Mt. Hood National Forest

Burned Area Emergency Response Summary – White River Fire

October 31, 2020

On August 17, 2020 lightning started the White River fire on the Mount Hood National Forest (Mt. Hood NF). Hot, dry weather, low humidities and drought conditions caused the fire to quickly move into the White River Canyon towards private and BLM ownership. The fire burned a mosaic pattern of mixed conifer stands encompassing 17,412 acres of mixed ownership with 51% occurring on the Mt. Hood NF. On September 28, 2020 the fire was close to containment and management turned back to the Mt. Hood NF.

The Forest Service assembled a Burned Area Emergency Response (BAER) team on September 28, 2020. This team of experts in soils, geology, hydrology, engineering, botany, recreation, archaeology, fisheries, and GIS, began assessing the post-fire effects to critical values on Forest Service lands. The team developed a Soil Burn Severity (SBS) map to document the degree to which soil properties had changed within the burned area. Fire damaged soils have low strength, high root mortality, and increased rates of water runoff and erosion. Using the SBS map, BAER team members ran models to estimate changes in stream flows (hydrology) and debris flow (geology) potential. The models compared pre-fire conditions to predicted post-fire conditions to determine relative changes, which are then used to determine the relative risk to different critical values and recommendations to address those things determined to be an emergency. Below is a summary of the findings of each resource area.

SOILS and EROSION

Approximately 19% of the burned area within the White River Fire had moderate soil burn severity, with only 2.4% of the area mapped at high severity. Moderately burned soils had lost up to 80% of the pre-fire ground cover (litter and ground fuels) but retained fine roots and soil structure. In most cases, moderate and high severity patches are

located on slopes under 20% which greatly reduces the potential for sediment movement. Overall, the likelihood of erosion exceeding background levels on this fire are minimal and the BAER team does not expect large scale erosion response.

GEOLOGY and DEBRIS FLOW RISK

The burned area lies entirely within the Western Cascades Physiographic Province but sits east of the crest of the Cascade Mountains where the combination of a drier climatic regime and contrasting geology lead to a vastly different landscape. There are two bedrock units that compose the more gently sloping terrain east of Mt. Hood along the White River. Debris flow hazard was rated low to moderate with only one small hillslope showing high hazard potential While upper watershed climatic and geologic conditions favor the development of very large debris flows, these are not found within the area affected by the fire. Additionally, due to the fact that moderate to high soil burn severities generally only occurred on moderate slopes where gravity is unlikely to influence the development of mass wasting events, it is unlikely that a significant increase above background levels will occur within the White River fire perimeter.

HYDROLOGY and RUNOFF

Hydrologic response will include localized areas of temporarily reduced interception and infiltration of precipitation and increased runoff compared with those of unburned conditions. Due to limited area (22%) in high and moderate soil burn severity streamflow impacts from the fire are expected to be minimal.

ROADS

The White River Fire includes 39.88 miles of National Forest System roads. Most roads occurred outside of the small area of high and moderate severity burn and are not expected to be impacted by erosion and runoff.
However, weakened fire burned trees may block roads and pose a risk to forest users for several years. The fire damaged sections of guardrail along Wamic Road (FSR #4800) increasing risk to human life and safety. Burned posts will be replaced and attached back to the original guardrail where possible and a new section of metal guardrail will be added where needed. Warming signs will be placed at road entry points that lead into the fire.

RECREATION

The White River Fire includes 20.72 miles of National Forest System trails as well as several developed recreation sites. Field reviews found that recreation sites were remarkably unscathed. The fire burned up to

the edge of several developed recreation sites but stopped short of destroying facilities. The trails within the White River fire present threats to human life and safety, but they are adequately safe from post-fire erosion due to the flat ground that the trails traverse. In the sections of trail that have significant slope, the burn severity was low. Trails will have some damaged tread where roots and stump holes burned and collapsed the surface. Fire-killed trees have fallen across trails and have impeded trail access. High danger from falling snags will persist along the trails for many years. On the Camas (non-motorized) trail there will be a modest increase of erosion risk from large precipitation events. Warning signs will be placed at campgrounds and trailheads where trails lead into the fire.

BOTANY

Approximately 27 miles of dozer line and 5.5 miles of handline were constructed in and around the White River Fire perimeter on National Forest System lands. 45 miles of existing road were also brushed and utilized for fire containment and 22 drop points, safety zones, and dozer pushouts were created. All line and points constructed or utilized during fire suppression activities may serve as weed seed sources or dispersal corridors. Dispersal of weeds from fire equipment movement poses a significant risk to native plant post-fire regeneration. Even though a weed washing station was brought in, seed may have been transported into the burn on suppression vehicles and equipment that arrived on the fire before the washing station was established. This increases the possibility of suppression equipment acting as weed seed vectors. Dozerlines and handlines will be most impacted by this threat. Natural resources are at risk for weed incursion from species such as houndstongue, invasive annual grasses and knapweed species among others. BAER treatments include the survey, treatment, and monitoring of invasive species infestation will occur over 373 acres of at-risk land.

CULTURAL RESOURCES

The White River burn area is part of the lands ceded to the federal government by the Confederated Tribes of the Warm Springs Reservation of Oregon (CTWSRO) in the treaty of 1855. However, CTWSRO reserved their right to fish, hunt game, and harvest other foods and materials from these lands. The White River Fire burn also encompasses historic period cultural sites ranging in occupational dates from early nineteenth to middle of the twentieth century. These

sites relate to pioneering settlement, transportation, irrigation and agriculture, timber harvest, mercantile, and Forest Service administration. Burn severity was low to moderate over most sites. For example, burn severity was low to moderate over most of the Barlow Road historic district. Other than the occasional downed timber, there is was little to no impact to the road from the fire. There is a minor risk of increased upslope/stream erosion and deposition on portions of the road. Other sites were in low or unburned areas.

CONCLUSION

The BAER team has identified imminent threats to values at risk based on a rapid scientific of the area burned by the White River Fire. The findings provide the information needed to prepare and protect against post-fire threats. Emergency treatments will be implemented within one year of containment of the fire. Emergency treatments will include the replacement of a guardrail along Forest Road 48, installation of warning signs at select road entrances, recreation trailheads, and staging areas; and actions to prevent and minimize the spread of invasive weeds.