

SPATIAL AND TEMPORAL RESPONSE OF GRIZZLY BEARS TO RECREATIONAL USE ON TRAILS^{TWS}

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Many human activities affect how bears use habitat, but effects of motorized recreational vehicle use on trails have not been formally assessed. We used hourly locations from four GPS-collared female bears in the Lewis and Clark National Forest to assess spatial and temporal distributions of bears relative to trail locations and to recreational use on trails. When availability was defined as circles equal to 95 percent of move distances around the previous bear location, all bears used areas near trails less than expected. We iteratively reclassified trail habitat versus non-trail habitat as increasing buffers in 50-m increments around trails until we reached a buffer-width at which bears used areas near trails in proportion to availability. Compositional analysis results showed that bears selected against areas within 250-900 m from ATV trails and within 450-600 m from single-track trails, which had some motorbike use. The distance from trails at which bear use approximated availability varied by individual bear, time of day, season, and type of trail. We assessed selection characteristics based on the nearest motorized route with logistic regression. Although explanatory power was low, two patterns of selection emerged. Three bears selected against areas near trails with high levels of motorized use and were more likely to use areas further from trails. One bear used areas closer to trails extensively in the spring and somewhat in the summer. Selection against areas near highways was stronger than selection against areas near ATV and single-track trails.