



**31st Meeting of the
Prairie Grouse Technical Council**
September 22 - 24, 2015 • Nevada, Missouri

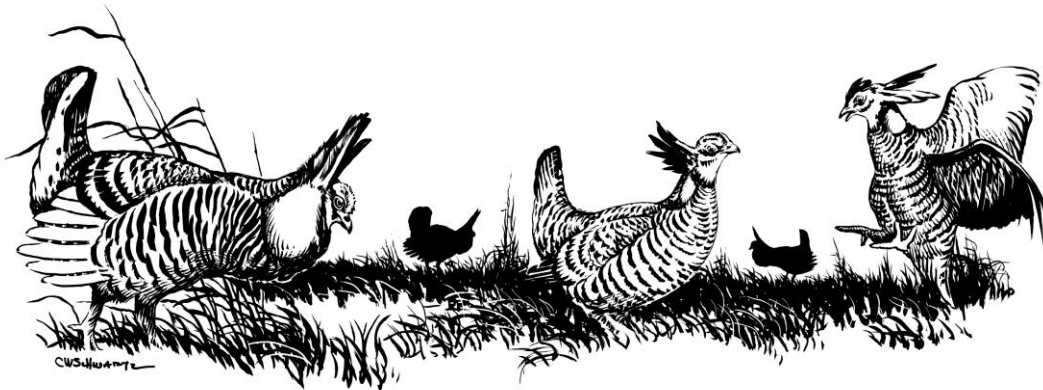
Welcome to the 31st Prairie Grouse Technical Council!

Every other year we gather from across the Great Plains and beyond, to socialize and share what we are learning about the conservation of the handful of iconic prairie grouse species. 2015 marks the third time Missouri has had the honor of hosting the Prairie Grouse Technical Council since it was formed in 1957; we're very glad that you're here!

Regardless where we come from or the species in which we happily invest our efforts, we are united by concerns about dwindling habitat and ever-expanding challenges. Whether we work with isolated populations on the edge of a species' range or in the relative stability of the heart of the range, whether we administer an Endangered Species listing or a closely-managed hunting season, we share well-justified concerns. We are bound by common efforts to sustain habitat and buffer the impacts of agricultural policy, energy development and other factors beyond our control.

It is increasingly important to gather to recount successes and share new ideas. It is inspiring to take part in the collective experience of our group and welcome new members of the profession. Your Missouri hosts sincerely hope you have an enjoyable and informative conference. Thanks for coming!

Max Allegor, Chair, 31st Prairie Grouse Technical Council



Acknowledgements

Thanks to fellow members of Missouri's Greater Prairie-Chicken Recovery Team who led the charge to plan this meeting; Aimee Coy, Dave Niebruegge, Frank Loncarich, Matt Hill, Steve Cooper, Tom Thompson, Len Gilmore, and Steve Clubine.

A special thank-you goes to Lana Wilson and Gina Allison who worked behind the scenes to arrange our meals, breaks and field trip logistics. We also want to thank Jason Cobden, Yvonne Heerlein, Liz Leeman, Kathy Cooper, Sharron Gough, Loel Wilson, Stasia Whitaker, Mike Longhofer, Mike Larsen, Joe Coy, Kathy Hetherington, Betty Elkins and Andy Carmack for their work behind the scenes.

Missouri Department of Conservation staff also thank the North American Grouse Partnership, and especially Steve Riley and Greg Hoch, for bringing PGTC registration and payment processes into the internet age for the first time.

Finally, thanks to the organizations and businesses listed on the back of this program, for their generous donations to the silent auction. The following individuals donated auction items and we appreciate their generosity as well: Glenn Chambers, Noppadol Paothong, Jim Rathert, Sharron Gough, Steve and Kathy Cooper, Len Gilmore and the Pettis County Beekeepers.



Program

Tuesday, September 22nd

5:30 – 9:00 p.m. **Social and registration**, food and drinks provided

Wednesday, September 23rd

- 8:00 a.m. **Opening remarks** – Max Alleger (Moderator)
- 8:10 a.m. **Welcome to Missouri** – MDC Deputy Director Tim Ripperger
- 8:20 a.m. **From the Heart of the Range to the Edge of the Range: History of Greater Prairie-Chickens in North American True Prairie** – Steve Clubine
- 9:00 a.m. **Update – Interstate Working Group for Greater Prairie-Chicken and Sharp-tailed Grouse** – Jon Haufler and Keith Sexson
- 9:20 a.m. **The LPCH Range-Wide Conservation Plan: A New Model for Conserving Threatened and Endangered Species** – Cal Baca
- 9:40 a.m. **LPCI: A Path Forward Threatened Species Recovery and Agricultural Communities** – Jon Ungerer
- 10:00 a.m. Break
- 10:20 a.m. **Conservation Banking for Prairie Grouse: Promising Future or Wishful Thinking** – Stephanie Manes
- 10:40 a.m. **Effectiveness of Landscape Management Practices for a Landscape Species: Are Core Areas Working to Protect Sage-Grouse?** – Emma Suzuki Spence
- 11:00 a.m. **Missouri's Translocation Efforts** – Tom Thompson
- 11:20 a.m. **Translocation of Greater Prairie-Chickens from Kansas to Missouri Increased Genetic Diversity in Missouri and Results in Introgression** – Andrew Gregory
- 11:40 a.m. **Missouri State Historical Archive** – Severin Roberts
- 11:50 a.m. **Great Plains Fire Science Exchange** – Sherry Leis
- 12:00 p.m. Lunch

- 1:00 p.m. Board Buses for Wah’Kon-Tah (WKT) Prairie Field Trip
- 2:00 p.m. WKT Field Trip Begins – refer to detailed field trip agenda
- 6:30 p.m. Social and Fish/Chicken Fry on the Prairie
- 9:00 p.m. Buses return to hotels at 30-minute intervals

Thursday, September 24th

- 8:00 a.m. **Orientation to 2nd Day** – Max Alleger
Morning Moderator – Frank Loncarich
- 8:05 a.m. **Iowa Prairie-Chicken Translocations** – Chad Paup
- 8:25 a.m. **Update on Captive Breeding and Raising of Attwater’s Prairie-Chickens and Their Release into and Survival in the Wild, with Comments on Experimental Breeding Methodologies** – Mike Morrow / Steve Sherrod
- 8:45 a.m. **Rangewide Genetic Analysis of Lesser Prairie-Chicken Reveals Population Structure, Range Expansion, and Possible Introgression** – Lena Larsson
- 9:05 a.m. **Factors Affecting Female Space Use in Ten Populations of Prairie Chickens** – Virginia Winder
- 9:25 a.m. **Lesser Prairie-Chicken Space use Response to Anthropogenic Structures** – Reid Plumb
- 9:45 a.m. **Attributing Landscape Characteristics to Lesser Prairie-Chicken Survival in Kansas and Colorado** – Samantha Robinson
- 10:05 a.m. Break
- 10:20 a.m. **Regional Demographic Variability for Lesser Prairie-Chickens in Kansas and Colorado** – Dan Sullins
- 10:40 a.m. **Demographic and Movement Responses of Greater Prairie-Chickens to Patch-Burn Grazing on Private Lands** – Virginia Winder
- 11:00 a.m. **Female Lesser Prairie-Chicken Response to Grazing in Western Kansas Grasslands** – John Kraft
- 11:20 a.m. **Effect of Pyric Herbivory on Vegetation Composition with Management Implications for Lesser Prairie-Chickens** – Jonathan Lautenbach

- 11:40 a.m. **Weather Constrains the Influence of Fire and Grazing on Nesting Greater Prairie-Chickens** – Dwayne Elmore
- 12:00 p.m. Lunch
- 1:00 p.m. Business Meeting: Max Alleger (Chair)
- 1:40 p.m. Afternoon Moderator – Matt Hill
- Hierarchical Modeling of Lesser Prairie-Chicken Lek Attendance, Survival, and Recruitment in Response to Grazing and Weather** – Sarah Fritts
- 2:00 p.m. **Environmental Factors Associated with Lesser Prairie-Chicken Use of Surface Water** – Clint Boal
- 2:20 p.m. **An Assessment of Lesser Prairie-Chicken Nest Microclimate and Nest Survival Among Three Ecoregions** – Blake Grisham
- 2:40 p.m. **Greater Prairie-Chicken Movements and Production in Nebraska and Minnesota** – John Toepfer
- 3:00 p.m. Break
- 3:20 p.m. **Modeling Range-Wide Habitat Suitability for Lesser Prairie-Chickens Using Aerial Surveys and Citizen Science** – Ashley Unger
- 3:40 p.m. **Are Boom Vocalizations Used to Recognize Individuals in Greater Prairie-Chickens?** – Jackie Augustine
- 4:00 p.m. **Evaluating the Influence of Habitat Structure on the Movement Rates of Gallinaceous Chicks** – Mandy Orth
- 4:20 p.m. Adjourn afternoon session
- Optional meeting to discuss range-wide prairie grouse management planning / Haufler
- 5:30 p.m. Silent Auction/Poster Session
- 7:00 p.m. Banquet and Awards

Friday, September 25th

Dispersal

31st Prairie Grouse Technical Council Field Trip

Wah'Kon-Tah Prairie September 23, 2015

We will tour Wah'Kon-Tah Prairie, located about 20 miles east of Nevada. As we head east on Highway 54 we will travel through a relatively flat landscape with fertile soils that was once tallgrass prairie but is now intensively cropped. As we approach the town of El Dorado Springs you will notice that crop fields give way to cattle pastures. When we arrive at Wah'Kon-Tah you will see why we consider ourselves at the edge of the range for prairie grouse.

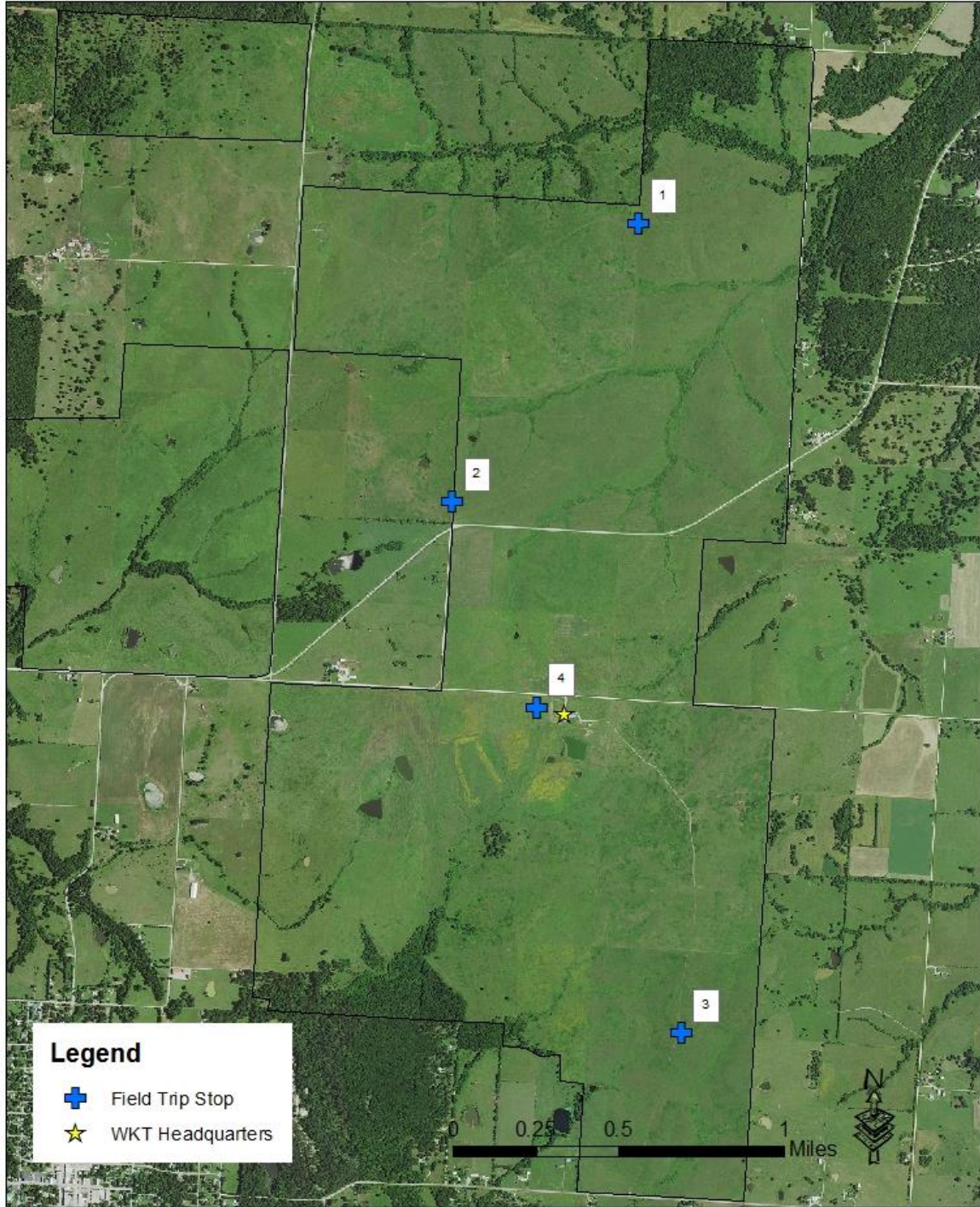
Named for the "Great Spirit" or "Great Mystery" of the Osage tribe, Wah'Kon-Tah Prairie was purchased by The Nature Conservancy in the 70s and 80s. It is the largest example of non-glaciated Tallgrass prairie remaining in Missouri; these and the glaciated prairies lying north of the Missouri River once covered over one-quarter of the state. Wah'Kon-Tah escaped the plow because of its thin, rocky soils and poor soil fertility. The ridges are nearly flat with moderate to steep side slopes that lead to many swales and prairie headwater streams.

Wah'Kon-Tah Prairie lies within the transition zone between the Osage Plains and the Ozark Highlands. Depending on climate, fire frequency and intensity this site would have shifted between open prairie and savanna / woodland plant communities.

Managers use prescribed burning, grazing and other practices to simulate historic disturbances that maintain healthy grasslands and limit negative impacts of invasive plants, including trees. Management priorities include providing nesting and brood rearing habitat for Greater prairie-chickens, Northern bobwhite, and other grassland birds such as Henslow's sparrow and upland sandpiper. Monitoring and management for a number of lesser known species is also important. Examples include: Mead's milkweed, prairie mole crickets, Regal fritillary butterflies, pink katydid, northern crawfish frog, slender glass lizard and Northern harrier.

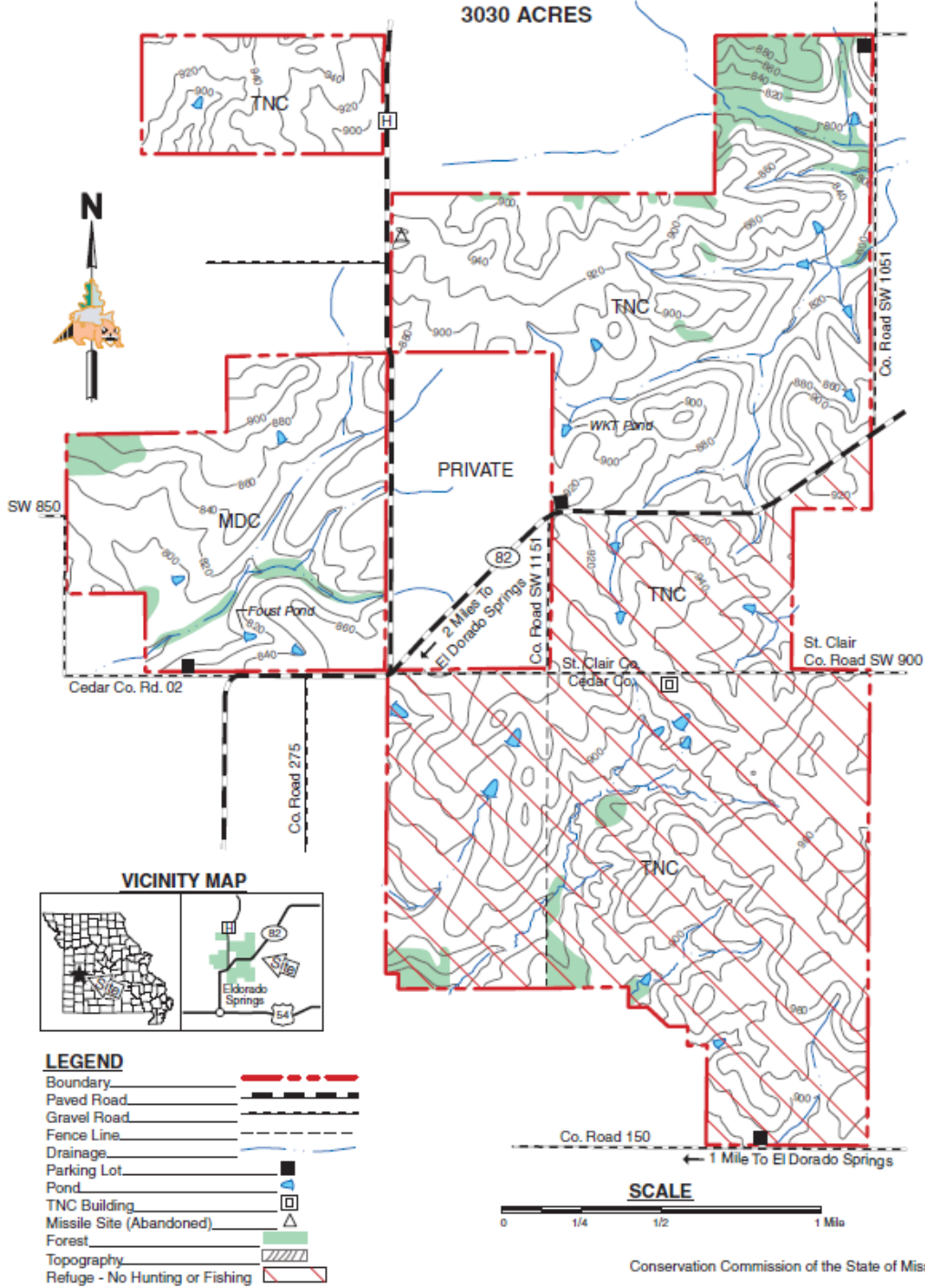
We have planned four stops for the field trip where we will talk about public and private land management efforts to benefit greater prairie-chickens.

PGTC Field Trip Wah'Kon-Tah Prairie



WAH'KON-TAH PRAIRIE

CEDAR and ST. CLAIR COUNTIES
3030 ACRES



Presentation Abstracts

FROM THE HEART OF THE RANGE TO THE EDGE OF THE RANGE: HISTORY OF GREATER PRAIRIE-CHICKENS IN NORTH AMERICAN TRUE PRAIRIE.

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Greater prairie-chickens (GPC), were common in the true (tallgrass) prairie region of North America prior to EuroAmerican settlement. The region (Missouri to Ohio and Tennessee to Minnesota) was grazed by small herds of bison that followed fresh burns from Indian origin or lightning, ensuring usable GPC habitat in this high rainfall region. After the demise of Indians and bison but before EuroAmerican settlement, GPC were reported as scarce because the prairie became too tall and rank for them without the impact of a large herbivore. A few decades before dense EuroAmerican settlement, cattlemen brought in herds of cattle and prairie-chicken populations exploded. Accounts from this period report extensive pastures and use of fire to control excess grass. Thus, the earliest patch-burn grazing with livestock was practiced by early cattlemen, not unlike Indians had done for centuries to manage native grazers. Increased settlement and breaking of the sod for crops required huge numbers of draft animals; two acres of forage was required for every acre farmed. The result was an even greater patchwork of better nesting and brood-rearing habitat for prairie grouse. While grouse used cereal grains when available, it had little to do with the exploding grouse populations. It was the dramatic increase in usability of the tallgrass prairie that produced the great numbers of prairie grouse and other grassland wildlife. Failure to recognize and replicate habitat that produced the remarkable abundance is a recipe for failure. No present-day 'Edge of the Range' state has come close to replicating these conditions at the appropriate scale. Without more acquired acreage and appropriate management with light to moderately grazing, remnant prairie grouse populations can only persist through periodic translocations to maintain genetic diversity.

THE LESSER PRAIRIE-CHICKEN RANGE-WIDE CONSERVATION PLAN: A NEW MODEL FOR CONSERVING THREATENED AND ENDANGERED SPECIES

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On May 12, 2014, the U.S. Fish and Wildlife Service (USFWS) listed the Lesser Prairie Chicken (LPC) as threatened under the Endangered Species Act of 1973 (ESA). In addition, the USFWS published a final special rule under §4(d) of the ESA that provides for incidental take of a LPC by a participant operating in compliance with the LPC Range-wide Plan (RWP) which is administered by the Western Association of Fish & Wildlife Agencies (WAFWA). This was an unprecedented use of Section §4(d) of the ESA that leaves most of the management authority for the species with the state fish and wildlife agencies through the governance structure established by the RWP. Industry participation in the RWP is voluntary and occurred via a Candidate Conservation Agreement with Assurances (CCAA) prior to listing and now through a WAFWA Certificate of Participation (WCP). To date, there have been 181 companies (energy, electric, oil & gas) enrolled in the RWP that have contributed >\$42 million for perpetual off-site mitigation activities. Eighty-seven and one-half percent of that revenue is directed into a non-wasting endowment for conservation offsets and 12.5% is reserved for administrative expenses. Seventy-five percent of the conservation offsets will occur through 5-10 year term contracts that move around the landscape and 25% of the offsets will be permanent conservation sites consistent with the standards set forth by the USFWS in their conservation banking guidelines. To date, the WAFWA has secured 10 term contracts with private landowners and one permanent conservation site encompassing nearly 98,000 acres in term contracts and 1600 acres in permanent conservation by fee title acquisition across LPC range which is more than sufficient to offset all of the current participant impacts. More than 8,000 acres contained in those agreements are scheduled for brush management activities that will restore their utility for LPC. Through those agreements the WAFWA has committed >\$15 million over the next 10-years to private landowners. The WAFWA is annually reporting upon the success of the program and the progress toward the USFWS-endorsed goals established by the RWP (i.e. population size, habitat acreage, and impact acreage).

UPDATE ON CAPTIVE BREEDING AND RAISING OF ATTWATER'S PRAIRIE-CHICKENS AND THEIR RELEASE INTO AND SURVIVAL IN THE WILD, WITH COMMENTS ON EXPERIMENTAL BREEDING METHODOLOGIES.

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One of three extant prairie-chickens in the world, Attwater's Prairie-chicken (APC; *Tympanuchus cupido attwateri*), historically found on the coastal plains of southern Texas and Louisiana, is one of the most endangered birds in North America. Numbers in the wild exist primarily at the Attwater Prairie Chicken National Wildlife Refuge and vary from approximately 60-200 birds, depending on time of year. Annual post-release survival (0-43%) averages 17-19%, compared to 50% for wild produced prairie-chickens. Teetering on extinction, this bird survives as a result of captive breeding by wildlife parks and zoos and annual releases of offspring, but significant wild population growth has not resulted. Red imported fire ants have adversely impacted insect communities on which APC chicks feed, but viruses, protozoans, and phorid flies parasitic on the ants may provide help. Overall, mass propagation of captive Galliformes has proven to be complicated and difficult, and production of birds that show high survival and significant reproduction in the wild is a challenge. Annual releases of larger numbers of high quality young is the goal. Utilizing original as well as a combination of techniques for breeding and managing captive ring-necked pheasants (Beaver's Game Farm), Houbara bustards (Emirates' Center for Wildlife Propagation), and APC (Fossil Rim Wildlife Center; Houston Zoo), the Sutton Avian Research Center is currently building a dedicated facility in Oklahoma focused on breeding APC for release. Experimental methods will include: 1) natural breeding in pairs and trios; 2) breeding of both human imprinted male and female APC; 3) female mate choice of copulating males. Other management methods include use of "home grown" greens, sprouts, and insects, and hopefully wild grouse "gut flora." Greater prairie-chickens (GPC) are serving as surrogates initially to test efficacy of prospective designs and methodology.

RANGEWIDE GENETIC ANALYSIS OF LESSER PRAIRIE-CHICKEN REVEALS POPULATION STRUCTURE, RANGE EXPANSION, AND POSSIBLE INTROGRESSION

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Additional citations available upon request

Effective management of Lesser Prairie-Chickens requires information about population connectivity and structure. Populations are declining due to habitat loss and fragmentation. Portions of the historic range, however, have recently been recolonized and even expanded; most likely due to the planting and maintenance of Conservation Reserve Program (CRP) fields that provide necessary vegetation structure. Our goals were to characterize connectivity and genetic diversity among populations, identify source population(s) of recent range expansion, and determine the level of introgression with Greater Prairie-Chicken. We analyzed 240 samples from across the range using 13 microsatellite loci. We identified three or four distinct populations that were largely defined by ecoregion boundaries. Genetic diversity was similar among ecoregions and N_e ranged from 142 for the shortgrass/CRP mosaic to 296 in the mixed grass prairie. No recent migration was detected among most ecoregions, except from the mixed grass prairie north into the shortgrass/CRP mosaic ($m = 0.207$, 95% CI = 0.116 - 0.298). A STRUCTURE analysis investigating the area of Lesser and Greater Prairie-Chicken geographic overlap revealed $K = 2$ corresponding to the two species. Several hybrids and presumed “pure” individuals based on morphology were “mis-assigned” or admixed suggesting hybridization between the two species. Further, asymmetric migration rates confirm that both Lesser and Greater Prairie-chicken populations in the Shortgrass/CRP ecoregion were the source populations for the hybrid group. As significant structure exists among ecoregions despite close geographic proximity, continued monitoring of diversity within and among ecoregions is warranted. Management actions that promote genetic connectivity and range expansion may be critical to the long term viability of the species.

LESSER PRAIRIE-CHICKEN SPACE USE RESPONSE TO ANTHROPOGENIC STRUCTURES

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Landscapes of the southern Great Plains have been altered extensively due to conversion of native grasslands to row-crop agriculture, which is considered the primary causes of precipitous declines in Lesser Prairie-Chicken (*Tympanuchus pallidicinctus*) populations; prompting its recent listing as a federally threatened species. Understanding the spatial ecology of lesser prairie-chickens in relation to anthropogenic structures is critical for conservation planning, management, and development mitigation. We investigated the relationship between space use of radio-marked female ($N = 201$) lesser prairie-chickens and multiple anthropogenic structures between two ecoregions in Kansas during 2013 and 2014. We examined behavioral avoidance of anthropogenic structures at two scales of selection using Resource Utilization Functions and Resource Selection Functions. Females avoided all investigated anthropogenic features with distance to distribution power lines being a significant predictor of space use. We found no difference in behavioral avoidance of structures among different periods of the breeding season. Females selected areas with lower densities of anthropogenic features than those available at random. Evidence from our study suggests that behavioral avoidance of anthropogenic structures may result in functional habitat loss and continued fragmentation of remaining grassland habitat.

REGIONAL DEMOGRAPHIC VARIABILITY FOR LESSER PRAIRIE-CHICKENS IN KANSAS AND COLORADO

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Population declines have led to the recent listing of the lesser prairie-chicken (*Tympanuchus pallidicinctus*, LPC) as a threatened species under the Endangered Species Act. Recovering LPC to population goals will require strategic conservation efforts potentially addressing an array of limiting factors that vary throughout the range of the species. Factors causing the decline likely differ throughout their distribution which spans a ~40 cm precipitation gradient, varied growing season duration, and a diverse array of soils and associated vegetation. Therefore, we examined differences in LPC population growth rates and vital rates among 4 study sites in Kansas and Colorado. We captured, marked, and estimated vital rates (e.g., nest survival, brood survival, adult survival) from 182 female LPC and their offspring during 2013-2015. We estimated the finite rate of population growth (λ) for each site using a deterministic matrix model and examined vital rate contributions to differences in growth rates among sites using a fixed-effects life-table response experiment. Finite rate of population growth estimates for each site ranged from 0.49 ± 0.06 to 0.55 ± 0.07 and adult survival contributed the most to differences among sites. Sites with increased fragmented grassland landscapes had lower adult survival. The LPC population, when pooled among sites and years of study, was projected to continue to decline ($\lambda = 0.53 \pm 0.06$). Continued measurements of vital rates and population response to changing environmental conditions are needed.

DEMOGRAPHIC AND MOVEMENT RESPONSES OF GREATER PRAIRIE-CHICKENS TO PATCH-BURN GRAZING ON PRIVATE LANDS

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Greater Prairie-Chicken (*Tympanuchus cupido*) populations have decreased as much as 50% over the last 30 years, paralleling losses of tallgrass prairie and implementation of intensive rangeland management strategies. Patch-burn grazing has been introduced as an alternative management technique, mimicking historically heterogeneous fire and grazing regimes and providing the mosaic of habitats required by prairie chickens for successful reproduction and survival. We conducted a 3-year field study (2011–2013) to investigate responses of female prairie chickens to patch-burn grazing compared to intensive management in the central Flint Hills of Kansas. We explored the effects of fire and grazing practices on habitat selection using resource utilization functions. Rangeland management practices influenced space use during both breeding and nonbreeding seasons, and female prairie-chickens disproportionately used areas stocked at lower densities and managed with longer fire return intervals. We used Andersen-Gill survival models to examine the effect of fire and grazing practices on predator-specific mortality risk (avian vs. mammalian). Mortality risk to avian predators was high and dependent upon rangeland management practices, with highest hazard levels in densely stocked and recently burned areas. Subsequently, annual survival estimates were nearly two times higher for females captured at leks on properties managed with patch-burn grazing compared to intensive management. Our results support a growing body of evidence that rangeland management strategies that mimic historical heterogeneous fire and grazing regimes benefit native prairie wildlife and ecosystem health.

FEMALE LESSER PRAIRIE-CHICKEN RESPONSE TO GRAZING IN WESTERN KANSAS GRASSLANDS

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The Lesser Prairie-Chicken (*Tympanuchus pallidicinctus*; hereafter LPC) is a grouse species endemic to the grasslands of the southern Great Plains. In May 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, knowledge of LPC population responses to livestock grazing strategies would aid in 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, 2014, and 2015, 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), larger pasture sizes, and greater values of above-ground biomass. Analyses indicated loamy upland, limy upland, red clay prairie and saline subirrigated ecological sites were used more than other available range sites. Relating measures of livestock production with LPC population demography can provide additional information for LPC conservation and management.

MODELING RANGE-WIDE HABITAT SUITABILITY FOR LESSER PRAIRIE-CHICKENS USING AERIAL SURVEYS AND CITIZEN SCIENCE

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Modeling habitat suitability requires presence data of sufficient quantity and quality. However, collecting these data can be costly and is often complicated by limited land access. Citizen science projects, such as eBird, have created a global network of volunteers collecting data that is freely accessible. The federally threatened lesser prairie-chicken (LPC; *Tympanuchus pallidicinctus*), is well represented in eBird with presence observations from 182 unique locations from 2012-2014. During that same time period, a range-wide, aerial survey detected 106 LPC lek sites. Our objective was to determine the potential of eBird data for use in habitat suitability modeling. We used maximum entropy modeling to create habitat suitability models. Variables were selected based on biological significance to LPCs as reported in the literature and were identical for each model. We obtained better model performance using aerial survey data (test omission rate: 17.4%, AUC: 0.759) than with eBird data (test omission rate: 33.3%, AUC: 0.682). We used the *I*-statistic to determine the degree of similarity between the two models and found a high level of overlap ($I = 0.900$). We obtained the best results when we combined eBird data and aerial survey data (test omission rate: 0.9%, AUC: 0.771). Our results indicated that eBird data could be used as a low-cost source for occurrence data to improve habitat suitability models and inform range-wide conservation plans.

State Reports

Illinois

In the spring of 2015, the 53rd consecutive census in south-central Illinois indicated 68 greater prairie-chicken males significantly up from 38 males in the spring of 2014. The 2015 counts included 39 males in Jasper County and 29 males in Marion County. In 2015, the males in Jasper County increased from a very low count of 12 in 2014 to 39 males in 2015. This was following the spring 2014 prairie-chicken translocation from the Smokey Hills Region in Kansas. The Marion County population also increased slightly from 26 males in 2014 to 29 males in 2015. The greater prairie-chicken remains a state endangered species in Illinois and is currently limited to two flocks located in Jasper and Marion Counties.

In 2014, supported by a State Wildlife Grant and the Prairie-Chicken Recovery Plan, the Illinois Department of Natural Resources, Illinois Natural History Survey and the Illinois Audubon Society began a 3-year prairie-chicken translocation for genetic and demographic purposes due to drastic declines in the Illinois population. In 2014, 50 males and 41 females were trapped and relocated to Illinois from the Smokey Hills region in Kansas. In 2015, the translocation effort was suspended due to an Executive Order from the Governor limiting out of state travel.

Kansas

Population Status

The extreme drought observed across the Great Plains from 2010-2013 had differing effects across the state. In the west half of the state, where water is a limiting resource, nesting and brood rearing habitat was depleted causing population declines. Widespread annual burning was limited throughout the Flint Hills, allowing for slight recoveries in populations. Spring precipitation in 2014 and 2015 greatly improved range conditions across the state. The index to the state wide population density for LPCH increased by 13.7% in 2015 as compared to 2014, while the statewide index to GPCH population density increased by 12.9%.

Annual range wide aerial surveys have also been conducted on the LPCH since 2012. Population estimates increased in all three ecoregions surveyed that are partially or completed within KS. Following this methodology, a statewide population estimate was generated for the first time in Kansas for GPCH in 2015. Preliminary results are presented in Table 1 below.

Table 1. Estimated densities of GPC per 100 km² and population sizes by ecoregion and overall. Ecoregions that are included are Smoky Hills (ESH), Flint Hills (FH), Glaciated Plains (GP), Osage Cuestas/Chautauqua Hills (OCCH), and Northern High Plains (NHP). Oklahoma (OK) also had estimates completed and the overall estimate includes estimates from this region.

Region	Density (per 100 km ²)	Population Size	SE	CV
ESH	117.3 (60.4, 162.3)	28,771 (14807, 39803)	8073	0.28
FH	133.3 (71.1, 181.2)	32,090 (17117, 43619)	8179	0.25
GP	14.7 (6.7, 21.0)	661 (302, 945)	206	0.31
OCCH	32.4 (11.6, 54.6)	2,332 (832, 3928)	971	0.42
NHP	60.2 (46.4, 85.7)	23,975 (18492, 34133)	4807	0.20
OK*	47.3 (18.7, 69.6)	1,914 (757, 2817)	651	0.34
Overall	86.1 (57.69, 109.55)	89,744 (60098, 114123)	17,015	0.19

Hunter Activity and Harvest

Greater prairie chicken harvest has been tracked through our Small Game Harvest survey since 1963; Lesser Prairie Chicken was added in 1975. Species estimates are derived by county of pursuit with the harvest being attributed to the dominant species in counties within the range overlap. Estimated combined species harvest through this survey has ranged from a high of 120,000 birds in 1982 to a low of 3,622 in 2013. Survey results indicate that most Kansas prairie chicken hunters are opportunistically taking chickens while hunting other upland game. In the 2014-2015 season an estimated 5,619 active hunters harvested an estimated 1,496 birds, which translates into 1.7% of the total estimated population from 2015 spring aerial surveys.

Habitat Management Projects

Kansas Department of Wildlife Parks and Tourism, partnering with many agencies both outside and within the state, was a recipient of a Regional Conservation Partnership Program Grant through USDA. The Kansas portion of these funds will be targeted at improving and preserving grasslands in the smoky hills ecoregion. The Greater Prairie Chicken estimated occupied range is used to target these funds and Lek surveys will be used in part to track the results of the project. Outside of this focus area we continue to work with private landowners through federal EQIP and our state habitat programs to develop and enhance prairie chicken habitat where possible.

Missouri

In 2015, 8 public areas, 5 routes, and 1 non-public area were surveyed by MDC staff, and other state agency and NGO personnel. A total of 74 males were observed on 14 leks within 5 population areas for an estimated population of 148 prairie-chickens in the state (Figure 1). The number of routes and area surveys have been modified or dropped in the last 3 years due to > 5 years since last reporting of booming prairie-chickens in several of the survey areas. In 2005, 33 route and area surveys were run with 24 of them being occupied (11/15 public areas, 9/12 routes, and 4/6 odd areas) by 183 male prairie-chickens on 33 leks. This corresponds to a 58% drop in the number of routes surveyed, a 70% drop in the number of occupied leks, and a 60% drop in the number of booming male prairie-chickens during this 10 year period (2005 – 2015).

Overall the state population of greater prairie-chickens has remained stable since 2009 averaging 112 total birds (56 male prairie-chickens on 10 leks) over the last 5 years. Three population areas (Taberville Prairie, Wah'Kon-Tah Prairie, Dunn Ranch-Grand River Grasslands) currently hold 95% of the Prairie-Chickens in Missouri. The other 2 areas (Prairie State Park and Shelton Prairie in the Stony Point/Golden Prairie complex) are essentially relicts that will more than likely blink out in the coming years without additional management or input from private lands to conservation and restoration of suitable habitat. In 2005, Stony Point/Golden Prairie complex held 33%, and Prairie State Park held 8% of the prairie-chickens in Missouri.

The Wah'Kon-Tah Prairie and Dunn Ranch-Grand River Grasslands areas have benefited from recent augmentation of populations through translocations. From 2008 – 2012, 451 birds were moved to Wah'Kon-Tah Prairie from Kansas that re-established this population after it is believed to have become extirpated in 2000. In the 3 years since the end of the translocations, there has been 1 good year indicative of good production and recruitment, and 2 years in which numbers have dropped possibly as a result of poor production or recruitment. In 2015, we did see a rebound at Taberville Prairie from last year's count of only 5 birds to 14 birds. However, similar to the last 2 years at Taberville Prairie, the northern harriers consistently pushed displaying males off the historic lek onto neighboring crop ground and pasture. In 2012 Iowa

Department of Natural Resources (DNR) initiated a 4-year translocation project into the Iowa side of Grand River Grassland Population area to bolster this declining population. In 2013 Iowa DNR expanded this effort into the Missouri side of the Grand River Grasslands at The Nature Conservancy's Dunn Ranch. In 2015 (the end of this translocation project) 40 males on 9 leks were observed within the Missouri side of the Grand River Grasslands.

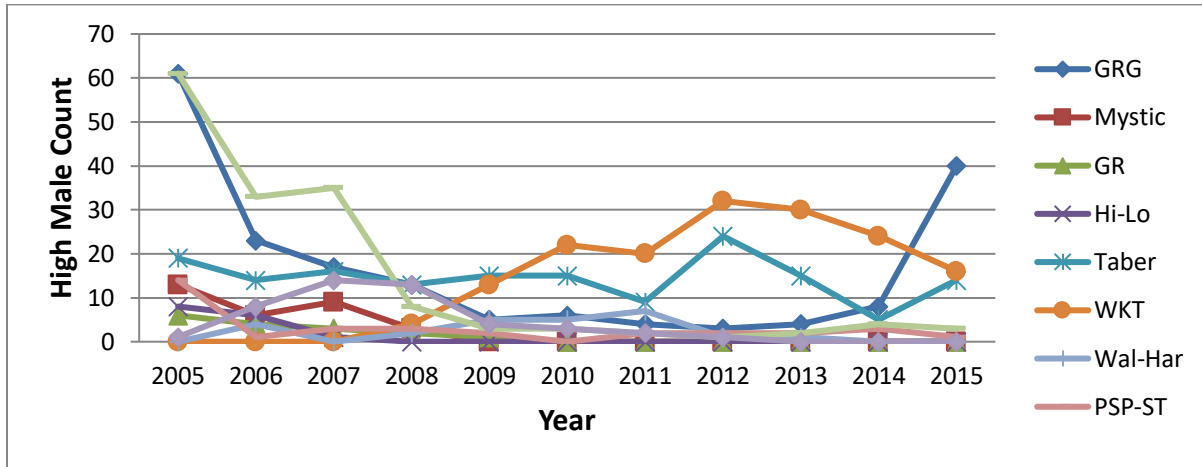


Figure 1. Missouri greater prairie-chicken area population totals 2005 – 2015. Number of males represented is the high count observed within a given year between 1 March and 15 May. GRG = Grand River Grassland COA, Mystic = Mystic Plains COA, GR = Green Ridge PCFA, Hi-Lo = Hi Lonesome PCFA, Taber = Taberville PCFA, WKT = Wah’Kon-Tah Prairie, Wal-Har = Walker/Harwood Private Lands, PSP-ST = Prairie State Park/Shawnee Trails COA, STP-GP = Stony Point/Golden Prairies COA, Law-Jas = Lawrence/Jasper Count Private Lands.

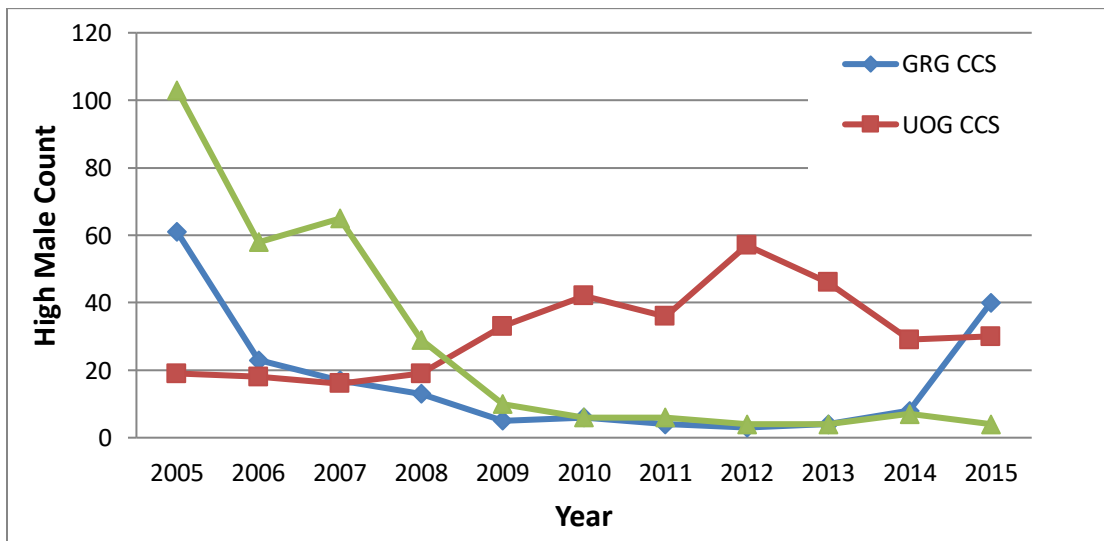
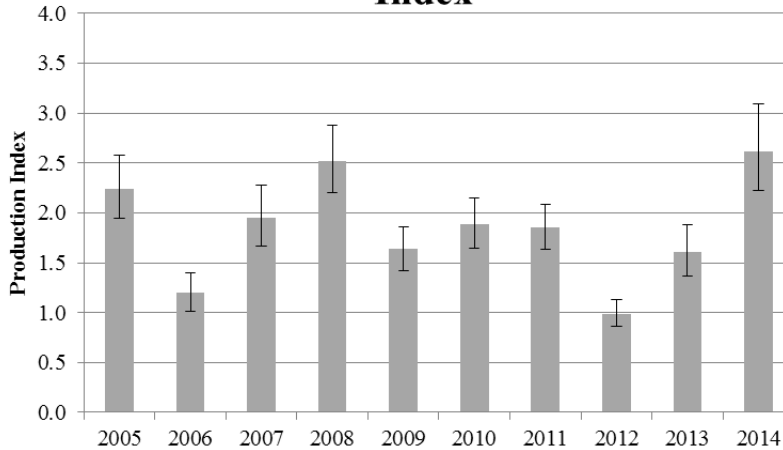


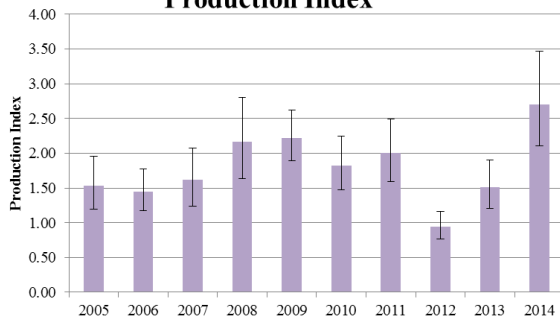
Figure 2. Missouri greater prairie-chicken CCS population area totals 2005 – 2015. Number of males represented is the high count observed within a given year between 1 March and 15 May. GRG = Grand River Grassland CCS, UOG = Upper Osage Grassland CCS (Wah’Kon-Tah and Taberville Prairies).

**South Dakota
Prairie Grouse Harvest Survey**

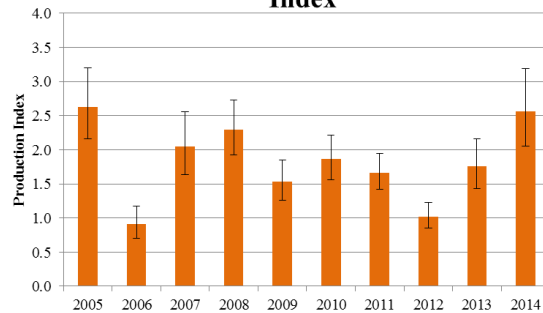
**Statewide Prairie Grouse Production
Index**



**Statewide Sharp-tailed Grouse
Production Index**



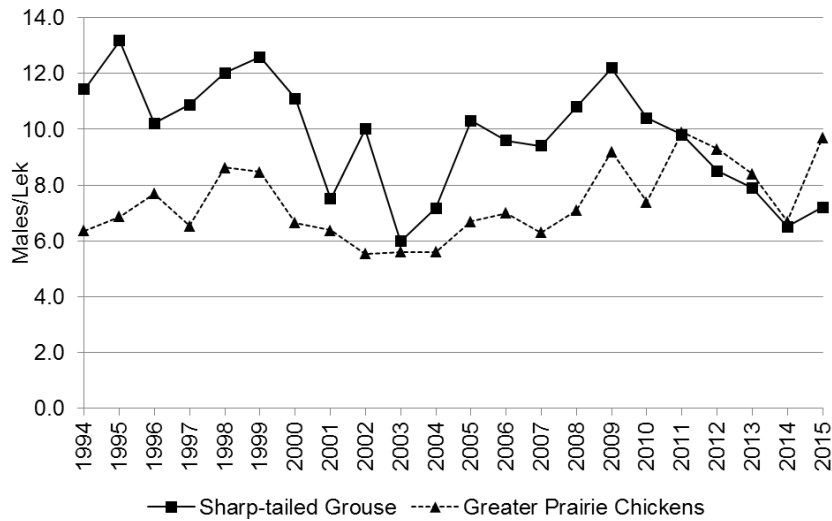
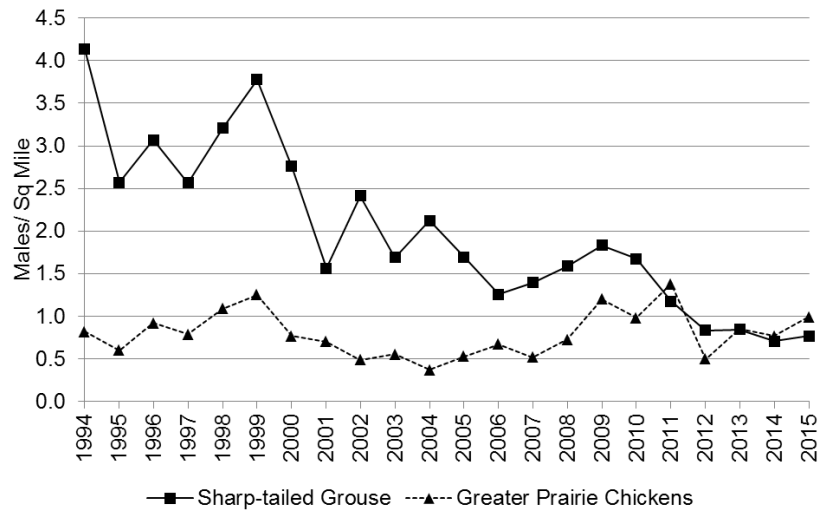
**Statewide Prairie Chicken Production
Index**



Results and Analysis:

Wings from 706 hunter-harvested sharp-tailed grouse and greater prairie-chickens were collected throughout the state during the 2014 hunting season. The overall young/adult ratio was 2.6, which was higher than the 2013 index of 1.6. Age ratios were similar between species.

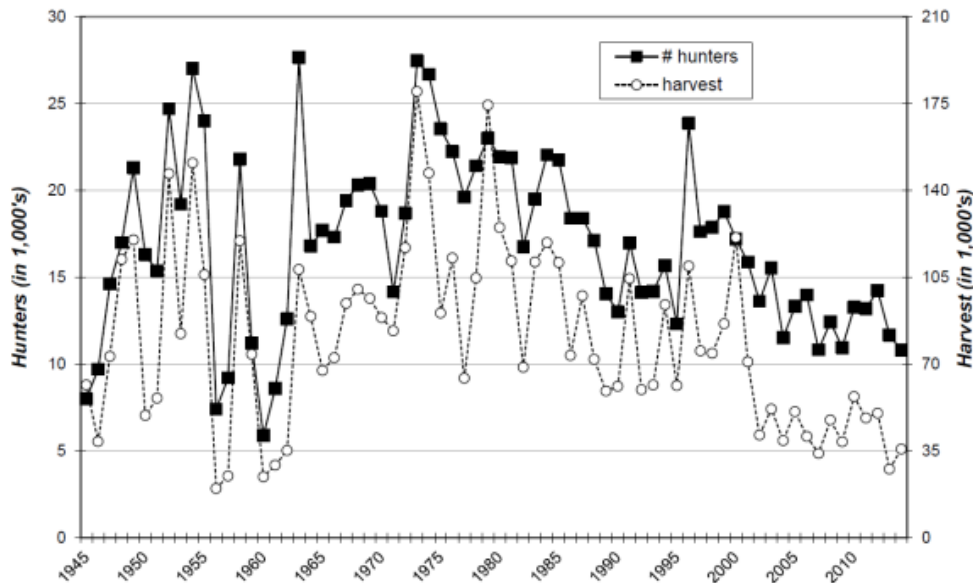
Spring Lek Survey



Results and Analysis:

Between 25 March and 30 April, 2015, Department personnel and cooperators conducted lek surveys using traditional survey methods on 10 survey blocks established throughout the main prairie grouse range in South Dakota. Sharp-tailed grouse leks were detected on 10 of the blocks, totaling 39 leks and 281 males observed. Prairie-chicken leks were detected on 8 blocks, totaling 20 leks and 194 males observed. During the past 20 years, sharp-tailed grouse abundance has declined while prairie-chicken abundance has held steady.

Total Prairie Grouse Harvest



In 2014, an estimated 6,503 resident and 4,254 non-resident hunters harvested 35,790 prairie grouse (25,847 by residents and 9,943 by non-residents) throughout South Dakota. Harvest in 2014 was higher than the 27,698 prairie grouse harvested in 2013; however, it is still below the 10-yr average harvest of 43,086 prairie grouse.

Prairie Grouse Occupancy Model

Data collection began in 2014 to develop a spatially explicit habitat-based statewide occupancy model for prairie grouse. The model will be useful to focus conservation efforts and prioritize certain geographic areas. The model will be developed by determining presence or absence of prairie grouse leks on 1 mile² sample units across the state. Samples were spatially balanced across the state and occurred along a gradient of landscape-level grassland availability. A total of 1,400 sampling units were randomly selected throughout the prairie grouse range in South Dakota. Samples were stratified among high, medium, and low grassland strata. The 1 mile² areas are searched 2-3 times per year and the final presence/absence data set will be used in conjunction with landscape level habitat covariates to develop an occupancy model. So far, 337 sections have been searched with 55 leks detected (5 mixed, 31 sharp-tailed grouse, and 19 greater prairie-chicken) for a total of 463 males. Data collection will continue until enough data is collected to develop a useful model.

Washington

Declining populations and distribution of Columbian sharp-tailed grouse (*Tympanuchus phasianellus columbianus*) in Washington have resulted in serious concerns for their long-term conservation status. The overall population was estimated to be 794 in 2014, associated with 38 leks. Management activities are directed by the 2012 “Washington State recovery plan for the Columbian sharp-tailed grouse” (<http://wdfw.wa.gov/publications/00882/>). Translocations of sharp-tailed grouse from ‘healthy’ populations outside the state have been conducted to improve the genetic and demographic health of populations within Washington.

The Washington Department of Fish and Wildlife, in cooperation with the Colville Confederated Tribes, translocated 368 Columbian sharp-tailed grouse from central British Columbia, southeastern Idaho, and north-central Utah to Washington State in spring 2005–2013. The release sites in Washington included Dyer Hill (south of Brewster in Douglas County), Swanson Lakes (south of Creston in Lincoln County), Greenaway Springs (southeast of Okanogan), and Nespelem (east of Nespelem in Okanogan County). Two of the release sites included state-owned public land and the other sites are Colville Tribal land; all are being managed for the benefit of wildlife, and in particular sharp-tailed grouse. In all release sites, sharp-tailed grouse declined through the year 2005, despite the acquisition, protection, and restoration of habitat. Efforts to monitor movement, survival, and productivity of the translocated birds are ongoing. Although it is too early in the process to determine whether the augmentations should be considered a success, population increases have been documented.

Wisconsin

Greater Prairie-Chicken. Found in all Wisconsin counties in 1900, the range of prairie chickens has contracted in the state to such an extent that the species is now found only in central Wisconsin, predominantly in association with four public properties where large blocks of grassland remain. Annual surveys of males at traditional lek sites are used to index prairie chicken population size. The number of male prairie chickens observed on booming grounds in central Wisconsin increased from 230 to 253 between the 2014 and 2015 spring surveys, while the number of observed leks decreased (from 40 to 36). The population in this area experienced a population bottleneck in the 1950s that resulted in a significant reduction in genetic diversity. To address this issue, 110 hens from an established population in Minnesota were translocated to Wisconsin from 2006-2009. An assessment of this project indicated that many Minnesota hens survived and successfully fledged young, and that introgression resulting from the translocation had at a minimum offset the continued loss of diversity due to genetic drift.

Pressure to convert grassland acres to agricultural purposes (corn, potatoes, cranberries) imposes the most significant challenge to expanding the habitat base for prairie chickens in Central Wisconsin. Current subpopulations on the four “core” public properties (Buena Vista, Leola, Mead, and Paul J. Olson Wildlife Areas) are nearly completely isolated, and restoring gene flow among these population segments via habitat development on surrounding public lands will be important in insuring the long-term persistence and genetic health of prairie chickens in Wisconsin.

Effectively partnering with private landowners to explore means of establishing or enhancing grassland habitat in agricultural areas (e.g., rotational grazing) will be important to fostering

gene flow and increasing the probability of persistence for this species. Researchers with the University of Wisconsin-Stevens Point recently conducted a five-wave mail survey to understand Central Wisconsin farmers' attitudes towards conservation. Results indicated that multiple farmer typologies exist in the Central Wisconsin landscape and each farmer typology has preferred methods of involvement in the planning process. To best involve farmers and private landowners, conservation organizations need to tailor collaborative approaches to accommodate the individualized preferences of different stakeholder typologies to the best of their abilities.

Managed intensive grazing plans on private lands are initiated through local grazing specialists. Pilot managed intensive grazing projects are underway on the Buena Vista and Paul J. Olson Wildlife Areas, including vegetation and insect response assessments in coordination with the University of Wisconsin-Madison and other partners.

Revision of the ten-year prairie chicken management plan is currently underway, including the formation of task groups on public lands, private lands, research, and education/outreach. Development of spatially-explicit population viability analyses (PVA) will help determine the efficacy of different management approaches that are designed to improve prairie chicken persistence in Wisconsin. A University of Wisconsin-Stevens Point study conducted from 2014-2015 will help determine factors limiting nest and brood survival on the Buena Vista and Paul J. Olson Wildlife Areas and improve PVA analyses. Apparent nest success estimates are approximately 35% when data was pooled across sites and years. The majority of nest failures occurred from mammalian (63%) and avian (6%) depredations. Nest hatch success was >84% in both years. Final analyses are underway.

The master planning process for the four core grassland properties has been initiated in order to coincide with the revision of the prairie chicken management plan. The master planning process involves data gathering (e.g. biotic inventories), analysis by an integrated team of natural resource professionals, and extensive public participation.

Sharp-Tailed Grouse. Once found throughout much of Wisconsin, the distribution of sharp-tailed grouse in the state has changed dramatically since European settlement. Their range has retreated and contracted northward as Wisconsin's southern forest, savannas, and grasslands were cleared and converted to agriculture. Sharp-tailed grouse can be found on scattered private lands, but are primarily found on state-managed properties in northwest and north-central Wisconsin, including Crex Meadows, Namekagon Barrens, Douglas County, and Riley Lake Wildlife Management Areas, among others. Annual surveys of dancing males are conducted in early spring as an index to population size. The number of male sharp-tailed grouse dancing on leks within state-managed properties in northern Wisconsin remained essentially unchanged between 2013 and 2014 (124 and 125 males, respectively), but increased to 184 males in 2015 (38.6% increase). Population trends, however, still show an overall decline on managed properties since 1998, when 350+ dancing males were counted.

Sharp-tailed grouse continue to be managed as an upland game species in Wisconsin. Recent population declines and evidence of reduced genetic variability led to the cancellation of the sharp-tailed grouse hunting season in 2013 and 2014. However, given the increase in the number of dancing males counted during spring 2015 surveys, the Wisconsin Department of Natural Resources has made a limited number (100) of harvest permits available for the upcoming 2015 hunting season. Though the population has yet to recover from historic levels, wildlife managers believe a limited harvest to be sustainable without impeding population growth.

Numerous factors may threaten the persistence of sharp-tailed grouse in Wisconsin, including habitat loss, fragmentation, genetic degradation, over-harvest, and disease. As such, the species remains listed as a Species of Greatest Conservation Need in Wisconsin. Suitable habitat exists in scattered patches within a primarily forested matrix. As the sharp-tailed grouse is an area-sensitive species, there is concern that many of the remaining habitat patches are not large enough to sustain a viable population in the long-term. Additionally, the scattered distribution of remaining suitable habitat limits the dispersal and movement of sharp-tailed grouse among habitat patches. As a result, sharp-tailed grouse dispersal appears to be limited likely by significant habitat barriers, additionally impacting any genetic exchange among subpopulations. Dispersal among habitat patches and colonization of new habitat is likely necessary to maintain overall population size and genetic viability in the long-term. Given that there are multiple landowners across the landscape, there is a significant challenge in managing for sharp-tailed grouse habitat on the landscape scale.

In 2011, an updated conservation and management plan for sharp-tailed grouse was completed due to continued local population declines, range contractions, and conservation genetics research indicating that Wisconsin sharp-tailed grouse may show reduced genetic diversity relative to more continuous populations in Minnesota and the Great Plains. Additionally, research by the University of Wisconsin-Madison and University of Wisconsin-Stevens Point suggest the scale and approach of managing for sharp-tailed grouse on core public properties may not be enough to sustain the species.

An ongoing collaborative project between Wisconsin DNR and the University of Wisconsin-Madison aims to locate previously undiscovered lek sites and subpopulations of sharp-tailed grouse in the Northwest Sands Ecological Landscape in northwest Wisconsin by using occupancy-based survey methods. Such methodologies allow researchers and managers to examine for differences in sharp-tailed grouse occupancy (or presence) between core-managed and non-managed properties, in addition to better understanding how grouse utilize recently disturbed areas resulting from clear-cuts, large fires, or storm damage. Subsequent models can be developed to determine relationships between habitat characteristics (i.e., vegetation, topography, and patch configuration) and occupancy rates and abundance of grouse at landscape and within-patch spatial scales. Such information is needed so appropriate, cost-efficient management frameworks and habitat initiatives can be developed to better sustain and increase sharp-tailed grouse populations in Wisconsin.

Meeting Minutes
2013 Prairie Grouse Technical Council Business Meeting
October 12, 2013
Crookston, Minnesota

Nova Silvy moved to approve the 2011 Business Meeting minutes as presented; 2nd by K.C. Jensen; the motion passed unanimously.

Establishing a formal relationship between the PGTC and the North American Grouse Partnership (NAGP)

Discussion:

Steve Sherrod stated that the NAGP was founded in 1999 with the vision of becoming an advocate and fundraising entity similar to Ducks Unlimited.

Rick Baydack added that the North American Grassland Management Plan chose grouse as flagship species as an overall focus for implementing on-the-ground management plans.

Nova Silvy stated that additional emphasis on landowners and economics (ecotourism benefits) is needed to save grouse.

Dan Svedarsky stated that the recent American Grasslands Conference provided a forum for landowner participation

Karen Smith stated that many public lands in her area are not being well managed and are losing their potential to provide grouse habitat.

Christian Hagen brought the discussion back to the issue of whether to enter a formal memorandum of understanding with NAGP, asking what each organization stands to gain by the agreement.

Bill Vodenahl stated that discussions between the two groups began at the PGTC held in Woodward, OK, and that it was felt at the time that combining the strengths of the two groups (NAGP – advocacy and PGTC – Science) would provide mutual benefits.

Dan Svedarsky stated that the agreement would give the PGTC a web-based home, and that NAGP agrees, by way of the MOU, to help future PGTC host states organize and handle finances and Council meetings.

K.C. Jensen and Steve Sherrod stated that PGTC funds are currently held by the Grasslands Charitable Foundation of NM (Jim Weaver, Chair) as part of an informal agreement.

Andrew Gregory stated the need for a mutual statement of indemnification / non-responsibility clause, as well as a dissolution clause to specify how funds would be handled in the case one of the groups dissolves.

Dan Svedarsky stated the need for NAGP to set clear expectations for financial support in return for hosting the PGTC website.

Max Allegre added that an agreement with NAGP should include a clear statement of annual financial commitments on the part of both parties, as well as a list of deliverables.

K.C. Jensen moved to table the issue given the lack of needed information, and to allow Council members to vote on the issue via email after the details are known. Bill Vodenahl seconded the motion, which passed.

Social Media and Youth Outreach Efforts

Karen Smith stated the need for youth education to raise awareness of grassland habitat losses, and that social media approaches should be considered.

Andrew Gregory noted that many similar organizations maintain a Facebook page, and volunteered to look into establishing such for the PGTC.

Archival of PGTC documents

Max Allegor led the discussion related to archiving PGTC documents through the Missouri State Historical Society (MSHC) in Columbia, Missouri. This option emerged via contact from MSHC regarding documents that the heirs of Don Christisen gifted to the society. Nova Silvy stated support, noting the importance of maintaining historical records for the Council.

Steve Sherrod and Andrew Gregory noted the need to archive both digital and hard copy files.

Max Allegor stated that the MSHC only archives hard copy documents, and that individual states or organizations will be responsible for scanning their documents prior to submission to the MSHC.

Max Allegor moved that the PGTC enter into an agreement with MSHC to archive relevant hard copy documents, and that the PGTC provide support to MSHC in the amount of \$150 annually. Furthermore, states and organizations are to review their documents and bring one copy of each item they wish to have archived to the 2015 Council meeting. PGTC members from Missouri will be responsible for transferring documents to MSHC on behalf of PGTC member states and organizations following future Council meetings. Dan Svedarsky seconded the motion, which passed unanimously.

2015 PGTC

Max Allegor discussed tentative plans for the 2015 PGTC, which will be held in the Nevada, Missouri area.

Christian Hagen suggested involvement by NRCS staff related to Lesser Prairie-Chicken and Sage Grouse conservation efforts.

Tom Smith discussed the need to involve local landowners and focus on private land issues. Don Sexton moved to adjourn the business meeting; 2nd by Nova Silvy; the motion passed unanimously.

2015 PGTC Budget Report

Per the October, 2014 memorandum of agreement between the Prairie Grouse Technical Council and the North American Grouse Partnership (NAGP), NAGP agreed to provide fiscal services. This includes holding and administering financial resources associated with the official biennial meeting of the PGTC.

NAGP has collected registration funds via an online PayPal site. The Missouri Department of Conservation has expended funds to cover up-front costs related to the meeting and will be reimbursed by NAGP from the PGTC sub-account for actual expenses incurred. A total of \$2,406.50 expended by MDC will not be submitted for reimbursement, and is offered as an in-kind donation in support of our 2015 meeting.

	Amount	Source / Notes	Balance
Incoming Balance			\$15,735.82
Income		Registrations	
	\$6,294.39	Paypal – Early Registrations (\$125)	
	\$1,889.55	Paypal - Standard Registrations (\$150)	
	\$1,125.00	Registration - checks deposited	
	\$9,308.94	Total Registrations	
		Other Cash Income	
	\$250.00	MPCS donation	
	\$9,558.94	Total Income	\$25,294.76
Expenses	\$838.07	Excalibur Screenprinting	
	\$652.19	Kraft Mercantile; food service supplies	
	\$104.01	Grainger; field trip supplies	
	\$450.27	Wal-Mart; food items; bottled water	
	\$853.75	Big T Rentals; Tents, tables & chairs	
	\$427.86	Arwood Waste; field trip supplies	
	\$315.00	Field Trip rentals	
	\$900	Buzz's BBQ; lunch	
	\$2,391	Field trip; 3 buses + drivers	
	\$1,670	Banquet caterer (EST)	
	\$800.00	Sam's Club; food & drinks (EST)	
	\$9402.15	Total expenses for NAGP reimbursement to MDC	
	\$1,404.00	KCAV rentals (MDC donation)	
\$1,002.50	Specialty Sportswear (MDC donation)		
\$2,406.50	Additional expenses not reimbursed to MDC		
Estimated Ending Balance			\$15,892.61
All proceeds from the silent auction will be deposited in the NAGP account administered for the PGTC			

The Hamerstrom Award

The Hamerstrom Award was established in honor of Fred and Fran Hamerstrom, pioneers of prairie grouse research and management. It will be awarded at the meeting of the Prairie Grouse Technical Council. The award will consist of a plaque with the engraved name of the recipient.

Award Criteria:

1. To recognize individual(s) and organization(s) who have made significant contributions in prairie grouse research, management, or other support programs which have enhanced the welfare of one or more species of prairie grouse in a particular state or region.
2. The contribution should be evidenced by a sustained effort over at least 10 years.
3. The contribution may be related to research, management activity, promotion of an integrated program, or some combination thereof. The relative importance given to these three categories of contributions is the prerogative of the Awards Committee but it should be based on how it has helped the overall welfare and survival of prairie grouse.

Selection Procedure:

1. The selection of award recipients will be made by the three-member Executive Board and two additional members appointed by the Chairman.
2. Nominations will be accepted at large as well as from members of the Awards Committee.
3. Nominations will be submitted to the designated Awards Committee Chairman at least one month before (deadline for the 31st meeting is August 23, 2015) the biennial meeting of the Prairie Grouse Technical Council.
4. Nominations should include the following information:
 - A. Name, address, and phone number of nominee
 - B. Biographic sketch of individual or brief history of organization
 - C. Overview of contributions indicating the nature of the contributions, duration, how it has contributed to the welfare of one or more species of prairie grouse, and the geographic area influenced by the contributions.
5. A maximum of two individual awards and two organization awards may be presented at a biennial meeting. No awards will be given if the Awards Committee feels that no deserving individuals or organization are available at the time.

A bit about the Hamerstrom Award

The first recipient was Fran Hamerstrom, in 1992, and it has been since awarded at the biennial meetings of the Prairie Grouse Technical Council. She was presented "The Hamerstrom Award" at the annual meeting of the Society of Tympanuchus Cupido Pinnatus in Milwaukee, Wisconsin.

When the awards program was in the concept stage, Fran wanted to ensure that the Hamerstrom name not be associated with any interpretation of the word "conservation" that would include any relationship to the anti-hunting mentality. To make that clear, the awards presentation is to include the following recommendation from Fran's *Wild Foods Cookbook* on yet another way to enjoy prairie grouse.

Prairie grouse are outstanding table birds. Unlike most gallinaceous birds such as pheasant and ruffed grouse, they retain their juices well and do not tend to dry out while cooking.

Very young birds, still in juvenal plumage, have light breast meat and delicate texture, but the flavor is still undeveloped. By October, almost all the birds are in prime condition, with breast meat dark, almost like the legs, and very delicious.

Chickens and sharptails should be served rare or at most medium well-done.

Roast – Pluck dry, dress and clean. Do not stuff. Roast in a hot oven (450°) for 25 minutes for medium-rare sharptails or chickens.

Fried Prairie Grouse – Pluck, dress, and clean. Cut in pieces for frying. The breasts of these birds are so plump that it is often simpler to cut them away from the bone: then cut or divide each side of the breast into two pieces. If this is not done, the legs and back will be overdone while the breast still requires more cooking. Flour each piece lightly before placing it in the hot fat. Salt just before serving.

If you want to take the wild taste out of your grouse, pay no attention to anything I've written.

Hamerstrom Award Recipients

1992	Fran Hamerstrom
1993	Ron Westemeier
1995	Dan Svedarsky and Jerry Kobriger
1998	Bob Robel
1999	Bill Berg
2001	Len McDaniel
2003	John Toepfer
2005	Nova Silvy and The Society of Tympanuchus Cupido Pinnatus, Ltd.
2007	Rick Baydack and Kerry Reese
2009	Randy Rodgers and Bill Vodehnal
2011	Mike Morrow, Jack Connelly, and The Minnesota Prairie Chicken Society
2013	Terry Wolfe, Mike Shroeder, and the Sutton Center

Prairie Grouse Technical Council Executive Board

Past Chair, Dan Svedarsky
Research Biologist
NW Research and Outreach Ctr.
U of Minnesota
Crookston, MN 56716
dsvedars@crk.umn.edu

Chair, Max Alleger
Grassland Coordinator
Missouri Dept. of Conservation
P.O. Box 368
Clinton, MO 64735
Max.Alleger@mdc.mo.gov

PGTC Conferences

1 st	Grand Island, Nebraska	September 1957
2 nd	Emporia, Kansas	March 1959
3 rd	Stevens Point, Wisconsin	September 1960
4 th	Pierre, South Dakota	September 1961
5 th	Nevada, Missouri	September 1963
6 th	Warroad, Minnesota	September 1965
7 th	Effingham, Illinois	September 1967
8 th	Woodward, Oklahoma	September 1969
9 th	Dickinson, North Dakota	September 1971
10 th	Lamar, Colorado	September 1973
11 th	Victoria, Texas	September 1975
12 th	Pierre, South Dakota	September 1977
13 th	Wisconsin Rapids, Wisconsin	September 1979
14 th	Halsey, Nebraska	September 1981
15 th	Emporia, Kansas	September 1983
16 th	Sedalia, Missouri	September 1985
17 th	Crookston, Minnesota	September 1987
18 th	Escanaba, Michigan	September 1989
19 th	Billings, Montana	September 1991
20 th	Ft. Collins, Colorado	July 1993
21 st	Medora, North Dakota	August 1995
22 nd	College Station, Texas	February 1998
23 rd	Gimli, Manitoba	September 1999
24 th	Woodward, Oklahoma	September 2001
25 th	Siren, Wisconsin	September 2003
26 th	Valentine, Nebraska	September 2005
27 th	Chamberlain, South Dakota	October 2007
28 th	Portales, New Mexico	October 2009
29 th	Hayes, Kansas	October 2011
30 th	Crookston, Minnesota	September 2013
31 st	Nevada, Missouri	September 2015

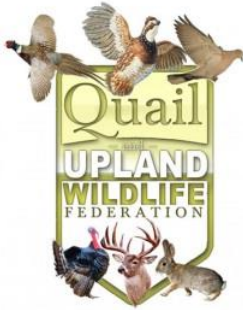
Meeting Attendees

<u>NAME</u>	<u>STREET</u>	<u>CITY</u>	<u>STATE</u>	<u>ZIP</u>	<u>EMAIL</u>
Max Alleger	2010 S Second St	Clinton	MO	64735	max.alleger@mdc.mo.gov
Frank Loncarich	1510 S Business 9	Neosho	MO	65850	frank.loncarich@mdc.mo.gov
Mitchell Miller	701 James McCarthy Dr	St Joseph	MO	64507	mitch.miller@mdc.mo.gov
Scott Sudkamp	26300 S 2325 Rd	Sheldon	MO	64784	scott.sudkamp@mdc.mo.gov
Ashley Nichter	15118 S Harbourside Dr	Ft Wayne	IN	46814	anichte@bgsu.edu
Steven Cooper	1019 NE 800	Windsor	MO	65360	steven.cooper@mdc.mo.gov
Alicia Struckhoff	3500 E Gans Rd	Columbia	MO	65201	alicia.stuckhoff@mdc.mo.gov
Ryan Jones	3500 South Baltimore	Kirksville	MO	63501	ryan.jones@mdc.mo.gov
Stasia Whitaker	PO Box 106 / 1109 S Main St	El Dorado Springs	MO	64744	stasia.whitaker@mdc.mo.gov
Michael Longhofer	PO Box 106 / 1109 S Main St	El Dorado Springs	MO	64744	michael.longhofer@mdc.mo.gov
Matt Hill	PO Box 106 / 1109 S Main St	El Dorado Springs	MO	64744	matt.hill@mdc.mo.gov
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