

PRESENTATIONS

CITIZEN SCIENCE IN ACTIONS: BIRDERS WORKING TO CONSERVE BIRDS THROUGH ARIZONA IBAS, **Jennie Macfarland**

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Arizona has an unusually active and productive Important Bird Areas (IBA) program. This is largely due to its band of dedicated and talented volunteers and its valued partnerships with Arizona Game and Fish, land management agencies, local birding and “friends” groups around the state. There are 48 IBAs in Arizona with 4 being quite close to Cottonwood, AZ. They are: Lower Oak Creek IBA, Tuzigoot IBA, Upper Verde River WA IBA and Watson/Willow Ecosystem IBA. These IBAs in particular have dedicated volunteer survey teams that shed important light on the conservation importance of these areas. Some of the larger survey projects manned by IBA volunteers and the results of these studies will also be outlined as well as the astonishing contribution of volunteers to the overall statewide program.

INFLUENCE OF FIRE AND BURN SEVERITY ON BIRD SPECIES, **Joe Crouse**

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Point counts were conducted in a chronosequence of Northern Arizona wildfires to determine species composition. The fires surveyed were the Leroux (2001), Independence (2009), General (2014) and Highline (2017). Each fire was stratified by burn severity as determined by Monitoring Trends in Burn Severity (MTBS) data. Criteria for fires included: available MTBS data, the

majority of the vegetation in the ponderosa pine and mixed conifer vegetation types and similar elevations. Species diversity was greatest in low burn severity areas in both the Leroux and Independence fires. The total number of species seen was greatest in the Independence fire but all fires were very similar. Red-breasted Nuthatch, Mountain Chickadee and Western Bluebird were the most common species across all fires with the Red-breasted Nuthatch and Mountain Chickadee most common in the unburned to moderate burn severities and the Western Bluebird most common in high severity.

RANGE EXPANSION OF MEXICAN DUCKS AND MALLARDS IN ARIZONA, **Swarbrick, B. M.**

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The Mexican duck (*Anas platyrhynchos diazi*) has expanded its range in Arizona beyond its historic distribution to include the Sonoran Desert, primarily due to human-altered wetlands such as urban parks and sewage treatment ponds. These recent habitats have not only influenced Mexican duck distribution but have also altered mallard (*Anas platyrhynchos*) migration patterns. As a result, both mallards and Mexican ducks are now migrants and winter visitors to formerly vacant nesting habitats. Substantial hybridization is evident between mallards and Mexican ducks, resulting from broods of mallard and Mexican ducklings raised in and near water treatment sites. This study documents the yearlong presence of Mexican ducks and hybrids within rural and urban ponds in the Sonoran Desert. Mallards are generally absent during the nesting season, with the exception of urban ponds. Therefore pairing of mallards with Mexican ducks is limited during summer but may be prominent in the winter months. Although hybridization of mallards with Mexican ducks may be increasing in these new subtropic habitats, the lower numbers of mallards present prevents genetic swamping. Rural and remote areas, where mallards are few or in low numbers, are generally populated with Mexican duck phenotypes. The above phenomena are attributed to the influence of nutrient-rich water treatment ponds on Mexican duck and mallard recruitment.

NONNATIVE GRASSES DECOUPLE HABITAT SELECTION FROM FITNESS IN GRASSLAND BIRDS, **Erik Anderson**

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Nonnative plants that are structurally similar to native species may present misleading cues to animals indicating the availability of resources that are no longer abundant in invaded areas. Migratory birds that breed in arid grasslands may be especially susceptible to this

disassociation between evolutionarily-honed cues and future resources because they establish breeding sites in spring, but delay nesting until summer when monsoon rains trigger increases in abundance of the insect prey that they need to provision nestlings. We established 140 plots across a gradient of invasion by nonnative grasses in southeastern Arizona, where we studied density and nesting success of grassland birds along the invasion gradient. For the two most common bird species, density and nest success were not associated positively. Specifically, as dominance of nonnative grasses increased, density of grasshopper sparrows (*Ammodramus savannarum*) decreased by 75% and daily nest survival increased by 19% across the invasion gradient. This suggests that individuals avoid invaded areas that enhance reproductive success. Conversely, as dominance of nonnative grasses increased, density of Botteri's sparrows (*Peucaea botterii*) increased by 33% and daily nest survival decreased by 4% across the invasion gradient. This suggests that invaded areas might function as ecological traps attracting individuals from areas of high-quality habitat into areas where reproductive success is lower. By decoupling settlement cues from the resources associated with those cues over evolutionary time, nonnative plants can alter substantially the distribution and demography of grassland birds.

EBIRD—CROWDSOURCING ORNITHOLOGY, Ian Davies

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As a researcher or conservationist, the work that you do is pretty much always going to be limited by money and time. What if there were a way to collect data from the crowd to inform your work? eBird taps into the global interest in birds, engaging more than 350,000 birders worldwide to collect more than 450 million bird observations from every country: all available for free for you to use. This presentation will focus on what eBird resources are available for birdwatchers, conservationists, and researchers, including some case studies and examples of recent work by both Cornell Lab and external analysts.

**DISTRIBUTION AND HABITAT OF ELF OWLS IN RIPARIAN ENVIRONMENTS IN ARIZONA,
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The Elf Owl has experienced declines on the western edge of its range and is a covered species under the Lower Colorado River Multi-Species Conservation Program. As part of a broader study on riparian habitat use in this species, we assessed the distribution and habitat use of Elf Owls across a gradient of riparian and adjacent upland environments in portions of southern and western Arizona. Specifically, we assessed occurrence probabilities of owls in three different riparian and adjacent upland vegetation communities in areas with and without potential nest cavities provided by saguaro cacti, identified environmental factors that explain occurrence probabilities, and evaluated the significance of broadleaf-deciduous riparian vegetation to owls in these communities. In spring of 2015, we used call broadcast to survey owls at 1,397 survey stations along 112 transects (193 km in total length) and obtained 855 detections of Elf Owls that represented approximately 553 individuals. Probability of Elf Owl occurrence increased markedly with presence of saguaro cacti, suggesting the importance of nest cavities they provide. Occurrence probabilities in areas dominated by mesic and xeric riparian vegetation were similar, but lower at stations in exotic riparian vegetation dominated by salt cedar. Moreover, probability of Elf Owl occurrence increased with cover of broadleaf deciduous trees and mesquite in riparian areas, with cover of mesquite in uplands areas, and with increasing height of upland vegetation, but only in areas where saguaros were present with no effect elsewhere.

NORTH AMERICA'S ONLY CARACARA: WIDE-RANGING BUT LITTLE KNOWN, **Morrison, J.L.**

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In North America, populations of the Crested Caracara (*Caracara cheriway*) occur in Florida, Texas, and Arizona and in areas of northern Mexico. Despite being relatively common where it occurs, the species has received little attention compared to many North American raptors. My research on the Florida population represents the only in-depth study of this species anywhere throughout its range. The Arizona population has never been formally studied, although groups of caracaras are now regularly seen foraging in agricultural areas, the largest numbers observed during winter months. Our upcoming studies in Arizona are likely to provide new insights of this intriguing raptor. The fact that Florida's population is isolated likely has had a strong influence on its ecology, so this non-migratory population may not be representative of the species, generally. The landscape is quite different among areas where caracaras occur, so its ecology likely varies geographically as well. Also worthy of investigation are the species' vagrancy patterns. During the past 10 years, caracaras have been reported, increasingly, in far northern states and even in Canada. Why has this raptor received so little attention? Perhaps because it is most often perceived as a scavenger and it regularly associates with vultures. Or, given the caracara's association with agricultural lands, issues of access to nests and roosts on private land may deter interest in developing further studies. To better understand our only caracara, however, these perceived barriers must be overcome.

POSTERS

HUMMINGBIRD MONITORING AT MONTEZUMA CASTLE NATIONAL MONUMENT. **Tina Greenawalt**

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In 2015, we partnered with the Hummingbird Monitoring Network (HMN) to establish a monitoring station in the Verde Valley. Monitoring stations are currently active throughout western North America from Mexico to British Columbia. Each station collects detailed demographic information on hummingbird populations, which can help estimate abundance so that population trends can be detected. Migration timing and movement patterns can also be detected with the information collected. After doing feeder watches at two potential sites in the spring and summer of 2015, we chose Montezuma Castle National Monument as the best location for a monitoring station. We began our monitoring sessions in April 2016 and recently finished our second season. Over the course of the last two seasons we have banded over 200 hummingbirds of 3 different species. While our station does not have enough data for analysis on recapture rates, I will share data for recaptures on other sites in Arizona.

WESTERN BURROWING OWLS FACE MULTIPLE CHALLENGES ASSOCIATED WITH URBAN LIVING IN WESTERN ARIZONA, **Kerrie A. T. Loyd**, Joseph J. Osinski and Morgan T. Beckwith

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Burrowing owls (*Athene cunicularia hypugaea*) are labeled as species of conservation concern across the western US. In Lake Havasu City, Arizona, owls are commonly observed in nontraditional habitats- desert washes (arroyos) in developed locations. Urban and suburban washes may offer a large prey base and abundant existing burrows but owls are susceptible to disturbance from humans, predation by high densities of coyotes and exposure to poisoned prey. We began studying habitat characteristics and productivity of local burrowing owls in February 2014. Over the past 4 breeding seasons, we've monitored 84 nests. Nest success increased from 2014 to 2015 (44% to 75%) with an average of 69% over all 4 years. The mean number of fledglings per nest to date is 4.1 (range 1-7). Seventeen nests were abandoned for unknown reasons and 16 experienced a mortality of one or more adults and chicks. Four fresh carcasses found in 2014 and one in 2015 were confirmed to be contaminated with high levels of brodifacoum, the compound commonly used in second generation anticoagulant rodenticides. High levels of mortality throughout our study area in 2014 may be responsible for the difficulty we experienced in locating nesting pairs of owls in 2016. Results from regression models suggest that nest sites experiencing a mortality were less likely to produce fledglings but those with larger burrow diameter were more likely to have a larger number of offspring. No significant differences were found when comparing plant cover, prey availability, burrow diameter or height from wash floor at successful vs. failed

nest sites. Our research over the future seasons will continue to provide baseline data on the local population as well as help biologists and managers understand the owls' unique habitat preferences.

TEN YEAR SUMMARY OF GRASSLAND BIRD POINT COUNTS AT APPLETON-WHITTELL
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Annual roadside point counts for grassland birds were established on the Appleton-Whittell Research Ranch of the National Audubon Society (AWRR) and the Babacomari Ranch in 2006. Points are located in half mile increments on the main road from the Upper Elgin Road junction to the AWRR headquarters, 7 of the 12 points are on the Babacomari Ranch that has livestock grazing; another 10 points are on East Mesa Road within the AWRR boundary. The points are surveyed from mid-August to early September when breeding birds are singing. Birds heard or seen are counted during a 5-minute period at each point. Trends for those birds that are of conservation focus are presented for each survey route