

INFLUENCE OF PRE-BREEDING BODY CONDITION ON REPRODUCTIVE METRICS OF GREATER SAGE-GROUSE

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Many species are subject to carry-over effects, where habitat quality experienced long before breeding may influence subsequent performance and overall fitness of an individual. Pre-breeding body condition has been shown to affect reproductive metrics including: breeding propensity, timing of nest initiation, clutch size, and offspring quality. Although the effects of pre-breeding body condition on reproduction have been well-studied in waterfowl, we know little about carry-over effects for gallinaceous birds. During on-going research in the Centennial Valley in southwestern Montana, we tracked 237 female Sage-grouse for 5 years and monitored nesting activity and broods until 30 days of age. Based on preliminary regression analyses, we did not detect an influence of pre-breeding body condition on breeding propensity, given that most individuals nested (91%, 187/206) if they survived long enough to breed. We did not observe differences in timing of nest initiation based on variation in pre-breeding body condition, but this timing differed substantially among years. We found pre-breeding body condition positively influenced clutch size and offspring weight, however there was substantial unexplained variation. Although we did not find pre-breeding body condition strongly influenced reproduction in this population, other metrics, such as habitat characteristics and the previous season's weather events, may provide insights about the role of carry-over effects in sage-grouse. We are currently investigating other drivers to understand the importance of winter habitat quality on reproduction and subsequently help guide management decisions.