EFFECTIVENESS OF POST-FIRE EROSION CONTROL TREATMENTS

To mitigate potential post-fire erosion and flooding, various erosion control treatments are applied on highly erodible areas with downstream resources in need of protection. Recent efforts to evaluate the effectiveness of postfire erosion mitigation treatments have used natural rainfall experiments at the hillslope- and small watershed-scale. Our results suggest that some mitigation treatments may reduce erosion for some, but not all, rainfall events. For small rainfall events (less than 2-yr return period for the 10 min duration), small reductions in first year erosion rates have been measured for hydromulch and contour-felled log erosion barriers, but the largest reduction in erosion rates have been measured in areas treated with dry mulches. Mulches, such as agricultural straw and engineered wood straw, applied at a rate that yields 70 percent ground cover, have reduced first year erosion rates up to 80 percent. Grass seeding treatments often do not result in enough vegetative cover to reduce erosion in the first year but may reduce erosion in subsequent years. The erosion reduction effect of all post-fire treatments decreases as rain intensity increases; however, dry mulch treatments may provide some erosion reducing effect at higher rain intensities than hydromulch or contour-felled logs.