Okanogan-Wenatchee National Forest

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

BAER Information: (208) 398-3348

WENATCHEE COMPLEX
Burned-Area (BAER) Report (FS-2500-8)

Fire Background

Following a severe lightning storm that covered much of eastern Washington, a series of fires were discovered on September 9, 2012.

The Wenatchee Complex of multiple fires burned a total of 56,478 acres in Chelan County, Washington. The largest fire within the complex is the Peavine Canyon Fire at 19,467 acres. The other complex fires are the Byrd Fire (14,119 acres); Canyons Fire (7,557 acres); Poison Canyon Fire (5,910 acres); Cashmere Fire (2,651 acres); Pyramid Fire (1,692 acres); Klone Fire (1,476 acres); First Creek Fire (1,402 acres); Basalt Fire (1,193 acres); Sears Creek Fire (617 acres); Cuitin Lake Fire (290 acres); White Pine Fire (61 acres); 469 Fire (21 acres); Maverick Fire (21 acres); John Fire (2 acres); Upper White Fire (0.2 acre); Mule Fire (0.1 acre); and Signal Peak Fire (0.1 acre).

The Wenatchee Complex is currently 70% contained. The Forest's fire managers have not yet declared a date for the complex of 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:

Total burned acres analyzed: 58,239 acres (42,701 acres of NFS land; 1,124 of other Federal land; 4,956 acres of State land; 9,458 acres of private lands) in the following watersheds: Lower Lake Chelan, Lake Entiat-Columbia River, Entiat River, Chiwawa River, White River-Little Wenatchee River, Icicle Creek, Mission Creek, Peshastin Creek, and Wenatchee River.

There are 123 miles of stream channels: 37 intermittent streams, 86 miles of perennial streams within the burned area.

There are 167 miles of roads (83 miles of Forest Service roads; 84 miles of non-Forest Service roads) and 48.9 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 2,728 acres of high soil burn severity (5%), 7,652 acres of moderate soil burn severity (13%), and 47,859 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 27 tons of erosion per acre from a 24-hour/25-year storm event of 3.4 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

Threats to life, safety, and property exist in valley bottom areas and in steep burned drainages throughout and downsream 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, roads, and trails located in valley bottoms adjacent to or in the floodprone areas or near stream channels, are at increased risk for flooding and debris flows. In several locations, structures and roads are located on alluvial fans at the outlets of severely burned drainages and are at increased risk for debris flows. Water diversion infrastructure is at risk due to sedimentation and debris accumulation. Numerous ponds and small reservoirs within the burned areas are at increased risk of filling with sediment and/or dam failure.

Property

ROADS: There are several miles of critical fish habitat and crossings located outside and downstream of the fire perimeters which will be directly affected by the post-fire runoff from burned areas within the headwaters and upper portions of the watersheds. Portions of the City of Wenatchee ,and the towns of Leavenworth and Cashmere are located directly downstream of the various fire perimeters. These properties, domestic and/or irrigation systems, and agricultural lands will also be directly affected by post-fire runoff and debris flow potential as a result of these fires. From a transportation standpoint, the area of greatest concern is the probability of potential impacts to US Highway 97 located directly at the outlet of Oklahoma Gulch, which was a site of debris flows under pre-fire conditions.

The Wenatchee Complex can be separated into two categories from a transportation system: 1) fires in which the road system is primarily located along the ridge line (Byrd and Canyons Fires) and post-suppression rehab should be adequate to meet those stablization needs; 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 (Basalt, Cashmere, First, Klone, Maverick, Peavine, and Poison Fires). In these fires, field surveys reaffirmed the potential for overtopping of undersized culverts, lateral stream movement into the road prisms, 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 exercise, treatments were identified for each of the above fires, but only those fires with a HIGH or VERY HIGH risk rating (Klone, Peavine and Poison Fires) will be submitted at this time for potential funding. For those fires with an INTERMEDIATE risk rating (Basalt, Cashmere, and Sears Creek Fires), road treatments will be provided in an appendix and to the local Forest Service engineers for use if monitoring indicates that an interim emergency treatment funding should be requested.

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 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.

Cultural Resources

A total of three cultural resource sites were identified as "potential values at risk" within the fire perimeter. GIS analysis using the BARC severity layer shows that 2 sites occur in low burn severity and 1 site occurs in high burn severity. Following field assessments, it was determined that none of these sites are at risk of damage from post-fire effects, erosion, or information loss. No emergency stabilization treatments are proposed for this complex of fires.

Emergency Stabilization Treatments

Treatment Objectives

HUMAN LIFE/SAFETY AND PROPERTY

Roads

Implement emergency road stabilization actions within the Wenatchee Complex 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

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. These species will quickly establish within these burn areas, dominate the vegetation, and impede the natural re-vegetation of the site by natives.

Based on an assessment of risk for noxious weed invasion on native plant communities, detection of new weed populations, followed by herbicide treatments have been recommended. Table Mountain Complex; Wenatchee Complex: Peavine, Poison, Canyon, Byrd Fires; and Okanogan Complex: Goat and Buckhorn Fires all contained either burn severity or proximity to noxious weed populations that deemed it necessary to take emergency actions in order to protect these ecosystems.

All weed treatments will be completed in the spring and fall of 2013. Two herbicide treatments are planned for each fire and the timing will be determined by herbicide effectiveness by species. Yellow star thistle, whitetop, and Canada thistle are most effectively treated with fall herbicide treatments, while knapweed species are most effectively treated in the spring. Fires

included in this proposed treatment include: Buckhorn, Hunter Mountain, Goat, Byrd, Cashmere Mountain, Poison, Canyons, Peavine, and Table Mountain Fires.

Detection and herbicide treatment of weed species to control new weed infestations will occur within those fire perimeters listed above, except within the Cashmere Mountian fire perimeter area, where weeds will be controlled by mechanical means as this area is within a designated wilderness. Funding for the noxious weed emergency treatments will be requested with an interim report in spring 2013.

Those fires not considered for treatment are: First Creek, Pyramid, Klone Maverick, Leecher, Basalt, Sears, 469, Mule, John, Signal Peak, Upper White, Wild Rose, French Cabin Creek, Gold Hill, and Kettle Creek Fires. These fires were not considered for treatment due to their small size, the lack of accessibility and/or the low probability of invasive species occurring in these sites post-fire conditions.

Recommended Emergency Treatments

Channel Treatments:

Removal of floatable woody material in Cashmere Mountain ephemeral channels

Land Treatments:

Invasive weed detection surveys

Herbicide and/or mechanical treatment

Road and Trail Treatments:

20 miles of Road Stabilization-Storm Proofing

4 miles of Trail Stabilization

Protection/Safety Treatments:

Signs and Closures (Gates, Fencing)

Recreation CXT Site

Storm Patrol of FS Roads

SU Permit Review Rain Gage Alert Station