

KANSAS ORNITHOLOGICAL SOCIETY

66th Annual Meeting



**Salina, Kansas
Kansas Wesleyan University**

3-5 October 2014

66th Meeting of the Kansas Ornithological Society Salina, Kansas

Schedule at a glance

Friday, October 3rd

6:00 - 9:00 p.m. Registration and informal reception at Lakewood Discovery Center Lodge, Lakewood Dr, 250, Salina

Saturday, October 4th

8:00 a.m. Registration and refreshments at Sams Hall of Fine Arts on the Kansas Wesleyan University campus (Main Entry on East side of the building)

9:00 a.m. Welcome and announcements in the Fitzpatrick Theatre in the Sams Hall of Fine Arts

9:15 a.m. Paper Session – Fitzpatrick Theatre

11:15 a.m. Business Meeting

11:30 - 1:30 p.m. Lunch on your own for attendees and meeting of the board at The Student Union

1:30 p.m. Birdwatcher's Hour

2:30 p.m. Paper Session.

4:45 – 5:00 p.m. KOS Business Meeting

6:00 – 9:00 p.m. Banquet, Awards and speaker at the Salina Country Club, 2101 East Country Club Road. The after dinner speaker is Al Batt from Minnesota, a birder, humorist and regular columnist for Bird Watcher's Digest.

Sunday, October 5th

7:00-12:00 p.m. Field Trips - Meet at the Lakewood Middle School's South parking area to carpool.

12:00 p.m. Lunch and compilation at Lakewood Park, about a block South of Lakewood Discovery Center Lodge

Details for Saturday

- 8:00 a.m. Registration and donuts at Fitzpatrick Theatre in the Sams Hall of Fine Arts.
Silent auction open for bids.
- 9:00 Welcome and Announcements
Henry Armknecht, President, Kansas Ornithological Society
Mike Rader, Local Committee Chair
- 9:15 **The Effects of Seasonal Climate and Food Availability on Woodland Avian Flock Composition** - *Samual D. Richards* and Calvin L. Cink Department of Biology and Chemistry, Baker University*
- 9:30 **Blazing and grazing for conservation: habitat use by Upland Sandpipers in an experimental landscape** - *Brett K. Sandercock*, Division of Biology, Kansas State University, and Virginia L. Winder, Benedictine College*
- 9:45 **How many Northern Flicker species are there in North America?** - *Joseph D. Manthey*, Mark A. Geiger; Robert G. Moyle, Biodiversity Institute and Department of Ecology and Evolutionary Biology, University of Kansas*
- 10:00 **Citizen Science and its Importance for Creating Effective Ecological Niche Models** – *Jacob C. Cooper*, KU Biodiversity Institute, University of Kansas*
- 10:15 Break and Silent Auction
- 10:30 **Functional Relationships Among Lesser Prairie-Chicken Survival, Habitat Use and Movements** - *Samantha Robinson*; R.T. Plumb and J.M. Lautenbach, Division of Biology, Kansas State University, D.A. Haukos, U.S. Geological Survey, Kansas Cooperative Fish and Wildlife Research Unit, Kansas State University, Manhattan, KS USA, J.C. Pitman, Kansas Department of Wildlife, Parks and Tourism*
- 10:45 **Object Permanence demonstrated by a Double Yellow Headed Amazon Parrot *Amazona oratrix* and an African Grey Parrot *Psittacus erithacus*** - *Lauren Brown, Ashtyn Stephens, Andrew Sensenig*, Tabor College*
- 11:00 **Conservation genomics reveals multiple evolutionary units within Bell's Vireo** -*Luke B. Klicka*, Biodiversity Institute -Ornithology Division, University of Kansas; Kevin J. Burns, Biology Department, San Diego State University; Barbara E. Kus, United States Geological Survey, San Diego, CA; Pascal O. Title, Biology Department, University of Michigan*
- 11:15 Business Meeting
- 11:30 - 1:30 Lunch on your own for attendees and meeting of the board in the Student Union.
- 1:30 p.m. Birdwatchers Hour – photos and stories from local members

- 2:30 **A Comparison of Diurnal and Nocturnal Foraging Behavior by Black-crowned Night-herons (*Nycticorax nycticorax*) at an Artificial Weir - Rachel E. Renken***, Alan D. Maccarone, Biology Department, Friends University; Bayleigh L. Hamilton, Wichita High School East, Wichita
- 2:45 **A Telemetry-based Study of Great Egret (*Ardea alba*) Nest-Attendance Patterns, Food-Provisioning Rates, and Foraging Activity - Alan D. Maccarone*** and Heather M. Stone, Biology Department, Friends University; John N. Brzorad, Lenoir-Rhyne University, Hickory North Carolina
- 3:00 **Habitat Use by Secretive Marsh Birds in Moist Soil Managed Wetlands in Eastern Kansas - Eric Wilson***, William Jensen, Department of Biological Sciences, Emporia State University, Richard Schultheis, Kansas Department of Wildlife, Parks, and Tourism
- 3:15 **Ciprofloxacin-Resistant Bacteria in Bird Species Exposed to Varying Levels of Human Disturbance - Jeffrey J. Carter***, Greg H. Farley, Eric T. Gillock, Department of Biological Sciences, Fort Hays State University
- 3:30 Break and Silent Auction
- 3:45 **Possible Effects of Black-Tailed Prairie Dogs on Abundance and Diversity of Raptors in Mixed and Shortgrass Prairie of Western Kansas- Nina M. Luna*** and Greg Farley, Fort Hays State University
- 4:00 **Grasshopper Sparrows on the Move: What Explains Variation in Within-Season Breeding Dispersal in a Declining Songbird? - Emily J. Williams***, W. Alice Boyle, Kansas State University, Division of Biology
- 4:15 **Female Lesser Prairie-Chicken Response to Grazing Practices in Western Kansas Grasslands - John D. Kraft*** and J. Lautenbach, Division of Biology, Kansas State University, D. A. Haukos, U.S. Geological Survey, Kansas Cooperative Fish and Wildlife Research Unit, Kansas State University, J. C. Pitman, Kansas Department of Wildlife, Parks, and Tourism, C. A. Hagen, Oregon Department of Fish and Wildlife
- 4:30 **Lesser Prairie-Chicken Habitat Use in Kansas and Colorado – Dan S. Sullins***, Kansas Cooperative Fish and Wildlife Research Unit, Department of Biology, Kansas State University
- 4:45 p.m. KOS Business Meeting
- 6:00 p.m. Banquet, Awards and speaker at the Salina Country Club

Nominating Committee Report: slate of candidates

President – Matt Gearheart
Vice President – Rob Penner
Secretary - Curtis Wolf
Treasurer – Max Thompson
Membership Development - Patty Marlett
Board Member – Art Nonhof
Board Member – Cheryl Miller
Board Member – Jeff Calhoun
Board Member – Jenn Rader
Business Manager - Lisa Weeks
Editor, *Bulletin* - Eugene Young
Editor, *Horned Lark* - Mark Van Horn

The Board Member position of Art Nonhof does not expire and Henry Armknecht stays on board as Past-President. These positions are automatic and do not require a vote.

Thank you to Nic Allen, Jon Vande Kopple and Janeen Walters for your service on the Board!

Abstracts

(presenter indicated by * following name)

The Effects of Seasonal Climate and Food Availability on Woodland Avian Flock Composition - *Samual D. Richards** and *Calvin L. Cink* Department of Biology and Chemistry, Baker University

This research explored the environmental factors that influenced composition of mixed species bird flocks in an oak-hickory forest in northeast Kansas through the fall and winter seasons. Throughout the experiment sixty-five individual birds of 6 different species were trapped, banded, measured, and color-marked for individual recognition. Temperature and snow cover were recorded for days of trapping and flock observation. Observations of flock composition were made on the same day in two areas, one with small feeding trays baited with seed, and one (control) with no supplemental food source. Numbers of each species were counted in the flocks, as well as individuals identified by color marks. Those individuals new to a flock were identified by the lack of color marks or a leg band. Flock size grew as ambient temperatures decreased during the fall and appeared to be highest in late winter when temperatures were lowest and snow covered the ground. Flock size was greater in areas with supplemental food compared to control areas. New individuals never captured in the fall appeared to be recruited to flocks as winter progressed. Wind appeared to influence flock activity in an inverse relationship resulting in low levels of activity during periods of strong winds. Bird-hunting hawks were observed only once and caused rapid break-up and dispersal of the flock. Core species in flocks were more predictable than in other published studies.

Blazing and grazing for conservation: habitat use by Upland Sandpipers in an experimental landscape - Brett K. Sandercock*, Division of Biology, Kansas State University, and Virginia L. Winder, Benedictine College

Upland Sandpipers (*Bartramia longicauda*) are a terrestrial species of migratory shorebird that require native grasslands for breeding and migration. Intensification of grazing management for cattle production may impact habitat quality and reproductive success. We investigated space use and habitat-specific demography of sandpipers in an experimental landscape with different fire and grazing treatments in northeast Kansas. To investigate space use, we radio-tracked 37 sandpipers with intensive daily monitoring for a 2-year period. Resource utilization functions (RUF) based on individual home ranges showed preferences for higher elevation, recently burned areas, high stocking rates, and habitat edges. To investigate nest placement and nest survival, we monitored an average of 30 nests per year for a 9-year period. The strongest predictor of nest placement was burn treatment with preference for sites not recently burned. Nest placement affected reproductive success because the highest rates of nest survival were in unburned and ungrazed sites. Our demographic results indicate that conservation of Upland Sandpipers and other grassland birds will require partnerships with private landowners to reduce use of prescribed fire and grazing intensity.

How many Northern Flicker species are there in North America? -

Joseph D. Manthey*, Mark A. Geiger,; Robert G. Moyle, Biodiversity Institute and Department of Ecology and Evolutionary Biology, University of Kansas

Avian species range from monomorphic to highly polytypic. Some species, such as Dark-eyed Juncos in North America, may be morphologically diverse, though currently published genetics has not been able to identify any phylogeographic structure. The Northern Flicker (*Colaptes auratus*) and Gilded Flicker (*Colaptes chrysoides*) are a polytypic superspecies group with a complex history of species splitting and clumping. There are up to 13 described subspecies within this superspecies group, which represent slight geographic variation of five main morphological groups: red-shafted flickers of western North America (*cafer* group), yellow-shafted flickers of eastern North America (*auratus* group), Cuban flickers of the Caribbean (*chrysocaulosus* group), Gilded flickers of the U.S. southwest and Mexican northwest (*chrysoides* group), and Guatemalan flickers of Central America (*mexicanoides* group). These groups are largely differentiable by variation in shaft color, malar color, throat color, crown color, and back barring. Here, I use various genetic sequencing methods to obtain genetic data for all five morphological groups. I assess genetic structure of all morphological groups, as well as potential gene flow among them. With this data, the *mexicanoides* group is the only genetically distinct lineage within the superspecies group, with large amounts of gene flow among other morphological groups.

Citizen Science and its Importance for Creating Effective Ecological Niche Models – Jacob C. Cooper*, KU Biodiversity Institute, University of Kansas

Occurrence data is paramount for understanding species geographical and ecological characteristics, which are often analyzed via ecological niche models. Gathering occurrence points has always been challenging, and many data-gaps exist. Ornithologists have long relied on citizen science data to improve upon our knowledge of bird distributions through such initiatives as breeding bird atlases and the North American Breeding Bird Survey. Despite these programs,

most citizen effort is placed towards recreational birding and often escapes formal collection. Given the number of birders worldwide, tapping into this resource has attracted a lot of attention in recent years and has led to the creation of several public databases for bird observations, including eBird. The increasing popularity of such interfaces has led to an all-time high of public data collection and provides an unprecedented amount of locality information. With this influx of crowd-sourced data, these models can be even more effective in predicting distributions and understanding species' ecological requirements.

Functional Relationships Among Lesser Prairie-Chicken Survival, Habitat Use and Movements - *Samantha Robinson**; *R.T. Plumb and J.M. Lautenbach, Division of Biology, Kansas State University, D.A. Haukos, U.S. Geological Survey, Kansas Cooperative Fish and Wildlife Research Unit, Kansas State University, Manhattan, KS USA, J.C. Pitman, Kansas Department of Wildlife, Parks and Tourism*

Wintering ecology of Lesser Prairie-Chickens (*Tympanuchus pallidicinctus*) has not been studied as extensively as breeding season demographic rates and habitat use. This is especially true for the contemporary northern range of the species, where they have expanded since the 1980s. As a non-migratory species of concern, relationships between survival, habitat characteristics and movement are required to accurately inform management decisions. Females were captured during the spring lekking season using drop-nets and walk-in drift traps. Each captured female was fitted with a VHF radio transmitter or GPS satellite transmitter. Nonbreeding movements were estimated for Lesser Prairie-Chickens in two ecoregions within Kansas, the Red Hills mixed grass prairie, and the Northwestern Short-Mixed-grass Prairie and CRP Mosaic. Home range size was estimated using kernel density estimators. Vegetation measurements were collected at point locations for birds throughout the nonbreeding season. Initial analyses show no significant relationships between survival and any of the chosen covariates. These lack of relationships are likely due to the random nature of nonbreeding season mortality. Future estimations of annual survival relationships using broad-scale habitat variables may indicate significant relationships.

Object Permanence demonstrated by a Double Yellow Headed Amazon Parrot *Amazona oratrix* and an African Grey Parrot *Psittacus erithacus* - *Lauren Brown, Ashtyn Stephens, Andrew Sensenig**, *Tabor College*

Object permanence is the ability of an animal to recognize the existence of an object after it disappears from the senses. Many species rely heavily on vision, and hence object permanence can be tested in such an animal by showing it an object and then hiding it with a visual barrier. Object permanence has been demonstrated in parrots, crows, Capuchin Monkeys, adult cats, dogs, two year old humans and other great apes. An adaptive explanation for object permanence is that it enhances food acquisition in complex environments, such as when the subject loses sight of the food while climbing or hunting, and it improves escape from an approaching predator that weaves in and out of the landscape.

Conservation genomics reveals multiple evolutionary units within Bell's Vireo - Luke B. Klicka*, Biodiversity Institute -Ornithology Division, University of Kansas; Kevin J. Burns, Biology Department, San Diego State University; Barbara E. Kus, United States Geological Survey, San Diego, CA; Pascal O. Title, Biology Department, University of Michigan

The Bell's Vireo (*Vireo bellii*) is a widespread species of North American bird consisting of four subspecies (*V. b. pusillus*, *V. b. medius*, *V. b. bellii*, and *V. b. arizonae*) breeding from central Mexico to the central and southwestern United States. Subspecies were delimited in the late 1800's and early 1900's on the basis of plumage variation. The subspecies *V. b. pusillus* is federally endangered, and the other three are listed by Partners in Flight as birds of conservation concern. This is the first study to examine geographic variation in the Bell's Vireo using genetic data. We reconstructed evolutionary relationships within the complex using mitochondrial ND2 and genome wide variation in the form of SNPs. We sequenced ND2 for 87 individuals from throughout the breeding range of the Bell's Vireo, and obtained SNP data for a subset of those individuals. Bayesian analyses of these data identified two major clades within Bell's Vireo. The two clades follow an east/west division with a potential contact zone in New Mexico. The eastern clade contains *V. b. bellii* and *V. b. medius*, while the western clade contains *V. b. pusillus* and *V. b. arizonae*. Support for these clades, and additional within clade structure, was discovered with the SNP data. Most notably, all the endangered Least Bell's Vireo individuals grouped into a well-supported clade. The east and west clades are approximately 3% divergent in their mitochondrial sequence data, a similar level to that observed between other avian species. Using BEAST and an ND2 divergence rate of 0.0115 per lineage per million years, we estimate the two clades diverged from 1.1 - 2.0 million years ago.

A Comparison of Diurnal and Nocturnal Foraging Behavior by Black-crowned Night-herons (*Nycticorax nycticorax*) at an Artificial Weir -Rachel E. Renken*, Alan D. Maccarone, Biology Department, Friends University; Bayleigh L. Hamilton, Wichita High School East, Wichita

To better understand how time of day and light level affect foraging patterns and feeding success in a primarily nocturnal wading bird, observations were made in 2013 on Black-crowned Night-herons at an artificial weir located in the Little Arkansas River in Wichita, Kansas. Numbers of foraging birds at the weir were recorded using intervals of 1-h during both day and nighttime periods. Strike rates, capture rates, relocation rates, prey sizes, and rates of aggression were compared. A similar number of Black-crowned Night-herons used this site during the day and at night. Nor did mean strike rates, capture rates, or relocation rates differ between day and night. However, focal birds captured significantly larger fish during the day, when they also experienced rates of intra- and interspecific aggression three times higher. Since basic foraging patterns did not differ by time of day, it is likely that differences in the behavior, detection, and availability of prey account for the capture of larger fish during the day than at night. We have continued this study in 2014, and will report and differences between years. Thus far, it appears that diurnal foraging by Black-crowned Night-herons appears to be important in meeting increased energy demands during the breeding season.

A Telemetry-based Study of Great Egret (*Ardea alba*) Nest-Attendance Patterns, Food-Provisioning Rates, and Foraging Activity -Alan D. Maccarone* and Heather M. Stone,
Biology Department, Friends University; John N. Brzorad, Lenoir-Rhyne University, Hickory North Carolina

The breeding season is a demanding period in an adult bird's annual cycle because it must balance energy gains with the competing demands of reproduction and self-maintenance. To better understand how this balance is reached, nest-attendance patterns, food-provisioning rates, and foraging patterns were studied in radio-tagged Great Egrets (*Ardea alba*) breeding in a mixed-species colony in Wichita, Kansas from 2011-2013. A total of 777 records of feeding sites yielded travel times, flight velocities, and flight distances. Prey-capture rates, capture efficiencies, prey sizes and aggressive interactions were recorded at rivers, ponds, and weirs. Food-provisioning intervals (Mean = 196 ± 18 min; Range = 30-2044 min) differed among radio-tagged birds and among years. Round-trip distances to feeding sites in 2011 (16.3 ± 17.8 km) and 2012 (16.0 ± 7.0 km) were similar but both were longer than those in 2013 (11.1 ± 3.3 km). Flight distances to feeding sites also differed among birds and increased with breeding stage. Strike rates and capture rates differed by year but not by microhabitat (rivers, ponds, weirs), while capture efficiency differed among these microhabitats. Fish captured at weirs averaged 6 times heavier than those caught at rivers or in ponds. Aggression rates at weirs were 5-10 times greater than at ponds and rivers. Distances to foraging sites were combined with published values for flight energetics to estimate flight costs, and prey-capture rates were combined with caloric values of fish to estimate energy gain for each bird.

Habitat Use by Secretive Marsh Birds in Moist Soil Managed Wetlands in Eastern Kansas - Eric Wilson*, William Jensen, Department of Biological Sciences, Emporia State University, Richard Schultheis, Kansas Department of Wildlife, Parks, and Tourism

Moist soil management is a common form of wetland management for waterfowl, where wetlands are dewatered in spring and flooded in fall to enhance summer vegetative production. The use of moist soil managed wetlands by other marsh birds (e.g., rails) has received little study. Our objective was to determine variation in abundance of the American bittern (*Botaurus lentiginosus*), Least bittern (*Ixobrychus exilis*), King Rail (*Rallus elegans*), Virginia Rail (*Rallus limicola*), and Sora (*Porzana carolina*) in relation to habitat structure within moist soil managed wetlands in Eastern Kansas. We used call-playback surveys to survey marsh bird abundance, and also recorded abundances of common songbirds. Study sites included the Flint Hills National Wildlife Refuge and the Marais des Cygnes National Wildlife Refuge and State Wildlife Area in eastern Kansas. Surveys were performed during the spring migration and summer breeding seasons of most marsh birds in Kansas. Six individual marsh birds of three species, Least Bittern, American Bittern, and Sora, were detected in only three of 31 wetland units across all sites. Vegetation cover and height were generally greater at points where these birds were detected. Dickcissels (*Spiza Americana*) and Red-winged Blackbirds (*Agelaius phoeniceus*) were generally more abundant at points with greater vegetation cover and height and less abundant at points with greater water coverage and depth. We are currently surveying marsh birds in fall using flush counts, which might reveal patterns with habitat structure. Call-playback surveys will resume in spring.

Ciprofloxacin-Resistant Bacteria in Bird Species Exposed to Varying Levels of Human Disturbance - Jeffrey J. Carter*, Greg H. Farley, Eric T. Gillock, Department of Biological Sciences, Fort Hays State University

The emergence of bacteria resistant to prescribed antibiotics presents a difficult challenge for treatment of human disease. Over time many antibiotic compounds have become ineffective due to spread of resistant genes, which has greatly decreased the number of viable treatment options for bacterial infections. This study focused on the bacterial flora assayed from avian species to assess the potential spread of antibiotic-resistant genes through the environment. We tested for bacteria resistant to ciprofloxacin in nestlings of nine bird species located in three study sites in western Kansas. Study sites were selected to reflect a gradient of human disturbance where antibiotics were introduced into the environment. A total of 194 Individual nestlings were sampled during two field seasons, with 12 individuals housing bacteria resistant to ciprofloxacin. All three study sites were represented in these positive results, which may indicate antibiotic resistant genes are more widespread in the environment than previously thought. Several of the species assayed are Nearctic – Neotropical migrants, suggesting a potential for the spread of these genes through environmental vectors.

Possible Effects of Black-Tailed Prairie Dogs on Abundance and Diversity of Raptors in Mixed and Shortgrass Prairie of Western Kansas - Nina M. Luna* and Greg Farley, Fort Hays State University

Black-tailed prairie dog (*Cynomys ludovicianus*) distribution has been significantly reduced by habitat modification for farmland, government-supported eradication programs, and disease. Black-tailed prairie dogs are a possible keystone species of the Great Plains and organisms such as ferruginous hawks and golden eagles have had population decline where prairie dog populations declined. This study quantifies and compares species diversity and individual abundances of raptors on rangelands with and without prairie dogs. We conducted raptor surveys from April 2013 to January 2014 in western Kansas. Objectives were: 1) quantify raptor species diversity and abundance, 2) identify seasonal patterns by species 3) assess possible ecological associations with common raptor species. More individual raptors ($n = 175$) were on the prairie dog treatment than non prairie dog treatment ($n = 107$). Observations of ferruginous hawks ($n = 38$) and golden eagles ($n = 31$) were abundant during the overwintering period on prairie dog treatments. Prairie dog treatment ($n = 13$) had 4 more species detected than non prairie dog treatment ($n = 9$). Burrowing owl, prairie falcon, merlin, and bald eagle were only observed on prairie dog treatment.

Grasshopper Sparrows on the Move: What Explains Variation in Within-Season Breeding Dispersal in a Declining Songbird? - Emily J. Williams*, W. Alice Boyle, Kansas State University, Division of Biology

Grassland birds are declining throughout North America, likely primarily due to habitat loss. The grassland-obligate Grasshopper Sparrow (hereafter, sparrows) is declining at 3% per year, including in their core breeding range in the Flint Hills of Kansas. During the 2013/14 breeding seasons, we observed that many sparrows dispersed 1-3km within our 3,487-ha study area at the Konza Prairie Biological Station, presumably between nesting attempts. Consequently, patterns of sparrow relative abundance changed dramatically over the breeding season. We hypothesized that these dispersal events are due to spatial and temporal changes in relative

predation/parasitism risk associated with different land use. We predicted that dispersers have lower nest success than individuals that maintain consistent territories, and that nests of dispersing individuals suffer higher parasitism rates. We captured and individually marked ~400 male Grasshopper Sparrows between May-July 2013/14 on 18 plots managed with cattle, bison, or no grazers, and burn frequencies of 1-3 years. We found a total of 116 nests via rope-dragging and behavioral observations. Nests were monitored every 2 days to determine nest fate, and daily nest survival was estimated in Program MARK and in Program R (Package RMark). Preliminary results indicate that dispersing individuals experienced much lower overall nest survival (0.11) than non-dispersed individuals (0.47). Contrary to prediction, parasitism rates were not different between dispersers or non-dispersed birds ($P=0.9853$). Ongoing studies quantifying temporal and spatial patterns of predation risk, food abundance, and habitat change will help determine the consequences of different land management regimes on grassland bird movements and habitat quality.

Female Lesser Prairie-Chicken Response to Grazing Practices in Western Kansas

Grasslands - John D. Kraft* and J. Lautenbach, Division of Biology, Kansas State University, D. A. Haukos, U.S. Geological Survey, Kansas Cooperative Fish and Wildlife Research Unit, Kansas State University, J. C. Pitman, Kansas Department of Wildlife, Parks, and Tourism, C. A. Hagen, Oregon Department of Fish and Wildlife

The Lesser Prairie-Chicken (*Tympanuchus pallidicinctus*; hereafter LPC) is a grouse species endemic to the grasslands of the southern Great Plains. In March, 2014, cumulative habitat degradation and subsequent population decline led to the listing of this species as “Threatened” under the Endangered Species Act. The vast majority of the species range occurs on private grazed lands. Therefore, LPC population responses to livestock grazing strategies need to be investigated and quantified for conservation planning. We investigated the effects of various grazing pressures on reproductive success and habitat use within Kansas grazed lands. During the springs of 2013 and 2014, individuals were captured on breeding/display grounds (leks) and fitted with either a 17-g VHF bib-style transmitter or a 22-g model 100 GPS Platform Transmitting Terminal (PTT). Locations of tagged birds, nest sites, and broods were recorded. Grazing data were collected via producer correspondence and vegetation surveys. Initial results indicate that functional grasslands are an important resource for LPC populations during all seasons. Furthermore, measures of LPC habitat use and reproductive success were positively related with lower values of grazing intensity (AUM and percent forage utilization rates). Analyses indicated loamy upland, limy upland, red clay prairie and saline subirrigated ecological sites were used more than other available range sites. Understanding and creating meaningful relationships between livestock production and LPC population demography will provide additional information for LPC conservation and management.

Lesser Prairie-Chicken Habitat Use in Kansas and Colorado – Dan S. Sullins*, Kansas Cooperative Fish and Wildlife Research Unit, Department of Biology, Kansas State University

The range of the lesser prairie-chicken (LPC) has decreased ~85% over the past 100, primarily due to the loss and degradation of available habitat. Kansas contains the largest portion of the LPC range where the majority of the now federally threatened species reside. To appropriately implement and assess conservation efforts for LPC, a clear understanding of habitat use across its northern range in Kansas and Colorado is needed. Therefore, my objective was to estimate the

relative importance of habitat variables (visual obstruction, percent forbs, and litter depth) with the probability of use by LPC among multiple study areas in Kansas and Colorado. Logistic regression was used to estimate effect size for explaining habitat use between variables measured at used ($n = 4,325$) and available points ($n = 3,688$). The predictive power of variables related to cover, nesting, and food suitability were assessed in separate model groups. Of each grouping, the quadratic relationship of forbs was the best supported food variable, and overall best univariate predictor of LPC use, litter depth was an informative nesting variable, and the quadratic relationship of vegetation height (dm) at which 25% visual obstruction occurs was the best supported cover variable. All were positively related with LPC use and had 95% confidence intervals that did not overlap zero. Best supported single variable models were combined to assess multivariate predictors. Overall, the additive model including food, nesting, and cover variables was the best predictor of LPC occupancy. Future management efforts should consider these variables when identifying and evaluating LPC habitat.

Thank you!!!!

Kansas Wesleyan University

Mike Rader, Shannon Rayl, Smoky Hills Audubon, KDWPT, Salina
Area Chamber of Commerce and the City of Salina

Spring Meeting: May 1-3, 2015 – Scott City
Fall Meeting 2015: ???