



# UPPER YAMPA WATER CONSERVANCY DISTRICT



# BEAR RIVER WILDFIRE READY ACTION PLAN

JANUARY 2025



## **Bear River Wildfire Ready Action Plan (WRAP)**

### **Building Resilient Watersheds**

#### **Vision:**

To prepare critical water supply watersheds in the Bear River project area to withstand and be resilient to wildfires. By integrating pre-fire actions and post-fire planning, WRAP fosters collaboration among stakeholders to ensure clear roles and responsibilities for wildfire preparedness and response.

#### **Goals:**

- Define key characteristics of resilient, wildfire-ready watersheds and ecosystems.
- Manage wildfire as a natural disturbance rather than aiming for its elimination.
- Identify priority watersheds for pre- and post-fire actions.
- Implement pre-fire actions to enhance watershed resilience.
- Collaborate with stakeholders to share data, analysis, and planning efforts.
- Integrate watershed treatments that connect hillslopes with streams and reservoirs.
- Explore innovative treatments and technologies that combine forest management and low-tech process based (LTPBR) restoration techniques.
- Adapt and align with existing projects to maximize funding efficiency.
- Provide public education and opportunities for community engagement around WRAP initiatives.

#### **Objectives:**

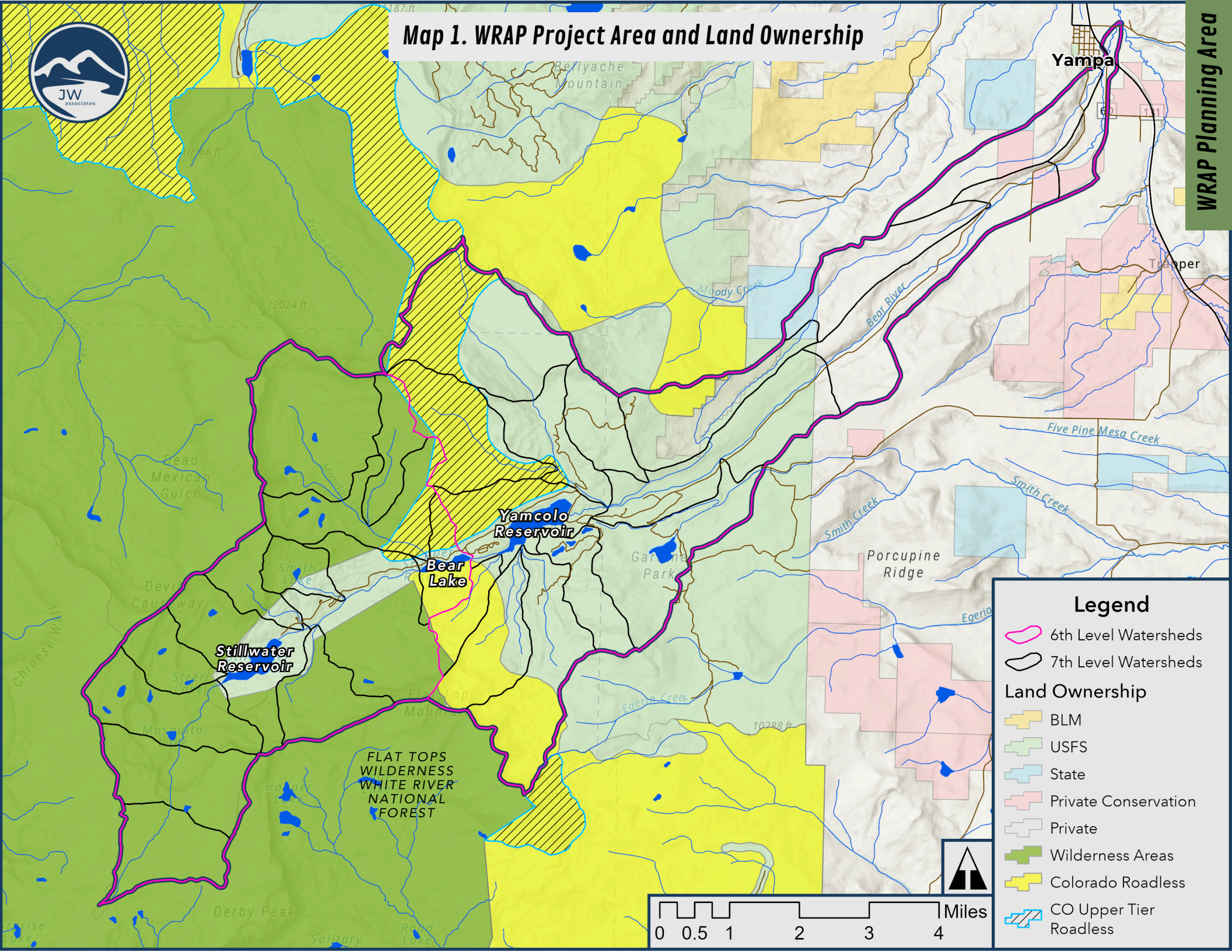
- Maintain ongoing stakeholder engagement and communication.
- Create plans and identify funding for multiple watershed resilience projects within two years.
- Integrate public education and community outreach into completed projects when possible.
- Collaborate with partners to establish a five-year plan to continue watershed resilience efforts.
- Track annual progress in advancing wildfire readiness across watersheds.





Map 1. WRAP Project Area and Land Ownership

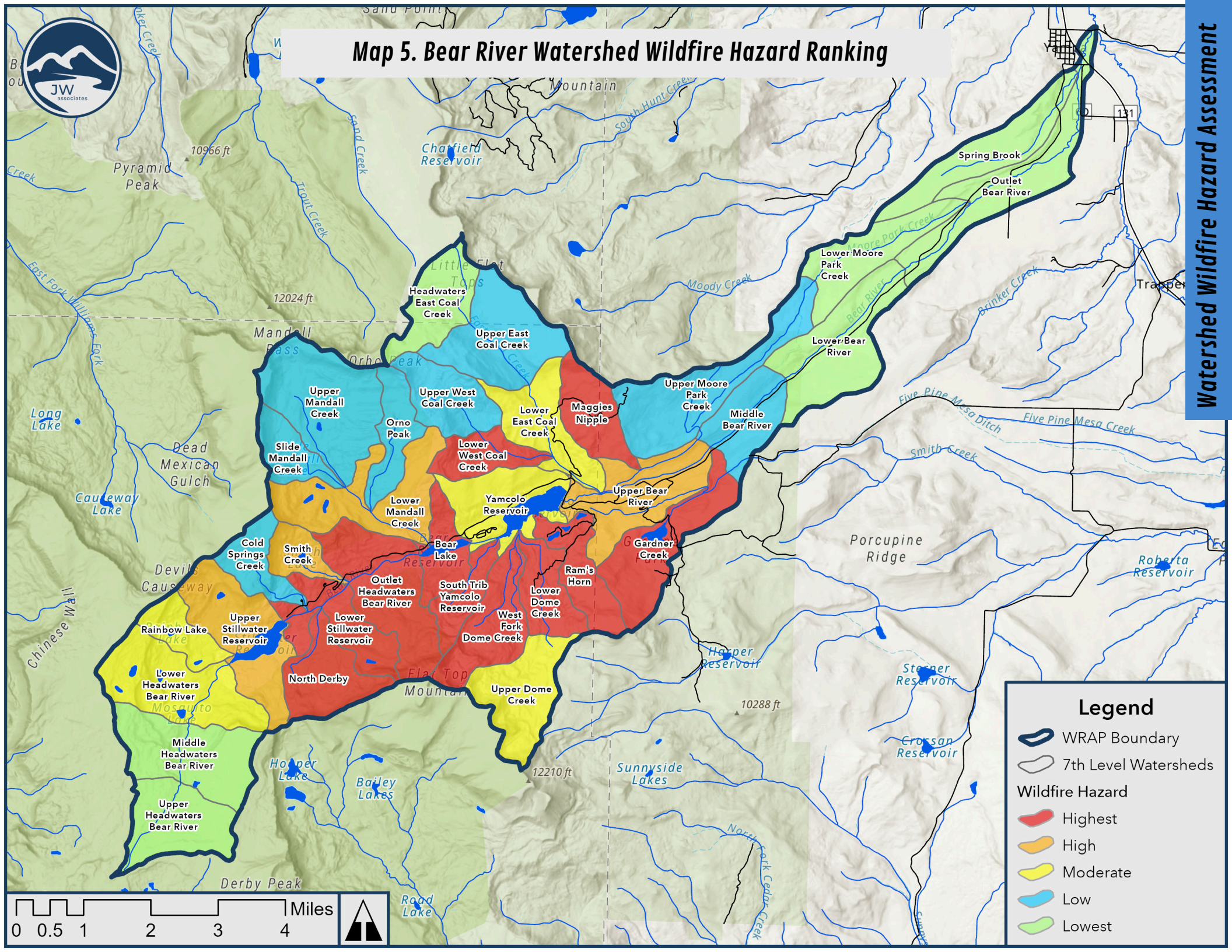
WRAP Planning Area







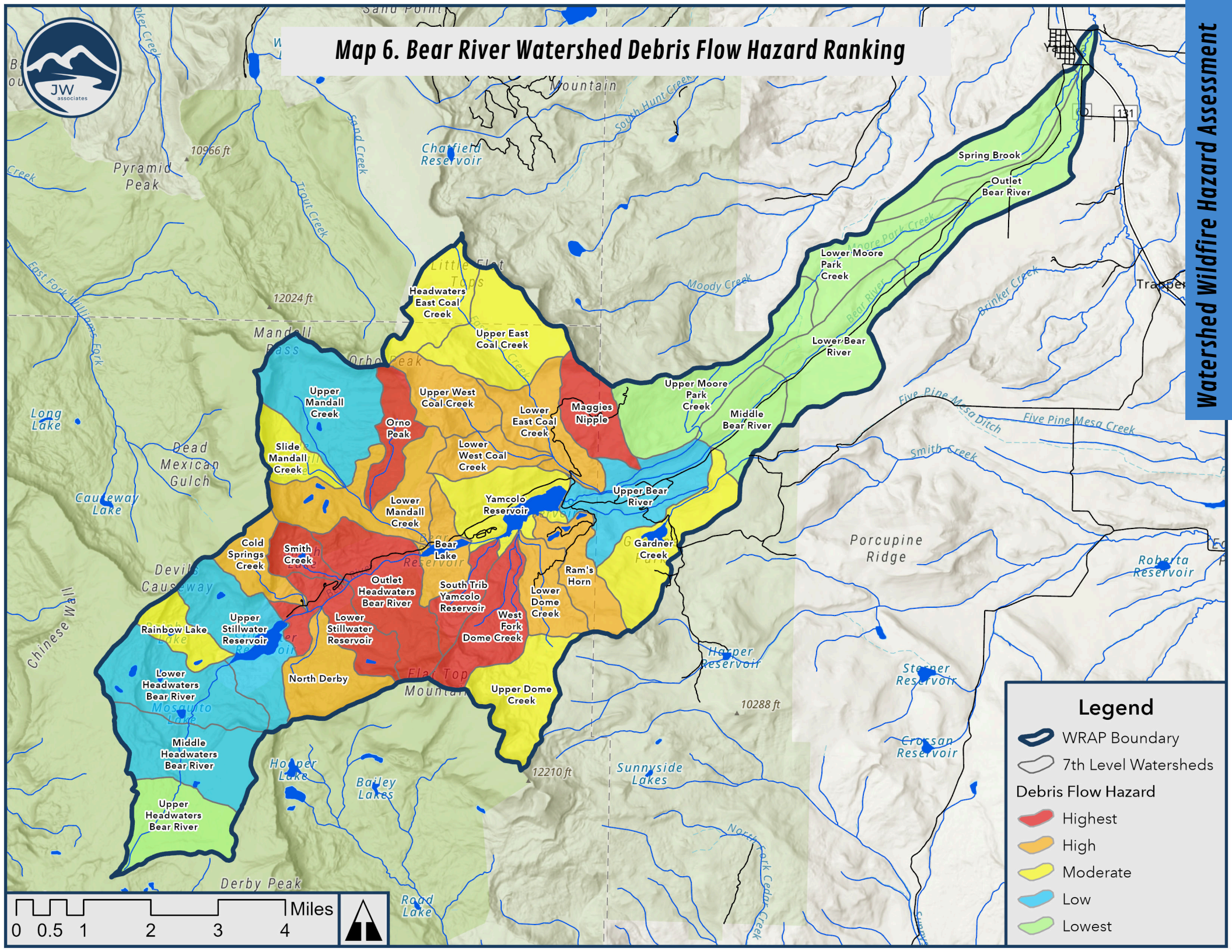
# Map 5. Bear River Watershed Wildfire Hazard Ranking







# Map 6. Bear River Watershed Debris Flow Hazard Ranking





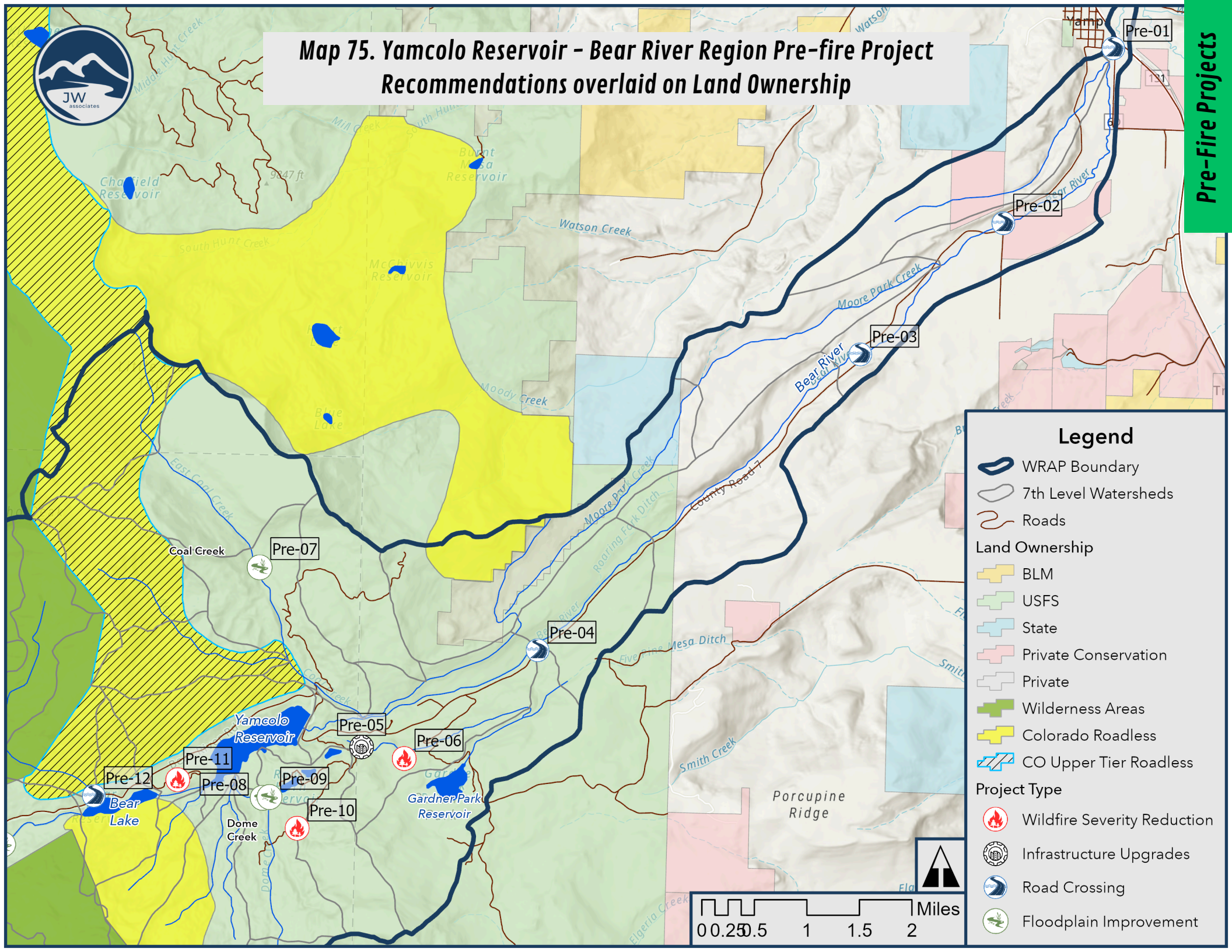




# Map 75. Yamcolo Reservoir - Bear River Region Pre-fire Project Recommendations overlaid on Land Ownership



Pre-Fire Projects



## Legend




- WRAP Boundary
- 7th Level Watersheds
- Roads
- Land Ownership
  - BLM
  - USFS
  - State
  - Private Conservation
  - Private
  - Wilderness Areas
  - Colorado Roadless
  - CO Upper Tier Roadless
- Project Type
  - Wildfire Severity Reduction
  - Infrastructure Upgrades
  - Road Crossing
  - Floodplain Improvement

0 0.25 0.5 1 1.5 2 Miles








## Bear River Watershed Wildfire Ready Action Plan Project Ideas

### Pre-Fire Planning and Mitigation

Project Number	Watershed	Stream/Location	Project Type	Project Icon	Project Description	Ownership	Partners	Status
Pre-01	Outlet Bear River	Bear River BR-030 Road Crossing	Road Crossing		Upgrade the culvert to a large bottomless arch or bridge in order to increase the stream's ability to modify its channel in higher flow situations, rather than overtopping the culvert and flowing over the road.	County Road	County Road and Bridge	Not Started
Pre-02	Outlet Bear River	Bear River BR-060 Road Crossing	Road Crossing		Consider adding overflow culvert or two instead of trying to change current bridge/culvert which also has stream gage on it.	County Road	County Road and Bridge	Not Started
Pre-03	Outlet Bear River	Bear River BR-100 Road Crossing	Road Crossing		Consider increasing road crossing capacity here. Current capacity is 257cfs, and 2yr post-fire peak flow is 425cfs. Work with County to add this crossing to priority list for upgrades.	County Road	County Road and Bridge	Not Started
Pre-04	Gardner Creek	Bear River BR-160 Road Crossing	Road Crossing		Upgrade the capacity of the culvert in this location. If the Stillwater Ditch blows out from high peakflows off Gardner Creek, the high volume of flow would likely blow out the current culvert and road section.	USFS Road 900	USFS	Not Started
Pre-05	Upper Bear River	Stillwater Ditch	Infrastructure Upgrades		Leverage the UYWCD ditch piping project to create a wider road along the ditch that could be utilized as a fire line. In addition, incorporate forest management work to create a large fire break along the ditch.	USFS	USFS	Planning In Progress
Pre-06	Upper Bear River	Stillwater Ditch	Wildfire Severity Reduction		Leverage forest treatments around Stillwater Ditch to reduce the wildfire hazard in these areas and alter the wildfire behavior to create more resilient watersheds.	USFS	USFS	Planning In Progress
Pre-07	Coal Creek	Coal Creek	Floodplain Improvement		The beaver were removed from this watershed when CPW reinstated the cutthroat trout population. Recommend supporting and expediting the reinstatement of the beaver population.	USFS	CPW, USFS	Not Started
Pre-08	Lower Dome Creek	Dome Creek Meadow	Floodplain Improvement		Current dams are constructed with small material because of lack of larger material available. Consider reinforcing/augmenting the current dams with posts. Consider enclosure fencing for aspen and willows to reduce ungulate grazing and improve woody vegetation. Consult CPW about the design and approach.	USFS	CPW, USFS	Not Started
Pre-09	Lower Dome Creek	Dome Creek Meadow	Future Analysis		How do we accomplish ecological uplift when there are currently active beavers? Recommend monitoring the area using drone imagery or game cameras to understand how it is continuing to improve or whether it needs to be helped along.	USFS	USFS	Planning In Progress
Pre-10	Dome Creek, Ram's Horn	South side of Yamcolo Reservoir	Wildfire Severity Reduction		Forest treatments in the dense spruce-fir and beetle killed forest to the south of Yamcolo Reservoir.	USFS	USFS	Project In Progress









Pre-11	Yamcolo Reservoir	Bear Lake Campground	Wildfire Severity Reduction		Review campsites and locations and conditions of fire rings. Consider upgrading fire rings, develop recommendations about potential vegetation clearing around fire rings and campgrounds.		USFS	Not Started
Pre-12	Lower Mandall Creek	Bear River BR-240 Road Crossing	Road Crossing		Upgrade the culvert to allow higher flows to pass through without taking out the road. Rehabilitate the downstream side of the culvert and riparian area below the crossing which would help to slow flows and drop sediment before it reaches Bear Lake.	USFS Road 900	USFS	Not Started
Pre-13	Outlet Headwaters Bear River	Mainstem of the Bear River above Bear Lake	Floodplain Improvement		There are currently well maintained wetlands in this area but it could be bolstered by adding more wood and complexity to the channel.	USFS	USFS	Not Started
Pre-14	Smith Creek	Bear River BR-250 Road Crossing	Road Crossing		Upgrade culvert capacity, with the addition of rip rap on both sides of the road and a debris rack to keep it clear. This crossing is very steep. Banks are already eroding and failing, lots of loose material available. Current culvert capacity is 33 cfs, this does not pass the pre-fire or post-fire peakflows. There is water flowing down the road as well and into the culvert.	USFS Road 900	USFS	Not Started
Pre-15	Cold Springs Creek	Bear River BR-270 Road Crossing	Road Crossing		Review the configuration of the pond above the road crossing and drainage through the road. Consider recommendations to changes in design that would allow use of the pond as a sediment basin post-fire. The crossing should be reviewed to generate recommendations that would allow it to function well with the sediment basin approach above. This could also be done post-fire	USFS Road 900	USFS	Not Started
Pre-16			Future Analysis		Following implemented treatments, re-assess the wildfire modeling and post-fire hazards			Not Started
Pre-17			Planning/Partnerships		Work on agreements with partners and stakeholders before a fire happens, about post-fire roles and responsibilities.			Not Started



## Bear River Watershed Wildfire Ready Action Plan Project Ideas


### Post-Fire Actions

Project Number	Watershed	Stream/Location	Project Type	Project Icon	Project Description	Ownership
Post-01	Outlet Bear River	Bear River BR-030 Road Crossing	Road Crossing		Keep the stream in the channel as much as possible and/or re-route the stream back to its channel, rather than into town. Install early warning systems for town flooding in a post-fire situation. This should include a stream gage that is high enough in the watershed to alert the town with sufficient time to prepare.	County Road
Post-02	Outlet Bear River	Town of Yampa Water Treatment Plant	Infrastructure Protection		Consider the height of the treatment plant compared to post-fire H&H modeling. The water treatment plant is currently elevated 28 inches above the surrounding ground (measured in the field). This will adequately safeguard the facility for flows less than the post-fire 5-year event. However, at some flow above the post-fire 5-year event, flood flows will impact the treatment plant. Protection projects could include earthen levees or water filled barriers, such as an AquaDam or Muscle Wall.	Town of Yampa
Post-03	Outlet Bear River	Bear River BR-060 Road Crossing	Road Crossing		Identify alternative route for County Road 7 which would cross private property and stay north of the river before BR-070 crossing. This would eliminate two river crossings.	County Road
Post-04	Lower Bear River	Bear River Irrigation Lands	Floodplain Improvement		Work with landowners and irrigators to raise bed elevations and decrease avulsion potential.	Private
Post-05	Gardner Creek	Bear River BR-160 Road Crossing	Road Crossing		Upgrade the capacity of the culvert in this location. If the Stillwater Ditch blows out from high peakflows off Gardner Creek, the high volume of flow would likely blow out the current culvert and road section.	USFS Road 900
Post-06	Upper Bear River	Stillwater Ditch	Infrastructure Protection		In case the UYWCD ditch piping project does not get accomplished pre-fire, perform post-fire hazard analysis using the actual burn severity to determine the most vulnerable locations along the ditch to post-fire flooding and debris flows, which could impact the ditch and its water delivery function. As necessary, protect vulnerable locations along the ditch.	USFS
Post-07	Coal Creek	Coal Creek	Floodplain Improvement		If the beaver dams are not restored pre-fire, there may be increased sediment loads from Coal Creek post-fire. It would be useful to utilize low-tech process based restoration techniques to improve the floodplains in this section of Coal Creek to mitigate the increased post-fire flows and sediment.	USFS



Post-08	Lower Dome Creek	Dome Creek Meadow	Floodplain Improvement		Use low tech debris racks placed high in wetland area to catch sediment as high as possible, paired with low-tech process based restoration (LTPBR) work below to store sediment. Right at the pinch point where the stream becomes more confined, put a big tree dam to slow water and deposit sediment.	USFS
Post-09	Lower Dome Creek	Dome Creek Meadow	Erosion Reduction		Gully treatments above the meadow to contain as much sediment as possible on the hillslopes.	USFS
Post-10	Lower Mandall Creek	Bear River BR-240 Road Crossing	Road Crossing		The upstream side of the culvert already has some storage capacity. This could be used as a sediment basin post-fire. Ideally, it could be dug out larger to create more storage space and then periodic maintenance would be required. Adding a debris rack to the upstream side of the culvert would help with	USFS/County Road
Post-11	Lower Mandall Creek	Bear River BR-240 Road Crossing	Floodplain Improvement		The upstream side of the culvert already has some storage capacity. This could be used as a sediment basin post-fire. Ideally, it could be dug out larger to create more storage space and then periodic maintenance would be required. Adding a debris rack to the upstream side of the culvert would help with maintenance. Rehabilitate the downstream side of the culvert. There is currently some riparian vegetation but there is also a flume that is causing downcutting and ponding that would quickly get blown out in a post-fire flooding event. If the flume could be removed, and more willows planted in the outlet area, the vegetation would trap sediment and slow flows into the reservoir.	USFS/County Road
Post-12	Outlet Headwaters Bear River	Mainstem of the Bear River above Bear Lake	Floodplain Improvement		There are currently well maintained wetlands in this area but following a fire they could get blown out from post-fire peak flows. Investigate whether the area could benefit from adding more wood and complexity to the channel using low-tech process based restoration techniques post-fire.	USFS
Post-13	Cold Springs Creek	Bear River BR-270 Road Crossing	Road Crossing		This location will function as a sediment basin post-fire because there is a large pond above the road crossing. Consider adding maintenance to clean out any collected sediment and debris in a post-fire situation.	USFS Road 900
Post-14			Future Analysis		In a post-fire situation, re-running the watershed hazard analysis using the actual burn severity on the ground will help to illuminate the necessary locations to take immediate reactionary measures to reduce post-fire impacts to water supply infrastructure and life & safety.	



Post-15			Planning/Partnerships		Partnerships are critical post-fire do determine what needs to be done immediately while the fire is still burning in order to be ready to hit the ground running. Determine decisions that need to be made, how to get permits, agreements, funding, etc.	
Post-16	Outside Project Area	Town of Yampa Waste Water Treatment Plant	Infrastructure Protection		Consider protecting the wastewater treatment plant which is located in the floodplain. Protection projects could include earthen levees or water filled barriers, such as an AquaDam or Muscle Wall.	Town of Yampa