SURVIVAL OF GUNNISON SAGE-GROUSE CHICKS AND JUVENILES IN COLORADO

AMY J. DAVIS, Colorado State University, Department of Fish, Wildlife, and Conservation Biology, Ft.Collins, CO 80523, USA

MIKE PHILLIPS, Colorado Division of Parks and Wildlife, 317 West Prospect, Fort Collins, CO 80526, USA

PHILLIP A. STREET, Colorado State University, Department of Fish, Wildlife, and Conservation Biology, Ft.Collins, CO 80523, USA

PAUL F. DOHERTY, JR., Colorado State University, Department of Fish, Wildlife, and Conservation Biology, Ft. Collins, CO 80523, USA

Abstract: Juvenile recruitment is one of the most important vital rates influencing the population growth of many bird species. Understanding trends in juvenile recruitment is fundamental to understanding trends in the population as a whole. Gunnison Sage-grouse (Centrocercus minimus) have declined substantially from their historic range and is currently a candidate species under the U.S. Endangered Species Act. There is currently no species-specific information on juvenile recruitment rates for the Gunnison Sage-grouse. My research focused on establishing baseline juvenile recruitment rates for this species, and testing population-level, individual (i.e., hatch date, age, age of hen) and temporal hypotheses (month, year, trend over year) associated with juvenile recruitment. I compared two populations of Gunnison Sage-grouse juvenile recruitment from 2005-2010 in the Gunnison Basin population and from 2007-2010 in the San Miguel population, both in the southwest of Colorado. I evaluated chick survival (hatch-30 days of age) and juvenile survival (31 days of age to the start of the first breeding season), then combined them to evaluate juvenile recruitment. The difference in the two populations was strong in the chick survival analysis, no chicks survived to 30 days of age in San Miguel (n=8). Chick survival was 0.52 (SE=0.08) in Gunnison Basin (n=282). Thus there was no recruitment in San Miguel. There was a slight negative trend in chick survival and a stronger negative trend in juvenile survival from 2005-2010 in Gunnison Basin. Juvenile survival ranged from 0.60 (SE=0.12) in 2005 to 0.11 (SE=0.06) in 2010 (n=87). The overall juvenile recruitment rate in Gunnison Basin declined from 0.38 (SE=0.09) in 2005 to 0.05 (SE=0.03) in 2010.