Six Rivers National Forest

Burned Area Emergency Response (BAER)

Post-Fire BAER Assessment

BAER Information: (415) 881-1871

GASQUET COMPLEX POST-FIRE BAER ASSESSMENT REPORT SUMMARY

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

The Gasquet Complex wildfires started by lightning on July 31, 2015, and burned about 30,400 acres. On September 12, 2015, the complex was 95% contained. The wildfires burned approximately 30,180 acres within the Smith River and South Fork Smith River watersheds in the Smith River National Recreation Area on the Six Rivers National Forest (NF). The remaining acres burned on private land.

A Forest Service Burned-Area Report, which included the BAER assessment team's analysis of the burned areas within South Complex and recommended emergency treatments, was recently submitted to the Pacific Southwest Region (Region 5) Regional Forester by the Forest Supervisor for the Six Rivers National Forest:

- ✓ 13 sub-watersheds were analyzed and modeled to compare pre-fire conditions to post-fire predicted response.
- ✓ There are 45 miles of intermittent streams and 55 miles of perennial streams within the burned areas.
- ✓ There are 27 miles of National Forest system roads, and 9 miles of non-motorized trail within the burned area.
- ✓ There are 1,973 acres of strongly water repellent soil, 5,066 acres of moderately water repellent soil, and 4,630 acres of weakly water repellent soil.
- ✓ There are 9,299 acres with high or very high hazard ratings for soil erosion, 19,431 acres with moderate ratings for soil erosion, and 658 acres with low hazard ratings for soil erosion.
- ✓ There are 1,617 acres of high soil burn severity (5%), 6,331 acres of moderate soil burn severity (21%), and 22,461 acres of low/unburned soil burn severity (74%).

The observed fire intensity and soil burn severity is consistent with fire behavior documented in the Incident Management Team close-out narratives.

High and moderate soil burn severity classes have evidence of severe soil heating. Across the Gasquet complex, these generally occur in a patchy distribution. Soil seedbank and water infiltration characteristics are impacted in the areas that have burned at high or moderate severity, especially where there were extended or multiple burning periods. Natural recovery of these areas 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.

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, incursion of invasive weeds, falling hazard trees, and rockfall. Emergency post-fire conditions were identified by the BAER team for the following values-at-risk:

Human Life and Safety – There are risks to human life and safety of recreating public and agency personnel from hazard trees, rolling rocks, flooding and localized debris flows when traveling on roads and trails affected by the burned areas. Fire-damaged road segments and post-fire impacts increase both the risk and the possibility of loss of ingress and egress. There are numerous burned tree snags in close proximity to parking and campsites that threaten stationary campers and parked vehicles.

Property: Trails – There are risks for post-fire damage to segments of the Summit Valley and Sawtooth Trails. Segments of these trails are susceptible to rill development, erosion, and potential damage from storm runoff, rockfall, land sliding and debris flows.

Property: Roads – There are risks of damage to roads within the burned area from rock- and debris-fall, and from accelerated flow and sediment delivery affecting road prisms and drainage structures.

Natural Resources: Water Quality – There is a high risk to water quality in streams due to increased sediment delivery. Impacts to watershed process and functions that regulate erosion and sediment delivery are expected where soils burned at moderate to high severity. Threats to water quality can potentially affect beneficial uses of water, including habitat for Endangered Species Act (ESA)-listed cold water aquatic species as well as municipal and domestic water supply systems. No treatments are recommended.

Natural Resources: Soil Productivity and Soil Quality – There is a very high risk to soil quality due to accelerated erosion in localized areas that sustained moderate to high soil burn severities. In terms of long-term recovery of the burned area, loss of surface soils can lead to decreased site productivity, with the potential for increased spread of invasive plant species, since noxious weeds may more readily establish on degraded soil sites. In the short-term, unauthorized OHV intrusions can increase where physical barriers and vegetative screens have been damaged or lost, contributing to further degradation of soil productivity. No treatments are recommended. Because the Gasquet Complex wildfires sustained predominantly low to very low soil burn severities in a mosaic pattern with the areas of higher severity, a relatively small proportion of the burned area will suffer reduced soil productivity.

Natural Resources: Ecosystem Stability and Vegetation Recovery – There is a high risk to native plant diversity and intact or naturalized native plant communities from the threat of introduction and spread of noxious and non-native invasive plants from existing populations within and adjacent to areas of high and moderate soil burn severity. There is also a high risk from noxious weed seed imported by fire suppression equipment and activities. Areas of moderate to high soil burn severity have lost vegetation barriers which served to reduce, if not prevent, the spread of non-native invasive plants into new areas. These areas also have altered habitat conditions including fire-damaged soils that favor invasive plant seed establishment. Displacement of native species by non-native invasive plant species can result in a loss of viability for sensitive plant species native to the burned area. Encroachment by non-native invasive plants can also result in degradation of range and recreational values, reduction of water availability to native plants, and can negatively impact the plant community and ecology.

Natural Resources: Wildlife – Low risk is expected to occupied and suitable critical habitat for the Northern spotted owl and the marbled murrelet from fire-caused conifer mortality and fire stress to trees, which will result in relatively minor habitat loss for both species. There are low risks expected to owls, murrelets and fisher if BAER implementation activities were to be conducted during the nesting or denning season; consequently BAER emergency stabilization actions should be coordinated with the local wildlife biologist to avoid adverse disturbance effects to these species. A low risk was determined for Coho salmon and their suitable and occupied habitat, related to fine sediment effects on substrate composition and water quality, as well as loss of shade from streamside tree mortality affecting higher stream temperatures.

Cultural Resources – An intermediate risk is present of degradation to historic properties. Prehistoric and historic trails located with the burned area may suffer damage from flooding where increased overland water flow and hillslope erosion from moderate and high soil burn severity areas that intersect trails. Flood damage to prehistoric and historic trails will result in loss of data and site integrity if not mitigated.

Other Non-BAER Values – There are other values-at-risk which are not considered to be BAER critical values that are potentially threatened by post-fire conditions. There is a an unquantified degree of threat to domestic and municipal water supply systems on non-Forest Service System lands downstream of the burned areas that is related to potential increases in sediment, turbidity, and increased peak flows that may damage or clog surface water supply intake systems. A low risk is likely to raptors from BAER implementation activities that extend into the 2016 nesting season, which could disrupt nesting, cause loss of productivity, and decrease the survival of young birds. Coordination with Forest wildlife biologists should ensure that BAER implementation activities are scheduled outside the nesting period near known nest sites. There are likely to be post-fire effects to fish and aquatic species and downstream habitat from localized short- and long-term modification of substrate composition by increased fine sediment and possible debris flows, as well as water quality impacts from fine sediment, ash and increased water temperatures from loss of streamside vegetation and shade canopy. Threats to non-Forest Service values should be coordinated and communicated with the appropriate parties through interagency coordination.

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 life 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 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 Native American tribes and other agencies such as the National Resource Conservation Service (NRCS) to assist private entities and communities including private residents, domestic water suppliers to achieve post-fire recovery objectives.

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

- Stabilize the transportation system (roads and trails) and water drainage structures to prevent damage resulting from increased soil erosion and storm water runoff, and reduce public safety hazards. Storm-proof roads and trails, close portions of trails to the public as warranted until properly stabilized, and maintain non-functional gates on Level 2 roads. Conduct storm patrols to monitor roads and drainage structures at risk, maintain and/or repair any damage to road surfaces, remove sediment and debris from drainage and treatment structures within the burned areas.

- Conduct heritage resource protection patrols to document changes to pre-historic and historic trails in terms of run-off and flash flooding which could affect site integrity and to determine if additional management actions is required to protect these properties.
- Reduce the potential for impaired vegetative recovery and the introduction and spread of invasive weds by conducting detection surveys and rapid response eradication efforts where feasible. Treat high priority non-native invasive plant treatment sites by mulching with weed-free straw and seeding with native grass seed
- Fall hazard trees at BAER treatment locations to provide for worker safety,
- Install burned area hazard warning signs to caution forest visitors traveling on roads and recreating within the burned areas.
- Continue to communicate risks to the public, community groups, and cooperating agencies.
- Continue to work and coordinate with Native American tribes, interagency cooperators, partners, and affected parties and stakeholders.
- Assist Native American tribes, 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, roads, and other infrastructure).
- Consider temporary forest closures to protect public users of Forest Service System lands and recreation sites.

SPECIAL NOTE: *Everyone near and downstream from the **Gasquet Complex** fire 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, Eureka Office** (http://www.wrh.noaa.gov/eka/) website.*

Six Rivers NF Post-Fire BAER Assessment information is available at http://inciweb.nwcg.gov/incident/4600/.

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