

FEATURE ARTICLES

SURVIVAL AND MOVEMENTS OF JUVENILE BURROWING OWLS DURING THE POSTFLEDGING PERIOD

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Abstract. Burrowing Owl (*Athene cunicularia*) populations have declined extensively throughout much of North America, and modeling demography may assist conservation. However, few studies have estimated adult survival, and fewer still have determined juvenile survival. In 2003 and 2004 we monitored survival of 40 radio-tagged juveniles during the postfledging period in the Little Missouri National Grassland, North Dakota, where owls nested in black-tailed prairie dog (*Cynomys ludovicianus*) colonies. Survival averaged 0.57 (95% CI: 0.41–0.73) prior to autumn migration. Mortality was highest during the first two weeks after nest departure when juveniles were flightless, and two to three weeks later when juveniles became independent. Predation or starvation was implicated in most deaths. Distribution and abundance of escape cover (number of prairie dog burrows within 30 m of nests and size of the natal prairie dog colony) did not affect survival. Body condition and brood size at the time of radio-tagging also did not influence survival. Juvenile owls exhibited nest-centered dispersal, and averaged 108 ± 21 (SE) m and 82 ± 17 m from nests at initiation of migration in 2003 and 2004, respectively. Mean dates of departure from the study area were 2 September (± 3 days) 2003 and 24 August (± 2 days) 2004. Mortality during the postfledging period accounted for approximately two-thirds of mortality in the first year of life.

Key words: *Athene cunicularia*, *black-tailed prairie dog*, *Burrowing Owl*, *Cynomys ludovicianus*, *juvenile survival*, *mortality*, *postfledging period*.