

McCully Fire Burned Area Summary

Burned Area Report

Fire Background

The McCully Fire was ignited by lightning on August 22, 2026, approximately 22 miles northwest of Baker City, Oregon, on the Whitman Ranger District. A midday lightning storm moved through the Elkhorn Mountains, producing approximately a dozen lightning strikes and starting at least six fires, including the McCully and North Pole fires. On August 26, 2026, the McCully and North Pole fires merged near the headwaters of Cracker Creek due to windy conditions and extremely dry fuels. The McCully Fire is the largest wildfire in this portion of the Elkhorn Mountains since the 1996 Sloans Ridge Fire.

While many wildfires cause minimal damage to the land and pose few threats to the land or people downstream, some fires result in damage that requires special efforts to reduce impacts afterwards. The Burned Area Emergency Response (BAER) program is designed to identify and manage potential risks to resources on National Forest System lands and reduce these threats through appropriate emergency measures to protect human life and safety, property, and critical natural or cultural resources. BAER is an emergency program for stabilization work that involves time critical activities to be completed before damaging events to meet program objectives.

The Forest Service assembled a BAER team on October 5, 2026, for the McCully Fire. This team of experts in various resource disciplines began assessing the post-fire effects to critical values on Forest Service lands. Impacts to the soil are the primary indicator of potential post-fire changes in watershed response, as well as watershed recovery. The team developed soil burn severity (SBS) maps to document the degree to which the fires had changed soil properties. Using the SBS map,

physical scientists can predict erosion potential, changes to runoff and flood flows, and increased geologic hazards. Field evaluations and modeling results are used to determine relative increases in post-fire risk to different critical values and inform recommendations to address these increased risks.



Figure 1. Hydrologists and Soil Scientists assess soil burn severity in Fruit Creek.

Soils

Soil burn severity is not an assessment of vegetation consumption, but rather an integration of vegetation loss, changes in soil structure and infiltration capacity, remaining vegetation, duff, or ash, and soil color, all of which may indicate relative degrees of soil heating.

The final soil burn severity maps were developed with ESRI ArcGIS software using satellite-imagery-derived Burned Area Reflectance Classification (BARC) and field survey data. Field work included assessment of ash characteristics, ground cover, root condition, soil structure, soil water-repellency, and vegetation burn severity as described in the Field Guide for Mapping Post-fire Soil Burn Severity (Parsons et al. 2010). High burn severity is characterized by a complete consumption

of organic material with the surface layers of the soil resulting in a change to single-grain structure. Fine roots are commonly charred or consumed 3-5 cm deep. The highest-severity areas often have a loose, dusty appearance, and no longer have any cohesion or soil strength. Generally, there will be less destruction of soil organic matter, roots, and structure in an area mapped as moderate compared to high. In areas mapped as moderate SBS, soil structure, roots, and litter layer may remain intact beneath a thin ash layer. Low soil burn severity results in very little alteration of soil organic matter and little or no change in soil structural stability.

Mapped and validated SBS for the burned area is High (5%), Moderate (36%), Low (50%), and Very Low/Unburned (9%) (see map on page 6). The more severe a fire's effects are on the soil, the more likely those soils will erode in subsequent rainstorms – especially in locations with steep slopes. Erosion after fires can cause tremendous damage to homes and other structures in the years after a fire.

Geology

The team identified the geologic conditions and processes that have shaped and altered the watersheds and landscapes and assessed the impacts from the fire on those conditions and processes that could affect downstream critical values. Using the understanding of rock types and characteristics, geomorphic processes, and distribution of geologic hazards helps predict how the watersheds will respond to and be impacted by upcoming storms.

The team provided soil burn severity field data to the US Geological Survey Landslide Hazard Program to assist in forecasting the probability, potential volumes, and hazards of debris flows through their developed empirical models. The USGS Post-fire Debris Flow Hazard Model estimates a moderate to low combined hazard for debris flow throughout the fire. (see map on page 7).

Post-fire debris flow initiation requires high intensity, short-duration rainfall events, most often

correlated to convective storms in eastern Oregon. In high-severity burn areas of the McCully fire, the possible geologic response is expected to be small debris flows, hyper concentrated flows, sediment bulking, localized flooding, and dry ravel (gravity-induced downslope movement of rocks).

Hydrology

Primary watershed response is expected to include an initial flush of ash and burned materials, erosion in drainages and on steep slopes in the burned area, increased peak flows and sediment transport and deposition, and debris flows. Watershed response is dependent on the occurrence of rainstorms and rain-on-snow events and will likely be greatest with initial storm events. Increased watershed response is most likely in areas with high to moderate soil burn severity. Disturbances will become less evident as vegetation is reestablished, providing ground cover that reduces erosion and increases surface roughness which slows flow accumulation and increases infiltration.



Figure 2. North Fork John Day River along the fire perimeter.

A rapid hydrologic assessment suggests that there will be an increase in peak flows in the burned area. Smaller drainages with a greater extent of moderate and high soil burn severity will have the greatest increase in relative flow. Larger watersheds with lower soil burn severity still show signs of increased peak flow and may contain deposits of sediment and ash. These responses are expected to

be most pronounced during the first 1-3 years after the fire and will become less evident as vegetation and soil-hydrologic function recover.

Critical Values

The first critical value BAER teams assess is always human life and safety on National Forest System lands. During and after heavy rainstorms, Forest Service employees and visitors to National Forest System Lands could be threatened by floodwaters and debris flows. In addition, users of roads within and downstream of the burned areas may be affected by road washouts during and after heavy rainstorms. The National Weather Service can establish an early warning alert plan for areas that are potentially at risk from these events. The BAER team recommends general warning signs and communications to travelers on any National Forest System roads and trails within or directly adjacent to the fire.

Roads and Bridges

Roads in and downstream of burned areas are at risk of damage due to post-fire conditions. The most likely threat due to the fires is clogging of culverts, bridges, and other in-channel infrastructure from the higher levels of floatable debris (especially burned trees) in burned watersheds. Once blocked by debris, road drainage structures no longer function and the stream flows over the road, often causing considerable damage and limiting access. Various measures can reduce this risk, including protecting culvert inlets with debris racks, removing large floatable debris from channels upstream of structures before floods, and making heavy equipment available and readily mobilized during storm events to keep structures clear of debris.

Debris flows are less likely than debris-laden flood flows, but they pose a greater threat to roads when they do occur and are difficult to mitigate.

Critical values addressed in the BAER report include Forest Service System Roads and related drainage features. Treatments for the protection of

these roads include storm proofing of existing drainage features, new drainage dip installations, and storm inspection and response during or immediately after high intensity rainfall.



Figure 3. Fisheries specialist surveying a culvert near the McCully burned area.

Recreation

National Forest System recreation infrastructure includes campgrounds, trails, and day use areas. Most of the recreation assets within the burned area relate to Baldy Creek trail, Elkhorn Crest trail, McCully Forks Campground, and all-season use of roads as snowmobile routes. Similar to roads, recreation infrastructure could be damaged in post-fire storm events. The team proposes placing trail and road hazard signage, storm inspection and response, and public communication strategy.

Botany

Invasive plants adversely affect native plant communities through allelopathy (suppression of growth of a native plant by release of a toxin from a nearby invasive plant) and direct competition for water and resources. Over time, native plant diversity decreases as invasive plants expand, reducing habitat for native plant species and wildlife. Shifts from diverse native plant communities to non-native invasive plant

dominance could alter future fire behavior, intensity, extent, and season of burning.

The majority of the McCully fire is relatively free of invasive plants. However, the burned area creates conditions for invasive species to outcompete native plants. The team recommends a treatment of Early Detection, Rapid Response (EDRR) to monitor noxious weed infestation and expansion in areas disturbed due to mechanical suppression activity and burned areas prone to new noxious weed infestations.

Cultural Resources

The most typical post-fire threats to cultural sites are physical threats such as erosion or damage from (now dead) falling trees. In some cases, newly exposed artifacts are threatened by human damaging activities such as looting or vandalism. Cultural resources were evaluated by the team and treatments proposed as necessary to protect these values from post-fire threats.

Federally Listed Species

Critical habitat for Federally listed steelhead and bull trout occurs in select river drainages. Impacts to aquatic systems are directly related to the anticipated increases to runoff, erosion, and sedimentation in streams. Most critical habitat is anticipated to have short-term recoverable impacts. Treatments to road drainage structures will reduce the risk to critical habitat.

The Federally listed Whitebark Pine occurs in the McCully fire. The team recommends a treatment of verbenone to address unacceptable risks of mountain pine beetle infestation to surviving mature Whitebark Pine within the burned area.

Anticipated Vegetation Recovery

Post-fire recovery varies greatly based on climate, vegetation types and burn severity. It is typical for recovery to take between 3-5 years for reestablishment of ground cover. The persistence of

drought in the years following wildfires also delays the recovery time frame. Even with only a short period of time since fire containment, resprouting of trees and shrubs as well as emergence of forbs have been noted within the burned area.



Figure 4. Federally listed Whitebark Pine within the burned area.

Non-Forest Service Values

Since fire effects know no administrative boundaries, additional threats exist for assets not owned or managed by the Forest Service. Post-fire emergency response is a shared responsibility. There are several Federal, State, and local agencies that have emergency response responsibilities or authorities in the post-fire environment. The BAER team and local unit BAER Coordinator has engaged with interagency partners to facilitate consideration of off-Forest values covered through other programs with the relevant responsible entities.

Conclusion

There are multiple phases of post-fire actions after a wildfire covering suppression repair through long-term recovery. BAER is the rapid assessment of burned watersheds by a BAER team to identify imminent post-wildfire threats to human life and safety, property, and critical natural or cultural resources on National Forest System lands and take

immediate actions to implement emergency stabilization measures before the first major storms. The BAER team has identified imminent threats to critical values based on a rapid assessment of the area burned by the McCully Fire. The assessment was conducted using the best available methods to analyze the potential for damage from post-fire threats, including flooding and debris flows. The findings provide the information needed to prepare and protect National Forest System critical values against post-fire threats.

BAER treatments cannot prevent all the potential flooding or soil erosion impacts, especially after a wildfire-changed landscape. It is important for the public to stay informed and prepared for potentially dramatic increased run-off events. Many burned-area watersheds were already hydrologically responsive to rainfall and prone to erosion and sediment transport prior to the fire and will likely be even more responsive due to post-fire conditions. However, vegetation recovery is anticipated to be rapid with ground cover approaching pre-fire conditions within 1-3 years, which will attenuate any post-fire effects on watershed processes. The Forest Service will continue to provide information and participate in interagency efforts to address threats to public and private values resulting from the McCully Fire.

The Forest Service will continue to work towards long-term recovery and restoration of the burned area in coordination with efforts to rebuild and restore the communities affected. A vegetation burn severity map, or mortality map, may be produced as a part of the recovery efforts to help other scientists, such as wildlife biologists, botanists, and silviculturists understand what to expect from this changed landscape for wildlife habitat, invasive weeds, timber salvage, and reforestation needs.

Local Forest Service Leadership

Jeremy Aujero – Whitman District Ranger –
jeremy.aujero@usda.gov

Local Forest Service BAER Coordinator

Mary Young – mary.young@usda.gov

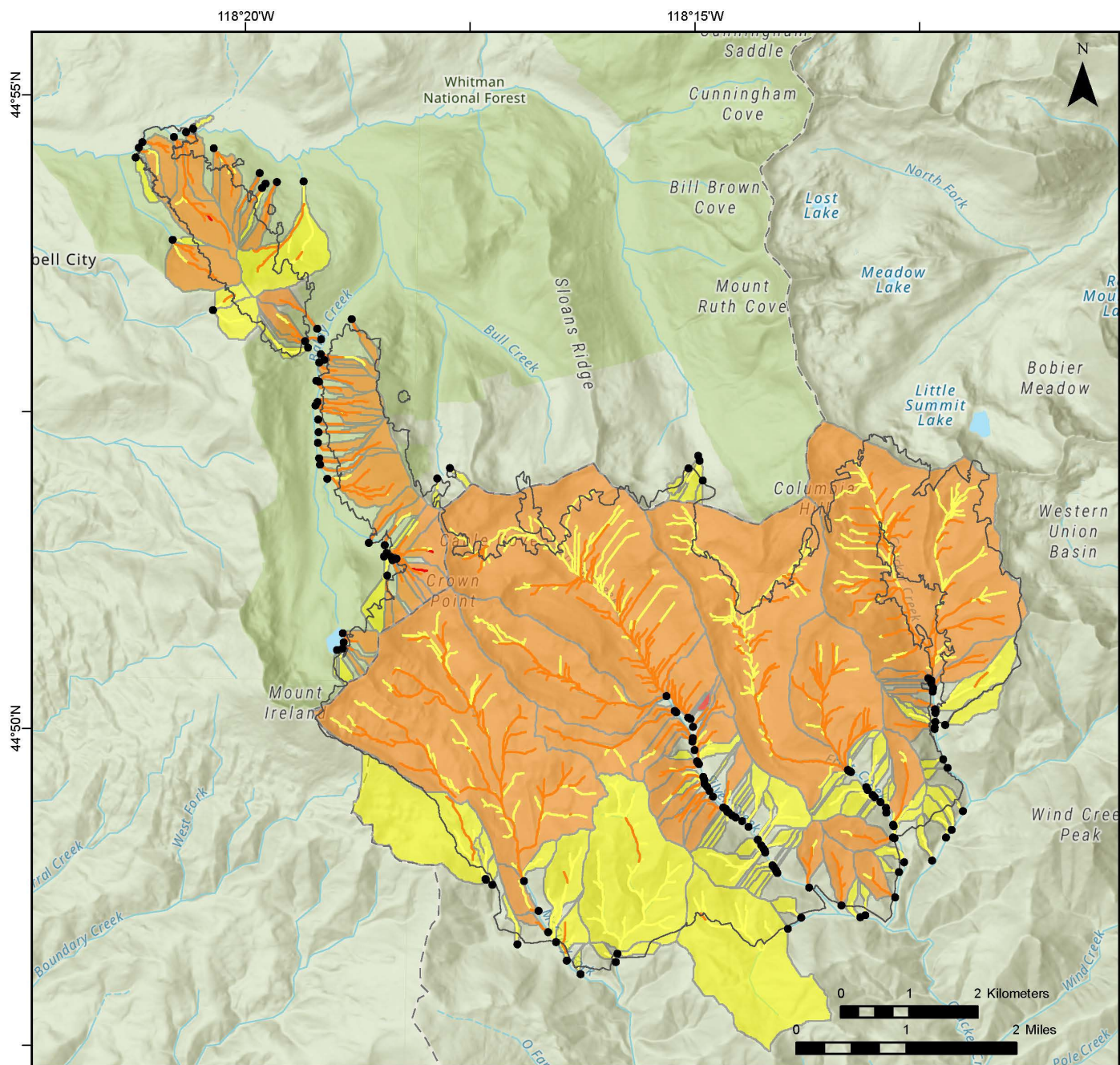
References:

Parson, Annette; Robichaud, Peter R.; Lewis, Sarah A.; Napper, Carolyn; Clark, Jess T. 2010. Field guide for mapping post-fire soil burn severity. Gen. Tech. Rep. RMRS-GTR-243. Fort Collins, CO: U.S. Department of Agriculture, Forest Service, Rocky Mountain Research Station. 49 p.
(https://www.fs.usda.gov/rm/pubs/rmrs_gtr243.pdf)

2026 McCully Fire, Wallowa-Whitman National Forest, Oregon

Combined Hazard

Design storm: Peak 15-minute rainfall intensity 24 mm/h



Base from: Esri and its licensors, © 2026
Universal Transverse Mercator Zone 11N
North American Datum of 1983

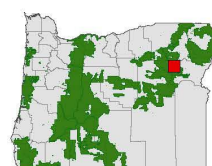
EXPLANATION

● Watershed outlet

Combined Hazard



Assessment Area
Wallowa-Whitman National Forest, Oregon



This work is preliminary and subject to revision. It is being provided due to the need for timely "best science" information. The assessment is provided on the condition that neither the U.S. Geological Survey nor the United States Government may be held liable for any damages resulting from the authorized or unauthorized use of the assessment.