



LESSER PRAIRIE-CHICKEN CONSERVATION ASSESSMENT

PROGRAM REVIEW AND RECOMMENDATIONS FOR IMPROVED SUCCESS

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EXECUTIVE SUMMARY

Lesser prairie-chicken (*Tympanuchus pallidicinctus*) populations are at or near all-time lows with an estimated 97% decline in populations and a 92% decline in rangewide occupancy. Estimated populations from the last half-century of over 200,000 birds have reached lows of approximately 20,000 birds in 2013 and have recently seen a slight recovery to approximately 33,000 birds. Based on the severe reduction in habitat availability and historically low populations, the North American Grouse Partnership (NAGP) is extremely concerned about the future of lesser prairie-chickens.

This report outlines the results of a review of lesser prairie-chicken (LPC) conservation programs by the NAGP and makes recommendations for changes, revisions and additions to ensure successful conservation of the species and their habitats. NAGP has determined that ***overall; the Lesser Prairie-Chicken Rangewide Plan (RWP) remains a solid conservation strategy for the management of LPC but needs to be revised in order to be more successful in the near-term. The RWP needs to prioritize conservation efforts in a more focused manner and guide all LPC conservation programs so that current needs for LPC can be met, ensure better coordination amongst programs, and ensure all stakeholders have a seat at the table.***

At the current time, LPC conservation is in a “recovery” mode and efforts and program implementation should reflect that reality. Having adequate funding to complete needed actions is a key to success and additional funding from numerous sources is needed. Conservation actions need to be less opportunistic and more strategic with all parties working together for mutual goals. Increased priority needs to be given to establishing a more strategic system of core conservation areas patterned after strongholds within each ecoregion. These core areas should serve as anchors for current and future conservation efforts and to provide refugia for populations during contraction due to drought or continued loss and degradation of existing habitat. All LPC conservation efforts must be embraced and incentivized to increase the amount of actions being implemented and decrease the threat of listing under the Endangered Species Act (ESA). Although LPC populations have stabilized over the past 3 years, LPC are recovering from all time historic low populations and the status of the species will remain uncertain until additional droughts are experienced. Therefore, efforts and actions that focuses on protecting and enhancing core populations and habitat need to be the highest priority.

Mitigating the impacts from energy development is still a priority and WAFWA’s Mitigation Framework and other mitigation programs can offset current impacts from enrolled companies to LPC habitat. However, impacts from non-participating companies are exceeding those that are participating. Grazing and range management are key tools for habitat management and must provide enough nesting, brood-rearing and security habitat. A strategic approach needs to be combined with increased funding, better collaboration amongst programs, and participation from landowners and other stakeholders who are not currently participating in any LPC program. This will lead to the ***right actions*** at the ***right place*** at the ***right time*** for the ***right cost*** for a ***successful outcome*** for LPC conservation.

NAGP recommends five overall areas be addressed to increase the likelihood of successful LPC conservation:

- 1. Increased funding for LPC conservation from numerous sources**
- 2. Strategic application of LPC actions to focus limited resources (conservation triage and targeting) through a delineated system of finer scale core conservation areas**
- 3. Better coordination among all conservation actors and actions**
- 4. Increased transparency for public conservation**
- 5. Consistent application of science and management, with rapid incorporation of new information**

NAGP also identified additional specific recommendations that can help improve conservation actions and their delivery:

- A. *Create a Lesser Prairie-Chicken Stakeholders Executive Oversight Group*
- B. *Establish consistent application of conservation practices that benefit LPC*
- C. *Establish consistent regulatory guidance for LPC programs and actions*
- D. *Evaluate and develop policy and protocol for allowing "stacking" of conservation programs in targeted areas*
- E. *Develop a more rigorous adaptive-management approach*
- F. *Evaluate and adjust costs of conservation actions based on outcomes and represent a fair market condition for all parties.*
- G. *Adjust analytical tools for evaluating habitat quality and develop outcome-based metrics for determining success of conservation efforts*
- H. *Standardize and simplify the reporting of mitigation systems and make them more "user-friendly"*
- I. *Evaluate the effectiveness of the WAFWA Mitigation Framework for delivery of strategic conservation actions*
- J. *Solicit impartial reviews of data and reports on a recurring basis*
- K. *Establish a science-based public relations campaign supporting LPC conservation efforts that benefits all conservation efforts and stakeholders.*
- L. *Embrace conservation banking and private investment into the LPC conservation strategy.*

These recommendations will allow for conservation programs to meet the current goals for LPC conservation which NAGP defines as:

- Recovered LPC populations rangewide, with no threat of listing;
- State leadership and control of LPC conservation;
- Range expansion and restoration of LPC habitats;
- Increased habitat function on existing and restored habitats; and
- Continued strategic voluntary conservation efforts and opportunities for all.

INTRODUCTION

Lesser prairie-chicken populations are at or near all-time lows over the past 100 years. It is estimated that there has been over 97% decline in populations and a 92% decline in range. Of the approximately 115 million acres of historic habitat, only approximately 15 million acres are left. Population reconstructions estimate a rangewide population of over 200,000 birds through the 1960's decreasing to about 25,000 birds in the late 1980s to mid-1990s, and increasing to an estimated 80,000 birds in 2008. Populations since 2008 have reached lows of approximately 20,000 birds in 2013 and have recently seen a slight recovery to approximately 33,000 birds. Based on the severe reduction in habitat availability and historically low populations, the North American Grouse Partnership is extremely concerned about the future of lesser prairie-chicken.

The North American Grouse Partnership (NAGP) is an international non-profit conservation organization whose mission is to promote the conservation of grouse and the habitats necessary for their survival and reproduction. Formed in 1999, NAGP is the only conservation organization that advocates for all 12 species of North American grouse and their habitats with a focus on policy and partnerships. Our strength is found in three key areas - *Science, Policy, and Management*. This is demonstrated by the experience and expertise of our Board of Directors and Council of Scientists that is unparalleled in grouse conservation circles. Our goals are to ensure that grouse conservation is guided by science, public policies are beneficial to grouse, and on-the-ground management of lands leads to positive outcomes for grouse.

NAGP has been involved with lesser prairie-chicken (LPC) conservation having previously endorsed the Western Association of Fish and Wildlife Agencies (WAFWA) LPC Rangewide Plan (RWP) when it was being developed in 2012-2013. NAGP has conducted a review of LPC conservation actions being implemented within the range of this species.

Our effort was driven by the following goals:

1. Assess the effectiveness and efficiency (***right actions*** at the ***right place*** at the ***right time*** for the ***right cost*** for a ***successful outcome***) of LPC conservation programs under the umbrella of the RWP;
1. Identify areas for clarification, improvement, adjustments, modifications or additions to on-going conservation efforts;
2. Provide input into the US Fish and Wildlife Services' (FWS) Species Status Assessment (SSA) and listing determination;
3. Provide information to the new federal administration officials on the importance of LPC conservation and to keep it a priority at the national level;
4. Identify areas for NAGP assistance/participation in LPC conservation efforts; and
5. Transfer lessons learned from the LPC program review into new efforts for greater prairie chicken and sharp-tailed grouse Interstate Working Groups and rangewide planning.

NAGP examined, where practicable, all LPC conservation programs to determine the following:

Effectiveness of Conservation Actions for LPC based on current information/science (consistent application of proven actions to ensure LPC benefit in coordination with other programs at the landscape scale);

Efficiency of Conservation Resources applied to conservation actions in a strategic manner (ensure the right actions are taken in the right place at the right time for the right price for a successful outcome);

Accountability of Conservation Programs to Achieve Conservation Outcomes (recover LPC to suitable levels and sustain those levels for perpetuity and ensure funding and resources are being carried out in a way that benefits LPC and are working toward stated goals);

Coordination of LPC programs under the umbrella of the RWP; and

Progress to stated goals, objectives for programs and successful recovery of LPC populations.

METHODS

NAGP undertook this program review in the following way:

- Reviewed the public information available on each LPC conservation program;
- Conducted GIS analyses of available information;
- Conducted interviews with a wide range of stakeholders;
- Used the status of past and current LPC populations and habitat conditions to assess existing conservation program progress and success;
- Conducted a professional analysis and assessment with wildlife and policy professionals familiar and experienced in LPC conservation; and
- Developed recommendations that should collectively improve LPC conservation efforts.

NAGP used the Western Association of Fish and Wildlife Agencies (WAFWA) Rangewide Plan for LPC (RWP) as the baseline of ongoing work for this review because it is the fundamental plan for LPC conservation supported by the state agencies and the USFWS. The RWP presents an overall conservation strategy for LPC that sets population and habitat conservation goals and includes all LPC conservation efforts by federal and state agencies, and non-profit conservation organizations. The RWP also includes a mitigation framework administered by WAFWA for addressing new impacts, primarily from energy development and funded by the same industry, to the species. Some refer to this mitigation framework as the RWP, however we distinguish between the two, referring to the overall conservation strategy and associated programs and conservation efforts as the RWP, and refer to the WAFWA Mitigation Framework as such.

The four overall goals of the RWP can be summarized as –

1. Population – ten-year average of 67,000 birds rangewide with 8,000 birds in the sand/shinnery, 10,000 birds in the sand/sagebrush, 24,000 birds in the mixed-grass prairie, and 25,000 birds in the short-grass prairie ecoregions.
2. Habitat Availability – 70% of Focal Areas (CHAT 1) and 40% of Connectivity Zones (CHAT 2) conserved and occupied
3. Restoration/Remediation – achieve 953,693 acres of restoration and 27,820 acres of remediation of impacted habitats over 10 years
4. Permanent Conservation – at least one stronghold in each ecoregion that meets the stronghold criteria (at least 25,000 acres) after 10 years

NAGP used publicly-available information for this review, and relied upon the accuracy of the available information. NAGP did not attempt to validate the accuracy of these data or information and therefore cannot warranty any conclusions or other discrepancies that may be derived from other-than-public information. NAGP did request information on various LPC programs directly from agencies coordinating these efforts. We used GIS data available from WAFWA to further analyze current habitat conditions. For example, we evaluated the amounts of anthropogenic impacts and cropland occurring within 3 miles of each mapped lek in the WAFWA GIS as well as the mapped amounts of potentially suitable habitat around each lek.

NAGP conducted interviews with key stakeholders to gain a better understanding of conservation efforts and to identify issues of concern or gaps in conservation approaches. We visited with numerous people from the following categories – biologists, policy experts, agency leadership, landowners, mitigation bankers, former agency employees, retired professionals, non-governmental groups, financial experts, and individual stakeholders not associated with any group. Finally, NAGP used professional judgement and experience from NAGP staff and individual members of the NAGP Board of Directors to write this report and to develop a set of recommendations that could help LPC conservation efforts.

We sought input from WAFWA on early drafts of our report and made presentations to the USFWS. NAGP valued all input to this report and made adjustments to the report based on this input. However, it should be noted that the report represents only the views of NAGP and no endorsement from any other agency or organization should be assumed unless specifically stated by such groups. Our intent is to provide recommendations for better LPC conservation and to support all conservation efforts from all programs as we all win when LPC conservation is successful.

FINDINGS

Our review found that the overall conservation strategy of the RWP remains a solid approach to LPC conservation. However, a number of updates, changes, and additions are recommended to make it

more effective and efficient, increase accountability, and provide better overall coordination and priorities for LPC programs.

NAGP conducted an assessment of the current status of the species and the contributions of each of the LPC-focused programs on providing LPC habitat. We also examined the level of coordination and collaboration amongst LPC conservation programs. Based on this assessment, NAGP is concerned with the current low populations of LPC rangewide and within several LPC ecoregions as well as the current ability of habitat conservation efforts to address these low populations. Building from these concerns, we are also concerned with the need for more funding, the lack of a focused and coordinated strategic application of conservation actions, the need for more focused prioritization of conservation within identified Focal and Connectivity zones, the effectiveness of some current or planned LPC conservation actions, lack of formal coordination and collaboration between conservation programs, and the need to incorporate new information and science into LPC conservation efforts. We want to ensure that the **right actions** are being applied in the **right places** at the **right time** and for the **right cost** to produce **successful outcomes** with a strategic direction of the needs and opportunities for LPC and their habitat. NAGP also wants to ensure that all potential LPC conservation actions are fully considered on an equal basis if they could benefit the species.

NAGP defines success of LPC conservation as:

1. Recovered LPC populations rangewide, with no threat of listing;
2. Increased habitat function on existing and restored habitats State leadership and control of LPC conservation;
3. Range expansion and restoration of LPC habitats; and
4. Continued strategic voluntary conservation efforts and opportunities for all.

CURRENT POPULATION STATUS AND TRENDS

Current LPC populations are precariously low rangewide. While LPC numbers (based on lek surveys conducted by Western EcoSystems Technologies, Inc.) within 3 of the 4 ecoregions. have shown increases in the past 3 years (WEST Inc. report), it is important to note that these levels are from historically-depressed populations and are not on track to reach the goal of a 10-year running average of 67,000 birds for quite some time.

LPC population trends are best assessed starting from 2012, given that coordinated rangewide population surveys were initiated in 2012 (Table 1.) Population estimates prior to 2012 were reconstructed from lek-count data (Garton 2012) and make direct comparisons of numbers problematic. From 2012 to 2017, the rangewide population estimates was trending in a negative direction, declining by an average of approximately 140 individuals annually (this estimate is based on the slope of the trend line through population estimates (Fig. 1). Population estimates from 2012-17 in all ecoregions except the shortgrass ecoregion were trending in a negative direction (Fig. 2 and 3).

Table 1. LPC population estimates range-wide and by ecoregion as reported by WEST Inc. (2017).

Ecoregion	2012	2013	2014	2015	2016	2017
Shinnery Oak	4,108	2,167	1,474	896	3,255	2,596
Sand Sagebrush	2,680	2,173	513	897	1,479	1,469
Mixed Grass	10,318	4,350	7,686	10,027	6,891	7,778
Shortgrass	21,561	11,606	14,289	18,165	14,025	21,427
Total	38,667	20,297	23,962	29,985	25,651	33,269

Fig 1. Rangewide LPC Population Trend 2012-2017

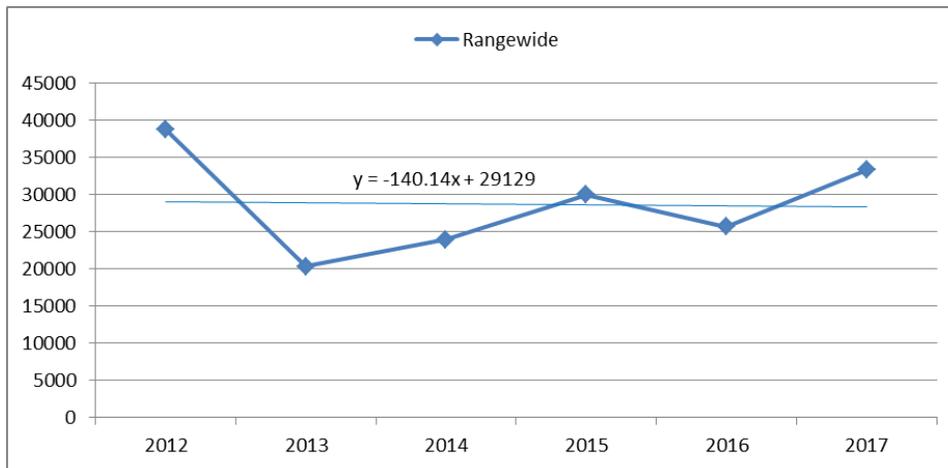


Fig 2. LPC Population Trend in the Shortgrass and Mixed-Grass Ecoregions 2012-2017

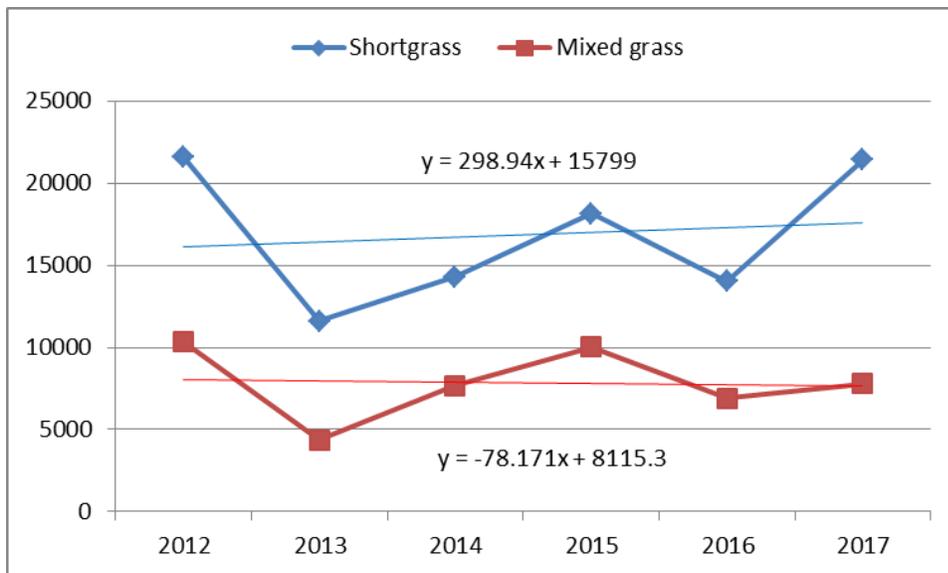
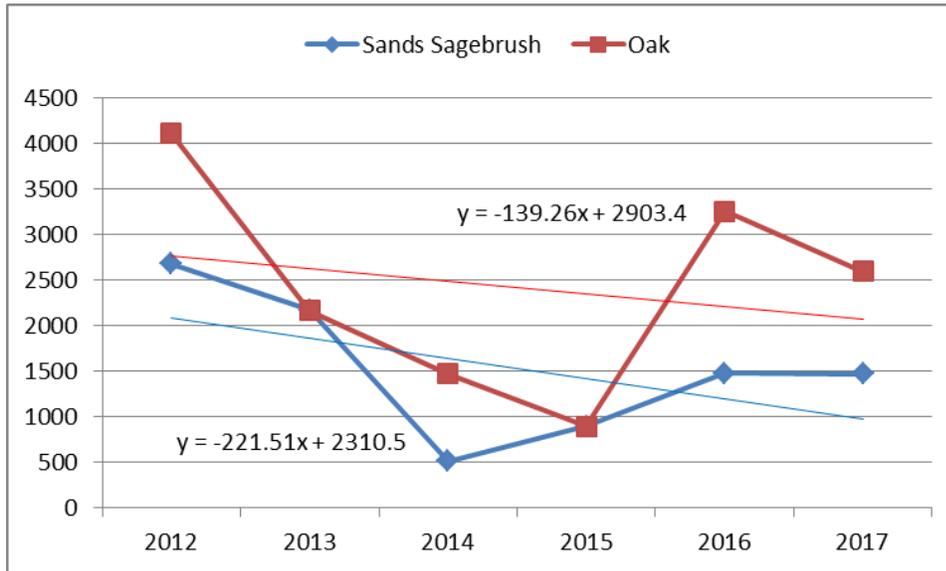


Fig 3. LPC Population Trend in Sand-Sagebrush and Shinnery-Oak Ecoregion 2012-2017



When looking at 3-year average values from 2012, populations appear to be trending in a positive direction rangewide, and in the shortgrass and mixed-grass ecoregions. However, the populations in the sand-sagebrush and shinnery-oak ecoregions appear to continue in a negative direction (Fig. 4, 5 and 6).

The 3-year running average from 2012 for the shortgrass ecoregion averaged greater than 50% of the population goal for that ecoregion. The 3-year running average for the rangewide population stands at 44% of the population goal, while the sand-sagebrush (13%), mixed-grass (34%), and shinnery-oak (28%) ecoregions currently are estimated well below the 50% threshold identified in the RWP.

Fig 4. 3-Year Average Rangewide LPC Population Trend for 2014-2017

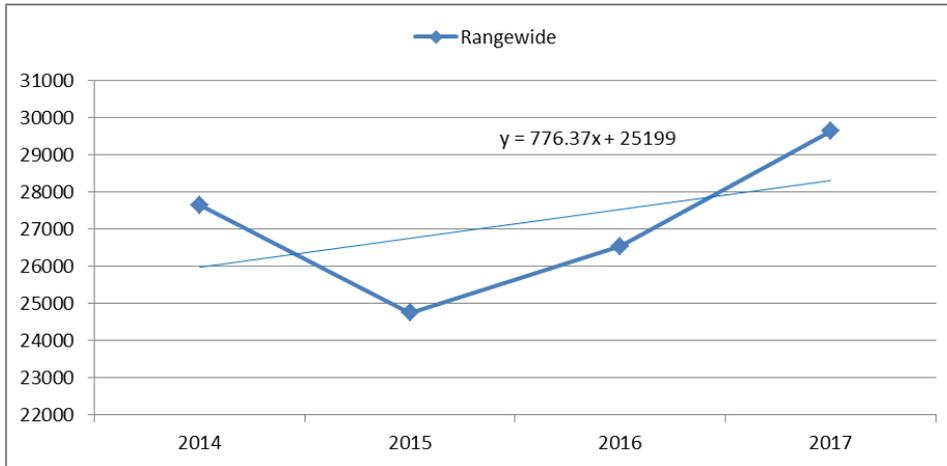


Fig 5. 3-Year Average LPC Population Trend for the Shortgrass and Mixed-grass Ecoregion for 2014-2017

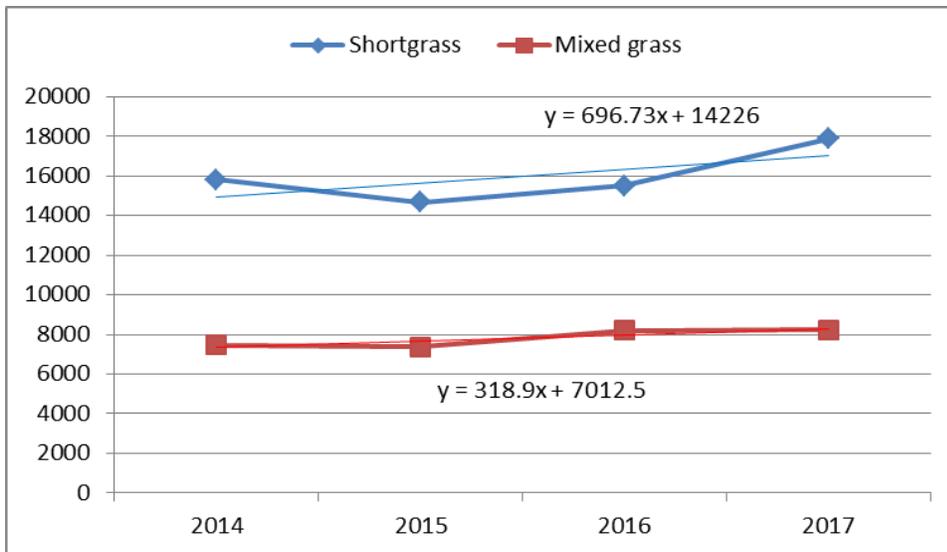
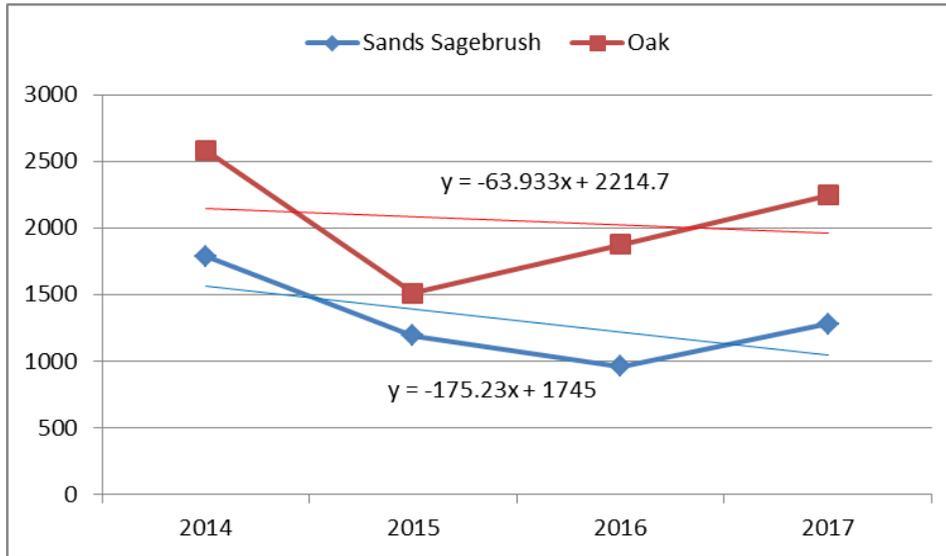


Fig 6. 3-Year Average LPC Population Trend for the Sand-sagebrush and Shinnery-oak Ecoregion for 2014-2017



Because LPC populations generally appear to be increasing since 2013, we investigated trends from 2013. Populations appear to be trending in a positive direction from 2013 rangewide and for the shortgrass, mixed-grass, and shinnery-oak ecoregions, and in a negative direction for the sand-sagebrush ecoregion. Given slopes of these trend lines and assuming the trends continue, population goals could be attained within 2- (shortgrass) to 27-years (mixed-grass ecoregion; Fig. 7, 8 and 9). Although the trend from 2013 in the shinnery-oak ecoregion (Fig 9) suggests that population goals could be attained in 21 years (in 2038), it is worth noting that there was a 3.6-fold increase (896 to 3255 individuals) in the population estimate in this ecoregion between 2015 and 2016. This level of increase might have resulted from a modification of survey areas between years. The reported numbers are likely biologically impossible if survey techniques are accurate and consistent (i.e., assuming twice as many females as males in the population and minimal immigration, each female in the 2015 population would have had to add approximately 4 chicks to the breeding population in 2016, and none of the adults could have died between surveys). Additionally, the shinnery-oak ecoregion was the only ecoregion to experience apparent population declines between 2016 and 2017. McDonald et al. (2016) do not discuss this outlying point in their annual report. Therefore, the trend for the shinnery-oak ecoregion should be viewed with caution until further data are accumulated.

Fig 7. LPC Population Rangewide Trend 2013-2017

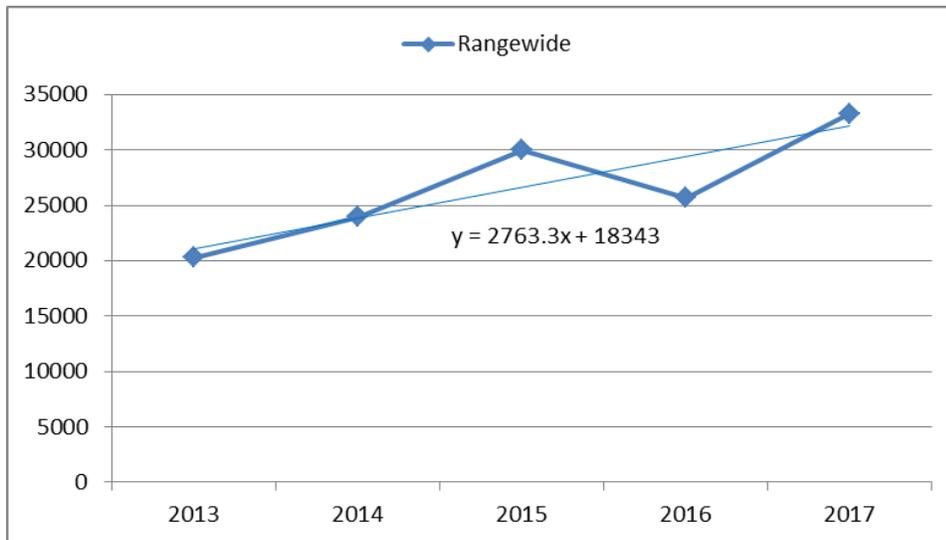


Fig 8. LPC Population Trends in the Shortgrass and Mixed-grass Ecoregions 2013-2017

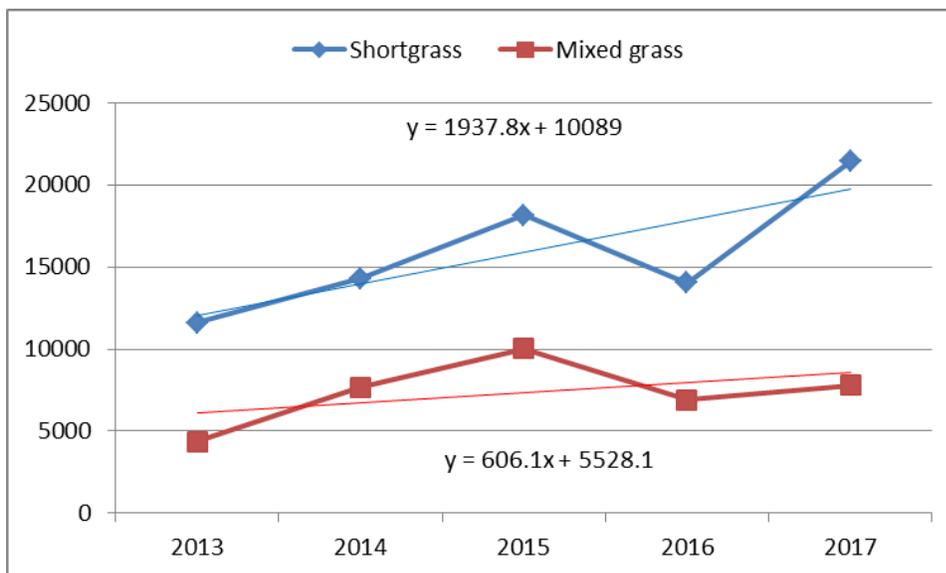
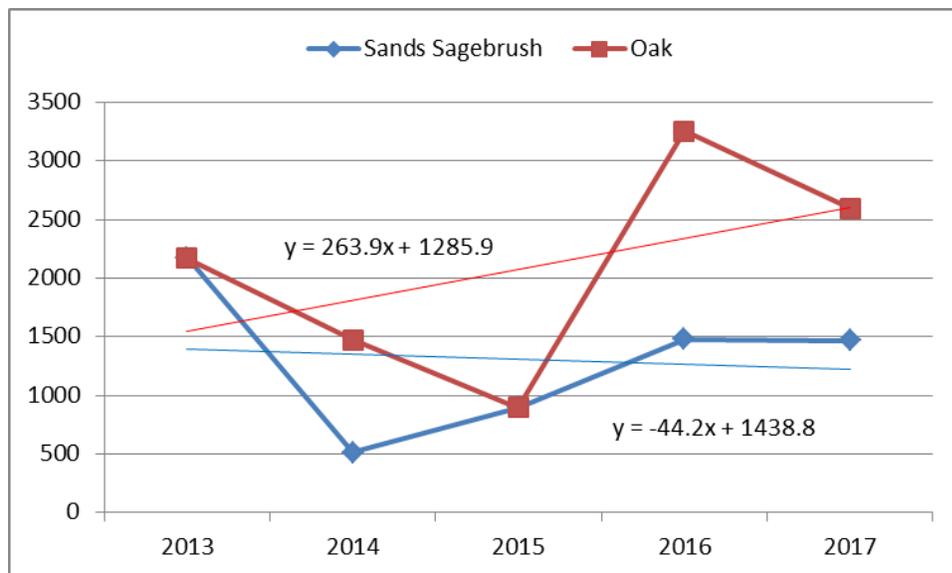


Fig 9. LPC Population Trends in the Sand-sagebrush and Shinnery-oak Ecoregions 2013-2017



Our assessment of population status is that LPC numbers remain well below desired levels, and numbers are unlikely to reach desired targets without substantial increases in population growth for 3 of the 4 ecoregions. We also note that the last several years (i.e., from 2013) have seen generally favorable weather conditions (unlike 2012-2013 when drought conditions occurred). The long-term trends in the population will not be known until we again experience a significant drought throughout the LPC range, an event that is certain to happen in the not-too-distant future, particularly given projected effects of climate change.

CURRENT LPC HABITAT CONSERVATION STATUS

The RWP recommended focusing management efforts into a delineated system of areas identified through the Crucial Habitat Assessment Tool (CHAT), developed by the Western Governors Association in coordination with the state fish and wildlife agencies. The CHAT was based on current LPC occupancy and habitat conditions and used modeling to estimate where recovery, restoration and expansion of LPC could take place. LPC focal and connectivity zones are designated as CHAT 1 (Focal) and CHAT 2 (Connectivity) zones. CHAT 1 areas total 7.1 million acres and the RWP set a goal of having >70% of these areas in good to excellent quality habitat. The RWP has a goal of providing for 75% of the population goals within CHAT 1 areas. CHAT 1 areas currently represent 36% of the occupied LPC habitat rangewide (RWP page 73). CHAT 2 areas total 3.1 million acres with the goal of having >40% in good to excellent quality habitat with no gaps of non-habitat >2 miles. CHAT 3 areas include modeled

habitat areas of high predicted quality and available and potential habitat totaling 22.5 million acres. No specific goals are indicated for this zone, although it is assumed that these areas will contribute at least 25% of the overall population goals.

As identified by the FWS, LPC need large blocks of good to excellent quality habitat, such as the conditions referenced by the RWP as "strongholds," consisting 25,000-50,000 acres of contiguous native grasslands with no more than limited amounts of cropland, few trees, and minimal fragmentation from anthropogenic impacts to successfully produce sustainable local populations. Strongholds or areas that can support local LPC populations at the landscape scale and considered core LPC habitats should be considered a subset of the focal areas (CHAT 1) identified in the RWP. Such areas are smaller, more focused and prioritized areas for conservation within a focal-area boundary. Optimal habitat requires both high-quality nesting habitat with interspersed brood-rearing habitat all in close proximity and of sufficient size to support populations with good probabilities of being sustained. These site and landscape-level considerations are essential for LPC conservation and recovery. Conservation and mitigation efforts must recognize these specific spatial needs for prioritization and application of projects to protect, restore and conserve LPC habitat.

Rangewide, LPC habitats are afflicted by lost, fragmented and degraded conditions from energy development, conversion to cropland, inappropriate grazing practices, disruption of the historical role of fire, invasion of trees and other stochastic events. GIS analysis of impacts, croplands and potential suitable habitat around leks revealed some of the limitations of current habitat conditions. Table 1 lists the combined effects of impacts from anthropogenic structures, developments and croplands surrounding leks in each of the 4 ecoregions, while Table 2 lists the resulting amounts of potential suitable habitat around leks in each ecoregion.

Percent Impacted Habitat	Shortgrass Prairie Ecoregion	Mixed Grass Prairie Ecoregion	Sand Sage Ecoregion	Shinnery Oak Ecoregion
	<u>Percentage of Leks (# of Leks)</u>			
0-10%	0.7 (1)	7.3 (28)	17.2 (5)	31 (92)
>10-20%	6.3 (9)	14.3 (55)	31 (9)	18.5 (55)
>20-30%	7.7 (11)	20.6 (79)	13.8 (4)	15.8 (47)
>30-40%	21.1 (30)	28.1 (108)	10.3 (3)	13.5 (40)
>40-50%	21.1 (30)	16.7 (64)	6.9 (2)	5.7 (17)
>50-60%	13.4 (19)	6.5 (25)	6.9 (2)	7.1 (21)
>60-70%	14.1 (20)	3.6 (14)	0 (0)	3.4 (10)
>70-80%	7 (10)	2.3 (9)	0 (0)	3.7 (11)
>80-90%	5.6 (8)	0.3 (1)	0 (0)	1.3 (4)
>90-100%	2.8 (4)	0.3 (1)	13.8 (4)	0 (0)

Table 1. The percentage impacted area within 3 miles of leks (sum of anthropogenic impacts within buffers as specified in the RWP added to cropland not already in an impact buffer) within each of the 4 LPC ecoregions. Values in the columns are the percentage of leks impacted in each of the listed impact categories, while the numbers in parentheses are the number of leks meeting the designated impact level.

Percent Suitable Habitat	Shortgrass Prairie Ecoregion	Mixed Grass Prairie Ecoregion	Sand Sage Ecoregion	Shinnery Oak Ecoregion
	<u>Percentage of Leks (# of Leks)</u>			
0-10%	5.6 (8)	0.3 (1)	13.8 (4)	0.7 (2)
>10-20%	4.9 (7)	0.8 (3)	0 (0)	3.4 (10)
>20-30%	11.3 (16)	2.9 (11)	0 (0)	3.4 (10)
>30-40%	14.8 (21)	5.7 (22)	6.9 (2)	3 (9)
>40-50%	14.1 (20)	8.3 (32)	0 (0)	6.7 (20)
>50-60%	19 (27)	25.5 (98)	6.9 (2)	7.4 (22)
>60-70%	16.9 (24)	22.7 (87)	13.8 (4)	12.8 (38)
>70-80%	9.2 (13)	17.7 (68)	13.8 (4)	16.8 (50)
>80-90%	4.2 (6)	11.7 (45)	31 (9)	16.5 (49)
>90-100%	0 (0)	4.4 (17)	13.8 (4)	29.3 (87)

Table 2. The mapped amount of potential suitable habitat within 3 miles of leks within each LPC ecoregion. Values in the columns are the percentages of leks in each ecoregion with the designated amounts of potential suitable habitat, while the numbers in parentheses are the number of leks meeting the designated criteria. Habitat is identified as potential suitable habitat because it is only mapped as grass and shrub vegetation and has not been evaluated for its structure or composition which will influence its quality as LPC habitat.

We also assessed the total percentage of impacts (developments and cropland) within each CHAT 1 and 2 reporting units as delineated in the RWP. Figure 10 displays these results.

These analyses reveal that even looking at the best habitat locations – making the assumption that LPC leks have been selected by LPC as the best available habitat – LPC habitat has experienced considerable impacts and changes. For example, only 13.4% of leks in the shortgrass ecoregion had >70% potential suitable habitat within 3 miles of the leks, while 33.8% of leks in the mixed grass ecoregion, 58.6% in the sand sage ecoregion, and 62.6% in the shinnery oak ecoregion met this level of habitat. Levels of impacts reveal the effects of direct loss of habitat from developments and conversions to croplands but do not capture the degradation of habitat quality from land use practices such as inappropriate grazing, invasion of tree species, or the effects of long-term drought. Figure 10

shows the high levels of impact and conversion occurring within the designated focal areas and connectivity zones, revealing that considerable amounts of restoration are needed to achieve the goals for these areas as specified in the RWP.

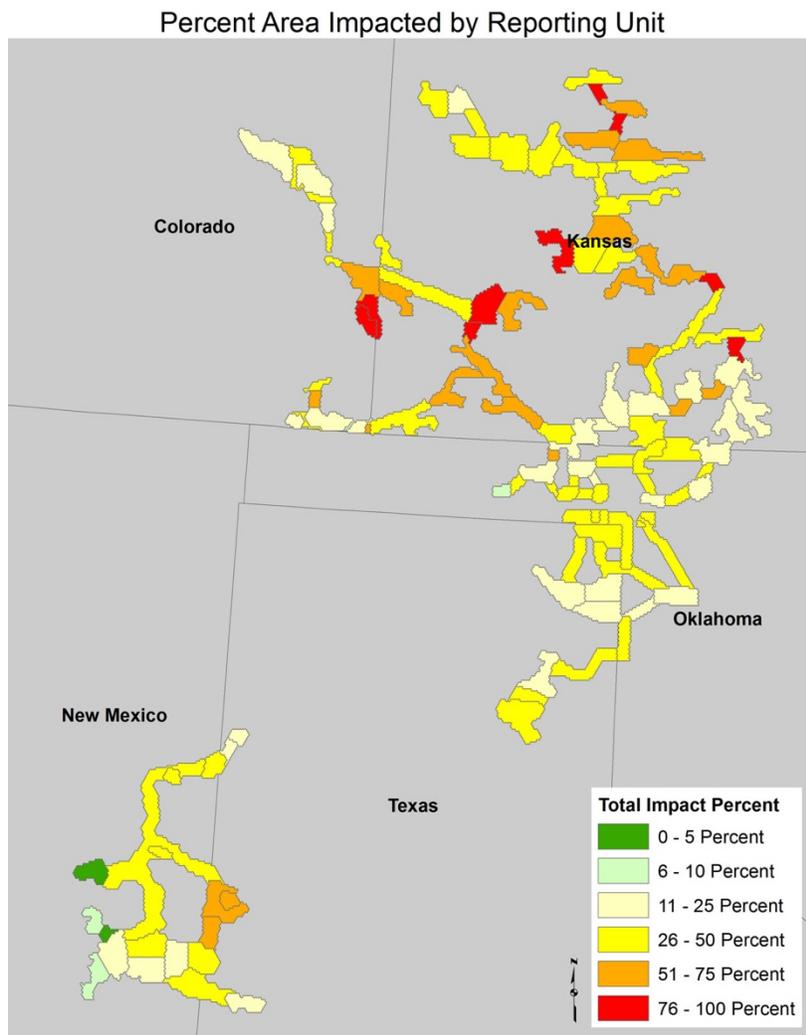


Figure 10. Percent of area impacted by development or cropland within CHAT 1 and 2 units.

The changes created by impacts appear to out-pace the mitigation and conservation actions currently available. A recent report from the Defenders of Wildlife environmental group evaluated the loss and disturbance of LPC habitats from energy and agricultural disturbance for a 19-month period beginning in September 2015 (https://cci-dev.org/analysis/LPC_delisting/). Their findings cause concern that current mitigation programs may only be addressing less than 1/3 of on-going habitat loss within the LPC range. Further losses are also occurring from habitat degradation due to improper grazing practices and tree invasion.

Because the LPC currently is not a federally-protected species, LPC populations are regulated as a gamebird by each state (NM, OK, CO, KS, TX) wildlife agency. In most cases, these state agencies have

limited regulatory authority to control how habitat is managed on private lands or on federal public lands and state lands do not make up a large portion of LPC habitats (although the state does have regulatory control on their state administered or owned lands). State agencies can provide incentives to private landowners and producers to encourage them to incorporate conservation on their land or into their operations, although state budgets and policy often do not allow for deployment of meaningful amounts of state funding to address needs. The state also can provide recommendations and guidance to federal land management agencies to prevent further impacts.

Existing mineral leases and split-estate situations, with mineral ownership being different than surface ownership, create a challenge for permanent conservation areas, but one that should be addressed to ensure creation of a system of core areas. These “severed” mineral estate issues create a complex problem because subsurface rights have priority over surface rights and eminent domain can and often is used to force energy development without landowner permission or concurrence. Areas with assured long-term management for LPC primarily occur on federal or state lands and have specific designation (Area of Critical Environmental Concern, Special Management Area, Reserve, Park or otherwise) but these lands are severely limited within the range of LPC. There are some private landowners who have designated permanent protection for LPC through permanent conservation easements with non-governmental conservation organizations or the potential establishment of conservation banks, but the number is few.

The primary habitat conservation practice applied to date has been prescribed grazing, designed to increase the likelihood of better functioning LPC habitat and thereby increasing and potentially expanding LPC populations. LPC need residual grass cover of preferred species with at least minimum height and structure to have successful nesting, brood-rearing, and year-round security cover. Current prescribed grazing practices attempt to achieve this through application of utilization limits on seasonal or year-long grazing with specified utilization rates ranging from 30-50% depending upon the program administering the prescribed grazing. The effectiveness of prescribed grazing at improving LPC habitat quality is showing some success, but the range of vegetation types used by LPC as well as annual fluctuations in grass productivity and individual landowner livestock management strategies presents a challenge for determining which utilization rate for which sites under which weather patterns is best for providing LPC habitat. The difficulties in measuring utilization rates also increase the time and resources needed to provide adequate monitoring of this practice. Drought, wildfire and market demands can all change the way ranchers graze their lands or leases and therefore it is essential to have conditions in place to ensure correct implementation of utilization.

LPC HABITAT CONSERVATION ACTIONS AND EFFECTIVENESS

LPC need to be managed at the landscape scale in order to provide the large blocks of habitat required to maintain their populations. Therefore, the scale of conservation actions must match those spatial-scale requirements to be most effective. Because this scale of conservation is achieved through the accumulation of smaller-scale actions, such as combining multiple ranches and pasture-level actions to

provide landscape scale (25,000-50,000 acre) conservation, spatial prioritization across and within CHAT categories is required. The pace of conservation must also be considered, particularly for recovery or enhancement actions, as LPC populations already are low and in a recovery mode with recovery strategies needed. Simply maintaining habitat and populations at current scales is insufficient. Conservation efforts must not only be focused on offsetting continued impacts but be a catalyst for habitat restoration efforts to boost recovery that ultimately increases populations across the range and within each ecoregion.

Delivery of LPC habitat conservation actions occurs at the federal, state, private and non-governmental agency levels. Each delivery mechanism is based on laws, regulations and funding available or suitable for the locale in which it is applied. The following actions currently are being used or are available to deliver LPC conservation:

Natural Resource Conservation Service (NRCS) – Lesser Prairie Chicken Initiative (LPCI)
WAFWA Mitigation Framework
USDA Farm Service Agency Conservation Reserve Program (CRP)
Candidate Conservation Agreements with Assurances (CCAA) in TX & OK
Candidate Conservation Agreement/CCAA in NM
FWS Partners for Fish and Wildlife Program
Private Land Conservation Banks
Federal land management plans
State Fish and Wildlife Agencies
Non-Governmental Conservation Organization Lands and Easements

NRCS LPCI

The NRCS's LPCI uses Farm Bill conservation programs to provide advice and financial assistance to landowners through the Environmental Quality Incentive Program (EQIP) using core practices designed for rangeland management. NRCS spent \$17 million in the first 2 years (2010-2011) of LPCI with an average of \$3.9 million per year since 2012. The number of private landowners enrolled in LPCI's range-enhancement program through 2015 was 459, and 1,062,246 acres have been enrolled in LPCI contracts. Key conservation practices identified by NRCS for LPCI are upland habitat management as the core practice typically applied, with prescribed grazing as an associated practice along with a number of other practices designed to improve LPC habitat. LPCI adopted a standard of 50% utilization for its prescribed-grazing regime. However, NRCS in Kansas adopted a standard of 33% utilization for its prescribed grazing regime. The LPCI report released in May 2017 identified 26 contracts for 2015 and 28 contracts for 2016 covering 114,438 acres and 89,422 acres respectively. These required an obligation of \$3,009,080 in 2015 and \$2,938,454 in 2016 (\$26 and \$33/acre respectively). Of these acres, brush management was applied on 9,039 acres in 2015 and 15,869 acres in 2016. Prescribed grazing was applied to 138,881 acres in 2015 and 96,873 acres in 2016, with a 2 year contract for application of this practice. WAFWA reported that LPCI contracts in 2015 covered 1.4% of CHAT 1 and 2 areas. LPCI has

prioritized CHAT 1 and 2 areas, but because it is a matching program requiring landowner contributions for practices, this can limit its ability to engage high percentages of landowners in any specific area and thus to strategically locate its application. Rather, participation relies on selection among the voluntary opportunities it generates from landowners and thus can be considered generally opportunistic. It is further complicated by the reliance on funding from Congress which can fluctuate greatly year-to-year and in future Farm Bills. LPCI works with WAFWA and Pheasants Forever to provide coordinated technical assistance to landowners.

WAFWA MITIGATION CONTRACTS

As part of the RWP, a mitigation strategy was developed and implemented by WAFWA to offset impacts through volunteer participation by development companies and landowners. Development companies enroll lands to be developed for energy or other uses and pay a fee according to the amount of land and proposed actions that could impact LPC. Landowners can enter into voluntary agreements for LPC conservation and be eligible for payments for conservation actions that would benefit LPC. Mitigation is expressly identified as requiring at least 25% "permanent" mitigation through easements and 75% through "temporary" mitigation administered in 5- or 10-year agreements. We were unable to locate any scientific basis for the 25/75 ratio of permanent-to-temporary mitigation. A ratio of 1:2 between impacts and offsets was assigned to gain benefits to the species and a Habitat Evaluation Guide (HEG) score is used to determine quality of habitat impacted and thereby quantify the amount of offset required.

As reported on September 12, 2017, WAFWA had 14 term contracts and 4 permanent contracts that were implemented, with 32 mitigation applications received and waiting for impacts to offset (termed "active term applications" by WAFWA). WAFWA reported 113,391 acres of CHAT 1 and CHAT 2 are under term contract and 33,906 acres are under permanent contract (only one site of the four likely meets the criteria to be designated as a stronghold but the criteria verification for the property is not yet public). While these 33,906 acres under permanent contract are providing conservation credits we are unsure whether these credits can be considered permanent conservation credits as specified by the RWP, which states, "all permanent conservation offset units must adhere to the FWS conservation banking guidance and the LPC Conservation Banking Standards established in the RWP (p. 93). According to the WAFWA 2016 RWP Annual Report approximately twenty percent (20%) of the term mitigation offset acres are in lands already impacted from development thus reducing the effective acres. While this program provides a mitigation system to offset impacts from enrolled lands it is estimated that only approximately 30% of all total impacts to LPC habitat occurring annually are being offset by the WAFWA mitigation contracts (as stated by Sean Kyle, September 12, 2017 at the LPC Initiative Council meeting in Park City, Utah). Based on 2016 information when we could breakout the mitigation actions by CHAT 1 and 2 areas, approximately 1.4% of CHAT 1 and 0.3% of CHAT 2 are being improved through these actions.

CONSERVATION RESERVE PROGRAM (CRP)

The Conservation Reserve Program is administered by the NRCS and Farm Service Agency under USDA. It is a program originally designed to reduce erosion on marginal agricultural lands and provide a financial incentive for landowners to participate and has added benefits to wildlife in subsequent Farm Bill re-authorizations since 1985. The acreage currently enrolled in the Conservation Reserve Program in the LPC range is more than 4.8 million acres. In the 2016 WAFWA report, CRP accounted for 786,869 acres or 8.3% of CHAT 1 and 2 areas. CRP in Kansas has targeted planting with native species of grass, and in some cases native and non-native forbs as well, and has contributed to LPC habitat, but often in fragmented landscapes including in areas where LPC were not historically well established (e.g., Shortgrass Ecoregion). CRP in other states may have produced more variable results but its contribution to LPC habitat has not been well documented empirically. Further, weeping lovegrass was planted extensively in Texas and New Mexico providing limited benefit to LPC. Sideoats grama, a native species, was planted in many CRP areas in Colorado but provides only limited benefits to LPC. Before CRP enrolled acres in states other than Kansas can be counted as contributing to conservation of LPC habitats, the CRP practice for each contract should be evaluated for benefits to LPC.

USDA has approved about 40 practices that agricultural producers can use to incorporate conservation into their operations. However, there are only a few of those practices that likely have benefits that can be used to solve some of the problems faced by LPC, such as very low nest success and brood survival rates. Some of the practices are of little or no benefit to the species, even when they result in large blocks of grass cover. For example, the first conservation practice approved for the CRP was CP-1, introduced grass and legume establishment. This practice was one of the most popular practices used by producers when CRP first came on the scene in the late 1980s. Fields enrolled in this practice did show benefits for soil erosion control and pesticide and fertilizer reductions. However, there is no evidence to show that fields enrolled in this practice (CP-1) actually improved nest success or brood survival rates for LPC, or for many other ground-nesting birds.

In reality, only 6 approved CRP practices are likely to help improve LPC nesting success and brood survival rates: CP-2, native grass, forb, and legume establishment; CP-4D, native wildlife habitat; CP-25, rare and declining habitat; CP-37, duck nesting habitat; CP-38, state acres for wildlife habitat enhancement; and CP-42, pollinator habitat establishment. However, even these practices can lose much of their conservation value to wildlife if they are not consistently managed and become too overgrown or are dominated by a single aggressive grass species.

In their 2016 Rangewide Conservation Plan Annual Progress Report, WAFWA identified 558,419 acres of CRP within the CHAT 1 reporting units, which is 28% of all conservation program acres reported in this report (Appendix A, pages 118-119). They also estimate that 228,450 acres or 49% of the CHAT 2 conservation program acres are enrolled in the CRP (Appendix B, page 120-121). It would be relatively easy to conclude from these data, as reported in these two appendices, that CRP is contributing significantly to the overall habitat recovery efforts for LPC. However, in reality there is no mention of how well these conservation program acres actually support the species' restoration goal. We recommend that an independent evaluation be conducted of the real potential of each of the CRP

conservation practices that have been or likely will be used in the LPC range to improving recruitment. This evaluation might consider assigning a rank to each CRP conservation practice establishing such potentials.

CANDIDATE CONSERVATION AGREEMENTS (WITH ASSURANCES) - TX & OK

Prior to listing, there were LPC CCAAs available for private landowners in New Mexico, Texas, and Oklahoma. These agreements are voluntary between the private landowner and the FWS and provide protection from future “take” provisions if the bird is listed under the ESA in return for agreeing to adopt a practice beneficial or non-detrimental to LPC. These agreements covered rangeland and grazing practices and the NM plan does address some energy issues through avoidance actions. Total area enrolled in all 3 CCAAs (including acreage enrolled in the CCA in NM) was reported as 2,932,552 acres. Acreage enrolled in CHAT 1 (436,191 acres) and CHAT 2 (91,105 acres) was reported for TX and OK. Additional acres occur in NM, but the total in CHAT 1 and 2 was not reported. These contracts do not come with funding to assist with private landowner implementation of the agreed to practices under the CCAA.

Texas had 84 ranches enrolled consisting of 614,250 acres (as reported in 2014) in their CCAA with no more applications for enrollment being accepted. Oklahoma has over 200,000 acres enrolled in their CCAA which covers agricultural practices.

There is no doubt that these CCA/A's can provide benefits to LPC, but the effectiveness is unknown, as they are voluntary for practices applied with no landowner compensation. Long-term monitoring should be required for implementation and effectiveness to LPC through CCA/As, and that information should be made public on an annual basis.

CANDIDATE CONSERVATION AGREEMENT/CCAA - NM

In 2008, the BLM in NM developed a Candidate Conservation Agreement/Candidate Conservation Agreement with Assurances (CCA/A) combination as part of the Pecos District Office Special Status Species RMP Amendment for LPC and Dune Sagebrush Lizard (DSL). This agreement is unique that it combines both private and public lands and is administered by the Center of Excellence for Hazardous Materials Management (CEHMM), a non-profit conservation organization based in Carlsbad, NM. The CCA/A set up mitigation fund for conservation actions and is structured as a Payment-In-Lieu-Fee (PILF) program. This means that energy companies pay into the fund based on what impact they expect to incur and CEHMM then administers and manages the mitigation. Conservation actions in the CCA/A include prohibitions on surface impacts from energy development in key LPC habitats and conservation measures to avoid, minimize, or mitigate impacts. This agreement covers both energy development and grazing/ranching activities on federal, state and private lands in southeast New Mexico.

In the 2016 annual report for the LPC/DSL CCA/A available on CEHMM's website, a total of 73 ranches have enrolled in the CCA/A totaling approximately 1.9 million acres (891,000 on federal lands/allotments). Fifty-six (56) energy companies have enrolled for a total of approximately 1.9 million acres (1 million is federal mineral estate/ownership under lease). A total of about \$400,000 of projects were completed in 2016 which included mesquite control, water development, and fence modification. In addition, a total of \$1.01 million was appropriated but not spent from 2016 for various projects.

FWS PARTNERS FOR FISH AND WILDLIFE PROGRAM

The FWS established the Partners for Fish and Wildlife Program (PFW) to provide technical and financial assistance for the restoration and enhancements of fish and wildlife habitat on private lands, in partnership with other state and federal agencies and non-governmental organizations. There is a match requirement for federal financial assistance, usually 25% of the total. In 2016, WAFWA reported that 5,495 (0.08%) acres of CHAT 1 and 5,287 (0.04%) acres of CHAT 3, mostly in the mixed grass ecoregion (94%), were enrolled in this conservation program. The likelihood that this program will be able to make meaningful contributions to the recovery of LPC populations given the current proposed federal budget and priorities is likely poor, or unclear at best.

Region 6 of the FWS reported that during FY 2012-2017, Kansas PFW completed 52,670 acres and Colorado PFW completed 1,721 acres of restoration/enhancement/establishment of upland habitat benefiting LPC. Conservation practices used included chemical and mechanical plant control, invasive tree (e.g., eastern red cedar and others) removal, installation of fire breaks, implementation of prescribed fire, development and implementation of grazing plans, installation of water facilities (e.g., livestock drinkers) to support improved livestock management, and seeding of native grasses and forbs.

Region 2 of the FWS reported that during FY 2012-2017, New Mexico PFW completed 300 acres, Oklahoma PFW completed 7,411 acres and Texas PFW completed 7,395 acres of restoration/enhancement/establishment of upland habitat benefiting LPC. The actual benefit of specific projects varied widely across both space and time. Some of these projects have benefits lasting 10 years (or more) while others are more short term (1-3 years). Additionally, the benefit from these projects vary greatly depending upon the type of project implemented, the pre-existing condition of the acres, the location of the project, the ability (condition and quantity) of the surrounding landscape to support healthy LPC populations, and the environmental factors (such as drought) occurring before/during/and after the projects

CONSERVATION BANKING

Conservation banks (sometimes referred to as mitigation banks) are permanent conservation easements with a dedicated management plan and dedicated funding source for LPC conservation on the enrolled properties normally in the form of a non-wasting endowment. Typically these banks are developed by private sector, for-profit mitigation banking companies, but can be developed by any private landowner. Permanent conservation efforts must meet strict requirements based on the 2014 LPC Permanent Mitigation Guidance issued by the FWS to qualify as a conservation bank. All banks must be approved by the FWS but the credits associated with each bank can be applied to any conservation credit system in permit vehicles or habitat exchange or even sold on a voluntary basis.

To date, over 33,000 acres have been approved as LPC Conservation Banks by the FWS in 3 of the 4 LPC service areas with an additional 60,000 potentially available for expansion of existing banks or new properties with landowners. One of the properties has a total of 46,000 acres potentially available as a stronghold in the mixed-grass ecoregion. Although not spatially assessed in the context of other conservation actions being pursued, these banks may provide immediate and strategic permanent conservation for LPC in CHAT 1 and 2 areas. But these acres have not been able to be put into play through any mitigation or conservation exchange because no transactions have taken place within the existing WAFWA Mitigation Framework. Therefore, available and future credits and the potential conservation value they represent are not being applied to LPC conservation efforts. It is important to note that the only LPC conservation credit system currently in place is through the WAFWA Mitigation Framework. Expanding the pool of mitigation providers and rectifying this issue is strongly encouraged.

FEDERAL LAND USE PLANS

Federal lands administered by the US Forest Service (FS) and Bureau of Land Management (BLM) are required to have land use plans to guide actions for multiple-use and sustained yield. For LPC conservation there are 2 National Grasslands (Cimarron and Comanche) in Kansas and Colorado managed by the FS and the associated Forest/Grassland Plan and one BLM District (Pecos in SE NM) that provide guidance on how LPC are managed on federal lands and when federal minerals are extracted.

In 2008, the Pecos District Office of the BLM approved an amendment to their Resource Management Plan for Special Status Species which included the LPC. The plan dealt with energy development and grazing impacts to LPC and created 4 categories for LPC (Core Management Area, Primary Population Area, Sparse and Scattered Population Area, and Isolated Population Area). The BLM restricted all impacts to LPC in the Core Management Area which included 51,522 acres in an LPC Habitat Preservation Area of Critical Environmental Concern (ACEC) and set forth guidance for impacts and mitigation for LPC. The RMP used 320 acres as a minimum patch size for potentially suitable LPC habitat and 3 years as the timeframe to establish LPC occupancy for lands. As part of the RMP amendment, a CCA/A was developed and approved to work with energy companies and landowners on

LPC conservation (administered by CEHMM, previously described). The Pecos District BLM lands are the only federally administered lands in the shinnery-oak ecoregion.

In 2014, the Cimarron and Comanche National Grasslands (NGs) approved their LPC Management Plans to be used in accordance with the National Grassland Plans required by the National Forest Management Act. These plans were greatly influenced by the RWP as stated on page 2 of the plan. LPC populations on these 2 Grasslands are at historic lows, reporting only 28 birds counted in 2013 (Figure 11). The Comanche NG includes an LPC Habitat Zoological Area of 10,177 acres. LPC on the Grasslands are isolated and have little room for dispersal and there is little to no connectivity to outside populations due to ecological barriers, habitat loss, fragmentation, and degradation and the limitations of LPC maximum dispersal range. The plans use 40% as their utilization rate for grazing.

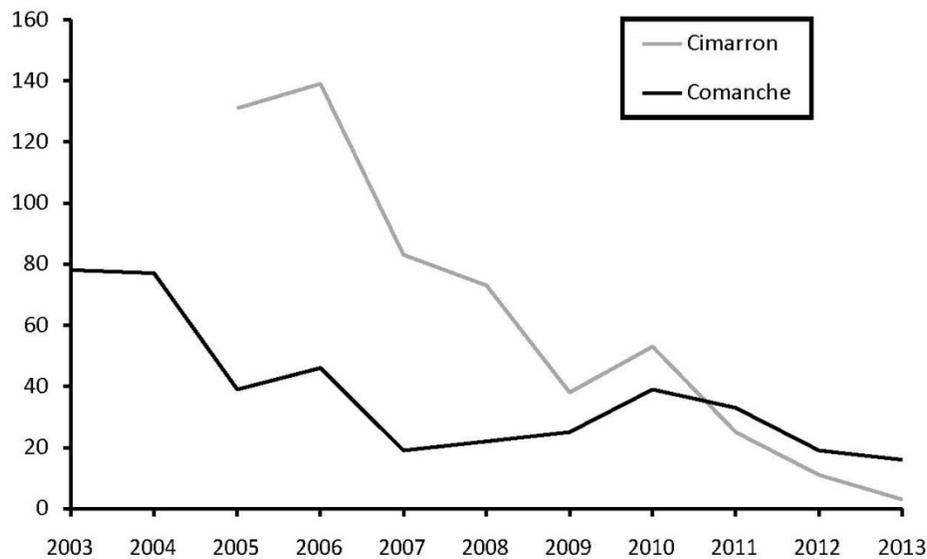


Fig. 11. Number of LPC counted during annual lek surveys (2003-2013) on the Cimarron and Comanche NGs. (Source - Lesser Prairie Chicken Management Plan, Comanche and Cimarron National Grassland, May 2014).

STATE FISH AND WILDILFE AGENCIES

Colorado, Kansas, New Mexico, Oklahoma, and Texas each have LPC management programs intended to guide agency actions, assist landowners and provide assistance to federal and other LPC programs. All states provide technical assistance and participate in the implementation of the RWP and make up the LPC Initiative Council and LPC Interstate Working Group.

Colorado listed the LPC as a state threatened species in 1973 and has 90% of LPC habitat within the state on private land with ~3% protected by conservation easements held by NGOs. Six percent of LPC habitat is found on federal lands and an additional 4% by the State of Colorado. There are efforts underway in Colorado to translocate LPC from private lands in Kansas to augment the LPC population. These efforts are being done to delay local population extirpation from this part of the LPC range.

Kansas upland game bird – habitat improvement program helps deliver improvements to upland bird habitats on private lands through the development of habitat management plans. The annual budget is approximately \$120,000 and provides for a 75% match for practices. Kansas State Wildlife Grants to benefit Species of Greatest Conservation Need provide funding for projects identified as high need by the State Wildlife Action Plan. In 2012, 21 projects impacted approximately 11,155 acres of LPC habitat (RWP, page 60-61).

New Mexico manages over 21,621 acres in Prairie Chicken Wildlife Areas scattered in the grasslands of the SE part of the state range in size from 28 to 7,189 acres. These areas are focused on the preservation and restoration of LPC habitats. Seventy-four percent of LPC habitat in NM is on private or state lands.

Oklahoma administers the Lesser Prairie Chicken Habitat Conservation Program with private landowners with LPC habitat projects through a 75% match and for a 10-year term. The OK Spatial Planning Tool allows developers to avoid high-value LPC habitats and promote voluntary conservation efforts.

Texas provides technical assistance to landowners through LPC management plans and in 2013 there were over 942,000 acres covered by such plans. Texas also has a Landowner Incentive Program to entice good conservation practices through technical and financial assistance and over 15,000 acres of LPC projects have been implemented.

NON-GOVERNMENTAL ORGANIZATIONS LANDS AND EASEMENTS

The Nature Conservancy owns and manages a number of areas for LPC and holds permanent conservation easements on a number of properties. TNC owns the 28,000-acre Milnesand Prairie Preserve in eastern New Mexico, the 7,200-acre Yoakum Dunes Preserve in Texas, and the 17,000-acre Smokey Valley Ranch in Kansas. TNC holds conservation easements on approximately 35,000 acres in Colorado.

Pheasants Forever provides technical assistance through over 20 LPC Farm Bill partner-funded biologists and hold conservation easements for WAFWA mitigation programs.

Bird Conservancy of the Rockies provides technical assistance through biologists employed through the Strategic Action Watershed Team.

National Fish and Wildlife Foundation administers the Private Land Technical Assistance program along with other grant programs to provide funding to LPC programs.

The Colorado Cattleman's Agricultural Land Trust has 2 conservation easements on approximately 14,000 acres in SE Colorado shortgrass prairie.

The Ranchland Trust of Kansas has a partnership with a private investment firm and two private landowners for an approved LPC conservation bank of 29,000 acres with an additional 26,000 acres available for future conservation bank establishment if market conditions warrant.

The Texas Agricultural Land Trust holds 2 conservation easements for over 7,135 acres of LPC habitat including one property committed to a conservation bank for LPC.

SUMMARY OF CURRENT CONSERVATION BENEFITS

These programs all act independently of one another with some coordination, particularly those within each respective state, but no overall coordination or collaboration strategy is evident. While all of the above conservation programs have been implemented for LPC, at least to some degree, their effectiveness in providing needed conservation has been limited. Tables 3 and 4 summarize the total acres reported for the above programs occurring in CHATs 1 and 2. As reported, a cause/effect relationship for actions taken is hard to establish and population gains (or losses) could be attributed to favorable weather, monitoring design/effort, or natural population variability. NRCS's LPCI program has active contracts affecting less than 2% of CHAT 1 and 2 areas. WAFWA's Mitigation Framework has been applied to approximately 1% of CHAT 1 areas and less than 1% of CHAT 2 areas. CRP has been applied in approximately 8% of CHAT 1 and 2 areas, but with the exception of Kansas, this program has uncertain benefits to LPC. In addition, there is no guarantee that CRP will continue to receive funding or priority in the new Farm Bill or a requirement to use LPC-friendly practices for enrolled acres. CCA/As provide uncertain benefits to LPC populations.

All of these programs provide benefits to LPC, but their combined ability to provide the large blocks of high-quality habitat needed by LPC through strategic application in CHAT 1 and 2 areas currently is very limited. The level of available funds restricts how many acres can be included in programs, and the requirement of landowner matches in many programs makes strategic provision of large blocks of habitat problematic. Our analysis leads to the conclusion that impacts to LPC habitats are outpacing mitigation efforts and therefore continuous loss is happening.

Table 3. Acres reported for various conservation programs within CHAT 1 areas.

CHAT 1 area	All LPC Initiatives*	CRP**	Ranching CCAAs	TOTAL %
Shinnery Oak	7.2%	10.4%	4.6%	22.8%
Mixed Grass	3.7%	4.8%	15%	23.5
Sand Sage	1.4%	8.2%	0%	9.6%
Short Grass	0.7%	9.0%	0%	9.7%
Range-wide	3.0%	7.9%	6.2%	17.1%

*Includes LPCI, WAFWA mitigation, USFWS Partners, and Reported state initiatives

**Includes all CRP practices, including non-native planting

Table 4. Acres reported for various conservation programs within CHAT 2 areas.

CHAT 2 area	All LPC Initiatives*	CRP**	Ranching CCAAs**	TOTAL %
Shinnery Oak	0.1%	14.7%	0.2%	15%
Mixed Grass	0.5%	5.8%	6.7%	13%
Sand Sage	0%	8.1%	0%	8.1%
Short Grass	2.2%	6.2%	0%	8.4%
Range-wide	0.8%	9.3%	3.7%	13.8%

*Includes LPCI, WAFWA mitigation, USFWS Partners, and Reported state initiatives

**Includes all CRP practices, including non-native planting

We will discuss the level of funding that is needed to ensure continued conservation of LPC habitat in the Recommendations section. However, the RWP recommendation of 70% of CHAT 1 areas and 40% of CHAT 2 areas totals just under 6 million acres. If all those lands were placed under an LPC agreement using LPCI's average cost, as estimated for 2015, of only \$26/acre (a subsidized cost, see below), it would require over \$154,000,000/year to fund, a level of funding that would be difficult to obtain.

The level of payment to landowners is also a concern. Conserving and restoring any highly scarce resource is an expensive proposition and the LPC is no exception. Currently, the bulk of funding comes through voluntary conservation efforts (WAFWA, LPCI, CRP) where costs are based on NRCS conservation practices payment rates.

These rates, developed for the application of the NRCS conservation efforts, may or may not be appropriate for application outside of those programs. NRCS rates must be considered "subsidized," because the payment schedule only includes eligible costs authorized by available programs and omits

certain costs such as operation and maintenance, risk, administrative/permits, opportunity cost, etc. (NRCS Title 300 – Payment Schedule Handbook, Part 600 – Payment Schedules 1st Edition, Oct. 2016). The NRCS advises that *it is not appropriate to use payment schedules as estimated total costs of projects (emphasis added) in Subpart B – Payment Schedule Requirements (600.10, D. 2. ii)*. This fact reveals that the NRCS rates will insufficiently cover the same practices carried out by landowners who have not received federal funding because the payments do not cover the entire practice cost requiring that landowners secure matching funds. Further, costs are variable throughout the range of LPC based on ecosystem type and market rates, and cost mechanisms differ. Basic economic theory dictates that private landowners are not generally going to conserve or restore a highly scarce resource based on cost capped or subsidized programs offered to them especially when there are often times multiple, conventional development opportunities that may negatively impact the LPC funding available to them that are backed by the competing values of these development opportunities.

Currently, we have only voluntary efforts funded through mitigation payments (RWP and NM PILF) or appropriated funding from federal or state appropriation processes. Because of this variability and matching requirements for private landowners (for federal funds), the true cost of LPC conservation actions cannot be ascertained and the “right” price per practice is often a moving target. In addition, administrative costs to manage and facilitate conservation actions are variable with some being covered through agency salaries and some through mitigation payments. Other costs are born completely by private landowners, businesses, or individuals.

Successful conservation efforts for LPC require adequate funds for the cost of achieving meaningful and measurable conservation actions/goals and must be enough to provide incentives under voluntary conservation agreements to private landowners. All programs need to recognize the administration costs associated with their implementation, and those programs that have administration costs subsidized need to ensure that these costs are fully accounted for in reporting metrics such as cost/acre for LPC conservation efforts.

NEW INFORMATION AVAILABLE FOR LPC CONSERVATION

The ability to incorporate new science into existing conservation efforts is essential to be able to apply limited funding and resources and maximize efforts for the benefit of LPC. Since 2013, new information is available that can increase efforts for LPC. New information including the benefits of reducing tree cover and amount of cropland in LPC habitat will help focus conservation actions for higher LPC benefit, while additional information on appropriate grazing levels and the importance of fire to LPC has become available. New information reported by LPCI (2017 report) and in the expected updated species status review of the USFWS provide a good reference of new findings that should be incorporated into management plans.

THREATS

Future long-term drought is a threat to LPC habitats and populations. How LPC populations will respond to the next drought that occurs, as it inevitably will, will provide a better measure of the effectiveness of on-going conservation efforts. While population fluctuations are a natural component of LPC response to varying weather conditions, the question will be whether sufficient high-quality habitat in large blocks has been provided to place the long-term population trend on an upward trajectory. Currently, the limited amount of acres under LPC programs, the generally opportunistic distribution of those acres within CHAT 1 and 2 areas, and the uncertain effectiveness of some of the management actions that have been implemented to date in significantly improving habitat, raise concerns about the future status of LPC.

Several large range fires occurred in 2017 within the LPC range. These burned approximately 780,000 acres of LPC habitat including CHAT 1 (~294,000 acres) and 2 (~131,000 acres) in KS, OK and TX). While the habitat quality of these areas for LPC is likely to be improved in future years because of the fire, populations in these areas were likely impacted negatively in 2017. Sufficient redundancy of areas managed as high quality LPC habitat is needed to ensure that years supporting large amounts of wildfire still provide sufficient areas to support source populations of LPC.

Energy extraction is a cyclic event, at least for oil and natural gas, which depends on market forces and access to minerals. Higher prices likely will trigger increased exploration and development. Recent articles predicted an estimated \$25 billion additional investment in oil and gas development in 2017 (<https://goo.gl/iN2aTp>), and the Permian Basin is expected to grow 50% in 2017 and rival the Ghawar Field in Saudi Arabia as the largest oil field in the world (<https://goo.gl/zciRD4>). Given that the shinnery-oak LPC populations are already under immense threat and isolation, this is of great concern. Wind and solar development also are becoming a concern with numerous commercial wind farms already located or planned in LPC habitats—in fact, NM (Sagamore project - <https://goo.gl/anZv1n>) and OK (Windchaser project - <https://goo.gl/J5BeUL>) just announced large wind-development proposals in the heart of LPC range in the shinnery-oak ecoregion. With reduced cost for wind and solar energy production, the drive to increase domestic fossil fuel production, and the push to lessen environmental regulation on energy production, threats from energy development are not going away and will likely increase in intensity in both the near and long term.

Climate change, in addition to increasing the potential for significant drought events, is expected to increase temperatures. LPC, especially in the shinnery-oak ecoregion, have been reported to be at risk from higher temperatures. Prolonged drought most likely will result in reduced nest success and brood survival (Grisham et al., 2013). This may make recovery of LPC in the southern portions of their range even more difficult. Uncertainties about future efforts to address the threats associated with climate change make this an increasing threat.

RECOMMENDATIONS

NAGP identified the following key areas where refinement, improvements, or additions to the RWP can lead to increased likelihood of successful LPC conservation actions. This should provide greater efficiency, effectiveness and accountability and improve the likelihood of providing for recovered and sustainable LPC populations. Additional more specific recommendations are also discussed below.

Key areas include:

- 1. Increased funding for LPC conservation from numerous sources**
- 2. Strategic application of LPC actions with limited resources**
- 3. Better coordination among all conservation actors and actions**
- 4. Increased transparency in public conservation**
- 5. Consistent application of science and management, with rapid incorporation of new information**

INCREASED FUNDING FOR LPC CONSERVATION FROM NUMEROUS SOURCES

Currently available funding for LPC conservation falls well short of what is needed to significantly affect LPC conservation needs. Increased levels of funding are needed from multiple sources to provide for LPC conservation. As tables 3 and 4 show, current dedicated LPC funding only provides for management of approximately 4% of CHAT 1 and 2 areas.

The 2018 Farm Bill will be a critical source of funding for future LPC conservation. Continuation and expansion of the LPCI program is needed under EQIP. A targeted and expanded CRP program including LPC enhancement practices is needed. An expansion of the Conservation Stewardship Program (CSP) may also be a mechanism for additional funding for LPC.

Direct support for LPC should be included in US Fish and Wildlife Service budgets, such as allocations through Section 6 ESA funding. Expansion of Partners for Fish and Wildlife funding specifically for LPC should also be explored.

WAFWA needs to reevaluate funding through its Mitigation Framework. Developers may need to pay additional amounts to allow an accurate accounting for impact and offset costs that fund strategic allocation of conservation actions to be most effective at mitigating impacts and achieving the stated goals of the RWP.

Additional sources of funding, such as support from foundations and organizations should be sought. NFWF, PF, TNC and other organizations may be able to assist with additional funding.

Additional funding from free market mechanisms can help with conservation efforts and incentivize private landowners to participate in LPC conservation. There are millions of private investment dollars on the sidelines waiting for an acceptable market condition before investing. These funds have never

been involved in LPC conservation before and can be seen as a needed bonus for conservation and allow actions to be completed at the scale needed for LPC recovery. These investors are needed and wanted and LPC conservation programs should welcome their involvement.

STRATEGIC APPLICATION OF LPC ACTIONS WITH LIMITED RESOURCES

When a species like the LPC, which depends on specific habitat needs and spatial requirements, gets to the point where potential for listing under the ESA may be warranted, a strategic approach to conservation must be used to stabilize the population and jumpstart the path to recovery (referred to as the “recovery phase”). LPC currently reside in 4 ecoregions that have a high degree of variability in population sizes, habitat conditions, climatic factors, threats, and impacts. Research has shown that the optimum strategy for conserving species at low population sizes is to protect areas of high quality habitat with sufficient size to maintain the local population and serve as a source for dispersers during years with favorable conditions and as the availability of suitable habitats expands. The RWP attempts to do this through the identification of focal areas (CHAT 1) that are then linked with connectivity areas (CHAT 2). However, the RWP goal of 4.96 million acres of CHAT 1 in good to excellent quality habitat and 975,000 acres of CHAT 2 in good to high quality habitat, while desirable, is well beyond the current capabilities of the program to effectively manage and fund. While the identification and categorization of CHAT 1 and 2 areas as mapped in the RWP can be maintained, changes need to be made to ensure a more-focused approach and application of available resources (conservation triage). The spatial prioritization of a finer delineation of core conservation areas within CHAT 1 and 2 areas needs to be rigorously directed to provide the most benefit in a coordinated manner across the programs providing LPC conservation – this is described in more detail below. Unless there is incentive or regulation to protect key core areas, continued loss, fragmentation, and degradation of core LPC habitat is likely to result in lower LPC production and populations. The delineated system of core areas needs to be managed to optimize quality of LPC habitat. CHAT 3 and 4 areas cannot be ignored either, as they offer the best long-term opportunity for range restoration and occupancy within the current and historical range of LPC. However allocation of funding to these areas needs to be carefully coordinated to support a delineated system of core areas.

The RWP discussed the establishment of strongholds, with a goal of one stronghold in each ecoregion of at least 25,000 acres with additional criteria. This is an effort towards a more strategic provision of needed large blocks of high quality habitat. However, one stronghold in each ecoregion is inadequate to address sufficient representation, resiliency, and redundancy needed to ensure future populations. A strategically-targeted system of priority core areas patterned using stronghold-type requirements is needed. These areas should have high assurances of long-term persistence with LPC management as the primary focus. Targeting an increased number of core areas in each ecoregion and determining desired locations of a system of these is a needed task. These areas should have a minimum size of 25,000 acres and preferably be 50,000 acres (as recommended by the FWS) of good to high quality habitat, preferably contain active leks, and be placed into long-term or permanent status for LPC

management. Areas of high-quality habitat smaller than that recommended for strongholds should be enhanced and protected if they support active leks, are adjacent to other smaller areas, and are within the natural dispersal distance of an existing or developing core area, or existing landscape fragmentation does not provide an opportunity for larger areas. A minimum of 9,000 acres has been identified as a potential floor for permanent conservation areas based on the seasonal needs of supporting a local LPC population. Taking into consideration existing areas that could qualify for core areas, some additional number, perhaps 10, might provide a minimum set. If they averaged 35,000 acres each, this would identify 350,000 acres of core areas. If these areas required \$75/acre/year on average to assure that large blocks of habitat could be provided, this would require an additional \$26 million in annual funding. These higher costs per acre are needed if a truly strategic approach is used to ensure high levels of landowner engagement in desired locations. This would also allow for greater application of restoration and remediation practices necessary for uplift and open up opportunities to engage additional partners. Such an initial strategic approach should be designed with an adaptive-management framework including testing scenarios and setting trigger points for potential future adjustments. It is worth noting that the adaptive-management framework should build from the strategic prioritization within CHAT 1 and 2 areas and direct coordination of resources into these areas.

BETTER COORDINATION AMONG ALL CONSERVATION ACTORS AND ACTIONS

Good cooperation exists among some agencies and organizations in some locations for delivery of coordinated plans for LPC. However, additional coordination is needed. In order to effectively deliver a strategic system of core areas, ***all agencies should be cooperators and assist with coordination of practices to achieve a common goal.*** In addition, all agencies or cooperating organizations should be coordinated such that any agency approached by a landowner should be able to provide ***"one stop shopping"***. In other words, all partners should be able to inform interested landowners about all programs available to them, including the potential for stacking of programs for the maximum benefit to local LPC populations. All agencies should be able to provide a landowner with information on all of the programs that could be used on their property, and provide contact information on technical service providers who could help package a set of programs and practices. ***Further, coordination has to be directed using the strategic-prioritization framework*** mentioned in more detail above. It is not enough to be communicating among programs; the conservation actions pursued by one organization have to build on the accumulated actions of the other organizations. In this way, the accumulated effects of the multiple programs focused on LPC conservation work synergistically towards landscape-scale conservation of the species.

We recommend the establishment of an Executive Oversight Group (discussed below) to specifically address how this coordination and stacking of resources can occur. Members of the Group should include representatives from FWS (both Partners Program and Ecological Services), WAFWA, NRCS, FSA, state agencies, NGOs, private investors, and landowner groups. This Group could also assist with communications and transparency (see below). We also recommend that an online clearinghouse for all

things LPC across all programs be created. This should include a place for input of conservation actions for reporting (similar to FWS Conservation Effects Databases) and be updated on a monthly basis.

INCREASED TRANSPARENCY IN PUBLIC CONSERVATION

At the core of a successful conservation program based on incentives is landowner and stakeholder trust, and that trust must be built and maintained for a sustainable program. An open and transparent process of communication must be established to build and maintain trust. Transparency is the key to building and maintaining that trust and should become more of a focus of the program. All stakeholders must be involved in the LPC conservation prioritization process. Program audits annual reports or evaluations should be open for stakeholder participation, and review. Like the adaptive-management framework, transparency should be inherent within the prioritization framework mentioned above; e.g., incorporate metrics important to landowners into the prioritization framework. By assessing multiple metrics beyond LPC habitat suitability, the issues important to the different stakeholders necessary for the success of the conservation programs are given full weight at the decision-making table. Further, the assessment of multiple metrics provides a more complete picture upon which to make conservation and management decisions while building and maintaining the directed coordination in general. Consider contracting with, forming, or resurrecting an entity (e.g., High Plains Partnership) to head-up the coordination that does not have a stake in the game and can be an arbiter in disputes. This separation, especially separation from government (or organizations perceived as the government), would add credibility in the eyes of many of those considering participating in the programs.

CONSISTENT APPLICATION OF SCIENCE AND MANAGEMENT, WITH RAPID INCORPORATION OF NEW INFORMATION

In general, coordination requires a knowledge-based foundation from which to structure the coordination; a foundation that is able to determine how each conservation action focused toward a given objective is fitting into the goals and objectives associated with the other potential actions, and vice-versa. This foundation allows for the objectives associated with each management action and participating entity to be given full weight at the decision-making table (transparency); provides a complete picture upon which to prioritize conservation and management decisions while building and maintaining the coordination in general; and is necessary as a framework to effectively implement adaptive-management principles. The foundation should be built around the idea of evidence-based action, with the “evidence” provided by dynamic ecological assessments providing what-if scenarios that are iteratively examined for effectiveness. The iterative nature of the framework allows for the seamless integration of monitoring data and new science into the multiple objectives within the program the knowledge-based foundation is targeting. Consider developing tools that can be used to

prioritize conservation actions spatially within CHAT 1 and 2 areas, especially in identification and management of core areas. Incorporate temporal variance so that the program inherently evolves through the incorporation of monitoring data and new science.

ADDITIONAL SPECIFIC RECOMMENDATIONS

CREATE A LESSER-PRAIRIE CHICKEN STAKEHOLDERS EXECUTIVE OVERSIGHT GROUP

Use existing efforts to create an Executive Oversight Group similar to what has been established for sage-grouse conservation efforts. This group would provide policy and program guidance and set priorities for LPC conservation across all programs and agencies. The Group should include all stakeholders, not just federal or state agency personnel. While leadership by state agencies is emphasized, the oversight groups should include representatives from Federal agencies (FWS, NRCS, BLM, FS, USGS), industry, ranching, private landowners, private investors, and conservation organizations (WAFWA and other NGOs) to increase coordination and program delivery effectiveness and reduce inconsistencies. Consider actively diversifying those participating in the Group to include disciplines not generally engaged in conservation, but important to the community influenced by the conservation actions pursued – e.g., social and economic expertise, sportsmen’s organizations, county planners, etc. As mentioned previously, the Oversight Group, should be coordinated and facilitated by an independent agent that does not have a vested engagement in the decisions.

The Group should hold regular meetings and conference calls to keep those involved in the Group, and through extension the organizations participating members represent, informed and to promote better relationships. This will increase the coordination, efficiency, effectiveness, and sustainability of conservation efforts to ensure a higher probability of success for conservation actions, and provide continuity for annual reporting, outreach, messaging, and fundraising.

ESTABLISH CONSISTENT APPLICATION OF CONSERVATION PRACTICES THAT BENEFIT LPC

The primary habitat conservation practice applied to date has been prescribed grazing, designed to increase the likelihood of better functioning LPC habitat and thereby increasing and potentially expanding LPC populations. LPC need residual grass cover of preferred species with at least minimum height and structure to have successful nesting, brood-rearing, and year-round security cover. Current prescribed grazing practices attempt to achieve this through application of utilization limits on seasonal or year-long grazing with utilization rates ranging from 30-50% depending upon the program administering the prescribed grazing.

As mentioned previously, the effectiveness of prescribed grazing at improving LPC habitat quality is showing some success, but the range of vegetation types used by LPC as well as annual fluctuations in grass productivity and individual landowner livestock management strategies presents a challenge for determining which utilization rate for which sites under which weather patterns is best for providing LPC habitat. Grazing strategies need to be specifically designed to benefit LPC, be able to show improved conditions (habitat function increase) or increase in local LPC population, and provide an adequate financial incentive for the landowners to make needed changes based on implementation and market costs. This should increase the number of landowners seeking opportunities for LPC conservation and provide for better accounting of the costs of LPC conservation actions based on what is needed for LPC.

A finding of research on grazing is that one utilization rate applied across the range of LPC is unlikely to produce the best habitat in many areas. Rather, the desired outcome in habitat structures and compositions should be identified in different locations (perhaps ecoregions), and these should be set as regional benchmarks for prescribed grazing and monitored for delivery by participating landowners. Further, the approach to establishing utilization rates on participatory lands should be flexible enough to allow the use of available and applicable site-specific data to set rates in specific locations. Control of exotic species and reestablishment of native bunchgrasses should be a priority not only for grazing practices but for restoration practices.

Prescribed burning is another practice that has been documented to produce high quality habitat for LPC. It has received limited application under current programs. Opportunities to expand its use in core areas are needed.

Strongholds need to meet the guidance set forth by the FWS and identified in the RWP across all LPC conservation programs. Mitigation actions should be consistent and based on science and proven actions, based on outcomes, for the benefit of LPC.

ESTABLISH CONSISTENT REGULATORY GUIDANCE ACROSS LPC CONSERVATION PROGRAMS AND ACTIONS

Regulatory requirements for developments need to be consistent across agencies and programs. For example, buffers need to be consistent across all programs. – e.g., current buffers for wind turbines differ between WAFWA’s Mitigation Framework and the USFWS mitigation guidelines. Developers should not be able to select different impact buffers among different programs. In setting consistent buffers, new information should be evaluated and current buffers re-evaluated for their effectiveness in quantifying impacts.

EVALUATE AND DEVELOP POLICY AND PROTOCOL FOR ALLOWING “STACKING” OF CONSERVATION PROGRAMS AT TARGETED AREAS

As part of a strategic approach, greater integration of conservation actions from various programs should be evaluated and implemented if it boosts conservation efforts. Multiple funding sources should be able to be applied to strategically-identified acres. While double paying for any practices must be avoided, programs should be able to be “stacked” so that funding sources can be additive to provide landowners with higher levels of compensation in selected locations. For example, a selected property might receive base funding from LPCI to establish an LPC management plan including prescribed grazing and prescribed fire. Additional funds might be applied through the Conservation Stewardship Program to further incentivize landowners. Finally, mitigation dollars might be added to secure an agreement to maintain the property under an LPC plan for a long duration. In this way, a landowner would be compensated fully for any economic costs associated with actively participating in LPC conservation (and perhaps even receive some added income), and be in a financial situation to address multiple concerns on the property to maximize conservation value of the enrolled acreage. Current policies make this stacking of funds problematic, particularly when it comes to developing mitigation credits and using federal funding on the same piece of property. Such policies need revision to allow flexibility for this type of specific use while still providing protections from abuses. This stacking should not create a situation where private land conservation bankers cannot compete for LPC conservation or mitigation, but used when current federal or state programs can be synergistic to existing efforts.

DEVELOP A MORE RIGOROUS ADAPTIVE-MANAGEMENT APPROACH

We recommend the development and application of an adaptive management approach to include specific actions to be taken based on feedback from monitoring, drought conditions, habitat conditions, and current population status. Key to true adaptive management for dealing with uncertain outcomes is scenarios planning and predetermined courses of action (with specific goals and objectives for resources and management actions). Current resource conditions (i.e. – population numbers) and monitoring will identify when established triggers or thresholds are met and a change of course is warranted, beyond just “re-visiting” or discussions with committees. Different action for different phases of LPC strategies should be developed for implementation given the current status of LPC populations (i.e. - recovery, expansion, maintenance, and extinction prevention). This adaptive management approach should be administered under the Executive Oversight Group discussed previously. We recommend that an overall adaptive management program be adopted using a formal definition of adaptive management when implementing the conservation actions. We suggest one based on the USDOI agency department guidance (*Adaptive Management: The U.S. Department of the Interior Technical Guide*, available at <http://www.doi.gov/ppa/upload/TechGuide.pdf>).

The approach should establish developed priorities, goals, objectives, targets (population and habitat), management actions, allowable actions and thresholds, and trigger points for four (4) LPC scenarios based on current status and need.

Recovery – current phase, focus on establishment of preservation areas (e.g., strongholds) and actions to ensure core areas are not further impacted or shrink. The goals for this phase would be the current goals for populations (67,000 rangewide and ecoregion specific goals) as stated in the RWP.

Expansion – focus on restoration of degraded habitats and increase the range of LPC occupancy into previously occupied habitat or newly created habitat.

Maintenance – focus on maintaining LPC populations and range.

Extinction Prevention – all actions should be focused on preventing any loss of habitat or populations. This phase would be predicated by a listing under ESA and federal regulation from the FWS.

EVALUATE AND ADJUST COSTS OF CONSERVATION ACTIONS BASED ON OUTCOMES AND REPRESENT A FAIR MARKET CONDITION FOR ALL PARTIES

Mitigation formulas and associated fees must reflect the true cost of conservation actions needed for strategic application in core areas. An assessment is needed of what the cost would be to effectively implement a system of core areas each consisting of 25,000-50,000 acres of high quality habitat located throughout the different ecoregions. The additional costs associated with subsidized (federal funding) programs that is not passed on to landowners must be recognized and not allowed to undermine free-market mitigation efforts.

An evaluation conducted by a third party conservation economic entity should perform an analysis and audit of conservation costs associated with conservation actions to establish a matrix for action costs and associated outcomes. This should promote competition and equality amongst LPC programs and delivery mechanism and ensure costs are reflective of a level-playing field for all LPC conservation and mitigation. Further, costs must be related to the success of actions, not just implementation.

Mitigation is not a one-time action, but a commitment to offset impacts through actions over the course of the life of a project that is causing impacts; therefore costs associated with these actions must reflect this commitment. If initial actions do not alleviate impacts, continued action must be applied to reach the offset. An administrative cost-recovery fee for proposed action should be added to the enrollment and mitigation impact fees to cover costs of administration of project application and annual administrative requirements. The process used to discount fees based on previously impacted buffer determinations need to be revised to ensure that impacted area delineations are accurate and are based on the best available science, particularly with indirect and cumulative impacts. Funding for

mitigation should not be carried by a single sector (energy companies) but be the responsibility of all actions that impact LPC. Additionally, mitigation cannot be directed to just one conservation effort (rangeland management/grazing) but follow proper mitigation sequencing (avoid, minimize, compensate) and be directed to those actions which are most likely to offset impacts and follow mitigation guidance recommendations (in-kind, on-site, out-of-kind, off-site)

Simply expanding or funding conventional Federal or State LPC targeted conservation programs is unlikely to achieve the necessary scale of participation needed by private landowners across the LPC's range. Additional focus should be placed on creating additional incentives for landowner participation in mitigation and conservation programs and these programs need to allow for market-based arrangements between landowners and all conservation providers to compete alongside the traditional conservation programs. Successes for mitigation and conservation efforts need to be based on outcomes and strategized for the most benefit to LPC. The right actions delivered at the right place at the right time for the right cost for a successful outcome. This requires consistent standards and application of such standards across all conservation programs.

ADJUST ANALYTICAL TOOLS FOR EVALUATING HABITAT QUALITY AND DEVELOP OUTCOME BASED METRICS FOR DETERMINING SUCCESS OF CONSERVATION EFFORTS

Since 2013, new information is available that should be included into LPC conservation strategies (RWP) and the HEG. Specifically new information on effects of tree densities, percent cropland, and the value of prescribed fire is sufficiently significant in its implications to warrant immediate attention. Increased priority needs to be given to LPC occupancy and proximity in habitat evaluations. Habitat function as it relates to the ability to produce birds and maintain current or future populations or range expansion should be readily identified by areas with the highest HEG score or evaluation metric.

Currently there are 3 grazing utilization levels being used (33%, 40%, 50%) depending on which LPC conservation program is employed. This can create conflict and confusion for ranchers and might not lead to the best conservation for LPC. Ecoregion specific utilization rates or grazing practices need to be further defined and a template for the development of ranch level grazing plans should be developed. Develop ecoregional-specific and consistent guidance on grazing utilization and a template for local-based grazing plans with each local grazing strategy based on what is needed locally for LPC habitat needs and adjusted annually based on monitoring and local conditions.

Increased efforts are recommended to provide specific LPC guidance to landowners for LPC habitat management (e.g., restoration of native bunchgrasses). Easy to understand and implement guidance for restoration activities to native bunchgrass and elimination of invasive or exotic plants for landowners should be developed. Development and employment of a smartphone application for use in the field could help with quick identification of issues and provide information and advice on actions. This could also reduce costs associated with staff and provide landowners ownership in conservation actions without needing site-visits to implement actions or assess current conditions.

All actions should be able to deliver effective conservation that can be assessed using consistent standards. Action/effect determinations and metrics need to be developed in order to ensure that only actions that are actively benefiting LPC conservation are implemented, funded, and carried forward. An ecoregional assessment framework should be developed for each ecoregion that rolls up to a rangewide framework. This assessment protocol should be a key part of the adaptive management effort and prioritization efforts for conservation actions. This will allow for effectiveness of actions to be maximized, promote efficiency and ensure accountability of LPC conservation actions and actors. Success needs to be judged on increased populations, range expansion or increased habitat function.

STANDARDIZE AND SIMPLIFY THE TRACKING AND REPORTING OF MITIGATION SYSTEMS AND MAKE THEM MORE "USER-FRIENDLY"

Current reporting of the WAFWA Mitigation Framework, particularly the financial payment process, is confusing to the general public and needs to be revised. It is confusing when both acres impacted and mitigated as well as impact and offset units are presented without clear cross-walking of these metrics. Mitigation acres are often reported but include impacted areas and non-habitat. All mitigation programs, including PILF and conservation banking, need to be based on the same standard and have equivalent value. In the "trust, but verify" mode, create a simple tracking database and make it available on the internet to the public.

EVALUATE THE EFFECTIVENESS OF THE WAFWA MITIGATION FRAMEWORK FOR DELIVERY OF STRATEGIC CONSERVATION ACTIONS

WAFWA's Mitigation Framework was designed to quantify the impacts from new developments and to mitigate these impacts through habitat conservation actions at other sites. Enrollment in WAFWA's Mitigation Framework is voluntary by developers, and as mentioned previously, recent analyses estimate that only around 30% of new developments are enrolling. The Framework uses a 2:1 ratio of mitigation offsets to impact units designed to generate a net conservation benefit (uplift) for LPC. However, if only 30% of new impacts are enrolled, this means that using the 2:1 ratio, only 60% of impact units occurring in LPC range are being offset with any mitigation resulting in an immediate loss of 40% through non-enrollment.

Impacts are determined based on the area within impact buffers delineated around new developments and are then further evaluated for the quality of the area as LPC habitat. Developers make payments that are administered by WAFWA and used to generate offset units that are similarly measured as acres adjusted for habitat quality. When tracked as impact or offset units, this relationship occurs. However, when reported as acres, a 1:1 ratio has not been achieved let alone the 2:1 ratio which is the goal.

The Framework uses a Habitat Evaluation Guide (HEG) to assess the quality of habitat at both impact and offset locations. This is to ensure that development impacts to habitat are offset with habitat of at least equal if not greater quality in offset locations. This is important so that mitigation can't designate large acres of low quality habitat to be maintained as a replacement for smaller acreage of high quality habitat impacted by a development. For this reason, the WAFWA system chose to calculate offset units based on the quality of a site as rated by the HEG to generate the number of offset units. Impacted acres are multiplied by the HEG score to generate impact units, while offset units are generated as the acres enrolled in an offset location times the HEG score of those acres. WAFWA requires offset units to be at least equal in HEG score as the impacted areas to maintain at least habitat quality equivalency in mitigation. While this system produces an equivalency in impact units to offset units, it produces some additional challenges.

An examination of the calculations of impact units and offset units and their costs and payments shows some of the challenges. If a development is going to impact 100 acres, the impact units are calculated as that acreage times its HEG score. WAFWA reported that its average HEG score for impacted areas was 0.22. Thus, on average, 100 acres of impact results in 22 impact units. The number of units is doubled using the 2:1 ratio to produce 2X the offset units to create a mitigation benefit, so an impact to 100 acres of 0.22 value produces a need for 44 offset units. WAFWA then works with a landowner to contract for the 44 offset units. It reported the average HEG score of 0.62 for its conservation delivery locations. This means that on average, the 44 offset units would be met on 71 acres with a HEG score of 0.62, the reported average score of its lands under offset contract. This meets the equivalency requirement in terms of impact units, although when reported simply as acres (which has been the conventional metric for quantifying impacts and offsets), 100 impacted acres are replaced with 71 acres of conservation action, thus resulting in a net loss of 29 acres of habitat for LPC. While impacts are generally occurring in lower quality habitat and mitigation is occurring in higher quality areas, when reported as acres, the 2:1 ratio is not produced. When combined with the estimated number of impacts not enrolled in the Mitigation Framework, it means that for every 100 acres of habitat being impacted by development, only 28 acres are contracted for conservation delivery. It should be noted that under conventional mitigation systems, that 100 acres of impacted area would result in 200 acres of mitigation area using a 2:1 offset:impact ratio.

The financial components and ability to engage landowners in strategic locations gets more involved. To discourage development in CHAT 1 and 2 areas, impact units are charged more to developers in these areas. Similarly, to encourage landowners in CHAT 1 and 2 areas to enroll in mitigation efforts, higher payments are offered in these areas. Specifically, impacts occurring in a CHAT 1 area are assessed at 2.5X, CHAT 2 at 2.0X, CHAT 3 at 1.8X, and CHAT 4 at 1.6X, averaging 2X overall if equal numbers of acres are impacted in each CHAT category. On the mitigation offset side, units in CHAT 1 are paid at 1.25X the unit rate, CHAT 2 at 1.05X, CHAT 3 at 0.9X and CHAT 4 at 0.8X. However, WAFWA has adjusted this payment with a new multiplier, bringing the payment in CHAT 1 to 1.35X. This means that if more acres are being impacted in CHAT 1 areas a higher ratio than 2:1 for offset:impact units would be generated, while if more impacts occur in CHAT 3 and 4 locations, then the 2:1 ratio of offset units to impact units may not be met.

Landowners are compensated with an initial signup bonus and then with payments for practices applied, with the cost of these payments based on average NRCS practice rates calculated in each of the LPC ecoregions. A limitation to this method is that practice costs are assessed on a per acre basis. However, landowner payments are based on offset units generated. This compounds the challenges of paying landowners sufficient amounts to encourage high enrollment levels in desired (strategic) locations. Let's use an example of a practice that costs \$20/acre. If a landowner enrolls 100 acres, and if the HEG score is 0.62, then the landowners would receive on average \$1,240 for applying the \$20/ac practice on that 100 acres for the 62 offset units generated. However, based on the calculated practice rates for an ecoregion, the average landowner's cost is actually \$2,000 for that practice on the 100 acres. Even in CHAT 1, the landowner would only be paid \$1,674 for the practice using the 1.35X multiplier. While habitat quality may improve over time increasing the payments to the landowner, many habitat changes, such as shifts in vegetation composition, can take considerable time. Thus, the ability to offer landowners high enough incentives to ensure high levels of enrollment in desired locations is limited. Mitigation is prioritized for CHAT 1 areas, but is still largely opportunistic in delivery based on landowners voluntarily coming forward with lands for inclusion. Without higher incentives based on the actual costs of what it would take for landowners to implement LPC conservation actions in the areas where it is needed most and meet their ranch business plans, strategic location of large blocks of habitat is constrained. In addition, while impacts cost more in CHAT 1 and 2 areas, they are still occurring because there is no restriction to impacts in these areas unless total anthropogenic impacts exceed 30% and even then avoidance of these areas is voluntary.

An additional component of the WAFWA Mitigation Framework is the mapping of existing anthropogenic developments, and the placement of buffers around these. New developments are not assessed impact units for any areas that fall within the buffers of existing developments. This encourages new development to occur near existing development providing incentives to cluster developments which is a clear conservation benefit. However, new developments are likely to cause greater impacts than existing developments due to higher levels of activity associated with construction and operations of new facilities. A recommendation would be to buffer existing developments at 1/2 the size of buffers for new developments. This would still encourage clustering, but potentially provide a truer measurement of impacts from new developments.

When taken together, we reach the following conclusions: (1) the acreage being impacted is not being offset by the acreage under conservation; (2) the cost of conservation to a landowner is often not being covered through the program limiting enrollment; and (3) the ability of the program to result in LPC population increases is limited. Several solutions are recommended.

First, because offset units include both areas being maintained as LPC habitat and areas being restored to LPC habitat, the 2:1 ratio is unlikely to produce net gains for the species. This ratio should be increased to better address needs for both improvements to and increases in amounts of LPC habitat.

Second, the landowner payment schedule should be restructured to increase payments for habitat enhancement practices. Specifically, payment rates should be adjusted such that the payments available to landowners for mitigation are at least consistent with per acre costs of implementing

mitigation practices. While payments should still be adjusted for differences in habitat quality, payments overall need to be increased to ensure landowner engagement. The payments to landowners should be based on market-based evaluations of required levels of payments to enroll large blocks of habitat in strategic locations. Areas with higher quality habitat might receive payments greater than the average costs of implementing practices, providing an additional incentive for conservation in the most critical locations. The additional costs of these payments would need to be backtracked through the system with commensurate increases in costs of impact units.

The FWS guidance for mitigation for greater sage-grouse (a similar grouse species) provides an excellent resource and should be reviewed and modified to address LPC mitigation efforts (Greater Sage-Grouse Range-Wide Mitigation Framework). All mitigation efforts must be based on the same assumptions, impact and offset metrics, and be standardized across programs. Additionally, increased efforts to employ actions for willing participants should be undertaken immediately as LPC are in a recovery mode and those willing landowners could help reduce the immediate threat of listing under the ESA.

SOLICIT IMPARTIAL REVIEWS OF DATA AND REPORTS ON A RECURRING BASIS.

Similar to financial audit requirements, a review of the LPC programs for effectiveness, efficiencies, and accountability (including financial) should be performed by an impartial, qualified 3rd party on a regular basis (annually for many areas). This can be completed by providing a “big-tent” approach which gives comfort to all stakeholders and establishes a “trust but verify” process. The National Academy of Sciences, conservation organizations, or private conservation businesses are examples of entities that could perform reviews.

ESTABLISH A SCIENCE-BASED PUBLIC-RELATIONS CAMPAIGN SUPPORTING LPC CONSERVATION EFFORTS THAT BENEFITS ALL CONSERVATION EFFORTS AND STAKEHOLDERS.

Engage partners with strong outreach skills to generate and deliver a message that inspires and encourages LPC conservation efforts. Ensure this campaign is directly linked to data and the personal stories of entities enrolled in and benefiting from LPC conservation collectively and highlights those policy or management actions that are most effective in LPC conservation. A strong and positive message has to be in front of the public and policy makers well before efforts begin to advocate for LPC in the 2018 Farm Bill. Establish a common communication framework and mobile application network (similar to Sage West for greater sage-grouse) to ensure timely and regular communication with stakeholders and the public.

EMBRACE CONSERVATION BANKING AND PRIVATE INVESTMENT INTO THE LPC CONSERVATION STRATEGY.

Free market mechanisms can help with conservation efforts. Lack of understanding, complexity, and cost estimates often can create friction and barriers for mitigation bankers and other private investments to participate in existing conservation programs. Hundreds of millions of dollars are waiting on the sidelines to invest in various species markets across the country, but they need predictability, certainty and assurances from Federal and State regulators and mitigation program administrators that their investments will have a level playing field to participate in these programs. Efforts are needed that allow the private investment community to witness a consistent string of transactions between private mitigation providers and program administrators of these programs in order to advance these programs. In the theme of “opportunity for all,” ensure that any private investor or landowner who wants to be involved in LPC conservation has a way to be involved and effective.

CONCLUSION

LPC conservation is at a critical junction with the actions we take today possibly determining the fate of LPC existence. All LPC conservation efforts must be supported, encouraged and incentivized. It is only a matter of time before the next drought or boom in energy development or agricultural conversion will have lasting impacts to LPC populations and we must ensure that the current populations are ready. LPC conservation cannot be satisfied with just obtaining “stable” populations but must be leading to “increasing” and recovered populations rangewide. We are in a recovery mode and all actions must reflect that through prioritization, coordination, collaboration and funding. The NAGP seeks to ensure the **right action** is being applied at the **right place** and **right time** for the **right cost** for a **successful outcome**. We seek a recovered, well distributed rangewide LPC population that can once again support traditional recreational uses like hunting as grouse hunters are a big advocate for LPC conservation and create strong advocates for LPC conservation programs. Success for one program should equate to success for all programs and LPC and all stakeholders must contribute to this, and take credit for, this success.

NAGP recommends, based on the findings and analysis, that the RWP is still the proper framework for LPC conservation efforts across administrative and ecological boundaries and can provide for the collaboration and coordination needed for successful LPC conservation. A revision of RWP that incorporates the recommendations contained in this report is warranted and should be undertaken.

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