

## ABSTRACTS FROM THE NMOS 58<sup>TH</sup> ANNUAL MEETING

The following abstracts are from the papers presented March 26 and 27, 2021 at the 58<sup>th</sup> annual meeting of the New Mexico Ornithological Society held virtually. Abstracts are given in the order of presentation with the presenter underlined.

**AN OVERVIEW OF AVIAN RESEARCH, MONITORING, AND OUTREACH AT RIO MORA NWR – W. Jaremko-Wright**, New Mexico Highlands University, Box 9000, Las Vegas, NM 87701

This presentation will provide an overview of avian research, monitoring, and outreach at Rio Mora National Wildlife Refuge. Work at RMNWR provides a unique example of a working partnership between multiple NGOs, federal agencies, and universities. Past collaborative research between Colorado State University, RMNWR, and New Mexico Highlands University investigated the effect of bison, cattle on grassland bird community metrics in the summers of 2016-2017. Breeding bird monitoring began in 2018 to quantify the contribution of the refuge's three primary habitat types to overall bird abundance and diversity. In 2019, research commenced with the Intermountain Bird Observatory to quantify the migratory pathways of Long-billed Curlews in the shortgrass steppe with GPS-tracking units. Bird related outreach at the refuge in the form of birding tours with wildlife advocacy groups has allowed access to the refuge for more than 75 members of New Mexico's birding community.

**CHANGES IN AVIAN COMMUNITY COMPOSITION AND STRUCTURE FOLLOWING PRESCRIBED THINNING OF PINYON-JUNIPER WOODLAND – L.J. Schilder**, Department of Natural Resources Management, Texas Tech University, Lubbock, TX 79409; C.C. Borgman, U.S. Fish and Wildlife Service, Albuquerque, NM 87102; C. Portillo-Quintero and R.D. Cox, Department of Natural Resources Management, Texas Tech University, Lubbock, TX 79409; C.W. Boal, U.S. Geological Survey Texas Cooperative Fish and Wildlife Research Unit, Texas Tech University, Lubbock, TX 79409

Pinyon-juniper woodlands are an extensive vegetation community found throughout the western United States, where climate and land use practices have significantly increased woodland range and density. This expansion has created federal and state agency interest in tree removal and thinning with the goals of reducing fuel loads and restoring historic stand structure. Conversely, the high proportion of avian pinyon-juniper specialists included on national and state lists of concern has created a need to balance thinning targets with conservation of these woodland-obligate bird species. The objective of this study was to document avian community changes and estimate species densities following thinning prescriptions at two geographically distinct pinyon-juniper woodlands in central New Mexico (NM). We stratified our random sampling into thinned and unthinned plots and conducted point count surveys during the breeding seasons of 2018,

2019, and 2020 at a site in Lincoln County, NM and a site in Socorro County, NM. We observed 90 species across both sites, with over half determined as moderate or high conservation. We will determine detection probabilities and estimate densities for species with sufficient detections ( $> 60$ ), and analyze differences in richness, diversity, and community structure between strata. Our results will provide resource managers with quantified avian community response to thinning and inform conservation efforts for the benefit multiple species.

**IMPLICATIONS OF BANK STABILIZATION ON BANK SWALLOWS IN NEW MEXICO –** M. Conway, New Mexico Department of Game and Fish, 1 Wildlife Way, Santa Fe, New Mexico 87507; C. Hayes, University of New Mexico, Department of Biology, Albuquerque, New Mexico 87131

Bank swallows (*Riparia riparia*) nest colonially in excavated burrows on vertical banks. Within New Mexico, they rely on natural features within stream channels and arroyos created and modified by erosional, flood, and other fluvial processes. Previous reports described their known breeding distribution in New Mexico as a series of satellite colonies surrounding a single large colony in Calabacillas Arroyo near Albuquerque, which was subsequently modified by bank stabilization to protect surrounding urban development. A comprehensive survey conducted in 2008 identified 20 potential bank swallow colonies, with thirteen active colonies, and a total of 304 breeding pairs. Recent winter surveys found that most of these historic colonies have disappeared or decreased in size, resulting from artificial bank stabilization or natural collapse. Although there is little quantitative population data for this species in New Mexico, populations are vulnerable to nest site loss from erosion control, bank stabilization, and filling of arroyos for urban development. We present status information for populations within New Mexico, and discuss implications relevant to conservation and management.

**ECTOPARASITISM AND ENERGY INFRASTRUCTURE LIMIT SURVIVAL OF PREADULT GOLDEN EAGLES IN THE SOUTHERN GREAT PLAINS –** R.K. Murphy and D.W. Stahlecker, Eagle Environmental, Inc., Santa Fe, NM 87508; B.A. Millsap and C.C. Borgman, U.S. Fish and Wildlife Service-Migratory Birds, Albuquerque, NM 87133, C.W. Boal and S.D. Mullican, U.S. Geological Survey Cooperative Wildlife Research Unit and Department of Natural Resources Management, Texas Tech University, Lubbock, TX 79409; and B.W. Smith, U.S. Fish and Wildlife Service-Migratory Birds, Denver, CO 80228

The US Southern Great Plains (SGP) continues to undergo intensive energy development that could affect the region's Golden Eagles (*Aquila chrysaetos*), yet the eagles' population status there is unknown. During 2011-2019, we used satellite telemetry to assess survival rates and causes of mortality among 40 preadult ( $< 3$  yr of age) Golden Eagles in the SGP; 29 were monitored starting at the late nestling stage and 11 were

immigrants. For comparison we monitored 15 preadult Golden Eagles from the Central Great Plains (CGP), where energy development was less extensive. We estimated annual survival rates by using a multi-state model in a Bayesian framework that accounted for probabilities of causes of death. Mean annual survival for preadults in the SGP was (point estimate) 0.282, versus 0.720 in the CGP and  $\sim 0.7-0.9$  elsewhere in the coterminous western US. In the SGP, Mexican chicken bugs (*Haematosiphon inodorus*) were implicated in deaths of at least seven Golden Eagles during the  $\sim 2$ -wk late nestling stage and in two deaths during early post-fledging. Energy infrastructure especially electrocutions accounted for 12 (57.1%) of 21 deaths of post-fledged preadults in the SGP. Seven of 11 immigrant eagles died while in the region. Overall, the probability that a preadult Golden Eagle would die in the SGP was 0.797; probabilities of death due to Mexican chicken bugs and electrocution were 0.225 and 0.269, respectively. To maintain or increase breeding populations of Golden Eagles including local populations across the western US, mitigation of factors limiting recruitment in the SGP should be a management priority.

**RAPTORS OF THE SOUTHERN GREAT PLAINS: AN EXPLORATION OF HOW BIRDS OF PREY HAVE RESPONDED TO 150 YEARS OF LANDSCAPE CHANGE – C.W. Boal, U.S. Geological Survey Texas Cooperative Fish and Wildlife Research Unit, Texas Tech University Lubbock, TX 79409**

Since the late 1800s, the southern Great Plains have seen manifest changes to the landscape. Once wide open and trackless prairie grasslands have been subjected to a long, progressive pattern of increasingly disruptive land uses. Additionally, there have been changes in climate that may influence phenology of plants and wildlife of the region. A compelling question for conservation is how species and their abundances we see today are representative of what was historically present. For example, in some areas where Golden Eagles once nested there are now expansive wind turbine fields, whereas in other areas Broad-winged Hawks have recently become breeding birds. Unfortunately, historical data are sparse, necessitating some interpretation and reasoning for comparison with what exists in contemporary data availability. I will draw on the limited historical information and more contemporary data to explore how the landscape of the region has changed, and how that likely has influenced raptor populations across time, for good or ill, and how that may bias our perceptions of what conservation targets should be.

**CROSSING THE OCEAN: GENE FLOW BETWEEN SEDENTARY ISLAND BIRD POPULATIONS – E.F. Gyllenhaal, X.M. Mapel, J.M. McCullough, and M.J. Andersen, Department of Biology and Museum of Southwestern Biology, University of New Mexico, Albuquerque, NM, 87131**

Islands have provided a disproportionate amount to the development of allopatric speciation theory, because myriad populations are separated by open-water gaps. These isolated populations are often genetically distinct, but little is known about the number of birds moving between them (gene flow). To examine gene flow between island populations, we performed population genomic studies in three groups of sedentary Pacific island birds. First, we found that the widespread honeyeater *Foulebaio carunculatus* formed distinct populations across short distances, but gene flow still connects distance archipelagos. Second, we found that strikingly distinct populations of the *Symphoricarurus* monarchs interbred in multiple instances when they came into contact both on islands and due to Pleistocene sea-level changes. Finally, we tested how levels of gene flow vary relative to island biogeographic predictions with the Fiji Bush Warbler *Horornis ruficapilla*. We found that four island subspecies were genetically distinct, but asymmetric gene flow occurred between them. Gene flow was higher from larger to smaller islands than vice-versa, and was negatively correlated with distance. Using a framework to compare estimates of gene flow to predictions from classic island biogeography, we found gene flow often differed as expected. However, we inferred fewer birds moving against the trade winds between large islands, and lower gene flow than expected from small to large islands. This analytical framework is an important development to allow the study of island biogeography on a population genetic level and will facilitate study of factors that may prevent birds on different islands from interbreeding.

**RAPIDLY DECLINING PEREGRINE FALCON POPULATION IN NEW MEXICO, 2016-2019 – T.H. Johnson, PO Box 63, La Jara, NM 87027**

Experienced observers have been monitoring a representative sample of Peregrine Falcon (*Falco peregrinus*) nesting habitat since 2016, building on prior data extracted from statewide monitoring that began in 1979. The study area covers 3 degrees of latitude and longitude, extending from Farmington to Taos and south to Socorro. Eighteen representative habitat areas in the study area were surveyed completely each year. A territorial population of 40 adult pairs in 2016 decreased 28% to 29 adult pairs in 2019. Productivity averaged 1.15 young per adult pair during 2016-2019. Analysis of long-term data show that productivity has been critically low since 2007, and that pairs have laid later and failed more often over the last 2 decades. Low productivity accounts for the falling population, but the causes of low productivity are uncertain.

**THE ALBUQUERQUE CHRISTMAS BIRD COUNT: 60 YEARS OF CITIZEN SCIENCE IN NEW MEXICO – D. Mehlman, 322 Tyler Rd NW, Los Ranchos, NM 87107**

The Christmas Bird Count (CBC) is the oldest-running citizen science project to study birds in North America and the Albuquerque CBC is the oldest one in New Mexico. I provide an examination of the results of the CBC over the 60-year period from 1961 to 2020. The cumulative number of species found on the count over this period was 208,

with a maximum of 124 species in 2018. Both the number of participants, count effort (measured by party hours) and number of species found have steadily increased over time. However, number of species and total number of birds counted each year is highly correlated with count effort, so birds per party hour is the appropriate measure for groups or individual species analyzed over time. After accounting for effort, there does appear to have been a slow increase in species diversity on the CBC over time. Species or groups showing notable increases during the overall period include waterfowl (both geese and ducks), Sandhill Crane, American Coot, Ring-billed Gull, raptors, doves, and Lesser Goldfinch. Species showing notable declines during the period include Lewis's Woodpecker and Loggerhead Shrike. Though taxonomic changes over time complicate these analyses, the CBC provides an interesting snapshot of avifaunal changes in the Middle Rio Grande/Albuquerque metro area during the early winter and provide data that can be used to explore causal variables contributing to the observed changes.

**THE NEW MEXICO BIRD RECORDS COMMITTEE: THE FIRST QUARTER CENTURY – S.O. Williams III**, New Mexico Bird Records Committee, 1819 Meadow View Drive NW, Albuquerque, NM 87104

The New Mexico Bird Records Committee (NMBRC) was organized during 1992-1993 and began evaluating records in 1994. Through 2020, 1992 records, involving 220 species, were circulated; 1480 (74%) were accepted (“endorsed”), 230 (11%) were not accepted (“not endorsed”), and 282 (14%) were to be recirculated. During that period, 76 species were added to the confirmed state list, including 68 by NMBRC decisions and 8 by AOU/AOS taxonomic decisions. In 2020, 200 records were evaluated, with 164 (82%) accepted, 26 (13%) not accepted, and 10 (5%) to be recirculated; three new species were added in 2020. Through 2020, the state list stood at 549 species confirmed by specimen, photo, or audio recording. Some species accepted by the Committee included several high-profile ones of national and international interest, and a few that were not accepted were of similar high interest beyond New Mexico; several of those will be discussed, as will upcoming considerations which may continue to expand the state list.

**BIRDING, DOCUMENTATION AND USING TECHNICAL TOOLS TO BECOME A BETTER CONTRIBUTOR TO SCIENCE (AND TO eBIRD) D.J. Krueper**, Redstarts & Ravens, LLC, Corrales, NM 87048

A method of both contributing to science, as well as to compiling and organizing personal birding checklists, eBird is an outstanding tool for professionals as well as for bird watchers. Part of that process is to document eBird sightings with either photographic evidence or sound recordings. Natural history documentation started 19,000 years ago, and has progressed since. We will explore the progression, the recent tools and make recommendations for documentation now and into the future to support and enhance documentation for NMOS and also eBird.