Fuel and Stand Characteristics in P. Pine Infested With Mountain Pine Beetle, Ips Beetle, and Southwestern Dwarf Mistletoe in Colorado's Northern Front Range

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In the ponderosa pine forests of the northern Front Range of Colorado, downed woody debris amounts, fuel arrangement, and stand characteristics were assessed in areas infested with southwestern dwarf mistletoe (*Arceuthobium vaginatum subsp. cryptopodum*), mountain pine beetle (*Dendroctonus ponderosae*) and Ips spp. One hundred fifty plots, each 0.04 ha, were measured and an ANCOVA and Tukey's Multiple Comparison Procedure were used to assess differences in plots with high infestation level compared to plots with trees not infested. Dwarf mistletoe contributed more to the fuel arrangement than to fuel amounts, with the amount of 1, 10, and 1000 hr time lag fuel classes not being different in plots with dmr > 4 as compared to plots with dmr < 4. Height to bottom of crowns was lower and percent live crown was greater in plots with dmr > 4 as compared to plots with dmr < 4. Bark beetles selectively infested large trees in plots without the presence of dwarf mistletoe (p=0.09), while the distribution of trees killed by bark beetles was equal across diameter size classes in plots with dwarf mistletoe and bark beetles (p=0.84). Bark beetles contributed to differences in the amount of fuel and fuel arrangement.

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