



Treated vs. Untreated Understory Forest Response Following Wildland Fire in the Southwest: Implications for Range Managers

Douglas S. Cram¹, Terrell T. Baker¹ and Carl Edminster²; (1) New Mexico State University, (2) Rocky Mountain Research Station; Contact Author Email: dcram@nmsu.edu

We compared understory stand characteristics in silviculturally treated vs. untreated ponderosa pine (*Pinus ponderosa*) stands following wildland fire in New Mexico and Arizona between 2003-2007. Our objective was to characterize the annual and cumulative response and communicate management implications. To determine understory stand response following fire in lop, pile, burn; lop and scatter; harvest and burn; and untreated control stands, we estimated understory cover, standing crop, and dead and down fuel loading. Mean bare-soil cover on untreated sites was greater 2-3, 2-6, and 6-10 growing seasons following fire on Rodeo-Chediski, Borrego, and Oso study sites, respectively, as compared to treated sites. Differences in standing crop among treatments and years were ecologically insignificant. Coarse woody debris on untreated Oso sites was greater than treated sites 6-10 growing seasons following fire. Differences in fire severity between treated and untreated sites resulted in noteworthy ecological differences. Untreated sites had greater potential for soil erosion as a result of greater bare soil exposure up to 10 growing seasons following fire. While increased fuel loads due to falling tree boles may contribute organic matter to the system, they also have the potential to increase soil heating in the event of a reburn. Research results may be useful for discussions regarding suspension of federal grazing permits following fire. According to Franklin et al. (1997), ecosystem "recovery" depends on opportunity and chance. In the case of forest stands subjected to wildland fire, treated stands were provided an immediate opportunity to rebound while untreated stands were left to rely on chance.

2009. 62nd Society for Range Management Annual Meeting. Paper No. 85-1.