

Wildlife Society of America

Response of elk to high-density patches of coarse woody debris and regenerating saplings: A multi-scale analysis of browsing refugia in Yellowstone National Park.
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Following the extensive 1988 Yellowstone fires, a mosaic of high-viscosity patches was formed by fallen logs and regenerating lodgepole pine (*Pinus contorta*) saplings. Such patches could potentially provide browsing refugia for post-fire aspen (*Populus tremuloides*) seedlings. However, the density and distribution of saplings and downed logs required to effectively exclude elk (*Cervus canadensis*) are not known. We used pellet counts to estimate relative habitat use by elk at 64 sites distributed across density gradients of downed wood and regenerating saplings. Sub-hectare and landscape scales of pellet count variability were not explained by the density of logs or pine saplings. Given that some of our sites had densities of pine saplings in excess of 60,000 stems per ha and densities of downed logs greater than 1,500 logs per ha, our results suggest that fire-induced viscosity may not create broad-scale browsing refugia for aspen in Yellowstone National Park.