USDA Forest Service
U.S. DEPARTMENT OF AGRICULTURE

| Wallowa-Whitman, Umatilla, & Malheur National Forests | September 2026

Anthony, Burnt Creek, Olive Butte and Salmon Fire Burned Area Summary

Burned Area Report

Fire Background

The Anthony, Salmon, and Olive Butte Fires ignited by lightning strikes on July 8, 2026. The Burnt Creek Fire ignited by a lightning strike on July 17, 2026.

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 require 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 August 11, 2026, for Anthony, Burnt Creek, Olive Butte, and Salmon Fires. 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. Mosaic burn pattern on the Salmon Fire.

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 Anthony burned area is High (9%), Moderate (27%), Low (59%), and Very Low/Unburned (5%) (see map on page 6).

Mapped and validated SBS for the Burnt Creek burned area is High (1%), Moderate (14%), Low (74%), and Very Low/Unburned (11%) (see map on page 7).

Mapped and validated SBS for the Olive Butte burned area is High (8%), Moderate (27%), Low (59%), and Very Low/Unburned (5%) (see map on page 8).

Mapped and validated SBS for the Salmon burned area is High (1%), Moderate (20%), Low (64%), and Very Low/Unburned (15%) (see map on page 9).

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 low combined hazard for the Salmon Fire and Burnt Creek Fire, and a moderate combined hazard for the Olive Butte Fire and Anthony Fire. (see maps on pages 10-13).

Figure 2. Watershed specialists assessing a burned drainage near Lightning Creek, within the Salmon Fire.

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.

Post-fire conditions have been evaluated to determine how changes to soil conditions as well as hillslope and channel hydrology are expected to impact the values at risk downstream of the fires. A rapid hydrologic assessment suggests that there will

be elevated risk of increased runoff, ash and sediment.

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.

Figure 3. Engineering specialist assessing road infrastructure on the Anthony 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 and storm inspection and response.

Other Forest Service Property

Other Forest Service property critical values that were assessed for post-fire threats are two abandoned mine sites adjacent to the Olive Butte Fire, which the Forest Service has invested in treatment actions under the Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA). Coordination with Forest Service Environmental Engineers, who manage the sites has and will continue to occur to assess and mitigate risks at these sites in the post-fire environment.

Recreation

National Forest System recreation infrastructure in the burned areas include trails and trailheads. Most of the recreation assets within the Salmon, Olive Butte, Burnt Creek, and Anthony Fires burned area relate to the Chico & Davis Creek Trails (Burnt Creek) and all-season use of roads as snow mobile routes (Olive Butte). No unacceptable risks to recreation infrastructure were identified. No BAER treatments are proposed but users should be aware of post-fire risks.

Botany

A diverse range of native plant communities occur across all four fires, including forested and non-forested habitats. In the Anthony Fire, two Forest Sensitive Species of moonwort occur in areas of new dozer lines and fuel breaks.

Invasive plants adversely affect native plant communities through allelopathy (suppression of 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.

Current infestations are primarily located along roads, dozer lines, and trails throughout the burned areas, with interior areas being largely un-infested. However, the burned areas and suppression activities create conditions for invasive species to outcompete native plants.

The team recommends Early Detection, Rapid Response (EDRR) to monitor and treat for noxious weed infestation and expansion in areas disturbed due to mechanical suppression activities. Treatments include manual and mechanical removal, and herbicide application. Some disturbance areas in Salmon and Olive Butte Fires have known patches of state-listed noxious weeds, and it is likely that propagules were carried into the burns and areas of disturbance. In the Burnt Creek Fire footprint there are two small sites of high-priority noxious weeds which have not yet become established in the region. Treatment of these sites would prevent their rapid expansion into the burned areas.

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. Coordination with local tribal partners has and will continue to occur.

Federally Listed Species –Fisheries & Botany

All four fires are within the current range of ESA-listed species. There is Threatened Lower Snake Steelhead habitat within Burnt Creek Fire, Threatened Mid-Columbia Steelhead and Mid-Columbia Bull Trout habitat in the Salmon and Olive Butte Fires and Threatened Mid-Columbia Bull Trout habitat within the Anthony Fire. Threats include additional loss of habitat in the fire areas due to mass soil movement, flooding, and debris flows.

Critical habitat for Federally listed Steelhead and/or Bull Trout occurs in Anthony Creek and Indian Creek (Anthony Fire), Davis and Swamp Creek (Burnt Creek Fire), Clear, Beaver and Olive Creeks (Olive Butte Fire) and Salmon and Lightning Creeks (Salmon Fire). Impacts to aquatic systems are directly related to the anticipated increases to runoff, erosion, and sedimentation in streams.

Figure 4. Bull Trout in Indian Creek on the Anthony Fire.

The Federally listed Whitebark Pine occurs in the Anthony and Salmon fires. The team recommends a treatment of verbenone to address unacceptable risks of mountain pine beetle infestation to surviving mature white bark pine within the Anthony and Salmon burned areas.

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 areas.

Non-Forest Service Values

Since fire effects have 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 have 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 areas burned by the Salmon, Olive Butte, Burnt Creek, and Anthony Fires. 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. The recommended BAER treatments in this report have been approved.

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 1-5 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 Salmon, Olive Butte, Burnt Creek, and Anthony Fires.

The Forest Service will continue to work towards long-term recovery and restoration of the burned areas 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

Wallowa-Whitman – Jeremy Aujero - jeremy.aujero@usda.gov

Local Forest Service BAER Coordinator

Wallowa-Whitman – 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)

Anthony BAER

Soil Burn Severity
Burned Area Emergency Response (BAER)

Miles
0 0.28 0.55 1.1
N

Soil Burn Severity

Soil Burn Severity is a measure of the fire's effects on the ground surface and soil condition. This map identifies the fire-induced changes in soil and ground surface properties that may affect infiltration, runoff, and erosion potential. The BAER Team uses this map to identify areas of unacceptable risk to a critical value and where mitigating treatments may be most effective. This product is appropriate for wildland landscapes and does not represent fire effects in developed areas.

Severity indicators

High soil burn severity: Most or all of the pre-fire ground cover and surface organic matter (litter, duff, and fine roots) is generally consumed, and charring may be visible on larger roots. Soil is often gray, orange, or reddish at the ground surface where large or dense fuels were concentrated and consumed. Soil structure is often altered and less stable at the surface.

Moderate soil burn severity: Up to 80 percent of the pre-fire ground cover may be consumed but generally not all of it. There may be potential for recruitment of effective ground cover from scorched needles or leaves remaining in the canopy that will soon fall to the ground. Soil structure is generally unchanged.

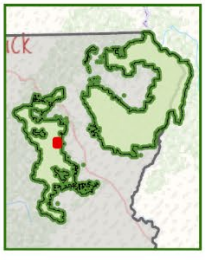
Low soil burn severity: The ground surface, including any exposed mineral soil, may appear brown or black (lightly charred), and surface organic layers are not completely consumed. The canopy and understory vegetation will likely appear "green."

Very Low soil burn severity or Unburned: Little to no burn expected within these areas except in small patches, or where fuels were sparce. Canopy and ground litter almost completely intact. Little to no vegetation mortality expected.

For additional information including photo examples of soil burn severity see the Field Guide for Mapping Post-Fire Soil Burn Severity at: https://www.fs.usda.gov/rm/pubs/rmrs_gtr243.pdf

Date: 8/19/2026

Wallowa-Whitman National Forest

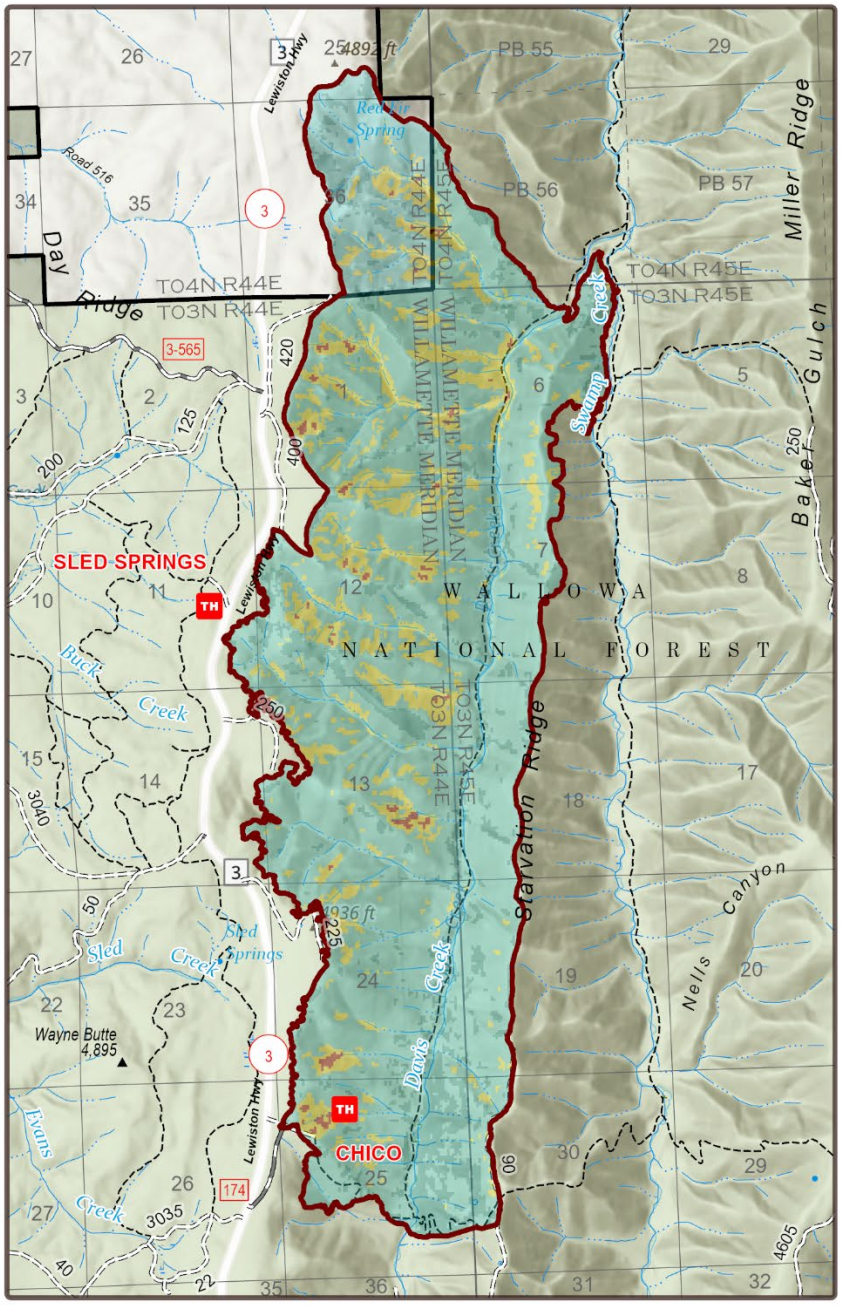


Oregon

Soil Burn Severity	Acres	% Burned
High	246	9%
Moderate	733	27%
Low	1,564	59%
Very Low or Unburned	132	5%
Assessment Boundary	2,675 acres	

Soil Burn Severity
Burned Area Emergency Response (BAER)

Miles 0 0.42 0.85 1.7 N



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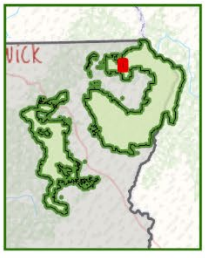
Wallowa-Whitman National Forest

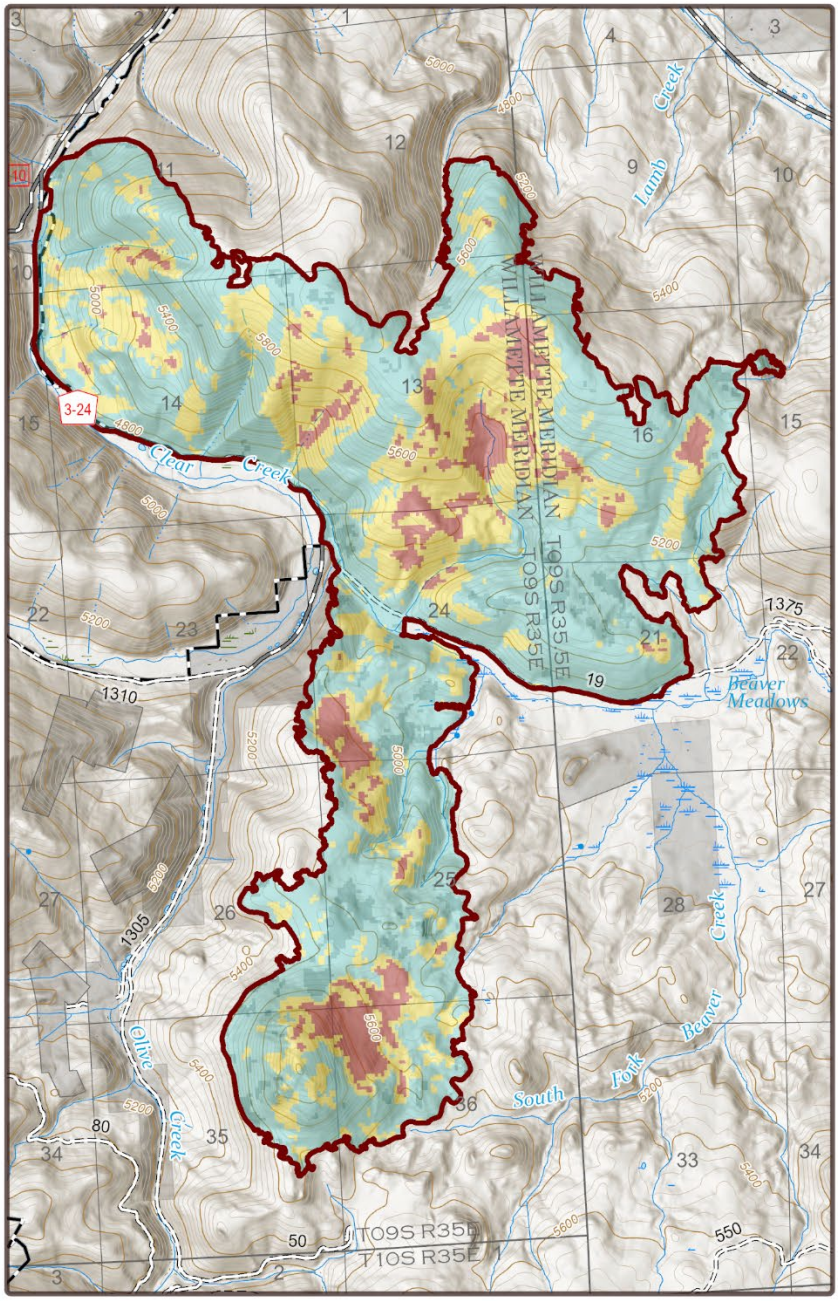


Oregon

Soil Burn Severity	Acres	% Burned
High	30	1%
Moderate	622	14%
Low	3273	74%
Very Low/Unburned	480	11%
Assessment Boundary	4,406 acres	

Soil Burn Severity
Burned Area Emergency Response (BAER)

Miles
0 0.33 0.65 1.3
N



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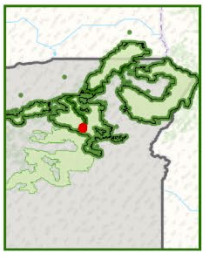
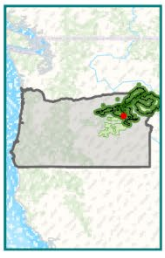
Date: 8/21/2026

Wallowa-Whitman National Forest



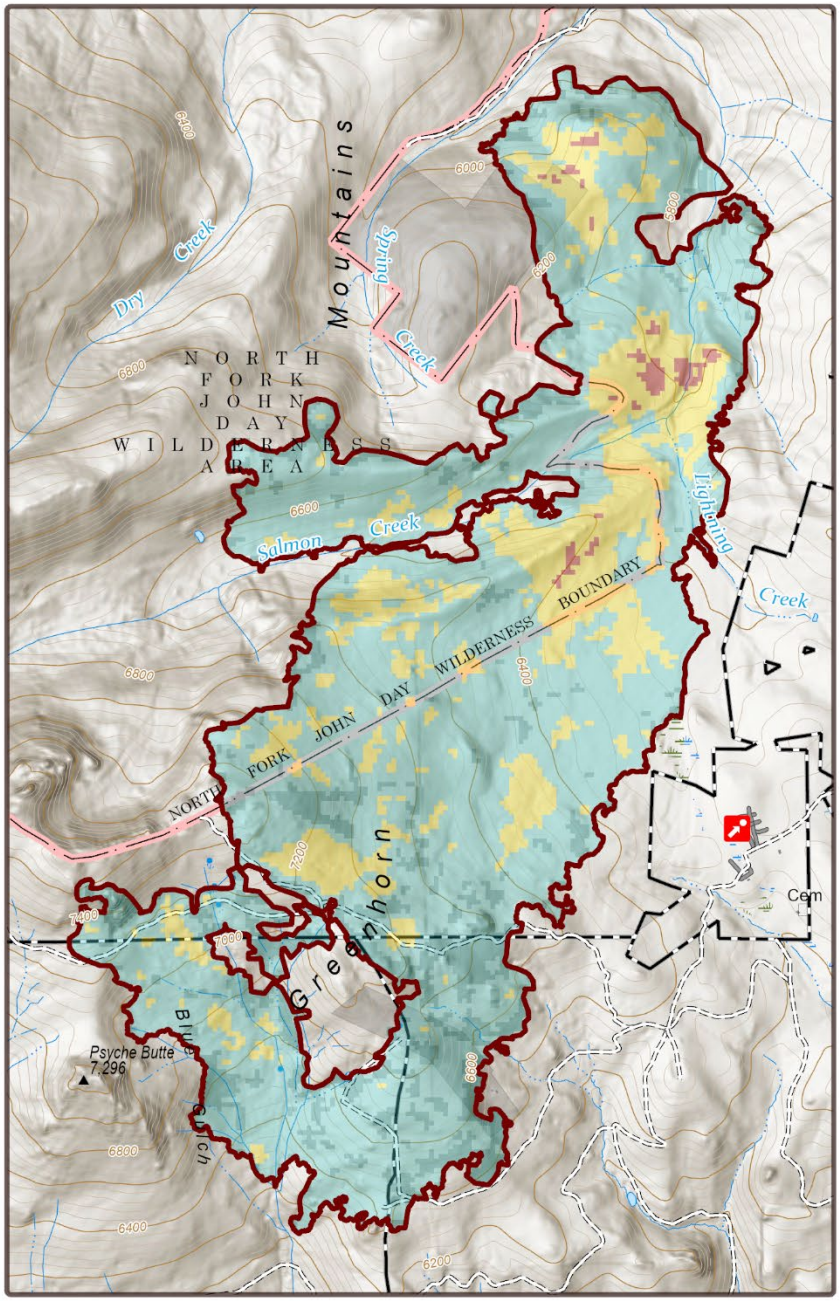
Oregon



Soil Burn Severity	Acres	% Burned
High	256	8%
Moderate	857	27%
Low	1805	59%
Very Low or Unburned	160	5%
Developed	1	< 1%
Assessment Boundary	3,079 acres	

Soil Burn Severity
Burned Area Emergency Response (BAER)

Miles 0 0.23 0.45 0.9 N



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Moderate soil burn severity: Up to 80 percent of the pre-fire ground cover may be consumed but generally not all of it. There may be potential for recruitment of effective ground cover from scorched needles or leaves remaining in the canopy that will soon fall to the ground. Soil structure is generally unchanged.

Low soil burn severity: The ground surface, including any exposed mineral soil, may appear brown or black (lightly charred), and surface organic layers are not completely consumed. The canopy and understory vegetation will likely appear "green."

Very Low soil burn severity or Unburned: Little to no burn expected within these areas except in small patches, or where fuels were sparce. Canopy and ground litter almost completely intact. Little to no vegetation mortality expected.

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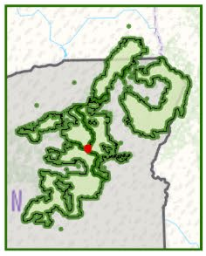
Date: 8/21/2026

Malheur National Forest Wallowa-



Oregon

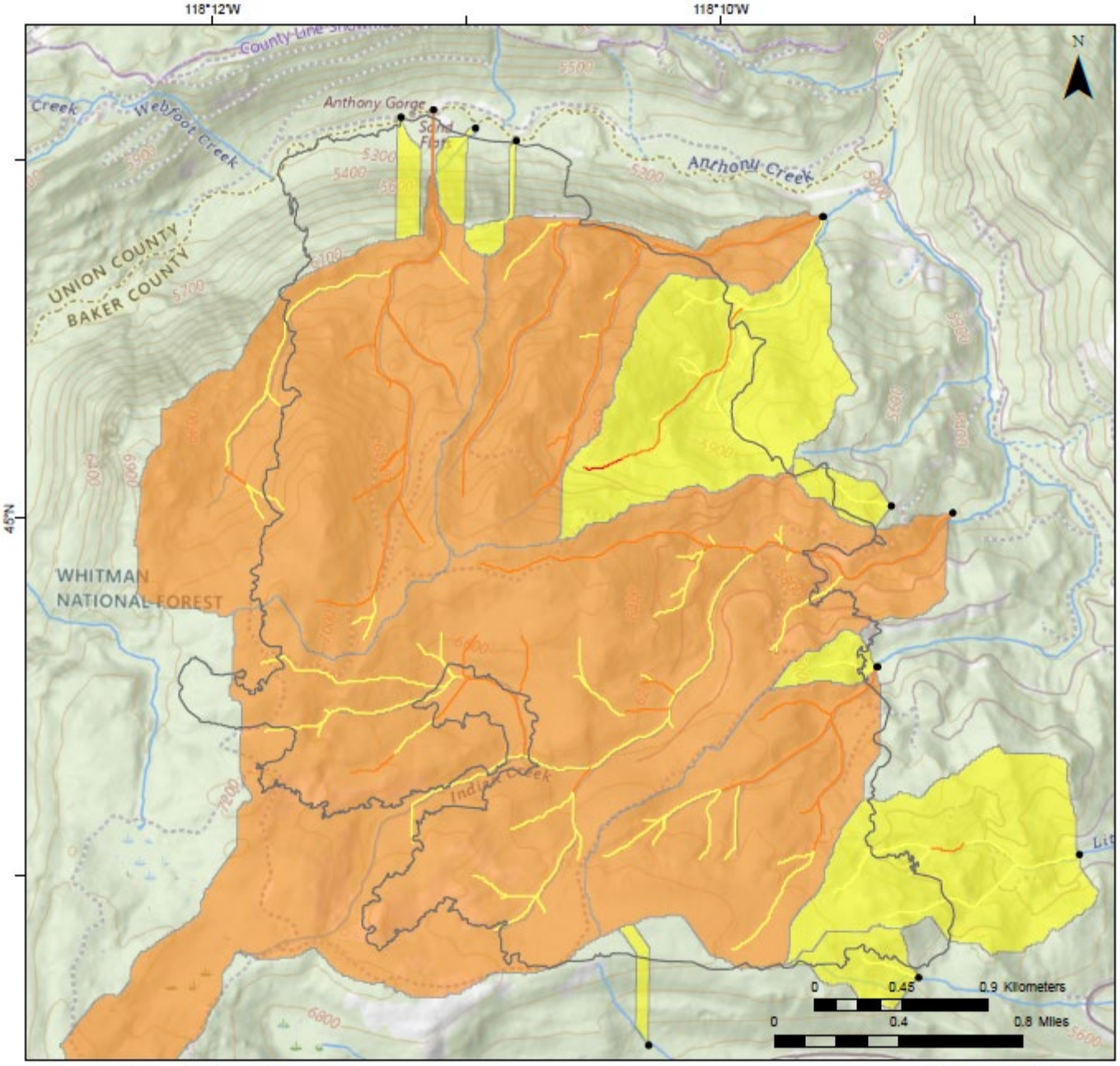
Soil Burn Severity	Acres	% Burned
High	14	1% High
Moderate	298	20% Moderate
Low	965	64% Low
Very Low or Unburned	226	15% Very Low or Unburned
Assessment Boundary	1,503 acres	

USGS
science for a changing world

2026 Anthony Fire, Wallowa-Whitman National Forest, Oregon

Combined Hazard

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



Base from: U.S. Geological Survey digital data
Universal Transverse Mercator Zone 11N
North American Datum of 1983

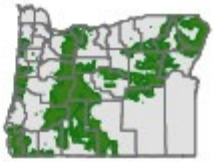
EXPLANATION

● Watershed outlet

Combined Hazard

Low | Moderate | High

Assessment Area
Wallowa-Whitman National Forest, Oregon

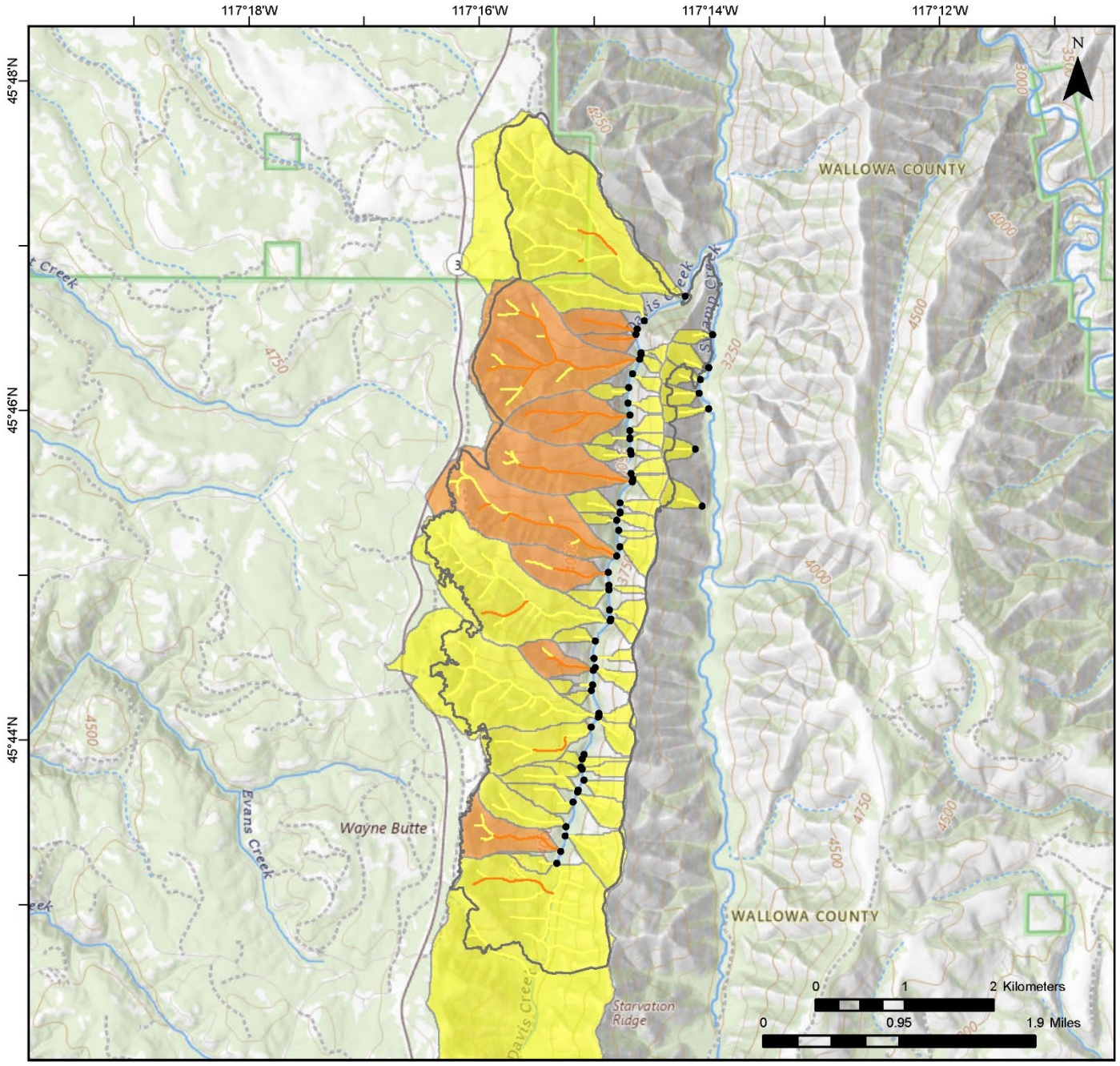


USGS
science for a changing world

2026 Burnt Creek Fire, Wallowa-Whitman National Forest, Oregon

Combined Hazard

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



Base from: U.S. Geological Survey digital data
Universal Transverse Mercator Zone 11N
North American Datum of 1983

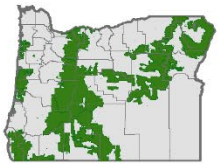
EXPLANATION

● Watershed outlet

Combined Hazard

Low | Moderate | High

Assessment Area
Wallowa-Whitman National Forest, Oregon

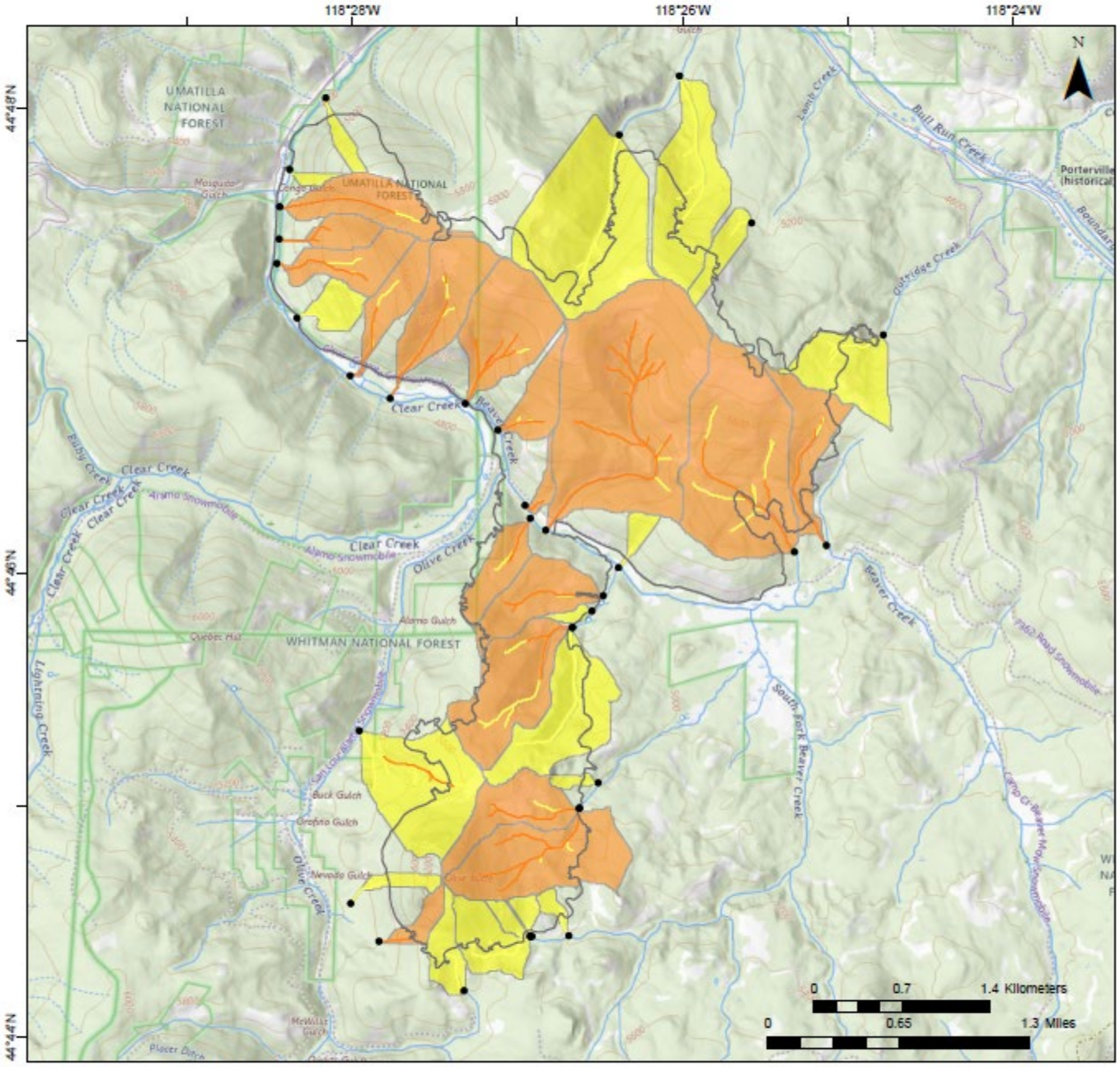


USGS
science for a changing world

2026 Olive Butte Fire, Umatilla National Forest, Oregon

Combined Hazard

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



Base from: U.S. Geological Survey digital data
Universal Transverse Mercator Zone 11N
North American Datum of 1983

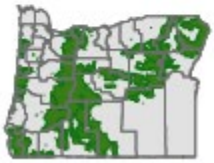
EXPLANATION

● Watershed outlet

Combined Hazard

Low | Moderate | High

Assessment Area
Umatilla National Forest, Oregon



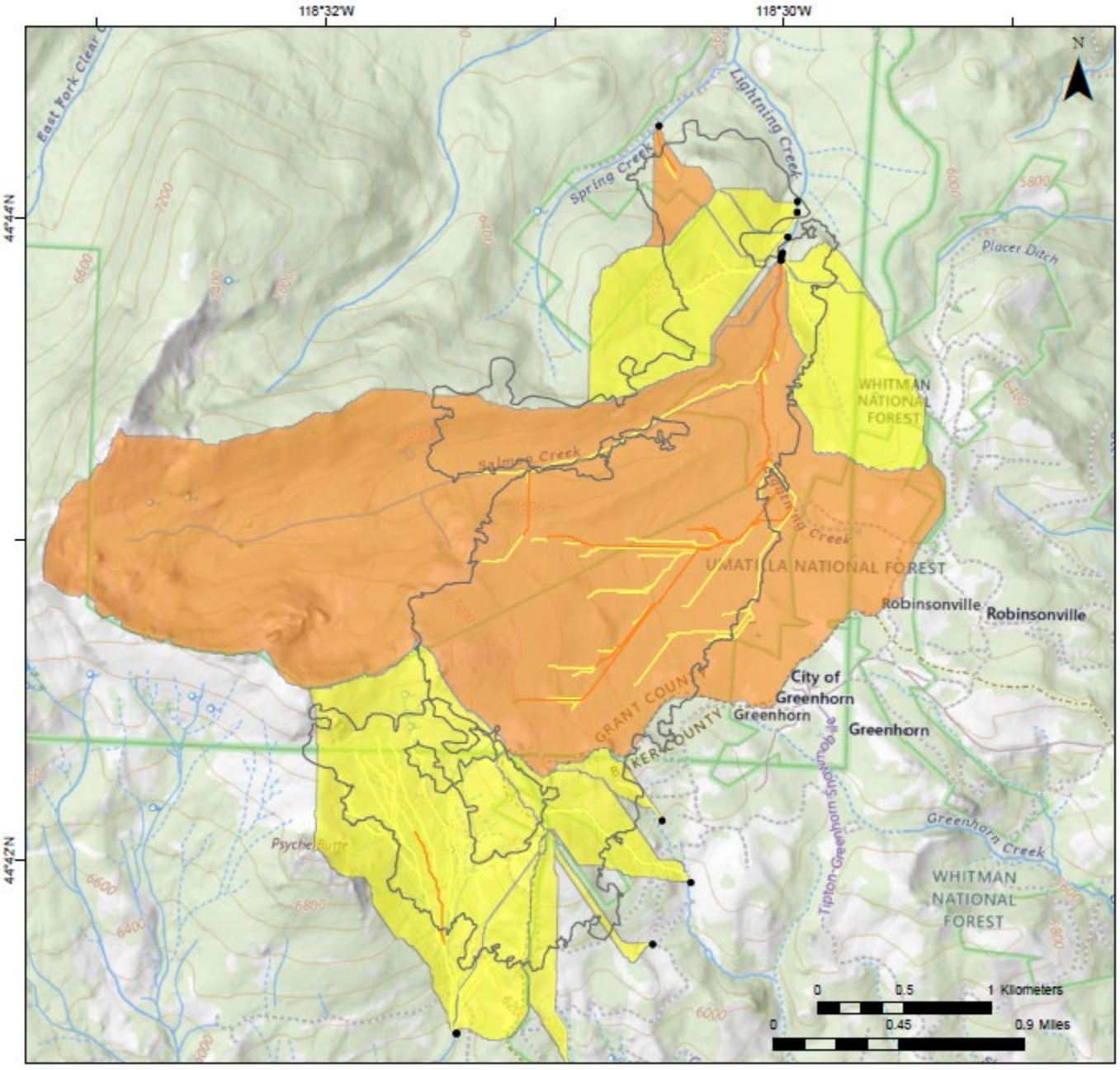
This work is preliminary and subject to revision. It is being provided due to the need for timely "best science" information. The assessment is provided on the condition that neither the U.S. Geological Survey nor the United States Government may be held liable for any damages resulting from the authorized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

USGS
science for a changing world

2026 Salmon Fire, Umatilla National Forest, Oregon

Combined Hazard

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



Base from: U.S. Geological Survey digital data
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North American Datum of 1983

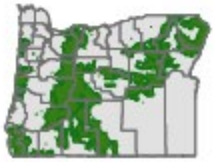
EXPLANATION

● Watershed outlet

Combined Hazard

Low | Moderate | High

Assessment Area
Umatilla National Forest, Oregon



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