



**NEW MEXICO
ORNITHOLOGICAL SOCIETY
49TH ANNUAL MEETING**

**9 April 2011
Las Cruces, New Mexico**

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9 April 2011
Ramada Palms Hotel and Conference Center
Las Cruces, New Mexico

AGENDA

9:00-10:00	REGISTRATION
10:00-10:45	NMOS BUSINESS MEETING
10:45-11:00	BREAK
11:00-11:15	NMOS GREETING Dave Krueper (PRESIDENT) - ANNOUNCEMENTS
11:15-12:00	NMOS GENERAL SCIENCE SESSION MORNING Martha Desmond (NMSU) SESSION CHAIR
11:20-11:40	RIPARIAN RAPTOR SURVEYS AND PROJECT BLACK HAWK: AN INTRODUCTION M.C. Neal AND C. Duffy

11:40-12:00	PRELIMINARY RESULTS FROM SATELLITE TRACKING OF GOLDEN EAGLES IN THE COLORADO PLATEAU REGION R.K. Murphy, D.W. Stahlecker, B.A. Millsap, and A.R. Harmata
12:00 -1:30	LUNCH
1:30-4:30	NMOS GENERAL SCIENCE SESSION AFTERNOON Martha Desmond (NMSU) SESSION CHAIR
1:30-1:50	FACTORS INFLUENCING NEST SURVIVAL AND PRODUCTIVITY IN WESTERN BURROWING OWLS ACROSS THE GREAT PLAINS J. Good, M.J. Desmond, R. Treminio, W. Gould, G.W. Roemer, and C. Campbell.
1:50-2:10	OCCUPANCY OF HABITATS BY MEXICAN SPOTTED OWLS IN RELATION TO EXPLOSIVE NOISE AND RECREATIONAL ACCESS AT LOS ALAMOS NATIONAL LABORATORY C.D. Hathcock, L.A. Hansen, and D.C. Keller
2:10-2:30	THE OSPREYS OF NAVAJO DAM, SAN JUAN CO., NM: THE 2009 BREEDING SEASON T. REEVES
2:30-2:50	REPORT ON THE FIRST CONFIRMED NESTING OF ANNA'S HUMMINGBIRD IN NEW MEXICO D.J. Griffin and D.M. Simonetti

2:50 – 3:20	BREAK INFORMAL POSTER SESSION
3:20-3:40	SURVEYS FOR YELLOW-EYED JUNCOS IN THE BIG BURRO MOUNTAINS, GRANT COUNTY, NEW MEXICO D.J. GRIFFIN AND H.A. WALKER
3:40-4:00	NESTLING DEVELOPMENT AND FLEDGING IN BLACK-THROATED GRAY WARBLER: A PHOTO ESSAY A.C. GORBET AND L.P. GORBET
4:00-4:20	BREEDING BIRD RESPONSES TO 30 YEARS OF GRASSLAND RESTORATION ON SOUTHERN NEW MEXICO PUBLIC LANDS J.M. COFFMAN
4:20-4:40	BIRD MIGRATION AND STOPOVER HABITAT USE IN THE SOUTHWEST J.M. RUTH, R.H. DIEHL, AND R.K. FELIX JR.

POSTERS

ALL PRESENTERS MUST BE AT THEIR POSTERS FROM 2:50-3:20

NEW MEXICO BURROWING OWL WORKING GROUP: EFFORTS IN EDUCATION AND CONSERVATION
C.A. FINLEY, D. AKINS, M. WOOTTEN, AND V. BAILEY

CITY OF LAS CRUCES, BURROWING OWL MANAGEMENT PROJECT
H. COBOS, V. DIANDREA, AND M.J. DESMOND

**INFLUENCE OF NEST DENSITY AND LANDSCAPE
FRAGMENTATION ON BURROWING OWL PREY DELIVERY
TO NESTS**

M. CAMPOS, J. GOOD, AND M.J. DESMOND

**DOES BURROWING OWL NEST DENSITY INFLUENCE TIME
DEVOTED TO ALERT BEHAVIORS?**

C. WILLIAMS, J. GOOD, AND M.J. DESMOND

**IDENTIFICATION OF BURROWING OWL PREDATORS IN
BLACK-TAILED PRAIRIE DOG COLONIES ACROSS THE
GREAT PLAINS.**

M.B. HAGMAN, J. GOOD, AND M.J. DESMOND

4:45 **ADJOURN**

5:00 – 6:00 **INFORMAL SOCIAL**

6:00 **NMOS BANQUET**

7:00 **KEYNOTE PRESENTATION: ADVENTURES IN
MEXICO WITH THE MEXICAN DUCK**
S.O. WILLIAMS III

ABSTRACTS

ORAL PRESENTATIONS

(In order of presentation; presenters underlined)

RIPARIAN RAPTOR SURVEYS AND PROJECT BLACK HAWK: AN INTRODUCTION

M.C. Neal and C. Duffy, HawkWatch International, SW Regional Office, Glenwood, NM 88039

During the summer of 2010 HawkWatch International conducted a feasibility assessment for conducting riparian raptor surveys and undertaking a long-term research and monitoring effort focused on the Common Black-Hawk (*Buteogallus anthracinus*) in Southwest New Mexico. In totality, 85 miles of riparian stream reaches were assessed and surveyed along the Gila and San Francisco Rivers. Thirty-eight individual nests or territories were documented for six species, including: Common Black Hawk (CBHA), Peregrine Falcon, Golden Eagle, Zone-tailed Hawk, Red-tailed Hawk, and Common Raven. Territorial behavior was also documented for American Kestrel, Cooper's Hawk, Great Horned Owl, and Western Screech Owl. Fifty percent or 19 of these territories were utilized (active or occupied) in 2010. Of the nine active nests, some measure of productivity was documented at seven nests, primarily for CBHA, two of which fledged one young each (documented nest success). Two CBHA nests (22%) are believed to have failed as a direct result of proximate human disturbance and two others were significantly disturbed later in the reproductive cycle. Observations indicate that topography and intraspecific competition could be more significant limiting factors in CBHA nest distribution than is habitat or interspecific competition factors. Hence, more incised canyon country demonstrates greater inter-nest distance than more open valley areas with similar habitat. Likewise, nest sites in the more incised and linear habitats may be more prone to proximate human disturbance. Learn why HawkWatch International believes the CBHA may be an important indicator species and how the organization plans to move forward with Project Black Hawk in 2011 and beyond.

PRELIMINARY RESULTS FROM SATELLITE TRACKING OF GOLDEN EAGLES IN THE COLORADO PLATEAU REGION

R.K. Murphy, U.S. Fish and Wildlife Service—Division of Migratory Birds, Albuquerque, NM 87103, D.W. Stahlecker, Eagle Environmental, Inc., 30 Fonda Road Road, Santa Fe, NM 87508
B.A. Millsap, National Eagle Coordinator, U.S. Fish and Wildlife Service, Albuquerque, NM 87103, A.R. Harmata, Department of Biology, Montana State University, Bozeman, MT 59717

A decline in the western U.S. breeding population of Golden Eagle (*Aquila chrysaetos*) is suspected and threats to the population are increasing, but poor understanding of the species' population dynamics limit its conservation. In spring 2010, we began using satellite telemetry to study survival, sources of mortality, natal dispersal, and movements and home range use of Golden Eagles breeding at the center of the Colorado Plateau region. Eight nestling and four adult Golden Eagles were instrumented in northwestern New Mexico and northeastern Arizona in May-June 2010 (nestlings) and January 2011 (adults). Two nestlings fledged prematurely (< 50 days old), probably due to food stress, and died. Two others died 30 and 60 days after fledging, due to injury and unknown causes. A male left his natal area 2.5 months after fledging

and in the subsequent 3 months moved up to 250 km away, traveling extensively through southern Colorado before settling in southwestern Colorado in late October. Two females moved 60-100 km from natal areas to southwestern Colorado in February, one after a brief, 170-km eastward excursion in November. A third female had not moved more than 15 km from her natal area through mid-February but began moving farther by early March. Four adults (two males, two females) captured on known territories in early January 2011 exhibited different movement scenarios by late February. One male remained on territory but another began to move up to 40 km from his winter range, leaving his residency in question. One adult female was killed, apparently in a battle for her territory, while the other suddenly moved 450 km south in early February from what was thought to be her territory. Mid-winter home ranges (95% kernel) were about 9 km² for adult females and 31 km² for adult males. The study already has begun to yield novel findings and will be expanded in spring 2011.

FACTORS INFLUENCING NEST SURVIVAL AND PRODUCTIVITY IN WESTERN BURROWING OWLS ACROSS THE GREAT PLAINS

J. Good, M.J. Desmond, R. Treminio, and G. Roemer, Department of Fish, Wildlife and Conservation Ecology, New Mexico State University, Las Cruces, NM, 88003, William Gould, Department of Applied Statistics, New Mexico State University, Las Cruces, NM 88003, and Carol Campbell, Department of Geography, New Mexico State University, Las Cruces, NM 88003

Western Burrowing Owls (*Athene cunicularia hypugaea*) have experienced a population decline across western North America. Interestingly, in contrast to the declines in the north, Breeding Bird Survey data indicates an annual population increase of 1.5% in the highly fragmented southern Great Plains. However, the impact of fragmentation on Burrowing Owl populations is not yet understood. Habitat destruction and fragmentation may be attributing to the declines in burrowing owl productivity. Across the Great Plains, Burrowing Owls rely heavily on burrows created by the black-tailed prairie dog within prairie dog colonies. We observed 1559 Burrowing Owl nests in 89 prairie dog colonies across the Great Plains in Buffalo Gap, Grand River, Pawnee, Comanche, Kiowa, and Rita Blanca National Grasslands as well as Janos-Nuevos Casas Grande, Mexico during the summers of 2006, 2009, and 2010. We observed a nest failure rate of 24.6% in 2006, 40.6% in 2009, and 41.1% in 2010. Both local and landscape variables are used to investigate nest survival and productivity. Results of our data analyses will be discussed.

OCCUPANCY OF HABITATS BY MEXICAN SPOTTED OWLS IN RELATION TO EXPLOSIVE NOISE AND RECREATIONAL ACCESS AT LOS ALAMOS NATIONAL LABORATORY

C.D. Hathcock, L.A. Hansen, and D.C. Keller, Resources Management Team, Environmental Stewardship Group, J978, Los Alamos National Laboratory, Los Alamos, NM 87545

We examined 15 years of presence/absence data on the Mexican Spotted Owl (*Strix occidentalis lucida*) at Los Alamos National Laboratory in seven areas managed as Spotted Owl habitat and affected by two types of anthropogenic disturbances: human recreation and relatively frequent but brief impulse noises caused by explosives. On the basis of the percent of years each area was occupied (the occupancy rate), the type of disturbance had an apparent effect on habitat occupancy. The rate of occupancy of Spotted Owl habitat within 2.4 km of firing sites with

restricted access was 31% while in habitat >2.4 km from firing sites in which recreational access was allowed it was 7%. These results suggest that the Spotted Owl's use of habitat at Los Alamos is not adversely affected by noise generated during explosives tests but may be adversely affected by recreational access.

THE OSPREYS OF NAVAJO DAM, SAN JUAN CO., NM: THE 2009 BREEDING SEASON

T. Reeves, Department of Computer Science and Information Technology San Juan College, Farmington, NM 87402

Photographic documentation of the pair of breeding Osprey at Navajo Dam in 2009. The female was first photographed incubating eggs on 23 May. The parents were regularly at the nest or in the vicinity. The female did the incubating. The male did most of the fishing. There was a second female in the area. The first evidence of hatchlings was on 17 June. The female mother was first observed flying from the nest on 23 June. My observations to this point were made in the afternoon. On 30 June the female spread her wings to shade the nestlings with the temperature at 91 degrees F. That is all the activity in subsequent afternoons so I switched to mornings for my observations. Throughout the nesting season the male brought fish to the nest. He also continued to bring branches to the nest all season. On 9 July with both parents in the nest and the young too small to be visible a second female adult was photographed flying over the nest. The first young was seen on 15 July. A nestling was seen flapping its wings on 23 July. On 6 August the two young were about the size of the female. On 10 August the first flight of an immature was photographed. Both female young were flying on 13 August. The young birds stayed close to the nest until 20 September. After that they were observed only away from the nest. One Osprey was regularly seen flying around until 13 November.

REPORT ON THE FIRST CONFIRMED NESTING OF ANNA'S HUMMINGBIRD IN NEW MEXICO

D.J. Griffin and D.M. Simonetti, Mesilla Valley Audubon Society P.O. Box 1645 Las Cruces, NM 88004-1645

From January 24 to 30, 2010 DMS observed and photographed an adult female Anna's Hummingbird (*Calypte anna*) gathering nest material in her backyard in a residential neighborhood of Las Cruces, Dona Ana County, New Mexico. On January 30, 2010 we explored the neighborhood for possible nesting areas and nest sites as well as potential nectar sources. On January 31, 2010, the Anna's Hummingbird again visited DMS's backyard and we later followed the female and located her nest in an Afghan pine tree (*Pinus eldarica*) approximately 115 meters from where she gathered nest material. From February 1 to March 5, 2010 we monitored the nest, determined the outcome, and took standard nest site measurements following nest completion. The female apparently laid only one egg and ultimately produced one fledgling. The fledgling left the nest on March 3, 2010 and within 2 days was capable of flying up to 12 meters at a time. This nesting by Anna's Hummingbird is the first such confirmed and documented in New Mexico. We also report on the apparent increase of wintering Anna's Hummingbirds in the Las Cruces area, the expansion of Anna's Hummingbird breeding range in recent years and of more recent breeding records in Texas.

SURVEYS FOR YELLOW-EYED JUNCOS IN THE BIG BURRO MOUNTAINS, GRANT COUNTY, NEW MEXICO

D.J. Griffin, Griffin Biological Services, Las Cruces, NM 88012, and H. A. Walker, PhD, Non-game and Endangered Species Ornithologist Conservation Services Division New Mexico Department of Game and Fish, 1 Wildlife Way, Santa Fe, NM 87507

In 2008 and 2009, we conducted surveys, nest searches and monitoring and capture and banding of Yellow-eyed Juncos (*Junco phaeonotus*) in the Big Burro Mountains of Grant County, New Mexico. In winter 2010, we conducted surveys to determine distribution and captured and banded additional birds. In 2008, 16 pairs of Yellow-eyed Juncos were found including 9 breeding pairs. Three nests were found and monitored; 2 were predated and 1 produced 4 fledglings. Dark-eyed “Red-backed” Juncos (*J. hyemalis dorsalis*) were observed less frequently and no nesting pairs were located. In 2009, 11 pairs of Yellow-eyed Juncos, 4 unpaired Yellow-eyed Junco males, 1 pair of “Red-backed” Juncos, and 1 male Gray-headed Junco (*J. hyemalis caniceps*) were detected. Six pairs of Yellow-eyed Juncos nested and produced fledglings. Four nests were located and 3 were monitored. Two nests were abandoned during construction, and 2 nests produced fledglings. Up to 5 additional pairs nested in 2009. In 2008 and 2009 apparent hybrids between the two species were observed, as were apparent mixed-species breeding pairs. Phenotypic variability in individuals made it difficult to ascertain in the field if a particular junco was a hybrid. Fourteen juncos were captured and banded in 2009 including 7 Yellow-eyed, 5 Dark-eyed, and 2 intergrade/hybrid juncos. In winter 2010, heavy snowfall precluded thorough survey efforts at higher elevations and few Yellow-eyed Juncos were observed. Five Yellow-eyed Juncos were observed on private land and 2 of these were captured and banded. Additional breeding season surveys and banding will continue in 2010.

NESTLING DEVELOPMENT AND FLEDGING IN BLACK-THROATED GRAY WARBLER: A PHOTO ESSAY

A.C. Gorbet and L. P. Gorbet, Rio Grande Bird Research, Inc., 7204 Oralee St. NE, Albuquerque, NM 87109

Very little is known of nestling development and fledging in the Black-throated Gray Warbler (*Dendroica nigrescens*). According to ornithological literature, fledging period has not been documented for this species. During 2010, Black-throated Gray Warblers were monitored in Otero Canyon, Manzanita Mountains, Bernalillo County, NM, as part of a research project on their breeding biology. This project was funded in part by the NMOS Ryan Beaulieu Research Grant awarded in April 2010. Daily photographs were taken of developing chicks at a known nest from hatching through fledging. Photographs of nestlings nearing fledging at a second nest were also gathered. The juxtaposition of these images illustrate the development of young Black-throated Gray Warblers from hatching to fledging and shed light on a previously little known aspect of the ecology of the species. Our findings indicate that young Black-throated Gray Warblers leaving the nest at 8 days old can successfully fledge, though ideal fledging time in this species likely takes place when nestlings are 9 to 10 days old.

BREEDING BIRD RESPONSES TO 30 YEARS OF GRASSLAND RESTORATION ON SOUTHERN NEW MEXICO PUBLIC LANDS

J. M. Coffman, Dept. of Biology, New Mexico State University, Las Cruces, NM 88003

In an attempt to restore large tracts of southwestern New Mexico's degraded rangelands, the Bureau of Land Management (BLM) applied herbicide to 190,494 ha of creosotebush (*Larrea tridentata*) shrublands since the early 1980's with 70% of the treatments occurring since 2006. BLM has set goals to treat an additional 172,000 ha at a cost of \$12,750,000. Along with increased rangeland productivity and watershed health, managers assume these treatments will improve wildlife habitat and diversity but, these assumptions remain largely untested. To examine the response of breeding birds to shrublands undergoing restoration, I surveyed bird species composition and vegetation structure on sixteen paired plots that varied in time since initial treatment. I paired each treatment plot with a nearby untreated shrubland that had similar elevation, soil type, landform, and distance to water. Shrub control treatments featured a significant increase in grass cover and basal cover relative to controls. There was also greater average total bird abundance on shrub control treatments than on controls. Treatments and controls differed in bird community composition and newer treatments differed from older treatments. Eastern Meadowlarks (*Sturnella magna*), Scaled Quail (*Callipepla squamata*) and Cassin's Sparrows (*Peucaea cassinii*) responded positively to increased grass cover. Treatments also had a significant effect of Meadowlark average abundance. This study presents the first evidence supporting wildlife habitat improvements on 30 years of grassland restoration and will provide regional managers with a range of habitat measures useful in monitoring future efforts.

BIRD MIGRATION AND STOPOVER HABITAT USE IN THE SOUTHWEST

J. M. Ruth, USGS Arid Lands Field Station, Albuquerque, NM 87131 and R.H. Diehl and R.K. Felix Jr., University of Southern Mississippi, Hattiesburg, MS 39406

To ensure full life-cycle bird conservation, we need to understand migrant behavior en route and how birds use habitat during stopover. Birds traversing the Southwest are known to use riparian stopover habitats; we know less about how migrants use other habitats and how density varies across the region seasonally and annually. Using weather radar data, we found that in fall there was greater passage of migrants through the central part of the borderlands; in spring there was some suggestion of greater passage in the eastern borderlands. Density patterns are consistent with the existence of more than one migration system through western North America and seasonally different migration routes for at least some species. Presence of bats in the data complicates some interpretations. We combined radar and land cover data to determine migrant stopover habitat use. There were significant differences in bird densities among habitat types at all radar sites in at least one of three seasons studied. Upland forest habitat in parts of Arizona and New Mexico supported higher migrant densities than other habitat types, especially in fall. Developed habitat in areas with little upland forest habitat also supported high migrant densities. Scrub/shrub and grassland habitats supported low to intermediate migrant densities, but because these habitat types dominate the region, they may support larger numbers of migrants than previously thought. This may be especially true for non-forest species. Further research is needed to address issues of target identity and to confirm the importance of these habitat types to migratory birds.

POSTERS

(alphabetical by author)

INFLUENCE OF NEST DENSITY AND LANDSCAPE FRAGMENTATION ON BURROWING OWL PREY DELIVERY TO NESTS

M.J. Campos, J. Good, and M. J. Desmond, Department of Fish, Wildlife and Conservation Ecology, New Mexico State University, Las Cruces, NM 88003

Athene cunicularia, commonly known as the Burrowing Owl, is a species of conservation concern native to the western United States. Burrowing owl populations are declining throughout much of their range, most likely due to the effects of habitat fragmentation. As acres of grassland are being converted for agricultural purposes, the size, quality and distribution of prairie dog colonies has declined. This may result in increased risk of predation for nesting owls, higher nesting densities of owls and increased competition for resources among neighboring owl nests. We are interested in how owl nest density and landscape fragmentation influences the type of prey items delivered to owl nests. Multiple cameras were distributed among different nests at five Forest Service National Grasslands in summer 2010 (Buffalo Gap NG and Grand River NG, South Dakota, Comanche NG and Pawnee NG, Colorado, and Kiowa NG, New Mexico and Rita Blanca NG, Texas). By obtaining and quantifying data from the video footage, we will determine the types of prey items (vertebrate or invertebrate) delivered to nests in relations to nest density and the landscape matrix. We hypothesize that the percentage of vertebrate prey items will be negatively related to burrowing owl nest density and the degree of landscape fragmentation. Alternatively, landscape fragmentation may positively influence the amount of vertebrate prey delivered to a nest until a threshold level of fragmentation is reached and decline after. This research will contribute to a greater understanding of substantial Burrowing Owl population declines in the Northern Great Plains.

NEW MEXICO BURROWING OWL WORKING GROUP: EFFORTS IN EDUCATION AND CONSERVATION

C.A. Finley and D. Akins, Dept. of Natural Resources , Kirtland Air Force Base, 2050 Wyoming Blvd SE, Kirtland AFB, NM 87117, and M. Wootten and V. Bailey, Envirological Services, Inc, 8109 Waverly Dr NW, Albuquerque, NM 87120

The New Mexico Burrowing Owl Working Group has worked to inform the public and researchers on the importance of Burrowing Owl Conservation since 2001. Our Mission is to reduce the risk of Burrowing Owl declines throughout the state through research, education, and provide a source by which historical and current status on the Burrowing Owl can be documented. A brochure was developed that educates the public on the working group, owl ecology, conservation priorities, and includes an observation form to be filled out and sent in to the group. The New Mexico Department of Game and Fish developed a Burrowing Owl database that will contain both citizen science and research related data on abundance and distribution of owls in New Mexico. This confidential database will be housed in a secured location. Once the database is populated the data will be analyzed to identify threats to the Burrowing Owl, Burrowing Owl habitat use, and population abundance, distribution, and status, of the Burrowing Owl in New Mexico. Map layers are being developed through a Geographical

Information System that provide vital information on Burrowing Owl distribution, elevation, precipitation, prairie dog towns etc.

CITY OF LAS CRUCES, BURROWING OWL MANAGEMENT PROJECT.

H. Cobos, V. DiAndrea, M. J. Desmond, Department of Fish, Wildlife and Conservation Ecology, New Mexico State University, Las Cruces, NM 88003

This project addresses the management of Burrowing Owl (*Athene cunicularia*) populations on City of Las properties by working collaboratively with the Parks and Recreation Department to develop a Burrowing Owl management plan. A large breeding and wintering population of Burrowing Owls occurs in southern New Mexico in the urban and agricultural interface of the City of Las Cruces in Dona Ana County. This population is partially migratory, with a large percentage of the population appearing to be resident, however, the number of individuals overwintering varies among years. Over recent years, a number of conflicts have arisen between land management activities and nesting owls in and around Las Cruces, New Mexico. The fossorial nature of this bird and its association with disturbance makes it particularly vulnerable to land maintenance, development and agricultural activities. For example, a large number of owls in Las Cruces are associated with ponding areas for flood control. These are areas that require regular maintenance, especially as the monsoon season approaches. Nests in these areas and along irrigation canals, sides of agricultural fields and new housing developments are often destroyed by heavy equipment without the operator realizing that the nest existed. In addition, the owls association with rock squirrel populations also puts nests at risk as many land managers consider rock squirrels to be pests and actively work to control populations and close burrows, again often without realizing the presence of nesting owls. Our work with the City of Las Cruces has identified important City of Las Cruces properties to be labeled as Burrowing Owl management areas. We have installed artificial burrows (in sets of two) in these areas to keep owls on site but draw them away from the zone of conflict. To date we have installed 25 sets of artificial burrows on 4 sites. This is the first nesting season that owls will be using these burrows.

IDENTIFICATION OF BURROWING OWL PREDATORS IN BLACK-TAILED PRAIRIE DOG COLONIES ACROSS THE GREAT PLAINS

M.B. Hagman, J. Good, and M.J. Desmond, , Department of Fish, Wildlife and Conservation Ecology, New Mexico State University, Las Cruces, NM 88003

Western Burrowing Owls (*Athene cunicularia hypugaea*) are experiencing sharp population declines across their historic range on the Great Plains. Previous research demonstrates that predation is the most common cause of Burrowing Owl nest failure. North American badgers (*Taxidea taxus*) are the most well known predators of the burrowing owl. However, other types of predators have not been well documented. By differentiating among major predators and verifying what various predation events look like, we hope to document predation events across Great Plains study sites. We placed motion-activated cameras at five Forest Service National Grasslands to capture evidence of predators and predation events. Because the risk of losing an entire nest to predation is highest during incubation and the early nestling stage, we kept the cameras at each nest only until the chicks reached ~10 days of age. With the video cameras and Levee Inspection System “peeper probe” from Sandpiper Technologies we obtained evidence of badger and bullsnake (*Pituophis catenifer sayi*) predation. Although other predators were present

on video within the prairie dog colonies, no evidence was found of them depredating Burrowing Owl nests.

DOES BURROWING OWL NEST DENSITY INFLUENCE TIME DEVOTED TO ALERT BEHAVIORS?

C. Williams, J. Good, and M. J. Desmond, Department of Fish, Wildlife and Conservation Ecology, New Mexico State University, Las Cruces, NM 88003

The Western Burrowing Owl (*Athene cunicularia hypugaea*) is a native grassland species dispersed across western North America. In recent years this species has experienced strong population declines in the northern parts of its range and is listed as endangered in Canada, threatened in Mexico, and a species of conservation concern in the United States. Strong population declines in the north and stability in the south have raised questions about their migratory patterns, habitat suitability and survival rates. In the Great Plains, Burrowing Owls often nest in clusters within active portions of prairie dog colonies and maintain mean inter-nest distances that allow for optimal visual and auditory communication between nests. However, due to prairie dog colony fragmentation their habitat has dwindled possibly forcing these birds to nest closer together in denser clusters and in lower quality habitats. To document Burrowing Owl behaviors due to nesting density, 40 cameras were placed on five Forest Service National Grasslands sites (Grand River NG, SD; Buffalo Gap NG, SD; Comanche NG, CO; Kiowa NG, NM; and Rita Blanca NG, TX). I hypothesize that Burrowing Owls nesting in denser clusters will display less alert behavior than those found in isolated nests or less dense clusters, but will spend less time at the nest. I will quantify owl behaviors at nest sites and create an activity budget of alert (straight, tall postures; adjusting position for a better view; etc.), warning (head bobbing; aggressive posture; charging; etc.), maintenance (grooming; nest maintenance; etc.) and resting (stretching; laying with wings outstretched; etc.) behaviors.