

EMERGENCY PETITION SPECIES REVIEW

6 July 2009

Petition for Species Review to List the Lesser Prairie-Chicken (*Tympanuchus pallidicinctus*)

Kansas Department of Wildlife and Parks (KDWP) is responsible for listing rare species of fauna in KS as Endangered, Threatened, or Species-in-Need-of-Conservation (SINC). Every five years the list is reviewed as required by statute (K.S.A. 32-960). A Threatened and Endangered Species Task Committee (Committee) oversees the process and makes listing recommendations to the Secretary of KDWP. The recommended changes must then be approved by the KDWP Commission.

The Committee solicited input from other sources regarding listing, delisting, uplisting, or downlisting of KS wildlife in 2008 as part of the review process. The Lesser Prairie-Chicken (*Tympanuchus pallidicinctus*), hereafter LPC, was not petitioned for listing. The US Fish and Wildlife Service (USFWS) completed a review of the LPC in November of 2008 to reassess its candidate status. The USFWS review was completed after solicitation and review of petitions received by KDWP, moreover, a paper just published underscores the vulnerability of the species rangewide. As such, new data on potential threats to existing populations in KS necessitates a petition that warrants emergency State listing of the LPC in KS.

PETITION FOR EMERGENCY SPECIES REVIEW 6 July 2009

Species Common Name: Lesser Prairie-Chicken

Species Scientific Name: *Tympanuchus pallidicinctus*

Recommended change in petition species status (please circle or check):

List as: Endangered Threatened Species-in-need-of-conservation (SINC)

And/or remove from: Endangered Threatened SINC

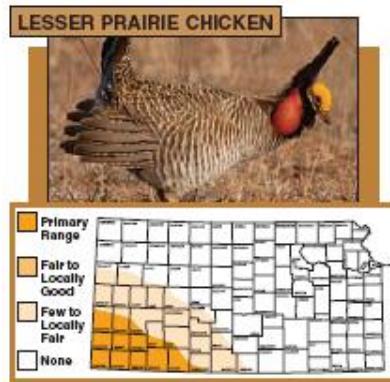
1) Describe the species' current distribution and abundance:

In Kansas: The current range in the western portion of the State is approximately 29,130 sq km, within all or part of 35 counties since 1999. Houts et al. (in press) using GIS and the KS GAP vegetation map determined that there is between 2,221,133 ha (5,488,539 ac) and 2,903,364 ha (7,174,369 ac) of suitable LPC habitat remaining. Recently, LPC distribution in Kansas has moved northward. At the same time the Greater Prairie-Chicken (hereafter GPC, *Tympanuchus cupido*) range has expanded northwestward in Kansas. As a result of these changes a hybrid zone now exists between the two species in approximately eleven northwestern counties and individuals of both species have been reported at the same lek in Pawnee County. A hybridization rate of about 2.5% was estimated on at least one survey route (Bain and Farley 2002, USFWS 2008).

Based on survey routes and the National Gap Analysis, the estimated population for LPCs in 2006 was between 19,700 and 31,100 individuals (Rodgers 2007a, USFWS 2008). KDWP survey route data from 2005 and 2006 were not statistically significant from each other (n = 15 routes, 14.2 and 16.3 LPC/sq km respectively, Rodgers 2006, 2007b). However, in 2007 there was a statistically significant reduction by 38%, down to 10.1 LPC/sq km. Factors for the sudden decline in 2007 were attributed to drought during the breeding season and heavy snow cover in the winter (Rodgers 2007b). Kansas is key to the species' survival, as it contains the

most extensive remaining range and the largest population found in the five states where it occurs (KS, TX, NM, OK, CO) (KDWP 2006).

Figure from KDWP Hunting Regulations 2008 (KDWP 2008).



Current global distribution: The LPC is a highly threatened, endemic species with a very restricted distribution, limited to mixed sand-sagebrush or shinnery oak grasslands of eastern NM, northwestern TX, northwestern OK, southeastern CO, and western KS. Within this limited range, most of its habitat exists on private lands (95%) and only 4% is managed for LPC on public land (Bureau of Land Management in NM, and US Forest Service in OK, NM, CO, KS). The reduction in habitat and subsequent population decline resulted in a petition to list the LPC under the Endangered Species Act (ESA, 1973, 16 USC 1531 et seq., as amended) in 1995. The USFWS concluded that listing was warranted, but precluded, and therefore gave it candidate species status in 1998, with a listing priority of eight. In 2008, the USFWS reassessed the status of the LPC, and concluded that listing was again warranted but precluded, and it was given a higher priority listing of category two (USFWS 2008). Chris O'Melia, USFWS biologist, stated in an interview with the Salina Journal (Schrag 2009) concerning the listing as a category two; "It is the last step in the candidate process before we initiate listing... We will start the listing process in the very near future if things don't change."

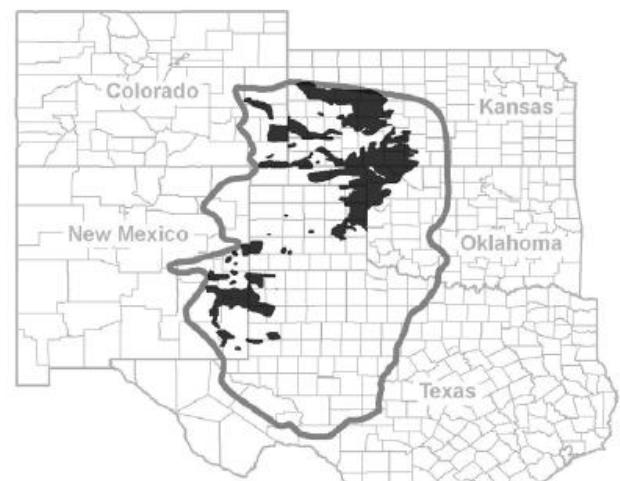
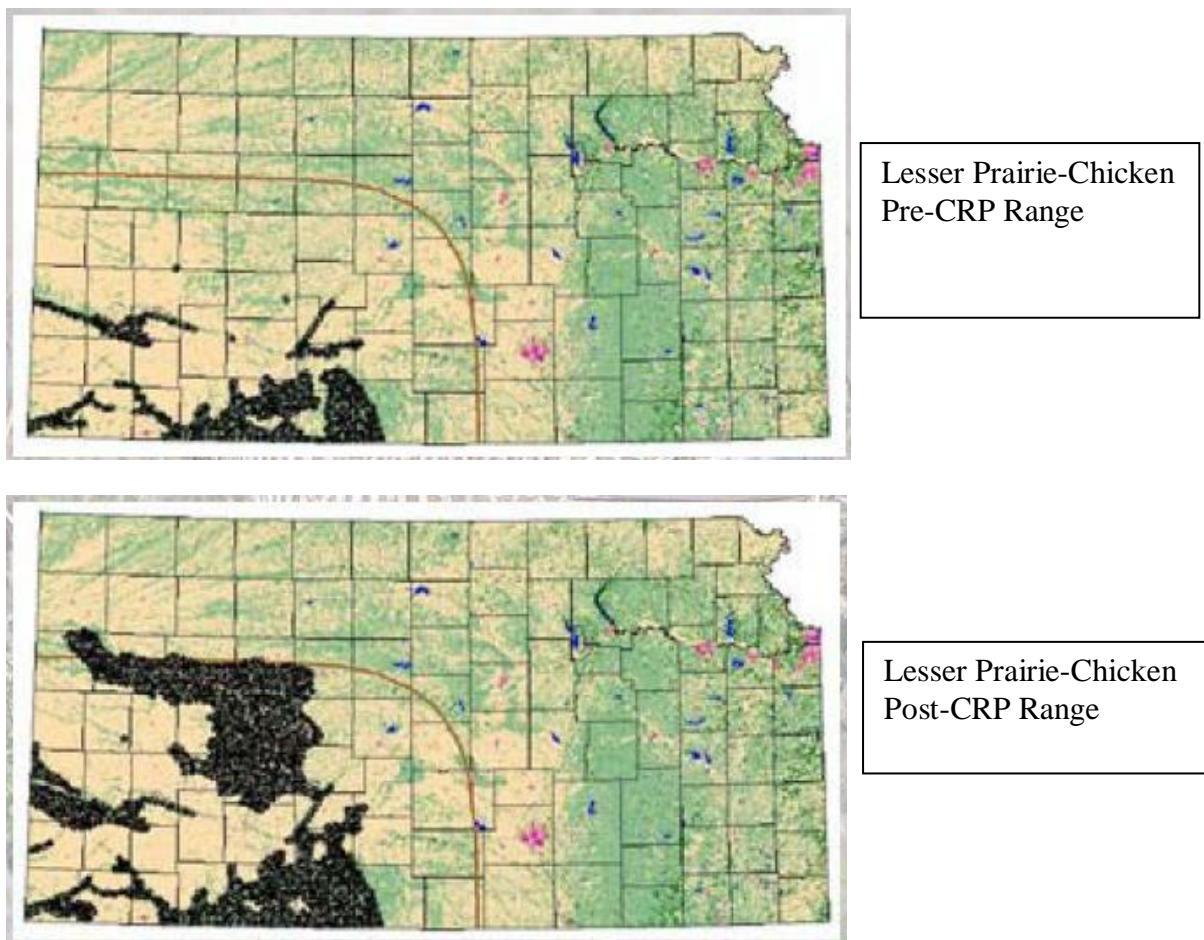


Figure 1. Estimated historic (perimeter circle) and current (black polygons) occupied LPC range in CO, KS, NM, OK and TX. Current (2007) range map layer courtesy of TPWD.

Above figure from USFWS (2008).

Cite references or studies supporting distribution information: Jensen et al. 2000, Bain and Farley 2002, KDWP 2006, 2008, Rodgers 2006, 2007a, 2007b, USFWS 2008 (Attached), Pruett et al. 2009, Schrag 2009, Houts et al. in press.

2) How and to what magnitude has the species' distribution changed during the past 35 years? In Kansas: Its historic range in Kansas was approximately 76,757 sq km, primarily sand-sagebrush habitat that was severely reduced with European settlement. Kansas once contained the second largest area of habitat second only to TX (236,398 sq km). By the mid-1900s it was largely restricted to the remnant habitat in southwestern KS, with the greatest abundance concentrated south of the Arkansas River. By 1997 it was restricted to 19 counties, primarily in the southwest, south of the Arkansas River. Since 1999 it reoccupied 16 counties north of the river and now occurs within 35 western KS counties. Reasons for the increase are generally attributed to the Conservation Reserve Program (CRP). Even with the recent reoccupation of part of the KS historical range, there has been a 62% decrease in the species' historical KS distribution. Underscoring the magnitude of the decline and the importance of KS to the species' survival is that fact that KS now ranks first in current occupied range with 29,130 sq km. Texas is second with 12,126 sq km out of an original 236,398 sq km.



Figures showing Pre-CRP and Post-CRP ranges in Kansas from Horton (2008).

Globally: Historically the species' occupied between 260,000 to 456,087 sq km. The current range and distribution is only 64,414 sq km, a 75-86% reduction. The LPC has the smallest population and most restricted range of all grouse species in North America.

Cite references: Thompson and Ely 1989, Hagen and Giesen 2005, Jensen et al. 2000, Horton 2008, USFWS 2008, Houts et al. in press.

3) Describe the species' population (not distribution) trends during the past 35 years.

In Kansas: Numbers have been declining since the 1970s and this trend has continued even though large-scale conversion of prairie to intensive agriculture (center pivot irrigation) has ceased since the mid 1980s.

On the Cimarron National Grasslands (CNG), southwestern KS, recent population surveys (1988-2007) indicated a decline in the LPC population when compared to the first 15 yrs of study (1964-1978). From 1995-1999 more intensive lek surveys indicated a stable population of between 173-283 individuals (Smith and Smith 1999). This survey was completed again in 2005 resulting in an estimated 249 individuals. However, since 2005, the population has declined, with an estimated 124 individuals in 2006 and only 86 in 2007, a 65% decline (USFS pers. comm.; in USFWS 2008).

In Finney County, lek survey indices in the 1960s reported 4.7 birds per sq km, by the 1980s this dropped to 3.1 birds per sq km, and down to 1.6 birds per sq km by the 1990s, even though suitable habitat was available (Robel et al. 2004).

As indicated above (see #1) the estimated KS population for LPCs in 2006 was between 19,700 and 31,100 individuals. Numbers recorded on surveys in 2005 and 2006 were not statistically different, however, in 2007 there was a 38% decline. Kansas now has the largest remaining population of LPC in the world, thus KS is key to the species' continual survival.

The highest total reported on the CNG Christmas Bird Count (CBC) was 58 in December 1989. Since 1990 LPCs averaged 6.7 individuals (total 121, range 0-22) and was reported on 78% of the CNG CBCs. During this same period the maximum reported during a single KS CBC period was 39 in 1999.

Globally: Little is known of the actual population size prior to 1900, though it was considered as "common" throughout its range. There are some estimates that indicated as many as two million occurred in TX. In 1904, 15,000-20,000 were observed in grain fields in Seward County, KS. Rangewide populations declined through the mid-1900s and by early 1970s it was estimated at 60,000. By 1980 the population was estimated between 44,000 to 53,000 individuals. Current rangewide estimates are between 35,214 and 64,669 individuals.

Adjacent states also show a decline in the population in recent years. In CO, by 1997 the population was estimated to be between 800 and 1,000 LPC, with <1,500 individuals in 2000. In 2004, CO initiated a new survey protocol with an emphasis on surveying a broader range of habitat, including CRP grassland. As a result, more leks were found, but short-term trends still show a decline in the population. Furthermore, like the CNG data in KS, the Comanche

Grasslands of CO show a dramatic decrease in LPC from an estimated 348 birds in 1988 to 64 in 2005. The latest estimate for OK in 2000 was <3,000 individuals, with declines since the early 1990s (see figure below).

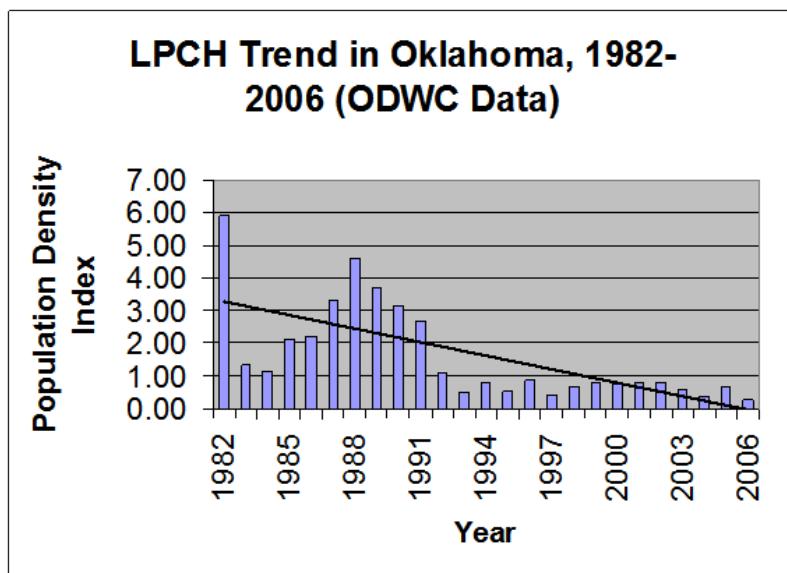


Figure from Sutton Avian Research Center and Oklahoma Department of Wildlife and Conservation (Sutton Avian Research Center 2009).

Colorado is the only state within the species' range to list the LPC, where it is considered as threatened.

Cite references: Bent 1932, Cable et al. 1996, Jensen et al. 2000, Robel et al. 2004, Hagen and Giesen 2005, KOS CBC data 1990-2007, USFWS 2008, Sutton Avian Research Center 2009.

4) What proportion of the species' global population is currently found within Kansas?
If you take current rangewide population estimates of between 35,214 and 64,669 individuals and an estimate of between 19,700 and 31,100 individuals in KS, than approximately 48-56% of the global population exists within KS.

Cite information upon which you base this determination: Rodgers 2007a, USFWS 2008.

5) What is the species' current residency status in Kansas (vagrant, migrant, year-round, etc.)? The LPC is a permanent resident (year-round).

6) Describe the species' current breeding status within Kansas including changes or trends during the past 35 years.

LPCs are polygynous and use "traditional" lekking territories, usually associated with elevated grasslands that are more open, often with bare or sparsely vegetated ground. Males begin displaying at leks in February-March and remain through early June (peak April-early May). Displays usually take place at dawn and dusk. After mating, females seek nest sites, often within 1-3 km of the lek (Giesen 1994). Nesting usually takes place April-June. Average clutch size is

10-14 eggs; they can be double-brooded (if first attempt fails), and incubation lasts 23-28 days. Broods may remain with female for 6-10 wks.

Lesser Prairie-Chickens breed throughout their current range, and are presumed to have bred throughout their historic range. As a result of expansion and reoccupation of former range and expansion of the GPC range, they now hybridize (see 1 above). Breeding success varies annually as a result of weather factors, both during the breeding and non-breeding seasons.

A six year study initiated in 1997 determined that low nest success and poor chick survival was the most important contributing factor to the decline of LPCs since the 1980s. Reproductive success appears to be low in appropriate habitat near anthropogenic features (Hagen 2003, Pittman 2003, Robel et al. 2004).

Cite references: Bent 1932, Coats 1955, Ports 1979, Thompson and Ely 1989, Cable et al. 1996, Giesen 1994, Hagen 2003, Pittman 2003, Robel et al. 2004, USFWS 2008, Oklahoma Cooperative Extension Service.

7) Describe the species' habitat requirements: LPCs require large unfragmented tracts of native grassland (1,945-16,000 ha) for successful breeding. This unfragmented habitat also needs to be void of anthropogenic features (e.g. roads, buildings, oil and gas wells, transmission lines, and center pivot irrigation fields), especially those with vertical structure. A minimum of 4,096 sq km may be required as a management area. However, the exact extent of habitat required by LPC has not been ascertained. Greatest densities of LPCs in Kansas occur in the remaining sand-sagebrush grasslands of southwest Kansas, but extensive populations also occur in the mixed-prairies of the Red Hills. In the southern portions of its range it prefers shinnery-oak grasslands. CRP grassland is also used which may have facilitated the species' expansion northward in KS.

Cite references: Hagen 2003, Pittman 2003, Robel et al. 2004, KDWP 2006, USFWS 2008.

8) Discuss the species' degree of specialization with regard to habitat, food, or other life history factors. The LPC is a mixed-short grass prairie specialist of the southern high plains that appears to require a contiguous area of 32-101 sq km and a landscape of at least 63% native rangeland for sustaining populations. Individuals have large home ranges, perhaps from 211 to 1,945 ha (females larger than males), but individuals associated with a single lek may encompass 50 sq km. During drought years, common in southwestern KS, home ranges increase in size. Cultivated cropland in KS has caused considerable fragmentation of the remaining grasslands. While CRP land has allowed the LPC to expand its range within KS, the potential for discontinuing the CRP program always exists. Schrag (2009) indicated that two-thirds of the CRP contracts in KS are scheduled to expire by 2012. Therefore, the remaining habitat within KS is essentially "Critical Habitat" and all efforts to preserve such, on both private and government owned lands, should be a high priority.

Diet consists of insects, seeds, leaves, buds, and cultivated grains. Young birds tend to feed on more animal material (invertebrates) and adults consume more vegetative material, especially in

fall and winter. While grains have become increasingly important, a stable LPC population requires a landscape with no more than 20-37% cropland (Crawford and Bolen 1976).

Other Life History Factors: Due to their lekking mating system, display grounds are elevated grassland sites that are mostly sparsely vegetated, while nesting and brood rearing habitats typically require taller, more dense vegetated cover. Annual mortality rates are high (65%) and life-span is relatively short (about 5 yrs). The overall low reproductive and survival rates may be offset by increasing available habitat and the prevention of fragmentation. Hunting, while believed to not be a major threat at the population level, could have an impact at the local level and lead to local extirpation. LPCs avoid suitable sand sagebrush habitat near anthropogenic features.

References: Crawford and Bolen 1976, Hagen 2003, Pittman 2003, Hagen and Giesen 2005, USFWS 2008, Schrag 2009, Oklahoma Cooperative Extension Service.

9) Discuss the species' sensitivity to environmental contaminants, if any, including known actual potential problems:

“To date, no studies have been conducted examining potential effects of agricultural insecticide use on LPC populations. However, significant impacts from pesticides to other prairie grouse have been documented. Of approximately 200 sage grouse known to be feeding in a block of alfalfa sprayed with dimethoate, 63 were soon found dead, and many others exhibited intoxication and other negative symptoms (Blus et. al. 1989, p. 1139). Because LPC are known to selectively feed in alfalfa fields throughout their range, the Service believes there may be cause for concern that similar impacts may be occurring.” (USFWS 2008)

“...Consequently, herbicide application to native rangelands for the purposes of permanently decreasing or eliminating the shrub component to increase forage production for livestock reduces habitat quality for LPC throughout the species’ range. Herbicide application (primarily 2,4-D and tebuthiuron) to reduce or eliminate shrubs from native rangelands is a common ranching practice throughout LPC range. Through foliar and pellet application, respectively, these herbicides are designed to kill or suppress by repeatedly defoliating dicotyledon plants such as forbs, shrubs and trees, while causing no significant damage to monocotyledon plants such as grasses... Several studies have shown that shrub removal, primarily by herbicide application, is one mechanism that may be contributing to observed declines of LPC (Fuhlendorf et al. 2002, pp. 624-626, Bell 2005, Haukos and Smith 1989, p. 625).” (USFWS 2008)

To compound this problem, spraying in the southern portion of the LPCs range, within the shinnery-oak habitat is continuing, even on NRCS land. Additionally, grasslands managed with herbicides in other portions of the species range have shown LPCs abandon such areas.

10) To what degree is this species currently vulnerable to consumptive and/or commercial use in Kansas and what relationship does that use have on its total population?

Historically, the LPC was subject to market hunting but harvest has been regulated since the early 1900s. While the LPC is a “game species” within most of its range (excluding CO), legal harvest only occurs in KS and TX. However, in TX, LPCs are only harvested on properties with approved wildlife management plans that specifically address the LPC. Furthermore, the harvest

is limited to no more than 5% of the annual estimated population. Oklahoma has not allowed prairie-chicken hunting since 1996 (Doug Schoeling, ODWC, pers. comm.).

The current KS bag limit is set for one bird daily south of I-70 and two birds north of I-70 (all west of State HWY 281). Approximately 200 LPCs were harvested in 2006 (1,900 hunter-days) and the LPC harvest is “probably” insignificant at the population level (USFWS 2008). The annual harvest in both KS and TX combined is estimated to be fewer than 1,000 individuals annually. Some authors believe hunting is not an additive mortality, though in the past during low population cycles it may have accelerated declines.

With their current small and isolated populations in fragmented landscapes, and their clumped distribution within their natural landscape, they could be vulnerable to local extirpations through hunting. However, there is a lack of empirical data to support whether current harvest rates are problematic. Definitive experiments on different harvest rates associated with various fragmented patch sizes have not been completed, thus it is difficult to determine if harvest contributes to local population declines. One thing for certain, if the species’ becomes federally listed hunting will not be allowed in any state.

Cite references: KDWP 2008, USFWS 2008.

11) To what degree is this species’ Kansas habitat currently or potentially threatened by alteration or destruction?

Continued conversion of native grasslands or CRP grassland to cropland would adversely affect LPC populations. The reestablishment of part of their former range within KS appears to be a direct result of CRP grassland use. There were ca. 363,000 ha of CRP in KS based on cooperative mapping completed in 2007 (USFWS 2008). Based on estimated amounts of occupied CRP ranges, CRP fields in KS comprise 12.5% of the occupied LPC range, second only to TX (13.8%) (USFWS 2008). Two-thirds of the CRP contracts in KS are scheduled to expire by 2012 (Schrag 2009). The loss of CRP land would likely cause those lands to revert back to cropland and reduce the expansion of the LPCs range in recent years.

Due to habitats preferred by the LPC in KS, mixed-short grass rangeland in a region of low rainfall, the habitat is easily overgrazed and represents a management challenge. When overgrazing occurs the soils have less water-holding capacity resulting in less succulent vegetation, and consequently a reduction in insects required for developing young chicks. The lack of residual vegetation also decreases nesting cover and success.

The use of fencing for cattle ranching, while fragmenting the landscape, may also be contributing to declines in LPCs. Studies in OK, NM, and TX indicate that mortality due to collisions with fences may be significant (Wolfe et al. 2007, USFWS 2008). The single greatest cause of mortality in OK is fencing, which accounts for more than 40% of the deaths (Wolfe et al. 2007, Sutton Avian Research Center 2009).

Spatial fragmentation of an already fragmented landscape would have severe consequences for LPC populations. Increased fragmentation can lead to increased mortality rates or simply not

provide the natural history requirements for a sustainable population. The loss of CRP land would further increase an already fragmented landscape.

Structural fragmentation (introduced vertical structure) is known to cause LPCs to avoid or abandoned otherwise suitable habitat. Recent radio-telemetry studies conducted by Kansas State University researchers highlighted another threat to LPC, with the species avoiding human-made structures (Hagen 2003, Pittman 2003, Robel et al. 2004, Pittman et al. 2005, see attachment 3 and 4 for wind resource and transmission line development in KS). They ascertained that most LPC hens avoided nesting or rearing their broods within a quarter-mile of power lines and within a third-mile of improved roads. Buildings, including a coal-fired power plant and gas booster stations, were avoided from anywhere between two-thirds of a mile to one mile. This information, coupled with similar avoidance behavior noted in other species, suggests there is cause for concern over negative impacts on prairie chickens of other types of structures as well, including communications towers, wind farms, and suburban homes. Fragmentation of the open grassland horizons preferred by prairie chickens appears to represent the latest human-made threat to these species (KDWP 2006).

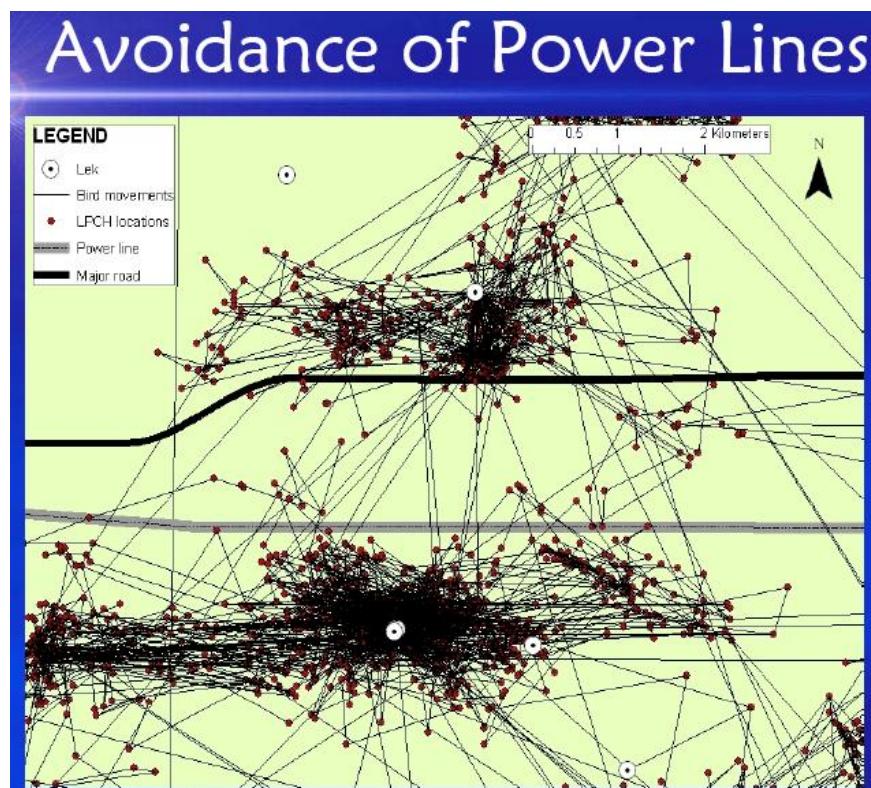


Figure from Patten (2008) showing LPC avoidance of transmission lines in OK panhandle.

Towers, power lines (transmission and distribution), oil and gas wells, compressor stations, fences, wind turbines, and buildings are examples of vertical structure that threatened LPC survival. Underscoring this we quote from the USFWS (2008); "..., southwestern KS currently supports the largest population and distribution of LPC of all states...In 2006, the Governor of

KS initiated the Governor's 2015 Renewable Energy Challenge, an objective of which is to have 1,000 megawatts (MW) of renewable energy capacity in KS by 2015 (Cita et al. 2008, p.1). A cost/benefit study (Cita et al. 2008, appendix B) found that wind was the most cost effective and likely renewable energy resource for KS. Modestly assuming an average of 2 MW per turbine—most commercial scale turbines are between 1.5 and 2.5 MW—some 500 turbines would be erected in KS if this goal is to be met. While not all of those turbines would directly overlap occupied range, the best wind potential in KS occurs in the western portions of the state (U.S. Department of Energy 2008). Inappropriate siting of wind energy facilities and associated facilities, including electrical transmission lines, appears to be a serious threat to LPC in western KS within the near future (R. Rodgers, KDWP, pers. comm. 2007).”

Again, we quote from the USFWS (2008); “...wind energy development is occurring within occupied portions of LPC habitat. Where such development has occurred, these areas are no longer suitable for LPC even though many of the typical habitat components used by LPC remain. Proposed transmission line improvements will serve to facilitate further development of additional wind energy resources. Future wind energy developments, based on the known locations of areas with excellent to good wind energy development potential, likely will have substantial overlap with known LPC populations. Additional areas that are currently unoccupied but lie within the historic range and provide suitable habitat for the LPC also could be developed. These areas of unfragmented habitat are crucial to ongoing efforts to conserve the LPC. Fragmentation of these areas would further modify or curtail the range of the LPC and hamper efforts to conserve the species. Therefore, the Service considers the ongoing and large-scale potential for commercial wind power development, particularly in western KS, northwestern OK and the TX panhandle, to be a high-level threat to the survival of the species in the near future. Siting of wind farms and transmission lines in a manner that avoids fragmentation of LPC habitat is important and some wind power developers appear sensitive to concerns about siting such facilities.”

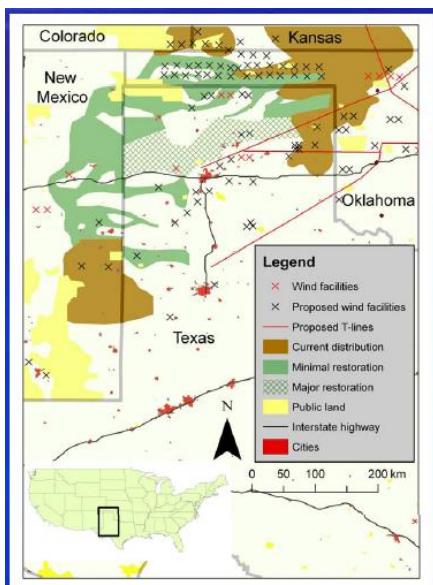
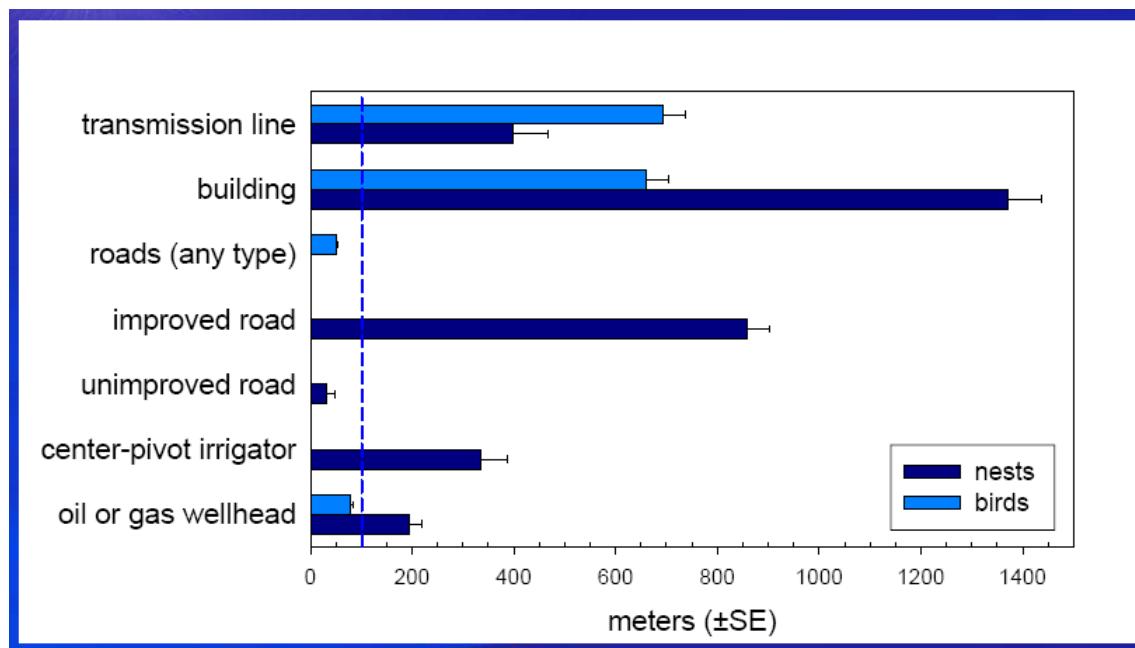


Figure from Patten (2008) and Pruett et al. (2009) showing potential wind resource area development in the southern portion of the LPC range.

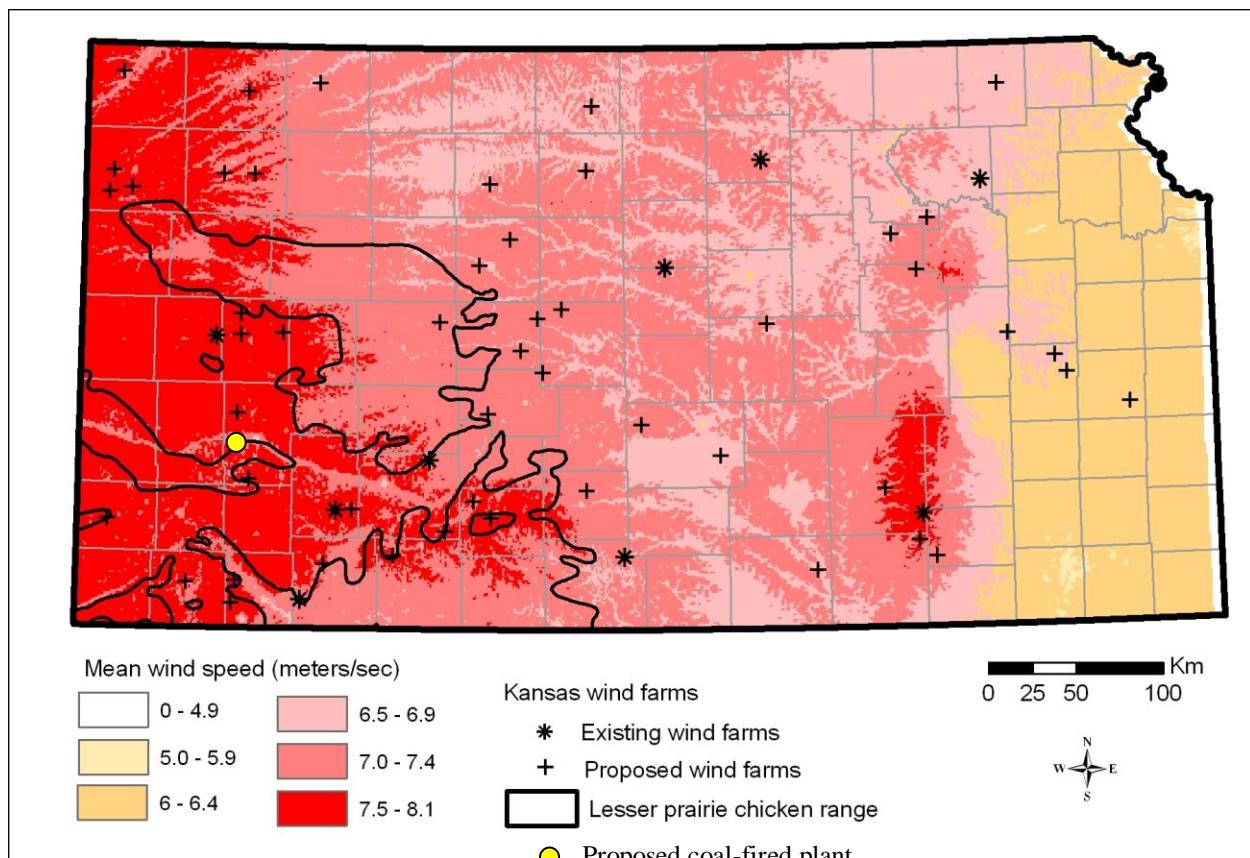
Oil and gas development in western KS is a concern considering the recent prices of oil, the push for natural gas development, and movement away from foreign oil dependence. Thus, there is

increased pressure and incentive to develop these fossil fuels. Such development, like wind energy development, provides potential for loss of habitat via fragmentation, both spatial and structural.

On 4 May 2008, Governor Parkinson agreed to a new energy plan that allows the development of an 895 MW coal-fired power plant in western Kansas, near Holcomb, after several years of rejection by the former governor (Office of the Governor 2009a, Klepper 2009). As part of the compromise to build the coal-fired power plant, Governor Parkinson and Sunflower Power Electric Corporation, Sunflower agreed to invest in more wind energy (Klepper 2009). Not only will the plant occupy potential prairie-chicken habitat, but it will also mean additional transmission line development within the LPCs range since only 200 MW will be for western KS, the remaining energy will be sent to CO (Klepper 2009).



Above Figure from Patten (2008) showing avoidance by individual LPCs and nests.



Above figure courtesy of Kansas Wind Resource Planner and Michael Houts, KDWP.

Finally, another potential human-related impact on the species is climate change. Peterson (2003) modeled climate change scenarios on montane and Great Plains bird species, including LPC, and predicted that Great Plains species would be more heavily influenced by climate change. The predictions under the assumption of no dispersal indicated there would be a dramatic area reduction (mode 35% of distributional area lost) and significant spatial movements (0-400 km shift of range centroid) of appropriate habitat.

12) Discuss the potential for recovery of this species through conservation measures. Be specific as to what measures you feel should be implemented to aid recovery.

According to the KS Wildlife Plan, KDWP lists several strategies to address the declining LPC population, loss of habitat, and fragmentation of existing habitat as follows:

- Develop broad scale education approach and outreach programs about the value of the LPC and promote LPC viewing on private properties.
- Publish and distribute publications on LPC management (similar to Oklahoma).
- Promote the LPC as an indicator species.
- Research and address wind farm impacts on LPC.
- Continue LPC monitoring.
- Bury or route power lines around nesting, brood rearing and lek habitats.

- Acquire, as advisable and possible, conservation easements on critical habitat with protocols for non-impact.

The USFWS (2008) listed the following “RECOMMENDED CONSERVATION MEASURES:

1. Reduce or eliminate upland construction of fence lines and utility lines within occupied habitat and for five miles surrounding all occupied habitat, especially near leks. If fence lines cannot be removed, it is recommended that the top and third wires of lines near active LPC leks be conspicuously marked to minimize collision mortality.
2. Limit or eliminate the federally-funded application of tebuthiuron herbicide in remaining shinnery oak habitats and 2, 4-D herbicide in sand sagebrush habitats.
3. Encourage range wide adherence to the Service’s Voluntary Interim Guidelines to Avoid and Minimize Wildlife Impacts from Wind Turbines, released in July 2003, (<http://www.fws.gov/habitatconservation/wind.pdf>).
4. Work cooperatively with energy-related industry to avoid, minimize and compensate for impacts to LPC populations and habitats.
5. Work with partners to target re-enrollments and new contracts under CRP and related agricultural conservation programs to benefit LPC.
6. Minimize further fragmentation of remaining Federal lands within current and historic LPC range by abandoning the use of ineffective timing, noise and distance stipulations near active or historic leks. Instead, future energy leasing, exploration and development, or other fragmenting human land uses within essential LPC habitats should be limited.
7. Establish secure and well-funded financial incentive mechanisms for private landowners to provide ungrazed or very lightly grazed native rangeland habitats that are suitable for LPC use, and are not subject to herbicidal shrub control practices.”

While we support the aforementioned recommendations from KDWP and USFWS, we believe it is critical to move forward and take the following additional steps:

- 1) List the LPC as threatened in KS;
- 2) pursue development of Candidate Conservation Agreements, including those with assurances;
- 3) reevaluate the use of fencing on State and federal lands, and develop educational material to deter private landowners from using fencing, or seek funding to help mark fences to reduce mortality;
- 4) support legislation to continue support for CRP lands, and to purchase existing prime LPC habitat, including CRP land;
- 5) encourage the use of a 5 mi (8.1 km) buffer zone around LPC leks for the development of anthropogenic features;
- 6) encourage the electrical utility companies (wind, coal, etc.) to develop conservation easements and to invest in the LPC conservation efforts;

- 7) encourage landowner conservation easements with non-governmental organizations to help protect existing habitat;
- 8) reevaluate the LPC hunting season to either eliminate or modify similar so that regulations are tied toward approved management plans (similar to what TX); and
- 9) ascertain the hybridization rate between LPCs and GPCs in their range of overlap.

There is a lack of regulatory measures to protect the LPC on private land, a generality for all species that exist in KS. Even with federally listed species, there is minimal statutory authority to address threatened and endangered species on private lands, but we should not use such facts to preclude State listing. Within KS, the listing of the LPC by KDWP should provide protection of any unwanted use of pesticides or herbicides within the LPCs range of occupied habitat and potential habitat, or at the very least allow for environmental review before such uses by local, State, or federal agencies. Efforts should be initiated by KDWP to encourage alternatives to the use of pesticides or herbicides within the LPCs range, especially on grasslands.

Listing efforts in KS would provide opportunities to potentially prevent the species from becoming federally listed. State listing should provide the impetus for KDWP and USFWS to pursue Candidate Conservation Agreements (CCA) and Candidate Conservation Agreements with Assurances (CCAA) with private landowners, non-governmental organizations, and the State to hopefully prevent future federal listing, or at least protect conservation measures and landowners in case the species becomes listed (ex. CCAA). New Mexico developed a CCA/CCAA that was signed in December 2008 (attached). Texas is working on such agreements.

With the potential threat to LPC populations associated with (ex. barbed-wire) fences (Wolfe et al. 2007), efforts should be made to reevaluate the use of fencing on State and federal lands. Studies in TX and OK have demonstrated that removal of fencing has reduced collisions. Thus, efforts to address removal of fences on private lands throughout the LPCs range in KS should be considered through the use of education, outreach, and publications on LPC management. Marking fences (ex. vinyl siding strips) also may help reduce collisions (Sutton Avian Research Center 2009).

Since CRP land has been beneficial to the LPC in KS, if CRP land is eligible for removal from the program then efforts should be made to encourage private landowners to maintain CRP vegetation. The future addition of new CRP lands also needs to be monitored. Not all CRP plantings are appropriate for LPCs, thus an emphasis should be made in seeding with the appropriate vegetation on new CRP acreage. Substantial effort should focus to encourage the continued funding of the CRP program. The State should also consider the possible acquisition of land for LPC management. Both grasslands (including CRP) and agricultural land should be considered since the latter could be converted back to grasslands.

While the country is in need of energy, especially more environmentally friendly sources, and western KS is a prime wind resource area, it also contains the single most significant LPC population and habitat in the world. Thus, listing of the LPC by KDWP would provide regulatory authority to protect this natural resource, while providing opportunities for further energy development. Based on existing data and recommendations from the USFWS we

recommend that no wind or oil development, or transmission line development occur within 5 mi (8.1 km) of all known LPC leks on native grasslands. If CRP lands that contain leks are significant enough to have a sustainable population, than the same 5 mi (8.1 km) buffer zone should be established around them. Development should be encouraged along cropland areas within the LPC range, but such development should maintain a 5 mi (8.1 km) buffer zone from known LPC leks, and appropriate grassland habitats.

Conservation easements may be an especially powerful mitigation tool when working with the wind and oil industry. In Oklahoma, OG&E announced on 1 April 2009, that they were investing \$3.75 million with ODWC to help provide habitat for LPCs to help offset impacts as a result of wind farm development.

Landowner encouragement to establish conservation easements or to work with non-governmental organizations such as The Nature Conservancy should be emphasized. As an example, Horizon Wind Energy developed the Meridian Way Wind Farm in Cloud County and agreed to invest in a 20,000 ac off-site habitat restoration program in association with Ranchland Trust (Schrag 2009).

States that permit hunting of prairie-chickens do not do so directly to promote stable populations and conservation, rather they simply permit hunting for the sake of tradition and recreation (Tselepidakis 2007). Due to the extent of fragmentation of the LPC population and the overall reduction in population size, both globally and in KS, KDWP should immediately suspend LPC hunting and establish State population goals and conservation measures to reach these goals. This would prevent local extirpations as a result of overharvest. Furthermore, before reestablishment of a hunting season the LPC range-wide population status needs to be reassessed. At the very least, efforts should be made to only allow hunting in areas where approved management plans are in place, similar to what has occurred in TX.

LPC and GPC hybridization is a potential concern due to the small isolated populations of LPC. The extent of hybridization needs to be monitored to ascertain the overall impact on genetic diversity within the species.

We concur with the USFWS (2008) and this quote underscores the need for funding and cooperative efforts; “Finally, much attention has been directed to the decline of prairie grouse nationwide, as evidenced through special sessions, symposia, and solicited publications throughout professional conservation arenas. In particular, the spring 2004 edition of The Wildlife Society Bulletin contains a host of publications relevant to recent LPC management, including formal guidelines for management of the species and its habitats (Hagen et. al. 2004, pp. 69-82). The North American Grouse Partnership, in cooperation with the National Fish and Wildlife Foundation and multiple State wildlife agencies and private foundations, has embarked on the preparation of the prairie grouse portions of an overarching North American Grouse Management Strategy (Strategy). The LPC portion of this Strategy is being developed under the leadership of the Lesser Prairie-chicken Interstate Working Group in cooperation with the Playa Lakes Joint Venture, and is independently identified as the Lesser Prairie-chicken Conservation Initiative. This Strategy would provide clear recovery actions and define the levels of funding necessary to achieve management goals for all species of grouse in North America. The final

draft of the prairie grouse portions of this strategy, encompassing 65 million acres of grassland habitat in the U. S. and Canada, was officially released and unanimously endorsed by the Association of Fish and Wildlife Agencies in late March, 2008.

The Service views the increased emphasis and exposure for prairie grouse as positive for the conservation and recovery of the LPC. However, many of these important conservation efforts will fail to materialize if adequate funding and institutional participation is lacking.”

13) Summarize your reasons for requesting a review of this species:

Under K.S.A. 32-958 section (f) a “threatened species” means any species of wildlife which appears likely, within the foreseeable future, to become an endangered species and under section (g) “wildlife” means any member of the animal kingdom, including, without limitation, any...bird... Furthermore, under K.S.A 32-960 the Secretary shall determine whether any species of wildlife indigenous to the state is a threatened species...in this state because of any of the following factors:

- (1) The present or threatened destruction, modification or curtailment of its habitat or range;
- (2) the overutilization of such species for commercial, sporting, scientific, educational or other purposes;
- (3) disease or predation;
- (4) the inadequacy of existing regulatory mechanisms; or
- (5) the presence of other natural or man-made factors affecting its continued existence within this state.

New data from the USFWS (2008), Patten (2008), and Pruett et al. (2009) with the subsequent re-designation by the USFWS of the LPC as a “Candidate 2” species (imminent danger of becoming threatened or endangered) is the main impetus behind this emergency petition to have the LPC listed as “threatened” in KS.

Kansas has the largest remaining population in the world with the largest remaining habitat. Recent population trends indicate a decline in the population though it has increased its range, primarily a result of utilization of CRP grasslands. The potential for the non-renewal of existing CRP lands is a real threat to further habitat loss.

The emphasis for a change in energy dependency, both State-wide and nationally, means that the existing LPC range within KS is prime for additional energy development. In fact, on 22 May 2009, Governor Parkinson signed legislation, the Renewable Energy Standards Act, which codifies the goal for KS utilities to generate 20% of their power by renewable energy by 2020 (Office of the Governor 2009b). Therefore, the key population of the LPCs survival is under direct threat as a result of vertical habitat displacement that would occur with the development of wind farms, new transmission lines, coal-fired power plant production, and oil and gas wells. The listing of the LPC in KS would be the second regulatory mechanism within its range to help sustain LPC population’s range-wide (CO listed LPC in 1973). The only other regulatory mechanisms are actions pertaining to hunting regulations, such as those used by OK to not allow hunting until population goals are met.

Clearly, based upon the data presented herein and under the authority set forth by K.S.A. 32-960, the LPCs:

- (1) existing habitat and range is threatened with continued destruction, modification and curtailment;
- (2) there is an inadequacy of existing regulatory mechanisms for this species; and
- (3) the presence of additional anthropogenic features will affect its continued existence of this species' within this state.

14) Describe your expertise/experience with the species you are petitioning.

Formed in 1949, the Kansas Ornithological Society (KOS) is the only statewide organization in Kansas devoted specifically to the study, conservation, and enjoyment of birds. Collectively, we know more than anyone else about the distribution, abundance, habits, and identification of the more than 460 species of birds in our state.

Feel free to attach any information you may have pertaining to the status or biology of this species that will help in its review.

Attachments:

- 1) Species Assessment and Listing Priority Assignment Form: Lesser Prairie-Chicken (USFWS 2008).
- 2) Candidate Conservation Agreement for the Lesser Prairie-Chicken (*Tympanuchus pallidicinctus*) and Sand Dune Lizard (*Sceloporus arenicolus*) In New Mexico (USFWS et al. 2008)
- 3) Figure: Using GIS for Wind Resource Planning in Kansas. Kansas Wildlife and Parks, Kansas Biological Survey, and Kansas Applied Remote Sensing Program.
- 4) Figures: Southwest Power Pool Transmission Expansion (Casplay 2008).
- 5) Figure: Designing Energy Solutions Without Borders (Barton 2008).

Point of Contact's on behalf of the Kansas Ornithological Society (lead petitioner) and other co-petitioners:

Mark B. Robbins: ornithologist. Ornithology Division, University of Kansas Natural History Museum & Biodiversity Institute, 1345 Jayhawk Boulevard, Lawrence, KS 66045. Phone: 785-864-3657. E-mail: mrobbins@ku.edu.

Gene Young: endangered species management/policy, avian interactions with wind turbines/towers. Northern Oklahoma College, 1220 E. Grand, PO Box 310, Tonkawa, OK 74653-0310. Office Phone: 580-628-6482; Cell Phone: 620-441-8056. FAX: 580-628-6209. E-mail: Eugene.Young@north-ok.edu.

Suggested expert contacts and areas of specialty:

Robert Robel: prairie-grouse biology, wildlife biology. Division of Biology, Kansas State University, Manhattan, KS 66506-4901. E-mail: rjrobel@ksu.edu.

Brett Sandercock: grassland avian species biology, prairie-chicken demographics. Associate Professor, Kansas State University, 425 Ackert Hall, Manhattan, KS 66506. Phone: (785)532-0120. E-mail: bsanderc@ksu.edu.

Elmer Finck: grassland biologist. Professor of Biological Sciences, Department of Biological Sciences, Fort Hays State University, 600 Park Street, Hays, KS 67601-4099. Phone: 785-628-4214. FAX: 785-628-4153. E-mail: efinck@fhsu.edu.

Greg Farley: grassland avian species biology. Department of Biological Sciences, Fort Hays State University, 600 Park Street, Hays, KS 67601-4099. Phone: 785-628-5965. FAX: 785-628-4153. E-mail: gfarley@fhsu.edu.

Stephanie Manes: wildlife biologist. E-mail: stephmanes@gmail.com.

References Cited

Bain, M.R. and G.H. Farley. 2002. Display by apparent hybrid prairie-chickens in a zone of geographic overlap. *Condor* 104:683-687.

Barton, L. 2008. Designing Energy Solutions Without Borders. REVOLUTION: Oklahoma Wind Energy Conference, Oklahoma City, OK, 3 December 2008.

Bell, L.A. 2005. Habitat use and growth and development of juvenile lesser prairie-chickens in southeast New Mexico. M.S. Thesis, Oklahoma State University, Stillwater, Oklahoma. 55 pp.

Bent, A. C. 1932. Life Histories of North American Gallinaceous Birds. Government Printing Office, Washington, D.C.

Blus, L.J., C.S. Staley, C.J. Henny, G.W. Pendleton, E.H. Craig, and D.K. Halford. 1989. Effects of organophosphorus insecticides on sage grouse in southeastern Idaho. *J. Wildl. Manage.* 53(4):1139-1146.

Cable, T. T., S. Seltman, and K. J. Cook. 1996. Birds of Cimarron National Grasslands. General Tech. Report RM-GTR-281. Fort Collins, CO: USDA, Forest Service, Rocky Mountain Forest and Range Experiment Station. 108p.

Caspary, J. 2008. Southwest Power Pool Transmission Expansion. REVOLUTION: Oklahoma Wind Energy Conference, Oklahoma City, OK, 3 December 2008.

Coats, J. 1955. Raising Lesser Prairie Chickens in captivity. *Kansas Fish and Game* 13:16-20. Crawford, J.A. and E.G. Bolen. 1976. Effects of land use on lesser prairie-chickens in Texas. *J. Wildl. Manage.* 40:96-104.

Fuhlendorf, S.D., A.J.W. Woodward, D.M. Leslie Jr., and J.S. Shackford. 2002. Multi-scale effects of habitat loss and fragmentation on lesser prairie-chicken populations of the US Southern Great Plains. *Lands. Ecol.* 17:617-628.

Giesen, K.M. 1994. Movements and nesting habitat of lesser prairie-chicken hens in Colorado. *Southwestern Nat.* Vol. 39.

Hagen, C. A. 2003. A Demographic Analysis of Lesser Prairie-Chicken Populations in Southwestern Kansas: Survival, Population Variability, and Habitat Use. Ph.D. dissertation, Kansas State University, Manhattan, Kansas.

Hagen, C.A., B.E. Jamison, K.M Giesen, and T.Z. Riley. 2004. Guidelines for managing lesser prairie-chicken populations and their habitats. Wildl. Soc. Bull. 32(1):69-82.

Hagen, C.A., and K.M. Giesen. 2005. Lesser Prairie-Chicken (*Tympanuchus pallidicinctus*), The Birds of North America Online (A. Poole, Ed.). Ithaca (NY): Cornell Lab of Ornithology; Retrieved from the Birds of North America Online:
<http://bna.birds.cornell.edu/bna/species/364doi:10.2173/bna.364>.

Haukos, D.A. and L.M. Smith. 1989. Lesser prairie-chicken nest site selection and vegetation characteristics in tebuthiuron-treated and untreated sand shinnery oak in Texas. Great Basin Nat. 49(4):624-626.

Horton, R. 2008. Populations and Regulatory Status of Lesser Prairie-Chickens in Oklahoma. REVOLUTION: Oklahoma Wind Energy Conference, Oklahoma City, OK, 3 December 2008. Oklahoma Department of Wildlife Conservation.

Houts, M. E., R. D. Rodgers, R. D. Applegate, and W. H. Busby. In press. Using Local Knowledge and Remote Sensing to Map Known Potential Prairie-chicken Distribution in Kansas. Prairie Naturalist.

Jensen, W. E., D. A. Robinson, Jr., and R. D. Applegate. 2000. Distribution and population trend of lesser prairie-chicken in Kansas. Prairie Naturalist 32:169–175.

Kansas Department of Wildlife and Parks. 2006. Greater and Lesser Prairie Chicken (web page). Available online: <http://kdwp.state.ks.us/news/Hunting/Upland-Birds/Greater-and-Lesser-Prairie-Chicken>, accessed 17 February 2009.

_____. 2008. Kansas Hunting and Furharvesting Regulations Summary. Available online: <http://www.kdwp.state.ks.us/news/Hunting/Hunting-Regulations>, accessed 17 February 2009.

Klepper, D. 2009. New Governor Approves one Coal-fired Power Plant for Kansas. Kansas City Star, online: <http://www.kansascity.com/105/story/1178538.html>, accessed 26 May 2009.

Office of the Governor, Kansas. 2009a. Press Release. Governor Parkinson and Sunflower Electric agree to new energy plan: Kansas to take a significant step forward on renewable energy policy. Available online, 4 May: <http://http.governor.ks.gov/News/NewsRelease/2009/nr-09-0504a.htm>. Accessed 26 May 2009.

_____. 2009b. Press Release. Governor Mark Parkinson signs landmark energy legislation: Kansas to finally have net metering and a codified Renewable Energy Standard. Available online, 22 May: <http://http.governor.ks.gov/News/NewsRelease/2009/nr-09-0522a.htm>. Accessed 26 May 2009.

Oklahoma Cooperative Extension Service. Ecology and Management of the Lesser Prairie-Chicken: E-970. Division of Agricultural Sciences and Natural Resources, Oklahoma State University.

Patten, M. A. 2008. Potential Effects of Wind Energy Development on the Lesser Prairie-Chicken. REVOLUTION: Oklahoma Wind Energy Conference, Oklahoma City, OK, 3 December 2008. University of Oklahoma, Oklahoma Biological Survey, Sutton Avian Research Center.

Peterson, A. T. 2003. Projected climate change effects on Rocky Mountain and Great Plains Birds: generalities of biodiversity consequences. *Global Change Biology* 9:647-655.

Pittman, J. C. 2003. Lesser Prairie-Chicken Nest Site Selection and Nest Success, Juvenile Gender Determination and Growth, and Juvenile Survival and Dispersal in Southwestern Kansas. M.S. thesis, Kansas State University, Manhattan, Kansas.

Pittman, J. C., C. A. Hagen, R. J. Robel, T. M. Loughin, and R. D. Applegate. 2005. Location and success of Lesser Prairie chicken nests in relation to vegetation and human disturbance. *J. Wildlife Management* 69(3):1259-1269.

Ports, M. A. 1979. Occurrence and density studies of nongame wildlife in southwestern Kansas-May 16-August 16, 1979. Kansas Fish and Game Commission.

Pruett, C. L., M. A. Patten, and D. H. Wolfe. 2009. It's Not Easy Being Green: Wind Energy and a Declining Grassland Bird. *BioScience* 59(3):257-262.

Robel, R. J., J. A. Harrington, Jr., C. A. Hagen, J. C. Pittman, and R. R. Reker. 2004. Effect of Energy Development and Human Activity on the use of Sand Sagebrush Habitat by Lesser Prairie-Chickens in Southwestern Kansas. *Trans. of the North American Wildlife and Natural Resource Conference* 69.

Rodgers, R. 2006. Prairie Chicken Lek Survey – 2006. May 2006 Performance Report, Kansas Dept. Wildl. and Parks, 5 pp.

Rodgers, R. 2007a. Letter written to US Fish and Wildlife Service, Oklahoma Ecological Services, March 15, 2007. Resources directed at benefiting lesser prairie chickens in Kansas (January 2006 – February 2007). Kansas Department of Wildlife and Parks. 4 pp.

Rodgers, R. 2007b. Prairie Chicken Lek Survey – 2007. May 2007 Performance Report, Kansas Dept. Wildl. and Parks, 5 pp.

Schrag, D. 2009. Prairie chickens face new threats. *Salina Journal* <http://www.salina.com/Print/prairie-chickens-3-16-2009>. Accessed 24 March 2009.

Smith, L. and R. Smith. 1999. Cimarron National Grassland lesser prairie-chicken lek survey report. Unpublished report on file at the Cimarron National Grasslands Ranger District Office, Elkhart, Kansas.

Sutton, G. M., Avian Research Center. 2009. Ecology of the Lesser Prairie-Chicken. Web page: <http://www.suttoncenter.org/LPCH.html>. Accessed 26 February 2009.

Thompson, M. C., and C. A. Ely. 1989. Birds in Kansas, Vol. 1. Univ. of Kansas Mus. Natl. Hist. Publ. Ed. Ser. No. 11. 404pp.

Tselepidakis, E. 2007. Conservation Solutions: The Case of the Greater Prairie Chicken. Undergraduate Senior Honors Thesis, Department of Economics, College of Arts and Sciences Washington University, St. Louis, MO.

USFWS. 2008. Species Assessment and Listing Priority Assignment Form: Lesser Prairie-Chicken. Available online: http://ecos.fws.gov/docs/candforms_pdf/r2/B0AZ_V01.pdf. Accessed 31 January 2009.

USFWS, US Bureau of Land Management, and Center of Excellence for Hazardous Materials Management. 2008. Candidate Conservation Agreement for the Lesser Prairie-Chicken (*Tympanuchus pallidicinctus*) and Sand Dune Lizard (*Sceloporus arenicolus*) In New Mexico. Available online: http://www.fws.gov/southwest/es/NewMexico/documents/CCA_CCAA_LPC SDL 2008 final signed.pdf. Accessed 17 February 2009.

Lead Petitioner(s):

Kansas Ornithological Society
Nancy J. Leo, President
4505 W 66th St.
Prairie Village, KS 66208
Phone: 913-432-0414 (H); 913-205-8847 (cell)

Co-Petitioner(s):

Kansas Birds Records Committee
Max C. Thompson, Chair
1729 E 11th St.
Winfield, KS 67156
Phone: 620-221-1856, E-mail: maxt@cox.net

Wichita Audubon Society
Kevin Groeneweg, President
PO Box 47607
Wichita, KS 67201
Phone: 316-687-4268, E-mail: kgroeneweg@sbcglobal.net
www.wichitaaudubon.org

Jayhawk Audubon Society
Chuck Herman, President
20761 Loring Rd.
Linwood, KS 66052
Phone: 913-301-3921, E-mail: hermansnuthouse@earthlink.net
<http://skyways.lib.ks.us/orgs.jayhawkaudubon>

Northern Flint Hills Audubon Society
Patricia Yeager, President
5614 Bayers Hill
Manhattan, KS 66502
Phone: 785-776-9593, E-Mail: pyky@flinthills.com
www.k-state.edu/audubon

Burroughs Audubon Society
Elizabeth Stoakes, President
7300 SW West Park Rd
Blue Springs, MO 64015
E-mail: lizkvet@yahoo.com
www.burroughs.org

Topeka Audubon Society
John A. Zempel, President
15104 94th Rd.
Topeka, KS 66618
E-mail: vhfjazz@yahoo.com, or TAS@topekaaudubonsociety.org
www.topekaaudubonsociet.org/index.htm

Smoky Hills Audubon Society
Michael Roy, President
PO Box 2936
Salina, KS 67402-2936
Phone: 785-493-2454, E-mail: roymd68@hotmail.com
<http://smokyhillsaudubon.wetpaint.com>

**Return to: Edwin J. Miller, T & E Program Coordinator
5089 CR 2925, Independence, KS 67301**