were developed to address limiting factors in our focus areas and to advance the broad goals and strategies of our 2023-2027 Strategic Plan. Action Types and specific activities are detailed on pages 39-48. Specific, measurable, achievable, relevant, and time-bound (SMART) objectives provide a way to monitor our progress towards accomplishing goals and desired outcomes. Failing to meet objectives or exceeding expectations will help dictate future priorities and allocation of resources. Goals, specific objectives, and action types are detailed for focus areas on pages 51-60. The PBWC will use the WRAP (pages 51-60) and tables of priority actions for each focus area (pages 61-76) to guide the development of projects and annual workplans. Workplans will detail where the council will focus implementation, engagement, outreach, and monitoring efforts over a given

year and provide a budget for the approved activities. Over the next decade, most project development and implementation efforts will focus on Tier 1 and Mesic geographies to meet the specific targets detailed in our objectives. These targets were developed using PBWC's current project list and anticipated schedule for implementation. For Tier 2 geographies, in 2030 the PBWC will evaluate expanding our current engagement focus area to provide capacity and resources for identifying project opportunities and developing/implementing future projects. Tier 3 geographies will be addressed opportunistically.

The WRAP is a living document. This plan will be reviewed annually by PBWC Staff and Board of Directors in the development of annual workplans. The annual review will document progress towards objectives and any significant changes pertinent to natural resource management within our prioritized geographies. A cooperative WRAP update to solicit feedback from our partners and the community will be conducted every 5 years to consider progress towards goals and objectives and any new information. A public meeting will be hosted by the Council in 2030 to solicit partner and community feedback for the WRAP. A full planning process including a Technical Team and Stakeholder Group will be conducted in 2025 to reassess priority geographies, goals, objectives, and future Council actions.

**Powder Basin Watershed Council
Watershed Restoration Action Plan**

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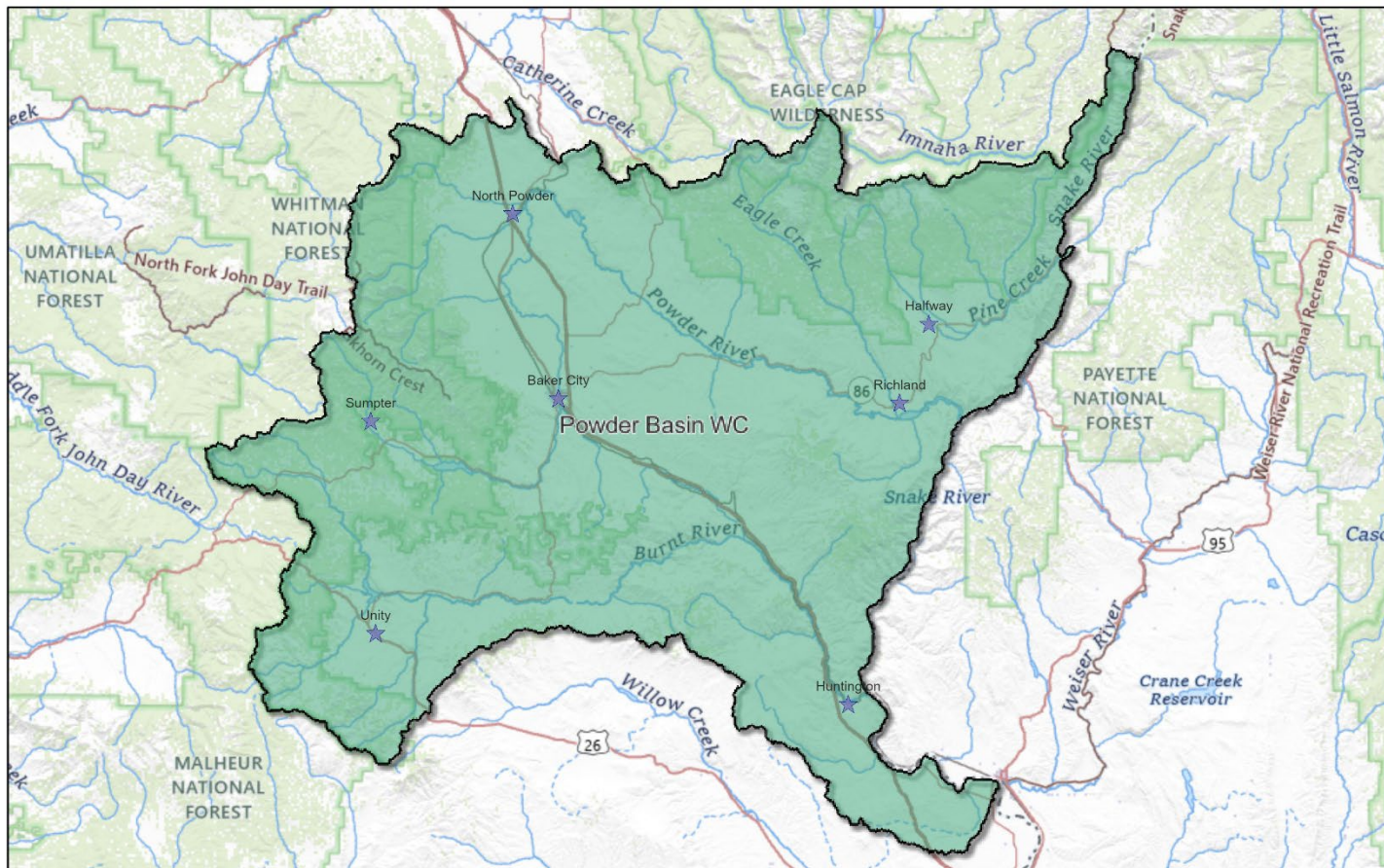
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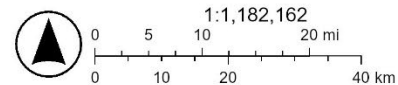
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Introduction

Powder Basin Watershed Council Operating Area



2/24/2025



USGS The National Map: National Boundaries Dataset, 3DEP Elevation Program, Geographic Names Information System, National Hydrography

The vision of the Powder Basin Watershed Council is that the Powder Basin watersheds are healthy and meet the needs of people and the environment.

The mission of the Powder Basin Watershed Council is to facilitate community supported maintenance and restoration of the streams, rivers and lakes within our watershed.

Purpose:

The goal of the Powder Basin Watershed Council's (PBWC) Watershed Restoration Action Plan (WRAP) is to provide a 10-year road map for future Council work to efficiently and effectively pursue our vision and mission. The WRAP builds on the Council's 2023-2027

Strategic Plan by outlining how broad goals and strategies will be implemented through specific objectives and actions in prioritized focus areas to address limiting factors. The Council will use the WRAP to develop and implement monitoring, engagement, and restoration projects throughout our operating area (Burnt River, Powder River, and Brownlee Subbasins) during 2025-2035. The WRAP will be reviewed annually by PBWC Staff and Board of Directors in the development of annual workplans. The annual review will document progress towards objectives and any significant changes pertinent to natural resource management within our prioritized geographies. A cooperative WRAP update to solicit feedback from our partners and the community will be conducted every 5 years to consider progress towards goals and objectives and any new information. A public meeting will be hosted by the Council in 2030 to solicit partner and community feedback for the WRAP. A full planning process including a Technical Team and Stakeholder Group will be conducted in 2025 to reassess priority geographies, goals, objectives, and future Council actions.

The Watershed Council, as part of its standard operating procedures, adopts an annual workplan and budget facilitating project development and the implementation of approved projects. This annual effort by the PBWC Board of Directors and PBWC staff will utilize the Action Plan supporting information, goals and objectives, and progress towards outcomes to establish our annual plan of work. The outcomes of landowner/manager engagement and project development first determine what restoration projects are carried forward to implementation. A critical consideration in the development of annual work plans is the acquisition of project opportunities (willing landowner/manager with agreed upon project scope). For example, if project opportunities are not occurring at a rate meeting our Action Plan objectives, then engagement and project development activities may require increased focus in a particular geography. Implementation actions are the result of the engagement and development processes. As a project ready for implementation is fully vetted through the Council, primary consideration in annual work plan development is staff capacity for implementing the available actions.

A critical step in project development is the approval process through the Watershed Council Board of Directors. All projects over \$20,000 in cost must be reviewed and approved by the Board of Directors. To facilitate a smooth flow of work, it is imperative staff keep the Board of Directors up to date on engagement activities in development. It would be highly inefficient for staff to develop projects, with minimal communication with the Board of Directors, and the Board does not approve a project for funding.

At the end of the 10-year operating period in 2035, the WRAP will be updated through a collaborative planning process to evaluate work towards completing objectives, effectiveness of actions, and changes to prioritized geographies for future Council focus. The planning process will incorporate feedback from a technical team of local natural resources experts, the Powder Basin community, PBWC staff, and the PBWC Board of Directors.

Basin Description:

In Northeastern Oregon, the Powder Basin includes Baker County and parts of Union, Wallowa, and Malheur Counties. The Powder Basin encompasses approximately two million acres consisting of three subbasins: the Powder River, the Burnt River, and the Brownlee. Within

these subbasins, there are about 3,500 miles of streams and rivers, and various reservoirs totaling approximately 167,400 acre-ft. of storage (excluding the Hells Canyon complex of reservoirs), which help irrigate over 166,500 acres of crop and pastureland. Elevations range from over 9,000 ft. in the Elkhorn and Wallowa Mountains to 1,700 ft. along the Snake River. High elevations are dominated by subalpine and mesic forests consisting primarily of public lands managed by the United States Forest Service (USFS). Mid-elevations consist of a mixture of grasslands, sagebrush shrublands, wet meadows, and agricultural lands which are managed privately or by the Bureau of Land Management (BLM). Drier forests and desert grasslands occurring at lower elevations also include private lands and BLM managed public lands. Land use within the Powder Basin includes ranching, farming, timber production, mining, hydropower projects, wind power production, recreation, commercial and residential development, and water supplies via reservoirs for towns and agriculture. For detailed information regarding specific subbasins please view the additional resources provided on page 14 of the PBWC's 2023-2027 Strategic Plan (available online at <https://www.powderbasinwatershedcouncil.org/publications---resources> and at the PBWC office in Baker City).

Historically, the Powder Basin was home to several anadromous fish species including coho salmon, sockeye salmon, spring and fall Chinook salmon, summer steelhead trout, and pacific lamprey. With the construction of the Thief Valley Dam on the Powder River in 1932, anadromous fish species were blocked from the upper Powder River Subbasin. The construction of the Hells Canyon Dam Complex on the Snake River in the 1950's and 60's further blocked anadromous fish species from the entire Powder Basin. Because of blocked fish passage, Upper Snake Species Management Units of spring Chinook, fall Chinook, and summer steelhead are considered functionally extinct. Presently, Bull Trout and redband trout are two significant fish species within the Powder Basin. Isolated populations of federally threatened Bull Trout (ESA listed) reside in headwater streams of the Elkhorn and Wallowa Mountains but cannot access historic migration routes and remain in the diminutive resident form. Redband trout, considered a sensitive species for Region 6 of the Forest Service, are widely distributed throughout each subbasin. For more information regarding fish distribution, Species Management Units, and listing status, please reference the watershed assessments and other additional resources on pages 14-16 of the PBWC's 2023-2027 Strategic Plan.

The Powder Basin also provides important sagebrush steppe habitat for Greater sage grouse, an Oregon Conservation Strategy Species (ODFW). Greater sage-grouse populations have declined throughout their range for various reasons, a primary factor being reduced and fragmented habitat. Presently, within the Powder Basin, an important conservation measure for this species includes the Candidate Conservation Agreement with Assurances (CCAA) program. CCAA's are voluntary agreements between interested landowners and the United States Fish and Wildlife Service. Landowners agree to manage their property for conservation of an at-risk species in exchange for assurances against additional regulatory requirements should the species become listed under the Endangered Species Act. The Powder Basin Watershed Council houses the CCAA Coordinator and works in partnership with the Baker Sage-grouse Local Implementation Team (Baker LIT) to administer this program and other restoration activities which align with our Vision and Mission. The goals, strategies, objectives, and actions outlined in this plan will facilitate the development and implementation of mesic habitat enhancement projects benefitting Greater sage-grouse and watershed function. For more information regarding

Greater sage-grouse and the CCAA program, please reference the additional resources on page 16 of the PBWC’s 2023-2027 Strategic Plan.

Current Conditions:

Current conditions specific to each subbasin are outlined in several watershed assessments and plans detailed below which are available upon request from the PBWC office or available online (see references, pages 77-79). Most watershed assessments and plans for the Powder Basin are over 20 years old, and feedback from the WRAP planning process indicated a need for future assessment updates. Limiting factors and water quality impairments outlined in current resources are described in detail by geographic focus area in Watershed Limiting Factors (pages 25-38). Current natural resources issues common to each subbasin include the Powder Basin Total Maximum Daily Load (TMDL) for *E. coli* developed by the State of Oregon Department of Environmental Quality (DEQ), observed and predicted climate change impacts, and 2024 wildfire recovery.

Current Conditions Resources

Powder Basin	Burnt River Subbasin	Powder River Subbasin	Brownlee Subbasin
2017 Assessment Report for the Reintroduction of Anadromous Fish Snake River Basin: Powder, Burnt, and Malheur River Subbasins	2004 Burnt River Subbasin Plan	2004 Powder River Subbasin Plan	2012 Brownlee Subbasin Watershed Assessment
2015 Mid-Columbia Recovery Unit Implementation Plan for Bull Trout (<i>Salvelinus confluentus</i>)	1995 North Fork Burnt River Watershed Analysis	2004 Powder River-Powder Valley Watershed Assessment	2000 Pine Creek Watershed Assessment
	2022 Burnt River Agricultural Water Quality Management Area Plan	2001 Upper Powder River Watershed Assessment	2022 Powder-Brownlee Agricultural Water Quality Management Area Plan
		2022 Powder-Brownlee Agricultural Water Quality Management Area Plan	

2024 Powder Basin Updates

Powder River Basin TMDL:

The State of Oregon Department of Environmental Quality (DEQ) has developed a Total Maximum Daily Load (TMDL) for the Powder River Basin to address impairments to water quality caused by high amounts of bacteria (*E. coli*) which was adopted in summer of 2024. Sources of *E. coli* bacteria in surface waters include fecal contamination from humans, domestic animals, and wildlife. The Powder River Basin TMDL identifies sources of pollution and

specific areas where *E. coli* reductions are necessary to attain state water quality standards. The TMDL addresses bacteria impairments in the Powder River, Burnt River, and Brownlee Subbasins. DEQ will continue to develop TMDL's for the Powder Basin in the future to address other impaired water quality parameters which may include dissolved oxygen and temperature.

For more information, please reference DEQ's Rulemaking Page for the Powder River Basin TMDL at <https://www.oregon.gov/deq/rulemaking/Pages/PowderTMDL.aspx>.

Climate Change:

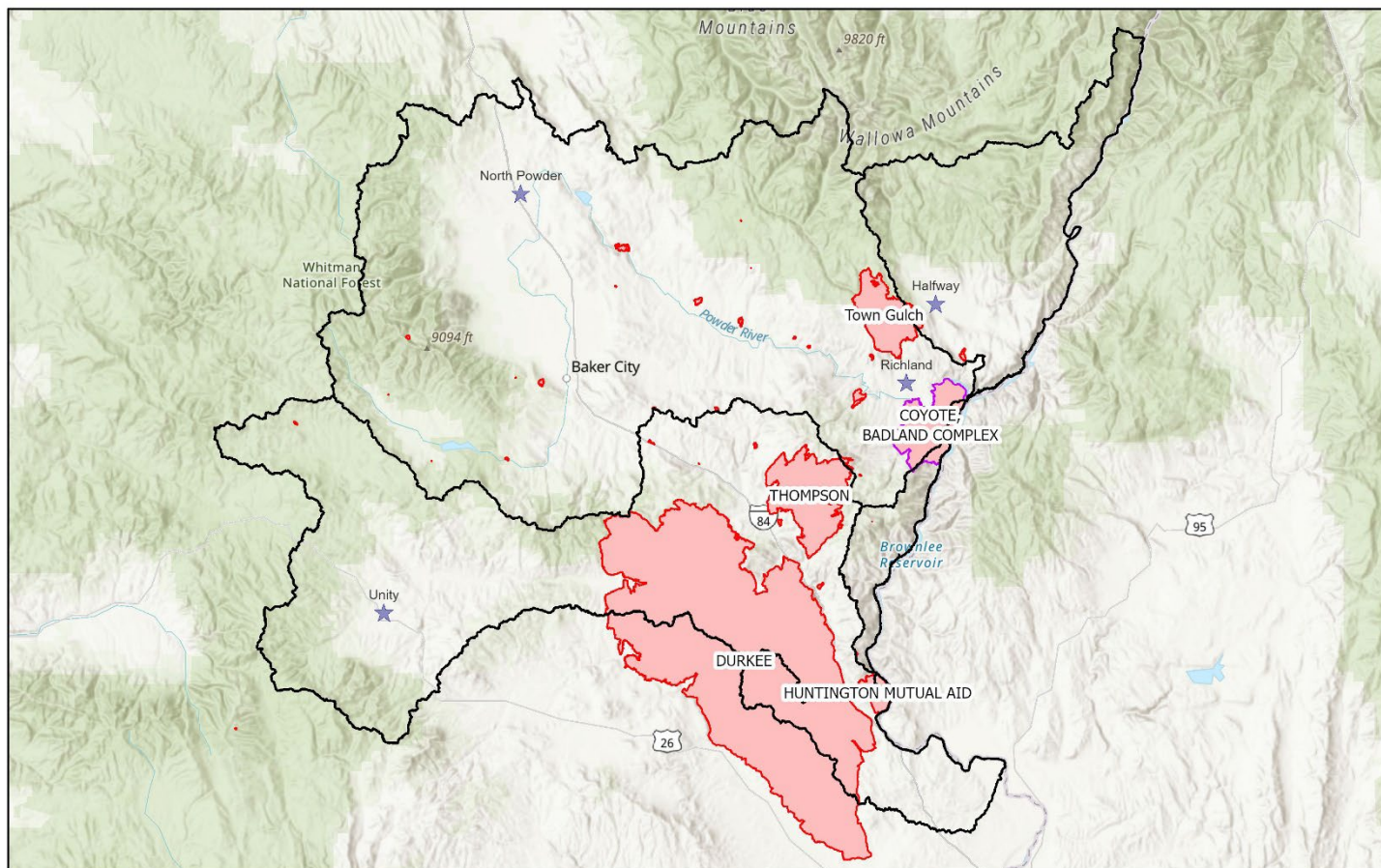
Climate change is a concern for rural communities throughout the Powder Basin. Current climate assessments for the State of Oregon predict continued increases in temperature, conversion of winter precipitation from snow to rain, and decreasing summer precipitation (Fleischman et al., 2025). These factors can exacerbate extreme heat events, catastrophic wildfires, and the multi-year drought of varying severity currently experienced statewide. Current climate predictions for the state of Oregon anticipate a continuation of these factors and events. Therefore, increasing climate resiliency throughout the Powder Basin is a top priority. Improving climate resiliency basin wide will be accomplished by using current climate predictions to inform Council strategies and actions. Summarized 2022 and 2025 climate predictions for the state of Oregon include information from NOAA National Centers for Environmental Information 2022 State Climate Summaries and the Seventh Oregon Climate Assessment (2025) from the Oregon Climate Change Research Institute. Summarized predictions include:

- Increasing frequency of extreme heat events.
- Increasing frequency and severity of drought and continued multi-year drought.
- Increasing winter precipitation and decreasing summer precipitation. Winter precipitation will include more rain than snow.
- Declining snowpack.
- Increasing frequency and severity of wildfire.

2024 Wildfires:

Several large wildfires impacted the Powder Basin during the summer of 2024 which significantly affected the wellbeing of our communities and health of our watersheds. The Durkee fire, Thompson fire, Badlands Complex, Town Gulch fire, and Huntington Mutual Aide fire burned approximately 371,000 acres leading to loss of livestock, infrastructure, property, rangelands, orchards, forests, sage-brush steppe, and riparian habitats. Immediate wildfire response includes reseeding efforts, rebuilding perimeter and cross fencing, and grazing management to protect disturbed soils and to preserve soil stability. The Tri County Cooperative Weed Management Area has applied for funding for future weed management efforts to prevent the spread of invasives and noxious weeds in several burned areas. The PBWC will work with partners and landowners to evaluate the need for future riparian restoration efforts, community engagement needs, and water quality monitoring.

2024 Wildfires-PBWC Operating Area



2/24/2025

★ Oregon_Tree_City_USA

□ Watershed Council Boundaries

□ Watershed Boundary Dataset HUC 8s

□ WFIGS Interagency Fire Perimeters

■ Wildfire

■ Wildfire in Complex

World Hillshade



1:1,182,162

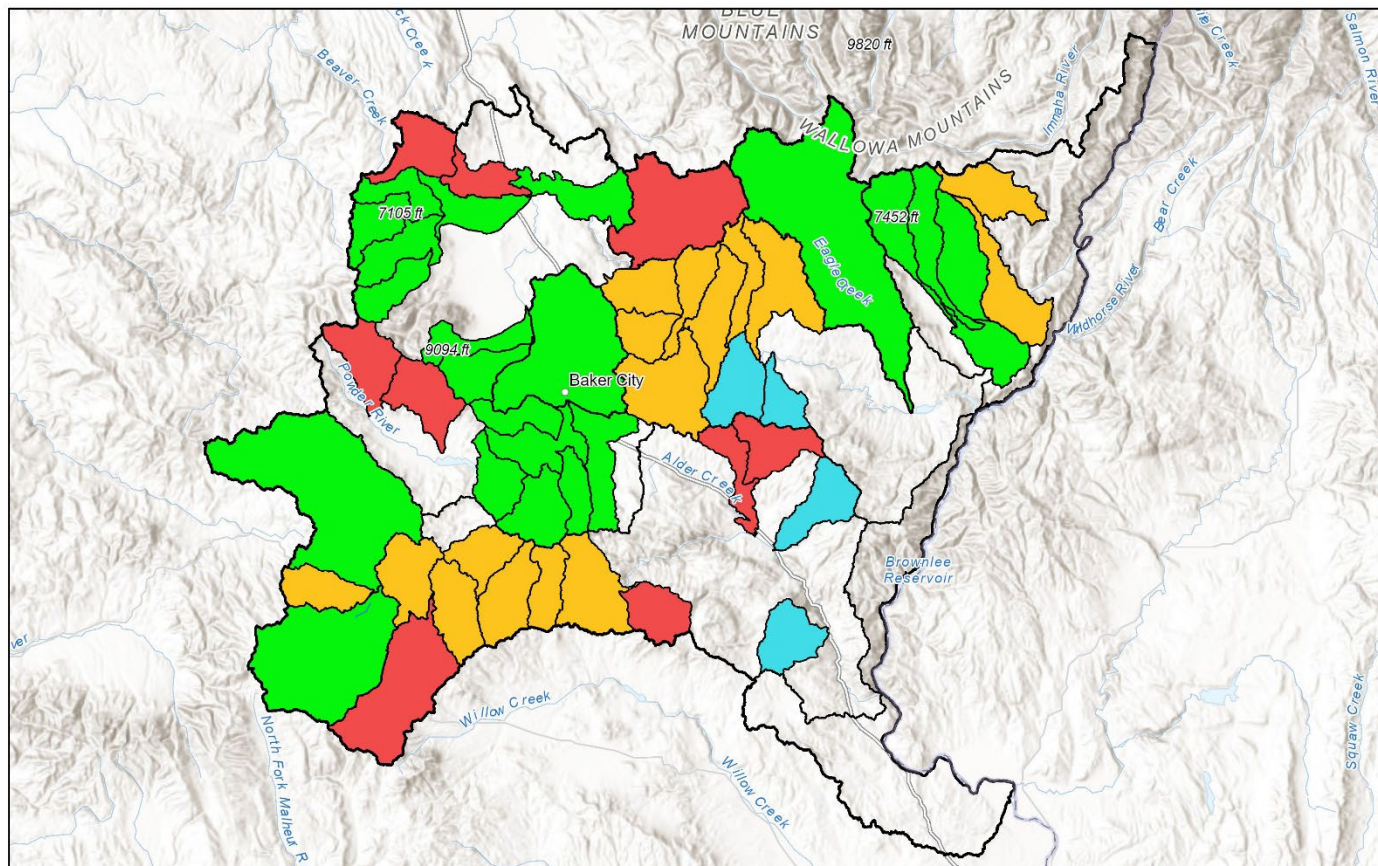
0 5 10 20 mi

0 10 20 40 km

Oregon State Parks, Esri, TomTom, Garmin, FAO, NOAA, USGS, Bureau of Land Management, EPA, NPS, USFWS, Esri, USGS

Geographic Focus Areas

Powder Basin Geographic Focus Areas



3/13/2025

Line Features

0 - 5,000

Watershed Council Boundaries

Watershed Boundary Dataset HUC 8s

HUC 12 Watersheds

Middle Fork Burnt, Burnt River Valley

HUC 10 Watersheds

Camp Creek

North Fork Burnt River, South Fork Burnt River

HUC 10 Watersheds

Big Creek

Baldock Slough (Fish the Powder), Eagle Creek

World_Hillshade



1:1,155,581

0 5 10 20 mi
0 10 20 40 km

Sources: Esri, TomTom, Garmin, FAO, NOAA, USGS, (c) OpenStreetMap contributors, and the GIS User Community, Sources: Esri, TomTom, Garmin,

Figure 1: The legend details Tier 1 priorities represented in green, tier 2 in yellow, opportunistic in red, and mesic in blue. Maps specific to each subbasin will detail watershed level priorities.

Purpose:

Geographic focus areas were prioritized for each subbasin to help direct future Council actions to effectively and efficiently pursue our Vision and Mission. While our 2023-2027 Strategic Plan guides overall operations, this plan lacks specific focus with respect to geography, limiting factors, action type, or community need. In consideration of our foreseeable operational capacity, effectively developing and implementing actions within our 2-million-acre operating area without focus, limits our ability to achieve demonstrable results meeting specified

watershed/community needs. The geographic focus areas prioritized during this planning process will establish a strategic pathway for focused Council actions over the next decade.

Identification Process:

Action Planning Teams:

In 2023 and 2024, a Technical Team of local natural resources experts and a Stakeholder Group of Powder Basin community members were assembled to participate in the Council's action planning process. Invites were distributed using a list of planning participants assembled from the Council's 2023 Strategic Plan Refresh process. Watershed Restoration Action Planning participants included:

- Powder Basin residents
- Baker County Commissioner
- USDA Forest Service, Wallowa Whitman National Forest, Whitman Ranger District
- U.S. Bureau of Land Management, Vale District, Baker Resource Area
- U.S. Bureau of Reclamation
- Confederated Tribes of the Umatilla Indian Reservation (CTUIR)
- Oregon Department of Fish and Wildlife
- Greater Hells Canyon Council
- Idaho Power Company
- Oregon State University Extension Service
- Burnt River Irrigation District
- Powder Valley Water Control District
- State of Oregon Department of Environmental Quality
- Baker Resources Coalition
- PBWC Board of Directors
- PBWC Staff

The Technical Team helped review current watershed assessments, plans, and used professional expertise to outline recommended geographies and work priorities for Stakeholder Group consideration. The Stakeholder Group reviewed recommendations and provided feedback on additional geographies, work priority order, and which focus areas to advance to the final Action Plan. Eight planning meetings were held to garner feedback from local experts and the community to identify and prioritize focus areas. A Technical Team meeting and Stakeholder Group meeting were hosted for each subbasin in Baker City, except for the Brownlee Stakeholder Group meeting which was held in Halfway. Two additional action planning meetings were held in Hereford and Richland to further engagement with local communities.

Focus Area Selection and Prioritization:

Specific prioritization criteria and a scoring matrix were developed to assist action planning participants in selecting focus areas and prioritizing which geographies to consider for immediate, future, and opportunistic actions. During the Burnt River Stakeholder Group

meeting, participants were asked to discuss what factors they felt were critical for selecting and prioritizing geographies. Using this feedback, current ecological condition, restoration potential, opportunities for leveraging partnerships, opportunities to further current Council actions, uplifting priority habitats for state and federal focus species, and addressing community needs were outlined as important criteria for identifying geographies. Current ecological condition and restoration potential were selected to help focus future Council actions in areas where restoration investments would lead to significant ecological uplift. Partnership potential was selected due to the importance of community and partner support for project success and for leveraging partnerships to acquire project funding. Pursuing future actions where the Council is already implementing projects helps further restoration investments and increases demonstrable results. Prioritizing geographies within core habitats for state and federal focus species increases partnership and funding opportunities. Finally, prioritizing areas of community concern helps further our relationship with rural communities and provides a pathway for project opportunities benefiting both people and the environment.

The scoring matrix was developed to prioritize selected focus areas for immediate, future, and opportunistic actions. While our intention was for action planning participants to use the scoring matrix for each subbasin, the matrix was only used once by the Technical Team for the Powder River subbasin. There were no significant differences between focus area scores, meaning the tool was unsuccessful for prioritization. The Technical Team for the Brownlee subbasin began the process of scoring focus areas, but noted scores were close and would likely be nearly identical for each geography. In the future, the scoring matrix and criteria will be updated using partner and community input to more effectively assist with prioritization. The scoring matrix and criteria used during this action planning process are detailed in the following section. Despite the lack of numerical scores, in their discussion and selection of focus areas, both the Technical Team and Stakeholder Group detailed priority areas for future Council actions and areas where the Council should consider actions opportunistically. Using this feedback, three tiers were developed to plan the Council's implementation of actions within geographic focus areas over the next decade (2025-2035). Tier 1 and Tier 2 focus areas include geographies identified as top priorities for future Council work by the Technical Team and Stakeholder Group. Tier 1 priorities include geographies where the Council has dedicated resources and capacity for community engagement, monitoring, and project development. Tier 2 priorities include areas where the council plans to expand community engagement to provide funding and capacity for future project development. Tier 3 focus areas include geographies identified by the Technical Team and Stakeholder Group for opportunistic actions.

Mesic habitat opportunities were identified in partnership with the Baker Sage-grouse Local Implementation Team (Baker LIT) and the Sage-grouse Candidate Conservation Agreement with Assurances (CCAA) Coordinator. The Baker LIT conducted their own prioritization of action areas for mesic habitat restoration in 2020. Prioritization criteria included:

- Proximity to core habitat
- Proximity to ongoing restoration work
- Partner involvement
- Landowner participation
- Sagebrush Conservation Design Map

- Resistance/Resilience maps layers
- Funding opportunities & Match funds

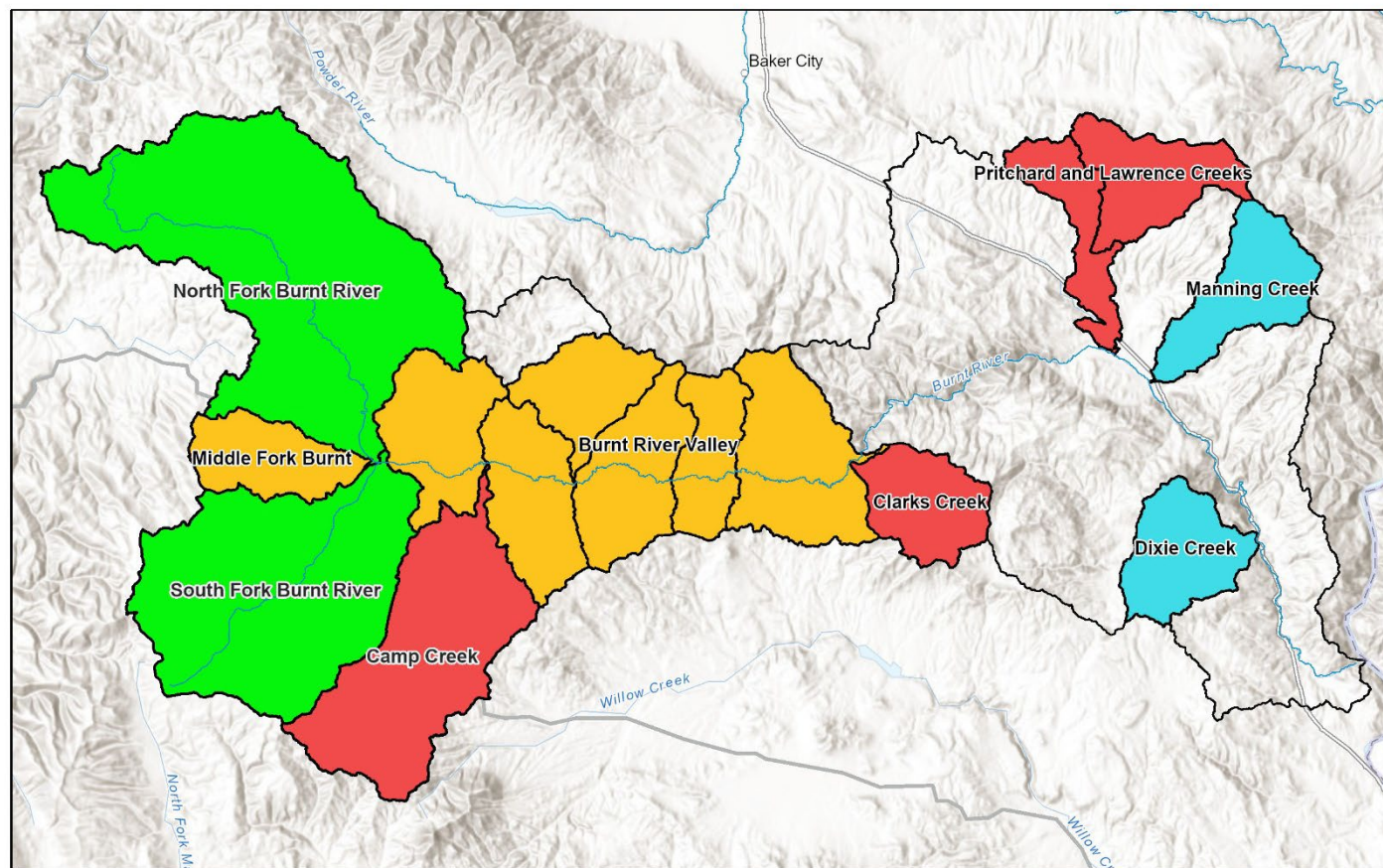
The action areas identified by the Baker LIT include Goose Creek (Powder), Love Reservoir (Powder), and Lawrence/Sardine (Burnt). Other opportunities identified in partnership with the CCAA Coordinator include areas within core sage-grouse habitat which were impacted by 2024 wildfires. The Council will prioritize work within Action Areas identified by the Baker LIT but will also consider projects opportunistically in other areas like Dixie Creek and Manning Creek.

2024 Prioritization Criteria and Scoring Matrix:

1. Current ecological conditions (weighted 3x): Public land: Forest Service Watershed Condition Framework and professional opinion. Private land: Professional and community opinion.
 - Functioning properly (5)
 - Functioning at risk-Upward trend (4)-professional opinion
 - Functioning at risk (3)
 - Functioning at risk-Downward trend (2)-professional opinion
 - Impaired function (1)
2. Restoration Potential (weighted 3x): Based on valley type and professional opinion
 - High restoration potential: Wide, low gradient, depositional valleys where streams may exhibit slight to moderate entrenchment. Low-tech restoration techniques could successfully address degradation in the proposed system with high ecological uplift. (4-5)
 - Moderate restoration potential: Wide, low gradient, depositional valleys where stream channels exhibit moderate entrenchment and would require more intensive restoration techniques to successfully address degradation and to achieve ecological uplift. (2-3)
 - Low restoration potential: Confined valleys or deeply gullied stream systems where restoration is not likely to have a significant uplift. (1)
3. Partnership potential (weighted 1.5x): Opportunities to engage with partners, important for project success and funding.
 - Priority area for multiple partners (2 or more: federal, state, private) and potential to secure project partners is high. (4-5)
 - Priority area for at least 1 partner (federal, state, private) and potential to secure project partners is moderate to high. (2-3)
 - Not a priority for partners or there is little opportunity to collaborate with partners already working in the area. (1)
4. Potential to further current PBWC work (not weighted):
 - PBWC is actively implementing projects in the area or has already secured funding for a project in this area (4-5)

- PBWC is actively designing or planning a project in this area with secured partners but has not secured funding (2-3)
 - PBWC conducts monitoring in this area and/or is considering a project in this area but has not secured partnerships or funding (1)
 - PBWC is not currently planning projects in this area or conducting any monitoring work (0)
5. Importance of area for ESA listed species or state/federal focus species (not weighted): Heavy focus on professional opinion, watershed assessments, and Redband trout for the Burnt River Subbasin
- Priority area for 1 or more ESA listed species (not applicable to Burnt River subbasin), sage-grouse, or within an ODFW Beaver Emphasis Area. The area must be identified as a priority by the Technical Team and prioritized in federal, state, or local planning documents (4-5)
 - No ESA listed species or sage-grouse present, but important areas for state or federal focus species, including ODFW Beaver Emphasis areas. The area must be identified as a priority by the Technical Team and prioritized in relevant state, federal, or local planning documents. (2-3)
 - No ESA listed species or sage-grouse present. State or federal focus species may be present, but the area was not identified as a priority by Technical Team and is not identified as a priority in relevant state, federal, or local planning documents (1)
6. Community Importance and Feasibility (weighted 1.5x): Areas of concern for the community, are there opportunities to implement projects with willing landowners.
- Urgent area of concern for the community (TMDL focus areas or other areas of concern) where likelihood of project partnership with community members is high (4-5)
 - Moderately urgent to urgent area of concern for the community (TMDL focus areas or other areas of concern) where likelihood of project partnership with community members is moderate. Additional outreach efforts could improve partnership potential. (2-3)
 - Non-urgent area of concern for the community (TMDL focus or other areas) but likelihood of project partnership with community members is low. Additional outreach efforts are not likely to improve partnership potential. (1)

Burnt River Subbasin - Geographic Focus Areas



2/6/2025

Line Features

0 - 5,000

Watershed Boundary Dataset HUC 8s

HUC 12 Watersheds

Manning Creek, Dixie Creek

Camp Creek, Clarks Creek, Pritchard/Lawrence Creek

Middle Fork Burnt, Burnt River Valley

HUC 10 Watersheds

Camp Creek

North Fork Burnt River, South Fork Burnt River

World Hillshade



1:591,081

0 3.5 7 14 mi

0 5 10 20 km

Oregon State Parks, State of Oregon GEO, Esri, TomTom, Garmin, SafeGraph, FAO, METINASA, USGS, Bureau of Land Management, EPA,

Figure 2: Tier 1 priorities are represented in green, tier 2 in yellow, opportunistic in red, and mesic in blue.

Burnt River Subbasin Focus Area Prioritization:

Technical Team Ranking	Stakeholder Group Ranking
1. North Fork Burnt River	1. TMDL Focus Areas (Middle Fork, South Fork, Burnt River Valley)
2. TMDL Focus Areas (Middle Fork, South Fork, Burnt River Valley)	2. North Fork Burnt River
3. Pritchard/Lawrence Creek	3. Pritchard/Lawrence Creek
4. Clarks Creek	4. Clarks Creek
Opportunistic (not rated): Camp Creek (Burnt River tributary)	Opportunistic (not rated): Camp Creek (Burnt River tributary)

Both the North Fork Burnt River watershed and TMDL Focus Areas were ranked as high priority for future Council actions by the Technical Team and Stakeholder Group, meaning these areas will be tier 1 and tier 2 priorities for the Council in 2025-2035. Tier 1 priorities include the North Fork Burnt River and South Fork Burnt River where the Council has dedicated resources and capacity for community engagement, monitoring, and project development. Tier 2 priorities include other TMDL focus areas, the Middle Fork Burnt River and Burnt River Valley (Unity Reservoir to Clarks Creek), where the Council plans to expand community engagement to provide funding and capacity for future project development. Tier 3 priorities include Pritchard/Lawrence Creek, Clarks Creek, and Camp Creek where projects will be considered opportunistically.

Mesic habitat opportunities were identified in partnership with the Baker Sage-grouse Local Implementation Team (Baker LIT) and the Sage-grouse Candidate Conservation Agreement with Assurances (CCAA) Coordinator. Pritchard and Lawrence Creeks are within the Lawrence/Sardine Action Area prioritized by the Baker LIT for future mesic restoration actions. Manning Creek and Dixie Creek both contain core sage-grouse habitat and were impacted by 2024 wildfires. Mesic restoration will be prioritized in Action Areas with other areas considered opportunistically.

Tier 1 Focus Areas:

North Fork Burnt River: The North Fork Burnt River (NFBR) originates in the Greenhorn Mountains, flows through a wide depositional valley near the ghost town of Whitney, and then flows through a long canyon reach before the valley widens again to the NFBR mouth at Unity Reservoir. Public land ownership includes the Wallowa-Whitman National Forest encompassing the headwaters, most tributaries, and the canyon reach. Private landownership includes Whitney Valley, lower sections of tributaries, and the valley downstream of the canyon reach to Unity Reservoir. The North Fork Burnt River provides important habitat for several state and federal focus species including Columbia Basin redband trout, Columbia spotted frogs, beavers, aspen, and more. Significant land use includes timber harvest, grazing, agriculture, irrigation, mining, and recreation. The wide depositional valleys have high restoration potential, and partnership opportunities are likely with the Wallowa-Whitman National Forest (WWNF), Oregon Department of Fish and Wildlife (ODFW), and private landowners. ODFW has designated the NFBR as a Beaver Emphasis area and is supporting the PBWC's current restoration efforts and beaver monitoring. The PBWC is engaged in several restoration and design projects within the WWNF and has identified other opportunities on private lands downstream.

South Fork Burnt River: The South Fork Burnt River (SFBR) originates in the Monument Rock Wilderness and flows through the Wallowa-Whitman National Forest before entering private agricultural lands and sage-brush steppe habitat in the valley to the mouth at Unity Reservoir. This watershed likely has the best aquatic habitat in the subbasin (Assessment Report for the Reintroduction of Anadromous Fish Snake River Basin: Powder, Burnt, and Malheur River Subbasins 2017) and provides important habitat for Columbia Basin redband trout, Greater sage-grouse, aspen, and more. Protection actions would likely benefit intact habitat in the upper watershed while restoration is more appropriate for the lower watershed. The 2016 Rail Fire burned nearly 42,000-acres of forest land in the upper and middle sections of the watershed.

Significant land uses include grazing, agriculture, irrigation, and recreation. Legacy mining impacts are evident on Bull Run Creek. Potential project partners for future actions in this focus area include the WWNF, ODFW, Baker Sage Grouse Local Implementation Team, Oregon Department of Agriculture, Baker County Soil and Water Conservation District, and private landowners. The Council has been involved in several projects with private landowners in this area with more planned in the future. The lower SFBR watershed was identified as a focus area in the Powder Basin TMDL for *E. coli* (Whited Reservoir to Unity Reservoir). The South Fork Burnt River is also identified as a Strategic Implementation Area (SIA) by the Oregon Department of Agriculture (2022 Burnt River Agricultural Water Quality Management Area Plan).

Tier 2 Focus Areas:

Middle Fork of the Burnt River: The Middle Fork of the Burnt River (MFBR) originates in the Wallowa-Whitman National Forest and flows through private lands east of Highway 26 to the mouth at Unity Reservoir. Significant land uses include grazing, agriculture, and irrigation. The MFBR was identified as a focus area in the Powder Basin TMDL for *E. coli*. The Council is expanding our long-term water quality monitoring program to include this area and will expand our engagement focus to include this area in the future.

Burnt River from Unity Reservoir to Clarks Creek: From Unity Reservoir, the Burnt River flows through a wide, depositional valley before entering the Burnt River Canyon near Clarks Creek. The mainstem of the Burnt River includes private agricultural lands and the lower reaches of tributaries. Tributaries to the north and south of the valley are a mosaic of private and public ownership (BLM, Wallowa-Whitman). Significant land use includes grazing, agriculture, and irrigation. The tributaries and valley north of Hwy-245 were impacted by the 2015 Cornet Windy Ridge Fire. Downstream of the Bridgeport Valley, tributaries to the north and south were impacted by the 2024 Durkee Fire which also burned through the entirety of the Burnt River Canyon. The section of the Burnt River from Indian Creek to Marble Creek was identified as a focus area in the Powder Basin TMDL for *E. coli*. The Council will expand our engagement focus to the Burnt River Valley in the future to provide capacity and resources for future project development. Potential project partners include private landowners who will be impacted by TMDL requirements.

Tier 3 Focus Areas:

Camp Creek: Camp Creek originates in the Bull Run Mountains on the Wallowa-Whitman National Forest and flows through private agricultural lands to Higgins Reservoir before flowing through a broader valley to the confluence with the Burnt River. The lower portion of the watershed includes important functional sagebrush-steppe habitat. Significant land use includes grazing, agriculture, irrigation, and recreation. This watershed provides important habitat for Columbia Basin redband trout and Greater sage-grouse. This is currently an engagement focus area for the Council and projects will be considered opportunistically. Potential project partners include the Wallowa-Whitman National Forest, ODFW, Baker LIT, and private landowners.

Clarks Creek: Clarks Creek originates near the border of Malheur County in the mountains south of the Burnt River Valley. Landownership is a mix of public (BLM) and private. Significant land use includes grazing, agriculture, irrigation, and mining. Active mines and legacy mining impacts make future actions in this watershed unlikely. Actions may be considered opportunistically for this area, but project opportunities will be evaluated for restoration potential, partnerships opportunities, and cost/benefit of proposed actions before prioritizing work. This watershed was significantly impacted by the 2024 Durkee Wildfire.

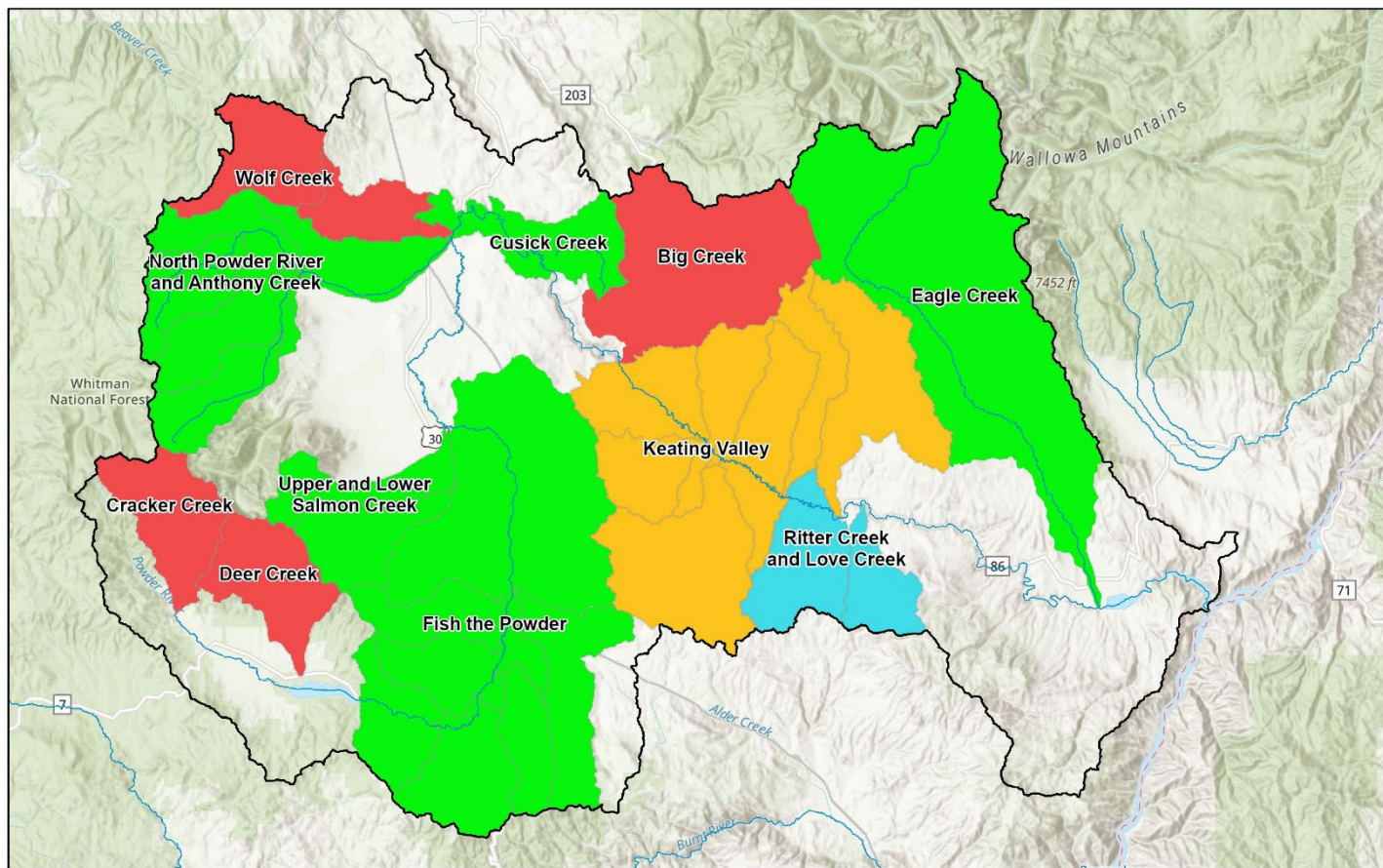
Pritchard and Lawrence Creek: Pritchard, Lawrence, and Sardine Creeks originate north of Durkee Valley near Little Lookout Mountain. Habitat throughout the watershed is dominated by sagebrush steppe and juniper with some forest in the headwaters of Lawrence Creek. Landownership in the headwaters of these streams is mostly private, with public lands (BLM) increasing downstream, and then returning to private ownership in Durkee Valley where Pritchard Creek flows into the Burnt River. Sardine Creek is a tributary to Pritchard Creek, and Lawrence Creek is a tributary to Sardine Creek. Significant land use includes grazing, agriculture, irrigation, and recreation. This watershed provides important habitat for Columbia Basin redband trout and Greater sage-grouse. The upper reaches of Sardine Creek were impacted by the 2012 Sardine fire. This watershed is also a focus for mesic habitat restoration opportunities and includes the Lawrence/Sardine Action Area. Potential project partners include the BLM, Baker LIT, and private landowners.

Mesic Habitat Focus Areas:

Manning Creek: Manning Creek originates near Big Lookout Mountain and flows through mostly private land to the confluence with the Burnt River in the southern portion of Durkee Valley. A small section of the upper watershed is forested while sagebrush steppe dominates lower elevations. Aspen stands are present near springs in the upper watershed. Significant land use includes grazing, agriculture, irrigation, and recreation. This watershed provides important habitat for Columbia Basin redband trout and Greater sage-grouse. A significant portion of the watershed was impacted by the 2024 Thompson fire. Potential project partners include the BLM, Baker LIT, and private landowners.

Dixie Creek: Dixie Creek originates near Pedro Mountain in the southeast portion of the Burnt River subbasin. Rye Valley is a wide depositional valley near the confluence of the North and South Forks of Dixie Creek. Below the confluence, Dixie Creek flows through a narrower, steep valley. Landownership is a mix of public (BLM) and private throughout the watershed from the headwaters to the confluence with the Burnt River. Significant land use includes grazing, agriculture, irrigation, and recreation. This watershed provides important habitat for Columbia Basin redband trout, beavers, and Greater sage-grouse. A significant portion of this watershed was impacted by the 2024 Durkee Fire. Potential project partners include the BLM, Baker LIT, and private landowners.

Powder River Subbasin - Geographic Focus Areas



2/6/2025

Line Features
 0 - 5,000
 Watershed Boundary Dataset HUC 8x
 Watershed Boundary Dataset HUC 12s
 Lower Salmon Creek
 HUC 12 Watersheds
 Ritter Creek, Love Creek

Cracker Creek, Deer Creek, Wolf Creek
 Powder River (Fish the Powder), Salmon Creek, North Powder River, Anthony Creek, Cusick Creek
 Powder River (Keating Valley), Balm Creek, Goose Creek
 HUC 10 Watersheds
 Big Creek
 Baldock Slough (Fish the Powder), Eagle Creek
 World Hillshade

1:677,791
 0 4 8 16 mi
 0 5 10 20 km
 Oregon State Parks, State of Oregon GEO, Esri, TomTom, Garmin, SafeGraph, FAO, METI/NASA, USGS, Bureau of Land Management, EPA,

Figure 3: Tier 1 priorities are represented in green, tier 2 in yellow, opportunistic in red, and mesic in blue.

Powder River Subbasin Focus Area Prioritization:

Technical Team Ranking	Stakeholder Group Ranking
1. Lower Salmon Creek (39.5)	1. Powder River: Mason Dam to Hughes Lane
2. Anthony Creek (37.5), Powder River: Mason Dam to Hughes Lane (37.5)	1. Upper and Lower Salmon Creek (Baker City Watershed)
3. North Powder (37.3)	1. North Powder River
4. Upper Salmon Creek (37.2)	1. Anthony Creek
5. Eagle Creek (35.8)	1. Thief Valley: Cusick Creek
6. Powder River: Keating Valley (34.4)	1. Powder River: Keating Valley (Big Creek to Goose Creek)

7. Thief Valley: Cusick Creek (33)	1. Eagle Creek
8. Cracker/Silver Creek (31.3)	9. Cracker Creek
9. Wolf Creek (no score)	10. Wolf Creek
Opportunistic (not rated): Deer Creek and Big Creek	Opportunistic (not rated): Deer Creek and Big Creek

Technical Team scores for the recommended Powder River focus areas were not significantly different, and the Stakeholder Group decided to advance all recommended focus areas to the final Action Plan. To further prioritize selected focus areas, the Stakeholder Group selected which areas they wanted to see the Council work in first, which resulted in 7 recommendations for tier 1 and tier 2 priorities. Tier 1 priorities are areas where the Council has dedicated resources and capacity for community engagement, monitoring, and project development. Tier 1 priorities include the Powder River from Mason Dam to Hughes Lane (Fish the Powder reach), Upper and Lower Salmon Creek, the North Powder River and Anthony Creek, Cusick Creek (Thief Valley), and Eagle Creek. Tier 2 priorities include the Powder River and tributaries in the Keating Valley from Big Creek to Goose Creek where the Council plans to expand community engagement to provide funding and capacity for future project development. Tier 3 priorities include Cracker Creek, Deer Creek, Wolf Creek, and Big Creek where projects will be considered opportunistically.

Mesic habitat opportunities were identified in partnership with the Baker Sage-grouse Local Implementation Team (Baker LIT) and the Sage-grouse Candidate Conservation Agreement with Assurances (CCAA) Coordinator. Ritter Creek, Love Creek, and Goose Creek are within prioritized Action Areas (Love Reservoir and Goose Creek) identified by the Baker LIT for future mesic restoration actions. Goose Creek was also identified as a tier 2 priority in the PBWC's action planning process. Mesic restoration will be prioritized in Baker LIT Action Areas with other areas considered opportunistically.

Tier 1 Focus Areas:

Powder River (Mason Dam to Hughes Lane): Through this section, the Powder River flows from the outlet of Mason Dam through a small section of public land within the Wallowa-Whitman National Forest to private agricultural lands in Bowen Valley. The river then flows through a small canyon reach of more private property and finally into the Powder Valley and through downtown Baker City to Hughes Lane. This section of the Powder River provides important habitat for Columbia Basin redband trout and beavers. Significant land use includes grazing, agriculture, irrigation, and recreation (fishing and swimming). The Council is engaged in a multiphase initiative within this area to improve aquatic habitat and fishing on the Powder River called the "Fish the Powder" initiative. Partnership opportunities in this area are diverse, including the WWNF, BLM, ODFW, private landowners, and Baker City. Mason Dam to Sutton Creek is also a focus area identified in the Powder Basin TMDL for *E. coli*.

Upper and Lower Salmon Creek: Salmon Creek originates in the Elkhorn Mountains west of Baker City and flows through the Wallowa-Whitman National Forest before entering private agricultural lands in Baker Valley. Upper Salmon Creek includes the headwaters of Salmon Creek to the Pine Creek confluence. Lower Salmon Creek includes the headwaters of Pine Creek

to the Salmon Creek confluence and then Salmon Creek to the confluence with the Powder River. The upper sections of both watersheds provide important habitat for Endangered Species Act (ESA) listed Bull Trout and Columbia Basin redband trout. Significant land use includes domestic water supply, grazing, agriculture, irrigation, and recreation in the upper portion of the watersheds. Community concerns for this area include the wildland urban interface and low flows in summer due to irrigation diversions. This is a current engagement and monitoring focus area for the Council. Potential project partners include the WWNF, ODFW, Baker City, Baker Resources Coalition, and private landowners.

North Powder River and Anthony Creek: The North Powder River originates in the Elkhorn Mountains west of Haines. The upper reaches of the North Powder River which flow through the Wallowa-Whitman National Forest are designated Wild and Scenic. In the middle and lower watersheds, the river flows through a small section of private land, the ODFW Elkhorn Wildlife Area, and into private agricultural lands in the North Powder Valley. Anthony Creek is a tributary to the North Powder River which originates in the Elkhorn Mountains near Anthony Lake. Anthony Creek flows through the Wallowa-Whitman National Forest, a small section of private land, the ODFW Elkhorn Wildlife Area, and joins the North Powder River on private agricultural lands in the valley. Both the North Powder River and Anthony Creek provide important habitat for ESA-listed Bull Trout and Columbia Basin redband trout. Brook trout hybridization with Bull Trout is a concern for both waterways. Significant land use in this watershed includes recreation (hunting, fishing, wildlife viewing), grazing, agriculture, and irrigation. The Watershed Council is currently involved with ODFW in a multiphase project on Anthony Creek. Other project opportunities with ODFW are being explored for the North Powder River. The North Powder River from Anthony Creek to the confluence with the Powder River was also identified as a focus area in the Powder Basin TMDL for *E. coli*.

Cusick Creek: Cusick Creek originates near Sugar Loaf Mountain west of Pondsosa. Cusick Creek flows through private lands all the way to the mouth at Thief Valley Reservoir and provides important habitat for Columbia Basin redband trout, Greater sage-grouse, and aspen. Significant land use includes grazing, agriculture, irrigation, and recreation (hunting and fishing). The Council is involved with a private landowner in a multiphase project to improve the Cusick Creek watershed which includes stream restoration and upland improvements.

Eagle Creek: Eagle Creek originates in the Eagle Cap Wilderness in the Wallowa Mountains north of Richland and is designated Wild and Scenic from the headwaters to the Wallowa-Whitman National Forest boundary at Skull Creek. From the National Forest boundary, Eagle Creek flows into broader valleys dominated by private agricultural lands. This watershed likely has the best aquatic habitat in the subbasin, provides important habitat for Columbia Basin redband trout, and is a priority area identified by the Confederated Tribes of the Umatilla Indian Reservation (CTUIR) for future anadromous fish reintroduction efforts (Assessment Report for the Reintroduction of Anadromous Fish Snake River Basin: Powder, Burnt, and Malheur River Subbasins 2017). Significant land use includes recreation (hiking, camping, hunting, fishing), grazing, agriculture, and irrigation. Little Eagle Creek and a section of the lower watershed were impacted by the 2024 Town Gulch Fire. The Watershed Council is currently engaged with Trout Unlimited and Idaho Power Company in project design for floodplain restoration in the lower

watershed. Eagle Creek from Two Color Creek to the confluence with the Powder River was also identified as a focus area in the Powder Basin TMDL for *E. coli*.

Tier 2 Focus Areas:

Powder River: Keating Valley (Big Creek to Goose Creek): This section of the Powder River includes the Keating Valley and tributaries from Big Creek to Goose Creek. Land ownership along the mainstem Powder River is private. Tributaries to the north and south include a mix of public (WWNF, BLM) and private landownership. The tributaries to the north originate in the Wallowa Mountains while those from the south originate in the hills near Virtue Flats, Lone Pine Mountain, and Little Lookout Mountain. Significant land use includes grazing, agriculture, and irrigation. The mainstem Powder River and some tributaries to the north provide important habitat for Columbia Basin redband trout and beavers. Goose Creek, Ritter Creek, and Love Creek provide important habitat for Greater sage-grouse. The Council will expand our engagement focus to the Keating Valley for future project development. While the Keating Valley reach of the Powder River is not a TMDL focus area, the reach downstream through the canyon leading to Richland is. Actions in the Keating Valley to address improved water quantity and quality will likely benefit reaches downstream. Potential project partnerships include the WWNF in upper tributaries, the BLM, the Baker LIT, ODFW, private landowners, the Oregon Department of Agriculture, and the Keating Soil and Water Conservation District. This section of the Powder River through Keating Valley is also identified as a Strategic Implementation Area (SIA) by the Oregon Department of Agriculture (2022 Powder-Brownlee Agricultural Water Quality Management Area Plan).

Tier 3 Focus Areas:

Cracker Creek: Cracker Creek originates in the Elkhorn Mountains near Columbia Hill and the boundary of the North Fork John Day Wilderness. Cracker Creek flows through the Wallowa-Whitman National Forest, private lands near Bourne, and a mix of public and private land to the confluence with McCulley Creek in Sumpter. The upper portion of the watershed provides important habitat for ESA-listed Bull Trout and Columbia Basin redband trout are present throughout the system. Brook trout hybridization with Bull Trout is a concern for this waterway. Significant land use includes timber harvest, mining, grazing, and recreation. The lower reaches of Cracker Creek were historically dredged and placer mined, leaving legacy impacts. Potential project partners include the WWNF, ODFW, and private landowners.

Deer Creek: Deer Creek originates in the Elkhorn Mountains near Pole Creek Ridge and Elkhorn Ridge. The stream flows through the Wallowa-Whitman National Forest then enters private agricultural lands in a broader valley north of Phillips Lake. The stream enters Phillips Lake near the Mowich Loop Picnic Area on public land. In the upper portion of the watershed, Lake Creek (tributary to Deer Creek) provides important habitat for ESA-listed Bull Trout, but brook trout hybridization with Bull Trout is also a concern for this waterway. Columbia Basin redband trout are present throughout the watershed. Significant land use includes grazing, agriculture, irrigation, and recreation. Potential project partners include the WWNF, ODFW, and private landowners.

Wolf Creek: Wolf Creek originates near Anthony Butte and Summer Spring Ridge in the northwest corner of the watershed. Wolf Creek flows through steep canyons on the Wallowa-Whitman National Forest with a few parcels of private land. The creek then flows through private land to the Wolf Creek Reservoir, and private agricultural lands downstream of the reservoir to the confluence with the Powder River near North Powder. The upper portion of the watershed provides important habitat for ESA-listed Bull Trout. Columbia Basin redband trout are present above and below the reservoir. Significant land use includes grazing, agriculture, irrigation, and recreation. Potential project partners include the WWNF upstream of the reservoir, the Powder Valley Water Control District who operates the reservoir, and private landowners.

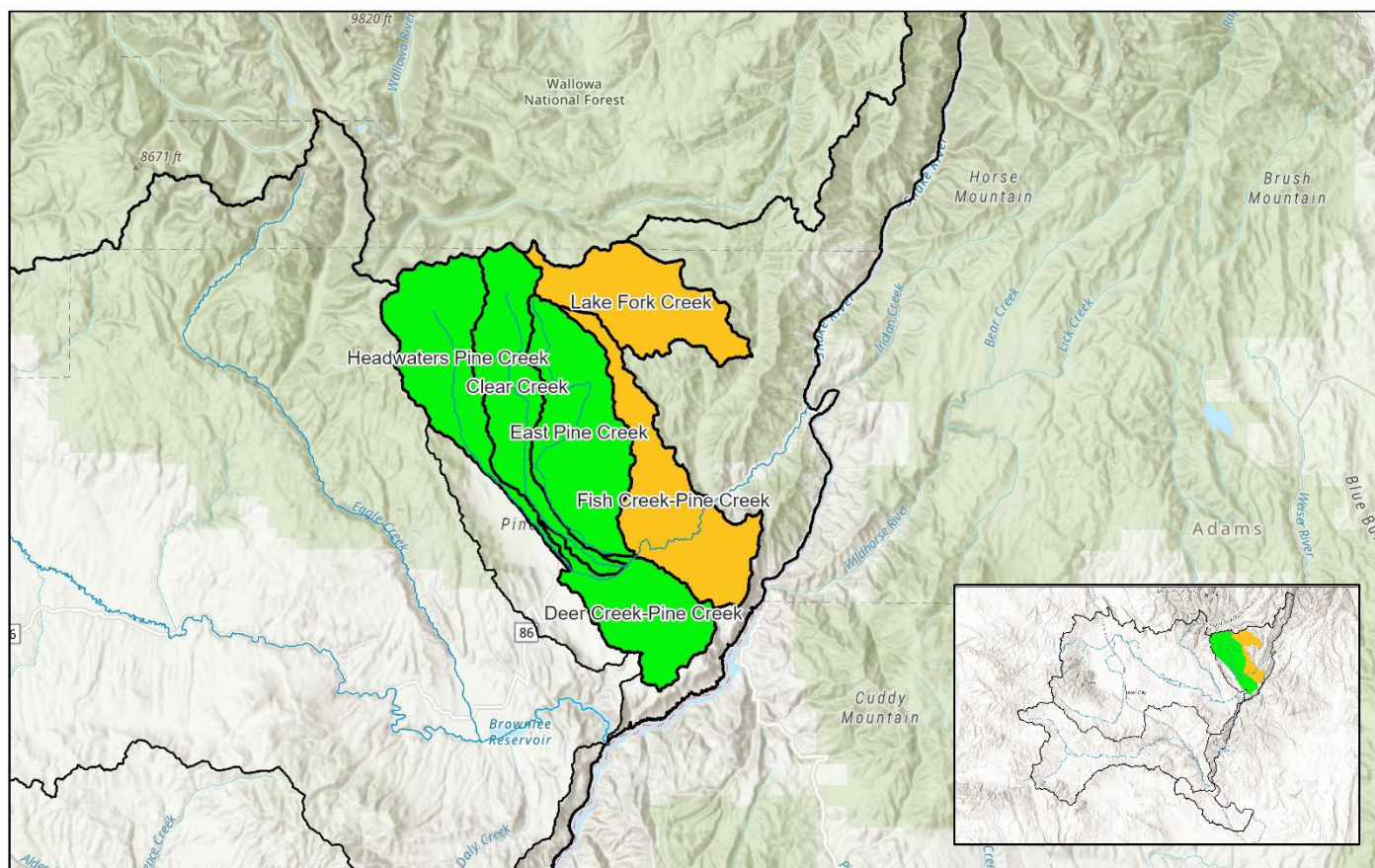
Big Creek: Big Creek originates in the Wallowa Mountains near Flagstaff Butte and Four Point Ridge. Big Creek flows through the Wallowa-Whitman National Forest and a mix of BLM land and private agricultural lands downstream. Big Creek enters the Powder River on BLM land downstream of Pondosa. The Powder River in this section is designated Wild and Scenic. Columbia Basin redband trout are present throughout the watershed. Significant land use includes grazing, agriculture, irrigation, and recreation. Potential project partners include WWNF, BLM, and private landowners.

Mesic Habitat Focus Areas:

Ritter Creek: Ritter Creek originates in the hills south of Keating Valley. Ritter Creek flows through private pastureland, agricultural land, some public land (BLM), and then into private agricultural lands in Keating Valley to the confluence with the Powder River. The dominant habitat type within the watershed is sagebrush-steppe providing important habitat for Greater sage-grouse. Columbia Basin redband trout may be present lower in the watershed. Significant land use includes grazing, agriculture, irrigation, and some recreation (hunting) higher in the watershed. The Watershed Council is currently partnering with the Baker LIT to address mesic habitat improvements in this area.

Love Creek: Love Creek originates near Glasgow Butte in the hills south of Keating Valley. Love Creek flows through predominantly private pastureland in the upper portion of the watershed, some BLM land in the lower portion of the watershed, and a small section of private land at the confluence with the Powder River. Sagebrush-steppe in this focus area provides important habitat for Greater sage-grouse. Columbia Basin redband trout may be present lower in the watershed. Significant land use includes grazing, irrigation, and some recreation (hunting) in the upper watershed. The Watershed Council is currently partnering with the Baker LIT to address mesic habitat improvements in this area.

Brownlee Subbasin - Geographic Focus Areas



2/6/2025

Line Features

- 0 - 5,000
- Watershed Council Boundaries
- Watershed Boundary Dataset HUC 8s

Pine Valley Focus Areas

- Pine Creek, East Pine Creek, Clear Creek
 - Fish Creek, Lake Fork Creek, Elk Creek, Aspen Creek
- World Hillshade

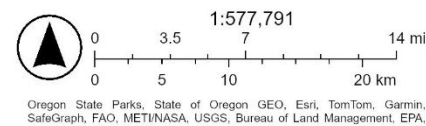


Figure 4: Focus areas include only the Pine Valley portion of the Brownlee Subbasin Tier 1 priorities are represented in green and tier 2 priorities are represented in yellow.

Brownlee Subbasin Focus Area Prioritization:

Technical Team Ranking	Stakeholder Engagement Group Ranking
1. Pine Creek	1. Pine Creek
2. East Pine Creek	2. East Pine Creek
3. Clear Creek	3. Clear Creek
4. Elk Creek, Aspen Creek	3. Fish Creek
5. Lake Fork Creek	3. Lake Fork Creek
6. Fish Creek	4. Elk Creek, Aspen Creek

Pine Creek, East Pine Creek, and Clear Creek were ranked as highest priority for future Council actions by the Technical Team and Stakeholder Group due to current ecological

condition, restoration potential, partnership potential, community importance, and the importance of these streams for ESA-listed Bull Trout. The Brownlee Subbasin also encompasses tributaries to the Snake River on the Oregon side and a small section near Huntington termed the Southern Foothills in the Brownlee Subbasin Assessment. Tributaries to the Snake River and watersheds in the Southern Foothills were not outlined as priorities for future work due to lack of partnership potential, community engagement, and restoration potential. These areas will be reevaluated for prioritization in 2035 during the 10-year Action Plan update. Tier 1 priorities include Pine Creek, East Pine Creek, and Clear Creek where the Council has dedicated resources and capacity for community engagement, monitoring, and project development. Tier 2 priorities include Fish Creek, Lake Fork Creek, Elk Creek, and Aspen Creek where the Council plans to expand community engagement to provide funding and capacity for future project development.

Tier 1 Focus Areas:

Pine Creek: Pine Creek originates high in the Wallowa Mountains in the Eagle Cap Wilderness in the Wallowa-Whitman National Forest. The East Fork of Pine Creek upstream of Cornucopia provides important habitat for the “core” population of ESA-listed Bull Trout in the Pine, Indian, and Wildhorse Core Area (2015 Mid-Columbia Recovery Unit Implementation Plan for Bull Trout). Downstream of Cornucopia, Pine Creek flows through both private and public land (WWNF) and then into private agricultural lands in the Pine Valley near Carson and Halfway. The focus area extends through the Pine Valley to the mouth of East Pine Creek. Significant land use includes grazing, agriculture, irrigation, recreation, and mining. Legacy dredge and placer mining have significantly altered the natural stream function of Pine Creek between Cornucopia and Carson. Stream dewatering is a concern for Pine Creek in the lower portion of the watershed through Halfway. Columbia Basin redband trout distribution extends throughout the watershed. The Pine Valley is a current engagement and monitoring focus area for the Council. Potential project partners include the WWNF, Idaho Power Company, ODFW, and private landowners.

East Pine Creek: East Pine Creek originates high in the Wallowa Mountains in the Wallowa-Whitman National Forest and flows through the WWNF to private agricultural lands in the Pine Valley. East Pine Creek joins Pine Creek in the southeast corner of the Pine Valley. The upper portion of the watershed provides important habitat for ESA-listed Bull Trout. Brook trout and brook trout-Bull Trout hybrids are documented lower in the watershed. Columbia Basin redband trout distribution extends throughout the watershed. Significant land use includes grazing, agriculture, irrigation, and recreation. Stream dewatering and low flows due to irrigation diversion are a concern for East Pine Creek through the valley. The Pine Valley is a current engagement and monitoring focus area for the Council and the Council is currently engaged in the implementation and development of irrigation efficiency projects in this area. Potential project partners include the WWNF, Idaho Power Company, ODFW, and private landowners.

Clear Creek: Clear Creek originates high in the Wallowa Mountains near Sugarloaf Mountain. Clear Creek flows through the Wallowa-Whitman National Forest to private agricultural lands in the Pine Valley beginning near Boulder Flat Lane. Clear Creek joins Pine Creek in the southeast corner of the Pine Valley upstream of the East Pine Creek confluence. The upper portion of the watershed provides important habitat for ESA-listed Bull Trout. Brook trout and brook trout –

Bull Trout hybrids are documented in the lower watershed extending up Clear Creek to the Trail Creek confluence. Columbia Basin redband trout distribution extends throughout the watershed. Significant land use includes grazing, agriculture, irrigation, and recreation. Meadow Creek, a tributary to Clear Creek, is an important cold-water source for the Pine Basin. The Council is currently engaged in a multiphase project with the WWNF and IPC to improve a degraded section of Meadow Creek to restore stream and wetland function to protect this cold-water source. The Pine Valley is a current engagement and monitoring focus area for the Council. Potential project partners include the WWNF, Idaho Power Company, ODFW, and private landowners.

Tier 2 Focus Areas:

Fish Creek: Fish Creek originates in the Wallowa Mountains near Fish Lake in the Wallowa-Whitman National Forest. Fish Creek flows through the WWNF before entering private agricultural lands to the confluence with Pine Creek near Hwy-86. Several trans-basin diversions provide water to Fish Creek and Dry Creek. Columbia Basin redband trout distribution likely extends throughout watershed. Brook trout occupy Fish Lake at the top of the watershed. Significant land use includes grazing, agriculture, irrigation, and recreation. The Council will expand our engagement focus to Fish Creek for future project development. Potential project partners include the WWNF, Idaho Power Company, ODFW, and private landowners.

Lake Fork Creek: Lake Fork Creek originates in the Wallowa Mountains near Fish Lake in the Wallowa-Whitman National Forest. Lake Fork Creek flows through the WWNF to the Hells Canyon National Recreation Area and the confluence with North Pine Creek. Columbia Basin redband trout distribution extends throughout the watershed. Brook trout are documented in both Lake Fork Creek and Fish Lake. Significant land use includes grazing, irrigation, and recreation. There are several high elevation meadows in the upper portion of the watershed which would benefit from restoration. The Council will expand our engagement focus to Lake Fork Creek for future project development. Potential project partners include the WWNF, Idaho Power Company, ODFW, and private landowners.

Elk Creek and Aspen Creek: Elk Creek and Aspen Creek (tributary to Elk Creek) originate in the Wallowa Mountains near the boundary of the Eagle Cap Wilderness in the Wallowa-Whitman National Forest. Elk Creek flows through the WWNF to the confluence with Lake Fork Creek just upstream of the Hells Canyon National Recreation Area boundary. The upper portion of Elk Creek and Aspen Creek provide important habitat for ESA-listed Bull Trout. Columbia Basin redband trout distribution extends throughout the watershed. Aspen Creek is an important cold-water resource but is fully diverted during the baseflow season for irrigation through a trans-basin diversion to Hooker Flat. Significant land use includes grazing, irrigation, and recreation. The Council will expand our engagement focus to Elk Creek and Aspen Creek for future project development. Potential project partners include the WWNF, Idaho Power Company, ODFW, and private landowners.

Watershed Limiting Factors

The following section will summarize limiting factors for geographic focus areas in the Burnt River, Powder River, and Brownlee subbasins. Limiting factors summarized for this Action Plan include water quality impairments, fish passage barriers and distribution, flow restoration priorities, Watershed Condition Framework classification and parameters rated in poor condition, information from assessments and plans specific to the subbasin, and observations from planning team participants. Resources for information used to summarize limiting factors include:

Water Quality Impairments: The State of Oregon Department of Environmental Quality (DEQ) 2022 Integrated Report was used to summarize waterbodies with impaired beneficial use throughout the Powder Basin. Designated beneficial uses developed by DEQ for the Powder Basin include:

- Public Domestic Water Supply
- Private Domestic Water Supply
- Industrial Water Supply
- Irrigation
- Livestock Water
- Fish and Aquatic Life
- Wildlife and Hunting
- Fishing
- Boating
- Water Contact Recreation
- Aesthetic Quality

The Action Plan summarizes category 5 and category 4 impairments for each focus area in the Powder Basin. Category 5 impairments demonstrate at least one beneficial use is not supported, indicating a need for TMDL development. Category 4 impairments demonstrate at least one designated use is not supported, but TMDL development is unnecessary.

Fish Passage Barriers and Distribution: Fish passage barrier location, type (bridge, culvert, dam, etc.), status (partial barrier, complete barrier, etc.), and priority were summarized for Powder Basin focus areas using the Oregon Department of Fish and Wildlife Oregon Fish Habitat Distribution and Barriers database. Habitat distribution for Columbia Basin redband trout, Bull Trout, and brook trout were also summarized from this database where applicable.

Flow Restoration: Priorities for flow restoration were summarized from the 2001 Summer Stream Flow Restoration Priorities Map developed by the Oregon Department of Fish and Wildlife and Oregon Water Resources Department to fulfill requirements of Measure IV.A.8.

Watershed Function: Watershed function classification and parameters rated in poor to fair condition were summarized using the USDA Forest Service Watershed Condition Framework (WCF). This framework describes watershed function, parameters in good, fair, and poor

conditions, and was developed as a tool to prioritize watersheds for future restoration efforts by the Forest Service.

Subbasin Plans and Assessments: Several subbasin plans and assessments were used to detail limiting factors for each focus area. Specific assessments/plans used for focus areas are described by subbasin in the section below. Plans and assessments outline natural and anthropogenic disturbances which may impact water quality and natural stream function. Throughout the Powder Basin, current and historic anthropogenic impacts commonly include development (roads, cities, recreation, reservoirs, and agriculture), removal of beavers, introduction of invasive species, grazing, irrigation, logging, mining, and year-round recreation.

Burnt River Subbasin Limiting Factors:

Subbasin Specific Resources:

2022 Burnt River Agricultural Water Quality Management Area Plan: This plan was developed by the Oregon Department of Agriculture in partnership with the Burnt River Local Advisory Committee and Burnt River Soil and Water Conservation District. The plan identifies water quality issues related to agriculture and strategies for protecting and improving water quality throughout the focus area. High water temperatures and reduced streamflow are identified as the main water quality concerns for the subbasin.

2004 Burnt River Subbasin Plan: The Action Plan summarizes the current condition of aquatic habitat attributes detailed in the 2004 Burnt River Subbasin Plan. The Technical Team for the Burnt River planning effort rated current habitat conditions using a Qualitative Habitat Assessment which relied on professional expertise and local knowledge. The attributes assessed by the Technical Team are outlined in Table 22 of the Burnt River Subbasin Plan and provided below:

Table 22. QHA habitat attributes and their definitions.

Habitat Attribute	Definition
Riparian Condition	Condition of the stream-side vegetation, land form and subsurface water flow.
Channel Stability	The condition of the channel in regard to bed scour and artificial confinement. Measures how the channel can move laterally and vertically and to form a "normal" sequence of stream unit types.
Habitat diversity	Diversity and complexity of the channel including amount of large woody debris (LWD) and multiple channels
Key Habitat	The complex of habitat types formed by geomorphic processes (including LWD) within the stream (e.g. pools, riffles, glides etc.).
Sediment Load	Amount of fine sediment within the stream, especially in spawning riffles
High Flow	Frequency and amount of high flow events.
Low Flow	Frequency and amount of low flow events.
Oxygen	Dissolved oxygen in water column and stream substrate
High Temperature	Duration and amount of high summer water temperature or low winter temperatures that can be limiting to fish survival
Pollutants	Introduction of toxic (acute and chronic) substances into the stream

The Burnt River Subbasin Plan provides scores for each attribute for most streams within the watershed. Habitat ratings reflect how closely the current condition of an attribute is to the optimal reference condition. Ratings include 0% of optimum, 25% of optimum, 50% of optimum, 75% of optimum, and 100% of optimum. A summarization of these ratings for each geographic focus area is described under “Other Limiting Factors.”

1996 North Fork Burnt River Watershed Analysis (Wallowa-Whitman National Forest): This analysis was also used to summarize limiting factors. This watershed assessment details results from several stream surveys conducted by the Wallowa-Whitman National Forest in the 1990’s. Survey results provide information on large woody debris, pool frequency/quality, substrate, land use practices, and current conditions for several streams in the watershed.

Tier 1 Priorities

Focus Area	Water Quality Impairments	Other Limiting Factors
North Fork Burnt River	<ul style="list-style-type: none"> • Dissolved Oxygen year-round, • Bio criteria (health of macroinvertebrate communities), • Temperature year-round, • Sedimentation (high cobble embeddedness), • Habitat modification (deficient pools, large woody debris, high width to depth ratio), • Flow modification (water withdrawal concern-Redband trout) 	<ul style="list-style-type: none"> • Highest flow restoration priority • 2 priority passage barriers and many other obstructions • Habitat Ratings: Poor riparian condition (vegetation/floodplain connection), poor channel stability (incision, confinement), poor habitat diversity (lack of large woody debris, low pool frequency, single-threaded channels). • Legacy impacts from mining, timber harvest, grazing, agricultural development, and beaver removal throughout watershed.
South Fork Burnt River	<ul style="list-style-type: none"> • Temperature year-round, • Bio-criteria, • TMDL Focus (<i>E. coli</i>), • Dissolved Oxygen- spawning. 	<ul style="list-style-type: none"> • 1 priority passage barrier and other obstructions. • Flow restoration priority is low to moderate. • Habitat ratings (0-50% of optimum) occur in the Lower SF and Job Creek watersheds and include low flows and high temperatures. • The upper and middle watershed demonstrate legacy wildfire impacts from the 2016 Rail Fire. • WCF: Upper and Lower watersheds are rated as functioning at risk while middle watershed is rated as impaired function (poor aquatic habitat/biota, road/trail condition, fire effects/fire regime, and water quantity are concerns).

Tier 2 Priorities

Focus Area	Water Quality Impairments	Other Limiting Factors
Middle Fork Burnt River	<ul style="list-style-type: none"> • TMDL Focus (<i>E. coli</i>), • Dissolved Oxygen year-round, • Dissolved Oxygen-spawning, • Bio-criteria. 	<ul style="list-style-type: none"> • Low flows, • 1 priority passage barrier, • Poor aquatic habitat. • Legacy impacts from agricultural development
Mainstem Burnt River and Tributaries (Unity Reservoir to Clarks Creek)	<ul style="list-style-type: none"> • TMDL focus area for <i>E. coli</i>, • Bio-criteria, • Temperature year-round, • pH, • Sedimentation (high cobble embeddedness), • Flow modification (water withdrawal concern-Redband trout). 	<ul style="list-style-type: none"> • 3 priority barriers, Higgins Reservoir Dam is a complete passage barrier, and two dams along mainstem Burnt River in Independence Creek sub-watershed which partially block passage. Many other obstructions with varying passage status. • High flow restoration priority along the mainstem Burnt River from Unity Reservoir to Durkee. • Most watersheds are functioning at risk, Independence Creek is rated as impaired function (Poor conditions for aquatic habitat/biota, fire effects/fire regime, and road/trail common to each watershed). • Habitat ratings (25%-50% of optimum) include riparian condition, channel stability, habitat diversity, fine sediment, low flows, high temperatures, pollutants, and obstructions.

Tier 3 Priorities

Focus Area	Water Quality Impairments	Other Limiting Factors
Camp Creek (West Camp Creek sub-watershed)	None	<ul style="list-style-type: none"> • Habitat ratings (50% of optimum) include riparian condition, channel stability, habitat diversity, fine sediment, high and low flows, and high temperatures.
Clarks Creek	Temperature year-round	<ul style="list-style-type: none"> • Habitat ratings (25%-50% of optimum) for riparian condition, channel stability, habitat diversity, fine sediment, high/low flows, and obstructions, 50% of optimum for high temperatures and pollutants. • Significantly impacted by 2024 Durkee Fires. • Historic and active mining influence
Pritchard and Lawrence Creeks	Temperature year-round	<ul style="list-style-type: none"> • Habitat ratings (25%-50% of optimum): high temps, riparian conditions, habitat diversity, fine sediment, low flows, pollutants, and obstructions. • Moderate flow restoration priority

Mesic Priorities

Focus Area	Water Quality Impairments	Other Limiting Factors
Manning Creek	None	<ul style="list-style-type: none"> • Habitat ratings (25%-50% of optimum): High temperatures, riparian condition, habitat diversity, fine sediment, low flows, pollutants, and obstructions. • Upper portion of watershed was significantly impacted by 2024 Thompson Gulch Fire.
Dixie Creek	<ul style="list-style-type: none"> • Temperature year-round • Sedimentation 	<ul style="list-style-type: none"> • One complete passage barrier in the upper section of watershed. • Habitat ratings (25%-50% of optimum): habitat diversity, high flows, fine sediment, high temperatures, riparian condition, channel stability, low flows, and pollutants. • Significantly impacted by 2024 Durkee Fire.

Powder River Subbasin Limiting Factors:

Subbasin Specific Resources:

2022 Powder-Brownlee Agricultural Water Quality Management Area Plan: This plan was developed by the Oregon Department of Agriculture in partnership with the Powder-Brownlee Local Advisory Committee and the Baker Valley, Eagle Valley, and Keating Soil and Water Conservation District. The plan identifies water quality issues related to agriculture and strategies for protecting and improving water quality throughout the focus area. High water temperatures and reduced streamflow are identified as the main water quality concerns for both subbasins.

2004 Powder River Subbasin Plan: The Action Plan summarizes the current condition of aquatic habitat attributes detailed in the 2004 Powder River Subbasin Plan. The Technical Team for the Powder River planning effort rated current habitat conditions using a Qualitative Habitat Assessment which relied on professional expertise and local knowledge. The attributes assessed by the Technical Team are outlined in Table 22 of the Burnt River Subbasin Plan and provided below:

Table 22. QHA habitat attributes and their definitions.

Habitat Attribute	Definition
Riparian Condition	Condition of the stream-side vegetation, land form and subsurface water flow.
Channel Stability	The condition of the channel in regard to bed scour and artificial confinement. Measures how the channel can move laterally and vertically and to form a "normal" sequence of stream unit types.
Habitat diversity	Diversity and complexity of the channel including amount of large woody debris (LWD) and multiple channels
Key Habitat	The complex of habitat types formed by geomorphic processes (including LWD) within the stream (e.g. pools, riffles, glides etc.).
Sediment Load	Amount of fine sediment within the stream, especially in spawning riffles
High Flow	Frequency and amount of high flow events.
Low Flow	Frequency and amount of low flow events.
Oxygen	Dissolved oxygen in water column and stream substrate
High Temperature	Duration and amount of high summer water temperature or low winter temperatures that can be limiting to fish survival
Pollutants	Introduction of toxic (acute and chronic) substances into the stream

The Powder River Subbasin Plan provides scores for each attribute for most streams within the watershed. Habitat ratings reflect how closely the current condition of an attribute is to the optimal reference condition. Ratings include 0% of optimum, 25% of optimum, 50% of optimum, 75% of optimum, and 100% of optimum. A summarization of these ratings for each geographic focus area is described under “Other Limiting Factors.”

2004 Powder River-Powder Valley Watershed Assessment: This assessment addresses limiting factors, historic conditions, and current conditions for the Powder River within the Powder River Valley, approximately Sutton Creek to Wolf Creek.

2001 Upper Powder River Watershed Assessment: This assessment addresses Cracker Creek, McCulley Creek, and the Powder River downstream to Phillips Lake. The assessment summarizes results from several stream surveys conducted by the Wallowa-Whitman National Forest which addressed large woody debris, pool frequency/quality, substrate, land use practices, and current conditions for several streams in the watershed.

Tier 1 Priorities

Focus Area	Water Quality Impairments	Other Limiting Factors
Powder River and Tributaries (Mason Dam to Hughes Lane): Mason Dam to Sutton Creek Confluence	<ul style="list-style-type: none"> • Fecal Coliform, • Dissolved Oxygen-spawn, • Temperature- year-round, • Methylmercury- Human Health Toxics, • Bio Criteria. 	<ul style="list-style-type: none"> • Priority passage barrier on the Powder River at the Smith Ditch diversion (dam is partial barrier during part of the migration period) and many other documented passage barriers exist throughout the watershed. • Moderate-high flow restoration priority. • From Mason Dam to Stices Gulch, habitat ratings (~50% of optimum) include riparian condition, habitat diversity, low flows, and dissolved oxygen. • From Stices Gulch to Sutton Creek, habitat ratings (~25%-50% of optimum) include riparian condition, low flows, high temperatures, and obstructions. • Low flows and obstructions are the greatest concern (~25% of optimum) for the Beaver Creek watershed. • Sutton Creek and Ebell Creek watersheds are impaired (~25%-50% of optimum) for almost all parameters except for dissolved oxygen, low temps, and pollutants which are rated 100% of optimum. • The USDA Forest Service Watershed Condition Framework classifies every sub-watershed within this section as having impaired function.
Powder River and Tributaries (Mason Dam to Hughes Lane): Sutton Creek to Hughes Lane	<ul style="list-style-type: none"> • Temperature- year-round, • Aquatic Life Toxics (total Iron) • Human Health Toxics (Arsenic, inorganic) 	<ul style="list-style-type: none"> • Moderate to High flow restoration priority (Baldock Slough is rated as high flow restoration priority). • Habitat ratings (~25%-50% of optimum) for the Powder River in this section include riparian condition, channel stability, fine sediment, habitat diversity, low flows, high temperatures, pollutants, and obstructions. • Habitat ratings (~25%-50% of optimum) for Baldock Slough include fine sediment, high temperatures, riparian condition, habitat diversity, low flows, dissolved oxygen, pollutants, and obstructions. • Habitat ratings (~25%-50% of optimum) for Old Settlers Slough include riparian condition, fine sediment, low

		flows, dissolved oxygen, high temperatures, pollutants, obstructions, habitat diversity and high flows.
Upper Salmon Creek	No data.	<ul style="list-style-type: none"> • 1 priority passage barrier (Bull Trout) on Salmon Creek. • High flow restoration priority. • Current habitat ratings are closer to optimum in the upper portion of the watershed and decrease significantly moving downstream into the Powder Valley. • Habitat ratings (0%-50% of optimum) include: riparian condition, channel stability, fine sediment, low flows, obstructions, habitat diversity, dissolved oxygen, high temperatures, and pollutants. • WCF Poor Condition: Aquatic Biota, Water Quantity, Aquatic Habitat, Road and Trail, Fire Effects/Fire Regime.
Lower Salmon Creek	No data.	<ul style="list-style-type: none"> • High flow restoration priority. • Current habitat ratings are closer to optimum in the upper portion of the watershed and decrease moving downstream into the Powder Valley. • Habitat ratings (0%-50% of optimum) include: 0% of optimum for low flows and obstructions, 25% of optimum for riparian condition, channel stability, habitat diversity, fine sediment, dissolved oxygen, high temperatures, and pollutants, 50% of optimum for high flows. • WCF Poor Condition: Water Quantity, Aquatic Habitat, Road and Trail, Fire Effects/Fire Regime. • Dewatering is a significant concern outlined in the assessment. Dewatering is evident in the lower reaches of Salmon Creek, Pine Creek, and Spring Creek. • Spring Creek is fully diverted into Bowles Ditch. • Tech Team expressed concerns regarding low flows in late summer throughout the lower watershed due to irrigation diversions.
North Powder River and Anthony Creek	<ul style="list-style-type: none"> • Temperature year-round, • Bio Criteria, • <i>E. coli</i>. 	<ul style="list-style-type: none"> • 7 priority passage barriers and other documented barriers (Bull Trout). • Brook trout. • Moderate to highest flow restoration priority. • Throughout the upper portions of the watershed, most parameters are rated 75%-100% of optimum. Low flows and obstructions are the greatest concerns for upper reaches. • Moving downstream, habitat ratings (25%-50% of optimum) include low flows, high temperatures, fine sediment, habitat diversity, and obstructions.

		<ul style="list-style-type: none"> WCF Poor Condition: Water Quantity, Aquatic Habitat, Road and Trail, and Fire Effects/Fire Regime.
Thief Valley (Cusick Creek)	No data.	<ul style="list-style-type: none"> Thief Valley Reservoir is priority barrier. Low-high flow restoration priority. Habitat Ratings: 0% of optimum for channel stability, habitat diversity, fine sediment, and obstructions, 25% of optimum for riparian condition, 50% of optimum for dissolved oxygen, high temps, and pollutants.
Eagle Creek	<ul style="list-style-type: none"> Temperature year-round, <i>E. coli</i>. 	<ul style="list-style-type: none"> 1 priority passage barrier and many other documented barriers with varying passage status. Low to high flow restoration priority. Habitat Ratings: Upper reaches of Eagle Creek (Headwaters, West Fork, East Fork) are rated between 75%-100% of optimum for all parameters. Impairments increase in the lower section of the watershed. Habitat ratings (25%-50% of optimum) common to both lower Eagle Creek reaches include riparian condition, low flows, and obstructions.

Tier 2 Priorities

Focus Area	Water Quality Impairments	Other Limiting Factors
Powder River and Tributaries (Keating Valley: Big Creek to Goose Creek)	<ul style="list-style-type: none"> Temperature- year-round, turbidity, sedimentation, Aquatic Life Toxics (Iron-total), Human Health Toxics (Arsenic-inorganic, methylmercury), flow modification. 	<ul style="list-style-type: none"> Low to High flow restoration priority. Habitat Ratings: (25%-50% of optimum) for the mainstem Powder River through this section include obstructions, fine sediment, low flows, and high temperatures. Habitat ratings: (25%-50% optimum) throughout the upper and lower reaches of most tributaries include low flows, fine sediment, high temperatures, and obstructions. Many areas with heavy grazing influence, historic mining influence, Trans-basin diversion causing sediment issues between Balm and Goose Creek.

Tier 3 Priorities

Focus Area	Water Quality Impairments	Other Limiting Factors
Cracker Creek	<ul style="list-style-type: none"> • Temperature year-round. 	<ul style="list-style-type: none"> • Passage barriers (Bull Trout), • Brook trout, • High flow restoration priority, • Lower watershed (McCully Creek to Little Cracker Creek) is rated 50% of optimum for several parameters (riparian condition, channel stability, and habitat diversity), • Cobble embeddedness, historic dredge mining and active/historic placer mining are extensive throughout lower reach and limit stream function, • WCF Poor Condition: Road and trail condition, fire effects/fire regime.
Deer Creek	<ul style="list-style-type: none"> • Temperature year-round. 	<ul style="list-style-type: none"> • Passage barriers (Bull Trout), • Brook trout, • High flow restoration priority, • Several parameters rated ~50% of optimum throughout watershed (riparian condition, channel stability, high/low flows, temperature, obstructions, sediment, and low flows), • Head cutting and vertical channel erosion in some portions of lower Deer Creek, • WCF Condition: Poor aquatic habitat condition, poor road/trail condition, and poor fire effect/fire regime condition.
Wolf Creek	<ul style="list-style-type: none"> • Temperature year-round, • pH. 	<ul style="list-style-type: none"> • 4 priority passage barriers (Bull Trout). • Low to high flow restoration priority. • Habitat ratings: Conditions in the upper portion of the Wolf Creek watershed are near optimum for all parameters. • Habitat ratings: Below the reservoir to the confluence with the Powder River, Wolf Creek is impaired for several parameters (25%-50% optimum) including riparian condition, habitat diversity, fine sediment, low flows, high temperatures, dissolved oxygen, and obstructions.
Big Creek	<ul style="list-style-type: none"> • Temperature year-round. 	<ul style="list-style-type: none"> • High flow restoration priority. • Habitat Ratings: Confidence levels in habitat ratings are low for the upper portions of the watershed and Beagle Creek.

		<ul style="list-style-type: none"> • The upper reach of the watershed is rated nearly 75-100% of optimum for all parameters. • Big Creek reach 2 and Beagle Creek are rated ~50% of optimum for most parameters. • The lower section of Big Creek from Beagle Creek to the confluence of the Powder River has the highest confidence level and the most concerning parameters (~50% of optimum) include low flows, high temperatures, and obstructions.
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Mesic Priorities

Focus Area	Water Quality Impairments	Other Limiting Factors
Ritter Creek	No data.	<ul style="list-style-type: none"> • Moderate flow restoration priority. • Habitat Ratings: 25% of optimum for riparian condition, channel stability, habitat diversity, fine sediment, high/low flows, high temperatures, pollutants, and obstructions, ~50% of optimum for dissolved oxygen. • Heavy grazing influence.
Love Creek	None.	<ul style="list-style-type: none"> • Passage barriers. • Moderate flow restoration priority. Habitat Ratings: ~50% of optimum for riparian condition, channel stability, habitat diversity, fine sediment, high flows, low flows, and high temperatures.
Goose Creek	<ul style="list-style-type: none"> • Turbidity, • Temperature year-round, • Sedimentation. 	<ul style="list-style-type: none"> • Passage barriers. • High flow restoration priority. • Habitat Ratings: (25%-50% of optimum) for the upper portion of the watershed includes fine sediment, low flows, high temperatures, and obstructions. • Most parameters are below 50% of optimum for the lower portion of the watershed. • Low flows are 25% of optimum for both reaches. • WCF Poor Condition: Water Quality, Riparian/Wetland Vegetation, Water Quantity, Aquatic Biota, Aquatic Habitat, Road and Trail, Fire Effects/Fire Regime. • Trans-basin diversion from Balm Creek to Goose Creek contributes to sedimentation.

Brownlee Subbasin Limiting Factors:

Subbasin Specific Resources:

2022 Powder-Brownlee Agricultural Water Quality Management Area Plan: This plan was developed by the Oregon Department of Agriculture in partnership with the Powder-Brownlee Local Advisory Committee and the Baker Valley, Eagle Valley, and Keating Soil and Water Conservation District. The plan identifies water quality issues related to agriculture and strategies for protecting and improving water quality throughout the focus area. High water temperatures and reduced streamflow are identified as the main water quality concerns for both subbasins.

2012 Brownlee Subbasin Watershed Assessment: This assessment addresses the entirety of the Brownlee Subbasin including the Pine Valley, canyon reach of the Snake River, and the Southern Foothills. The assessment addresses historic and current conditions, limiting factors, and includes recommendations for watersheds throughout the subbasin.

2000 Pine Creek Watershed Assessment: This assessment addresses streams within the Pine Valley. The assessment addresses historic conditions, current conditions, and limiting factors.

Tier 1 Priorities

Focus Area	Water Quality Impairments	Other Limiting Factors
Pine Creek	Temperature year-round.	<ul style="list-style-type: none"> • 3 priority passage barriers (dams) ranging from partially passable to complete passage barriers. • High flow restoration priority from headwaters to approximately Turner Creek. • Highest flow restoration priority from Turner Creek to Long Branch confluence downstream of Pine Valley. • Stream dewatering and reduced flows, • Historic/active mining influence, • Excess erosion due to fire/grazing impacts, • Impaired water quality parameters, • Fish passage/habitat • Excess erosion from high-risk roads • Reduced riparian vegetation (low canopy cover). • WCF Poor condition: Water Quantity, Water quality, Aquatic Habitat.
East Pine Creek	Temperature year-round.	<ul style="list-style-type: none"> • 10 prioritized barriers throughout the watershed. • Brook trout. • Many documented culverts with varying passage status ranging from unknown, completely passable, partially

		<p>passable, and complete barriers. Several other bridges and dams with unknown passage status.</p> <ul style="list-style-type: none"> • Brook trout. • High flow restoration priority from the headwaters to Beecher Creek. • Highest flow restoration priority from Beecher Creek to mouth at Pine Creek. • Dry Creek has moderate flow restoration priority. • Reduced stream flows due to irrigation diversions, • Impaired water quality parameters, • Reduced riparian vegetation (low canopy cover), • Sand/gravel quarries, • Fish passage. • WFC Poor condition: Water Quality, Water Quantity, Road and Trail, Fire Effects/Fire Regime.
Clear Creek	Temperature year-round.	<ul style="list-style-type: none"> • 8 documented priority barriers (dams) throughout watershed. • 1 culvert which is a complete passage barrier on Trail Creek at NFD road 6610 crossing, and several other bridges/culverts with unknown passage status. • Brook trout. • High flow restoration priority from the headwaters to approximately the Meadow Creek confluence. • Highest flow restoration priority from downstream of Meadow Creek to mouth at Pine Creek. • Reduced stream flows due to irrigation diversions, • Impaired water quality parameters, • Fish passage (Bull Trout specifically), • Reduced riparian vegetation (low canopy cover), • Excess erosion due to high-risk roads/grazing/fire, and mining activity. • WCF Poor condition: Water Quantity, Aquatic Habitat, Road and Trail.

Tier 2 Priorities

Focus Area	Water Quality Impairments	Other Limiting Factors
Fish Creek	Temperature year-round.	<ul style="list-style-type: none"> • 1 priority dam in the upper portion of the watershed which is complete passage barrier (Barrier to some native migratory fish adults and / or species for only part of migration period). • 1 culvert at Hwy 86 crossing is also a complete barrier.

		<ul style="list-style-type: none"> • Trans-basin diversions from Fish Creek to Dry Creek. • High flow restoration priority for Long Branch and mainstem Pine Creek. • Reduced stream flows due to irrigation diversions, • Impaired water quality parameters, • Reduced riparian vegetation (low canopy cover), • Excess erosion due to high-risk roads/grazing/fire, • Fish passage. • WCF Poor condition: Water Quantity, Road and Trail, Fire Effects/Fire Regime.
Lake Fork Creek	Temperature year-round.	<ul style="list-style-type: none"> • 3 priority barriers (dams) in upper portion of the watershed. • Brook trout. • Moderate flow restoration priority. • Trans-basin diversions. • Some reduced stream flows due to irrigation diversions, • Some mining activity, • Impaired water quality parameters, • Reduced riparian vegetation (low canopy cover), • Excess erosion due to high-risk roads/grazing/fire, • Fish passage. • WCF Poor condition: Fire Effects/Fire Regime.
Elk Creek and Aspen Creek	Temperature year-round.	<ul style="list-style-type: none"> • Trans-basin diversions. • Irrigation diversion on Aspen Creek is within Bull Trout occupied habitat: IPC has been working on remediating this diversion for a long time, but water right situation is complicated. This is a significant cold-water input for the Pine basin and is a high priority for future actions if the water rights issue can be remedied.

Watershed Restoration Action Plan

Approach:

The Watershed Restoration Action Plan (WRAP) incorporates prioritized geographies, watershed limiting factors, recommended actions, and an action plan creating a roadmap for future Powder Basin Watershed Council work over the next decade (2025-2035). The Watershed Council standard operating procedure (SOP) includes the development of a workplan and budget, annually. The Action plan will guide the development of annual work plans by providing a basis for determining the geographic focus areas for engagement work in any given year based on achieving Action Plan objectives. This plan is a tool for the Watershed Council which provides direction for future engagement efforts, project development, and monitoring work.

The Action Plan will be reviewed and updated every 5 years (a living document) to address new information regarding limiting factors, restoration techniques and in consideration of work accomplished toward meeting Action Plan objectives. A public meeting will be hosted by the Council to solicit partner and community feedback for five-year updates. At the end of the 10-year operating period in 2035, the WRAP will be updated through a collaborative planning process to evaluate work towards completing objectives, effectiveness of actions, and changes to prioritized geographies for future Council focus. The planning process will incorporate feedback from a technical team of local natural resources experts, the Powder Basin community, PBWC staff, and the PBWC Board of Directors.

Actions:

Specific action types were developed to drive future project development within prioritized geographies to effectively address the limiting factors summarized in the previous section. Actions reflect current Council activities for restoration, engagement, monitoring, mesic habitat improvements, and education/outreach. Actions also reflect the Goals and Strategies outlined in the Council's 2023-2027 Strategic Plan to ensure future project development advances our Vision and Mission. Actions include:

Action Type	Action Description
1. Beaver restoration and coexistence (low-tech)	1. Restore beaver dynamics and promote coexistence efforts where appropriate (suitable habitat, willing landowners). Restoration actions may include low-tech process-based restoration techniques: beaver dam analogues, post assisted log structures, vertical post structures, etc. Coexistence actions may include installing pond leveler flow devices, trapezoidal culvert fences, tree protections (fencing or sand paint), etc.
2. Wetland and stream restoration (engineered/high-tech)	2. Restore stream and wetland function in areas with high restoration potential (low gradient reaches, broad valleys). High-tech restoration actions necessitating design by a professional engineer: stage-zero restoration, channel-fill, riffle construction, etc.

3. Wood placements (pools and habitat complexity)	3. Increase the quantity and quality of pools and complex aquatic habitat to benefit various aquatic organisms. Restoration actions may include course wood placements (hand felling), engineered log jams, low-tech brush/slash plugs, etc.
4. Habitat protection (fencing, off-channel water)	4. Protect riparian and upland habitats from disturbance and browsing to help restore vegetation or protect existing vegetation. Actions may include riparian fencing, enclosure fences, off-channel watering developments, etc.
5. Riparian plantings	5. Restore riparian vegetation in areas with low or non-existent canopy cover (address channel incision first and stream function). Actions may include planting native riparian vegetation, building enclosure fences to protect plantings, etc.
6. Water use efficiency	6. Improve water use efficiency to benefit instream flows and fish passage through irrigation system modernizations. Actions may include installing mainline pipe, risers, and other infrastructure for sprinkler systems, piping ditches, replacing outdated pipe or ditch infrastructure, etc.
7. Aquatic organism passage (irrigation and road infrastructure)	7. Improve passage for native fish and other aquatic organisms. Actions may include modernizing diversion infrastructure (installing headgates, roughened riffles), installing fish screens (screening and bypass at diversion structures), remediating road crossing infrastructure (culvert or bridge replacements, stream simulation), and remediating manufactured instream structures (replacing weirs, constructing riffles).
8. Livestock management	8. Livestock management. Actions may include riparian fencing, hardened water crossings, water gaps, off-channel watering developments, working with landowners to develop grazing management strategies or plans, etc.
9. Engagement (private and public)	9. Engage with community members, public agencies, and private organizations to develop project opportunities related to actions 1 through 8 and to increase partnership potential throughout the Powder Basin. Actions may include hosting public meetings, giving presentations to local organizations or chapters, hosting hands-on workshops, creating and distributing flyers and mailings, attending local fairs and events, site visits with willing landowners to identify project opportunities, hosting tours of completed restoration projects, etc.

10. Water quality monitoring	10. Continue water quality monitoring in focus areas to support partner efforts and identifying status and trends for Powder Basin waterbodies to support future prioritization efforts. Actions may include coordinating volunteers, providing presentations to the community and local organizations regarding collected data, creating and distributing flyers and mailings, taking water quality grab samples, e-DNA sampling, <i>E. coli</i> sampling, macroinvertebrate sampling, collecting pre-project data regarding vegetation and channel characteristics, etc.
11. Project Effectiveness monitoring	11. Incorporate low-tech process-based restoration and stage-zero projects into an effectiveness monitoring program to facilitate better adaptive management to support future actions. Actions may include writing and submitting grants for program funding, hiring additional staff to meet capacity needs (seasonal, FTE), monitoring low-tech restoration structures, monitoring beaver sign and long-term occupancy potential, monitoring vegetation and channel characteristics, drone imagery, e-DNA sampling, fish population monitoring, etc.
12. Mesic habitat restoration	12. Partner with the CCAA Coordinator and Baker Local Implementation Team to identify, plan, and implement tier 2, and tier 3 mesic restoration projects within prioritized areas of the Baker Priority Area for Conservation. Tier 2 actions may include riparian/mesic plantings, exclosure fencing, and low-tech process-based restoration techniques: beaver dam analogues, post assisted log structures, vertical post structures, etc. Tier 3 actions may include high-tech restoration actions necessitating design by a professional engineer: stage-zero restoration, channel-fill, riffle construction, etc. Tier 1 actions will be incorporated into larger tier 2 and 3 projects. Tier 1 actions may include invasive and noxious vegetation treatments, juniper removal, exclosure fencing, grazing management changes, and/or off-channel water developments.
13. Education and outreach	13. Continue partnership with local high schools, youth groups (Baker Resources Coalition, Beef Northwest, Baker Technical Institute, etc.), local communities, and land managers to conduct volunteer events and field days geared towards hands-on watershed restoration and education. Hands-on and educational activities should address watershed limiting factors and the benefits of implementing action types 1-12. Actions may include hosting high school field days for districts throughout

	our operating area, providing presentations regarding monitoring and natural resource management at local schools, hiring local youth crews to perform hands-on restoration work for low-tech projects, coordinating with partner agencies to participate in field day events, etc.
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Action recommendations for each geography were developed in consideration of restoring, enhancing, or protecting beneficial uses of surface water which may be limited or impaired due to watershed limiting factors summarized in the previous section. Beneficial uses of surface water were designated by the State of Oregon Department of Environmental Quality (DEQ) for basins statewide. Designated beneficial uses specific to the Powder Basin include:

- Public Domestic Water Supply
- Private Domestic Water Supply
- Industrial Water Supply
- Irrigation
- Livestock Water
- Fish and Aquatic Life
- Wildlife and Hunting
- Fishing
- Boating
- Water Contact Recreation*
- Aesthetic Quality

*The Powder Basin TMDL for *E. coli* used the water quality standard associated with Water Contact Recreation to determine impaired waterways. This beneficial use is listed for several geographies in the Action Plan which are TMDL focus areas. Actions were recommended to help achieve the water quality standard associated with this beneficial use, and not necessarily for improving recreation.

Beneficial uses provide a lens to focus recommended actions and future project development within our prioritized geographies to effectively address limiting factors. Without this focus, almost every action could be recommended for every geography, which does not provide direction for future project development. Actions were developed to address habitat restoration, habitat protection, engagement, monitoring, and education/outreach which are activities aligned with the current goals and strategies of the Powder Basin Watershed Council. Future project development and implementation will center on the actions recommended for each prioritized geography.

PBWC Goals, Strategies, and Actions:

The following section will address each PBWC goal, strategy, and specific actions to advance our work. Goals and strategies are intended to drive the organization towards achieving our vision and mission and specific actions provide a roadmap for accomplishing our objectives in specific geographies.

<p>Goal 1 Riparian Management and Water Conservation: Support projects to enhance watershed function and improve habitat for species of concern throughout the Powder, Burnt, and Brownlee subbasins. Projects may address improving water quality, water quantity, timing of flows, water use efficiency, functioning condition of priority streams, and watershed resilience to climate change.</p>	
<p>Strategy A: Implement restoration projects designed to address the degradation of priority streams within each subbasin. Address key limiting factors of sinuosity, bank stability, fish habitat complexity, vertical erosion, channel widening, floodplain connectivity, invasive species, barriers to fish migration, water quality, water quantity, riparian+ vegetation, and other relevant factors.</p>	<p>Actions:</p> <ol style="list-style-type: none"> 1. Beaver restoration and coexistence (low-tech) 2. Wetland and stream restoration (engineered/high-tech) 3. Wood placements (pools and habitat complexity) 4. Habitat protection (fencing, off-channel water) 5. Riparian plantings 6. Water use efficiency 7. Aquatic organism passage (irrigation and road infrastructure) 8. Livestock management 10. Water quality monitoring 12. Mesic habitat restoration
<p>Strategy B: Pursue projects to improve water quantity and timing of flows to increase water storage capacity and residence time of water on the landscape. Projects may address process-based restoration, floodplain connectivity, upland storage, natural/artificial dams, reservoirs, reforestation/protection of established forests, and other relevant factors.</p>	<ol style="list-style-type: none"> 1. Beaver restoration and coexistence (low-tech) 2. Wetland and stream restoration (engineered/high-tech)
<p>Strategy C: Pursue projects to increase water-use efficiency through irrigation improvements and use of drought-tolerant plants. Irrigation improvement projects should consider unique hydrology of some systems which rely on flood irrigation to sustain late season flows and for groundwater recharge.</p>	<ol style="list-style-type: none"> 6. Water use efficiency
<p>Strategy D: Promote projects to increase resiliency of watersheds within the Powder, Burnt, and Brownlee subbasins to negative impacts of climate change. Projects may address increased water storage capacity, improving late season flows, restoration to improve drought-tolerance, restoration to improve flood damage resilience, and other relevant factors.</p>	<ol style="list-style-type: none"> 1. Beaver restoration and coexistence (low-tech) 2. Wetland and stream restoration (engineered/high-tech) 4. Habitat protection (fencing, off-channel water) 5. Riparian plantings 6. Water use efficiency

<p>Strategy E: Promote water quality improvement by pursuing projects and partnerships to address the upcoming Powder Basin TMDL for bacteria. Partner with the State of Oregon Department of Environmental Quality, private landowners, irrigation districts, and other relevant parties to prioritize watershed council work around TMDL focus areas.</p>	<ol style="list-style-type: none"> 4. Habitat protection (fencing, off-channel water) 5. Riparian plantings 6. Water use efficiency 8. Livestock management 9. Engagement (private and public) 10. Water quality monitoring
<p>Goal 2 Upland Management: Promote projects and partnerships to enhance the health of forests, rangelands, grasslands, and upland wet-meadow complexes throughout the Powder, Burnt, and Brownlee subbasins to improve habitat for species of concern and increase watershed function. Actions may address wildfire education and management, improving soil health and productivity, reducing erosion and compaction, managing invasive species, and continued support of work implemented by the Sage-grouse Conservation Candidate Agreement with Assurances (CCAA) Coordinator.</p>	
<p>Strategy A: Work with stakeholders to help restore watersheds by reducing fire intensities and increasing public understanding and acceptance of the role fire plays in renewing forests and improving soil health and productivity.</p>	<p>Actions:</p> <ol style="list-style-type: none"> 1. Beaver restoration and coexistence (low-tech) 2. Wetland and stream restoration (engineered/high-tech) 9. Engagement (private and public)
<p>Strategy B: Promote forestry and grazing practices that maintain vegetation, soil, and water resources on uplands to prevent erosion and reduce runoff. Projects may address diminishing soil disturbance through grazing management, forest management, off-channel watering developments, installing fencing to protect sensitive habitats and species, promoting minimum impact recreational practices, and other relevant factors.</p>	<ol style="list-style-type: none"> 4. Habitat protection (fencing, off-channel water) 5. Riparian plantings 8. Livestock management 9. Engagement (private and public) 12. Mesic habitat restoration
<p>Strategy C: Support efforts to reduce invasive species in forests, rangelands, grasslands, and upland wet-meadow complexes throughout the Powder Basin. Work with partners to reduce invasive species, promote weed management education, and pursue opportunities to diversify native species and increase biodiversity to improve ecological resiliency to disturbance and climate change.</p>	<ol style="list-style-type: none"> 4. Habitat protection (fencing, off-channel water) 5. Riparian plantings 8. Livestock management 9. Engagement (private and public) 12. Mesic habitat restoration
<p>Strategy D: Continue supporting efforts of the Sage-grouse CCAA Coordinator in their work to meet programmatic CCAA goals, monitor uplands, engage with diverse stakeholders, and to maintain/improve Sage-grouse habitat throughout Baker and Union counties.</p>	<ol style="list-style-type: none"> 12. Mesic habitat restoration

<p>Goal 3 Partnership and Coordination: The goal of Partnership and Coordination is to promote trust, understanding, partnership, and collaboration among stakeholders of the Powder Basin to achieve the mission of the Powder Basin Watershed Council. The Powder Basin Watershed Council is a volunteer organization comprised of diverse membership. Enhancing healthy watersheds and thriving communities requires coordination between private landowners, public lands managed by various agencies, broad support of the community, current and future PBWC partners, and governments (local, state, and federal).</p>	
<p>Strategy A: Keep interested landowners and basin residents informed of and facilitate their involvement in current PBWC programs, projects, and events. Ensure program and project processes are transparent and include interested landowners and basin residents in all relevant steps.</p>	<p>Actions: 9. Engagement (private and public) 13. Education and outreach</p>
<p>Strategy B: Recruit active and potential partners to participate in PBWC planning activities. Activities may include Strategic Planning, Action Planning, contractor solicitation, project proposals, and project implementation.</p>	<p>9. Engagement (private and public) 13. Education and outreach</p>
<p>Strategy C: Partner with public land management agencies to develop projects prioritizing watershed management. Assist agencies in characterizing to the public the role public lands and their management play in the function of watersheds. Coordinate activities and planning with management occurring on public lands to maximize benefits to watershed health.</p>	<p>9. Engagement (private and public) 13. Education and outreach</p>
<p>Strategy D: Form partnerships to reduce watershed degradation through conservation easements, land-use planning, education, or other means.</p>	<p>9. Engagement (private and public)</p>
<p>Strategy E: Partner with entities contributing to project development, funding, and completion to increase the geographic and topical scope of the PBWC. Partners may include local nonprofits, those supporting local agriculture, conservation, and rehabilitation.</p>	<p>9. Engagement (private and public) 10. Water quality monitoring 13. Education and outreach</p>
<p>Strategy F: Build partnerships with local, state, and federal governments to help inform and advise policy decisions by sharing data and experience collected by the PBWC and the community. Work with governments to find ways to better serve our communities, and to coordinate opportunities to aid vision and mission achievement.</p>	<p>9. Engagement (private and public) 10. Water quality monitoring 11. Project Effectiveness monitoring</p>

<p>Goal 4 Education, Outreach, and Communication: Promote Powder Basin Watershed Council (PBWC) work, mission, programs, and projects to help educate youth, the public, private landowners, public agencies, and other interested parties about the importance of sustaining and increasing watershed health throughout the Powder Basin to provide for multiple uses and interests.</p>	
<p>Strategy A: Educate youth about the importance of managing watersheds to enhance upland, riparian, river, and socioeconomic health by developing partnerships with local school districts and educators, pursuing educational opportunities for local youth, and continuing current educational programs.</p>	<p>Actions: 13. Education and outreach</p>
<p>Strategy B: Provide educational opportunities to the public by offering relevant presentations, tours, workshops, and opportunities to participate in watershed restoration efforts on public and private lands.</p>	<p>9. Engagement (private and public) 13. Education and outreach</p>
<p>Strategy C: Promote greater public awareness of the Powder Basin Watershed Council by hosting and attending community events in each subbasin. Inform the public of current PBWC programs, projects, and activities.</p>	<p>9. Engagement (private and public) 10. Water quality monitoring 13. Education and outreach</p>
<p>Strategy D: Support opportunities for water-based recreation that help foster a sense of appreciation for lakes, rivers, and streams within the Powder Basin. Continue pursuing projects such as Fish the Powder which educate communities about watershed management needs to enhance recreational opportunities.</p>	<p>9. Engagement (private and public) 13. Education and outreach</p>
<p>Strategy E: Increase availability and accessibility of PBWC data, maps, and materials to educational partners, the public, landowners, agencies, and any other interested parties.</p>	<p>10. Water quality monitoring 11. Project Effectiveness monitoring</p>
<p>Strategy F: Continue outreach and communication with PBWC partners, supporters, and the public through newspaper articles, social media posts, workshops, guest speakers, planning activities, flyers, and any other relevant means of communication.</p>	<p>9. Engagement (private and public) 13. Education and outreach</p>

Goal 5 Organizational Development: To effectively pursue the vision and mission of the Powder Basin Watershed Council (PBWC) requires sufficient staff and financial resources to develop, implement, and manage the strategies listed in this document and future council actions.	
Strategy A: Improve the financial health of the PBWC and increase support from basin residents through local fundraising and volunteer recruitment to support the programmatic efforts. Pursue a diversity of funding sources to improve PBWC resilience.	No specific actions necessary: ongoing by PBWC Staff and Board of Directors
Strategy B: Support and sustain PBWC staff through appropriate training and competitive salaries. Support the Board of Directors through training and recruitment of new members as needed.	No specific actions necessary: ongoing by PBWC Staff and Board of Directors
Strategy C: Develop a basin-wide Watershed Restoration Action Plan to establish priority work areas within each of the three subbasins. Prioritization will be accomplished through a synthesis of existing watershed assessments and reports, current and recent research, consultation with local experts, and the location of streams in high visibility and high recreational use areas. Projects will be selected from these priorities based on which projects result in the greatest ecological and social benefits, which projects require the most work to accomplish, which projects will bring in assistance from partners, and which projects will result in beneficial outreach.	No specific actions necessary: Action Plan fulfills this strategy
Strategy D: Engage resources outside the watershed to improve PBWC effectiveness. Resources may include the Network of Oregon Watershed Councils, other Watershed Councils, Nonprofit Association of Oregon, Universities, and other relevant parties.	No specific actions necessary: ongoing by PBWC Staff and Board of Directors

Goal 6 Monitoring and Assessments: Achieving the vision and mission of the Powder Basin Watershed Council (PBWC) requires knowledge and data regarding current basin conditions, data collection to establish potential condition trends, data collection to determine the effectiveness of PBWC actions, and adaptive measures for addressing ineffective actions.	
Strategy A: Continue long-term water quality monitoring in the Powder, Burnt, and Brownlee subbasins. Water quality monitoring will include measurements of temperature, pH, conductivity, flow, turbidity, macroinvertebrate sampling, and other relevant parameters.	Actions: 10. Water quality monitoring
Strategy B: Work with partners to determine needs for data collection and organization throughout the Powder Basin. Support partners through assessment work to collect, organize, and share relevant data to establish baseline conditions and trends for watersheds throughout the basin.	9. Engagement (private and public) 10. Water quality monitoring 11. Project Effectiveness monitoring

<p>Strategy C: Develop an effectiveness monitoring program and/or incorporate effectiveness monitoring into PBWC projects to evaluate the success of actions. Effectiveness monitoring may include the collection of baseline data prior to project development and will be used for riparian management and water conservation actions, upland management actions, and education, outreach, and communication actions. Collected data will help inform future PBWC actions and will aid in Strategic Plan and Action Plan updates.</p>	<p>11. Project Effectiveness monitoring</p>
<p>Strategy D: When appropriate, incorporate adaptive management principles into planning processes, project development, design, and evaluation. Adaptive management encourages comparing monitoring data to predicted outcomes to increase effectiveness of future actions. Stakeholder participation in planning and project development is useful in identifying problems, diversifying solutions, and reducing uncertainty of actions.</p>	<p>11. Project Effectiveness monitoring</p>

2025-2030 Watershed Restoration Action Plan

The 2025-2035 Watershed Restoration Action Plan (WRAP) provides a roadmap for the vision outlined in the goals and strategies of the Powder Basin Watershed Council's 2023-2027 Strategic Plan. Specific goals and measurable objectives provide direction for future project implementation, project development, community outreach, and monitoring work in prioritized geographies to achieve desired outcomes. Specific, measurable, achievable, relevant, and time-bound (SMART) objectives provide a way to monitor our progress towards accomplishing goals and desired outcomes. Failing to meet objectives or exceeding expectations will help dictate future priorities and allocation of resources. The PBWC will use the following WRAP (pages 49-60) and tables of priority actions for each focus area (pages 61-76) to guide the development of projects and annual workplans. Workplans will detail where the council will focus implementation, engagement, outreach, and monitoring efforts over a given year and provide a budget for the approved activities. Over the next decade, most project development and implementation efforts will focus on Tier 1 and Mesic geographies to meet the specific targets detailed in our objectives. These targets were developed using PBWC's current project list and anticipated schedule for implementation. For Tier 2 geographies, in 2030 the PBWC will evaluate expanding our current engagement focus area to provide capacity and resources for identifying project opportunities and developing/implementing future projects. Tier 3 geographies will be addressed opportunistically.

Project Development and Implementation:

The 2025-2035 Watershed Restoration Action Plan (WRAP) will guide project development and implementation over the next decade. The WRAP details where and how the PBWC will engage with partners and the community to identify project opportunities, priority action types specific to geographies for focused project development, the quantity of actions we anticipate implementing in tiered priorities, and where to focus future long-term monitoring and effectiveness monitoring efforts. Projects will be developed and implemented using the following pathway:

1. Identifying Project Opportunities: Community and partner engagement is the foundation for developing project partnerships and identifying viable project opportunities. Engagement activities include developing and distributing informational flyers, hosting workshops and other hands-on volunteer events, hosting public meetings and presentations, attending local events, and participating in site visits with land managers to view potential projects. If viable project opportunities are identified, they are added to the PBWC's anticipated implementation calendar and advanced to project development. Project development includes writing a project prospectus for PBWC Board of Director review which outlines restoration needs, watershed benefits, partnerships, funding pathways and a preliminary budget, project goals and objectives, and an anticipated timeline for implementation. In the future, the Project Prospectus will also outline the priority geography of the proposed project (Tier 1, Tier 2, Tier 3, or Mesic) and how the project aligns with WRAP goals, objectives, and priority action types. The PBWC is currently funded through the Oregon Watershed Enhancement Board

(OWEB) with a Capacity Grant and an Engagement Grant for engagement activities with the purpose of developing projects throughout our operating area. Our Engagement Grant provides funding for specific engagement activities to develop projects in specific focus areas. Currently, the focus areas associated with our Engagement Grant encompass all Tier 1 geographies and some Tier 2 geographies. Specific focus areas will be updated and/or expanded in future Engagement Grant requests to support continued or additional outreach activities to sustain future project development.

2. PBWC Board of Directors Approval: Projects greater than \$20,000.00 in cost must be approved by the PBWC Board of Directors prior to seeking project funding. A brief overview of a developing project is provided to the PBWC Board of Directors for review through a Project Prospectus and board meeting presentation by the relevant project manager. The Prospectus outlines restoration needs, watershed benefits, partnerships, funding pathways and a preliminary budget, project goals and objectives, and an anticipated timeline for implementation. In the future, the Project Prospectus will also outline the priority geography of the proposed project (Tier 1, Tier 2, Opportunistic, or Mesic) and how the project aligns with WRAP goals, objectives, and priority action types. If a project is approved by the PBWC Board of Directors, the relevant project manager will begin writing and submitting grants to support project funding.

4. Funding: The PBWC receives most project funding through the Oregon Watershed Enhancement Board (OWEB). OWEB offers two open-solicitation periods annually where the Council can seek funding for Engagement activities, Technical Assistance activities, and Restoration activities. Monitoring grants are offered annually, and Council Capacity grants are offered biennially. The status of the restoration project determines the appropriate funding pathway through OWEB. If projects require any engineered design or permitting work, seeking funds through a Technical Assistance grant is the appropriate pathway. If project designs and permitting work are complete, a Restoration grant is the appropriate pathway for project implementation funding. The PBWC may also seek smaller grants from other institutions to provide match for OWEB grants or to pursue activities not funded through OWEB like general education and outreach.

3. Design and Permitting: Depending on the type of action, the PBWC staff will develop low-tech designs in coordination with project partners or hire a qualified engineering firm/consultant for high-tech restoration work. No matter the restoration project, designs are imperative for receiving implementation funding and successfully navigating the permitting process. Addressing permitting requirements and environmental clearances is a complex process which may take 6 months or more to complete. Basic requirements for most projects include archaeological surveys to address State Historic Preservation Office requirements, removal-fill authorizations for streams and wetlands through the Department of State Lands and Army Corps of Engineers, fish passage approval through the Oregon Department of Fish and Wildlife, and environmental clearances obtained through the State of Oregon Department of Environmental Quality. Once designs, permits, and funding are in place, project implementation can begin.

4. Project Implementation: Low-tech process-based restoration projects are implemented by PBWC staff, partners, youth crews, and volunteers annually. The PBWC hires qualified contractors to implement other activities like irrigation efficiency improvements, aquatic organism passage improvements, and other high-tech restoration actions. Project implementation normally occurs over the course of several years depending on the size and scope of the project. Once the project is implemented, the PBWC will return to conduct post project monitoring at established intervals. Project maintenance is not currently funded by OWEB, and the PBWC relies on landowners/partners to assist with implementing this action.

5. Monitoring: Monitoring occurs before and after project implementation to track progress towards project goals and objectives. The PBWC is currently developing an effectiveness monitoring program which will help evaluate the effectiveness of some project actions including low-tech process-based restoration and stage-zero techniques. Results from the effectiveness monitoring program will assist future adaptive management actions and the development of engagement activities, projects, and implementation in prioritized geographies. Long-term water quality monitoring to document status and trend is also a core program which will be conducted in various waterways throughout Tier 1, 2, and 3 geographies.

Watershed Restoration Action Planning Table

Outcome 1: Support projects to enhance watershed function and improve habitat for species of concern throughout the Powder, Burnt, and Brownlee subbasins. Projects may address improving water quality, water quantity, timing of flows, water use efficiency, functioning condition of priority streams, and watershed resilience to climate change.			
Goals	Objectives	Priority Action Types	Focus Areas
Goal 1-1: Implement 24 Aquatic Ecosystem Restoration Actions (aquatic organism passage, irrigation system modernization, low-tech process-based restoration, and channel/floodplain restoration) within the Powder River, Burnt River, and Brownlee subbasins during the period 2025 through 2035.	Objective 1-1-1: Implement 8 aquatic ecosystem restoration actions within Tier 1 Powder River Subbasin Geographic Focus Areas.	1. Beaver restoration and coexistence (low-tech), 3. Wood placements (pools and habitat complexity), 4. Habitat protection (fencing, off-channel water), 5. Riparian plantings, 6. Water use efficiency, 7. Aquatic organism passage (irrigation and road infrastructure), 8. Livestock management	Powder River and Tributaries (Mason Dam to Hughes Lane)
		1. Beaver restoration and coexistence (low-tech), 5. Riparian plantings, 6. Water use efficiency, 7. Aquatic organism passage (irrigation and road infrastructure)	Powder River and Tributaries (Mason Dam to Hughes Lane)

		1. Beaver restoration and coexistence (low-tech) 4. Habitat protection (fencing, off-channel water), 6. Water use efficiency, 7. Aquatic organism passage (irrigation and road infrastructure)	Upper Salmon Creek
		1. Beaver restoration and coexistence (low-tech) 4. Habitat protection (fencing, off-channel water), 6. Water use efficiency, 7. Aquatic organism passage (irrigation and road infrastructure)	Lower Salmon Creek
		1. Beaver restoration and coexistence (low-tech), 2. Wetland and stream restoration (engineered/high-tech), 3. Wood placements (pools and habitat complexity), 4. Habitat protection (fencing, off-channel water), 6. Water use efficiency, 7. Aquatic organism passage (irrigation and road infrastructure), 8. Livestock management	North Powder River and Anthony Creek
		1. Beaver restoration and coexistence (low-tech), 5. Riparian plantings	Thief Valley (Cusick Creek)
		1. Beaver restoration and coexistence (low-tech), 2. Wetland and stream restoration (engineered/high-tech), 3. Wood placements (pools and habitat complexity), 4. Habitat protection (fencing, off-channel water), 7. Aquatic organism passage (irrigation and road infrastructure)	Eagle Creek
	Objective 1-1-2: Implement 1 aquatic ecosystem restoration action within Tier 2 Powder River	9. Engagement (private and public)	Powder River and Tributaries (Keating Valley: Big Creek to Goose Creek)

	Subbasin Geographic Focus Areas.		
	Objective 1-1-3: Implement 6 aquatic ecosystem restoration actions within Tier 1 Burnt River Subbasin Geographic Focus Areas.	1. Beaver restoration and coexistence (low-tech) 4. Habitat protection (fencing, off-channel water), 6. Water use efficiency 7. Aquatic organism passage (irrigation and road infrastructure),	North Fork Burnt River
		2. Wetland and stream restoration (engineered/high-tech), 4. Habitat protection (fencing, off-channel water), 6. Water use efficiency, 7. Aquatic organism passage (irrigation and road infrastructure),	South Fork Burnt River
	Objective 1-1-4: Implement 1 aquatic ecosystem restoration action within Tier 2 Burnt River Subbasin Geographic Focus Areas.	9. Engagement (private and public)	Middle Fork Burnt River
		9. Engagement (private and public)	Mainstem Burnt River and Tributaries (Unity Reservoir to Clarks Creek)
	Objective 1-1-5: Implement 6 aquatic ecosystem restoration actions within Tier 1 Brownlee Subbasin Geographic Focus Areas.	6. Water use efficiency, 7. Aquatic organism passage (irrigation and road infrastructure)	Pine Creek
		6. Water use efficiency, 7. Aquatic organism passage (irrigation and road infrastructure)	East Pine Creek
		2. Wetland and stream restoration (engineered/high-tech) 6. Water use efficiency, 7. Aquatic organism passage (irrigation and road infrastructure)	Clear Creek
	Objective 1-1-6: Implement 1 aquatic ecosystem restoration action within	2. Wetland and stream restoration (engineered/high-tech), 6. Water use efficiency,	Fish Creek

	Tier 2 Brownlee Subbasin Geographic Focus Areas.	7. Aquatic organism passage (irrigation and road infrastructure), 9. Engagement (private and public)	
		2. Wetland and stream restoration (engineered/high-tech), 6. Water use efficiency, 7. Aquatic organism passage (irrigation and road infrastructure), 9. Engagement (private and public)	Lake Fork Creek
		6. Water use efficiency, 7. Aquatic organism passage (irrigation and road infrastructure), 9. Engagement (private and public)	Elk Creek and Aspen Creek
	Objective 1-1-7: Implement 1 aquatic ecosystem restoration action within Tier 3 Geographic Focus areas.	6. Water use efficiency, 7. Aquatic organism passage (irrigation and road infrastructure) 9. Engagement (private and public)	West Camp Creek (Burnt River Subbasin) All other tier 3 focus areas (Burnt and Powder subbasins)
Outcome 2: Promote projects and partnerships to enhance the health of forests, rangelands, grasslands, and upland wet-meadow complexes throughout the Powder, Burnt, and Brownlee subbasins to improve habitat for species of concern and increase watershed function. Actions may address wildfire education and management, improving soil health and productivity, reducing erosion and compaction, managing invasive species, and continued support of work implemented by the Sage-grouse Conservation Candidate Agreement with Assurances (CCAA) Coordinator.			
Goals	Objectives	Priority Action Types	Focus Areas
Goal 2-1: Implement 4 upland and mesic habitat restoration actions with focus on Greater sage-grouse conservation needs within the Powder River and Burnt River Subbasins during the period 2025 through 2035.	Objective 2-1-1: Implement 2 mesic habitat restoration actions for Greater Sage-grouse habitat in the Powder River Subbasin Tier 1, Tier 2, and Tier 3 Geographic Focus Areas.	12. Mesic habitat restoration	Love Creek
		12. Mesic habitat restoration	Ritter Creek
		9. Engagement (private and public) 12. Mesic habitat restoration	Goose Creek
	Objective 2-1-2: Implement 2 mesic habitat restoration actions for Greater Sage-	12. Mesic habitat restoration	Pritchard and Lawrence Creeks
		12. Mesic habitat restoration	Manning Creek
		12. Mesic habitat restoration	Dixie Creek

	grouse habitat in the Burnt River Subbasin Tier 1, Tier 2, and Tier 3 Geographic Focus Areas.		
Outcome 3: The goal of Partnership and Coordination is to promote trust, understanding, partnership, and collaboration among stakeholders of the Powder Basin to achieve the mission of the Powder Basin Watershed Council. The Powder Basin Watershed Council is a volunteer organization comprised of diverse membership. Enhancing healthy watersheds and thriving communities requires coordination between private landowners, public lands managed by various agencies, broad support of the community, current and future PBWC partners, and governments (local, state, and federal).			
Goals	Objectives	Priority Action Types	Focus Areas
Goal 3-1: In 2025-2035, Implement and participate in landowner engagement, outreach, and educational activities to educate the public on watershed management/stewardship, leading to watershed restoration project opportunities.	Objective 3-1-1: Engage directly with private landowners and public land managers to develop restoration project opportunities to meet Goals and Objectives established under Outcomes 1 and 2. Specific engagement activities will be established in Watershed Council annual Work Plans in consideration of progress made towards meeting objectives accomplished under Goals 1 and 2.	9. Engagement (private and public) 13. Education and outreach	Tier 1 focus areas in the Burnt, Powder, and Brownlee Subbasins.
	Objective 3-1-2: Annually participate in 4 of established outreach events (county fair, Miners Jubilee, etc.), as a “go to them” strategy to engage with the diverse communities within the Watershed Council’s	9. Engagement (private and public) 13. Education and outreach	Tier 1 focus areas in the Burnt, Powder, and Brownlee Subbasins.

	geographic scope to facilitate future engagement and project development.		
	Objective 3-1-3: Annually sponsor 2 educational workshops focused on beaver restoration and coexistence to educate the public on the benefits of beaver, how to coexist with beaver, and foster development of restoration project opportunities.	9. Engagement (private and public) 13. Education and outreach	Tier 1 focus areas in the Burnt, Powder, and Brownlee Subbasins.
	Objective 3-1-4: Annually work to have 2 articles published in local media focused on Council monitoring and restoration actions to facilitate future restoration project opportunities.	9. Engagement (private and public) 13. Education and outreach	Tier 1 focus areas in the Burnt, Powder, and Brownlee Subbasins.
Goal 3-2: 1	Objective 3-2-1: During the 5-year review of the WRAP in 2030, evaluate continued engagement needs and/or need for additional focus in Tier 1 geographies in the Burnt, Powder, and Brownlee Subbasins for future project development.	9. Engagement (private and public)	Tier 1 focus areas in the Burnt, Powder, and Brownlee Subbasins.
	Objective 3-2-2: During the 5-year review of the WRAP in 2030, evaluate Council	9. Engagement (private and public)	Tier 2 focus areas in the Burnt, Powder, and Brownlee Subbasins.

	capacity to expand engagement activities to Tier 2 geographies in the Burnt, Powder, and Brownlee Subbasins for future project development.		
	Objective 3-2-3: Through the engagement, outreach, and educational activities detailed in Goal 3-2, identify 3 project opportunities in Tier 2 geographies in the Powder Subbasin in 2030-2035.	9. Engagement (private and public)	Powder River and Tributaries (Keating Valley: Big Creek to Goose Creek)
	Objective 3-2-4: Through the engagement, outreach, and educational activities detailed in Goal 3-2, identify 3 project opportunities in Tier 2 geographies in the Burnt Subbasin in 2030-2035.	9. Engagement (private and public)	Middle Fork Burnt River and Mainstem Burnt River and Tributaries (Unity Reservoir to Clarks Creek)
	Objective 3-2-5: Through the engagement, outreach, and educational activities detailed in Goal 3-2, identify 3 project opportunities in Tier 2 geographies in the Brownlee Subbasin in 2030-2035.	9. Engagement (private and public)	Fish Creek, Lake Fork Creek, Elk Creek and Aspen Creek
Outcome 4: Promote Powder Basin Watershed Council (PBWC) work, mission, programs, and projects to help educate youth, the public, private landowners, public agencies, and other interested parties about the importance of sustaining and increasing watershed health throughout the Powder Basin to provide for multiple uses and interests.			

Goals	Objectives	Priority Action Types	Focus Areas
<p>Goal 4-1: Implement and participate in community engagement, outreach and educational activities to educate the public on watershed management/stewardship and the importance of PBWC work.</p>	<p>Objective 4-1-1: In 2025-2035, continue to participate in the Baker Resource Coalition summer student internship program annually by engaging the interns for 1-2 weeks in Council project monitoring and implementation actions.</p>	<p>13. Education and outreach</p>	<p>Tier 1 Focus Areas: North Fork of the Burnt River, Mainstem Powder River and Tributaries (Sutton Creek to Hughes Lane), Anthony Creek, Clear Creek</p>
	<p>Objective 4-1-2: In 2025-2035, continue partnering with local and regional youth crews (Training and Employment Consortium, Baker Technical Institute, Northwest Youth Corps, Beef Northwest etc.) to engage youth in PBWC project monitoring implementation actions.</p>	<p>13. Education and outreach</p>	<p>Tier 1 Focus Areas: North Fork of the Burnt River, Mainstem Powder River and Tributaries (Sutton Creek to Hughes Lane), Anthony Creek, Clear Creek</p>
	<p>Objective 4-1-3: Annually sponsor 2 educational field days focused on local students grades 5-12 to educate them on watershed processes and management. Coordinate with PBWC partners to engage youth throughout our operating area and to expose youth to diverse career fields and natural resources experts.</p>	<p>13. Education and outreach</p>	<p>Tier 1 Focus Areas: North Fork of the Burnt River, Mainstem Powder River and Tributaries (Sutton Creek to Hughes Lane), Anthony Creek, Clear Creek</p>

	Objective 4-1-4: Annually sponsor 1-2 volunteer events focused on engaging the public with stewardship of local streams and watersheds (Powder River Spring Cleanup, etc.).	13. Education and outreach	Tier 1 Focus Areas: Mainstem Powder River and Tributaries (Sutton Creek to Hughes Lane)
Outcome 6: Achieving the vision and mission of the Powder Basin Watershed Council (PBWC) requires knowledge and data regarding current basin conditions, data collection to establish potential condition trends, data collection to determine the effectiveness of PBWC actions, and adaptive measures for addressing ineffective actions.			
Goals	Objectives	Priority Action Types	Focus Areas
Goal 6-1: Develop and implement an adaptive management strategy to guide future restoration focus areas, evaluate outcomes of specific project types, and fill data gaps, thus guiding future project development and design.	Objective 6-1-1: Seek funding to support development of a restoration project adaptive management strategy and effectiveness monitoring program. Adopt and implement a formal adaptive management strategy and project effectiveness monitoring program by 2027.	11. Project Effectiveness monitoring	Tier 1 Focus Areas: North Fork of the Burnt River, Anthony Creek, Clear Creek
	Objective 6-1-2: Continue to seek funding for and implement the Council's Long-term Water Quality Monitoring Program to guide future project development and project effectiveness monitoring. Continue and seek partnerships with key	10. Water quality monitoring	Mostly Tier 1 geographies and some Tier 2 and Tier 3 sub-watersheds. See the next section for priority action types by focus area for each subbasin.

	partners including the Forest Service, BLM, and local volunteers.		
	Objective 6-1-3: Continue implementation of the Powder Basin Macroinvertebrate Status and Trend Monitoring project to guide future focus areas for restoration project development. Seek funding and implement data collection every five years (2029 and 2034).	10. Water quality monitoring	Mostly Tier 1 geographies and some Tier 2 and Tier 3 sub-watersheds. See the next section for priority action types by focus area for each subbasin. The PBWC will use past macroinvertebrate sampling locations to outline future efforts in annual workplans.
	Objective 6-1-4: Seek collaboration opportunities with local natural resource managers to collect data in support of future natural resource management and restoration.	10. Water quality monitoring	Tier 1, 2, and 3 geographies in the Burnt, Powder, and Brownlee subbasins.

Burnt River Subbasin: Priority Action Types by Focus Area

Tier 1 Priorities				
Focus Area	Water Quality Impairments	Other Limiting Factors	Beneficial Uses	Priority Action Types
North Fork Burnt River	<ul style="list-style-type: none"> • Dissolved Oxygen year-round, • Bio criteria, • Temperature year-round, • Sedimentation (high cobble embeddedness), • Habitat modification (deficient pools, large woody debris, high width to depth ratio), • Flow modification (water withdrawal concern-Redband trout) 	<ul style="list-style-type: none"> • Highest flow restoration priority • 2 priority passage barriers and many other obstructions • Habitat Ratings: Poor riparian condition (vegetation/floodplain connection), poor channel stability (incision, confinement), poor habitat diversity (lack of large woody debris, low pool frequency, single-threaded channels). • Legacy impacts from mining, timber harvest, grazing, and beaver removal throughout watershed. 	<ul style="list-style-type: none"> • Fish and aquatic life (Redband trout) • Irrigation 	<ol style="list-style-type: none"> 1. Beaver restoration and coexistence (low-tech) 4. Habitat protection (fencing, off-channel water), 6. Water use efficiency 7. Aquatic organism passage (irrigation and road infrastructure), 10. Water quality monitoring 11. Project Effectiveness monitoring, 13. Education and outreach.
South Fork Burnt River	<ul style="list-style-type: none"> • Temperature year-round, • Bio-criteria, • TMDL Focus (<i>E. coli</i>), • Dissolved Oxygen-spawn. 	<ul style="list-style-type: none"> • 1 priority passage barrier and other obstructions. • Flow restoration priority is low to moderate. • Habitat ratings (0%-50% of optimum) occur in the Lower SF and Job Creek watersheds and include low flows and high temperatures. • The upper and middle watershed demonstrate legacy wildfire impacts from the 2016 Rail Fire. 	<ul style="list-style-type: none"> • Fish and aquatic life (Redband trout) • Fishing • Irrigation • Livestock Water • Water Contact Recreation 	<ol style="list-style-type: none"> 2. Wetland and stream restoration (engineered/high-tech), 4. Habitat protection (fencing, off-channel water), 6. Water use efficiency, 7. Aquatic organism passage (irrigation and road infrastructure), 10. Water quality monitoring.

		<ul style="list-style-type: none"> Upper and Lower watersheds are rated as functioning at risk while middle watershed is rated as impaired function (poor aquatic habitat/biota, road/trail condition, fire effects/fire regime, and water quantity are concerns). 		
Tier 2 Priorities				
Focus Area	Water Quality Impairments	Other Limiting Factors	Beneficial Uses	Priority Action Types
Middle Fork Burnt River	<ul style="list-style-type: none"> TMDL Focus (<i>E. coli</i>), Dissolved Oxygen year-round, Dissolved Oxygen-spawning, Bio-criteria. 	<ul style="list-style-type: none"> Low flows, 1 priority passage barrier, Poor aquatic habitat. 	<ul style="list-style-type: none"> Fish and aquatic life (Redband trout) Irrigation Livestock water Water contact recreation 	<p>9. Engagement (private and public)</p> <p>10. Water quality monitoring</p>
Mainstem Burnt River and Tributaries (Unity Reservoir to Clarks Creek)	<ul style="list-style-type: none"> TMDL focus area for <i>E. coli</i>, Bio-criteria, Temperature year-round, pH, Sedimentation (high cobble embeddedness), Flow modification (water withdrawal concern-Redband trout). 	<ul style="list-style-type: none"> 3 priority barriers, Higgins Reservoir Dam is a complete passage barrier, and two dams along mainstem Burnt River in Independence Creek sub-watershed which partially block passage. Many other obstructions with varying passage status. High flow restoration priority along the mainstem Burnt River from Unity Reservoir to Durkee. Most watersheds are functioning at risk, Independence Creek is rated as impaired function (Poor conditions for aquatic habitat/biota, fire 	<ul style="list-style-type: none"> Water contact recreation Irrigation Livestock watering 	<p>9. Engagement (private and public)</p>

		<p>effects/fire regime, and road/trail common to each watershed).</p> <ul style="list-style-type: none"> Habitat ratings (25%-50% of optimum) include riparian condition, channel stability, habitat diversity, fine sediment, low flows, high temperatures, pollutants, and obstructions. 		
Tier 3 Priorities				
Focus Area	Water Quality Impairments	Other Limiting Factors	Beneficial Uses	Priority Action Types
Camp Creek (West Camp Creek sub-watershed)	None	Habitat ratings (50% of optimum) include riparian condition, channel stability, habitat diversity, fine sediment, high and low flows, and high temperatures.	<ul style="list-style-type: none"> Fish and Aquatic Life (Redband trout) Irrigation, Wildlife and hunting 	6. Water use efficiency, 7. Aquatic organism passage (irrigation and road infrastructure)
Clarks Creek	Temperature year-round	<ul style="list-style-type: none"> Habitat ratings (25%-50% of optimum) for riparian condition, channel stability, habitat diversity, fine sediment, high/low flows, and obstructions, 50% of optimum for high temperatures and pollutants. Significantly impacted by 2024 Durkee Fires. Historic and active mining influence 	<ul style="list-style-type: none"> Fish and Aquatic Life (Redband trout) 	None, reevaluate in 2035.
Pritchard and Lawrence Creeks	Temperature year-round	<ul style="list-style-type: none"> Habitat ratings (25%-50% of optimum): high temperatures, riparian conditions, habitat diversity, fine sediment, low flows, pollutants, and obstructions. 	<ul style="list-style-type: none"> Fish and Aquatic Life (Redband trout), Irrigation, 	10. Water quality monitoring 12. Mesic habitat restoration

		<ul style="list-style-type: none"> Moderate flow restoration priority. 	<ul style="list-style-type: none"> Wildlife and hunting 	
Mesic Habitat Priorities				
Focus Area	Water Quality Impairments	Other Limiting Factors	Beneficial Uses	Priority Action Types
Manning Creek	None	<ul style="list-style-type: none"> Habitat ratings (25%-50% of optimum): High temperatures, riparian condition, habitat diversity, fine sediment, low flows, pollutants, and obstructions. Upper portion of watershed was significantly impacted by 2024 Thompson Gulch Fire. 	<ul style="list-style-type: none"> Fish and Aquatic Life (Redband trout), Irrigation, Wildlife and hunting 	<p>10. Water quality monitoring 12. Mesic habitat restoration</p>
Dixie Creek	<ul style="list-style-type: none"> Temperature year-round Sedimentation 	<ul style="list-style-type: none"> One complete passage barrier in the upper section of watershed. Habitat ratings (25%-50% of optimum): habitat diversity, high flows, fine sediment, high temperatures, riparian condition, channel stability, low flows, and pollutants. Significantly impacted by 2024 Durkee Fire. 	<ul style="list-style-type: none"> Fish and Aquatic Life (Redband trout), Irrigation, Wildlife and hunting 	<p>10. Water quality monitoring 12. Mesic habitat restoration</p>

Powder River Subbasin: Priority Action Types by Focus Area

Tier 1 Priorities				
Focus Area	Water Quality Impairments	Other Limiting Factors	Beneficial Uses	Priority Action Types

Powder River and Tributaries (Mason Dam to Hughes Lane): Mason Dam to Sutton Creek	<ul style="list-style-type: none"> • Fecal Coliform, • Dissolved Oxygen- spawn, • Temperature-year-round, • Methylmercury-Human Health Toxics, • Bio Criteria. 	<ul style="list-style-type: none"> • Priority passage barrier on the Powder River at the Smith Ditch diversion (dam is partial barrier during part of the migration period) and many other documented passage barriers exist throughout the watershed. • Moderate-high flow restoration priority. • From Mason Dam to Stices Gulch, habitat ratings (~50% of optimum) include riparian condition, habitat diversity, low flows, and dissolved oxygen. • From Stices Gulch to Sutton Creek, habitat ratings (~25%-50% of optimum) include riparian condition, low flows, high temperatures, and obstructions. • Low flows and obstructions are the greatest concern (~25% of optimum) for the Beaver Creek watershed. • Sutton Creek and Ebell Creek watersheds are impaired (~25%-50% of optimum) for almost all parameters except for dissolved oxygen, low temps, and pollutants which are rated 100% of optimum. • The USDA Forest Service Watershed Condition Framework classifies every sub-watershed within this section as having impaired function. 	<ul style="list-style-type: none"> • Fish and Aquatic Life (redband trout), • Fishing, • Water contact recreation, • Irrigation, • Livestock water 	<ol style="list-style-type: none"> 1. Beaver restoration and coexistence (low-tech), 3. Wood placements (pools and habitat complexity), 4. Habitat protection (fencing, off-channel water), 5. Riparian plantings, 6. Water use efficiency, 7. Aquatic organism passage (irrigation and road infrastructure), 8. Livestock management, 9. Engagement (private and public), 10. Water quality monitoring.
Powder River and Tributaries (Mason Dam to Hughes Lane): Sutton Creek to Hughes Lane	<ul style="list-style-type: none"> • Temperature-year-round, • Aquatic Life Toxics (total Iron) • Human Health Toxics (Arsenic, inorganic) 	<ul style="list-style-type: none"> • Moderate to High flow restoration priority (Baldock Slough is rated as high flow restoration priority). • Habitat ratings (~25%-50% of optimum) for the Powder River in this section include riparian condition, channel stability, fine 	<ul style="list-style-type: none"> • Fish and Aquatic Life (Redband trout), • Fishing, • Aesthetic quality, 	<ol style="list-style-type: none"> 1. Beaver restoration and coexistence (low-tech), 5. Riparian plantings, 6. Water use efficiency, 7. Aquatic organism passage (irrigation and road infrastructure), 9. Engagement (private and public),

		<p>sediment, habitat diversity, low flows, high temperatures, pollutants, and obstructions.</p> <ul style="list-style-type: none"> Habitat ratings (~25%-50% of optimum) for Baldock Slough include fine sediment, high temperatures, riparian condition, habitat diversity, low flows, dissolved oxygen, pollutants, and obstructions. Habitat ratings (~25%-50% of optimum) for Old Settlers Slough include riparian condition, fine sediment, low flows, dissolved oxygen, high temperatures, pollutants, obstructions, habitat diversity and high flows. 	<ul style="list-style-type: none"> Irrigation 	<p>10. Water quality monitoring, 13. Education and outreach.</p>
Upper Salmon Creek	No data.	<ul style="list-style-type: none"> 1 priority passage barrier (Bull Trout) on Salmon Creek. High flow restoration priority. Current habitat ratings are closer to optimum in the upper portion of the watershed and decrease significantly moving downstream into the Powder Valley. Habitat ratings (0%-50% of optimum) include: riparian condition, channel stability, fine sediment, low flows, obstructions, habitat diversity, dissolved oxygen, high temperatures, and pollutants. <p>WCF Poor Condition: Aquatic Biota, Water Quantity, Aquatic Habitat, Road and Trail, Fire Effects/Fire Regime.</p>	<ul style="list-style-type: none"> Fish and Aquatic Life (Bull Trout spawning and rearing), Irrigation, Domestic water supply 	<p>1. Beaver restoration and coexistence (low-tech) 4. Habitat protection (fencing, off-channel water), 6. Water use efficiency, 7. Aquatic organism passage (irrigation and road infrastructure), 9. Engagement (private and public), 10. Water quality monitoring</p>
Lower Salmon Creek	No data.	<ul style="list-style-type: none"> High flow restoration priority. Current habitat ratings are closer to optimum in the upper portion of the 	<ul style="list-style-type: none"> Fish and Aquatic Life (Bull Trout 	<p>1. Beaver restoration and coexistence (low-tech) 4. Habitat protection (fencing, off-channel water),</p>

		<p>watershed and decrease moving downstream into the Powder Valley.</p> <ul style="list-style-type: none"> • Habitat ratings (0%-50% of optimum) include: 0% of optimum for low flows and obstructions, 25% of optimum for riparian condition, channel stability, habitat diversity, fine sediment, dissolved oxygen, high temperatures, and pollutants, 50% of optimum for high flows. • WCF Poor Condition: Water Quantity, Aquatic Habitat, Road and Trail, Fire Effects/Fire Regime. • Dewatering is a significant concern outlined in the assessment. Dewatering is evident in the lower reaches of Salmon Creek, Pine Creek, and Spring Creek. • Spring Creek is fully diverted into Bowles Ditch. • Tech Team expressed concerns regarding low flows in late summer throughout the lower watershed. 	<p>spawning and rearing),</p> <ul style="list-style-type: none"> • Irrigation 	<p>6. Water use efficiency, 7. Aquatic organism passage (irrigation and road infrastructure), 9. Engagement (private and public), 10. Water quality monitoring</p>
North Powder River and Anthony Creek	<ul style="list-style-type: none"> • Temperature year-round, • Bio Criteria, • <i>E. coli</i>. 	<ul style="list-style-type: none"> • 7 priority passage barriers and other documented barriers (Bull Trout). • Brook trout. • Moderate to highest flow restoration priority. • Throughout the upper portions of the watershed, most parameters are rated 75-100% of optimum. Low flows and obstructions are the greatest concerns for upper reaches. • Moving downstream, habitat ratings (25%-50% of optimum) include low flows, high 	<ul style="list-style-type: none"> • Fish and Aquatic Life (Bull Trout spawning and rearing), • Aesthetic quality, • Water contact recreation, • Irrigation, • Livestock water 	<p>1. Beaver restoration and coexistence (low-tech), 2. Wetland and stream restoration (engineered/high-tech), 3. Wood placements (pools and habitat complexity), 4. Habitat protection (fencing, off-channel water), 6. Water use efficiency, 7. Aquatic organism passage (irrigation and road infrastructure), 8. Livestock management,</p>

		<p>temperatures, fine sediment, habitat diversity, and obstructions.</p> <ul style="list-style-type: none"> WCF Poor Condition: Water Quantity, Aquatic Habitat, Road and Trail, and Fire Effects/Fire Regime. 		<p>9. Engagement (private and public), 10. Water quality monitoring, 11. Project Effectiveness monitoring, 13. Education and outreach.</p>
Thief Valley (Cusick Creek)	No data.	<ul style="list-style-type: none"> Thief Valley reservoir is priority barrier. Low-high flow restoration priority. Habitat Ratings: 0% of optimum for channel stability, habitat diversity, fine sediment, and obstructions, 25% of optimum for riparian condition, 50% of optimum for dissolved oxygen, high temperatures, and pollutants. 	<ul style="list-style-type: none"> Fish and Aquatic Life (Redband trout), Wildlife and hunting, Irrigation, Livestock watering 	<p>1. Beaver restoration and coexistence (low-tech), 5. Riparian plantings, 10. Water quality monitoring,</p>
Eagle Creek	<ul style="list-style-type: none"> Temperature year-round, <i>E. coli</i>. 	<ul style="list-style-type: none"> 1 priority passage barrier and many other documented barriers with varying passage status. Low to high flow restoration priority. Habitat Ratings: Upper reaches of Eagle Creek (Headwaters, West Fork, East Fork) are rated between 75%-100% of optimum for all parameters. Impairments increase in the lower section of the watershed. Habitat ratings (25%-50% of optimum) common to both lower Eagle Creek reaches include riparian condition, low flows, and obstructions. 	<ul style="list-style-type: none"> Fish and Aquatic Life (Redband trout), Aesthetic quality, Irrigation, Water contact recreation, Livestock water 	<p>1. Beaver restoration and coexistence (low-tech), 2. Wetland and stream restoration (engineered/high-tech), 3. Wood placements (pools and habitat complexity), 4. Habitat protection (fencing, off-channel water), 7. Aquatic organism passage (irrigation and road infrastructure), 9. Engagement (private and public), 10. Water quality monitoring.</p>
Tier 2 Priorities				
Focus Area	Water Quality Impairments	Other Limiting Factors	Beneficial Uses	Priority Action Types

Powder River and Tributaries (Keating Valley: Big Creek to Goose Creek)	<ul style="list-style-type: none"> • Temperature-year-round, • turbidity, • sedimentation, • Aquatic Life Toxics (Iron-total), • Human Health Toxics (Arsenic-inorganic, methylmercury), • flow modification. 	<ul style="list-style-type: none"> • Low to High flow restoration priority. • Habitat Ratings: (25%-50% of optimum) for the mainstem Powder River through this section include obstructions, fine sediment, low flows, and high temperatures. • Habitat ratings: (25%-50% optimum) throughout the upper and lower reaches of most tributaries include low flows, fine sediment, high temperatures, and obstructions. • Many areas with heavy grazing influence, historic mining influence, • Trans-basin diversion causing sediment issues between Balm and Goose Creek. 	<ul style="list-style-type: none"> • Fish and Aquatic Life (reband trout), • Irrigation, • Wildlife and hunting 	<p>9. Engagement (private and public) 10. Water quality monitoring</p>
Tier 3 Priorities				
Focus Area	Water Quality Impairments	Other Limiting Factors	Beneficial Uses	Priority Action Types
Cracker Creek	Temperature year-round.	<ul style="list-style-type: none"> • Passage barriers (Bull Trout), • Brook trout, • High flow restoration priority, • Lower watershed (McCully Creek to Little Cracker Creek) is rated 50% of optimum for several parameters (riparian condition, channel stability, and habitat diversity), • Cobble embeddedness, historic dredge mining and active/historic placer mining are extensive throughout lower reach and limit stream function, • WCF Poor Condition: Road and trail condition, fire effects/fire regime. 	<ul style="list-style-type: none"> • Fish and Aquatic Life (Bull Trout Spawning and Rearing) 	<p>9. Engagement (private and public) 10. Water quality monitoring</p>

Deer Creek	Temperature year-round.	<ul style="list-style-type: none"> • Passage barriers (Bull Trout), • Brook trout, • High flow restoration priority, • Several parameters rated ~50% of optimum throughout watershed (riparian condition, channel stability, high/low flows, temperature, obstructions, sediment, and low flows), • Head cutting and vertical channel erosion in some portions of lower Deer Creek, • WCF Condition: Poor aquatic habitat condition, poor road/trail condition, and poor fire effect/fire regime condition. 	<ul style="list-style-type: none"> • Fish and Aquatic Life (Bull Trout Spawning and Rearing) 	<p>9. Engagement (private and public) 10. Water quality monitoring</p>
Wolf Creek	Temperature year-round, pH.	<ul style="list-style-type: none"> • 4 priority passage barriers (Bull Trout). • Low to high flow restoration priority. • Habitat ratings: Conditions in the upper portion of the Wolf Creek watershed are near optimum for all parameters. • Habitat ratings: Below the reservoir to the confluence with the Powder River, Wolf Creek is impaired for several parameters (25%-50% optimum) including riparian condition, habitat diversity, fine sediment, low flows, high temperatures, dissolved oxygen, and obstructions. 	<ul style="list-style-type: none"> • Fish and aquatic life (Bull trout spawning and rearing, Redband trout), • Irrigation, • Livestock water 	<p>9. Engagement (private and public) 10. Water quality monitoring</p>
Big Creek	Temperature year-round.	<ul style="list-style-type: none"> • High flow restoration priority. • Habitat Ratings: Confidence levels in habitat ratings are low for the upper portions of the watershed and Beagle Creek. • The upper reach of the watershed is rated nearly 75-100% of optimum for all parameters. 	<ul style="list-style-type: none"> • Fish and aquatic life (Redband trout), • Irrigation, • Livestock water 	<p>9. Engagement (private and public) 10. Water quality monitoring</p>

		<ul style="list-style-type: none"> • Big Creek reach 2 and Beagle Creek are rated ~50% of optimum for most parameters. • The lower section of Big Creek from Beagle Creek to the confluence of the Powder River has the highest confidence level and the most concerning parameters (~50% of optimum) include low flows, high temperatures, and obstructions. 		
Mesic Habitat Priorities				
Focus Area	Water Quality Impairments	Other Limiting Factors	Beneficial Uses	Priority Action Types
Ritter Creek	No data.	<ul style="list-style-type: none"> • Moderate flow restoration priority. • Habitat Ratings: 25% of optimum for riparian condition, channel stability, habitat diversity, fine sediment, high/low flows, high temperatures, pollutants, and obstructions, ~50% of optimum for dissolved oxygen. • Heavy grazing influence. 	<ul style="list-style-type: none"> • Wildlife and hunting 	<p>11. Project Effectiveness monitoring 12. Mesic habitat restoration</p>
Love Creek	None.	<ul style="list-style-type: none"> • Passage barriers. • Moderate flow restoration priority. Habitat Ratings: ~50% of optimum for riparian condition, channel stability, habitat diversity, fine sediment, high flows, low flows, and high temperatures. 	<ul style="list-style-type: none"> • Fish and Aquatic Life (Redband trout), • Wildlife and hunting 	12. Mesic habitat restoration
Goose Creek	<ul style="list-style-type: none"> • Turbidity, • Temperature year-round, • Sedimentation. 	<ul style="list-style-type: none"> • Passage barriers. • High flow restoration priority. • Habitat Ratings: (25%-50% of optimum) for the upper portion of the watershed includes fine sediment, low flows, high temperatures, and obstructions. 	<ul style="list-style-type: none"> • Fish and Aquatic Life (Redband trout), • Irrigation, 	<p>9. Engagement (private and public), 10. Water quality monitoring, 12. Mesic habitat restoration</p>

		<ul style="list-style-type: none"> • Most parameters are below 50% of optimum for the lower portion of the watershed. • Low flows are 25% of optimum for both reaches. • WCF Poor Condition: Water Quality, Riparian/Wetland Vegetation, Water Quantity, Aquatic Biota, Aquatic Habitat, Road and Trail, Fire Effects/Fire Regime. • Trans-basin diversion from Balm Creek to Goose Creek contributes to sedimentation. 	<ul style="list-style-type: none"> • Wildlife and hunting 	
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Brownlee Subbasin: Priority Action Types by Focus Area

Tier 1 Priorities				
Focus Area	Water Quality Impairments	Other Limiting Factors	Beneficial Uses	Priority Action Types
Pine Creek	<ul style="list-style-type: none"> • Temperature year-round. 	<ul style="list-style-type: none"> • 3 priority passage barriers (dams) ranging from partially passable to complete passage barriers. • High flow restoration priority from headwaters to approximately Turner Creek. • Highest flow restoration priority from Turner Creek to Long Branch confluence downstream of Pine Valley. • Stream dewatering and reduced flows, • Historic/active mining influence, • Excess erosion due to fire/grazing impacts, • Impaired water quality parameters, • Fish passage/habitat • Excess erosion from high-risk roads 	<ul style="list-style-type: none"> • Fish and Aquatic Life (Bull Trout Spawning and Rearing), • Livestock watering, • Irrigation 	<ul style="list-style-type: none"> 6. Water use efficiency, 7. Aquatic organism passage (irrigation and road infrastructure)

		<ul style="list-style-type: none"> • Reduced riparian vegetation (low canopy cover). • WCF Poor condition: Water Quantity, Water quality, Aquatic Habitat. 		
East Pine Creek	<ul style="list-style-type: none"> • Temperature year-round. 	<ul style="list-style-type: none"> • 10 prioritized barriers throughout the watershed. • Brook trout. • Many documented culverts with varying passage status ranging from unknown, completely passable, partially passable, and complete barriers. Several other bridges and dams with unknown passage status. • Brook trout. • High flow restoration priority from the headwaters to Beecher Creek. • Highest flow restoration priority from Beecher Creek to mouth at Pine Creek. • Dry Creek has moderate flow restoration priority. • Reduced stream flows due to irrigation diversions, • Impaired water quality parameters, • Reduced riparian vegetation (low canopy cover), • Sand/gravel quarries, • Fish passage. • WFC Poor condition: Water Quality, Water Quantity, Road and Trail, Fire Effects/Fire Regime. 	<ul style="list-style-type: none"> • Fish and Aquatic Life (Bull Trout Spawning and Rearing), • Livestock watering, • Irrigation 	<p>6. Water use efficiency, 7. Aquatic organism passage (irrigation and road infrastructure)</p>
Clear Creek	Temperature year-round.	<ul style="list-style-type: none"> • 8 documented priority barriers (dams) throughout watershed. 	<ul style="list-style-type: none"> • Fish and Aquatic Life (Bull Trout 	<p>2. Wetland and stream restoration (engineered/high-tech) 6. Water use efficiency,</p>

		<ul style="list-style-type: none"> • 1 culvert which is complete passage barrier on Trail Creek at NFD road 6610 crossing, and several other bridges/culverts with unknown passage status. • Brook trout. • High flow restoration priority from the headwaters to approximately the Meadow Creek confluence. • Highest flow restoration priority from downstream of Meadow Creek to mouth at Pine Creek. • Reduced stream flows due to irrigation diversions, • Impaired water quality parameters, • Fish passage (Bull Trout specifically), • Reduced riparian vegetation (low canopy cover), • Excess erosion due to high risk roads/grazing/fire, and mining activity. • WCF Poor condition: Water Quantity, Aquatic Habitat, Road and Trail. 	<p>Spawning and Rearing),</p> <ul style="list-style-type: none"> • Livestock watering, • Irrigation 	<p>7. Aquatic organism passage (irrigation and road infrastructure)</p> <p>10. Water quality monitoring,</p> <p>11. Project Effectiveness monitoring,</p> <p>13. Education and outreach.</p>
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Tier 2 Priorities

Focus Area	Water Quality Impairments	Other Limiting Factors	Beneficial Uses	Priority Action Types
Fish Creek	<ul style="list-style-type: none"> • Temperature year-round. 	<ul style="list-style-type: none"> • 1 priority dam in the upper portion of the watershed which is complete passage barrier (Barrier to some native migratory fish adults and / or species for only part of migration period). • 1 culvert at Hwy 86 crossing is also a complete barrier. 	<ul style="list-style-type: none"> • Fish and Aquatic Life (Redband trout), • Livestock watering, • Irrigation 	<p>2. Wetland and stream restoration (engineered/high-tech),</p> <p>6. Water use efficiency,</p> <p>7. Aquatic organism passage (irrigation and road infrastructure),</p> <p>9. Engagement (private and public)</p>

		<ul style="list-style-type: none"> • Trans-basin diversions from Fish Creek to Dry Creek. • High flow restoration priority for Long Branch and mainstem Pine Creek. • Reduced stream flows due to irrigation diversions, • Impaired water quality parameters, • Reduced riparian vegetation (low canopy cover), • Excess erosion due to high-risk roads/grazing/fire, • Fish passage. • WCF Poor condition: Water Quantity, Road and Trail, Fire Effects/Fire Regime. 		
Lake Fork Creek	Temperature year-round.	<ul style="list-style-type: none"> • 3 priority barriers (dams) in upper portion of the watershed. • Brook trout. • Moderate flow restoration priority. • Trans-basin diversions. • Some reduced stream flows due to irrigation diversions, • Some mining activity, • Impaired water quality parameters, • Reduced riparian vegetation (low canopy cover), • Excess erosion due to high-risk roads/grazing/fire, • Fish passage. • WCF Poor condition: Fire Effects/Fire Regime. 	<ul style="list-style-type: none"> • Fish and Aquatic Life (Redband trout), • Irrigation 	<p>2. Wetland and stream restoration (engineered/high-tech),</p> <p>6. Water use efficiency,</p> <p>7. Aquatic organism passage (irrigation and road infrastructure),</p> <p>9. Engagement (private and public)</p>
Elk Creek and Aspen Creek	Temperature year-round.	<ul style="list-style-type: none"> • Trans-basin diversions. 	<ul style="list-style-type: none"> • Fish and Aquatic Life 	<p>6. Water use efficiency,</p>

		<ul style="list-style-type: none"> • Irrigation diversion on Aspen Creek is right below Bull Trout population: IPC has been working on remediating this diversion for a long time, but water right situation is complicated. This is a significant cold-water input for the Pine basin and is a high priority for future actions if the water rights issue can be remedied. 	<p>(Bull Trout Spawning and Rearing),</p> <ul style="list-style-type: none"> • Irrigation 	<p>7. Aquatic organism passage (irrigation and road infrastructure), 9. Engagement (private and public)</p>
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