



## Migratory linkages of Burrowing Owls on DoD installations and adjacent lands

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### Background:

Burrowing Owls (*Athene cunicularia*) were once a common breeder in grasslands and deserts throughout the western U.S. and Canada. However, some populations have declined and Burrowing Owls have been extirpated from areas on the periphery of their breeding range.

Despite the declines in some portions of their range, Burrowing Owls appear to be increasing in other areas. One possible explanation for this paradox is that



Burrowing Owls are becoming less migratory. In other words, breeding populations might be redistributing rather than declining. This hypothesis has implications for the

validity of Burrowing Owl listing petitions and implications for the effectiveness of conservation and management efforts. Also, the high density populations of limited distribution that would result could be vulnerable to factors that threaten fragmented populations.

The status of the Burrowing Owl impacts the military mission because Burrowing Owls are common on many of the DoD installations in the west U.S.

### Objective:

The overall objective of this project is to determine whether Burrowing Owls are redistributing their populations and becoming less migratory. To this end, we will determine connectivity of Burrowing Owl populations on DoD installations and adjacent lands in the western U.S., and determine where Burrowing Owls nesting on DoD installations and adjacent lands spend the winter.

### Summary of Approach:

We will use stable isotope ratios of owl feathers to determine where Burrowing Owls breeding on (or near) DoD installations spend the winter. We will use genetics from blood samples to determine how much genetic interchange exists between populations of owls nesting on DoD installations. We will use radio telemetry to determine the migration routes of Burrowing Owls nesting on DoD installations, and where they overwinter.

### Benefit:

This work will provide a landscape level view of movements among Burrowing Owl populations which will

allow conservation managers to direct their efforts appropriately. This study also will provide insight into how the rapid land-use changes occurring in arid areas of the southwestern U.S. and northern Mexico are likely to influence the distribution of burrowing owls. This information is vital to supporting the military mission because it will help identify the management role of DoD for conserving Burrowing Owls in the U.S., potentially help prevent further listing efforts for a species that is common on DoD installations, and provide information on risk and frequency of bird strike hazards by documenting movement patterns of a breeding bird common on DoD installations in the region. Additionally, this project will provide information to resource managers at DoD installations that want to manage Burrowing Owl populations. To this end, we are also providing training to DoD personnel on Burrowing Owl field techniques.

### Accomplishments:

To date, we have held 3 workshops to train DoD personnel and contractors on Burrowing Owl field techniques. We have trapped 1,031 Burrowing Owls at 15 DoD installations, and collected feathers and blood from



each owl following a standard protocol. We have established contact with and arranged to visit another 16 DoD installations to trap and collect feathers.

### Contact Information:

Ms. Carol A. Finley  
Natural Resource Manager  
Kirtland AFB, Natural Resources Office  
2050 Wyoming Blvd. SE  
505-846-0053, 505-846-0403  
carol.finley@kirtland.af.mil

Dr. Courtney J. Conway  
Assistant Unit Leader  
USGS Arizona Coop. Research Unit  
University of Arizona  
Tucson, AZ 85721  
520-626-8535  
cconway@usgs.gov