



Central Washington 2012 Wildfires Burned Area Emergency Response (BAER) Information Brief – October 19, 2012

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OKANOGAN COMPLEX & GOAT FIRE Burned-Area (BAER) Report (FS-2500-8)

Fire Background

The Okanogan Complex is comprised of three separate fires located in Methow Valley, Okanogan County, Washington. The Buckhorn (4,638 acres), Leecher (1,320 acres), and Hunter (211 acres) fires were all sparked by a significant lightning storm on September 8, 2012. The complex of fires burned a total of 6,169 acres.

The human-caused Goat Fire burned 7,378 acres and was first detected on September 16, which is also located in Okanogan County. It was originally included as part of the Okanogan Complex, but was later managed separately.

The Okanogan Complex is currently 95% contained while the Goat Fire is currently 90% contained. The Forest's fire managers have not yet declared a date for these fires to be considered fully controlled.

FS-2500-8 Burned-Area Report -- Analysis

A Forest Service Burned-Area Report, that included the BAER assessment team's analysis of the burned area and recommended emergency treatments, was submitted to the Pacific Northwest (Region 6) Regional Forester by the Forest Supervisor for the Okanogan-Wenatchee National Forest on October 15, 2012:

The BAER assessment team analyzed the Okanogan Complex of fires with the Goat Fire for this report. The burned acres that were analyzed total 13,547 acres (11,550 acres of NFS land; 256 acres of other Federal land; 441 acres of State land; 1,300 acres of private lands) in the following watersheds: Lower Methow River, and Swamp Creek-Columbia River.

There are 22.9 miles of intermittent streams and 2.9 miles of perennial streams totaling 25.8 miles of stream channels within the burned area.

There are 31 miles of roads and 1.5 miles of trails within the burned area.

On October 5, the U.S. Forest Service Remote Sensing Application Center (RSAC) in Salt Lake City, Utah, provided the BAER team with an initial Burned Area Reflectance Classification (BARC) satellite imagery map. The team utilized aerial reconnaissance flights and field surveys to finalize a soil burn severity map for each of the large wildfires.

There are 927 acres of high soil burn severity (7%), 1,543 acres of moderate soil burn severity (11%), and 11,077 acres of low soil burn severity/unburned (82%).

Due to the size of the fire, depth of hydrophobic effects and topography of the fire area; only the high soil burn severity areas were determined to have strong contiguous water repellency.

The post-fire area has an erosion potential of 23 tons of erosion per acre from a 24-hour/25-year storm event of 2.4 inches. There is potential for accelerated sedimentation from the effects of the fire. The increased erosion can result in downstream sedimentation, which can bulk flows resulting in increased flooding impacts. This sediment may impair critical habitat for Threatened and Endangered (T&E) species. The loss of soil can impair soil productivity in the short and potentially long-term future.

It is estimated that the burned area has a 5-year recovery period to re-establish vegetation. The major concern for vegetative recovery and, in turn, hydrologic recovery is in the high severity burn areas.

Identified Values-at-Risk

Threats to the values-at-risk listed below are analyzed by the BAER team for impacts 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.

A risk matrix (Probability of Damage or Loss and the Magnitude of Consequences) was used to evaluate the risk level for each value identified during the BAER assessment:

Human Life/Safety and Property

Threats to life and safety and property potentially exist in valley bottom areas and in steep burned drainages throughout and downstream from the burned areas. Residents and road users may be exposed to increased risk of flooding and debris flows. Houses and other structures, driveways, other private property, Forest Service recreation facilities, and roads and trails located in valley bottoms adjacent or in the floodprone areas, or near stream channels are at potential increased risk for flooding and debris flows. In several locations, structures and roads are located on alluvial and debris flow fans at the outlets of severely burned drainages and are at increased risk for debris flows. Water diversion infrastructure is at risk due to sediment and debris accumulation. Numerous ponds and small reservoirs within the burned areas are at increased risk of filling with sediment and/or dam failure.

ROADS: There are several miles of critical fish habitat and crossings located outside and downstream of the fire perimeters which may be indirectly affected by post-fire runoff events.

The Okanogan Complex is separated into two categories from a transportation system: 1) fires in which the road system is primarily located along the ridge line (Goat Fire) with post-suppression rehab adequate to meet the expected runoff; and 2) fires in which the road system

has major sections located within the flood plain or downslope of the fires and the topography has a history of debris flows or large sediment movement (Buckhorn Fire). In these fires, field surveys reaffirmed the potential for overtopping of undersized culverts, lateral stream movement into the road prism, potential drainage plugging with sediment and debris movement, and damage to the road infrastructure along with a likelihood of impacts on fisheries habitat. Based on the BAER team's risk rating evaluation, treatments were identified for each of the above-mentioned fires, but only the Buckhorn Fire had a high risk rating and was submitted for potential emergency treatment funding.

TRAILS: There are no emergency risks identified for recreation values within these fires.

Natural Resources

SOILS: High and moderate soil burn severity in all complexes may impact soil productivity. It is assumed that both severity classes will react similarly and are considered to produce an erosion potential that will create a loss to soil productivity. The majority of the area is too gentle to warrant emergency treatment, when soil burn severity mapping is compared with acceptable slopes for treatment (20% to 50% slopes). Since this is a rapid assessment, it is recommended that the Forest conduct additional surveys to see if any land treatments are warranted, especially within the areas of high soil burn severity that are under green canopy.

HYDROLOGY: The potential values at risk identified include road and trail infrastructure, human life and safety, and water quality, due to increased debris flows and floods. The models within the Okanogan Fire Complex show increased peak flows. While there are large percentage changes for the Buckhorn Fire, the magnitude of the amount of flows that are anticipated are not expected to cause widespread problems within the land form. There may be localized problems due to the potential of increased flows.

T&E PLANTS: Impacts of the fire and fire suppression activities on federally and state listed plant species may reduce a species existing distribution, result in a loss of species viability, and/or create significant trends towards federal listing.

NOXIOUS WEEDS: Establishment and expansion of the invasive plant species into burned areas and the areas of suppression activity are at risk to become new infestations. Invasive species have the potential for native vegetation and listed plant species community conversion. Both wildlife and humans may be affected by these plant community conversions through impacts to forage, shelter or increased fire hazards.

T&E WILDLIFE: The species known to occur in or near the fire complexes include the northern spotted owl (*Strix occidentalis caurina*), and a suite of wide-ranging carnivores: gray wolf (*Canis lupus*), north American wolverine (*Gulo gulo*), Canada lynx (*Lynx canadensis*), and grizzly bear (*Ursus arctos horribilis*). Wide ranging carnivore species were not likely directly impacted by the fires. They are mobile and are generally able to escape a fire, although, disturbance from the fire itself and suppression activities, as well as habitat loss, may have displaced individual animals. Although spotted owl habitat may be found across a large

portion of the National Forest, proposed treatments have focused on the Wenatchee Complex and Table Mountain. No emergency treatments are proposed for the Okanogan Complex or the Goat Fire.

T&E FISHERIES: Within the Okanogan Complex there may be localized negative effects to aquatic habitat, listed fish, and critical habitat units (Buckhorn Fire). Many of the fires in the Okanogan Complex will have limited un-measurable effects to listed fish and habitat, but are not addressed in this report. No activities to mitigate the effects are likely to be successful at reducing these effects (except for the road emergency stabilization work proposed for the Buckhorn Fire).

Cultural Resources

Following a GIS analysis of these burned areas, no risks to cultural resources were identified within the areas of potential effect (APE) for these fires.

Emergency Stabilization Treatments

Treatment Objectives

HUMAN LIFE/SAFETY AND PROPERTY

Roads

Implement emergency road stabilization actions within the Okanogan Complex and Goat Fire to:

1. Reduce the potential for accelerated surface runoff damaging Forest Service roads within and directly downstream of the fire areas in headwaters directly affected by the fires.
2. Reduce the potential for road related surface/mass erosion and accelerated sediment delivery to downstream high value fisheries habitat, private water supplies and private dwellings.
3. Reduce the potential for debris “bulking” and potential debris-flow encounters on road-related drainage structure.
4. Reduce the potential for roads to act as a conduit for overland flows and increased sediment loading.
5. Reduce road-related hazards related to the burned areas.

NATURAL RESOURCES

Hydrology/Increased Stream Flow

Provide for public safety due to anticipated increased flood storm-flows and the potential for debris torrents that could cause great concern for public safety, private homes and property, and infrastructure values such as Forest Service roads and recreation facilities.

Noxious Weeds

The areas that have high severity fires are at a greater risk for invasion by noxious weeds species. Both noxious weed seeds present in the seed bank soil layer and those introduced during suppression efforts pose a high risk of replacing the native plant community, thus affecting the entire succession of post-burn plant communities. The weeds identified to be controlled are all known to benefit by fire through increased seed germination and being highly competitive in bare and disturbed soils. It is critical to begin controlling invasive plants and emergency treatments will be proposed in the spring of 2013. These species may quickly establish within these burn areas, dominate the vegetation, and impede the natural re-vegetation of the site by natives.

T&E Fisheries

Within the Okanogan Complex, reduce the adverse effects of the Buckhorn Fire on Upper Columbia River Steelhead, Upper Columbia River Spring Chinook Salmon, and Bull Trout. Emergency road stabilization treatments on the FS-4330 road will reduce the potential negative effects.

Recommended Emergency Treatments

Road and Trail Treatments:

31 miles of Road Stabilization-Storm Proofing (Buckhorn Fire)

Protection/Safety Treatments:

Signs and Closures (Gates)

Storm Patrol of FS Roads

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Central Washington BAER Team information is available at <http://inciweb.org/incident/3292/>.
Also, follow us on Twitter at <http://twitter.com/OkaWenNF>.

