Oklahoma Ornithological Society 2011 Fall Meeting 21-23 October

Abstracts

Saturday, 22 October, Schedule

2:30 Modeling the bird identification process

Joseph A. Grzybowski, UCO and Sam Noble Oklahoma Museum of Natural History, OU

2:45 Causes of song variation across the titmouse hybrid zones in Oklahoma and Texas

Claire Curry, OU

3:00 Greater-Prairie Chicken survival in grasslands managed for heterogeneity

Torre J. Hovick and R. Dwayne Elmore, OSU

3:15 Tree Swallow nest success, site fidelity, and seasonal movement at Red Slough WMA 2009-2011

Douglas R. Wood, David M. Eason, and Ross G. Anderson, SE

3:45 Prey mass and composition of Barn Owl pellets in Oklahoma

Katrina Hucks, Chris Butler and Ken Locey, UCO

3:45 The Oaks and Prairies Joint Venture: Landscape-scale partnership for bird habitat conservation

Jim Giocomo, Coordinator, Oaks and Prairies Joint Venture, American Bird Conservancy

4:00 Ecological niche modeling as a method for mapping hummingbird hybrids

Erica Judd and Chris Butler, UCO

4:15 eBird for Oklahoma birders

Brian Sullivan, eBird Project Leader, Cornell

Poster presentations are from 4:30-5:15 PM

Geolocators for Yellow Rails (*Coturnicops noveboracensis*)

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A recent innovation in tracking bird migration has been the development of geolocators. Traditional radio tags and satellite transmitters actively transmit information about location, necessitating a relatively large battery. In contrast, geolocators passively record photoperiod (i.e. daylength) which can be used to deduce latitude and longitude and do not require such large batteries. This means that we can now record migratory pathways and breeding/wintering grounds for relatively small long-distance migratory birds such as Purple Martins (Progne subis) and Wood Thrushes (Hylocichla mustelina) both of which weigh approximately 50 g. Geolocators could potentially be very useful for studies involving rare species in order to identify the extent of migratory connectivity (i.e the extent that birds which breed in the same area tend to winter in the same area) as well as migratory pathways and stopover sites (i.e. locations where a significant portion of the population temporarily stop during migration). Yellow Rails (Coturnicops noveboracensis) are rare birds that winter in the southeastern US and breed in the northern US and Canada. Recently they have been discovered overwintering as far north as southeastern Oklahoma. Most of the research conducted on this species has been on their breeding grounds and little is known about their migratory patterns and wintering ecology. Currently, we are using stable isotope analyses to determine where Yellow Rails that overwinter in Oklahoma bred. However, this approach does not allow us to track migration. We will attach twenty geolocators to Yellow Rails on their wintering grounds both in southeastern Oklahoma and Mississippi during the winter of 2011-2012. The geolocators will remain with the Yellow Rails for a year, gathering data on latitude and longitude. During the winter of 2012-2013 the geolocators will be retrieved. This approach should allow us to determine whether Yellow Rails follow a similar migratory route during spring and fall and will also identify stopover sites.

Causes of song variation across the titmouse hybrid zones in Oklahoma and Texas

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Hybrid zones are areas where two distinguishable populations secondarily contact after differentiation and interbreed. Gene flow across the contact can be mediated by selection pressure on the hybrids, dispersal of parental individuals into the hybrid zone, and the habitat preferences of both parental and hybrid individuals. These areas, widespread in nature, provide excellent opportunities to examine the mechanisms involved in the evolution of reproductive isolation. Tufted and Black-crested Titmice are passerine sister species that interbreed in two areas of contact: one older (thousands of years old) in Texas and one recent (within the past century) in southwestern Oklahoma. Here I discuss possible causes of the maintenance of song differences between Tufted and Black-crested Titmice across these two areas of secondary contact and interbreeding. I recorded songs from central Texas, north-central Texas, and southwestern Oklahoma. Frequency, phrase spacing, and phrase length change in songs across the younger hybrid zone, while frequency, number of phrases per song, and notes per phrase

change across the older hybrid zone. Phrase spacing and the number of notes per phrase are correlated with tree height and spacing. Beak morphology explains some variation among individuals' songs, but does not vary across the hybrid zones. This preliminary finding of disparity in song characteristics between the hybrid zones suggests that the birds across the young hybrid zone may be adapting to the signaling environment, while birds in the old hybrid zone may have selection pressures on species recognition. These data indicate that differences in male song recognition and female mate choice are likely to be found between the younger and older hybrid zones, so future work will expand on how the relative influence of environmental and social factors may change with time in hybrid zones.

The Oaks and Prairies Joint Venture: Landscape-scale Partnership for Bird Habitat Conservation

Jim Giocomo, Coordinator, Oaks and Prairies Joint Venture, American Bird Conservancy; jgiocomo@abcbirds.org

Joint Ventures (JVs) are regional, self-directed partnerships of government and nongovernmental organizations, corporations and individuals that work across administrative boundaries to deliver science-based conservation, focusing on bird populations. JVs work in support of national and international conservation plans by helping step the larger plans down to regional or landscape scales. They are organized by landscape areas with similar communities, habitats, and resource issues called Bird Conservation Regions. JVs focus on a broad spectrum of activities including “on the ground” projects like habitat protection and restoration as well as landscape scale conservation planning, outreach, monitoring and research, and they raise money for these activities through partner contributions and grants. In Oklahoma, the Oaks and Prairies Joint Ventures was formed to cover the Cross Timbers region and bring the total number of Oklahoma associated JVs to four, covering the whole state of Oklahoma while overlapping into other surrounding states. Originally, three Joint Ventures that covered parts of Oklahoma included the Lower Mississippi Valley JV and the Central Hardwoods JV in the east, and the Playa Lakes JV in the west, and were primary focused on building partnerships for wetland protection and restoration. Lately, Joint Venture focus has expanded to include all bird species and their associated habitats. The Oaks and Prairies Joint Venture extends from the northern border of Oklahoma, basically between Tulsa and Oklahoma City, to the Texas Hill Country. Initially we are working to build partnerships to restore and protect upland habitats including prairies, savannas, and brushlands. Joint Ventures will bring new opportunities for cooperation among conservation groups to help focus scarce conservation resources. I will discuss some of our initial planning efforts and how you can participate.

Modeling the bird identification process

Joseph A. Grzybowski, University of Central Oklahoma and Sam Noble Oklahoma Museum of Natural History, University of Oklahoma; j_grzybowski@sbcglobal.net

Citizen science involving birds already has had a long history with the Christmas Bird Counts initiated over 100 years ago. Emerging databases include those from bird-banding, the Breeding Bird Census, Bird Atlas projects, and, more recently, eBird, and are expanding rapidly. More sophisticated analytical approaches have been and continue to be developed in depicting some distributional, migration, and population processes of birds from these data.

However, researchers currently argue over the merits and demerits of such data. Much of this derives itself from the "noise" inherent in such data--from how well these data can be standardized statistically, to the veracity of the observations themselves. These depict a current frontier in putting citizen science to legitimate use. The identification process is intrinsic to these data [garbage in, garbage out]. The process of vetting, (understanding how best to sort, analyze and interpret such data) relates to how best to understand identification processes of birders.

I present a generalized conceptual model of this process derived from my own personal experiences. This model has several steps involving the nature of the observations themselves, translating the observations to an interpretation, and assessing the credibility of the interpretation. Assuming that all birders make errors (as I have), the key parameter in this general model is the accuracy-level. This model might be used to understand how birders progress through stages of improved accuracy, as well as understanding the potential accuracy-level of an individual observation. An understanding of this modeled process may help improve observer skills, as well as in standardizing the analytical approaches for improving citizen databases and their uses.

Expansion Of Wintering Black Rails

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The Black Rail (*Laterallus jamaicensis*) is the smallest of the North American rails. It is a secretive, nocturnal marsh-dwelling bird and seldom found except when it vocalizes during the breeding season. Recently, Black Rails have been found outside their previously published wintering ranges in California and elsewhere. The goal of this project was to determine the current wintering distribution of this species in the United States. We used data from ORNIS, Christmas Bird Counts and reports accepted by rare bird record committees. The data collected was mapped using Quantum GIS to show the distribution of the wintering range. Black Rails were found primarily in southeastern states but individuals were present as far north as the northeastern US. In California, Black Rails were not restricted to the Bay area but were also found in the Central Valley. It is unclear whether the apparent expansion in the wintering range of the Black Rail is real or an artifact of increased observer effort.

Greater-Prairie Chicken Survival in Grasslands Managed for Heterogeneity

Torre J. Hovick* and R. Dwayne Elmore, Oklahoma State University; torre.hovick@gmail.com

Recent shifts in rangeland management and new energy development have increased threats to imperiled prairie grouse (*Tymapanuchus* spp.) populations. Once a common species throughout the tallgrass prairie ecoregion, the Greater Prairie-Chicken (Tympanuchus cupido pinnata) is now reduced to

11 states, several of which have reintroduced populations. Increased fragmentation, loss of grasslands, and altered disturbance regimes have contributed to declines. We investigated how managing for heterogeneity, where only a portion of the landscape is burned each year and season of fires varies, influenced survival of Greater Prairie-Chickens. Our research was conducted at the Tallgrass Prairie Preserve in Osage County, Oklahoma from March 2011 – August 2011. We trapped adult birds on 4 leks over the course of 30 trapping days in late March and early April. We captured 35 birds ($\bar{x}$ = 1.2 birds/trap day) and fitted 16 g radio-transmitters to 30 (n = 17 females; n = 13 males). Daily survival rates (DSR) for radio-tracked adults was greater for females than males (female = 0.975 ± 0.10; male = 0.950 ± 0.02) with an overall probability of surviving the 20-week breeding season of 60 % for females and 35 % for males. Tracking collared-females yielded a total of 16 nests, 14 first nest attempts and 2 re-nest attempts. Nest survival analyses in program MARK found that the constant daily survival model was best at predicting Greater Prairie-Chicken survival (DSR = 0.960; SE = 0.01), but multiple models were competitive (ΔAIC ≤ 2). Other competitive univariate models included time since fire (β = 0.03 on a logit scale, SE = 0.02, 95% CI was -0.01, 0.08) and a linear time trend model (β = – 0.03 on a logit scale, SE = 0.02, 95% CI was -0.07, 0.02). On average, first nest attempts occurred in patches that were 30.07 months post fire (range: 14 – 43, SE = 2.53). This research emphasizes the importance of residual biomass resulting from elapsed time since fire for nesting Greater Prairie-Chickens. Additionally, our results improve knowledge of Greater Prairie-Chicken survival demographics for the southern portion of the Flint Hills.

Similarity of Prey Mass in Barn Owl Pellets Collected in Oklahoma

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We examined the prey composition of Barn Owl (*Tyto alba*) pellets from 25 counties in Oklahoma. A total of 47,835 pellets were collected from 1978 through 1992, representing a total of 57,725 prey items. The majority (98.6%) of the prey items were mammals, although birds, snakes, and invertebrates (1.43%) were also found. We hypothesized that pellets would disproportionally contain prey specimens with a mass between 40 and 80 g. The most frequently encountered specimens were *Sigmodon hispidus* (n = 21,449, mass = 80-150 g), *Peromyscus* spp. (n = 9,056, mass = 15-32 g), and *Perognathus hispidus* (n = 7,374, mass = 30-47 g). These results suggest Barn Owls prefer to feed upon small mammals and are consistent with the hypothesis. Introduced rodents such as *Mus musculus* (n = 6, mass = 21 g), *Rattus rattus* (n = 103, mass = 200 g), and *Rattus norvegicus* (n = 49, mass = 450 g) were not an important component of the diet in Oklahoma. Future studies should investigate whether Barn Owls may help control populations of rodents with a mass between 40 and 80 g.

Ecological niche modeling as a method for mapping hummingbird hybrids

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Hybrid zones are important because they provide a model for studying divergence and speciation. Recently, we have discovered that hybrids of Ruby-throated Hummingbirds (*Archilochus colubris*) and Black-chinned Hummingbirds (*A. alexandri*) are more common in Oklahoma than previously reported in the literature, with 12 apparent male hybrids banded during the last four years. Currently it is not possible to separate female hybrids by morphology. We sampled hummingbirds across Oklahoma and Texas to examine the extent of hybridization and used sequencing to identify F1 hybrids. We compared ecological niche models to determine their effectiveness at mapping the hybrid zone.

Testing the effect of weather on life history variation in Scissor-tailed Flycatchers

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Variation in life history traits is common and may vary among populations, within populations, and across time. Annual variation can have consequences for individual fitness, so understanding factors that influence this variation is important for understanding overall life history strategies and population trends. Both biotic and abiotic factors have been demonstrated to impact life history variation. Variation in weather, in particular, has been shown to have a strong effect. The southern Great Plains is an interesting place to examine the impacts of weather on these traits due to its extreme range of variation. In prairies and savannahs, the impact of these extremes on life history may be magnified because bird species living there have reduced protection from the elements. I investigated life history variation in the Scissor-tailed Flycatchers (Tyrannus forficatus), a savannah-nesting aerial insectivore. I examined variation in clutch initiation date, clutch size, incubation length, brood size, nestling period, and number of young fledged across four years (2008-2011). When I compared these traits among years using a Kruskal-Wallis test, clutch size ($p = 0.13$), incubation length ($p = 0.32$), brood size ($p = 0.13$), and nestling stage ($p = 0.49$) showed no statistically significant variation among years, while number fledged ($p = 0.03$) and clutch initiation date ($p < 0.0001$) were different. I will also discuss variation in life history traits relative to weather patterns, including rainfall, minimum, maximum, and average temperatures, and wind speed.

eBird for Oklahoma birders

Brian Sullivan, eBird Project Leader, Cornell University; bls42@cornell.edu

What is eBird? And what can it do for you as an Oklahoma birder? eBird (www.ebird.org) is a free online checklist program that allows you to record bird observations, keep track of your bird lists, and explore information about birds in Oklahoma, the United States, or anywhere around the world. You can share your observations with the birding community, as well as with the science community, which now uses eBird data as the foundation for gaining a better understanding of bird distribution and abundance. Find out about the great set of tools eBird has developed to make your birding better and easier. Watch

fascinating visualizations of continent-scale bird migration based on your data. Learn more about this powerful birding tool, how you can take part, and about how scientists are using your observations to better conserve birds and biodiversity.

Tree Swallow nest success, site fidelity, and seasonal movement at Red Slough WMA 2009-2011

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Tree Swallows (Tachycineta bicolor) have expanded their distribution southward over the last few decades. Based on prior observations of Tree Swallow nest attempts in Oklahoma, we initiated a long-term project on Tree Swallows at Red Slough WMA. We studied Tree Swallow nesting and behavioral ecology at the Red Slough WMA in southeastern Oklahoma from 2009 to 2011. We established a network of 57 nest boxes in 2009. We monitored nest success parameters, site fidelity, recruitment, and season movement patterns. We banded 526 adult and nestling Tree Swallows. We recorded a 26% adult recapture rate and a 7% recruitment rate of swallows banded as nestlings at Red Slough and returned to the site to nest successfully in 2011. Tree Swallows averaged 4.2 young fledged/nest attempt. Tree Swallow nest loss resulted primarily from rat snake predation. Adult Tree Swallows moved an average of 1.1 km between years resulting in dynamic turnover rates at nest sites; however, intra-seasonal movements were rare. Red Slough WMA serves as a source population for Tree Swallows at the southern extent of the species distribution.