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2 August 2021

Public Comments Processing
Attn: USFWS-R2-ES-2021-0015
U.S. Fish and Wildlife Service
MS: PRB/3W
5275 Leesburg Pike
Falls Church, VA 22041-3803
Submitted via electronic submission

Re: Proposed Rule listing two Distinct Population Segments (DPSs) of the Lesser Prairie-Chicken (*Tympanuchus pallidicinctus*); Docket No. FWS-R2-ES-2021-0015

Thank you for the opportunity to provide comments on the Proposed Rule referenced above recommending listing of the Lesser Prairie-Chicken under the Endangered Species Act. I am writing not only on behalf of Audubon of Kansas as its Executive Director, but also as a prairie-chicken biologist. I received my PhD in biology from Kansas State University in 2007 studying the mating behaviors of Greater Prairie-Chickens. As an Associate Professor at The Ohio State University at Lima, I started studying Lesser Prairie-Chickens in the hybrid zone in western Kansas in 2013 focusing on behavioral mechanisms maintaining species isolation with the sympatric Greater Prairie-Chicken. Therefore, this commentary draws upon my extensive experience with Lesser Prairie-Chickens and related species.

Audubon of Kansas is a nonprofit organization that promotes appreciation and stewardship of natural ecosystems in Kansas and the central Great Plains, with special emphasis on conservation of prairies, birds, other wildlife, and their habitat. It is neither funded nor administered by the National Audubon Society. Audubon of Kansas is made up of over 4000 members and supporters from across the state of Kansas and beyond.

Audubon of Kansas enthusiastically endorses the U.S. Fish and Wildlife Service's ("USFWS") Proposed Rule to list two distinct population segments ("DPS") of the Lesser Prairie-Chicken - both the northern DPS in Kansas, Colorado, Oklahoma, and Texas as 'threatened' with the 4(d) rule and the southern DPS in New Mexico and Texas as 'endangered'. We provide scientific summaries supporting the listing, and offer key recommendations for subsequent management plans to ensure this Lesser Prairie-Chickens' persistence. We recognize that tremendous efforts have already been undertaken to preserve this species by the Natural Resources Conservation Service Lesser Prairie-Chicken Initiative, Farm Service Agency Conservation Reserve Program, Oklahoma Ag CCAA, Texas Ag CCAA, New Mexico Ag and Oil & Gas CCA/CCAA, and many others. However, these efforts have not led to sufficient increases in resiliency given the birds' characteristically large weather-driven population fluctuations. Additionally, the most ambitious plan set forth by Western Association of Fish & Wildlife Agencies Range-Wide Conservation Plan and CCAA has not only

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has fallen short of its conservation goals, but was not financially sustainable¹. Despite these efforts, Lesser Prairie-Chicken populations have continued to track weather trends, with only one population out of the four scientifically-recognized populations experiencing stability or slight increases in population size². In short, voluntary conservation efforts and current CCAAs and CCAs enacted over the last two decades have done little to increase the size or resiliency of Lesser Prairie-Chicken populations, making the listing of Lesser Prairie-Chickens under the Endangered Species Act warranted and necessary.

The following evidence supports the listing:

1. Threats to Lesser Prairie-Chickens have increased drastically following their de-listing in 2016. Although population sizes of Lesser Prairie-Chickens have been declining since the mid-1900s, recent declines have been more drastic. The threats that have occurred are mainly due to oil and gas development as well as increasing agricultural uses³. Industrial wind and solar are also poised to expand in the Lesser Prairie-Chicken's range. In Kansas, there are no laws enforcing wildlife protections when siting industrial wind, and prairie-chicken setbacks stated in the Kansas Department of Wildlife and Parks wind energy guidelines⁴ and The Nature Conservancy's Site Wind Right⁵ are not being followed. Energy infrastructure not only removes habitat; the structures themselves are avoided. Prairie-chicken survival declines with increasing density of these structures and the infrastructure associated with them⁶.

2. Population sizes reflect precipitation and temperature trends. Grisham et al. (2013) observed that precipitation and winter temperature had the greatest effect size in influencing reproductive output in the shinnery oak portion of the range.⁷ Anecdotally, you

¹ ICF. 2020. Range-Wide Oil and Gas Candidate Conservation Agreement with Assurances Realignment Phase 1 Findings and Recommendations. December. Final. (ICF 00659.19.) Golden, Colorado. Prepared for Western Association of Fish and Wildlife Agencies, Boise, Idaho.

² Nasman K, Rintz T, Pham D, McDonald L. (2020) Range-wide population size of the Lesser Prairie-Chicken: 2012 to 2020. Prepared for: Western Association of Fish and Wildlife Agencies.

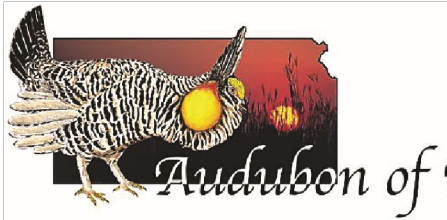
³ Evans M, Malcolm J (2021) Lesser prairie-chicken habitat changes since court delisting. Center for Conservation Innovation, Defenders of Wildlife.

⁴ Kansas Department of Wildlife. <https://ksoutdoors.com/Services/Environmental-Reviews/Wind-Power-and-Wildlife-Issues-in-Kansas> Accessed 25 July 2021.

⁵ The Nature Conservancy. Site Wind Right. <https://www.nature.org/en-us/what-we-do/our-priorities/tackle-climate-change/climate-change-stories/site-wind-right/>

⁶ Lawrence AJ, Carleton SA, Gould WR, Nichols CT. (2021) Lesser Prairie-Chicken survival in varying densities of energy development. *The Journal of Wildlife Management* 1-11; DOI: 10.1002/jwmg.22084

⁷ Grisham BA, Boal CW, Haukos DA, Davis DM, Boydston KK, Dixon C, et al. (2013) The Predicted Influence of Climate Change on Lesser Prairie-Chicken Reproductive Parameters. *PLoS ONE* 8(7): e68225.



can match prairie-chicken populations to precipitation.

Figure 1 shows the size of the shortgrass population².

Figure 2 shows the yearly rainfall in Gove County, KS, the heart of the shortgrass

population. Although the timing of rain may also be important in determining prairie-chicken population sizes, there does seem to be a resemblance between the two figures. Additionally, I want to draw your attention to 2020. Precipitation was down in that year, so one would predict that populations would decline in the following year.

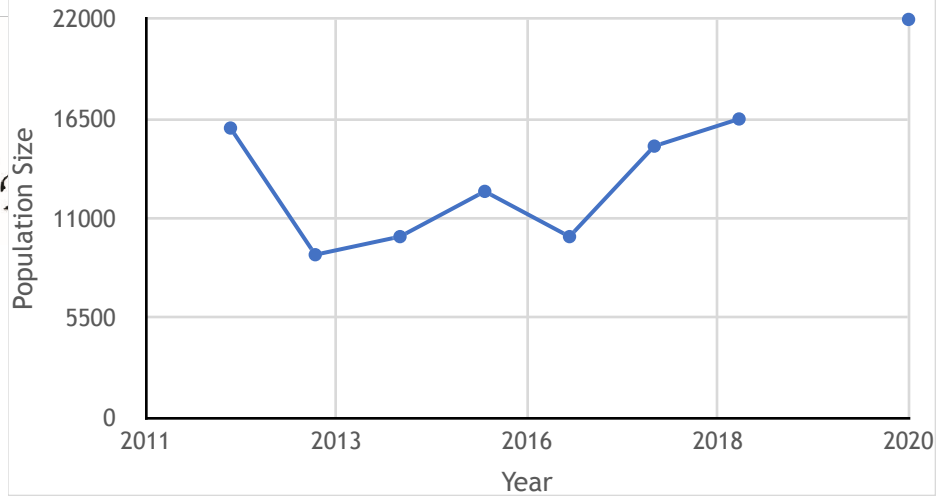
Indeed that is what we have seen. I have been monitoring six Lesser Prairie-Chicken leks in eastern Gove and western Trego Counties in Kansas since 2014. The number of birds at those leks declined 73% between 2020 and 2021 (range 59-86% per lek; 86 and 53 males observed in 2020 and 2021, respectively). When population numbers are available this year from the rangewide aerial surveys, I expect to see a decline throughout the shortgrass prairie population.

Because the size of the shortgrass population is large relative to the sizes of the other three scientifically-recognized populations, the size of the shortgrass population drives overall trends in Lesser Prairie-Chicken population size.

3. Populations are not able to

bounce back following severe drought. In the shinnery oak population in New Mexico and Texas, Fritts et al. (2018) demonstrated that Lesser Prairie-Chickens exhibit reduced resiliency as they may no longer be able to ‘bounce back’ following severe drought.⁸ There is also anecdotal evidence that sand sagebrush populations have not bounced back after

Size (short grass)



Precipitation

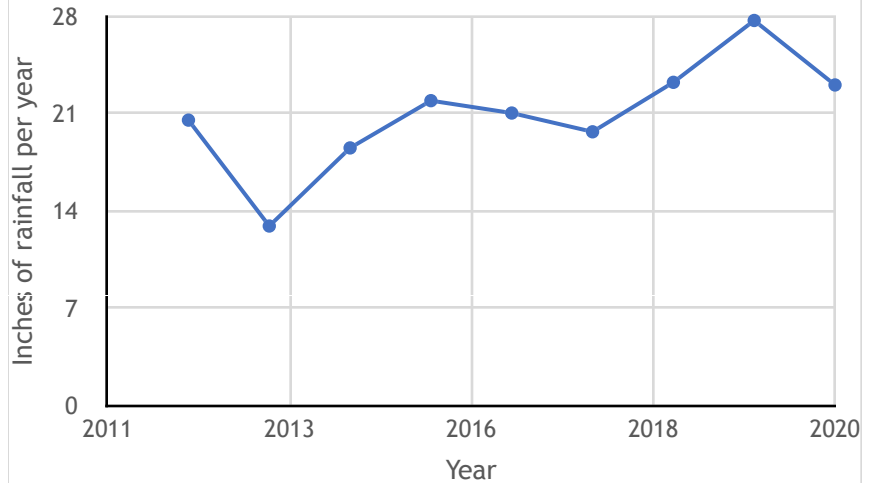


Figure 2 Average annual precipitation in Gove County, KS. Gove County boasts the greatest density of Lesser Prairie-Chickens in the state of Kansas and the shortgrass ecoregion. Data from the National Centers for Environmental Information, National Oceanic and Atmospheric Administration <https://www.ncdc.noaa.gov/cag/county/mapping/14/pcpl/202101/12/value>

⁸ Fritts SR, Grisham BA, Cox RD, Boal CW, Haukos DA, McDaniel P, Hagen CA, Greene DU. (2018) Interactive effects of severe drought and grazing on the life history cycle of a bioindicator species. Ecology and Evolution 8: 9550-9562.



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extreme, extensive wildfires in Texas and Oklahoma several years ago (personal communication J. Kennington).

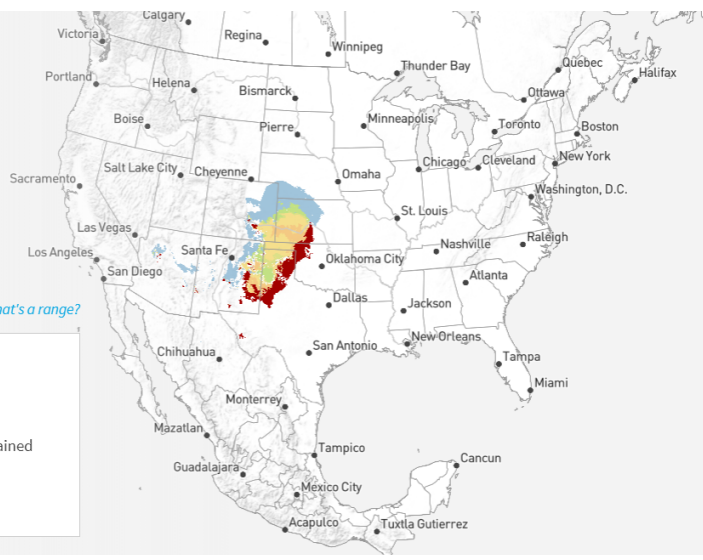
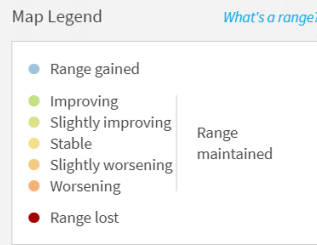
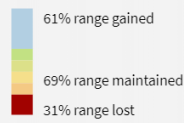
4. Voluntary conservation efforts have not been effective. Some critics of the listing point to the rangewide estimates² and suggest that increases in the total population are evidence that voluntary conservation efforts have been successful. However, there are several problems with their assertion. First, increases are not significant beyond what would be predicted given normal population fluctuation and the confidence intervals of the estimates². Second, ‘increases’ are not rangewide. The shortgrass prairie ecoregion is driving much of the supposed increases, with other populations being stable at best. Third, critics usually use 2013 as the benchmark. The year 2013 was an all-time low following a prolonged and intense drought. Precipitation increased in subsequent years, and populations of Lesser Prairie-Chickens tracked the change in precipitation. Lastly, critics have not ruled out or controlled for precipitation as the cause for supposed increases in population size when examining the effectiveness of voluntary conservation measures.

Audubon of Kansas makes the following recommendations, which enacted, could conserve, stabilize or increase the population size and resiliency of Lesser Prairie-Chickens.

1. ‘Strongholds’ should be established in all four populations recognized by scientific communities. We recognize that the Endangered Species Act has specific requirements for recognizing Distinct Population Segments (DPS); namely, that there must be geographic separation and habitat differences. Therefore, the Fish and Wildlife Service could only delineate two populations, the northern DPS and southern DPS. The southern DPS nicely aligns with the shinnery oak ecoregion^{2,9} recognized by the scientific community. However, the scientific community recognizes three subpopulations within the northern DPS, the sand sagebrush, mixed grass, and shortgrass/CRP^{2,9}. Given the genetic structuring of three subpopulations within the northern DPS, Audubon of Kansas recommends that ‘strongholds’ or areas of sufficient size to support healthy prairie-chicken populations be established within each scientifically-recognized ecoregion. We fear that emphasizing the northern DPS as one ecoregion will lead to a loss of genetic diversity given that the shortgrass/CRP population dwarfs the sand sagebrush and mixed grass ecoregions in Lesser Prairie-Chicken population size.

2. An ‘early warning’ system should be established. U.S. Geological Survey (in coordination with the states) recently developed a Targeted Annual Warning System (TAWS) for Greater

⁹ Oyler-McCance SJ, DeYoung RW, Fike JA, Hagen CA, Johnson JA, Larsson LC, Patten MA (2016) Rangewide genetic analysis of Lesser Prairie-Chicken reveals population structure, range expansion, and possible introgression. *Conservation Genetics* 17:643-660.



Sage-Grouse based on standardized lek count data¹⁰. This model could be applied to Lesser Prairie-Chicken as standardized population monitoring for Lesser Prairie-Chickens is already being conducted. The Western Association of Fish and Wildlife Agencies has been collecting transect data since 2012 (excluding 2019)².

3. Management plans should recognize that northwest Kansas and southwest Nebraska offer an opportunity for growth of the Lesser Prairie-Chicken's population. This region should be included in management plans for two reasons. First, climate change predictions project that Lesser Prairie-Chicken habitat is expanding north in light of climate change. Even in the most conservative climate change scenario, an increase in temperature by only 1.5 degrees Celsius, northwest Kansas, southwest Nebraska, and northeastern Colorado make up the majority of the 61% of habitat that could be gained (Figure 3)¹¹. If climate change results in a 3-degree Celsius increase in global temperature, then 89% of the Lesser Prairie-Chickens' range would be in this expanded area (Figure 4)¹⁰. Second, there is considerable evidence that the northern limit of the Lesser Prairie-Chickens' range may be farther north than is typically drawn. Some historical range maps utilized landowner and wildlife officer surveys conducted in the 1950s¹²; whereas European

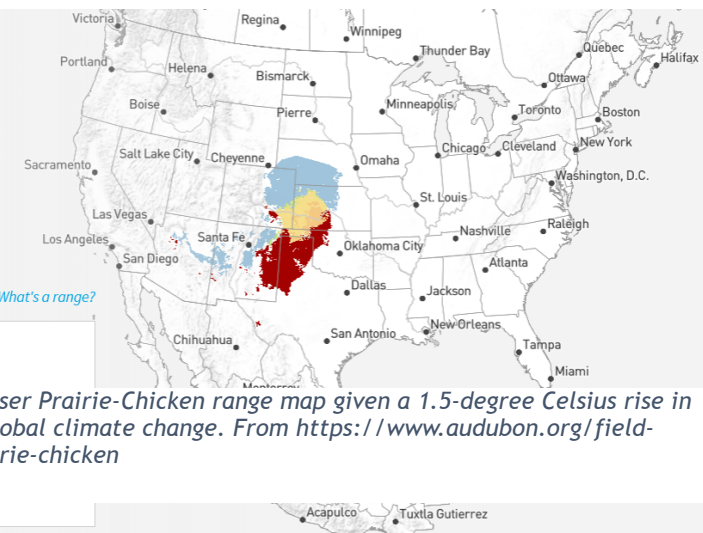
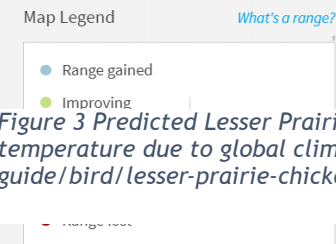
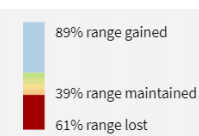


Figure 3 Predicted Lesser Prairie-Chicken range map given a 1.5-degree Celsius rise in temperature due to global climate change. From <https://www.audubon.org/field-guide/bird/lesser-prairie-chicken>

¹⁰ Coates PS, Prochazka BG, O'Donnell MS, Aldridge CL, Edmunds DR, Monroe AP, Ricca MA, et al. (2021) Range-wide Greater Sage-Grouse hierarchical monitoring framework—Implications for defining population boundaries, trend estimation, and a targeted annual warning system: U.S. Geological Survey Open-File Report 2020-1154, 243.

¹¹ The National Audubon Society [survivalbydegrees](https://www.audubon.org/field-guide/bird/lesser-prairie-chicken) and How <https://www.audubon.org/f>

¹² Schwilling MD. (1955) A study of the Lesser Prairie Chicken in Kansas. Kansas Forestry, Fish and Game Commission.



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settlement of the Great Plains started in the 1600s and peaked at different times in different states. Other historical maps utilize museum specimens, but disregard numerous outliers¹³. Currently, individuals and leks have been reported at the northern limit justifying expanding the current range of the Lesser Prairie-Chicken¹⁴. It is illogical to believe that in the last 30 years, Lesser Prairie-Chickens have evolved to allow them to occupy new habitats in this area as evolution of a vertebrate's habitat preferences are not expected to change so quickly. Historically, the shortgrass prairie of the High Plains and central Great Plains extended to the Platte River in Nebraska (Figure 1 and Figure 2 in Reese et al. 2016¹⁵). Ecological niche modeling also suggests that the historical Lesser Prairie-Chickens range extended to the Platte River in Nebraska¹⁶. The preponderance of evidence suggests a more northerly limit of the historical Lesser Prairie-Chicken range, and perhaps expansions in the west and south as well.

An extensive survey for Lesser Prairie-Chickens north of the current range to the Nebraska border or Platte River is warranted. When Lesser Prairie-Chickens are observed, the locations should be included in maps of currently occupied habitat. It would be short-sighted to ignore this potential for range expansion.

4. No energy development should be allowed in those areas currently occupied with Lesser Prairie-Chickens or within 5 km setback of occupied range. We recommend using a 5km setback of any energy development from active Lesser Prairie-Chicken leks (used within the last 5 years)^{5,17}. Additionally, the area impacted (made unsuitable for Lesser Prairie-Chickens) by an individual wind turbine or other vertical structure should not be calculated as the physical footprint of the turbine, but should include all lands within 1.8 km of the structure¹⁸. Setbacks for other types of energy development should also be determined not only on the basis of vertical structure, but also the soundscape that is impacted. We hope

¹³ Taylor MA, Guthery FS. (1980) Status, ecology, and management of the Lesser Prairie Chicken. Department of Range and Wildlife Management, Texas Tech University.

¹⁴ Johnsgard PA. (2002) Grassland Grouse and Their Conservation. Smithsonian Institution Press, Washington DC.

¹⁵ Reese GC, Manier DJ, Carr NB, Callan R, Leinwand IIF, Assal TJ, Burris L, Ignizio DA. (2016) Estimated historical distribution of grassland communitites of the southern Great Plains. US Geological Survey Open-File Report 2016-1184, 13p.

¹⁶ DeYoung RW, Williford DL. (2016) Genetic Variation and population structure in the prairie grouse: Implications for the Conservation of the Lesser Prairie-Chicken. In Ecology and Conservation of Lesser Prairie-Chickens (Eds. Haukos DA, Boal C), p.77-97

¹⁷ Taylor MA, Guthery FS. (1980) Fall-winter movements, ranges, and habitat use of lesser prairie-chickens. *Journal of Wildlife Management* 44:521-524. See also Riley TZ, Candelaria MA, Suminski HR. (1994) Lesser Prairie-Chicken movements and home ranges in New Mexico. *Prairie Naturalist* 26:183-186. See also Giesen KM. (1994) Movements and nesting habitat of lesser prairie-chicken hens in Colorado. *Southwestern Naturalist* 39:96-98.

¹⁸ Hagen CA, Jamison BE, Giesen KM, Riley TZ. (2004) Managing Lesser Prairie-Chicken populations and their habitats. *Wildlife Society Bulletin* 32: 69-82.

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that oil/gas, wind, and solar would be treated on a level playing field. This would effectively mean that any vertical structure located within 6.8 km of an active lek would negatively impact the Lesser Prairie-Chickens that occupy that area. Remediation and restoration takes many years and rarely produces habitat used to the extent that current habitat is utilized. Additionally, Lesser Prairie-Chicken habitat is being destroyed at an alarming rate due to oil/gas development³, so we are in danger of losing even more Lesser Prairie-Chicken habitat. This wanton destruction of Lesser Prairie-Chicken habitat is undermining efforts to save this species. If Lesser Prairie-Chickens are listed, no additional energy development of currently occupied Lesser Prairie-Chicken habitat should be allowed.

To enact this recommendation, current candidate conservation agreements (CCAs) and candidate conservation agreement with assurances (CCAAs) should be reviewed to determine whether the permit should continue. Although current CCAs and CCAAs have resulted in some beneficial conservation for the Lesser Prairie-Chicken, the species continues to decline. Thus, current CCAs and CCAAs are not adequate to address the needs of the Lesser Prairie-Chicken. According to the USFWS: “Under a CCA, no Enhancement of Survival Permit is issued. This means there is no permit that authorizes incidental take of the covered species in the event listing occurs, and no assurances are provided by the USFWS.”¹⁹ It would be wholly inappropriate to grant incidental take authorization to enrolled parties in any CCA on the effective date of any decision to list the Lesser Prairie-Chicken.

Specifically, the Center of Excellence for Hazardous Material Management (CEHMM) CCA and CCAA and the Western Association of Fish and Wildlife Agencies (WAFWA) CCAA need to be discontinued. Under the CEHMM CCA, 43 oil and gas companies have enrolled nearly 2 million acres in the historical range of the Lesser Prairie-Chicken, impacting 138,000 acres of currently occupied Lesser Prairie-Chicken habitat and 44,000 acres in areas necessary for connectivity between large Lesser Prairie-Chicken populations²⁰. Evidence for the ineffectiveness of this CCA is that the southern DPS is now being considered for “endangered” status rather than “threatened” as it was in 2016. WAFWA’s permit for the Range-wide Oil and Gas Candidate Conservation Agreement with Assurances for Lesser Prairie-Chicken (*Tympanuchus pallidicinctus*) in Colorado, Kansas, New Mexico, Oklahoma, and Texas has demonstrated an extreme level of mismanagement of the federal funds provided to support delivery of the Lesser Prairie-Chicken Initiative under this permit. This mismanagement was reported in WAFWA’s own internal audit¹ and has been covered heavily by the media. The malfeasance described should raise serious concerns about WAFWA’s ability to appropriately administer any further federal funding related to the prairie-chicken recovery effort. This well-publicized mismanagement was a major “black eye” for the recovery effort, hurting the credibility of the partners involved and raising public concern about the competency and potential for success from the recovery effort. Work needs to be done to restore the public trust in this regard and removing CCAA management responsibility from WAFWA is a necessary

¹⁹ Candidate Conservation Agreements. <https://www.fws.gov/endangered/esa-library/pdf/CCAs.pdf>

²⁰ CEHMM. (2021) Quarterly Report: Candidate Conservation Agreements for the Lesser Prairie-Chicken and the Dunes Sagebrush Lizard in New Mexico. https://www.cehmm.org/files/LPC_DSL_reports/2021_LPC_DSL_CCA-CCAA_Q1Report.pdf

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step in doing so. Additionally, and more importantly, the WAFWA CCAA has not resulted in substantial and lasting increases in population size of Lesser Prairie-Chickens². They are still vulnerable to extinction given their weather-dependent boom-bust population cycles.

5. Incidental take from agricultural operations should be monitored and minimized through increasing incentives associated with landowner conservation. Besides energy development, Lesser Prairie-Chicken habitat is also being destroyed at an alarming rate due to agricultural development³. Additional incentives should be made available for landowners willing to enact conservation practices such as converting row crop or center pivot agriculture to grasslands, reducing grazing pressure to provide nesting habitat, or removing woody vegetation. Numerous established programs could be expanded in size and incentives within the Lesser Prairie-Chicken range including the National Resource Conservation Service's (NRCS) Conservation Reserve Program (CRP), Environmental Quality Incentives Program (EQIP), and others. Additionally, easement programs focused on habitat within the range of the Lesser Prairie-Chicken could be established by state and federal agencies, similar to those offered by the USDA's Wetland Research Easement program or the Flint Hills Legacy Conservation Area. Multiple studies have shown that Lesser Prairie-Chickens thrive where there is a mix of cattle-grazed grasslands and CRP, and a minimal amount of row crop agriculture^{21,22,23}. ***We also note that landowners with expiring CRP contracts within the Lesser Prairie-Chicken's range should be allowed to take their land out of the program if they so desire.*** This ability of landowners to take land out of CRP and return it to agricultural production is critical for ensuring future participation in the program and instilling landowner trust. However, we hope that CRP payments will be such that it is just as profitable for landowners to put land into CRP as it is to conduct traditional row crop agriculture, thereby making it easier for landowners to participate in the program. Because most Lesser Prairie-Chicken habitat occurs on private land, those lands should be given high priority for conservation resources where available and appropriate.

6. When mitigation is warranted, it should be located in the same ecoregion (shinnery oak, mixed grass, short grass, or sand sagebrush) as the impact occurs. Not only is this biologically supported, it also fosters community support to see that impacts are mitigated locally.

7. When Lesser Prairie-Chicken Management plans are developed, they should have a goal of increasing populations sizes so that the species can be removed from the Endangered

²¹ Sullins DS, Kraft JD, Haukos DA, Robinson SG, Reitz JH, Plumb RT, Lautenbach JM, Lautenbach JD, Sandercock BK, Hagen CA. (2018) Demographic consequences of conservation reserve program grasslands for lesser prairie-chickens. *Journal of Wildlife Management* 82:1617-1632.

²² Woodward TS. (2014) Assessing the ability of Conservation Reserve Program lands to provide habitat for Lesser Prairie-Chickens (*Tympanuchus pallidicinctus*). Master's Thesis, Colorado State University.

²³ Hagen CA, Pavlacky, Jr. DC, Adachi K, Hornsby FE, Rintz TJ, McDonald LL. (2016) Multiscale occupancy modeling provides insights into range-wide conservation needs of Lesser Prairie-Chicken (*Tympanuchus pallidicinctus*). *Condor* 118:597-612.



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Species list. There should be explicit population goals and population viability analysis not only for the two DPS, but also for the subpopulations within the northern DPS.

Once USFWS completes the listing process and presumably lists the Lesser Prairie-Chicken, we hope it will consider Audubon of Kansas a resource for data and cooperation moving forward, as we have members in Kansas that could communicate conservation opportunities to landowners within the Lesser Prairie-Chickens' range.

Sincerely,

A handwritten signature in blue ink that reads "Jackie Augustine". The signature is fluid and cursive, matching the printed name below it.

Jackie Augustine, Executive Director

On behalf of Audubon of Kansas, Inc.

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