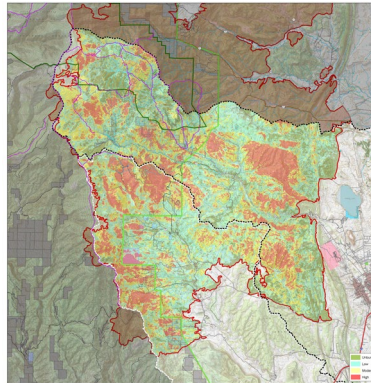




PHASE 1 HERMITS PEAK - CALF CANYON POST-FIRE BAER SOIL BURN SEVERITY MAP RELEASED



On May 22, 2022, BAER team specialists completed data gathering and analysis for Phase 1 of the Hermits Peak - Calf Canyon burned area. The soil burn severity (SBS) map analyzes 115,542 acres for the *Headwaters Gallinas River* and *Tecolote Creek* watersheds. The map and the data display soil burn severity (SBS) categories of unburned/very low, low, moderate, and high. Approximately 51% of the Phase 1 acres are either unburned/very low or low SBS, while 28% sustained a moderate SBS and 21% identified as high SBS. Areas within the watersheds that were assessed continue to burn and the potential for reburn exists where unburned, very low and low SBS is present.

The Phase 1 SBS map also shows the acreage for each of the land ownership for the 115,542 acres in the Phase 1 assessment to be: 48,581 acres for the Santa Fe National Forest, 66,216 acres of private lands, and 745 acres of New Mexico State lands.

The BAER assessment team used preliminary remote sensing data based on satellite imagery from May 14, 2022, with field-validated data collected over several days to produce the Phase 1 SBS map. Field-validated data was only collected on National Forest System (NFS) lands. This information was then used to extrapolate SBS off NFS lands. The BAER team and the US Geological Survey (USGS) both use the SBS map as an analysis tool to estimate post-fire erosion with subsequent sediment delivery, stream flows and debris flow probabilities.

The BAER assessment team also coordinates with other local and federal agencies such as county and state officials, Natural Resources Conservation Service (NRCS), National Weather Service (NWS), and USDOI Geological Service (USGS) to share information about burned watershed conditions and their predicted response during certain rain events.

It is important to note the SBS map product is an estimate of fire effects on soils and not direct effects to vegetation. SBS characterizes the soil surface and below-ground impact, whereas effects on vegetation are estimates of mortality based primarily on changes in vegetation canopy. The Rapid Assessment of Vegetation Condition after Wildfire (RAVG) program produces data describing post-fire vegetation conditions on NFS lands. Changes in overhead and understory vegetation canopy are often used as initial indicators of overall burn severity, but do not necessarily coincide with SBS.

Changes in soil cover, water repellency, and soil physical/biological conditions guide the interpretations to determine the severity burn level of the soil. Water repellency can occur naturally in soil and may change as a function of fire. It is frequently discussed as a post-fire effect. Fire can increase the

strength and thickness (or depth) of water repellent layers in soil, considerably affecting post-fire water runoff and possibly extending time for recovery of the burned area.

Soil burn severity indicators can be found within the Rocky Mountain Research Station's *General Technical Report 243 – Field Guide for Mapping Post-Fire Soil Burn Severity* https://www.fs.fed.us/rm/pubs/rmrs_gtr243.pdf and are described below.

Low SBS generally occurs where surface organic layers are not completely consumed and are still recognizable. Structural aggregate stability is not changed from its unburned condition, and roots are generally unchanged because the heat pulse below the soil surface was not great enough to consume or char any underlying organics. The ground surface, including any exposed mineral soil, may appear brown or black (lightly charred), and the canopy and understory vegetation will likely appear “green.” Lower risk for accelerated runoff, erosion, flooding, and debris flows is expected within and below these areas compared to moderate and high SBS.

Moderate SBS is documented where up to 80 percent of the pre-fire ground cover (litter and ground fuels) is consumed but generally not all of it. Fine roots may be scorched but are rarely completely consumed over much of the area. The color of the ash on the surface is generally blackened with possible gray patches. There may be potential for recruitment of effective ground cover from scorched needles or leaves remaining in the canopy that will soon fall to the ground. The prevailing color of the site is often “brown” due to canopy needle and other vegetation scorch. Soil structure is generally unchanged. Where greater amounts of reduced soil cover and increased water repellency occur, increased overland flow of water from precipitation is expected, most notably in locations where the overstory canopy no longer exists.

High SBS occurs where all or nearly all the pre-fire ground cover and surface organic matter (litter, duff, and fine roots) is generally consumed, and charring may be visible on larger roots. The prevailing color of the site is often “black” due to extensive charring. Bare soil or ash is exposed and susceptible to erosion, and aggregate structure may be less stable. White or gray ash (up to several centimeters in depth) indicates that considerable ground cover or fuels were consumed. Sometimes very large tree roots are entirely burned extending from a charred stump hole. Soil is often gray, orange, or reddish at the ground surface where large fuels were concentrated and consumed.

Generally, there is 100% tree mortality in high SBS, and tree recovery will take many years without planting. In high SBS, the exposed bare soil is very prone to post-fire impacts. The damaged soil is very easily detached with rain events causing excessive soil erosion, resulting in higher volumes of sediment delivery to adjacent creeks and rivers. There is increased likelihood for flooding and debris flows. These threats can individually or cumulatively increase the risk to human life and safety, property, infrastructure, and important critical natural and cultural resources.

The Phase 1 Hermits Peak - Calf Canyon Fire soil burn severity map can be downloaded at the “Hermits Peak - Calf Canyon Post-Fire BAER” InciWeb site (<https://inciweb.nwcg.gov/incident/8104/>) as a JPEG or PDF version under the “Maps” tab.

BAER SAFETY MESSAGE: *Everyone near and downstream from the burned areas should remain alert and stay updated on weather conditions that may result in heavy rains and increased water runoff. Flash flooding may occur quickly during heavy rain events-be prepared to act. Current weather and emergency notifications can be found at the **National Weather Service** website: www.weather.gov/abq/.*

Hermits Peak - Calf Canyon Post-Fire BAER Assessment information is available at: <https://inciweb.nwcg.gov/incident/8104/>

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