

GREATER SAGE-GROUSE NEST SITE SELECTION, BROOD-REARING SITE SELECTION, AND CHICK SURVIVAL IN WYOMING

Leslie Schreiber

Dr. Joshua Millspaugh, Thesis Supervisor

ABSTRACT

Greater sage-grouse (*Centrocercus urophasianus*; hereafter, sage-grouse) populations throughout North America were recently listed as “warranted but precluded” under the Endangered Species Act. North America’s largest wind energy facility, consisting of approximately 1,000 turbines, is proposed to be built in south-central Wyoming in an area occupied by sage-grouse. Our project is part of a Before-After-Control-Impact study collecting baseline data on sage-grouse prior to construction of this wind energy facility. Our objectives were to assess sage-grouse nest-site selection (Chapter 1), evaluate resource selection patterns by female sage-grouse with broods (Chapter 2), and estimate sage-grouse nest productivity and chick survival rates (Chapter 3).

Nest-site selection was influenced by lateral visual obstruction 23–46 cm above the ground. Female sage-grouse selected brood-rearing sites with greater lateral visual obstruction close to the ground, more sagebrush canopy cover, and greater relative abundance of arthropods compared to available sites. Our study is the first to report sage-grouse broods’ selection of greater relative arthropod abundance, but not necessarily greater forb cover. Chick survival rates to 70 days-post-hatch [2011: 0.120 ± 0.082 (SE), 2012: 0.031 ± 0.034 (SE), 2013: 0.157 ± 0.049 (SE)] were very low. Management practices aimed at conserving the native sagebrush/bunchgrass plant community, intermixed with vegetation that supports arthropods, such as numerous, small patches of wet meadows, might help improve sage-grouse nest productivity and chick survival on our study area.