

Ungulate resource selection in bark beetle-impacted forests of Colorado

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Abstract Body

Bark beetle outbreaks have impacted millions of acres of conifer forests in Colorado and across western North America, which has altered forest structure and function. These alterations may have significant impacts on the ability of forests to fulfill resource requirements for species that utilize them or modify how they use forests to meet these needs. Ungulates in the southern Rocky Mountains utilize conifer forests to fulfill different aspects of their ecologies. However, there is currently a limited understanding of the unique impacts bark beetle outbreaks have on each species. Using GPS location data for mule deer (*Odocoileus hemionus*), elk (*Cervus canadensis*), and bighorn sheep (*Ovis canadensis*) we created third and fourth order resource selection functions using a use-availability framework. Measures of the beetle kill, along with topographic covariates, were derived from remotely sensed data. Preliminary results suggest that measures of outbreak age, size, severity, and heterogeneity all impact ungulate use of forested areas, however these patterns vary across scale and by species. General trends indicate that older and more severe patches of beetle kill forests with moderate outbreak heterogeneity are selected for by ungulates. Understanding the dynamics of ungulate resource selection under these circumstances is critical to inform both wildlife and forest management strategies, as the impacts of beetle-kill continue to evolve and expand across the west.

SESSION DETAILS

[Technical Session 22: Wildlife Management II](#)

8:00-10:00am

Tuesday, 11 June, 2024