

BAER Analysis Briefing: Little Bridge Creek Interim 10/09/2014



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Little Bridge Creek Fire Okanogan County, Washington Okanogan-Wenatchee National Forest, Methow Valley District

The Little Bridge Creek Fire started on August 2, 2014 and burned 4,934 acres of National Forest System lands. It was contained on August 25 at a cost of \$12,518,000.

Elevations across the burned area range from 2,800 to about 6,500 feet. Vegetation types include dry pine forests, riparian habitats, mid-elevation mesic forest, and high-elevation mixed-conifer montane forests. Primary conifer species include ponderosa pine, Douglas-fir, larch, lodgepole pine, and Engelmann spruce, with subalpine fir found on the highest peaks. Aspen also occurs throughout most forest types.

The burned area includes 6.4 miles of intermittent streams and 6.9 miles of perennial streams, along with 7.1 miles of roads and 3 miles of trails. Of the total fire area, 2,889 (59 percent) were burned at low severity, 774 (16 percent) at moderate severity, and 794 (16 percent) at high severity. Approximately 1,570 acres were assessed with water-repellent soils. Across the burned area, soil erosion hazard ratings were identified at low hazard for 33 acres, moderate hazard for 72 acres, and high hazard for 4,593 acres, with an erosion potential calculated at 3.3 tons per acre and a sediment potential of 528 to 603 cubic yards per square mile.

This BAER assessment addresses post-fire conditions on NFS lands of the Methow Valley Ranger District on the Okanogan-Wenatchee National Forest. The Little Bridge Fire burned north of the Twisp River in the Little Bridge drainage. The BAER team included interagency personnel from the USFS, NPS, BIA, FWS, and BLM, representing engineering, hydrology, fisheries, soils, cultural resources, vegetation, and GIS. An in-briefing on September 2 was held to strategize field assessments and field assessments were conducted from September 3-9.

Watershed	Low	Moderate	High
Little Bridge Creek	2,224	471	554
Middle Twisp River	664	303	240
Thompson Creek-Methow River	1	0	0
Wolf Creek	1	0	0
Total	2,890	774	794

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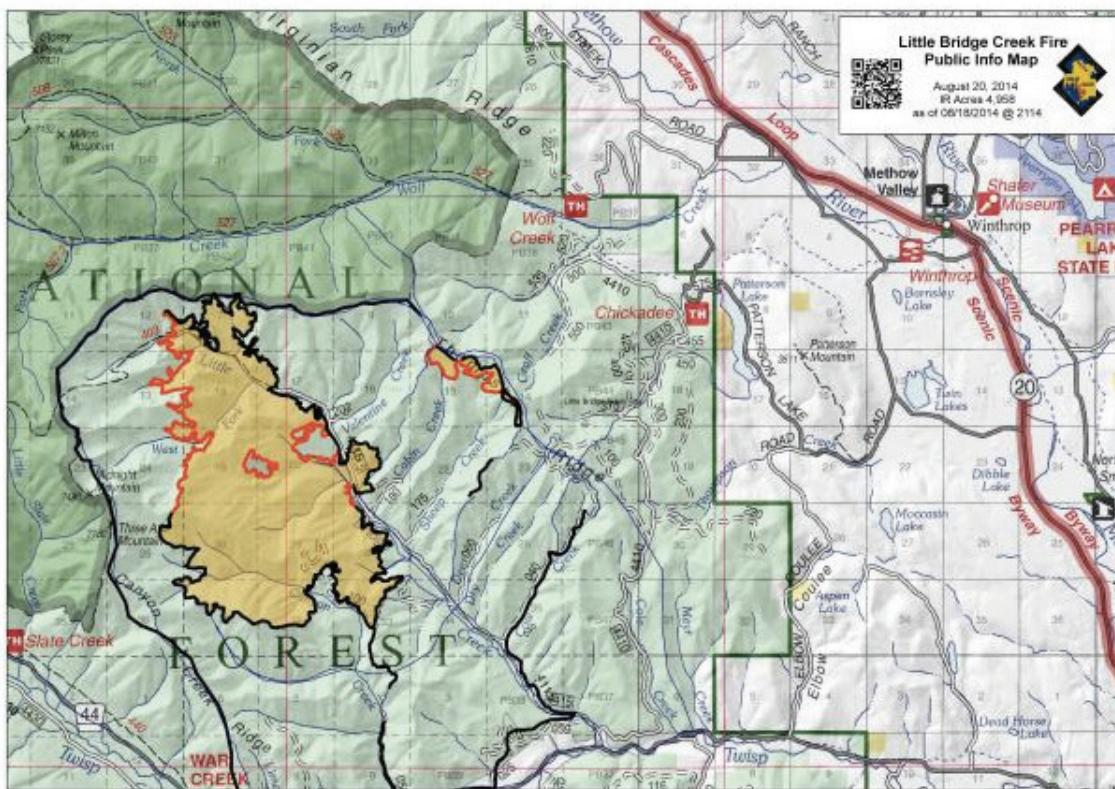


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Hydrologic design factors:

The Little Bridge Creek Fire burned within the Twisp River Watershed, and the percentage of the watershed burned was used to characterize post-fire hydrologic response. About 21 percent of the Little Bridge Creek watershed burned, with only 7 percent at high/moderate severity. About 5 percent of the Middle Twisp River watershed burned, with only 2 percent high/moderate severity. The stream with the greatest potential to be affected by the fire is Little Bridge Creek. Most of the riparian vegetation is intact, which reduces the risk of short- and long-term detrimental effects to hydrologic function. Estimated vegetative recovery period is 3 to 5 years.



Little Bridge Creek Fire perimeter 08/20/2014

Identified values-at-risk

Roads:

Risks to human safety exist from flooding, hazard trees, and rockfall along roads downstream or downslope of burned areas, especially those with moderate-high burn severity. Forest Road 4415000 is on the northwest side of the fire, and Little Bridge Creek flows between this road and the burned area. Risk to road infrastructure includes

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expected flooding of the creek and resulting lateral instability of the channel affecting the roadway. Forest Roads 4415100 and 4415130 and 4415140 are in proximity to Canyon Creek. Flooding is expected, with resulting lateral instability of the channel affecting these roads.

Fisheries and riparian habitat:

Steelhead and bull trout and their designated Critical Habitat are at risk from post-fire runoff, erosion, and sediment delivery, which could negatively affect steelhead populations and cause degradation of habitat. There are 0.1 miles of designated Critical Habitat within the fire area, but there are 16 miles of critical habitat within 3 miles of the fire perimeter. Designated Critical Habitat for bull trout includes 2.4 miles inside the fire area and 32 miles within 3 miles of the fire perimeter. Hydrologic function of hillslopes and channels may be affected by the loss of soil cover and structure, decreased infiltration, hillslope erosion and sediment delivery to stream channels, and increased stream channel runoff. Flooding and debris flows are expected. About 32 percent of the fire burned at moderate to high severity, but riparian habitat within Little Bridge remains mostly intact, which will help buffer fire effects.

Non-forested native or naturalized communities:

The slow natural regeneration following moderate-to-high burn severity with consumption of the seed bank threatens the native or naturalized communities of grass/shrub steppe habitat. Several noxious weed types exist within the burned area, but a recently discovered population of yellow toadflax at the bottom of Little Bridge Creek poses a new threat to the native plant communities in the area and in the Methow Valley.

Forested native or naturalized communities:

Significant tree mortality occurred in some areas, and the natural regeneration will be delayed by loss of the canopy, seed bank, and organic soil layer.

Soil productivity:

The BAER team identified a high probability of immediate detrimental soil displacement in areas affected by moderate and high burn severity. The loss of effective groundcover and above-ground organic matter will leave soils susceptible to erosion for 3 to 5 years in high-severity areas and 2 years in moderate.

Planned treatments:

Invasive plants and weed assessments will be conducted in FY2015 for Early Detection and Rapid Response (EDRR) on any new infestation within the fire perimeter. Treatments will occur at proper phenology of each species to ensure maximum control. The fire area will be assessed for new infestations of noxious weeds; assessments from FY2015 will establish baseline data to be tracked through the Methow Valley Ranger District GIS databases and will be used to determine the priority, level, and intensity of control for new infestations for one year after the fire containment date. Integrating weed projects with Okanogan County, Cooperative Weed Management Area on state and private lands will reduce noxious weed populations and weed control costs to all cooperators. Treatment sites will be evaluated annually for the next three years.

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Storm patrols will identify road problems and clear, clean, and/or block damaged roads. Patrollers will focus on roads and bridges with the most traffic, those that are of more value to the transportation system, and roads with high-risk structures prone to storm damage. Targeted roads include Little Bridge Creek Road and Little Bridge Saddle Road. Patrols will identify obstructions such as rocks, sediment, washouts, and plugged culverts, and will remove obstructions and other hazards.

Roads within the fire area have drainage structures that cross streams in areas with a moderate-to-low burn severity, with potential for increased runoff and debris flows. Storms could result in plugging culverts or exceeding maximum flow capacity, causing additional erosion and debris farther down the drainage caused by failures of the fill slopes of the roads.

Rolling and falling rock from burned slopes also risks human safety, along with the risk of falling trees, flash floods, and mudflows. Post-fire flooding can interrupt access, and even normal storm frequencies and magnitudes can easily initiate rill and gully erosion and cover roads or cause washouts. Monitoring will identify work needed to maintain and/or repair damage to road surfaces and drainage structures to provide safe access.



Safety and warning signs on Forest Road 4415000 near Sheep Creek and on 4415100 near 4415115 will identify of the dangers associated with a burned area at major entry points into the burned area.

Ongoing monitoring will ensure that post-fire projects are completed as prescribed. Effectiveness monitoring for area closures is included to determine whether additional law enforcement presence or public information is needed to achieve compliance and ensure public safety.

Little Bridge Creek Fire 08/07/2014

WHAT YOU NEED TO KNOW ABOUT DEBRIS FLOWS: <http://bit.ly/1nJ6P2t>

Questions? Check for updates on the BAER team website at CentralWashingtonFireRecovery.info or call the Okanogan-Wenatchee National Forest headquarters office at 509-664-9200.