

## PREY SELECTION AND FUNCTIONAL RESPONSE OF COUGARS IN NORTHEASTERN WASHINGTON

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**Abstract:** We investigated prey selection of cougars in northeastern Washington during 2002-2004, where sympatric white-tailed deer and mule deer are the available primary prey. We also tested two competing predation hypotheses, the “prey switching” hypothesis, and the “apparent competition” hypothesis. White-tailed deer comprised the greatest proportion of cougar kills (60%) and prey population (70%) across the study area; however use/availability results in all cases show either selection for mule deer or neutral selection. 2<sup>nd</sup> and 3<sup>rd</sup> order selection results indicate that cougars select for mule deer across the entire study area ( $p = 0.05$  and  $p = 0.07$ ), however within the study area, selection varies geographically. We detected strong seasonal fluctuations in selection, with cougars strongly selecting for mule deer in summer ( $p = 0.02$ ), but showing neutral selection during winter ( $p = 0.49$ ). Mean annual functional response of cougars was 6.68 days per deer kill. Kill rates did not differ between seasons ( $p=0.78$ ) or deer species ( $p = 0.58$ ), and we found no differences in habitat characteristics between white-tailed deer and mule deer kills. These findings are consistent with the apparent competition hypothesis, suggesting that the mule deer decline, although directly attributed to cougars, is ultimately caused by an abundance of invading primary prey (white-tailed deer).

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