



Lesser Prairie-Chicken: A Decade in Purgatory



Jess Alford ©

A Report on the Tenth Anniversary of the Lesser Prairie-Chicken's Designation as a "Candidate Species" under the Endangered Species Act (June 9, 2008)

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The lesser prairie-chicken (*Tympanuchus pallidicinctus*) inhabits shinnery oak and sand sagebrush grasslands in parts of Colorado, Kansas, New Mexico, Oklahoma, and Texas. An indicator species for the Southern Great Plains, the range of lesser prairie-chicken has been reduced by over 90 percent and its population has declined by an estimated 97 percent since the 1800s.

In 1995, the U.S. Fish and Wildlife Service received a petition to list the lesser prairie chicken as “threatened” under the Endangered Species Act. The agency concluded that the petition contained substantial information that warranted further review in July 1997, but then concluded that listing the species was precluded by other priorities in June 1998. The lesser prairie-chicken was subsequently designated a “Candidate Species,” a statutory purgatory where imperiled species may dwell for years before the Fish and Wildlife Service determines their listing status under the Endangered Species Act.

June 9, 2008, is the tenth anniversary of the date that lesser prairie-chicken was made a Candidate Species.

Candidate Species status provides no protection to designated species. For the lesser prairie-chicken, Candidate Species status has meant continued exposure to threats such as livestock grazing, oil and gas extraction, conversion of habitat to cropland, and other factors that have contributed to the bird’s continued decline throughout many parts of its range. Listing the lesser prairie-chicken under the Endangered Species Act is required to combat these threats and recover the species.

Listing the lesser prairie-chicken would also provide umbrella protection for shinnery oak and shrub grasslands on which the bird depends. A diverse animal community occurs in this habitat type, including the critically imperiled sand dune lizard (*Sceloporus arenicolus*), which is also a Candidate Species awaiting Endangered Species Act listing.

Introduction

The lesser prairie-chicken (LPC) is a medium-sized, gray-brown grouse that occurs in scattered populations in short-grass prairie in the American Southwest. LPC is present in southeastern Colorado; the southwestern quarter of Kansas; small areas in the panhandle and northwest counties of Oklahoma; east-central New Mexico; and limited areas in the northeastern and southwestern corners of the Texas Panhandle (see Map 1).

LPC is comparable in morphology, plumage and behavior to greater prairie-chicken (*T. cupido*), although the lesser prairie-chicken is smaller and has distinctive courtship displays and

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vocalizations. Similar to other grouse species, LPC males are known for their boisterous spring courtship displays on communal breeding grounds known as leks.

LPC use shinnery oak and sand sagebrush grassland habitats. Populations are non-migratory. Nesting and brood-rearing habitat are usually within 3 km of lek sites. Winter range is typically the same area used for breeding and summer range. LPC consume insects, leaves, buds and cultivated grains. The species occurs on private, state, and federal lands managed by the Bureau of Land Management (BLM) and Forest Service.

The historic population of LPC has been estimated at 2 million in Texas,¹ and as many as 3 million rangewide.² LPC current range is reduced to relatively small and scattered areas totaling about 8 percent of historic range.³ The current population size has been roughly estimated at 10,000-25,000 individuals.⁴

Habitat loss, degradation and fragmentation from livestock grazing, agriculture, oil and gas extraction, herbicide use, fences, utility corridors, roads, mining, wind energy production, unnatural fire and fire suppression threaten LPC. Drought may exacerbate the effects of these threats on LPC. Climate change may be an increasingly important threat to the species. The potential loss of habitat on private land enrolled in the federal Conservation Reserve Program (CRP) may have extremely negative effects on current populations. Kansas allows limited hunting of LPC; Texas precludes hunting for LPC, except on certain properties enrolled in a state habitat conservation program. (New Mexico, Colorado and Oklahoma do not allow hunting for LPC.)

Grassland birds are among the most threatened wildlife guilds in North America.⁵ Short-grass prairie is considered among the twenty most threatened bird habitats in the United States.⁶ The U.S. Fish and Wildlife Service (USFWS) received a petition to list the lesser prairie-chicken as “threatened” under the Endangered Species Act in 1995. The agency responded by designating

¹ Hagen, C. A. and K. M. Giesen. 2005. Lesser prairie-chicken (*Tympanuchus pallidicinctus*) *in* A. Poole (ed.). The Birds of North America Online. No. 364. Cornell Laboratory of Ornithology. Ithaca, NY (unpaginated) (*citing* G. W. Litton. 1978. The lesser prairie chicken and its management in Texas. Texas Parks and Wildl. Dep. Booklet 7000-25. Austin, TX.).

² Johnsgard, P. A. 2002. GRASSLAND GROUSE AND THEIR CONSERVATION. Smithsonian Institution Press, Washington, DC: 34.

³ Hagen, C. A. and K. M. Giesen. 2005. Lesser prairie-chicken (*Tympanuchus pallidicinctus*) *in* A. Poole (ed.). The Birds of North America Online. No. 364. Cornell Laboratory of Ornithology. Ithaca, NY (unpaginated) (*citing* M. A. Taylor and F. S. Guthery. 1980. Status, ecology, and management of the lesser prairie chicken. Gen. Tech. Rep. RM-77. USDA-Forest Service, Rocky Mountain Forest and Range Exp. Sta. Fort Collins, CO.).

⁴ Storch, I. (compiler). 2007. Grouse Status Survey and Conservation Action Plan 2006-2010. IUCN, Species Survival Commission, Grouse Specialist Group. Gland, Switzerland and Cambridge, United Kingdom; World Pheasant Association. Fordingbridge, United Kingdom: 84 (*citing* P. A. Johnsgard. 2002. GRASSLAND GROUSE AND THEIR CONSERVATION. Smithsonian Institution Press, Washington, DC.).

⁵ Brennan, L. A. and W. P. Kuvlesky. 2005. North American grassland birds: an unfolding conservation crises? J. Wildl. Manage. 69(1): 1-13.

⁶ American Bird Conservancy. 2007. Top 20 Most Threatened Bird Habitats in the United States. American Bird Conservancy. The Plains, VA.

LPC a candidate for protection under the Endangered Species Act⁷ and assigned LPC a listing priority number of 8.⁸

Region 2 (CO, KS) and Region 3 (NM) of the Forest Service list lesser prairie-chicken as a “sensitive species.” The Comanche and Cimarron national grasslands identify LPC as a “species of concern.” The state of Colorado lists LPC as “threatened.” The International Union for Conservation of Nature (IUCN) lists the species as “vulnerable.”⁹ Audubon and Partners in Flight include LPC on their “Watch Lists.”

U.S. Department of the Interior Secretary Kempthorne has stated that the USFWS will determine the fate of 71 species now listed as Candidate Species by September 30, 2008,¹⁰ although LPC is not on the list of Candidate Species that the agency will act upon by September. LPC has endured new and increasing threats and many populations have continued to decline since it was designated a Candidate Species in 1998. LPC may be or may become extirpated in northeastern and southeastern New Mexico, parts or all of Colorado, and parts of Oklahoma, Kansas, and Texas.

Threats to Lesser Prairie-Chicken

LPC are affected by myriad threats, from wind energy development, to hybridization with greater prairie-chicken, to the pervasive effects of climate change and drought. West Nile virus could represent a devastating new threat to the species (the virus has not yet been documented in LPC).¹¹ Other important and new threats to LPC are listed here.

Loss of Habitat on CRP-lands. Grassland birds use habitat on private land enrolled in the CRP,¹² including LPC.¹³ Perhaps two million acres of cropland are enrolled in CRP in LPC range.¹⁴ LPC depend heavily on habitat on CRP lands in Kansas, and also use CRP lands in Colorado.¹⁵ LPC appear to favor CRP lands that are planted with a mixture of native grasses and forbs (e.g., Kansas), and may not use fallow land or land planted in grass monoculture (e.g., Texas). Less than 30 percent of CRP lands in Oklahoma were planted to native grass and forb

⁷ 72 Fed. Reg. 69059-60 (Dec. 6, 2007).

⁸ 72 Fed. Reg. 69060 (Dec. 6, 2007).

⁹ BirdLife International. Species factsheet: Lesser Prairie-Chicken (*Tympanuchus pallidicinctus*). Available from www.birdlife.org; downloaded June 4, 2008.

¹⁰ Adler, J. “The race for survival.” *Newsweek* (June 9, 2008).

¹¹ Greater sage-grouse are highly susceptible to West Nile virus (WNV). WNV is almost always fatal to sage-grouse and it has had significant negative impacts on local populations of sage-grouse. Walker, B. L., D. E. Naugle, K. E. Doherty, T. E. Cornish. 2007. West Nile virus and greater sage-grouse: estimating infection rate in a wild bird population. *Avian Diseases* 51: 691-696; *see also* D. E. Naugle, C. L. Aldridge, B. L. Walker, T. E. Cornish, et al. 2004. West Nile virus: pending crisis for greater sage-grouse. *Ecology Letters* 7: 704-713.

¹² Riffell, S. K. and L. W. Burger. 2006. Estimating wildlife response to the Conservation Reserve Program: bobwhite and grassland birds. Final Report for FSA-R-28-04DC Estimating Wildlife Response to the Conservation Reserve Program. USDA, Farm Service Agency, Acquisition Management Branch, Special Projects Section.

¹³ *See generally* L. A. Robb and M. A. Schroeder. 2005. Lesser prairie-chicken (*Tympanuchus pallidicinctus*): a technical assessment. USDA-Forest Service, Rocky Mountain Region, Species Conservation Project: 13 (citing other sources). (Mar. 31, 2005).

¹⁴ BirdLife International (2008) (citing other sources).

¹⁵ Verquer, T. (undated). “Southeast Colorado Lesser Prairie Chicken Intensive Search, April 14-18, 2007.” Memorandum received from Colorado Division of Wildlife.

mixtures.¹⁶ Numerous references recommend planting CRP lands with a diversity of native species to benefit LPC.

Unfortunately, both important and lesser quality habitat on CRP-enrolled lands may soon be lost to LPC. Farmers and ranchers are increasingly withdrawing their fields from the CRP.¹⁷ Conversion of CRP-enrolled lands back to agriculture is a significant threat to LPC. USFWS appreciates the potential impact of the loss of CRP-enrolled habitat on LPC. An agency official wrote “So much for prairie chickens!” in response to a notice that the U.S. Department of Agriculture might permit farmers to withdraw some private land from the CRP without penalty in 2007.¹⁸

Wind Energy Development. LPC avoid trees, structures (including structures associated with oil and gas development and utility corridors) and other elevated points because they may serve as perches for raptors, corvids and other aerial predators that prey on LPC nests, chicks and adults. LPC appear to avoid wind turbines, regardless of whether aerial predators use them as perches. For this reason, USFWS recommended avoiding siting wind turbines within 5 miles (18 km) of known “prairie grouse” (including LPC) leks.¹⁹ However, the agency emphasized that its guideline was only a recommendation, and does not restrict wind energy development within 5 miles of a LPC lek. Unfortunately, significant new wind energy development is planned within LPC occupied range in New Mexico, Oklahoma and Texas. USFWS has noted that “massive expansion of the wind energy industry in the range of the lesser prairie chicken is imminent.”²⁰

Drought, Climate Change. Similar to other grouse, successful annual recruitment (nesting, brood-rearing) in LPC depends in part on timely, ample precipitation. Winter and spring precipitation produces more, denser vegetation, which offers better nesting habitat (screening cover from predators, sunlight and wind) and more food (plants, seeds, insects) for gravid/nesting females and broods.

Increased drought (and heat), which may be partly a byproduct of climate change, is a pervasive new threat to LPC. USFWS noted that periodic drought could exacerbate the effects of other threats (e.g., livestock grazing, oil and gas extraction, etc.) on LPC.²¹ Previous droughts have had a significant impact on LPC populations.²² New research also reported the effects of increased temperatures and reduced precipitation on individual LPC mortality.²³ Unfortunately, there is a broad consensus among climate models that the American Southwest will continue to

¹⁶ Bidwell, T. (ed.). 2002. Ecology and Management of the Lesser Prairie-Chicken. OSU Extension Circular E-970. Oklahoma State University, Division of Agric. Sci. and Nat. Res., Oklahoma Coop. Ext. Serv. Stillwater, OK: 12.

¹⁷ D. Streitfeld. “As prices rise, farmers spurn conservation program.” *New York Times* (Apr. 9, 2008).

¹⁸ Mehlhop, P., electronic mail to S. Manes “From Greenwire--AGRICULTURE: Despite record corn crop, USDA weighs opening conservation land,” dated Sept. 26, 2007. Document received from U.S. Fish and Wildlife Service.

¹⁹ Manville, A. M. 2004. Prairie grouse leks and wind turbines: U.S. Fish and Wildlife Service justification for a 5-mile buffer from leks; additional grassland songbird recommendations. U.S. Fish and Wildlife Service, Division of Migratory Bird Management. Arlington, VA. (peer-reviewed briefing paper).

²⁰ O’Meilia, C., Wildlife and Fire Consultation Biologist, electronic mail to D. Watkins, re. “Wind energy information,” dated Aug. 29, 2007. Document received from U.S. Fish and Wildlife Service.

²¹ 70 Fed. Reg. 24892 (May 11, 2005).

²² See, e.g., Johnsgard (2002): 40 (describing the effects of the Dust Bowl on LPC in Kansas in the 1930s).

²³ Pruett, C. L., M. A. Patten, D. H. Wolfe, S. K. Sherrod. (undated). Climate change affects mortality of a declining prairie bird. Submitted to Conservation Biology.

dry in this century and that, if these models are correct, “the levels of aridity of the recent multiyear drought or the Dust Bowl and the 1950s droughts will become the new climatology of the [] Southwest within a time frame of years to decades.”²⁴ Snyder (1967) observed that LPC may only occupy marginal habitat during favorable (wetter, cooler) climatic periods.²⁵ Pruett et al. (submitted) concluded that “unless lesser prairie-chickens are able to adapt to global warming, it is unlikely that they will persist in the southern portions of their range.”²⁶ The Fish and Wildlife Service is aware of the increasing threat of drought to LPC. The agency tendered draft and advanced copies of Seager et al. (2007), Pruett et al., and several news articles on climate change and drought in response to a request for information related to LPC.

Reduced Population Viability and Habitat Patch Size. While estimates of total LPC population vary, no published estimate may be enough for LPC to persist long-term. A population of 5,000-50,000 individuals is desirable for long-term persistence of LPC.²⁷ Many subpopulations of LPC are estimated at smaller than 5,000 birds (see state summaries below). Small populations are less able to survive known threats and stochastic events, and may have reduced genetic diversity, which may affect long-term survival.

Endurance of small populations of LPC may be further affected by small habitat patch size. Habitat loss and fragmentation isolate LPC populations, hindering gene flow and the potential for population increase known to occur on large, interconnected habitat patches. USFWS admitted that “remaining habitat patches may become smaller than necessary to meeting [sic] the yearlong requirements of individuals and populations [of LPC],” and noted that factors that reduce habitat heterogeneity (e.g., large areas converted to agriculture) will reduce the probability of LPC recolonizing unoccupied range.²⁸ Multiple references also note that human attempts to transplant or reintroduce LPC to unoccupied range have failed.

Current total occupied LPC range may be as small as 27,300 km² (6,745,976 acres)²⁹ or a fragmented area of 64,000km² (15,814,744 acres).³⁰ The minimum land area needed to maintain

²⁴ Seager, R., T. Mingfang, I. Held, Y. Kushnir, et al. 2007. Model projections of an imminent transition to a more arid climate in southwestern North America. *Science* 316(5828): 1181 - 1184 (May 25, 2007).

²⁵ Snyder, W. A. 1967. Lesser prairie chicken. Pages 121-128 *in* NEW MEXICO WILDLIFE MANAGEMENT. New Mexico State Game Commission. Santa Fe, NM.

²⁶ Pruett, C. L., M. A. Patten, D. H. Wolfe, S. K. Sherrod. (undated). Climate change affects mortality of a declining prairie bird. Submitted to *Conservation Biology*: 2.

²⁷ Traill, L.; B. W. Brook, C. J. A. Bradshaw (contributing authors); M. McGinley (ed.). 2007. Minimum viable population size *in* C. J. Cleveland (ed.). *Encyclopedia of Earth*. Environmental Information Coalition, National Council for Science and the Environment. Washington, DC. (last revised Dec. 20, 2007; retrieved June 5, 2008; available at www.eoearth.org/article/Minimum_viable_population_size); R. Frankham, J. D. Ballou, D. A. Briscoe. 2002. *INTRODUCTION TO CONSERVATION GENETICS*. Cambridge University Press. Cambridge, United Kingdom; L. S. Mills, J. M. Scott, K. M. Strickler, S. A. Temple. 2005. Ecology and management of small populations. Pages 691-713 *in* C. E. Braun (ed.). 2005. *TECHNIQUES FOR WILDLIFE INVESTIGATIONS AND MANAGEMENT*. Sixth ed. The Wildlife Society. Bethesda, Md: 692, Box 1. **The New Mexico Department of Game and Fish stated that a viable population of LPC may number 5,000-50,000 individuals.** G. M. Beauprez. 2007. Survey for active lesser prairie-chicken leks: spring 2007. Proj. no. W-138-R-5. New Mexico Dept. of Game and Fish. (unpaginated) (July 2007).

²⁸ 70 Fed. Reg. 24892-3 (May 11, 2005).

²⁹ Robb and Schroeder (2005): 13 (citing other sources).

³⁰ BirdLife International (2008) (citing other sources). This reference also estimated current LPC “breeding/resident” range at 102,000 km².

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a breeding population of LPC is an area of prime nesting and brood-rearing habitat of approximately two square miles (1,280 acres) in size, surrounded by a minimum of 10,000 acres of feeding and loafing habitat.³¹ Perhaps 25,000 acres are needed to provide sufficient habitat to maintain a LPC population.³²

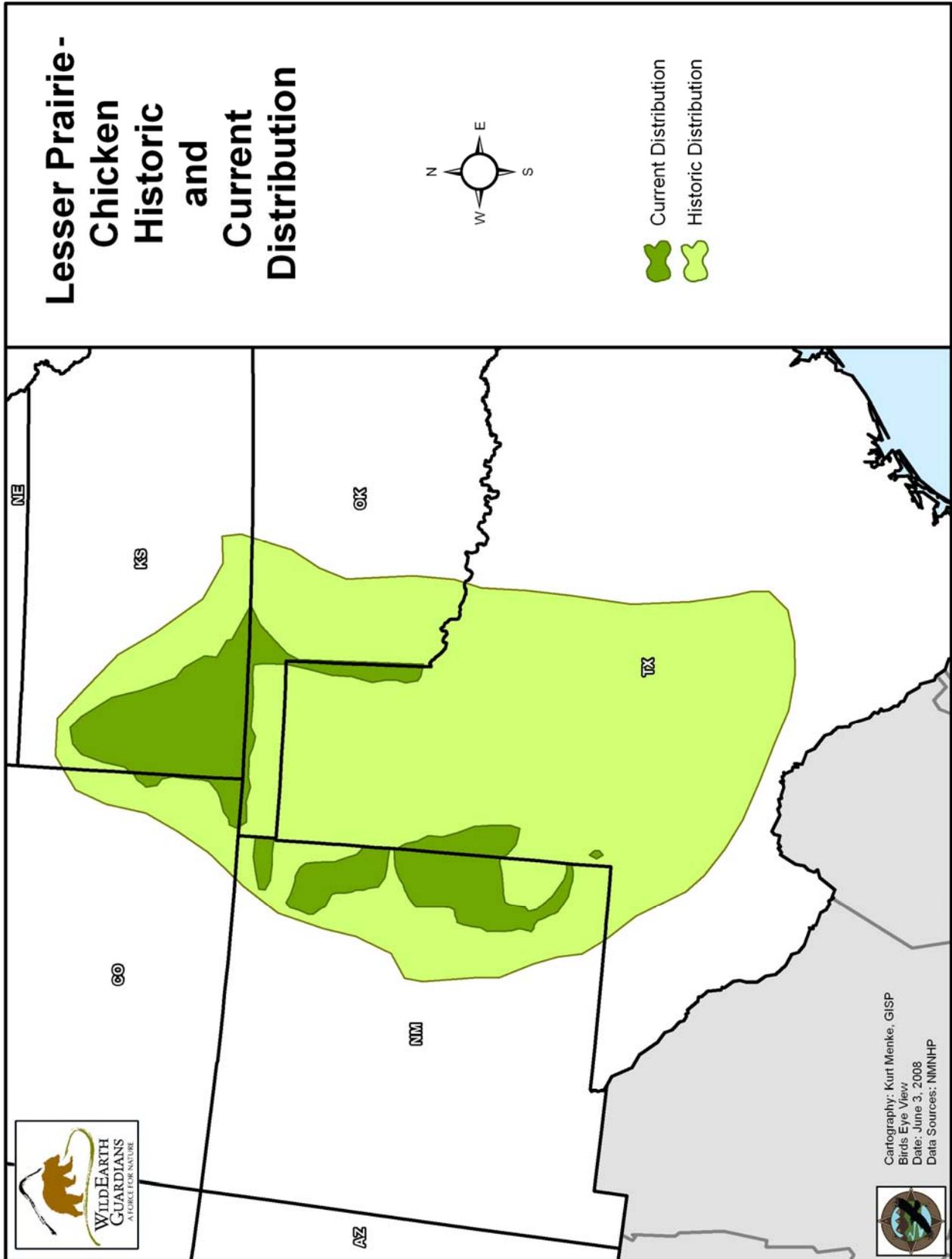
As LPC habitat is lost and degraded, habitat patches of 25,000 acres will be increasingly difficult to find. Bidwell (2002: 7) noted that “the effect of each additional fragmentation influence is magnified” as total habitat is reduced. Conservation of LPC habitat on public land may be particularly important. The USFWS has noted that, although federal lands comprise only five percent of currently occupied habitat, management of land uses such as livestock grazing, oil and gas extraction, and wind energy development on federal lands within both current and historic LPC range would be “of particular relevance to the future listing status of the species.”³³

³¹ Wildlife Habitat Management Institute. 1999. Lesser Prairie-Chicken (*Tympanuchus pallidicinctus*). Fish and Wildlife Management Leaflet No. 6. Natural Resources Conservation Service, Wildlife Habitat Management Institute. Madison, MS; Wildlife Habitat Council. Silver Spring, MD. (September 1999).

³² Bidwell, T. (2002): 3.

³³ 70 Fed. Reg. 24893 (May 11, 2005).

Map 1.



Although LPC historic and current range on Map 1 were rendered using the best geographic information system data available, the current range is probably even smaller than depicted here.

Habitat Loss and Population Decline in Lesser Prairie-Chicken

1. Colorado

Colorado has probably always had the fewest LPC of the five states with historic habitat,³⁴ and recent evidence indicates that the total population in the state (perhaps several hundred birds) has not increased since 1998. The Colorado Division of Wildlife (CDOW) conducted an intensive survey for LPC in 2007 and observed only 74 birds on 18 leks in the state.³⁵ This is 75 percent fewer LPC counted in 2006 (296 LPC) and half the number of leks counted the previous year.³⁶ A series of CDOW LPC survey reports underscore the many issues affecting LPC in Colorado:

(2002) There is no doubt the number of lesser prairie-chickens in Colorado is significantly less this year than that of the past several years. Reduced count effort and reduced area surveyed cannot alone explain away the reduced number of lesser prairie-chicken's [sic] observed this year. The obvious explanation is the lack of good nesting, brooding, and escape cover as a result of the prolonged and increasingly severe drought Colorado has been experiencing for the past several years. Conditions on the plains of southeast Colorado are similar to, if not worse than, the dust bowl days of the 1930's. Soil moisture levels are the lowest ever recorded, vegetative cover in many areas is reduced to residual cover from last summer, and insect populations are very much reduced over the majority of LPC range in Colorado.³⁷

(2003) Although there was a significant increase in search effort put forth in 2003 the number of Lesser Prairie Chickens counted did not increase correspondingly. Several factors contribute to this count. First there were no counts done in Cheyenne County this year and approximately one half the leks active in Kiowa County in 2002 were not surveyed in 2003 due to time constraints. Second the spring of 2002 was exceptionally dry and windy presumably leading to reduced recruitment of new birds into the 2003 population. Colorado has been experiencing one of the most severe droughts on record.³⁸

(2004) Although habitat conditions improved significantly throughout Colorado's LPC range in 2003, when timely spring rains produced ideal nesting and brood rearing conditions, Colorado is still experiencing one of the most severe droughts on record with little expectation of a return to average precipitation in the near future. Time will tell if the increase in LPC counts for 2004 are an indication of an increasing trend in LPC populations or simply a result of increased search effort.³⁹

³⁴ Johnsgard (2002): 41.

³⁵ Verquer, T. 2007. Colorado lesser prairie chicken breeding survey, 2007. (June 7, 2007). Colorado Division of Wildlife. (unpaginated).

³⁶ Verquer, T. (2007).

³⁷ Colorado lesser prairie-chicken breeding survey 2002. Colorado Division of Wildlife.

³⁸ Yost, J. A. 2003. Colorado lesser prairie-chicken breeding survey 2003. Colorado Division of Wildlife: 1.

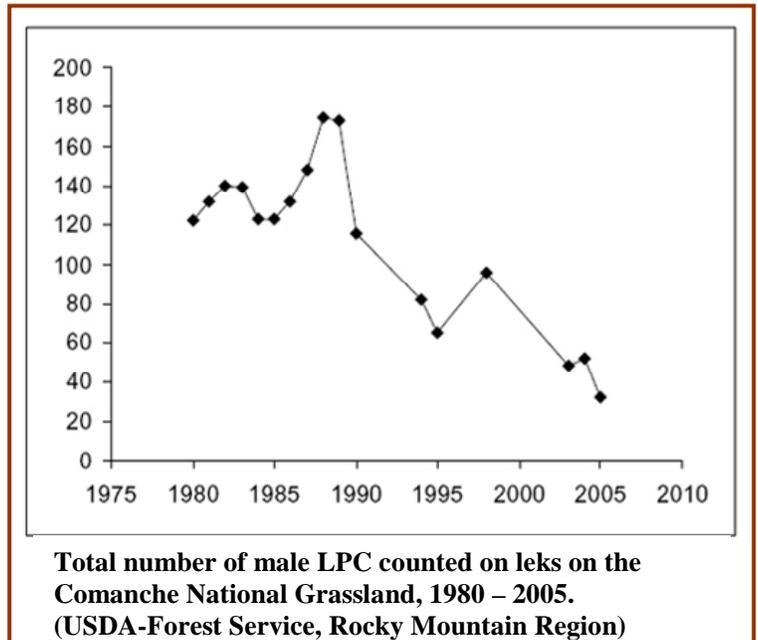
³⁹ Yost, J. A. 2004. Colorado lesser prairie-chicken breeding survey 2004. (revised Aug. 12, 2004). Colorado Division of Wildlife: 2.

(2007) ...hot and dry conditions resulted in less than ideal nesting and especially brood rearing conditions. Grasslands were generally dry and brown, with little green vegetation. This coupled with poor forb production, likely resulting [sic] in negative impacts to LPC production. Due to these hot dry conditions and a dry lightning storm there was a series of lightning caused fires totaling about 15,000 acres in June in the heart of Prowers County LPC range.⁴⁰

LPC presently occur in four of six counties that included LPC historic range in the southeast corner of Colorado (although no active leks were observed in Cheyenne County in 2007).⁴¹ While LPC may be stable or increasing in Kiowa and Prowers counties in the short-term, the species continued its long-term decline in Baca County, where the most LPC still occur in the state.⁴² LPC populations may have been affected by severe winter weather in 2006-2007 that included high winds and very cold temperatures. Storms left deep snow that covered food sources and left little or no cover for LPC. (One CDOW official hoped LPC were able to find refuge from the storms ... in Kansas!)

The Comanche National Grassland (CNG) in Baca County contains core LPC habitat in Colorado.⁴³ The LPC population on the grasslands has declined for over 20 years. Surveys counted between 190-300 male LPC on leks in the CNG in the late 1980s;⁴⁴ 220 total LPC in the late 1990s; 97 total LPC in 2000; 46 total LPC in 2006; and 21 total LPC in 2007.⁴⁵ CDOW identified livestock grazing as a possible factor that initiated this decline.⁴⁶ Now new energy development threatens to extirpate LPC from the CNG.

In late 2007 CDOW learned that the BLM had leased areas in LPC habitat on the CNG for oil and/or gas extraction. The BLM leased the areas after the



⁴⁰ Verquer, T. (2007).

⁴¹ Verquer, T. (2007) (ten LPC were observed in Cheyenne County in 2007, but a lek was not located).

⁴² Verquer, T. (2007).

⁴³ Prenzl, D., Southeast Regional Manager, CDOW, letter to B. Leaverton, Forest Supervisor, Pike & San Isabel National Forests, Cimarron & Comanche National Grasslands, dated Nov. 22, 2007.

⁴⁴ Nesler, T., Wildlife Conservation Section Manager, electronic mail to multiple recipients, in re. "Draft email on the LPC's," dated Nov. 5, 2007. Document received from Colorado Division of Wildlife.

⁴⁵ Trujillo, A., Energy Specialist, Southwest Region Office, CDOW, electronic mail to multiple recipients, in re. "Lesser Prairie Chicken Letter – with Changes," dated Nov. 8, 2007. Document received from Colorado Division of Wildlife.

⁴⁶ Trujillo (2007), e-mail.

controlling management plan that authorized mineral leasing on the grasslands had expired. Indeed, BLM did not even inform CDOW about the new leases, in contravention of the (expired) management plan. Forest Service wildlife biologists in the Forest Supervisor's office for the Pike and San Isabel National Forests, Cimarron and Comanche National Grasslands were also unaware of the leases (until notified by the members of the public). USFWS requested a meeting on November 14, 2007, to conduct an informal consultation (pursuant to the ESA, Section 7) to review the impacts of mineral development on LPC on the grasslands. CDOW drafted the following list of requests for BLM for the meeting:

1. The removal of all LPC core habitat on the Comanche Grasslands from future oil and gas leases.
2. Consider rescinding the most recent leases of LPC habitat on the Comanche Grasslands or if not, at least apply our list of more stringent stipulations.
3. Initiating [sic] the NEPA process to update the 1992 Oil and Gas Leasing FEIS.
4. Rescind all LPC Timing Restriction stipulations and replace them with NSO.
5. Institute 'Adaptive Management' to emerging issues.
6. Work with USFWS, NFS and DOW on the long-term recovery of the LPC.⁴⁷

The November 14 meeting was cancelled.

Given the importance of the issue, CDOW next sent a letter to the Forest Supervisor of the Pike and San Isabel National Forests, Cimarron and Comanche National Grasslands requesting that the Forest "rescind and/or purchase back recent oil & gas leases within core Lesser Prairie Chicken habitat within the Comanche National Grasslands."⁴⁸ CDOW further requested the withdrawal of CNG land with LPC from future leasing until new environmental analyses are completed. CDOW warned:

The ongoing mineral leasing of the remaining core habitats portends greater exploration and development and is an action with readily foreseeable on-the-ground consequences. Additionally, CDOW is concerned that additional leasing of important LPC habitat in view of severely declining population numbers will make defending against future ESA listing petitions difficult and may ultimately contribute to ESA listing and Federal protection for the LPC.⁴⁹

In November 2006, BLM included these oil and gas leases in a public sale of 16 parcels totaling 8,500 acres on and around the CNG that contained occupied or suitable LPC habitat. In May 2007, BLM offered 9 parcels containing approximately 6,000 acres of suitable or occupied LPC habitat.⁵⁰ Despite government agencies and conservation groups raising concerns about leasing mineral development in the heart of the LPC's remaining habitat in Colorado,⁵¹ BLM proceeded with allowing these parcels to be leased for oil and gas drilling.

⁴⁷ Trujillo (2007), e-mail.

⁴⁸ Prenzlow (2007), letter.

⁴⁹ Prenzlow (2007), letter.

⁵⁰ BLM lease sale notices available at www.blm.gov/co/st/en/BLM_Programs/oilandgas/leasing.html.

⁵¹ WildEarth (Forest) Guardians' protest of the November 2006 sale was submitted on October 24, 2006; WildEarth (Forest) Guardians' protest of the May 2007 sale was submitted April 25, 2007. Both were dismissed by the BLM.

2. Kansas

The southwest quadrant of Kansas may be the last remaining stronghold for LPC throughout its current range. LPC occupy 31 of 39 counties the species historically occupied in Kansas and total population was estimated at 10,000-15,000 in the early 1990s (although the basis for this estimate is unknown).⁵² Unfortunately, evidence suggesting a resurgence in LPC numbers in Kansas in recent years has not been sustained. The species experienced a downward trend from 1964-1998 (according to roadside lek surveys).⁵³ The latest published survey data from the Kansas Department of Wildlife and Parks documented a “highly significant” 38 percent decline from 2006 to 2007 in LPC counted per square mile in eleven counties (see Figure 1).⁵⁴ Severe drought in spring and summer 2006 appears to have contributed to low survey counts in 2007.⁵⁵

Low juvenile survival appears to be a contributing cause to long-term population declines in Kansas. In a study conducted in 2000-2003 in southwestern Kansas, annual juvenile survival was only 17.7 percent and the survival rate from hatch to March 31 the following year was only 11 percent. According to the study, even if all other vital rates (nest success, brood survival, and mortality) remained the same, annual juvenile survival rates must be increased from 11 percent to 27 percent for population stability. Overall nest success would need to increase from 26 percent (documented in this study) to 65 percent to achieve population stability (population recovery would require higher rates).⁵⁶ In other research, a 2000 study reported an annual juvenile survival rate of only 19 percent,⁵⁷ and a 2003 dissertation concluded that “...efforts to increase nesting success and chick survival are paramount” in LPC.⁵⁸

LPC in Kansas are threatened by oil and gas development, livestock grazing, the loss of habitat enrolled in the CRP, and hunting. A recent report discussed avoidance by lesser prairie-chickens of oil and gas structures and potential disturbance from noise generated by oil and gas machinery on the Cimarron National Grassland in southwest Kansas.⁵⁹ Recent lease sales by the BLM have included parcels on the Cimarron National Grassland that include potential LPC habitat.⁶⁰ A 2003 dissertation also documented LPC avoidance of human activity and structures and suggested that, “[f]uture impact assessments and conservation plans should consider the

⁵² Johnsgard (2002): 41 (citing others).

⁵³ Jensen, W. E., D. A. Robinson, R. D. Applegate. 2000. Distribution and population trend of lesser prairie-chicken in Kansas. *Prairie Natur.* 32(3): 169-176.

⁵⁴ Rodgers, R. 2007. Prairie chicken lek survey - 2007. Performance Report, Statewide Wildlife Research Surveys. Grant no. W-39-R-13. Kansas Department of Wildlife and Parks.

⁵⁵ Rodgers (2007).

⁵⁶ 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, KS.

⁵⁷ Jamison, B. E. 2000. Lesser prairie-chicken chick survival, adult survival, and habitat selection and movement of males in fragmented rangelands of southwestern Kansas. M.S. thesis. Kansas State University. Manhattan, KS.

⁵⁸ Hagen, C. A. 2003. A demographic analysis of lesser prairie-chicken populations in southwestern Kansas: survival, population viability and habitat use. Ph.D. Diss. Kansas State University. Manhattan, KS.

⁵⁹ Elson, M. 2000. Movements and habitat selection of lesser prairie-chickens on Cimarron National Grassland. Report to USDA-Forest Service and Kansas Dept. of Wildlife and Parks. (November 2000). Pittman (2003) also documented prairie-chicken avoidance of oil and gas structures and buildings.

⁶⁰ BLM lease sale notices are available from multiple sources, including the Internet. WildEarth (Forest) Guardians has protested mineral leasing on parcels where the effects of development may affect LPC.

construction or presence of anthropogenic features as a potential detriment to habitat suitability for lesser prairie-chickens.”⁶¹ That study reported that the majority of mortality was due to predation (which is exacerbated by habitat degradation and fragmentation), powerline collisions, and hunting.⁶²

Despite the species’ candidacy for ESA listing, hunting for LPC is still permitted in Kansas. The estimated annual kill from 1986-2006 averaged 711 birds; the estimated annual kill from 1996-2006 averaged 266 birds. As many as 6,200 LPC were taken by hunters in 1982.⁶³

One author predicted that conversion of grasslands to irrigated agriculture will eliminate sand sagebrush habitat in southwest Kansas, leading to the eventual extirpation of LPC in the state.⁶⁴ Jensen et al. (2000) noted the need to restore sand sagebrush in Kansas to benefit lesser prairie-chickens.⁶⁵ Walker (2000) similarly recommends conservation of sand sagebrush in Kansas to facilitate prairie-chicken recovery, warning against the destruction or overgrazing of this habitat.⁶⁶

Another threat to lesser prairie-chickens in Kansas and other states is loss of habitat and disturbance from wind energy development (wind farms). USFWS recommended in 2003 that wind turbines not be placed within 5 miles of known prairie grouse leks. However, the agency underscored in 2004 that its recommendation was voluntary guidance, despite the threat posed by wind farms in LPC habitat.⁶⁷

Since 1998, scientists have identified a new threat to LPC—hybridization with greater prairie-chickens. Scientists recently reported on hybridization between lesser and greater prairie-chickens in a 250,000 ha (61,776 acres) area in western Kansas.⁶⁸ Of the 96 lek sites observed in the study, 52 were exclusively inhabited by greater prairie-chickens, 17 contained only LPC, and 27 leks included males of both species. Twelve hybrid birds were also observed on nine leks. The researchers speculate that hybridization between greater and lesser prairie-chickens may be the result of human land uses, which attract and/or confine both species to the same areas.

⁶¹ Hagen (2003): 5.

⁶² Hagen (2003).

⁶³ Data source: Kansas Department of Wildlife and Parks estimated LPC harvest report.

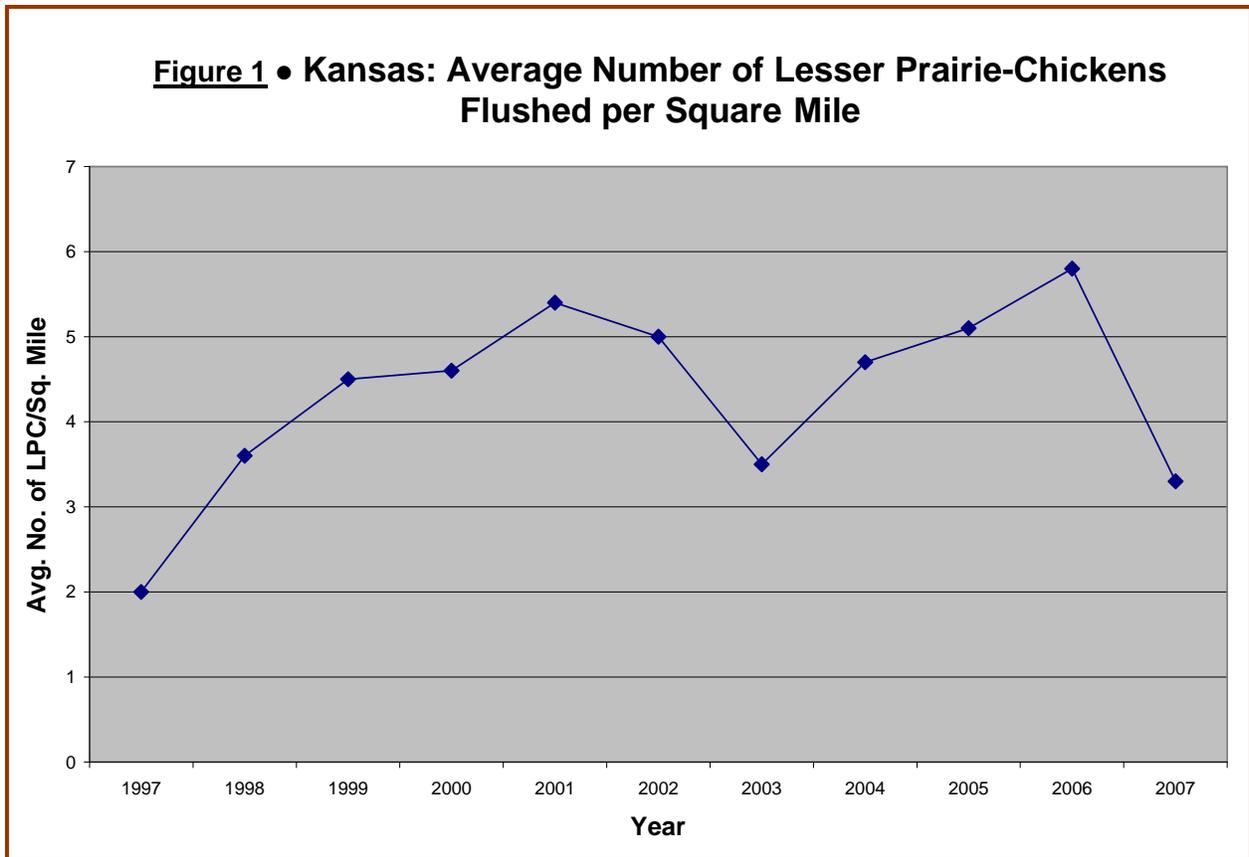
⁶⁴ Johnsgard (2002): 40.

⁶⁵ Jensen et al. (2000).

⁶⁶ Walker, T. L. 2000. Movements and productivity of lesser prairie chickens in southwestern Kansas. Final report to Kansas Dept. of Wildlife and Parks. (July 1, 2000).

⁶⁷ Manville (2004): 1.

⁶⁸ Bain, M. R. and G. H. Farley. 2002. Display by apparent hybrid prairie-chickens in a zone of geographic overlap. *Condor* 104: 683-687.



3. New Mexico

Once abundant in eastern New Mexico, the lesser prairie-chicken has been extirpated from 56 percent of its former range in the state and persists only in sparse and scattered populations in another 28 percent of current range (see Map 1). The core remaining populations occupy only 16 percent of the species' historic range.⁶⁹ The sparse and scattered populations of LPC in New Mexico are vulnerable to extinction from genetic and/or environmental factors.⁷⁰ The New Mexico Department of Game and Fish (NMDGF) estimated the LPC population in the state at 6,300 in 2007.⁷¹

NMDGF surveys indicate that LPC populations may have increased in recent years, although a severe drought appears to have affected LPC recruitment in 2006.⁷² NMDGF and BLM surveys reported declining populations in 2007.⁷³ Also, while surveys indicate that populations are increasing in some areas in the state (east-central NM), LPC populations are or may become

⁶⁹ Bailey, J. A. and S. Williams. 2000. Status of the lesser prairie-chicken in New Mexico, 1999. *Prairie Natur.* 32(3): 157-168; J. A. Bailey. 2002. Status of the lesser prairie-chicken in southeast New Mexico and southeast Chaves County, 2001. Unpublished report. Santa Fe, NM: 5.

⁷⁰ Bailey and Williams (2000).

⁷¹ Beauprez (2007).

⁷² Beauprez (2007).

⁷³ Beauprez (2007); S. Bird, Wildlife Biologist, memorandum to D. Morgan, Area Field Manager, BLM-CFO, re. "2007 Lesser Prairie-Chicken Survey Report and Recommendations" (undated). BLM, Carlsbad Field Office. Carlsbad, NM.

extirpated in other areas (northeastern NM, southeastern NM). Finally, the increased numbers counted in east-central New Mexico could also be the result of increased census effort in recent years.⁷⁴

Northeastern New Mexico. No leks have been detected in northeastern New Mexico since 2003 (defined as the area north of 35° N). LPC are probably extirpated from their historical range in Union, Harding and portions of north Quay counties.⁷⁵

East-central New Mexico. The core of remaining LPC populations in New Mexico occur in south Roosevelt, north Lea, and northeast Chaves counties. Recent data indicate that LPC populations may be the most stable on “Prairie Chicken Areas” (PCAs) managed by NMDGF in this area. Surveys found 164 LPC leks on or near PCAs in 2007 (compared to 69 in 2001; 102 in 2003; and 135 in 2005).⁷⁶ However, even prairie-chickens on specially designated PCAs are affected by drought, disturbance and other known factors and stochastic events: 757 LPC were counted on 89 leks on PCAs in 2007, as compared to 1,117 LPC observed on 183 leks in 2006 (representing a 32 percent decline in one year).⁷⁷ Unfortunately, PCAs are scattered and relatively small, ranging in size from 29 to 7,800 acres. As one USFWS official noted, while LPC populations may be increasing on lands where NMDGF has influence, habitat management and LPC status “[is] pretty dismal everywhere else.”⁷⁸ The small size of these areas also may not be sufficient to sustain LPC long-term (see “Habitat Patch Size” above).

The BLM Roswell Field Office (RFO) observed 692 LPC on 68 leks (9.6 LPC/lek) within its jurisdiction in 2007. These numbers are reduced from 1099 LPC counted on 94 leks (10.6 LPC/lek) in 2006, although the 2007 census is still the highest recorded total in the RFO since 1988.⁷⁹ The RFO’s survey area includes the Caprock Wildlife Habitat Area north of U.S. Highway 380. Recent data indicate that populations are increasing in the area (although the numbers are still significantly below censuses from the 1970s).

Sixty-five LPC were also observed on 6 leks on private land in east-central New Mexico in 2007.⁸⁰

Southeastern New Mexico. Unfortunately, LPC will probably become extirpated in southeastern New Mexico, south of Highway 380 (south of 33° N). LPC habitat is heavily impacted by anthropogenic factors in this region⁸¹ and the remaining grassland habitat may also be sensitive to periodic drought. NMDGF detected no leks in its 2007 surveys of the area and previous data

⁷⁴ Beauprez (2007); S. Manes, electronic mail to K. Collins, re. “State (NM) recommends against listing prairie chicken,” dated Jan. 30, 2007. Document received from U.S. Fish and Wildlife Service.

⁷⁵ Beauprez (2007).

⁷⁶ Beauprez (2007).

⁷⁷ Beauprez (2007).

⁷⁸ S. Manes, electronic mail to K. Collins, re. “State (NM) recommends against listing prairie chicken,” dated Jan. 30, 2007. Document received from U.S. Fish and Wildlife Service.

⁷⁹ Beauprez (2007) and BLM data.

⁸⁰ Beauprez (2007).

⁸¹ Best, T. L., K. Geluso, J. L. Hunt, L. A. McWilliams. 2003. The lesser prairie-chicken (*Tympanuchus pallidicinctus*) in southeastern New Mexico: a population survey. *Texas J. of Sci.* 55: 225-234.

indicate that the population remains low and continues to decline.⁸² The RFO found only one lek with 8 birds in 2007. This is down from 3 leks with 14 birds in 2006.⁸³ This same area had 51 active leks in the 1980s. Snyder (1967) could have predicted the loss of LPC south of Hwy. 380 (see “Drought, Climate Change” above) as drought and climate change have dried out the habitat and rendered it inhospitable to LPC.

Additional data collected by the BLM Carlsbad Field Office (CFO) indicate that LPC are declining in west-central Lea County (also south of 33° N). The CFO conducted a “listening” survey intended to detect LPC males booming on leks in Lea County. BLM personnel traveled 99 routes to listen for LPC at 1,119 listening points and 39 historic leks across a 311,863-acre area in 2007. LPC were heard a total of ten times. Nine of 39 leks were determined to be active, and one lek was deemed “semi-active.” These and previous findings indicate the LPC population is declining in central Lea County. A 1987 survey reported a high of 160 birds on 20 leks in the same area, a figure that had declined to only six birds on one lek in 1998, and to only two birds on one active lek in 2001. CFO personnel reported finding one active lek with seven males northeast of Eunice in 2002.⁸⁴

In 2004, BLM documented two active booming grounds in the CFO.⁸⁵ Agency staff noticed noise from unmuffled pump jacks and compressor stations and reported that, “[d]uring the survey, the compressor engine shut off. Moments later, LPC began vocalizing. It was the first time since 1988 that LPC were recorded being in that area.”⁸⁶ The CFO documented the same issue in 2007, noting that “[i]ndustrial noises were dominant throughout the survey area.” This noise and disturbance constitutes an important threat to the species by interfering with LPC breeding. With the continual din of pump jacks, compressors and related noise, female LPC are as unlikely to hear male booming as the humans who are surveying for these birds.

Based on these data, it is evident that LPC has been or will be extirpated from its historic range in northeastern New Mexico and south of 33° N. LPC persist in sparse and isolated populations in Curry County, north Roosevelt County and in southeast Chaves County. The remaining core LPC populations in New Mexico occupy only 16 percent of the species’ historic range on private lands, BLM public land (including the Caprock Wildlife Habitat Area) and NMDGF PCAs in south Roosevelt and north Lea counties, and northeast Chaves County.⁸⁷

The decline of LPC in New Mexico can be traced to habitat loss, degradation and fragmentation. Bailey et al. (2000) found that the majority of areas surveyed in east-central and southeastern New Mexico are poor nesting habitat (4% good potential nesting habitat, 16% fair, and 80% poor or zero potential).⁸⁸ The researchers noted, “the preponderance of poor lesser prairie-chicken

⁸² Beauprez (2007).

⁸³ BLM data on file with WildEarth Guardians.

⁸⁴ Davis, D. 2002. Survey for active lesser prairie-chicken leks: spring 2002. Federal Aid Report W-104-R-42. New Mexico Dept. of Game and Fish. Santa Fe, NM.

⁸⁵ Allen, T., Biological Technician, BLM-CFO, memorandum to N. Gonzalez, Area Field Manager, BLM-CFO, dated July 29, 2004.

⁸⁶ Allen (2004): 3.

⁸⁷ Bailey (2002): 5.

⁸⁸ Bailey, J. A., J. Klingel, C. A. Davis. 2000. Status of nesting habitat for lesser prairie-chicken in New Mexico. *Prairie Natur.* 32(3): 149-156.

nesting habitat observed in our study supported a hypothesis that lack of quality nesting habitat presently limits lesser prairie-chicken numbers and has been involved in the historic and recent declines of the species in New Mexico.”⁸⁹ Bailey and Williams (2000) reported threats to LPC in the state from livestock grazing in nesting habitat (and livestock grazing levels are rarely reduced during periods of drought), and loss of sand sagebrush and shinnery oak habitat.

Oil and gas extraction is a major threat to LPC in New Mexico.⁹⁰ The BLM adopted timing restrictions in 1988 to protect LPC during their breeding season, but the agency then allowed hundreds of waivers to these restrictions. While BLM continues to grant exceptions to timing stipulations for LPC, the number of exceptions granted sharply declined after WildEarth (Forest) Guardians, the New Mexico Wildlife Federation, and the Chihuahuan Desert Conservation Alliance sued the agency in March 2005.⁹¹ Altogether, the BLM Carlsbad Field Office has granted 516 exceptions to the LPC chicken timing stipulation since it was adopted in 1988, but now grants fewer than ten waivers per year (Table 1).

Table 1. BLM Approvals of Waivers to LPC Timing Limitations.⁹²

Year	No. of Approvals
2000	88
2001	237
2002	92
2003	59
2004	26
2005	3
2006	3
2007	8
Total	516

In 2008, the BLM Roswell and Carlsbad Field Offices approved a Resource Management Plan Amendment (RMPA) to address LPC and sand dune lizard. The RMPA reported that 72 percent of the planning area (comprising 1.15 million acres) is already leased for oil and gas extraction.⁹³ The RMPA prescribed mineral development mitigation for LPC, including timing limitations (which now run from March 1-June 15) and providing additional restrictions on waivers to these limitations; closure of LPC occupied or suitable habitat to new leasing, unless reclamation efforts compensate 2:1 for the new acreage disturbed; modification of Plans of Development and Conditions of Approval upon BLM request, to address impacts of development on LPC; and use

⁸⁹ Bailey et al. (2000): 154.

⁹⁰ Bailey and Williams (2000).

⁹¹ *Forest Guardians et al. v. Theiss et al.*, Civil No. 05-0276.

⁹² Data source: BLM Carlsbad Field Office. Data previously published in Forest Guardians. 2007. No Rest for the Weary: Why Seasonal Oil and Gas Closures Aren't Protecting Wildlife in New Mexico. Forest Guardians. Santa Fe, NM. (December 2007).

⁹³ BLM. 2008. Special Status Species Record of Decision and Approved Resource Management Plan Amendment. April 2008. Bureau of Land Management, Pecos District Office, Roswell and Carlsbad Field Offices. Roswell, NM: unpaginated, Table 2.

of No Surface Occupancy stipulations in some areas. However, suitable or occupied habitat may be leased if the LPC is no longer an ESA Candidate Species.⁹⁴

The RMPA also establishes an Area of Critical Environmental Concern (ACEC) for the LPC and sand dune lizard that includes 37,082 acres of public land surface and 46,902 acres of federal mineral estate. It includes a prohibition on new oil and gas leasing and limitations on development of existing leases. The ACEC is a much-reduced version of a larger ACEC proposed by WildEarth (Forest) Guardians and other organizations in December 2002, which included 183,000 acres.⁹⁵

While the RMPA improves the status quo for LPC on BLM lands in New Mexico by creating a LPC ACEC and closing other areas to mineral leasing, the majority of the planning area has already been leased for oil and gas extraction; there are already adverse impacts from habitat fragmentation and vertical structures resulting from development of these leases; the remaining population in the CFO is so small that it will likely become extirpated; and the new leasing closure is contingent on LPC's continued candidacy for listing under the ESA.

In addition, oil and gas development activities are occurring on state and private lands in New Mexico as well. While the New Mexico State Land Office (SLO) withdrew 109,000 acres of lesser prairie-chicken habitat from oil and gas leasing in 2004,⁹⁶ the SLO has leased 1.6 million acres for mineral production since May 2000, much of which is within LPC current range (Table 2).⁹⁷

Table 2. New Mexico State Lands Oil and gas Leasing, 2000-2007.

Year	Acres Leased	Comment
2000	186,793.79	Only includes May-Dec 2000
2001	213,478.38	
2002	179,723.20	
2003	348,278.01	
2004	204,275.30	
2005	197,142.69	
2006	150,320.67	
2007	134,994.76	
Total	1,615,006.80	

The BLM has identified encroachment by mesquite, and fragmentation and disturbance related to powerlines, pipelines and roads as additional threats to LPC in New Mexico.⁹⁸

⁹⁴ BLM (2008): unnumbered p. 24.

⁹⁵ See Forest Guardians et al. 2002. Lesser prairie-chicken (*Tympanuchus pallidicinctus*) Area of Critical Environmental Concern. A petition submitted to the Bureau of Land Management. (December 2007).

⁹⁶ New Mexico State Land Office. (News release) (Oct. 15, 2004).

⁹⁷ State leasing data on file with WildEarth Guardians.

⁹⁸ S. Bird, Wildlife Biologist, memorandum to D. Morgan, Area Field Manager, BLM-CFO, re. "2007 Lesser Prairie-Chicken Survey Report and Recommendations" (undated). BLM, Carlsbad Field Office. Carlsbad, NM.

4. Oklahoma

The cumulative effects of habitat degradation and fragmentation, climatic factors, reduced habitat patch size, lack of habitat corridors, and declining population viability threaten the continued existence of LPC in Oklahoma.

In 2007, the Oklahoma Department of Wildlife Conservation (ODWC) reported that,

A summary of data collected to date illustrates an alarming long term downward trend in population indices in all counties. These data suggest not only the necessity of continuing to monitor prairie chicken populations, but also suggest a need to refine prairie chicken management objectives on a range-wide basis.⁹⁹

ODWC published the same conclusion in 2002¹⁰⁰ and has noted that LPC populations in Oklahoma have declined more consistently than in Texas or New Mexico.¹⁰¹

The most recent LPC prairie-chicken monitoring report from ODWC documented only 19 prairie-chickens on four of ten historic lek sites in Oklahoma.¹⁰² This is reduced from monitoring data reported in 2002, when ODWC counted 72 birds on six of ten lek sites.¹⁰³ These data are also in contrast with average annual counts of over 100 males in 1988-1991.¹⁰⁴

In 1999, ODWC began counting all LPC flushed from leks, rather than monitoring male attendance at leks. The average number of LPC flushed per lek decreased from 5.6 LPC/lek in 2006 to 5.2 LPC/lek in 2007 (see Figure 2).

Overall, LPC range in Oklahoma has decreased by 64 percent and prairie-chickens occur in only seven¹⁰⁵ of 22 counties¹⁰⁶ where they were historically present (although the 2007 ODWC monitoring effort only included six counties). LPC population was estimated at less than 3,000 breeding individuals in 2000,¹⁰⁷ or 20 percent of the 1940 population.¹⁰⁸

Threats to LPC in Oklahoma include oil and gas extraction. Oklahoma lek survey reports indicate that noise from gas compressors is audible at some LPC booming grounds, as well as

⁹⁹ Schoeling, D. 2007. Performance report, Upland Game Investigations, July 1, 2006 - June 30, 2007, Monitoring greater and lesser prairie chickens. Grant no. W-82-R-46. Oklahoma Department of Wildlife Conservation. Oklahoma City, OK. (Aug. 3, 2007).

¹⁰⁰ Horton, R. 2002a. Performance report, Upland Game Investigations, July 1, 2001 - June 30, 2002, Monitoring greater and lesser prairie chickens. Grant no. W-82-R-41. Oklahoma Department of Wildlife Conservation. Oklahoma City, OK.

¹⁰¹ Oklahoma Department of Wildlife Conservation (ODWC). 1998. Landscape-level evaluation of the decline of the lesser prairie chicken in Oklahoma, Texas, and New Mexico. Grant No. AP-96-201W. Oklahoma Department of Wildlife Conservation. Oklahoma City, OK.

¹⁰² Schoeling (2007): Table 1.

¹⁰³ Horton (2002a).

¹⁰⁴ Horton, R. 2002b. Distribution and abundance of lesser prairie-chicken in Oklahoma. *Prairie Natur.* 32(3): 189-195.

¹⁰⁵ Bidwell (2002): 1.

¹⁰⁶ Johnsgard (2002): 39 (citing others).

¹⁰⁷ Horton (2002b).

¹⁰⁸ Johnsgard (2002): 39.

noise and potential disturbance from vehicular traffic associated with minerals development.¹⁰⁹ A recent publication by the Oklahoma Cooperative Extension Service on greater prairie-chicken recommended muffling pumpjacks and other sources of noise and discouraged habitat fragmentation from wind farms, coal bed methane development, roads, powerlines, and other anthropogenic structures.¹¹⁰ Strangely, this same recommendation was not made for lesser prairie-chickens, even though LPC

avoid even high quality habitat within 200 meters of a single oil or gas well pump, and they avoid the area within 600 meters of an improved road, and within 1,000 meters of an elevated powerline, regardless of whether avian predators are present.¹¹¹

Regardless, the BLM continues to lease areas for oil and gas drilling in LPC current range in Oklahoma.¹¹²

Another threat to prairie-chickens in Oklahoma is loss of native shrub habitat, which ODWC regards as especially significant in the state, relative to other states within the species' range. In a study conducted in western Oklahoma, the Oklahoma and Texas panhandles, and east-central New Mexico, the agency reported that the loss of shrub habitat was correlated with a negative population trend in LPC. The agency found that remaining native prairie may not be sufficient to sustain LPC due to grazing use.¹¹³ The report further stated that,

Because the historic leks that we studied were selected for their long-term population data, they may represent those areas thought to be the best habitat in each state. If so, the observation of only a single increasing lek [out of 12] is disturbing.¹¹⁴

The ODWC report also found that dense, ungrazed habitat on lands enrolled in CRP was the primary new habitat observed near new leks, although the report's authors were uncertain whether this habitat was benefiting LPC. Areas with stable LPC leks were found to have a mean cover of shrub-dominated habitat of 82.9 percent versus 62.5 percent for areas with declining leks. Total landscape change in shrub-dominated habitat was measured at a nearly 11 percent loss per decade, as compared to 3 percent in Texas and 1 percent in New Mexico.¹¹⁵ The ODWC report also noted that mechanical and herbicidal control of shrubs will reduce availability of desirable forbs and associated invertebrates for LPC.¹¹⁶

¹⁰⁹ Various ODWC lek survey data sheets (on file with WildEarth Guardians).

¹¹⁰ Bidwell, T. (ed.). 2003. Ecology and Management of the Greater Prairie-Chicken. OSU Extension Circular E-969. Oklahoma State University, Division of Agric. Sci. and Nat. Res., Oklahoma Coop. Ext. Serv. Stillwater, OK: 11.

¹¹¹ Bidwell, T. (2002): 7.

¹¹² BLM lease sale notices are available from multiple sources, including the Internet. WildEarth (Forest) Guardians has protested mineral leasing on parcels where the effects of development may affect LPC.

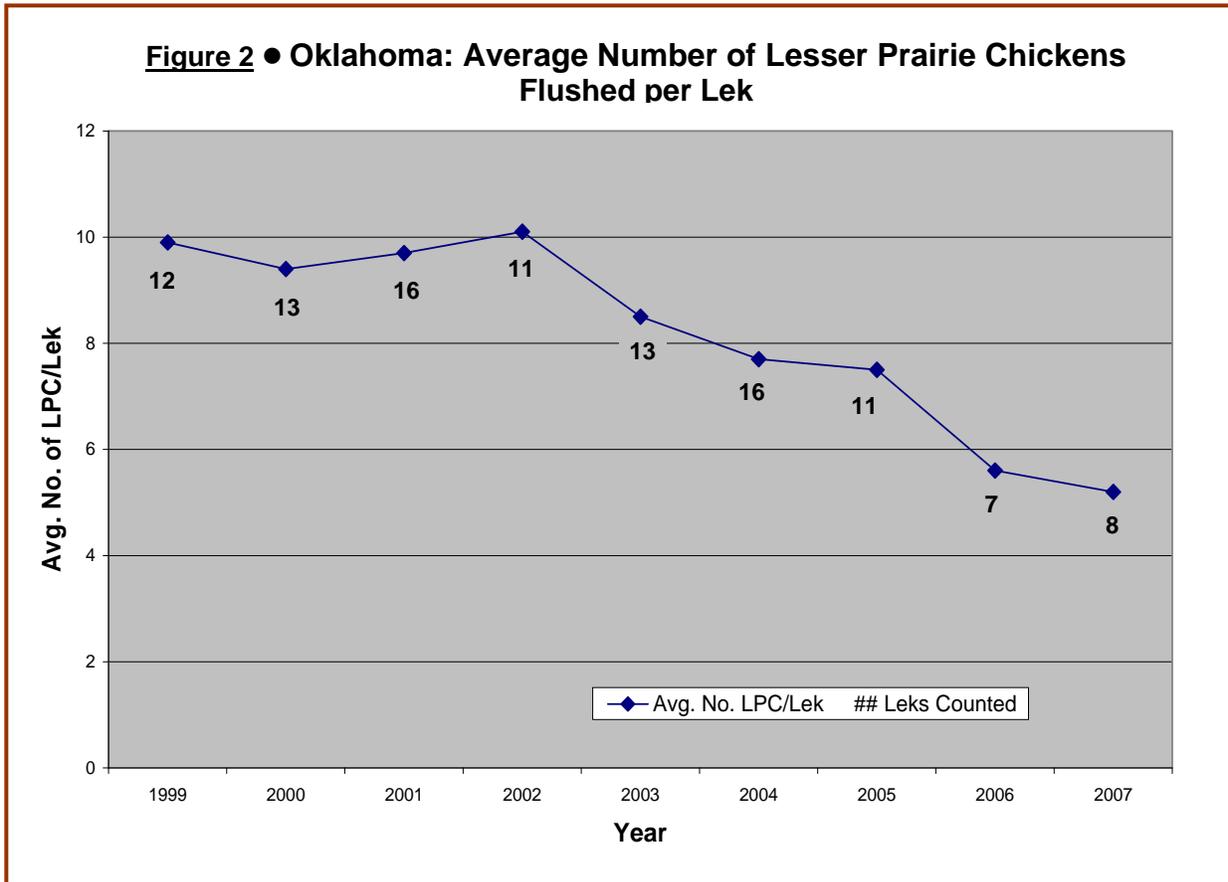
¹¹³ ODWC (1998).

¹¹⁴ ODWC (1998): 13.

¹¹⁵ Johnsgard (2002): 40.

¹¹⁶ ODWC (1998): 13.

Oklahoma lek survey data sheets also indicate the presence of ring-necked pheasants behaving aggressively toward lesser prairie-chickens. This has been noted to be a conservation concern.¹¹⁷



5. Texas

Texas may have been the center of LPC historic range¹¹⁸ and LPC were once numerous in West Texas and the Texas Panhandle.¹¹⁹ As many as 2 million LPC were estimated to occur in Texas prior to the 1900s.¹²⁰ Occupied range has been significantly reduced in Texas, and LPC presently occur in only two discernable populations in the state: a sliver of habitat in the northeastern corner of the Panhandle, and a small area in the Permian Basin in the southwestern portion of the Panhandle (see Map 1). LPC habitat is fragmented and range contraction and (long-term) population decline in all populations is evident in the data gathered by the Texas Parks and Wildlife Department (TPWD). Approximately 60 percent of lesser prairie-chicken habitat in

¹¹⁷ Mote, K. D., R. D. Applegate, J. A. Bailey, K. E. Giesen, R. Horton, J. L. Sheppard (tech eds.). 1998. Assessment and Conservation Strategy for the Lesser Prairie-Chicken (*Tympanuchus pallidicinctus*). Kansas Dept. of Wildlife and Parks. Emporia, KS. (unpaginated).

¹¹⁸ Johnsgard (2002): 32.

¹¹⁹ Lionberger, J. E. 2008. Performance report: lesser prairie-chicken monitoring and harvest recommendations. Federal Aid Grant No. W-126-R-16. Texas Parks and Wildlife. (May 8, 2008).

¹²⁰ Hagen and (2005): unpaginated (citing Litton 1978).

Texas has been lost in sixty years.¹²¹ The species has suffered “severe losses because of landscape changes since the turn of the century.”¹²² The current population in Texas was estimated at 3,000 LPC in 2001,¹²³ although other estimates are higher, at 5,000-10,000 LPC.¹²⁴

LPC status is dire in Texas. Researchers recently warned that,

Based on declining populations and elimination of critical habitat, the long-term status of the lesser prairie-chicken in the Texas Panhandle is alarmingly reminiscent of the status of the Attwater’s prairie-chicken (*T. cupido attwateri*) in south Texas during the 1960s...¹²⁵

TPWD surveys indicate further declines in the northeastern Panhandle and Permian Basin populations in 2007. The northeastern Panhandle surveys estimated 5.2 LPC/lek and the Permian Basin surveys estimated 8.9 LPC/lek (see Figure 3). These data are reduced from the 2006 surveys, which estimated 9 LPC/lek and 13 LPC/lek, respectively.¹²⁶

Despite LPC’s precarious status in Texas, LPC habitat in the state continues to be used for cultivated agriculture, livestock grazing, and oil and gas extraction. Limited hunting for LPC is also allowed on certain properties enrolled in a state conservation program. Hunting resulted in an average annual kill of 121 birds between 1997-2002.¹²⁷ A 2000 review of LPC status in Texas found that there has been a decrease in occupied range due to conversion to cropland, livestock grazing, and oil and gas development.¹²⁸ Crop conversion is contributing to LPC habitat loss in the High Plains region (southwestern Panhandle), and brush encroachment and grassland fragmentation are degrading LPC habitat in the Rolling Plains area (northeastern Panhandle) of the Texas Panhandle.¹²⁹

In apparent recognition that USFWS may list LPC as “threatened” or “endangered” under the ESA, the USFWS and TPWD began offering private landowners the opportunity to become involved in a Candidate Conservation Agreement with Assurances (CCAA) for LPC in 2006. The purpose of a CCAA is to shield landowners from possible restrictions that may result from a species listing under the ESA. Landowners who enroll in a CCAA must agree to maintain their private properties in accordance with predetermined guidelines. If they adhere to the guidelines, then they will not be subject to additional land use restrictions if LPC are protected under the ESA.

Unfortunately, the CCAA developed for LPC allows many land uses that are detrimental to the species: “prescribed grazing,” “prescribed burning,” and “brush management” are among listed

¹²¹ Sullivan, R. M., J. P. Hughes, J. E. Lionberger. 2000. Review of the historical and present status of the lesser prairie-chicken (*Tympanuchus pallidicinctus*) in Texas. *Prairie Natur.* 32(3): 177-188.

¹²² Lionberger (2008): 1.

¹²³ Johnsgard (2002): 35.

¹²⁴ Wu, X. B., N. J. Silvy, F. E. Smeins, R. C. Maggio. 2001. Landscape changes in lesser prairie chicken habitat in the Texas panhandle. Report to the Texas Parks and Wildlife Department. (October 2001).

¹²⁵ Sullivan et al. (2000): 178.

¹²⁶ Lionberger (2008): 10-11.

¹²⁷ Sullivan et al. (2000): 178.

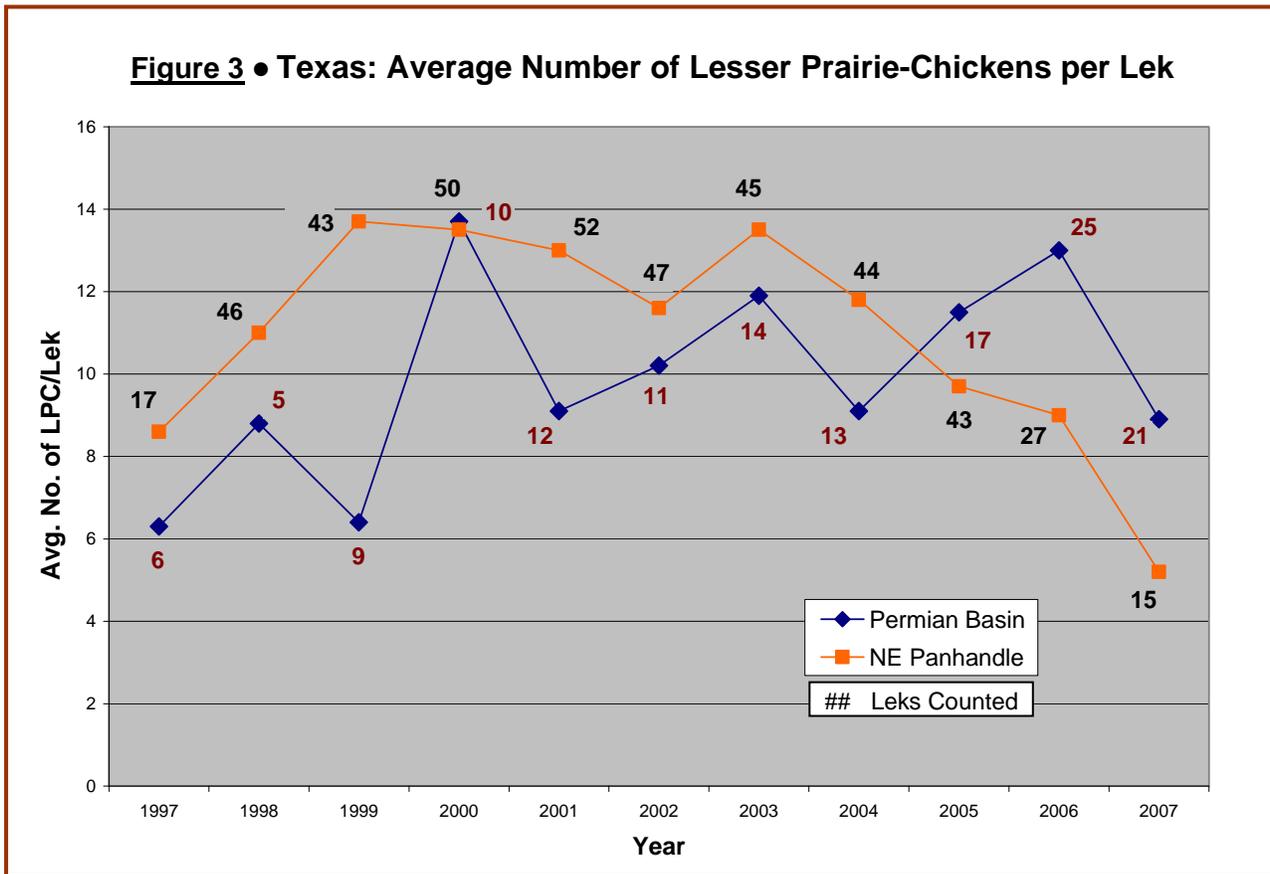
¹²⁸ Sullivan et al. (2000).

¹²⁹ Wu et al. (2001).

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“conservation measures” intended to improve LPC habitat.¹³⁰ The CCAA would also allow continued agricultural use, road construction, oil and gas extraction, and wind energy development that conforms with stated conservation measures, even if it resulted in mortality to individual LPC.¹³¹

USFWS has acknowledged the potential for extirpation of lesser prairie-chicken populations in the Permian Basin/western Panhandle in its October 2001 and June 2002 Candidate Notices of Review. The agency assured the public that “the impending loss of these populations is of major concern to us and efforts to address this are ongoing.”¹³² Notwithstanding the agency’s cryptic promises, extirpation and further decline appears imminent for LPC in Texas without USFWS action.



¹³⁰ Lionberger (2008): 3.

¹³¹ Lionberger (2008): 3.

¹³² 66 Fed. Reg. 54807, 54818 (Oct. 30, 2001); 67 Fed. Reg. 40657, 40667 (June 13, 2002).

Conclusion

This report documents continued declines and enduring and new threats to lesser prairie-chicken populations since it was designated a Candidate Species under the Endangered Species Act in 1998. Rangewide, the lesser prairie-chicken has suffered from a multi-year drought since becoming a Candidate Species. Research indicates that the recent drought is the beginning of a multi-decadal period of low precipitation.¹³³ Other threats, including livestock grazing, oil and gas extraction, and proposed wind energy development, will further fragment and degrade LPC habitat.

The lesser prairie-chicken should be protected under the Endangered Species Act immediately. A 2004 report documented that, in the period from December 1973 to January 1995, 108 species went extinct in the United States. For 83 of these species (77 percent), extinction can be traced to long listing delays.¹³⁴

Looking back further in history, lessons can be drawn from experience with other grouse. While the heath hen (*Tympanuchus cupido cupido*) was protected at the time of its extinction in 1932, that protection was belated and the small remaining population could not withstand the events of habitat loss, disease, and predation that caused its demise. The Attwater's prairie-chicken in Texas is presently on the brink of extinction, numbering fewer than 100 birds. The species' recovery is shrouded in doubt due to its precariously low numbers. We must have foresight in regard to lesser prairie-chicken. If the federal government does not list lesser prairie-chicken now, it will become even more difficult to recover the species later—assuming there is still time.

¹³³ Betancourt, J. L. 2004. The Current Drought (1999-2003) in Historical Perspective. Unpublished paper, U.S. Geological Survey, Desert Laboratory; University of Arizona. Tucson, AZ.

¹³⁴ Suckling, K., R. Slack, B. Nowicki. 2004. Extinction and the Endangered Species Act. Unpublished report. Center for Biological Diversity. Tucson, AZ. (May 1, 2004).