Wolf Den Site Selection In The Northern Rocky Mountains [TWS]

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Because mortality of wolves (*Canis lupus*) is highest during the first 6 months of life, den site selection may affect reproductive success of wolf populations. We studied fine-scale denning habitat selection (≤ 100 m of den sites) by comparing field-measured characteristics of 22 dens in Idaho, Montana, and Canada with paired random contrast sites within pack home ranges. In order of importance, wolves denned in areas that had greater canopy cover, hiding cover, herbaceous ground cover, and woody debris, and were closer to water than paired random sites. These factors suggest selection for physical protection and a readily available water source around den sites. We also compared 35 wolf dens to 35 paired contrast sites in Idaho, Montana, and Yellowstone National Park with respect to 6 remotely-sensed variables (elevation, slope, coniferous forest cover, solar radiation, distance to water, and distance to roads). We found no significant ($P < 0.10$ univariate) contrasts in the remotely-sensed variables, suggesting that some important variables can only be measured in the field. Nonetheless, a multivariate model based on the Mahalanobis distance with 4 of these remotely-sensed variables slope, elevation, coniferous forest cover, and solar radiation suggests that > 85% of dens will occur in potential denning habitat that occupies < 12 percent of the wolf recovery areas in the Northern Rocky Mountains. These results suggested optimal wolf denning habitat might be a limiting factor.

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