

Sierra National Forest
Burned Area Emergency Response (BAER)
 Post-Fire BAER Assessment



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ROUGH NORTH ZONE POST-FIRE BAER ASSESSMENT REPORT SUMMARY



FS-2500-8 Burned-Area Report: Watershed Analysis, Condition, and Response

On July 31, 2015, the [Rough Fire](#) started by lightening on the High Sierra Ranger District within the steep northern side of the Kings River drainage. By October 6, the wildfire burned approximately 151,600 acres on the Sierra National Forest (NF), Sequoia NF and Kings Canyon National Park.

A Burned Area Emergency Response (BAER) assessment team delineated an analysis area on the north side of the wildfire within the Sierra NF to survey and assess the burned area of approximately 30,822 acres called the North Zone of the Rough Fire. The BAER team evaluated the burned watersheds to determine post-fire conditions, values-at-risk such as human life and safety, property, and critical natural and cultural resources, emergency determination on those values and the potential for increased post-fire flooding, sediment flows, rock slides, and hazard trees. The team also recommended emergency stabilization treatments and actions to reduce the risks to those values.

The BAER assessment team's analysis of the burned areas within the Rough Fire and recommended emergency treatments were documented in a [Forest Service Burned-Area Report](#). This report was recently submitted to the Pacific Southwest Region (Region 5) Regional Forester by the Forest Supervisor for the [Sierra National Forest](#). The following are a summary of the BAER team's burned area analysis for the North Zone of the Rough Fire:

- ✓ 4 watersheds were analyzed and modeled in the North Zone of the Rough Fire to compare pre-fire conditions to post-fire predicted response: Patterson Creek-NF Kings River, Rancheria Creek-NF Kings River, Converse Creek-Kings River, and Verplank Creek-Kings River watersheds.
- ✓ There are 602 miles of ephemeral streams, 68 miles of intermittent streams and 55 miles of perennial streams.
- ✓ There are 53 miles of roads and 28 miles of trails.
- ✓ There are 4,571 acres of water repellent soils.
- ✓ There are 14,196 acres with high and very high hazard ratings for soil erosion, 11,574 acres with moderate ratings for soil erosion, and 2,807 acres with low hazard ratings for soil erosion.
- ✓ There are 20,733 (67%) acres of unburned/low soil burn severity, 8,250 (27%) acres of moderate soil burn severity and 1,840 (6%) of high soil burn severity in the North Zone of the Rough Fire.

The different BAER soil burn severity categories are areas and classes of impaired soil functions and are the key element BAER specialists use to determine if threats exist, whether fire-caused changes in soil characteristics exist that affect the soil hydrologic function, and at level. The identified soil burn severity levels in the burned areas of a wildfire become a baseline for resource specialists to monitor changes in soil hydrologic function and vegetative productivity as the burned watersheds recover.

High and moderate soil burn severity classes have evidence of severe soil heating. Across the Rough burned areas, these generally occur in a patchy distribution, with some concentrated zones of high burn severity. Soil seedbank and water infiltration characteristics are impacted in areas that have burned at high or moderate severity, especially where there were extended or multiple burning periods. Natural recovery is slower where little or no vegetative ground cover

remains, and increased surface water runoff will result in increased soil erosion at these sites. The low to very low soil burn severity areas still have good surface soil structure, intact fine roots and organic matter, and should recover more quickly once revegetation begins and the soil cover is re-established.

Vegetation types in the North Zone Rough burn perimeter are predominantly mixed conifer dominated by pine (27%) and canyon live oak (22%). Plant communities varies from blue oak savanna, chaparral and live oak woodland at the lower elevations to ponderosa pine, mixed conifer forest, montane meadows, and red fir forest at the upper elevations. Various riparian plant communities are found along river, streams, and within meadows. Kings Canyon is a very steep drainage with a large elevation gain resulting in a wide variety of vegetation types and long drainage lengths.

Identified Values-at-Risk, Threats, and Emergency Conditions

Threats to the values-at-risk identified below result from the potential for increased water flows, loss of water control, increased sediment delivery, debris flow occurrence, rock fall, and incursion of invasive weeds. Emergency post-fire conditions for the Rough Fire North Zone were identified by the BAER team for the following values-at-risk:

1. Threats to human life, safety, and property from rock fall and increased water runoff and debris flows on 11S007, and 11S012 forest roads; increased water runoff and debris flows on 11S044B, 11S045A and 12S001 forest roads;
2. Increased risk of water runoff impacting trail tread and drainage crossings, and to a lesser degree human life and safety on Rogers Ridge, Cliff Camp, Bear Wallow, Statham hiking trails, Kings River National Recreation Trail, and Spanish OHV trail;
3. Threats to critical natural and cultural resources from off highway vehicles (OHVs) threatening natural vegetative recovery, soil productivity, heritage resources sites and introduction and spread of noxious weeds into the burned area; and
4. Threats to natural vegetative recovery by invasion of noxious weeds spreading into the fire area through vectors related to fire suppression activities.

Emergency Stabilization Treatments

Treatment Objectives

The BAER assessment team's emergency stabilization objectives for the burned areas are to protect, mitigate and reduce the potential for identified post-fire threats, including increased soil erosion/sediment yield and water runoff on steep slopes, to:

1. Downstream human life, safety, and property;
2. Forest Service infrastructure and investments such as roads and trails;
3. Critical natural resources; and
4. Native and naturalized plant communities from new noxious weed infestations.

In addition to on-Forest efforts to reduce the threats to National Forest values and resources, the BAER team and the Forest will warn users of Forest Service roads and trails of hazards present in the burned area, and communicate and coordinate with other agencies such as the National Resource Conservation Service (NRCS), and counties to assist private entities and communities including private residents, domestic water suppliers, hydroelectric infrastructure managers, and public utilities to achieve post-fire recovery objectives.

The following post-fire emergency stabilizations measures and treatments have been approved:

- Storm-proof and stabilize the transportation roads system with improved water drainage structures and features to prevent damage resulting from post-fire watershed conditions such as soil erosion and storm water run-off, public safety hazards to improve the safety of forest visitors and employees. Conduct storm patrols to monitor roads and drainage structures within the burned areas.
- Storm-proof and stabilize burned area hiking trails with improved water drainage structures and features to prevent damage resulting from post-fire watershed conditions. Close trails, and/or install hazard warning signage along trails affected by the fire as part of an area closure. Conduct post-storm inspection of problem areas with emergency repairs if needed.

- Reduce the potential for impaired vegetative recovery, and the introduction and spread of invasive weeds by conducting early detection surveys, rapid response eradication of noxious weeds along areas disturbed by fire suppression activities (62.5 miles of fireline construction), equipment concentration points (31.2 acres), high and moderate soil burn severity areas near these fire suppression disturbed areas, and other high priority areas.
- Reduce the potential for increased unauthorized access to the burned area from off highway vehicle (OHV) users by installing access barriers and hazard signage to protect forest visitors, prevent OHV incursions, discourage soil disturbance, and protect vegetative recovery.
- Install burned area warning signs to caution forest visitors recreating within the burned areas.
- Continue to communicate risks to the public, community groups, and cooperating agencies.
- Continue to work and coordinate with interagency cooperators, partners, and affected parties and stakeholders.
- Assist cooperators, including local, state, and federal agencies with the interpretation of BAER assessment findings to identify potential post-fire impacts to communities and residences, domestic water supplies, and public utilities (including hydropower facilities, power lines, county roads, and other infrastructure).
- Consider continuing temporary forest, road and trail closures to protect public users of Forest Service System lands and recreation sites.

SPECIAL NOTE: *Everyone near and downstream from the **Rough Fire** burned areas should remain alert and stay updated on weather conditions that may result in heavy rains over the burn scar. Flash flooding may occur quickly during heavy rain events. Current weather and emergency notifications can be found at the **National Weather Service, San Joaquin Valley/Hanford Office** (www.wrh.noaa.gov/hnx/) website.*

Rough Post-Fire BAER Assessment information is available at <http://inciweb.nwcg.gov/incident/4625/>.

