

LEK ECOLOGY OF MALE GREATER SAGE-GROUSE
IN CARBON COUNTY, WYOMING

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ABSTRACT

Wildlife managers need to understand how Greater sage-grouse (*Centrocercus urophasianus*) breeding behavior influences long-term reproductive success, and should be able to accurately relate their breeding ground (i.e. lek) count data to population sizes.

Average daily attendance rates per lek ranged from a 16.1% in 2011 to 82.0% in 2014, with high annual variability, challenging lek counts as an index to populations. Males were less likely to attend the day of precipitation and the day following precipitation. Date also predicted attendance, with peak dates of attendance ranging from April 7 in 2012 to May 13 in 2011.

Males had a 1.04% - 2.22% daily probability of moving to a new lek on any given day, demonstrating high daily lek fidelity as expected for a lek-breeding bird. However, the yearly probability of moving to a new lek ranged from 38.6% - 69.9% per year, suggesting many males may make at least one interlek movement at some point during the breeding season. Dominant males were less likely to move than subordinates. Males were 5 times less likely to move during a day with 0.5 cm precipitation than with no precipitation, but 2 times more likely to move on the day following precipitation

Male sage-grouse were most likely to be detected on leks with shorter sagebrush and higher snow cover. The average detection rate across all leks was 87%, and there was little variation from lek to lek in their lek-specific detection rates, suggesting the lek count is an appropriate index to population size from lek to lek.