



Burned Area Emergency Response (BAER)

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LAKE POST-FIRE BAER ASSESSMENT REPORT RELEASED



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

A [Forest Service Burned-Area Report](#) that included the BAER assessment team's analysis of the recent Lake Fire burned area and recommended emergency treatments, was submitted to the Pacific Southwest Region (Region 5) Regional Forester by the Forest Supervisor for the San Bernardino National Forest on July 9, 2015:

- ✓ There are 71 miles of intermittent streams and 16 miles of perennial streams within the burned area.
- ✓ There are 25.6 miles of National Forest System roads and 37.6 miles of trails within the burned area.
- ✓ There are 640 acres of high soil burn severity (2%), 8,420 acres of moderate soil burn severity (28%), and 21,427 acres of low/unburned soil burn severity (70%).

Based on historic precipitation patterns, it can be expected that thunderstorms have a high probability of occurring in the weeks following the Lake Fire. The risk of flooding and erosional events will increase as a result of the fire, creating hazardous conditions within and downstream of the burned area. These hazardous conditions may be worsened in the case of a rain-on-snow event, where long-duration rainstorms falling on a shallow snowpack can produce very high peak flows.

Erosion response is heavily influenced by soil burn severity and hill slope. Before the fire, most of the forested areas had protective ground cover in the form of litter, duff, or ground vegetation. In high and moderate soil burn severity areas, it is highly likely that increased rates of soil erosion and sediment delivery to stream channels will occur, in the 1st and 2nd years following the fire, particularly on steep slopes.

Recovery of high burn severity areas is slower because little or no vegetative ground cover remains, the potential for tree needle cast is low and soils may be impacted by fire effects.

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, increase sediment delivery, increased debris flow, establishment of invasive weeds, and habitat degradation for federally threatened species exist. Emergency post-fire conditions for these identified values-at-risk were assessed by the BAER team.

Human Life and Safety - There is an imminent threat to human life and safety within and adjacent to the burned watersheds in the fire area related to road/stream crossings, recreation residences, organizational camps, dispersed and developed campgrounds, and forest users on hiking trails. Hazard trees pose a threat along road corridors, trails, within camps, and recreation residences, dispersed recreation sites, and recreation facilities, and within the areas where BAER emergency treatments will be implemented.

Property – There is risk to roads and crossings throughout the burn area from increased run-off, associated sediment and debris, and debris flows. There are developed and dispersed recreation sites at the outflow of almost every watershed around the burned area. There is an increased risk of hazard trees in close proximity of dispersed camping areas and picnic

sites within and adjacent to the burned area. There is a threat to Forest users from hazard trees, interior hot spots, flooding, and an increased potential of road and trail damage and flooding.

Roads – Roads throughout the burned watersheds are likely to be impacted by increased run-off, sediment, and debris flows derived from the burned areas. Culverts associated with these roads are at risk of plugging from debris carried down channels from burned watersheds. Culvert failures may increase the magnitude of flood, sediment, and erosion hazards in downstream communities and private lands and increase the potential of scouring of stream channels.

Trails - Emergency conditions exist for specific trails and sections of trail within the burned area. Approximately 1.1 miles of system trails are in high burn severity areas with 10.1 miles in moderate burn severity areas. Approximately .32 miles of the Pacific Crest Trail (PCT) is in moderate burn severity. Life and safety of trail users is also at risk in some areas within the burn. Specific trails and sections of trail at increased risk from post-fire threats are the Lost Lake Trail, South Fork Trail, Dollar Lake Trail, Aspen Trail, Fish Creek Trail, and sections of the PCT and Santa Ana River Trail. Dispersed recreation areas along these trails are also at an increased safety risk.

Lands Special Uses - The Lake Fire BAER assessment included 58 lands special uses and 255 recreation special uses. The lands special uses evaluated included water systems, phone and power lines, a service building, education center, and associated parking lot, along with 31 permitted roads. For those that are at risk, threats include threat to life and safety of permittees and their staffs, threat to permitted infrastructure, loss of ingress or egress via access roads, etc. Threats are due to the potential for increased storm water run-off velocity and volume, risk of debris flows, and the presence of hazard trees.

Recreation Special Uses - There were 233 recreation residences in 8 tracts, 17 organizational camps, 2 clubs, 2 hotel/motels, and 1 outfitting and guide service that were evaluated for post-fire effects. The organizational camps may each have 200-300 campers and staff at their site at any given time (for a total of 3,000-4,500 people). These special uses sites may have multiple buildings and facilities, roads and utilities (water and sewage systems, power and telephone lines, gas tanks and lines, etc.) associated with their use. Threats may include threat to human life, safety of the permittees, guests, and staff, threats to permitted infrastructure, loss of access roads/driveways, loss of water quality due to the potential for increased storm water run-off velocity and volume, increase debris flow, and hazard trees.

Developed Recreation - The Lake Fire area and areas downslope of the fire support a number of developed recreation sites and were assessed by the BAER team. Threats may include threat to human life and safety of the people using the Forest Service campgrounds, dispersed recreation sites, day use areas – including picnic areas, threats to Forest Service infrastructure, loss of access roads/driveways, loss of water quality due to the potential for increased storm water run-off velocity and volume, increased debris flows, and hazard trees. The BAER team determined that there is a high risk to the South Fork Campground water system due to the very close proximity to the South Fork Santa Ana River and the Lake Fire burned area.

Natural Resources: Ecosystem Stability and Vegetation Recovery – An emergency threat exists with post-fire invasive weed introduction and spread. There are many existing weed areas within the fire perimeter. There is the potential for the establishment of new and persistent weed populations due to the introduction and dispersal of invasive weeds into soils disturbed by fire suppression activities. It is highly likely that existing weed infestations along roadsides and fire suppression equipment staging areas will spread and expand into vulnerable burned areas. The ecological integrity of native plant communities in the burned area is at risk from these introduced invasive weeds and expanding invasive weed populations.

Natural Resources: Water Quality – An emergency condition exists at 4 channel crossings: 2 within the Barton Flats Recreation Residence Tract along 2 roads, and 2 along the road within the South Fork Recreation Residence Tract located south of Highway 38. The emergency condition is caused by a high proportion of high and moderate soil burn severity within the watersheds above channel crossings and the large amounts of floatable debris that could clog the channel crossings. Increased sedimentation could occur if these crossing failed or water from the channel is diverted down roads.

Natural Resources: Wildlife - An emergency condition exists for the federally listed Mountain Yellow-Legged Frog species as a result of predicted post-fire effects on riparian/aquatic habitats. The emergency condition is caused by the predicted debris flows and flooding in its habitat which is found in the Lake Fire burned area.

Cultural Resources - Emergency conditions exist for 1) an unrecorded but known historic cultural resource called the South Fork Diversion Canal as a result of moderate and high soil burn severity above Jenks Lake which has a high potential for debris flows and breaching of the canal; and 2) South Fork and Barton Flats Recreation Residence Tracts. One tract is eligible for the National Historic Register and the other is unrecorded but both are at risk.

Emergency Stabilization Treatments

Treatment Objectives

The BAER assessment team's emergency stabilization treatment objectives for the Lake Fire burned area focus on 1) the reduction of potential soil erosion/sediment yield and water runoff over steep slopes to attempt lessen the overall threat to downstream life and property; 2) preserve and protect the integrity of Forest Service infrastructure such as roads and trails, and natural and cultural resources; and 3) minimize the increased potential for the spread of invasive weeds:

- Stabilize the transportation roads system and prevent further damage resulting from erosion and storm water runoff, public safety hazards, and improve the safety of organizational camps and recreation residence tracts.
- Storm-proof trails and close portions of trails to the public as warranted until properly stabilized.
- Reduce the potential for impaired vegetative recovery and the introduction and spread of invasive weeds by conducting detection surveys and rapid response eradication efforts where feasible.
- Minimize unauthorized OHV use in the burned area to prevent impaired vegetative recovery.
- Mitigate potential loss of heritage/cultural resources.
- Protect the viability of the Mountain Yellow-Legged Frog species.
- Continue to work and coordinate with interagency cooperators, partners, and affected parties and stakeholders.
- Re-evaluate the need for temporary closures within the burned area, special uses, and recreation facilities and sites.

SPECIAL NOTE: *Everyone near and downstream from the Lake Fire area 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 Diego Office** (www.wrh.noaa.gov/sgx/) website.*

Lake Post-Fire BAER Assessment information is available at <http://inciweb.nwcg.gov/incident/4346/>.

