

DISTRIBUTION AND HABITAT SELECTION OF THE BURROWING OWL IN WESTERN SOUTH DAKOTA

Jason Thiele^{1*}, Charles Dieter¹ and Kristel Bakker²

¹Department of Biology and Microbiology
South Dakota State University
Brookings, SD 57007

²College of Arts and Sciences
Dakota State University
Madison, SD 57042

*Corresponding author email: jason.thiele@jacks.sdstate.edu

ABSTRACT

Burrowing owl (*Athene cunicularia*) populations are declining largely due to wide scale habitat loss. Habitats used by the burrowing owl are variable across its range, and knowledge of its specific needs in different regions is necessary for its conservation. In South Dakota, burrowing owls are associated with black-tailed prairie dog colonies, but it is unclear why owls select certain colonies over others as nest sites. We surveyed prairie dog colonies in 25 western South Dakota counties from May through July 2010 for burrowing owls using a standardized point count method. We classified each surveyed prairie dog colony into one of three classes (unoccupied, single occupied, or multiple occupied) based on the number of breeding pairs of burrowing owls in the colony. We used ArcGIS to calculate the area of each colony and to estimate the percent cover of trees, grassland, and cropland within 800 m and 1600 m of each colony. Occupied colonies were significantly larger than unoccupied colonies. Larger colonies typically provide more potential nest burrows and perhaps better foraging opportunities. Percent tree cover was the only landscape factor that differed among the three colony classes. At both the 800 m and 1600 m levels, occupied colonies had less tree cover in the surrounding landscape than unoccupied colonies, indicating that burrowing owls avoid nesting near wooded areas. During the next phase of this study, we will construct models using various combinations of nest-, colony-, and landscape-level habitat characteristics to determine the most important factors impacting nest site selection.