

Appendix A Severity Rating

On **low burn severity** sites the duff layer is partially consumed by the fire and very little heating of the soil surface layer occurs. The fire does not affect the soil hydrologic properties. Many unburned roots and seeds that are in the surface soil will aid in vegetating the burned areas. Natural re-vegetation on these sites will occur quickly. Typically, unburned trees and shrubs are present and provide cover that reduces soil erosion. Management activities using ground-based equipment are unlikely to increase soil erosion over that of similar unburned sites.

The moderate burn severity sites have slightly altered surface soil structure, reduced numbers of fine roots and less seed viability in the soil surface. Natural re-vegetation on these sites is slower than a low burn severity site. In most places the duff is reduced to a layer of charred litter. Hydrophobic soil, or soil that as result of fire has a slightly glazed or impermeable layer right at the surface, conditions may occur under moderate burn severity sites, but are usually spotty and short-lived. Sites with moderate burn severity are more likely to lead to increased soil erosion if they are disturbed by ground based logging equipment or other disturbances. However, erosion control practices are effective on these sites and must be applied. These soils are also susceptible to physical disturbance caused by equipment.

High burn severity sites have modified surface soil properties. The surface soil structure has broken down, and a strong hydrophobic layer may be present. Soil conditions and a lack of organic duff layer or protective vegetative cover allows for rain-impact erosion at the surface, reduced infiltration, and increase the potential for erosion and runoff. There are few viable roots or seeds in the upper several inches of the soil. The natural re-vegetation on these sites is slow. Immediately after the fire these areas will usually experience accelerated water runoff and erosion for a period of time, until a vegetative cover becomes established and the hydrophobic conditions dissipate. These soils require special mitigation measures and management practices to reduce the potential for even further soil erosion. The potential for erosion is highest on the steep slopes that burned with a high burn severity.

Other: On the Bucktail fire, the BAER team chose to map only high-severity areas and did not delineate moderate and low. Based on field review (see “Nutrient Cycles, Water Quality and Quantity/Bucktail” in this EA) and post-fire vegetation condition mapping (Map B), the ID Team assigned moderate and low severity rating using the following criteria. Areas classified as “other severity” by the BAER team having post-fire vegetation condition in “All Live” or “Mosaic” categories, were assigned “low” fire severity. Areas classified as “other severity” by the BAER team having post-fire vegetation condition in the “All Dead” category were assigned “moderate” fire severity.