The 2018 Lesser Prairie-Chicken Range-wide Conservation Plan Annual Progress Report

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Photo Credit: Grant Beauprez, New Mexico Department of Game & Fish

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EXECUTIVE SUMMARY

In 2014, the Lesser Prairie-Chicken (LPC) Range-wide Conservation Plan Van Pelt et al. 2013; (RWP) was implemented and since has been utilized as a locally controlled and innovative approach for maintaining state authority to conserve the LPC.

The purpose of the RWP is to establish a conservation strategy for the LPC that ensures the improvement and long-term persistence of the species into the foreseeable future (50 years) throughout its current or expanded range. More specifically, the RWP:

1. Identifies range-wide and ecoregion breeding population goals for LPC, the range-wide benchmark being a 10-year average of 67,000 birds.

2. Identifies desired habitat amounts and conditions as well as establishes restoration goals to achieve the population goals within the first 10-year timeframe.

3. Uses the Southern Great Plains Crucial Habitat Assessment Tool (CHAT) to delineate priority areas where LPC conservation actions will be emphasized and development will be minimized.

4. Enhances cooperative efforts to expand voluntary landowner conservation programs and encourage landowner participation.

5. Promotes agreements that incentivize industry avoidance and minimization and require mitigation when that is not possible.

6. Establishes a mitigation framework administered by WAFWA that includes contractual agreements with participating companies and private landowners. The framework requires unavoidable impacts to be offset with off-site conservation actions and utilizes a 2:1 mitigation ratio to ensure that a net conservation benefit occurs.

7. Identifies research needs and establishes monitoring requirements for the LPC population and enrolled properties.

8. Outlines an adaptive management framework that will maximize conservation benefits to LPC by incorporating monitoring data and emerging science.

9. Incorporates input received from agencies, organizations, landowners, industries, other stakeholders, and the public.

During the reporting period, January 1, 2018 - December 31, 2018, the following progress was made:

1. The annual LPC aerial survey used to monitor progress toward the population goals was conducted between March and May 2018. In 2018, the estimated breeding population size was 38,637 (90% CI: 20233, 49698). There was an estimated range-wide population increase of 29% from 2017 to 2018, based on the final aerial survey results, which was not statistically significant at the 80% confidence level. Increases in abundance of LPC were estimated in 2 of 4 ecoregions including the Sand Sagebrush and Shinnery Oak. The estimated increase in abundance of 1,758 lesser prairie-chicken in the Sand Sagebrush Prairie Region from 2017 to 2018 was significant at the 90% CI (0, 3561). The estimated increase in abundance of 3,405 lesser prairie-chicken in the Shinnery Oak Prairie Region from 2017 to 2018 was significant at the 80% CI (118, 6631). The population in the Mixed Grass and Shortgrass Ecoregions were estimated to be stable to slightly increasing during the 2018 evaluation period.

   Population trends during the implementation of the RWP include:

   A stable to increasing population of lesser prairie-chickens since 2013 in the Mixed Grass Prairie Ecoregion of northeast Panhandle of Texas, northwest Oklahoma, and south-central Kansas and in the Shortgrass Prairie Ecoregion of northwest Kansas.

   A stable to increasing population of lesser prairie-chickens since 2014 in the Sand Sage Prairie Ecoregion of southeastern Colorado, southwestern Kansas, and the northwest Oklahoma Panhandle

   A stable to increasing population of lesser prairie-chickens since 2015 in the Shinnery Oak Prairie Ecoregion of eastern New Mexico and western Panhandle of Texas.

2. During this reporting period, WAFWA did not secure any new permanent or term conservation properties.

3. At the end of 2018, WAFWA was managing 22 offset generating agreements encompassing 150,785 acres of which 37,616 acres are permanently protected by perpetual easements. WAFWA was also administering two active non-offset agreements containing an additional 9,845 acres.

4. There were 111 active CCAA contracts (Certificates of Inclusion) by 105 companies (no change since 2017) that encompassed 6,475,734 acres as of December 31, 2018 (-6%). CCAA acreage enrollment has declined for the last four years. There were 52 active WCA contracts (Certificates of Participation) by 52 companies (-3 since 2017) encompassing 599,620 acres (-11%). WCA acreage enrollment has declined for three of the last four years. The total enrollment in the two programs was down 1.8% at 7,563,016.3 acres (-6.4%).

5. In 2018, there were 118 industry projects processed and mitigated. These projects generated 368 annual impact units equating to $452,628.65 in mitigation fees. By ecoregion, the Shinnery Oak Ecoregion had the most projects (79 of 118 projects; 67%). The Mixed Grass

Ecoregion had fewer projects mitigated (21) but produced the most impact units of all the ecoregions (221 of 368 impact units; 60%). There continues to be a surplus of credits available with a range-wide positive value of 90,349 units. The distribution of available credits at the end of this reporting period was as follows: Sand Sagebrush (30,290), Shinnery Oak (6,351), Mixed Grass (46,834), and Shortgrass (6,874).

6. There was continued effort to work with state wildlife agencies to identify and pursue research and management needs. Those activities included: LPC translocation efforts that move birds from the Shortgrass to Sand Sagebrush Ecoregion; Developing best practices for using drones to monitor lek-mating grouse; Linking parasite loads, social networks, and coloration in lesser prairie-chickens; Proximate and ultimate perspectives of foot-stomping behavior in prairie-chickens; Pararsitological survey of LPC in Texas and New Mexico; Population Biology and Landscape Ecology of the Lesser Prairie-Chicken (Oklahoma); various land cover data, impacts of energy development on LPC space use, LPC movements, and climate-related effects to LPC populations.

7. WAFWA continued to monitor the need for adaptive management. There were no new adaptive management changes implemented in 2018.

8. Through the LPCAC, LPC Science Sub-Committee and LPC Finance Sub-Committee, representatives from industry, landowners, co-operatives, non-governmental agencies, as well as state and federal agencies addressed input and suggestions to make improvements and provide valuable feedback on the RWP.

9. The LPC Inter-State Working Group made considerable progress on the development, timeline and content of the RWP Five-Year Review.

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INTRODUCTION

This report summarizes the 2018 activities associated with the lesser prairie-chicken (LPC, *Typmanuchus pallidicinctus*) Range-wide Conservation Plan (RWP) administered by the Western Association of Fish and Wildlife Agencies (WAFWA, Van Pelt et al. 2013). The goal of the RWP is to conserve the LPC for future generations while facilitating continued and uninterrupted economic activity throughout the entire five-state LPC range (Figure 1). The RWP identifies a two-pronged strategy for LPC conservation: (1) the coordinated implementation of incentive- based landowner programs and (2) the implementation of a mitigation framework, which reduces threats and provides resources for off-site conservation activities.

If conservation of the LPC is to show long-term success, a strong and mutually respective partnership will be necessary between state, federal, non-governmental agencies; private landowners; and industry. The foundation of that partnership is embedded in Section 6 of the Endangered Species Act (ESA). This section clearly directs the U.S. Fish and Wildlife Service (USFWS) to cooperate to the maximum extent practicable with state fish and wildlife agencies and provides them with the authority to carry that partnership forward. That partnership guided the development of the RWP which now provides a clear road map for conserving the LPC.

BACKGROUND

The early history of the ESA listing status of LPC has been provided in previous annual reports. Please refer to those reports, or the RWP, for more detailed information about LPC listing history.

Recent listing related activities include:

On September 8, 2016, a petition was filed by WildEarth Guardians, Defenders of Wildlife and the Center for Biological Diversity asking the USFWS to re-list the LPC under the ESA. This petition also requested that sub-populations of LPC located in the Shinnery Oak and Sand Sagebrush Ecoregions be considered for emergency listing.

On November 30, 2016, the USFWS published a notice in the *Federal Register* in response to the September 8, 2016 listing petition. The USFWS found that the petition presented substantial positive information and therefore they would undergo the 12-month review process. During this 12-month review, a Species Status Assessment of the LPC was also be conducted. As of December 31, 2018, the SSA had not been released to the public, nor has a 12-month finding been determined.

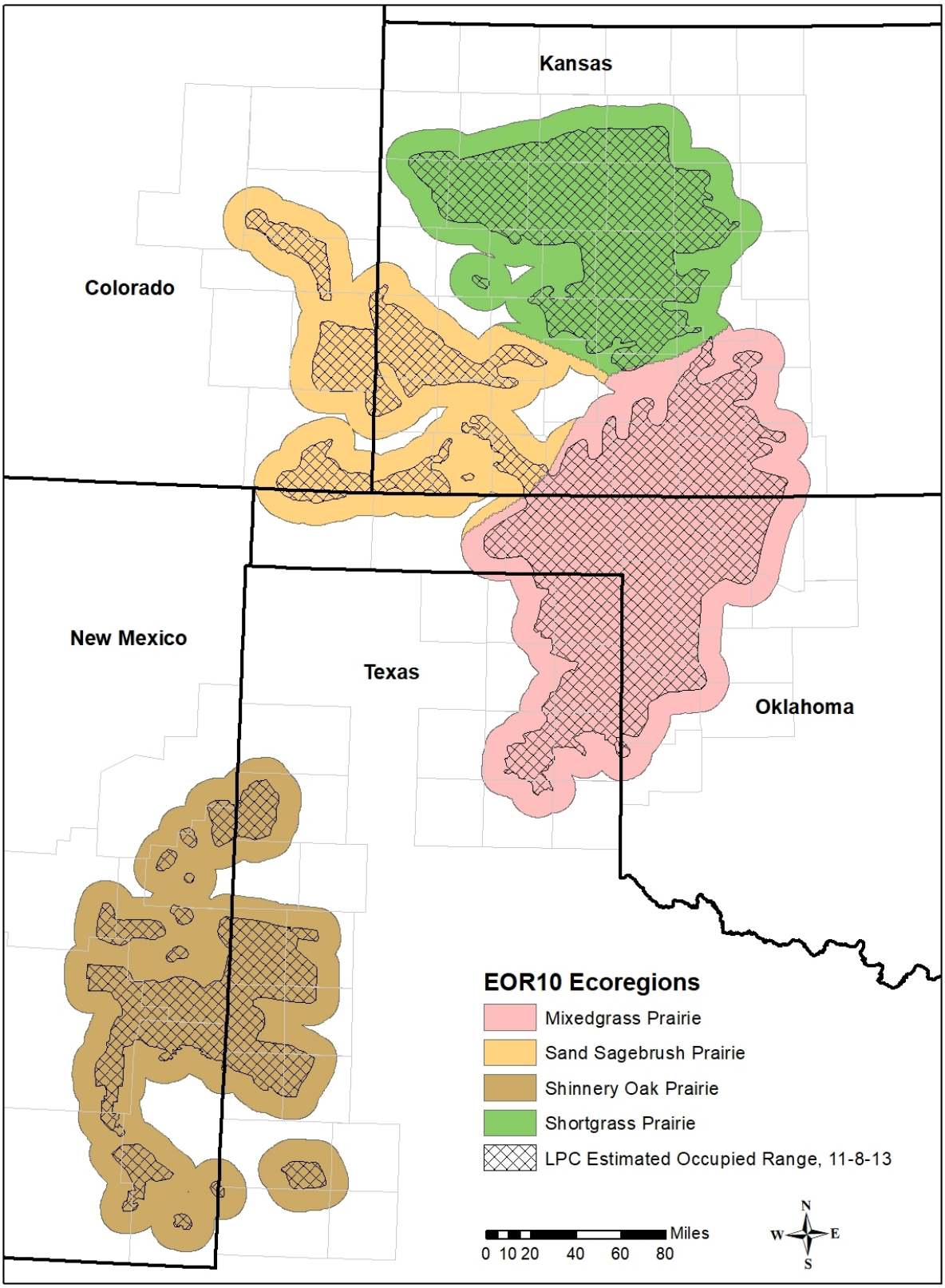

Figure 1. Current estimated occupied range plus 10 miles (EOR+10) of the lesser prairie-chicken and the four ecoregions delineated by the WAFWA.

CONSERVATION STRATEGY

The RWP describes a conservation strategy, which when implemented, will support sustainable populations of LPC. The strategy identifies 10-year habitat and population goals that are sufficient in size and juxtaposition to provide adequate population resiliency and redundancy. The RWP also improves coordination and conservation targeting across all the agencies and organizations who are delivering LPC conservation programs on private land. Additionally, the RWP promotes avoidance and minimization of impacts to LPC habitat and establishes a process for RWP industry participants to mitigate their actions, when necessary.

A key component of the RWP conservation strategy is applying the concept of focal areas and connectivity zones. This concept identifies the areas of greatest importance to the LPC and focuses conservation efforts into those areas. The strategy emphasizes delivery of habitat improvement in focal areas and connectivity zones by maximizing incentives to encourage those landowners to engage in LPC habitat maintenance and improvement.

Another important component of the strategy is identification of tools that help industry with siting decisions and development of a compensatory mitigation program that RWP participants can utilize when they are unable to avoid impacts to LPC habitat.

WAFWA MITIGATION AND METRICS SYSTEM

The WAFWA Mitigation Framework incentivizes avoidance and minimization of impacts to LPC habitat from development. The metrics system within this framework provides a pathway to mitigate for impacts to habitat through a biologically-based system that incorporates space, time and habitat quality to define both habitat impact units and habitat offset units. A habitat impact is defined as: potential LPC habitat that has been rendered unusable by LPCs based on direct or indirect habitat loss related to development. A habitat offset is defined as: an area of potential LPC habitat that is conserved and managed or restored to compensate for impacted habitat. Impacts are considered permanent, unless remediation back to baseline occurs. The mitigation system also utilizes a 2:1 mitigation ratio to ensure that offsets are greater than impacts, resulting in a net conservation benefit for the LPC.

The WAFWA Mitigation Framework functions as a platform to balance impact and habitat offset units in that a portion of the offset units are allocated at the sign-up based on current acreage and habitat quality. Additional offset units are generated annually, and the quantity is reflective of potentially usable acreage and habitat quality. The landowner is incentivized to manage for quality habitat because their annual payment is based on the acreage and Habitat Evaluation Guide (HEG) score of the enrolled property. If the participant does not follow the recommended management plan for the property, the offset units will be reduced, as will the annual payment to the participant. This performance-based system ensures participants are not paid in advance for un-generated offset units.

Offset units will be generated by enrolling a property into an agreement with WAFWA or one of its technical service providers. Participants may enroll in short-term (5-10 year) agreements or in long-term agreements requiring an easement. The value of 25% of the habitat offset units will

be targeted towards permanent conservation to support long-term conservation and population strongholds. The remaining 75% of the conservation efforts will be targeted towards short-term contracts (5-10 years), which represent permanent conservation that may shift around on the landscape within the targeting goals of the RWP and the SGP CHAT. Finally, the WAFWA mitigation system incentivizes the remediation of impacts that are not permanent on the landscape by providing the opportunity to generate offset units that can count toward new developments elsewhere. The 25/75 ratio of long and short-term offset units will be evaluated through the adaptive management process and may need to be adjusted in the future.

ADAPTIVE MANAGEMENT

Adaptive management is defined as a formal, structured approach to dealing with uncertainty in natural resource management, using the experience of management and the results of research as an ongoing feedback loop for continuous improvement. Adaptive approaches to management recognize that the answers to all management questions are not known and that the information necessary to formulate answers is often unavailable. Adaptive management also includes, by definition, a commitment to change management practices when deemed appropriate within the guidelines of the RWP.

Adaptive management is a dynamic process that helps reduce uncertainty in natural resource management by incorporating into flexible conservation plans new information as it becomes available. Adaptive management strategies allow for mutually agreed-upon changes to the conservation measures to occur in response to changing conditions or new information, including those identified during monitoring. The primary reason for using adaptive management in the RWP is to allow for changes in the conservation measures that may be necessary to reach the stated long-term goals. Under adaptive management, the mitigation and conservation activities implemented under the RWP will be monitored to identify whether they are producing the required results. Additionally, adaptive management activities affecting the implementation of the RWP will be influenced by emerging science and RWP implementation that fills existing knowledge gaps. Those two types of information will be used to guide adjustments in implementation of the RWP. To date, the adaptive management process in the RWP can generally be broken into two categories. The first category is directed at ensuring the program maintains its progress toward LPC habitat and populations goals. The second is directed at enhancing participation by industry by avoidance and minimization of impacts on LPC populations and habitat by industry development, operations and maintenance

The RWP identifies a series of activities or situations that will trigger the adaptive management process or specific conservation actions for LPC, as well as the timelines that those activities or situations will be evaluated (see Table 10 on page 117-120 in the RWP). There are eight individual variables in that list which are to be evaluated on an annual scale:

1. Administrative fee—WAFWA reports on the sustainability of the administrative endowment in the annual reports (see the financial summary). No adjustments to the administrative rate were made in 2018.

2. Individual technical service provider (TSP) compliance—Starting in May 2014, WAFWA has held five technical service provider training courses and has trained 267 individual TSPs on the use of spatial data available on the SGP CHAT website and the process for conducting field habitat

evaluations. Certified TSPs submit habitat evaluations to the WAFWA GIS lab for review. These evaluations include photo points allowing for visual confirmation of collected data. No TSP compliance issues were identified in 2017.

3. Population size—WAFWA conducts annual population monitoring and a detailed description is included in this report. Populations are evaluated on a three-year moving average.

4. Conservation Practice Costs—Conservation practice costs were reviewed again in 2018. After review by the LPCFSC, a recommendation was made to the LPCAC to not make adjustments in the payment rates to enrolled landowners. The LPCIC approved these recommendations and no changes will be implemented in 2019.

5. Emerging science—The LPC Science Sub-committee, (LPCSSC), reviews and informs the LPCAC on LPC science-related issues. No new items were identified and addressed in 2018.

6. Tangible mitigation unit offset ratio. This report contains an annual analysis of the acres impacted by industry development, habitat quality of those impacted acres and compares that to the acres conserved and the habitat quality of those acres.

7. Quality of the offset acreage—The habitat metric system defined in the RWP evaluates habitat quality for offset acreage on an annual basis. A summary of habitat quality is included in this report.

8. Habitat restoration goals—The RWP uses a system of focal areas and connectivity zones with goals of 70% suitable habitat in the focal areas and 40% in the connectivity zones. To achieve those goals, LPC habitat must be restored and maintained. Many LPC conservation programs across the region now use the SGP CHAT to target conservation efforts. This report will include an annual evaluation of those goals considering the restoration efforts of all conservation programs that provide data for that analysis. The strength of this approach is that common targeting helps leverage conservation efforts and funding with efforts from partner organizations.

9. A five-year review of the RWP will be conducted during 2019. Major items to be reviewed include; habitat quantity within CHAT categories and focal areas, avoidance of high priority CHAT categories and impact analysis, strongholds and progress toward stronghold goals, conservation practices, endowment sustainability and potential EOR+10 revision.

INDUSTRY PARTICIPATION

The RWP is designed to include conservation measures that eliminate and/or reduce threats by land uses including mineral, oil/gas, wind-energy developments, agricultural practices, and civil infrastructure (including transmission and distribution lines, radio/cell towers, water lines, and roads) on state and private property.

LEK SURVEYS FOR PROJECT CLEARANCE

Under the RWP, participant companies may conduct lek surveys to address restrictions under the conservation measures in the WCA and the WAFWA Oil and Gas Candidate Conservation Agreement with Assurances (CCAA). For areas within the EOR+10 that have not been surveyed for LPC (assume LPC presence) or are within 1.25 miles of a known lek, the conservation measures restrict activities during the breeding season where humans are present during the hours of 3 A.M. to 9 A.M., noise levels for facilities constructed and mitigated for under the WCA and CCAA, restrict off road travel in rangeland or planted grass and require the marking of fences. Participants have the option of considering an area occupied with active leks and following those restrictions or conducting lek surveys as defined in the lek survey protocol, which covers both aerial and ground-based surveys (see Appendix G in the RWP and adaptive management section in the RWP).

To receive a project clearance determination from WAFWA, survey data must be submitted to WAFWA and the data is checked to confirm it meets the lek survey protocol requirements. Project clearance surveys will have the appropriate buffers added (1 mile for ground surveys and 200m for aerial surveys), which are included in the lek survey layer on the CHAT website and are made available for public use for project planning. WAFWA updates this layer annually, once all lek survey data is received and summarized in August. WAFWA uses this layer, and all lek survey information received, to assess survey coverage of proposed development projects. The survey coverage determines if breeding season restrictions apply. Surveys are considered valid for five breeding seasons.

In the spring of 2018, 325,169 acres were surveyed for project clearance, totaling 0.8% of the total area of the EOR+10 (Table 1). Survey coverage varied by region from a high of 111,025 acres were in the Mixed Grass Ecoregion to a low of 50,642 acres in the Shinnery Oak Ecoregion (Table 1). Currently 20,909,354 acres of the EOR+10 (51.8%) have surveys conducted within the previous five years and are considered currently surveyed (Figure 2, Table 2).

Table 1. Summary of acreage covered by lek surveys in 2018 by ecoregion and CHAT category. Surveys are conducted by industry contractors, state agencies, and federal agency personnel to detect LPC presence or identify an area as not having LPC.

Ecoregions	CHAT Score	Acres	% of Area
Mixed grass Prairie	CHAT1	84,389	3.28%
	CHAT2	7,456	0.67%
	CHAT3	9,736	0.19%
	CHAT4	9,444	0.25%
	Ecoregion Total:	**111,025**	**0.88%**
Sand Sagebrush Prairie	CHAT1	75,491	4.77%
	CHAT2	0	0.00%
	CHAT3	8,071	0.43%
	CHAT4	2,198	0.05%
	Ecoregion Total:	**85,760**	**1.07%**
Shinnery Oak Prairie	CHAT1	0	0.00%
	CHAT2	0	0.00%
	CHAT3	41,361	0.70%
	CHAT4	9,281	0.29%
	Ecoregion Total:	**50,642**	**0.46%**
Shortgrass Prairie	CHAT1	50,829	2.72%
	CHAT2	0	0.00%
	CHAT3	17,335	0.98%
	CHAT4	9,579	0.20%
	Ecoregion Total:	**77,743**	**0.90%**
EOR+10 Total:		**325,169**	**0.81%**

Table 2. Summary of acreage covered by lek surveys performed in 2014-2018 (current active survey area).

Ecoregions	CHAT Score	Acres	% of Area
Mixed grass Prairie	CHAT1	2,562,349	99.47%
	CHAT2	1,210,377	108.44%
	CHAT3	5,660,744	109.16%
	CHAT4	1,042,194	27.66%
	Ecoregion Total:	**10,475,664**	**82.84%**
Sand Sagebrush Prairie	CHAT1	1,490,155	94.11%
	CHAT2	140,898	57.48%
	CHAT3	739,894	39.29%
	CHAT4	403,393	9.33%
	Ecoregion Total:	**2,774,341**	**34.53%**
Shinnery Oak Prairie	CHAT1	1,073,542	102.59%
	CHAT2	862,333	96.59%
	CHAT3	4,101,457	69.31%
	CHAT4	965,408	30.38%
	Ecoregion Total:	**7,002,741**	**63.46%**
Shortgrass Prairie	CHAT1	348,115	18.60%
	CHAT2	18,098	9.85%
	CHAT3	169,089	9.56%
	CHAT4	121,306	2.52%
	Ecoregion Total:	**656,608**	**7.59%**
EOR+10 Total:		**20,909,354**	**51.81%**

All lek detections from project clearance surveys are included in the WAFWA lek database, along with lek locations from the range-wide population surveys and those reported from state agencies and other data sources. If a new detection is recorded in an area that was surveyed in a prior year without detections, that new lek location supersedes the previous data and breeding season restrictions apply within 1.25 miles of that location for a minimum of five breeding seasons from the last detection. This database currently includes 3,763 lek observations recorded between 2005 and 2018, with 1,309 being from 2014-2018 and are considered “current leks” using the 5-year definition within the RWP. This total represents raw lek observations and may include the same lek observed across multiple years. There were 132 leks observed during the 2018 survey season based on the data submitted to WAFWA (Figure 3). Of those leks observed between 2005 and 2018 (3,763) 2,942 were in CHAT 1 (74%), 340 were in CHAT 2 (9%), 402 were in CHAT 3 (11%), and 71 in CHAT 4 (2%) and 8 were outside of the EOR+10 (0.2%). Leks outside the EOR+10 were in northwest Kansas (5), and three leks were just across the border in Colorado. Of those leks outside the EOR+1, all were identified by state wildlife agency personnel. There were additional

observations from aerial surveys, but since this area of NW KS also has greater prairie-chickens, the certainty that these are lesser prairie-chickens has been raised and these observations are considered questionable and under review.

Additional updates to leks and the surveyed areas may occur after August if new data is identified. Data users are encouraged to check the SGP Chat website and data portal to ensure they have the most current data available for their planning.

WAFWA CONSERVATION AGREEMENT PARTICIPATION BY INDUSTRY

The WAFWA conservation agreement (WCA) covers oil and gas, pipelines, wind energy, electric distribution and transmission, telecommunications, and other activities (See Sec. 10 of the WCA). As of December 31, 2018, there were 52 active WCA contracts by 52 companies (signed Certificates of Participation) (Table 3), three less than recorded at the end of 2017. All Certificates of Participation for this agreement have been scanned and made available to USFWS on a secure website.

The current active enrollment area totals for the WCA is 599,620acres (Table 4 & 5). WCA enrollments are down 11% from the 673,538 acres reported for 2017. An additional 2,040 acres are currently suspended for non-compliance. The acreage enrolled in the WCA has declined four three of the last four years. The business plan in the RWP expected increases in enrollment each year and established a 375,000-acre new enrollment target for the CCAA and WCA in the business plan of the RWP for 2018.

Figures 4 and 5 depict the distribution of the current active WCA enrollments across the extent of the EOR+10. The majority of the WCA enrollments (57.1%) are in the Mixed Grass Ecoregion, followed by the Shinnery Oak Prairie Ecoregion (30.8%), the Sand Sagebrush Ecoregion (9.6%), the Shortgrass Prairie Ecoregion (2.5%) (Table 4). The enrollment in this agreement represents a small percentage of the range of the species (1.5%) (Table 4 and 5). However, that enrollment has substantial biological importance because it represents a large portion of the electric grid within the EOR+10. By state, Oklahoma has the most WCA enrollment at 233,837 acres (39.0% of the total) followed by Texas at 188,424 acres (31.4%), Kansas at 89,565 acres (14.9%), New Mexico at 85,508 acres (14.3%), and Colorado at 2,285 acres (0.4%) (Table 5).

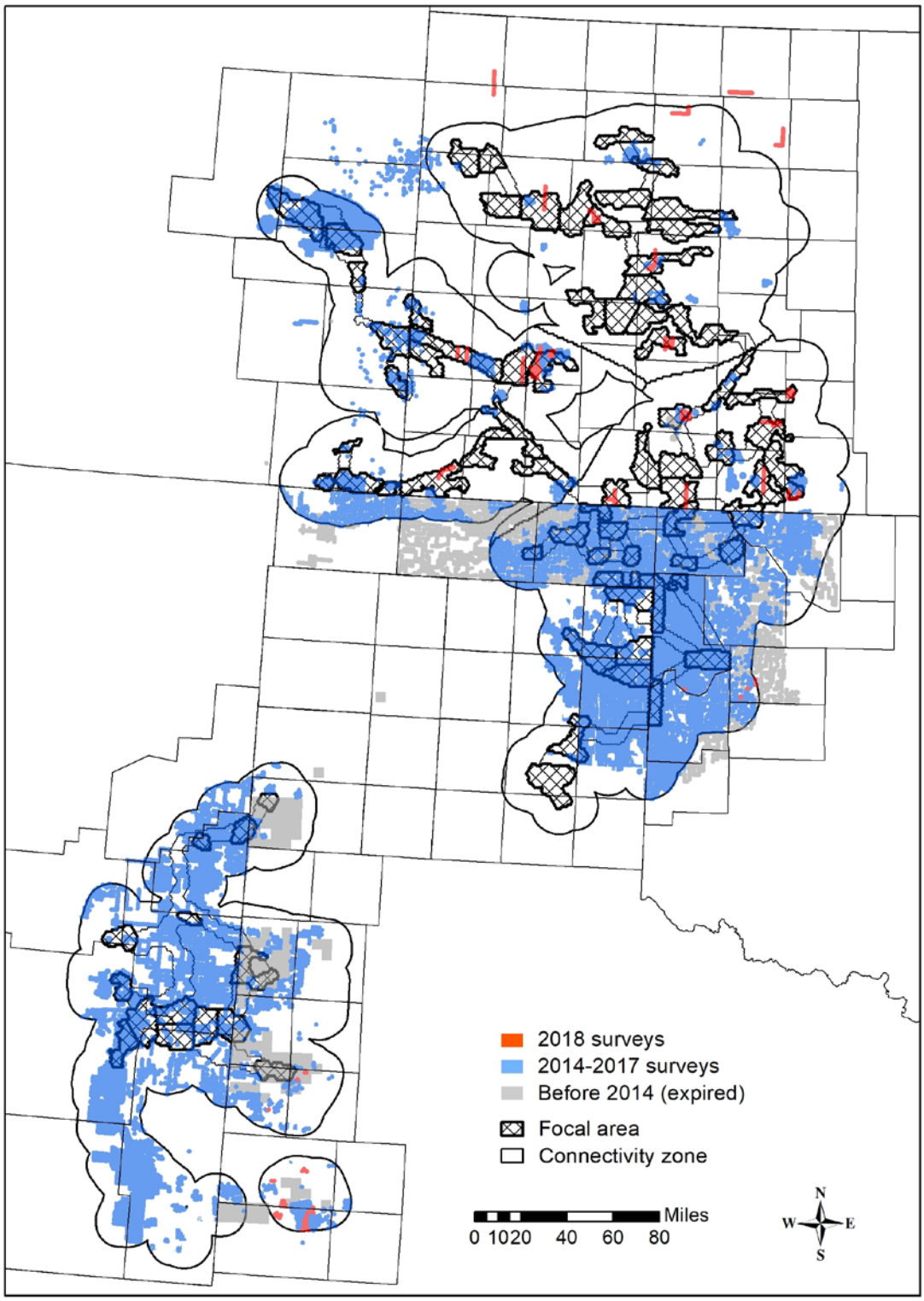

Figure 2. Lek surveys conducted in 2018 (new), 2014-2017 (active), and 2013 (just expired) across the estimated occupied range of the lesser prairie-chicken with a 10-mile buffer (EOR+10).

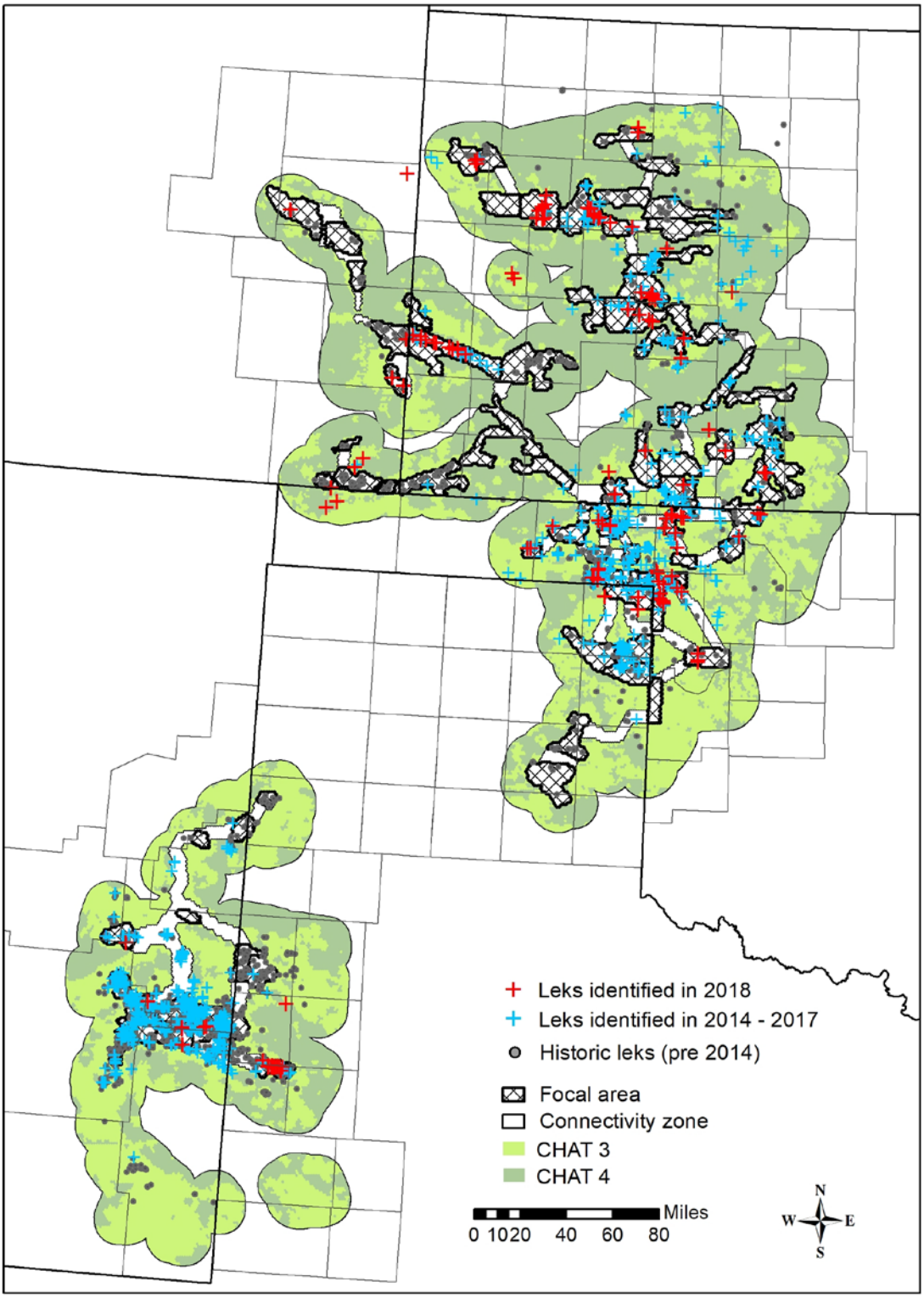

Figure 3. Leks identified in 2017 compared with those identified in 2014-2017 (still considered active) and leks last observed in 2013 or prior which are considered historic leks.

Table 3. Companies enrolled in the WCA and their current contract status for the 2018 reporting year.

No	Company Name	Contract Status*
1.	American Electric Power Company, Inc	Active
2.	Bailey County Electric Cooperative	Active
3.	Bluestem Wind Energy, LLC	Active
4.	BP America Production Company	Active
5.	Central Valley Electric Cooperative	Active
6.	Chaparral Energy, LLC	Active
7.	Cimarex Energy Company	Active
8.	Cimarron Electric Cooperative	Active
9.	CK Energy Electric Cooperative, Inc	Active
10.	Coral Coast Petroleum, LC	Active
11.	DCP Midstream, LLC	Active
12.	Deaf Smith Electric Cooperative	Active
13.	Edmiston Oil Company, Inc	Active
14.	Gore Oil Company	Active
15.	Grand Mesa Pipeline, LLC	Active
16.	Greenbelt Electric Cooperative	Active
17.	Hess Oil Company	Active
18.	Indian Exploration Company, LLC	Active
19.	ITC Great Plains	Active
20.	John O. Farmer, Inc	Active
21.	Enterprise Products Operating, LLC	Active
22.	ER Operating Company	Active
23.	Farmers Electric Cooperative	Active
24.	Kaiser-Francis Oil Company	Active
25.	Anadarko Petroleum Corporation	Active
26.	Lyntegar Electric Cooperative	Active
27.	North Plains Electric Cooperative	Active
28.	Northfork Electrical Cooperative	Active
29.	Northwestern Electric Cooperative	Active
30.	OG&E Corporation	Active

31.	Midcoast Operating, LP	Active
32.	P.O. & G. Operating, LLC	Active
33.	Peregrine Petroleum Partners, Ltd	Active
34.	Pioneer Resources, Inc	Active
35.	Ramsey Property Management, LLC	Active
36.	Raydon Exploration, Inc.	Active
37.	Raymond Oil Company, Inc	Active
38.	Red Oak Energy, Inc	Active
39.	Slawson Exploration Company, Inc	Active
40.	Southern Star Central Gas Pipeline, Inc	Active
41.	Sunflower Electric Power Corporation	Active
42.	Tower Assets Newco IX, LLC	Active
43.	Tri-County Electric Cooperative	Active
44.	Unit Petroleum Company	Active
45.	VAL Energy, Inc	Active
46.	Versado Gas Processors, LLC	Active
47.	Western Farmers Electric Cooperative	Active
48.	Western Gas Partners, LP	Active
49.	Xcel Energy, Inc	Active
50.	Prairie Wind Transmission, LLC	Active
51.	Lea County Electric Cooperative, Inc.	Active
52.	Bloom Wind, LLC	Active
53.	Jayhawk Pipeline, LLC	Inactive Transferred to CCAA
54.	Texakoma Exploration Production, LLC	Inactive Transferred to CCAA
55.	Superior Pipeline Company, LLC	Inactive Transferred to CCAA
56.	SemGroup Corporation	Inactive Transferred to CCAA
57.	Plains All American Pipeline, LP	Inactive Transferred to CCAA
58.	ONE Gas, Inc	Inactive Transferred to CCAA
59.	Magellan Midstream Partners, LP	Inactive Transferred to CCAA
60.	MarkWest Oklahoma Gas Company, LLC	Inactive Transferred to CCAA
61.	Kinder Morgan, Inc	Inactive Transferred to CCAA
62.	Kirkpatrick Oil Company, Inc	Inactive Transferred to CCAA
63.	Enable Midstream Partners, LP	Inactive Transferred to CCAA
64.	Jones Energy, LLC	Suspended

65.	StrataKan Exploration, LLC	Terminated by Lease Expiration
66.	Forestar Petroleum Corporation	Terminated by Non-Payment
67.	McElvain Energy, Inc	Terminated by Non-Payment
68.	Monarch Oil Pipeline, LLC	Terminated by Non-Payment
69.	Dolomite Resource Corporation	Terminated by Non-Payment
70.	Eagle Exploration & Production Company	Terminated by Non-Payment
71.	Eagle Oil and Gas	Terminated by Participant
72.	Alfalfa Electric Cooperative	Terminated by Participant
73.	Nadel and Gussman, LLC	Terminated by Participant
74.	Opal Resources Operating Company II, LLC	Terminated by Participant
75.	Broadview Energy	Terminated by Participant
76.	Roosevelt County Electric Cooperative	Terminated by Participant
77.	Samson Lone Star, LLC - Samson Resources Company	Terminated by Sale to Non-RWP
78.	Anadarko E&P Onshore, LLC	Terminated by Sale to Non-RWP
79.	BP America Production Company (Hemphill)	Terminated Transferred to CCAA
80.	COG Operating, LLC	Terminated Transferred to CCAA
81.	ConocoPhillips Company	Terminated Transferred to CCAA
82.	Continental Resources, Inc	Terminated Transferred to CCAA
83.	Eagle Rock Energy Services, LP	Terminated Transferred to CCAA
84.	Eagle Rock Field Services, LP	Terminated Transferred to CCAA
85.	Energy Transfer Partners, LP	Terminated Transferred to CCAA
86.	EnerVest Operating, LLC	Terminated Transferred to CCAA
87.	Devon Energy Comporation (Kansas)	Terminated Transferred to CCAA
88.	Devon Energy Comporation (Oklahoma)	Terminated Transferred to CCAA
89.	Devon Energy Comporation (Permian Basin)	Terminated Transferred to CCAA
90.	Devon Energy Comporation (Rockies)	Terminated Transferred to CCAA
91.	Devon Energy Comporation (Texas Panhandle)	Terminated Transferred to CCAA
92.	Oxy Oil and Gas	Terminated Transferred to CCAA
93.	ONEOK Partners, LP	Terminated Transferred to CCAA
94.	Mewbourne Oil Company	Terminated Transferred to CCAA
95.	Apache Corporation	Terminated Transferred to CCAA
96.	Landmark Resources, Inc	Terminated Transferred to CCAA
97.	Linn Operating, Inc	Terminated Transferred to CCAA
98.	Samuel Gary Jr. & Associates, Inc	Terminated Transferred to CCAA

99.	Tapstone Energy, LLC	Terminated Transferred to CCAA
100.	Regency Energy Partners, LP	Terminated Transferred to CCAA
101.	Toto Energy, LLC	Terminated Transferred to CCAA
102.	Kiwash Electrical Cooperative	Terminated Transferred to CCAA
103.	Access Midstream Partners, LP	Terminated Transferred to CCAA

**Contract status is as follows: active contracts have a current balance and no outstanding compliance notices, suspended or partially suspended contracts have a past-due enrollment fee balance, self-terminated contracts indicate a voluntary termination by the participant company, sold/transferred the enrollment was sold, transferred to another enrolled company and remains in the program, and transferred/inactive indicates that the company indicates that transferred the acreage to the CCAA program and retains the WCA contract without any enrolled acres.*

Table 4. Summary of active WCA acreage by ecoregion, CHAT category, and industry type and the percentage of the ecoregion and CHAT category that those enrollments represent as of December 31, 2018.

Ecoregions	CHAT Score	Electrical	Oil and Gas	Pipeline	Wind	Total Active Acres	% of Eco / CHAT Area
Mixed grass Prairie	CHAT1	27,472	21,801	3,467	0	52,740	2.0%
	CHAT2	21,170	32,097	1,001	9	54,276	4.9%
	CHAT3	93,690	57,188	3,704	360	154,942	3.0%
	CHAT4	61,140	14,110	4,066	866	80,183	2.1%
	Ecoregion Total:	**203,472**	**125,196**	**12,239**	**1,235**	**342,140**	**2.7%**
Sand Sagebrush Prairie	CHAT1	3,576	1,308	8,726	0	13,610	0.9%
	CHAT2	298	0	9	0	307	0.1%
	CHAT3	9,559	537	4,735	0	14,832	0.8%
	CHAT4	13,643	6,487	8,942	0	29,073	0.7%
	Ecoregion Total:	**27,077**	**8,333**	**22,412**	**0**	**57,821**	**0.7%**
Shinnery Oak Prairie	CHAT1	4,654	7,406	158	0	12,219	1.2%
	CHAT2	5,834	3,068	0	0	8,903	1.0%
	CHAT3	68,994	7,101	3,702	0	79,796	1.3%
	CHAT4	81,876	49	1,956	0	83,881	2.6%
	Ecoregion Total:	**161,358**	**17,625**	**5,816**	**0**	**184,798**	**1.7%**
Shortgrass Prairie	CHAT1	958	1,186	1,314	0	3,458	0.2%
	CHAT2	189	0	272	0	461	0.3%
	CHAT3	1,326	608	524	0	2,459	0.1%
	CHAT4	5,483	902	2,097	0	8,483	0.2%
	Ecoregion Total:	**7,957**	**2,696**	**4,207**	**0**	**14,860**	**0.2%**
EOR+10	**Total:**	**399,863**	**153,849**	**44,674**	**1,235**	**599,620**	**1.5%**

Table 5. Summary of active WCA acreage by state, ecoregion, CHAT category, and industry type that those enrollments represent as of December 31, 2018.

State	Ecoregions	CHAT Score	Electrical	Oil and Gas	Pipeline	Wind	Total Acres
Colorado	Mixed grass Prairie	CHAT1	215	0	523	0	738
		CHAT2	0	0	94	0	94
		CHAT3	134	0	78	0	212
		CHAT4	448	0	136	0	584
		Ecoregion Total:	**797**	**0**	**831**	**0**	**1,629**
	Sand Sagebrush Prairie	CHAT1	88	0	0	0	88
		CHAT2	123	0	0	0	123
		CHAT3	108	0	0	0	108
		CHAT4	338	0	0	0	338
		Ecoregion Total:	**657**	**0**	**0**	**0**	**657**
	State Total:		**1,454**	**0**	**831**	**0**	**2,285**
Kansas	Mixed grass Prairie	CHAT1	5,670	0	1,761	0	7,431
		CHAT2	4,877	251	525	9	5,662
		CHAT3	12,293	241	994	0	13,527
		CHAT4	8,749	318	2,304	575	11,946
		Ecoregion Total:	**31,589**	**810**	**5,584**	**583**	**38,566**
	Sand Sagebrush Prairie	CHAT1	3,477	1,308	8,726	0	13,511
		CHAT2	176	0	9	0	185
		CHAT3	3,926	537	3,978	0	8,441
		CHAT4	6,146	1,039	7,972	0	15,157
		Ecoregion Total:	**13,724**	**2,884**	**20,685**	**0**	**37,293**
	Shortgrass Prairie	CHAT1	945	1,186	1,237	0	3,367
		CHAT2	189	0	272	0	461
		CHAT3	1,211	608	519	0	2,338
		CHAT4	4,988	902	1,649	0	7,539
		Ecoregion Total:	**7,332**	**2,696**	**3,678**	**0**	**13,706**
	State Total:		**52,645**	**6,391**	**29,947**	**583**	**89,565**
New Mexico	Shinnery Oak Prairie	CHAT1	3,482	6	72	0	3,560
		CHAT2	4,852	0	0	0	4,852
		CHAT3	39,235	3	1,961	0	41,200

		CHAT4	35,242	0	655	0	35,897
		Ecoregion Total:	**82,811**	**9**	**2,688**	**0**	**85,508**
	State Total:		**82,811**	**9**	**2,688**	**0**	**85,508**
Oklahoma	Mixed grass Prairie	CHAT1	11,878	18,408	753	0	31,039
		CHAT2	10,683	24,839	348	0	35,870
		CHAT3	59,570	46,863	2,245	360	109,037
		CHAT4	27,734	7,906	1,343	292	37,274
		Ecoregion Total:	**109,865**	**98,015**	**4,689**	**651**	**213,220**
	Sand Sagebrush Prairie	CHAT1	11	0	0	0	11
		CHAT3	5,526	0	757	0	6,283
		CHAT4	6,845	5,448	970	0	13,263
		Ecoregion Total:	**12,382**	**5,448**	**1,727**	**0**	**19,557**
	Shortgrass Prairie	CHAT1	14	0	77	0	90
		CHAT3	115	0	5	0	120
		CHAT4	401	0	448	0	849
		Ecoregion Total:	**530**	**0**	**529**	**0**	**1,059**
	State Total:		**122,776**	**103,464**	**6,946**	**651**	**233,837**
Texas	Mixed grass Prairie	CHAT1	9,709	3,393	430	0	13,532
		CHAT2	5,610	7,006	34	0	12,650
		CHAT3	21,693	10,085	387	0	32,165
		CHAT4	24,209	5,886	284	0	30,378
		Ecoregion Total:	**61,221**	**26,370**	**1,134**	**0**	**88,725**
	Sand Sagebrush Prairie	CHAT4	315	0	0	0	315
		Ecoregion Total:	**315**	**0**	**0**	**0**	**315**
	Shinnery Oak Prairie	CHAT1	1,172	7,400	86	0	8,658
		CHAT2	983	3,068	0	0	4,051
		CHAT3	29,758	7,098	1,740	0	38,596
		CHAT4	46,635	49	1,301	0	47,985
		Ecoregion Total:	**78,548**	**17,615**	**3,127**	**0**	**99,290**
	Shortgrass Prairie	CHAT4	95	0	0	0	95
		Ecoregion Total:	**95**	**0**	**0**	**0**	**95**
	State Total:		**140,177**	**43,985**	**4,262**	**0**	**188,424**
Grand Total:			**399,863**	**153,849**	**44,674**	**1,235**	**599,620**

Table 4. Summary of active WCA acreage by ecoregion, CHAT category, and industry type and the percentage of the ecoregion and CHAT category that those enrollments represent as of December 31, 2018.

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Mixed grass Prairie	CHAT1	27,472	21,801	3,467	0	52,740	2.0%
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	CHAT3	93,690	57,188	3,704	360	154,942	3.0%
	CHAT4	61,140	14,110	4,066	866	80,183	2.1%
	Ecoregion Total:	**203,472**	**125,196**	**12,239**	**1,235**	**342,140**	**2.7%**
Sand Sagebrush Prairie	CHAT1	3,576	1,308	8,726	0	13,610	0.9%
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	CHAT4	81,876	49	1,956	0	83,881	2.6%
	Ecoregion Total:	**161,358**	**17,625**	**5,816**	**0**	**184,798**	**1.7%**
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		Ecoregion Total:	**797**	**0**	**831**	**0**	**1,629**
	Sand Sagebrush Prairie	CHAT1	88	0	0	0	88
		CHAT2	123	0	0	0	123
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		CHAT4	338	0	0	0	338
		Ecoregion Total:	**657**	**0**	**0**	**0**	**657**
	State Total:		**1,454**	**0**	**831**	**0**	**2,285**
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		CHAT2	4,877	251	525	9	5,662
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		CHAT4	6,146	1,039	7,972	0	15,157
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		CHAT4	4,988	902	1,649	0	7,539
		Ecoregion Total:	**7,332**	**2,696**	**3,678**	**0**	**13,706**
	State Total:		**52,645**	**6,391**	**29,947**	**583**	**89,565**
New Mexico	Shinnery Oak Prairie	CHAT1	3,482	6	72	0	3,560
		CHAT2	4,852	0	0	0	4,852
		CHAT3	39,235	3	1,961	0	41,200

		CHAT4	35,242	0	655	0	35,897
		Ecoregion Total:	**82,811**	**9**	**2,688**	**0**	**85,508**
	State Total:		**82,811**	**9**	**2,688**	**0**	**85,508**
Oklahoma	Mixed grass Prairie	CHAT1	11,878	18,408	753	0	31,039
		CHAT2	10,683	24,839	348	0	35,870
		CHAT3	59,570	46,863	2,245	360	109,037
		CHAT4	27,734	7,906	1,343	292	37,274
		Ecoregion Total:	**109,865**	**98,015**	**4,689**	**651**	**213,220**
	Sand Sagebrush Prairie	CHAT1	11	0	0	0	11
		CHAT3	5,526	0	757	0	6,283
		CHAT4	6,845	5,448	970	0	13,263
		Ecoregion Total:	**12,382**	**5,448**	**1,727**	**0**	**19,557**
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		CHAT3	115	0	5	0	120
		CHAT4	401	0	448	0	849
		Ecoregion Total:	**530**	**0**	**529**	**0**	**1,059**
	State Total:		**122,776**	**103,464**	**6,946**	**651**	**233,837**
Texas	Mixed grass Prairie	CHAT1	9,709	3,393	430	0	13,532
		CHAT2	5,610	7,006	34	0	12,650
		CHAT3	21,693	10,085	387	0	32,165
		CHAT4	24,209	5,886	284	0	30,378
		Ecoregion Total:	**61,221**	**26,370**	**1,134**	**0**	**88,725**
	Sand Sagebrush Prairie	CHAT4	315	0	0	0	315
		Ecoregion Total:	**315**	**0**	**0**	**0**	**315**
	Shinnery Oak Prairie	CHAT1	1,172	7,400	86	0	8,658
		CHAT2	983	3,068	0	0	4,051
		CHAT3	29,758	7,098	1,740	0	38,596
		CHAT4	46,635	49	1,301	0	47,985
		Ecoregion Total:	**78,548**	**17,615**	**3,127**	**0**	**99,290**
	Shortgrass Prairie	CHAT4	95	0	0	0	95
		Ecoregion Total:	**95**	**0**	**0**	**0**	**95**
	State Total:		**140,177**	**43,985**	**4,262**	**0**	**188,424**
Grand Total:			**399,863**	**153,849**	**44,674**	**1,235**	**599,620**

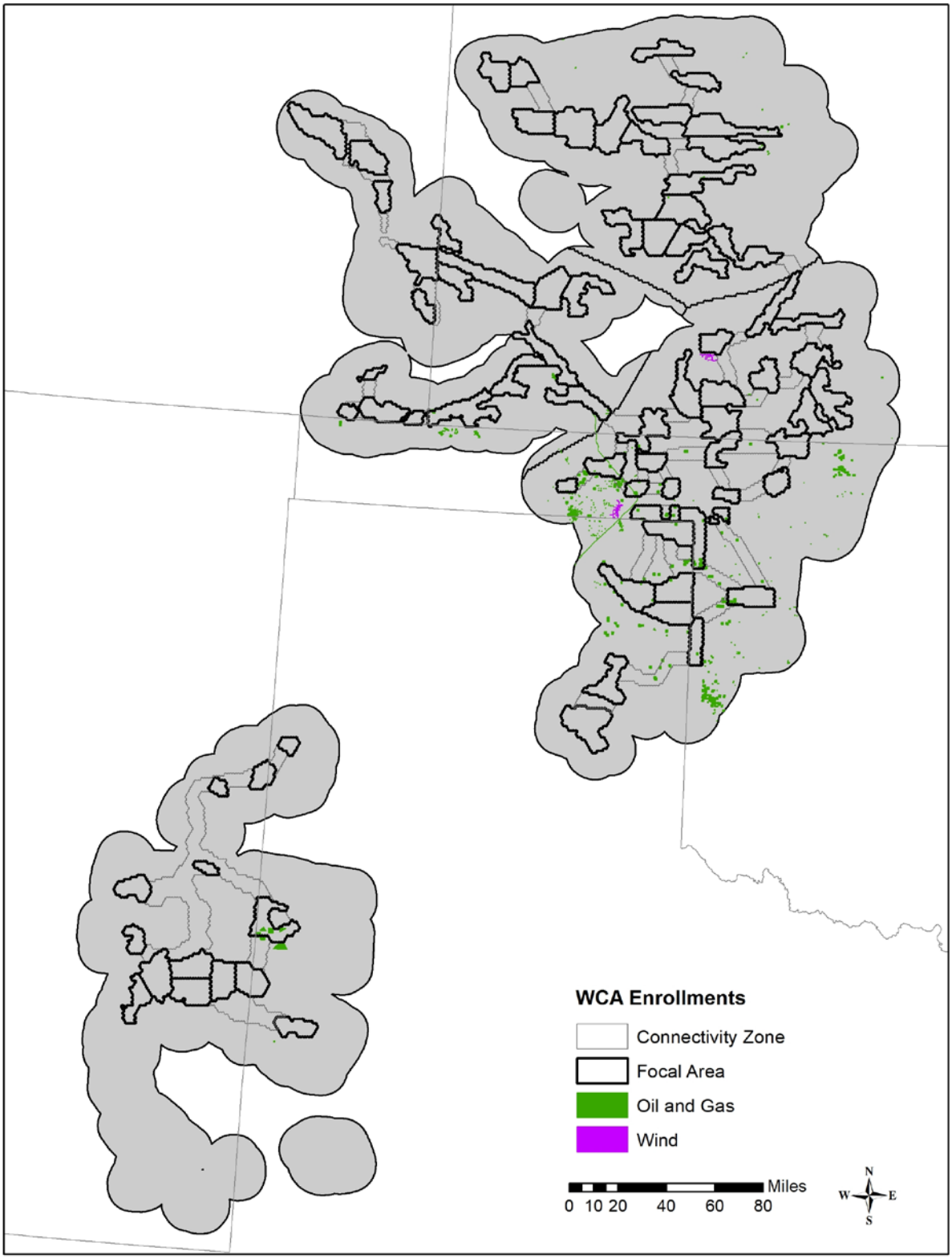

Figure 4. Enrollments in the WAFWA Conservation Agreement (WCA) as of December 31, 2018.

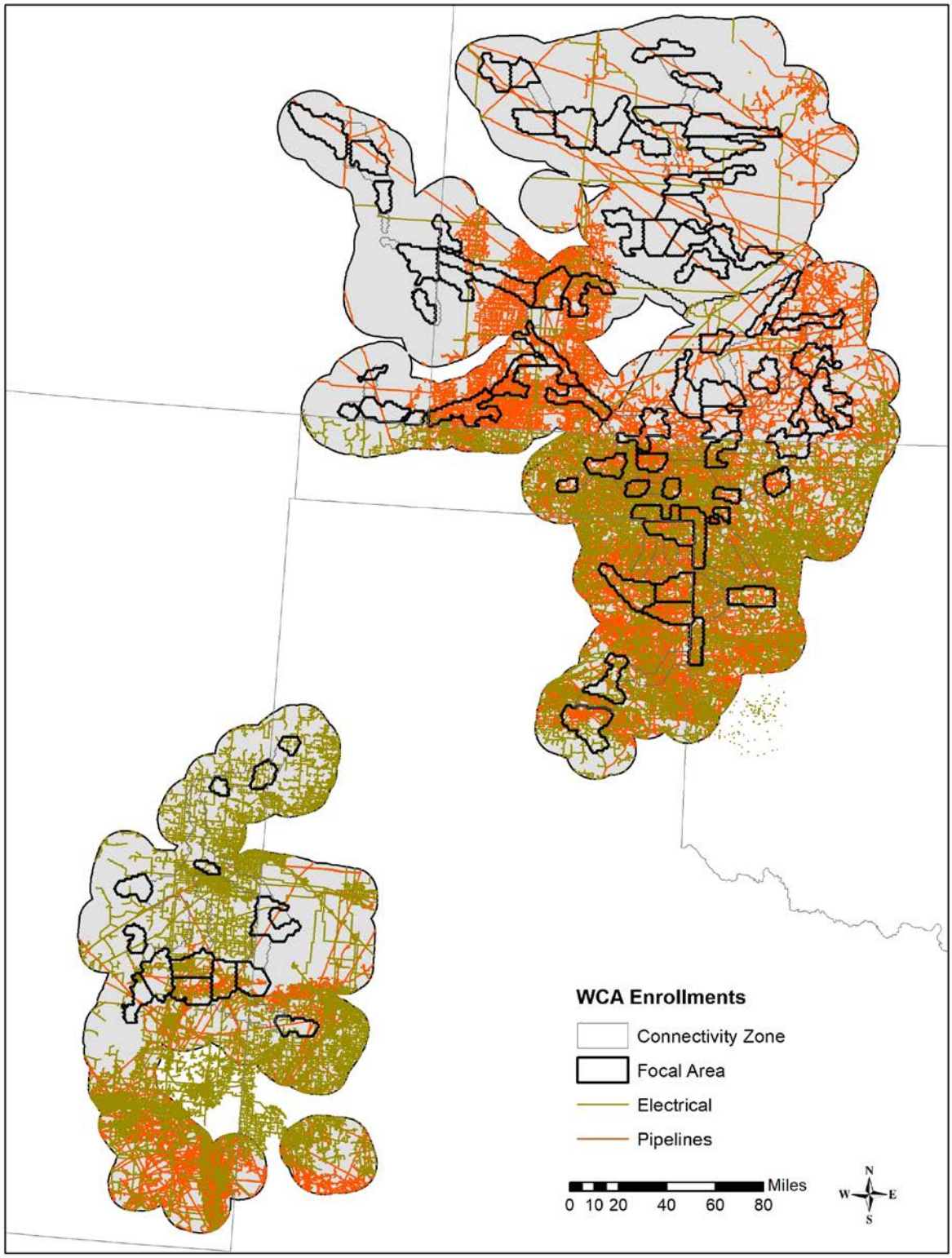

Figure 5. Electric and pipeline enrollments in the WAFWA Conservation Agreement (WCA) as of December 31, 2018.

WCA SUSPENSIONS AND TERMINATIONS FOR UNPAID FEES

Companies may be suspended for either non-payment of enrollment fees or for otherwise failing to follow the terms of the agreement. Under the WCA agreement, WAFWA is required to issue three notices for unresolved compliance issues: Compliance Notice, Delinquency Notice, and Notice of Noncompliance. Each notice establishes a twenty-business day period to resolve the issue. Companies have the option to seek review of compliance issues by the LPC Advisory Committee. The Initiative Council may consider termination of all or part of the enrollment if the compliance issue is not resolved prior to the established deadlines.

One company is currently suspended under the WCA for failure to report development projects on both WCA and CCAA enrolled property. These incidents occurred prior to 2018 and WAFWA has provided the company with all three notification letters required under the agreements. Efforts to reach a resolution have been unsuccessful and WAFWA is considering legal options to achieve that resolution. No companies were terminated for non-compliance during 2018.

WCA EMERGENCY AND NON-EMERGENCY OPERATIONS AND LPC MORTALITY REPORTING

The WCA requires the reporting of emergency and non-emergency operations as well as any incidents of LPC mortality. Emergency operations are those activities unexpectedly and urgently required to prevent or address immediate threats to human health, safety, or property; the environment; or national defense or security. The WCA requires the reporting of emergency operations that occur during the hours of 3am to 9am, between March 1 and July 15 that are within 1.25 miles of leks active within the previous 5 years or within 1.25 miles of un-surveyed areas of CHAT 1-3. Non-emergency activities occur on undisturbed areas in rangeland or planted grass cover (e.g., off of a well pad, road, or facility) between March 1 and July 15 and between 9 am and 3 pm that are within 1.25 miles of leks active within the previous 5 years or within 1.25 miles of un-surveyed areas of CHAT 1-3. Emergency operations reports are made by companies online via the WAFWA Conservation ToolKit website. The US Fish and Wildlife Service has access to view all databases produced from the ToolKit.

One participant reported a single incident as an emergency operation via the ToolKit. However, upon review by WAFWA staff, the incident did not meet the requirements for either an emergency incident or non-emergency. Despite the fact that it occurred within 0.8 miles of a lek and during the breeding season, the incident happened after 9 am and was mapped within the impact buffer of a secondary road. No other emergency or non-emergency operations or instances of LPC mortality were reported on WCA enrolled properties by participant companies during the 2018 calendar year.

CCAA INDUSTRY PARTICIPATION

The CCAA covers oil and gas and related activities such as wells, roads, pipelines, storage tank facilities, compressor and pumping stations, and electric service for oil and gas facilities. As of December 31, 2018, there were 111 active CCAA contracts by 105 companies, which is the same as the enrollment at the end of 2017. Two contracts are currently suspended for non-compliance. Certificates of Inclusion for this agreement have been scanned and made available to USFWS on a secure website.

Table 6. Companies enrolled in the CCAA and their current contract status for the 2018 reporting year.

No	Company Name	Contract Status*
1.	Cimarex Energy Company	Active
2.	Cimarex Energy Company (West Texas)	Active
3.	CMX, Inc	Active
4.	Coats Energy, Inc	Active
5.	COG Operating, LLC	Active
6.	ConocoPhillips Company	Active
7.	Continental Resources, Inc	Active
8.	Corlena Oil Company	Active
9.	Crawley Petroleum Corporation	Active
10.	Culbreath Oil and Gas Company, Inc	Active
11.	Cynosure Energy, LLC	Active
12.	DaMar Resources, Inc	Active
13.	Daystar Petroleum, Inc	Active
14.	DCP Midstream, LLC	Active
15.	Devon Energy Corporation (Kansas)	Active
16.	Devon Energy Corporation (Oklahoma)	Active
17.	Devon Energy Corporation (Permian Basin)	Active
18.	Devon Energy Corporation (Rockies)	Active
19.	Devon Energy Corporation (Texas Panhandle)	Active
20.	Diehl Oil, Inc	Active
21.	Beren Corporation	Active
22.	Berexco, LLC	Active
23.	BP America Production Company	Active
24.	Casillas Petroleum Corporation	Active
25.	Castelli Exploration, Inc	Active
26.	Central Operating, Inc	Active
27.	Centurion Pipeline, LP	Active
28.	Anadarko Minerals, Inc	Active

29.	Dorchester Minerals Operating, LP (Oklahoma)	Active
30.	Duncan Oil Properties, Inc	Active
31..	Edison Operating Company, LLC	Active
32.	Edmiston Oil Company, Inc	Active
33.	Elevation Resources, LLC	Active
34.	Empire Energy E&P, LLC	Active
35.	Enable Midstream Partners, LP	Active
36.	Energy Alliance Company, Inc	Active
37.	Energy Transfer Partners, LP	Active
38.	EnerVest Operating, LLC	Active
39.	EOG Resources, Inc	Active
40.	Apache Corporation	Active
41.	Apache Corporation (Permian)	Active
42.	Fasken Oil and Ranch, Ltd	Active
43.	Imperial American Oil, Inc	Active
44.	Jayhawk Pipeline, LLC	Active
45.	JMA Energy Company, LLC	Active
46.	Jolen Operating Company	Active
47.	Kenneth W. Cory, Ltd	Active
48.	Kinder Morgan, Inc	Active
49.	Kirkpatrick Oil Company, Inc	Active
50.	Laddex, Ltd	Active
51.	Landmark Resources, Inc	Active
52.	Griffin Management, LLC	Active
53.	Legacy Reserves Operating, LP	Active
54.	McGinness Oil Company of Kansas, Inc	Active
55.	Meridian Energy, Inc	Active
56.	Merit Energy Company, LLC	Active
57.	Mewbourne Oil Company	Active
58.	MIDCO Exploration, Inc	Active
59.	Midcoast Operating, LP	Active
60.	Mid-Con Energy Operating, LLC	Active
61.	Midnight Hour, LLC	Active
62.	Linn Operating, Inc	Active

63.	M&M Exploration, Inc	Active
64.	Magellan Midstream Partners, LP	Active
65.	MarkWest Oklahoma Gas Company, LLC	Active
66.	Maverick Brothers Resources, LLC	Active
67.	Murfin Drilling Company, Inc	Active
68.	ONEOK Partners, LP	Active
69.	Oolite Energy Corporation	Active
70.	Osage Investors, LLC	Active
71.	Osage Oil, LLC	Active
72.	Oxy Oil and Gas	Active
73.	Panhandle Topeka, LLC	Active
74.	Pickerell Drilling Company, Inc	Active
75.	Pintail Petroleum, Ltd	Active
76.	Pioneer Natural Resources USA, Inc	Active
77.	Plains All American Pipeline, LP	Active
78.	QEP Energy Company	Active
79.	Questa Energy, Corporation	Active
80.	Range Production Company, LLC	Active
81.	Red Oak Energy, Inc	Active
82.	O`Benco IV, LP - O`Brien Resources, LLC	Active
83.	Rio Petroleum, Inc	Active
84.	Strand Energy, LC	Active
85.	Strat Land Exploration Company	Active
86.	Superior Pipeline Company, LLC	Active
87.	Tabula Rasa Partners, LLC	Active
88.	Tandem Energy Corporation	Active
89.	Tapstone Energy, LLC	Active
90.	Tengasco, Inc	Active
91.	Texakoma Exploration Production, LLC	Active
92..	Texland Petroleum, LP	Active
93.	Thomason Petroleum, Inc	Active
94.	Triad Energy, Inc	Active
95.	Unit Petroleum Company	Active
96.	Versado Gas Processors, LLC	Active

97.	Viking Resources, Inc	Active
98.	Vincent Oil Corporation	Active
99.	W.R. Williams, Inc	Active
100.	Ward Petroleum Corporation	Active
101.	Western Operating Company	Active
102.	White Exploration, Inc	Active
103.	Samuel Gary Jr. & Associates, Inc	Active
104.	SandRidge Exploration and Production, LLC	Active
105.	SemGroup Corporation	Active
106.	Toto Energy, LLC	Active
107.	Younger Energy Company	Active
108.	Zinszer Oil Company, Inc	Active
109.	RG Exploration, LLC	Active
110.	Williams Midstream	Active
111.	ONE Gas, Inc	Active
112.	Anadarko Petroleum Corporation	Inactive
113.	Jones Energy, LLC	Suspended
114.	Le Norman Operating, LLC	Suspended
115.	Paladin Energy Corporation	Terminated by Bankruptcy
116.	Vanguard Natural Resources	Terminated by Bankruptcy
117.	LB Exploration, Inc	Terminated by Non-Payment
118.	Joshi Technologies International, Inc	Terminated by Non-Payment
119.	Forestar Petroleum Corporation	Terminated by Non-Payment
120.	Ares Energy, Ltd	Terminated by Non-Payment
121.	Eternity Exploration, LLC	Terminated by Non-Payment
122.	Encino Operating, LLC	Terminated by Non-Payment
123.	Energex, LLC	Terminated by Non-Payment
124.	Chisholm Partners II, LLC	Terminated by Non-Payment
125.	Cholla Production, LLC	Terminated by Non-Payment
126.	Pioneer Oil Company, Inc	Terminated by Non-Payment
127.	McElvain Energy, Inc	Terminated by Non-Payment
128.	Ol` Miss, LLC	Terminated by Non-Payment
129.	Redland Resources, LLC	Terminated by Non-Payment
130.	Nadel and Gussman Permian, LLC	Terminated by Participant

131.	Nadel and Gussman, LLC	Terminated by Participant
132.	Williford Energy Company	Terminated by Participant
133.	Trey Resources, Inc	Terminated by Participant
134.	Shakespeare Oil Company, Inc	Terminated by Participant
135.	Mikol Oil, LLC	Terminated by Participant
136.	Lighthouse Oil and Gas, LP	Terminated by Sale to Non-RWP
137.	Stanolind Operating, LLC	Terminated by Sale to Non-RWP
138.	Whiting Oil and Gas Corporation	Terminated by Sale to Non-RWP
139.	Samson Lone Star, LLC - Samson Resources Company	Terminated by Sale to Non-RWP
140.	Regency Energy Partners, LP	Transferred to Other Company
141.	Three Rivers Acquisition II, LLC	Transferred to Other Company
142.	Marathon Oil Company	Transferred to Other Company
143.	Highmount Operating, LLC	Transferred to Other Company
144.	Access Midstream Partners, LP	Transferred to Other Company
145.	Eagle Rock Energy Services, LP	Transferred to Other Company
146.	Eagle Rock Field Services, LP	Transferred to Other Company
147.	Eagle Rock Mid-Continent Operating Company, LLC	Transferred to Other Company
148.	Eagle Rock Operating Company, LLC	Transferred to Other Company
149.	Dorchester Minerals Operating, LP (Kansas)	Transferred to Other Company

**Contract status is as follows: active contracts have a current balance and no outstanding compliance notices, suspended or partially suspended contracts have a past-due enrollment fee balance, self-terminated contracts indicate a voluntary termination by the participant company, sold/transferred indicates that the enrollment was sold, transferred to another enrolled company and remains in the program, and transferred/inactive indicates that the company transferred the acreage to the CCAA program and retains the WCA contract without any enrolled acres.*

As of December 31, 2018, the CCCA included an active total of 6,475,734 enrolled acres (Table 7 and 8), which is down from 6,889,478 acres in 2016 (6%). An additional 92,897 acres are suspended for compliance violations including non-payment of enrollment fees and/or failure to report mitigation projects (Table 9). The acreage enrolled in the CCAA has declined steadily for the past four years in a row. The business plan in the RWP expected increases in enrollment each year and established a 375,000-acre new enrollment target for the CCAA and WCA in the business plan of the RWP for 2018.

The majority of the CCAA enrollment (54%) is in the Mixed Grass Ecoregion, followed by the Sand Sagebrush Ecoregion (30%), the Shinnery Oak Prairie Ecoregion (11%), and the Shortgrass Prairie Ecoregion (5%) (Figure 6,7 and Table 7 and 8). By state, Kansas has the most enrollment at 2,471,448.7 acres or 38% of the total enrollment (Table 8), but the state also encompasses the

largest share of the EOR+10. Of the remaining states, Texas has 1,872,686 acres (29%), Oklahoma has 1,946,728 acres or 30%, New Mexico has 139,129 acres or 2%, and Colorado has 49,930 acres or 0.7%.

Table 7. Summary of active CCAA enrollment acreage by ecoregion, CHAT category and industry and the percentage that these enrollments represent as of December 31, 2018.

Ecoregions	CHAT Score	Oil and Gas	Pipeline	Total Acres	% Total Area
Mixed grass Prairie	CHAT1	588,905	73,140	662,045	25.7%
	CHAT2	303,180	48,162	351,342	31.5%
	CHAT3	1,660,488	191,909	1,852,397	35.7%
	CHAT4	495,156	114,129	609,285	16.2%
	Ecoregion Total:	**3,047,728**	**427,340**	**3,475,068**	**27%**
Sand Sagebrush Prairie	CHAT1	520,790	24,702	545,492	34.5%
	CHAT2	14,533	1,085	15,618	6.4%
	CHAT3	284,527	18,213	302,740	16.1%
	CHAT4	1,020,950	56,589	1,077,540	24.9%
	Ecoregion Total:	**1,840,801**	**100,589**	**1,941,390**	**24%**
Shinnery Oak Prairie	CHAT1	2,142	12,779	14,921	1.4%
	CHAT2	2,747	3,070	5,817	0.7%
	CHAT3	261,950	94,194	356,143	6.0%
	CHAT4	298,478	62,477	360,955	11.4%
	Ecoregion Total:	**565,316**	**172,519**	**737,836**	**7%**
Shortgrass Prairie	CHAT1	52,427	4,590	57,017	3.0%
	CHAT2	17,424	1,066	18,489	10.1%
	CHAT3	43,182	6,181	49,363	2.8%
	CHAT4	174,343	22,230	196,573	4.1%
	Ecoregion Total:	**287,375**	**34,066**	**321,441**	**4%**
EOR+10 Total:		**5,741,220**	**734,515**	**6,475,734**	**16%**

Table 8. Summary of active CCAA enrollment acreage by state, ecoregion, CHAT category and industry that these enrollments represent as of December 31, 2018.

State	Ecoregions	CHAT Score	Oil and Gas	Pipeline	Total Acres
Colorado	Mixed grass Prairie	CHAT1	0	2,523	2,523
		CHAT2	0	837	837
		CHAT3	0	916	916
		CHAT4	0	3,641	3,641
		Ecoregion Total:	**0**	**7,916**	**7,916**
	Sand Sagebrush Prairie	CHAT1	18,613	1,038	19,651
		CHAT2	5,130	599	5,728
		CHAT3	5,255	908	6,163
		CHAT4	7,887	2,584	10,471
		Ecoregion Total:	**36,885**	**5,129**	**42,014**
	State Total:		**36,885**	**13,045**	**49,930**
Kansas	Mixed grass Prairie	CHAT1	120,413	19,763	140,175
		CHAT2	26,996	13,118	40,114
		CHAT3	75,965	30,969	106,934
		CHAT4	57,997	35,135	93,132
		Ecoregion Total:	**281,371**	**98,984**	**380,355**
	Sand Sagebrush Prairie	CHAT1	502,033	23,656	525,689
		CHAT2	9,403	487	9,890
		CHAT3	221,381	14,101	235,482
		CHAT4	950,172	48,613	998,785
		Ecoregion Total:	**1,682,990**	**86,857**	**1,769,846**
	Shortgrass Prairie	CHAT1	52,427	4,418	56,845
		CHAT2	17,424	1,066	18,489
		CHAT3	43,182	5,315	48,496
		CHAT4	174,343	18,887	193,230
		Ecoregion Total:	**287,375**	**29,685**	**317,060**
	State Total:		**2,251,735**	**215,526**	**2,467,262**
New Mexico	Shinnery Oak Prairie	CHAT1	241	11,783	12,024
		CHAT2	0	2,472	2,472
		CHAT3	6,094	79,247	85,342
		CHAT4	23	39,269	39,291
		Ecoregion Total:	**6,358**	**132,771**	**139,129**

	State Total:		**6,358**	**132,771**	**139,129**
Oklahoma	Mixed grass Prairie	CHAT1	190,534	27,587	218,121
		CHAT2	144,650	18,002	162,651
		CHAT3	1,068,909	106,076	1,174,985
		CHAT4	224,274	32,796	257,070
		Ecoregion Total:	**1,628,367**	**184,461**	**1,812,828**
	Sand Sagebrush Prairie	CHAT1	144	8	152
		CHAT3	57,891	3,203	61,094
		CHAT4	62,891	5,383	68,273
		Ecoregion Total:	**120,926**	**8,594**	**129,520**
	Shortgrass Prairie	CHAT1	0	172	172
		CHAT3	0	866	866
		CHAT4	0	3,342	3,342
		Ecoregion Total:	**0**	**4,381**	**4,381**
	State Total:		**1,749,293**	**197,435**	**1,946,728**
Texas	Mixed grass Prairie	CHAT1	277,958	23,267	301,226
		CHAT2	131,534	16,205	147,739
		CHAT3	515,613	53,949	569,562
		CHAT4	212,884	42,558	255,443
		Ecoregion Total:	**1,137,990**	**135,979**	**1,273,969**
	Sand Sagebrush Prairie	CHAT4	0	10	10
		Ecoregion Total:	**0**	**10**	**10**
	Shinnery Oak Prairie	CHAT1	1,901	995	2,896
		CHAT2	2,747	599	3,346
		CHAT3	255,855	14,946	270,802
		CHAT4	298,455	23,208	321,663
		Ecoregion Total:	**558,958**	**39,749**	**598,707**
	State Total:		**1,696,948**	**175,738**	**1,872,686**
Grand Total:			**5,741,220**	**734,515**	**6,475,734**

Table 9. Summary of suspended CCAA acreage by ecoregion, CHAT category and industry type as of December 31, 2018.

Ecoregions	CHAT Score	Suspended	% Total Area
Mixed grass Prairie	CHAT1	15,893	0.6%
	CHAT2	14,841	1.3%
	CHAT3	46,775	0.9%
	CHAT4	15,388	0.4%
	Ecoregion Total:	**92,897**	**0.7%**
EOR+10 Total:		**92,897**	**0.2%**

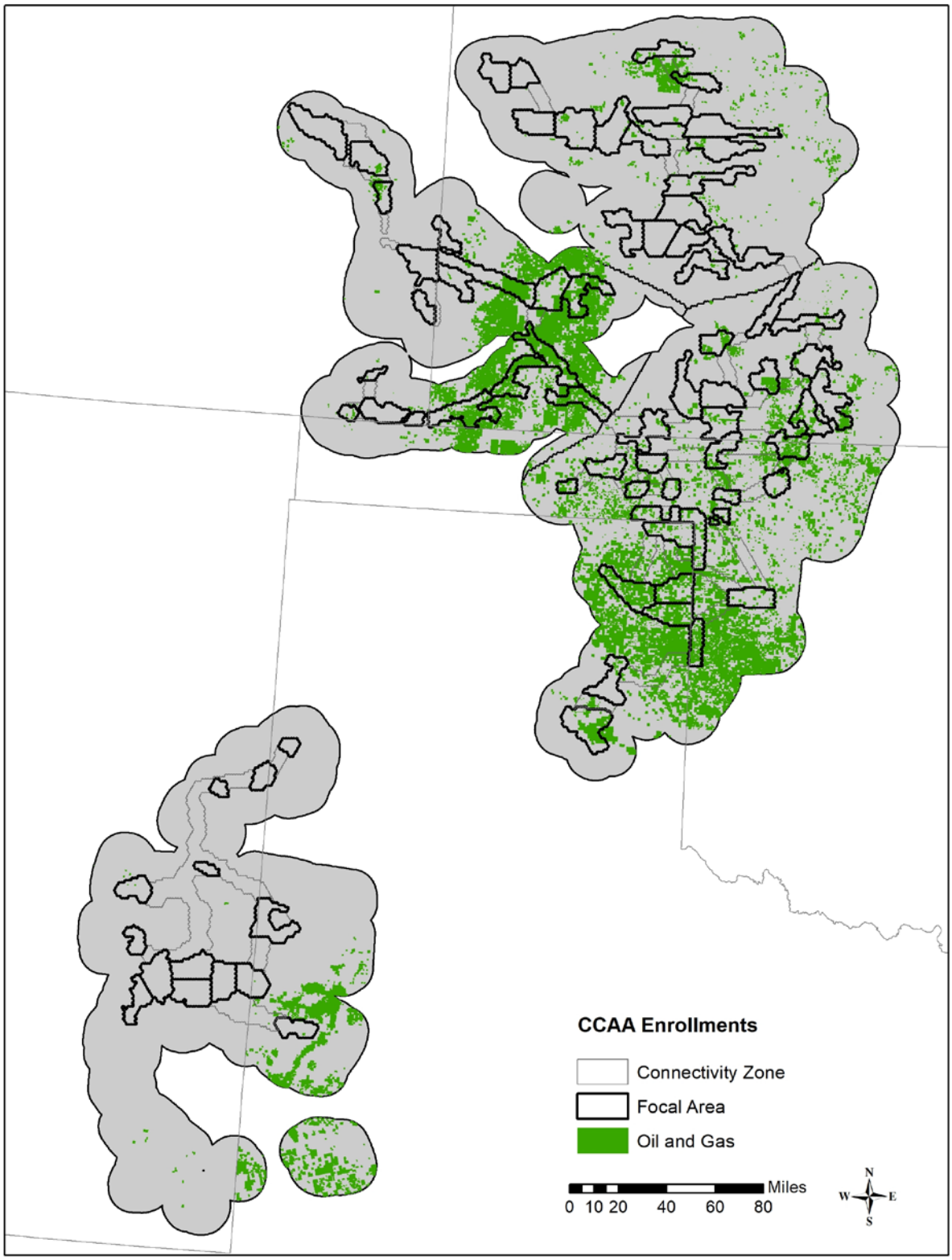

Figure 6. Oil and gas enrollments in the Range-wide Oil and Gas Candidate Conservation Agreement with Assurances (CCAA) as of December 31, 2018.

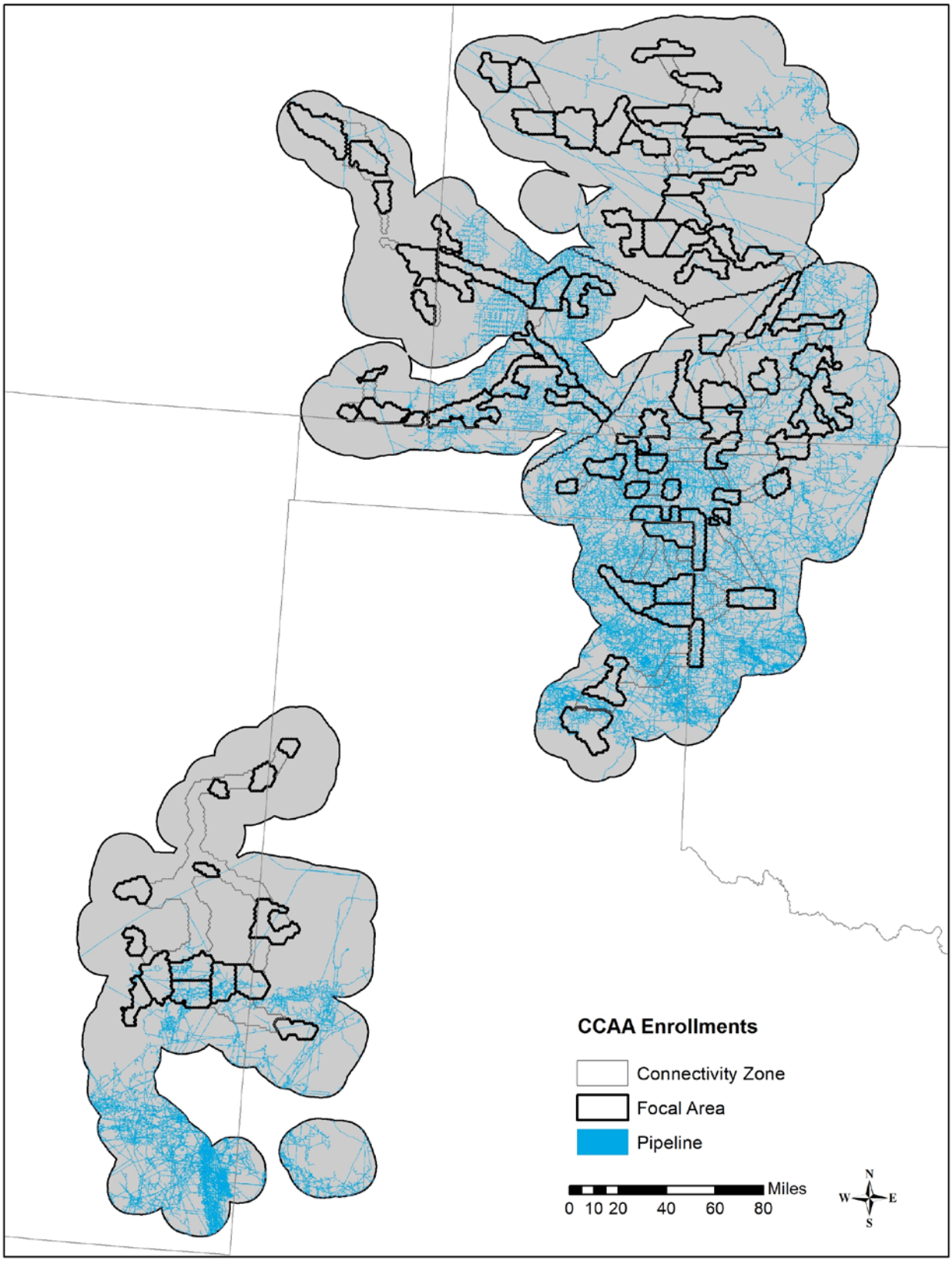

Figure 7. Map of pipeline enrollments in the Range-wide Oil and Gas Candidate Conservation Agreement with Assurances (CCAA) as of December 31, 2018.

CCAA SUSPENSIONS AND TERMINATIONS FOR UNPAID FEES

Companies may be suspended for either non-payment of enrollment fees or for otherwise failing to follow the terms of the agreement. Under the CCAA agreement, WAFWA is required to issue three notices for unresolved compliance issues: Compliance Notice, Delinquency Notice, and Notice of Noncompliance. Each notice establishes a twenty-business day period to resolve the issue. Companies have the option to seek review of compliance issues by the LPC Advisory Committee. The Initiative Council may consider termination of all or part of the enrollment if the compliance issue is not resolved prior to the established deadlines.

Two companies (Jones Energy, LLC and Le Norman Operating, LLC) are currently suspended under the CCAA for failure to report development projects on enrolled property. One of those companies is also suspended under the WCA agreement. These incidents occurred prior to 2018 and WAFWA has provided both company with all three notification letters required under the agreements. Efforts to reach resolutions have been unsuccessful with both companies. WAFWA is currently pursuing legal options to achieve that resolution against one of the companies and is considering those options for the second. WAFWA terminated the enrollment of two additional companies (Redland Resources, LLC and Encino Operating, LLC) during 2018 for failure to resolve outstanding compliance issues from 2017. All other outstanding compliance issues have been successfully resolved.

CCAA EMERGENCY AND NON-EMERGENCY OPERATIONS AND LPC MORTALITY REPORTING

The CCAA requires the reporting of emergency and non-emergency operations as well as any incidents of LPC mortality. Emergency operations are those activities unexpectedly and urgently required to prevent or address immediate threats to human health, safety, or property; the environment; or national defense or security. The CCAA requires the reporting of emergency operations that occur during the hours of 3 a.m. to 9 a.m., between March 1 and July 15 that are within miles of leks active within the previous 5 years or within 1.25 miles of un-surveyed areas of CHAT 1-3. Non-emergency activities occur on undisturbed areas in rangeland or planted grass cover (e.g., off a well pad, road, or facility) between March 1 and July 15 between 9 am and 3 am that are within 1.25 miles of leks active within the previous five years or within 1.25 miles of un-surveyed areas of CHAT 1-3.

Fifteen incidents were reported on the ToolKit website. Upon review of these incidents, only two met the criteria under the CCAA for a non-emergency operation, and they are described in Table 12.

Table 12. Summary of 2017 emergency and non-emergency operations reported for the CCAA.

Location Number	Industry Type	Operation Type	Eco-region	CHAT	Surveyed for Leks	Distance to Known Lek (miles)	Site within Cropland (Y/N)	Site within Existing Impact Buffer (Y/N)	Date	Start Time	End Time
1	Pipeline	Non-Emergency	Sand Sagebrush	1	N	30.7	N	N	4/10	12:00 PM	2:00 PM
2	Pipeline	Non-Emergency	Mixed Grass	2	N	35.4	N	N	06/12-06/13	9:30 AM	2:00 PM

RWP CONSERVATION PROGRAM

The RWP offers two basic enrollment options for landowners: non-offset and offset generating conservation agreements. There are also two types of conservation plans available to landowners regardless of which agreement type is being developed. The first is a rangeland conservation plan which utilizes livestock grazing as the primary management practice. The other option is a planted grass management plan which typically utilizes disturbance other than regular domestic livestock grazing to create and maintain suitable vegetative conditions for LPC (e.g. disking and prescribed fire).

The non-offset generating agreements are utilized to prescribe conservation practices on properties that are not generating mitigation offset units. Some of the prescribed practices in these agreements are funded using non-mitigation dollars (e.g. grant funds). The non-offset agreements also provided participants with exemptions from the take prohibitions of the ESA for the conservation practices that were being applied as prescribed when the LPC was federally protected. Those take exemptions were eliminated after the September 1, 2015 court decision overturned the USFWS ruling that listed the species as threatened under the ESA. WAFWA will advocate for these take exemptions to be reinstated by the USFWS if the LPC regains federal protection in the future. WAFWA accepts landowner requests for non-offset agreements continuously and processes them as quickly as possible. Any property that falls within a WAFWA ecoregion is eligible to enroll in a non-offset generating conservation agreement. WAFWA only monitors compliance of non-offset agreements when financially supported conservation practices are prescribed.

The offset generating agreements offered by WAFWA provided the same take exemptions as the non-offset agreement when the LPC was federally protected under the ESA. However, these agreements all provide various types of payments to landowners for implementing conservation practices that are beneficial to LPC. Enrolled properties produce mitigation credits to offset industry impacts elsewhere in the same ecoregion. Basic eligibility requirements dictate that a property must fall within a WAFWA ecoregion and contain at least 160 acres in one contiguous block. Landowners can offer eligible acreage for 5 or 10-year term agreements or ask that it be considered for a permanent conservation site. Sites that require restoration work such as range planting or brush management must be enrolled for at least a 10-year term. WAFWA continuously accepts landowner offers of eligible property for all the offset generating agreement options. However, enrollment is competitive and depends on availability of mitigation funds and other competing offers. Properties that do get enrolled in an offset generating agreement must be managed in compliance with a WAFWA-approved conservation plan. Rangeland conservation plans must include prescribed grazing. Planted grass management plans must include at least one disturbance practice during the term of the agreement. Both types of conservation plans must also include all the additional conservation practices necessary to address each of the identified threats to the LPC that exist on the property. WAFWA assesses compliance with conservation plans using landowner self-reporting forms for grazing activities, on-site verification of completed restoration practices, and annual vegetation sampling.

When WAFWA biologists make their initial visit to a property, a checklist is completed to identify

which LPC threats currently exist on the site. The biologists evaluate such things as the presence of invasive vegetation, harmful infrastructure, grazing pressure, and presence of LPC non- habitat. The biologists must attempt to address each of the LPC threats identified on the checklist when they

prepare a conservation plan for the property. WAFWA biologists can address those threats using 28 different conservation practices that must be prescribed to the standards described in the range-wide plan. The practices and their standards mimic those approved in the USFWS's biological opinion of the NRCS' Lesser Prairie-Chicken Initiative with three exceptions. The grazing applied through the RWP is adaptive and targets specific vegetation structure, all trees will be felled when brush management is prescribed, and there will be no chemical treatment of sand sagebrush.

WAFWA NON-OFFSET AGREEMENTS

During 2018, WAFWA did not receive any landowner requests for unfunded non-offset agreements. WAFWA did execute one such non-offset agreement in 2014 which is still being implemented by the landowner. That agreement includes prescribed grazing and prescribed fire on 8,912 acres in the Mixed Grass Ecoregion. Additionally, WAFWA also used a non-offset agreement in 2017 to deliver funding to a landowner for 933 acres of mechanical brush management in the Shinnery Oak Region. That agreement requires the landowner to maintain the benefits of the brush management practice for 10 years.

WAFWA CONSERVATION FUNDING STRATEGY

Currently, a ratio of 75/25 is used to split the WAFWA offset generating agreements between term contracts and perpetually conserved sites. The term contracts can be for a 5 or 10-year duration. When these term contracts expire, WAFWA will replace them with another term contract with equal or greater value as determined by the CHAT priority area where the expiring site occurred. The perpetually conserved sites are high quality habitats or sites with potential to be restored to those conditions. The perpetually conserved sites adhere to the USFWS conservation banking policy (USFWS 2003). Funding for management activities will be available in perpetuity for both conservation options because only endowment interest is committed for that purpose.

The 75/25 split was chosen as the ratio for two primary reasons. First, WAFWA will be able to affect a far greater number of acres with the most funding being targeted toward term contracts. Applying beneficial conservation practices on the maximum possible acreage provides the best opportunity to stabilize or increase the LPC population. This approach has proven to be successful at recovering the LPC as demonstrated by the range expansion and population growth observed in Kansas shortly after the implementation of the Conservation Reserve Program (Rodgers and Hoffman 2005). Secondly, a dynamic approach provides WAFWA with some flexibility to adapt to changing environmental conditions that may influence the ability of a specific site to support LPCs. The 75/25 ratio will be evaluated periodically through the adaptive management process described in the LPC range-wide plan.

WAFWA TERM CONTRACTS

WAFWA maintains all term contract applications on file for future funding consideration unless the landowner asks to be removed. WAFWA biologists regularly contact all applicants whom submitted an offer during previous years to determine if they are still interested and eligible for our program. The WAFWA database is updated accordingly based on those contacts. WAFWA also accepts new applications continuously but did not receive any during 2018 (Table 13).

At the end of this reporting period, WAFWA had 32 active term applications on file that encompassed 200,148 acres. WAFWA did not advertise the program during this reporting period because there were more than enough active agreements to meet industry demand. WAFWA will do targeted promotion of the program when industry demand dictates that it is necessary. When

contracts are needed to offset industry impacts, all applications are ranked using an established set of criteria. Those ranking criteria were developed by the Lesser Prairie-Chicken Interstate Working Group (IWG) and can be viewed on the WAFWA website (http://www.wafwa.org/initiatives/grasslands/lesser_prairie_chicken/). Offers are made to landowners based on their ranking score and the availability of funds.

Table 13. Summary of term applications received for the WAFWA offset unit generation program. Data are summarized through the end of the current reporting period (December 31, 2018).

Ecoregion	New Applications[a]	New Application Acres	Open Applications on File[b]	Open Application Acres
Sand Sagebrush	0	0	7	29,883
Shortgrass	0	0	6	8,099
Mixed grass	0	0	14	151,945
Shinnery Oak	0	0	5	10,219
Range-Wide	**0**	**0**	**32**	**200,148**

[a] Applications that have been received from landowners during the reporting period.

[b] Open applications are those still being considered for funding and includes new applications received during the reporting period as well as those previously received.

There were not any term contracts offered or executed during this reporting period due to the existing supply of credits exceeding industry demand (Table 14). At the end of this reporting period, WAFWA was administering 15 term contracts that are all 10 years in duration. Those contracts include 12 rangeland conservation plans and three planted grass conservation plans that encompass 112,037 acres of which 92,685 are currently un-impacted by development (Table 14, Appendices A-B).

Table 14. Summary of acreages contained in WAFWA offset-generating term contracts, 2018.

Ecoregion	Contracts	Raw Acres[a]	Total Unimpacted Acres[b]	CHAT1 Unimpacted Acres	CHAT2 Unimpacted Acres	CHAT3 Unimpacted Acres	CHAT4 Unimpacted Acres
Mixedgrass Prairie	7	73,902	62,383	46,165	374	677	15,166
Sand Sagebrush Prairie	1	12,575	8,794	8,794	0	0	0
Shinnery Oak Prairie	3	16,059	12,709	11,389	0	1,320	0
Shortgrass Prairie	4	9,501	8,800	4,895	3,808	97	0.00
Range-Wide	**15**	**112,037**	**92,685**	**71,243**	**4,182**	**2,094**	**15,166**

[a] Includes acreage impacted by development.

[b] Excludes acreage impacted by development utilizing the impact buffers established in the RWP.

WAFWA PERMANENT CONSERVATION ACQUISITIONS

WAFWA has multiple options to provide permanent conservation for the LPC and each one results in a conservation property that complies with the USFWS conservation banking policy (USFWS 2003). The options available to WAFWA include purchasing mitigation credits directly from USFWS-approved conservation banks, fee-title acquisition of property from willing sellers, and purchase of privately-owned development rights through acquisition of perpetual conservation easements that are held by a 3rd party organization. WAFWA has pre-defined eligibility criteria based on a property's location, size, mineral ownership, and proximity to known LPC lek sites. Properties that meet the initial eligibility requirements are ranked using criteria that prioritize properties that will provide the greatest benefit to LPCs. The ranking criteria prioritize properties based on size, existing developments, LPC habitat potential, proximity to other permanent conserved sites, and proximity to known LPC lek sites. The permanent conservation eligibility and ranking criteria can be downloaded from the WAFWA lesser prairie-chicken website. A packet of information is prepared for each eligible property once the rankings have been completed and the information is presented to the LPCIC at either their summer or winter meeting. The LPCIC reviews all the available options collectively and chooses which ones to pursue based on mitigation needs, ranking scores, available funding, and cost. Properties do not start generating mitigation offset units until all the requirements of the USFWS conservation banking policy (2003) have been satisfied which includes a recorded perpetual easement and establishment of endowments to provide for future management and monitoring costs.

During this reporting period, WAFWA did not secure any new permanent conservation sites. WAFWA attempts to acquire new permanent conservation sites when industry mitigation demands require it and that situation did not occur during the past year. In total, WAFWA has secured seven permanent conservation sites totaling 37,616 acres across the four ecoregions since inception of the program (Table 15).

Table 15. Permanently conserved sites secured by WAFWA through the lesser prairie-chicken range-wide conservation plan, 2018.

Site ID	Ecoregion	CHAT Category	Acquisition Type	Raw Acres [a]	Unimpacted Acres	Easement Holder	First Year of Offset Unit Generation
CZ026	Shinnery Oak	1	Fee Title	1,554	1,208	The Nature Conservancy	2015
CZ063	Mixed Grass	1	Easement	1,758	1,740	Pheasants Forever	2016
CZ024	Sand Sagebrush	1	Fee Title	29,626	28,831	The Nature Conservancy	2017
CZ065	Mixed Grass	1	Easement	968	968	Pheasants Forever	2017
CZ081	Shortgrass	1	Easement	276	251	The Nature Conservancy	2017
CZ082	Shortgrass	1	Easement	1,443	1,116	The Nature Conservancy	2017

CZ083	Shortgrass	1	Easement	1,991	1,537	The Nature Conservancy	2017
Total	**Range- Wide**	**NA**	**NA**	**37,616**	**35,650**	**NA**	**NA**

[a] Includes only acreage contained in a WAFWA conservation agreement which excludes livestock traps, farm yards, food plots, etc.
NA = not applicable

WAFWA HABITAT RESTORATION EFFORTS

The WAFWA conservation agreements are not only maintaining existing LPC habitat but they are facilitating the restoration of areas that are not likely currently occupied by the species. WAFWA prescribes restoration practices when they are necessary to address an identified threat to the species on contracted acreage. WAFWA can prescribe three different levels of mechanical brush management which are all used to remove invasive woody vegetation (e.g. eastern red cedar and mesquite). Chemical brush management can also be prescribed but only for the reduction of dense stands of Shinnery Oak on tight soils. The objective of chemical treatments is to reduce the dominance of the Shinnery Oak to encourage an increase in native grass distribution and abundance. WAFWA also prescribes range planting which is used to convert non-native grasslands or cropland to native vegetation which provides more suitable LPC habitat. WAFWA also encourages prescribed burning on all contracted acreages to help maintain suitable vegetation and prevent future encroachment of woody plants. Participants are not required to implement a prescribed burn plan, but it is encouraged and WAFWA biologists facilitate the development of professional burn plans for all willing landowners.

Since inception of the WAFWA program, restoration practices have been completed on 16,798 acres of which 1,309 acres were completed during the 2018 calendar year (Table 16). Most of the completed restoration to this point has been brush management in the Shinnery Oak and Mixed Grass Ecoregions. However, some range planting has also completed in the Shortgrass Ecoregion. An additional 2,506 acres are prescribed for subsequent years through the existing conservation agreements.

Table 16. Acreage of restoration completed and prescribed within all WAFWA conservation agreements through the end of the 2018 reporting period.

Ecoregion	Brush Management (Heavy)	Brush Management (Moderate)	Brush Management (Light)	Brush Management (Chemical)[a]	Range Planting	Total
Sand Sagebrush						
Completed During Reporting Period	0	0	0	0	0	0
Completed Since Inception of RWP	0	0	0	0	0	0
Total Prescribed	0	0	0	0	0	0
Shortgrass						
Completed During Reporting Period	0	0	0	0	0	0
Completed Since Inception of RWP	0	0	0	0	620	620
Total Prescribed	0	0	0	0	620	620

Mixed Grass						
Completed During Reporting Period	0	0	317	0	0	317
Completed Since Inception of RWP	1,011	778	727	0	0	2.516
Total Prescribed	1,011	778	1,818	0	0	3,607
Shinnery Oak						
Completed During Reporting Period	0	993	0	0	0	993
Completed Since Inception of RWP	1,148	3,613	1	8,272	629	13,662
Total Prescribed	1,148	5,027	1	8,272	629	15,077
Range-Wide						
Completed During Reporting Period	0	993	317	0	0	1,309
Completed Since Inception of RWP	2,159	4,390	728	8,272	1,250	16,798
Total Prescribed	2,159	5,805	1,819	8,272	1,249	19,304

[a] This practice is only applied for the specific purpose of suppressing dense stands of Shinnery Oak on tightsoils.

QUALITY OF WAFWA CONTRACTED PROPERTIES

The properties that produced mitigation offset units during 2018 ranged in size from 172 acres to 29,626 acres (Tables 17). Three of those agreements totaling 1,246 acres include planted grass conservation plans which prescribe restoration of cropland to native grasses and maintenance of restored or existing planted grass stands through regular disturbance activities. Nineteen of the agreements include rangeland conservation plans that prescribe domestic livestock grazing as the core conservation practice. Most of the acreage (82.8%) being managed through the existing agreements occurs in the highest priority areas (CHAT 1). There have also been 174 LPC lek observations recorded on these properties or within three miles of their boundary during the last five years. This is quite high considering that only 39% of that area has been surveyed in the last five years. In 2017, WAFWA implemented a lek survey protocol for enrolled conservation properties to better monitor LPC presence on enrolled conservation sites. Permanent survey points were established on each enrolled property and 123 of the 157 points have been visited during the last 2 years. The remaining points will be surveyed in spring 2019 to attain complete survey coverage of all acreage within the boundaries of enrolled conservation sites. In subsequent years, the points will be visited at least once every five years to maintain complete survey coverage of all conservation sites.

The habitat quality was also generally high across 22 sites that produced mitigation offset units in 2018 (Table 17). The average habitat quality score was 0.68 across all those sites in 2018. The site-specific values were derived by scoring the HEG criteria using on-site vegetation sampling data and spatial land cover information. The HEG includes four components consisting of foliar cover, plant species composition, presence of tall woody vegetation, and availability of potentially suitably habitat within 1-mile radius of the site (Van Pelt et al. 2013). Prescribed restoration efforts had not yet been fully completed on several of the properties prior to the 2017 vegetation sampling which is why a few sites scored low. The HEG scores associated with those properties should improve greatly in the coming years as more of the restoration work gets completed.

Table 17. Property Specific information for each of the 22 WAFWA contracted sites that produced mitigation offset units during the 2018 reporting period.

WAFWA Site ID	Ecoregions	Conservation Plan Type	Expiration Year	Primary CHAT	Total Acres	Active Lek Observations within 3 mi. (2013-2018)[a]	2018 Habitat Evaluation Guide Score (0-1)[b]
CZ003	Shinnery Oak Prairie	Rangeland Management Plan	2024	1	15,433	33	0.38
CZ008	Mixed grass Prairie	Rangeland Management Plan	2024	1	626	1	0.41
CZ013	Shinnery Oak Prairie	Planted Grass Management Plan	2024	1	316	28	0.85
CZ014	Shinnery Oak Prairie	Planted Grass Management Plan	2023	1	310	2	1.00
CZ016	Sand Sagebrush Prairie	Rangeland Management Plan	2024	1	12,575	2	0.78
CZ024	Sand Sagebrush Prairie	Rangeland Management Plan	Perpetual	1	29,626	24	0.62
CZ026	Shinnery Oak Prairie	Rangeland Management Plan	Perpetual	1	1,554	6	0.90
CZ033	Shortgrass Prairie	Rangeland Management Plan	2024	2	4,024	2	0.44
CZ035	Shortgrass Prairie	Rangeland Management Plan	2024	1	1,109	9	0.51
CZ036	Mixed grass Prairie	Rangeland Management Plan	2024	1	27,646	0	0.75
CZ037	Mixed grass Prairie	Rangeland Management Plan	2024	4	10,255	0	0.78
CZ038	Mixed grass Prairie	Rangeland Management Plan	2024	1	21,256.3	0	0.73
CZ040	Mixed grass Prairie	Rangeland Management Plan	2026	1	1,222	6	0.52
CZ061	Shortgrass Prairie	Rangeland Management Plan	2025	1	3,749	6	0.52
CZ062[c]	Shortgrass Prairie	Planted Grass Management Plan	2025	1	620	3	0.14
CZ063	Mixed grass Prairie	Rangeland Management Plan	Perpetual	1	1,758	4	0.74
CZ065	Mixed grass Prairie	Rangeland Management Plan	Perpetual	1	968	4	0.90
CZ066	Mixed grass Prairie	Rangeland Management Plan	2026	1	172	4	0.90
CZ067	Mixed grass Prairie	Rangeland Management Plan	2026	1	12,739	11	0.79
CZ081	Shortgrass Prairie	Rangeland Management Plan	Perpetual	1	276	1	0.86
CZ082	Shortgrass Prairie	Rangeland Management Plan	Perpetual	1	1,424	2	0.61
CZ083	Shortgrass Prairie	Rangeland Management Plan	Perpetual	1	1,992	2	0.82
Range Wide		**NA**	**NA**	**NA**	**149,650**	**174[d]**	**0.68**

[a] *The WAFWA database indicates that only 39% of the affected area has been surveyed within the last 5 years.*
[b] *Values are averaged across the evaluation units and weighted by the unimpacted acreage within each one.*
[c] *Quality was poor because the site was recently enrolled cropland and native grasses had not yet established.*
[d] *The total is less than the column sum because some lek sites occur within 3 miles of multiple enrolled properties.*
NA = not applicable

The property-specific HEG scores have generally remained stable or slightly improved for contracted sites that have been enrolled in the program for multiple years (Figure 8.) This trend appears to hold in each of the four ecoregions. However, it is important to note that the uplift potential varies greatly across the contracted sites. Most sites provided opportunities for habitat improvements, but others were already at their maximum expected habitat potential at the time of enrollment. Additionally, changes in environmental conditions can influence habitat quality greatly over the short-term even with consistent management (e.g. drought). Thus, the lack of a detectable trend for a specific site is not necessarily a good way to gauge the success of the prescribed management practices over such a short time period. Despite these caveats, the average slope associated with the trend lines is +0.03 for those properties that have been enrolled in the program for ≥3 years. This indicates that the habitat quality as measured by the HEG is increasing at an average rate of 3% per year for contracted sites across the range.

Figure 8. Lesser prairie-chicken habitat quality on WAFWA contracted mitigation properties as valued by the Habitat Evaluation Guide (HEG) method, 2015-2018.

WAFWA CONSERVATION AGREEMENT SUMMARY

Through this reporting period, WAFWA has 159,575 acres across the LPC range enrolled under some type of conservation agreement. Most of that acreage is generating conservation offset units (149,650 acres) with the majority occurring in the highest priority areas (CHAT 1; Table 17). WAFWA has permanently conserved 25.1% of that acreage with perpetual conservation easements and non-wasting endowments to support all future management needs. Through WAFWA offset and non-offset agreements there has been 16,798 acres restored to more suitable LPC habitat with another 2,506 prescribed. The 22 term and permanent conservation sites are distributed across the four ecoregions proportional to the distribution of industry impacts. This is required because the conservation properties must mitigate industry impacts at that scale. Thus, the majority of the acreage contracted for mitigation purposes falls within the Mixed Grass Ecoregion where the majority of the RWP industry impacts have occurred (Table 17, Appendix A).

NON-WAFWA CONSERVATION PROGRAMS ADMINISTERED WITHIN LPC RANGE

A critical component of the RWP is coordination among the various agencies and organizations that are managing public land acreage or delivering private land conservation programs in LPC range. During development of the RWP, those entities were engaged by the Interstate Working Group (IWG) through a series of targeted meetings and representatives from each agency or organization were included on several committees to help provide input about various plan components. The IWG also established state-specific implementation teams including representatives from those entities to coordinate local delivery of private land LPC assistance programs. At that time, the members of the implementation teams reviewed their current cross- agency coordination, identified opportunities for improvements, and discussed how landowners could be provided with "one stop shopping". Most of the agencies and organizations operating in LPC range are now using the WAFWA crucial habitat assessment tool to target their private land conservation programs due in part to those coordination efforts. Those WAFWA partners have also worked collectively to promote and explain the various conservation options and put more boots on the ground to assist landowners. Additionally, all the partnering conservation entities are collectively working toward the population and habitat goals established in the RWP. The current effort of our partners is summarized in this section along with a synopsis of our collective achievements.

NRCS PROGRAMS

There was limited data submitted by conservation partners for 2018 data. Much of the following analysis is reflective of 2017 numbers due to the lack of newdata. In 2010, NRCS launched the Lesser Prairie-Chicken Conservation Initiative (LPCI) under their Working Lands for Wildlife Partnership. The LPCI provides technical and financial assistance to producers through the Environmental Quality Incentives Program (EQIP). The objective of the LPCI is "to increase the abundance and distribution of the LPC and its habitat while promoting the overall health of grazing lands and the long-term sustainability of ranching operations." The USFWS completed a biological opinion of the LPCI on August 13, 2014. The NRCS is working with the FWS to review the application of conservation practices within the standards laid out in the biological opinion. The opinion provides a description of 28 conservation practices that could be implemented through the program that the USFWS deemed to be benign or beneficial to LPC.

Two of the 28 approved practices are considered core conservation practices. The primary core conservation practice is upland wildlife habitat management (645). Prescribed grazing (528) is

considered a secondary core management practice when livestock are present. Implementation of core practices is required to develop a landowner's conservation plan that focuses on improving habitat and reducing threats to LPC. This is important because implementing LPCI under 645 ensures all other LPCI practices are implemented specifically to benefit LPC.

Three of the practices applied under 645 are applied broadly and provide substantial benefit to LPC. Those practices include the other core practice of prescribed grazing (528), brush management (314), and range planting (550). Those practices, when applied as designed, either create new habitat or ensure that existing habitat is providing usable cover for all the LPC life stages. There are many other practices being applied through LPCI that provide benefit to LPC. However, we only summarize the acreage for those 3 practices because they are among the most beneficial to the LPC and they provide a reflection of the unique enrolled acreage (528) and the new acres of restored habitat (314 and 550).

In 2017, a total of 134,027 acres of prescribed grazing (528) were applied through LPCI (Table 18, Appendices A-B). Additionally, a total of 2,471 acres were treated with brush management (314). There was no range planting (550) applied through LPCI during 2017.

Producers participating in other NRCS programs are also using conservation practices as described in the biological opinion if it is determined that their property has habitat or potential habitat for LPC. Producers in this situation are not required to implement these practices under a management plan developed in accordance with the core practice of upland wildlife habitat management (645) but the practices they implement generally still provide benefit to LPC. General EQIP is the program in this category responsible for a large amount of LPC-beneficial restoration and enhancement practices. Through general EQIP, agricultural producers receive financial and technical assistance to implement structural and management conservation practices that optimize environmental benefits on working agricultural land. During 2017, producers enrolled in EQIP delivered approximately 190,000 acres of prescribed grazing (528), 17,000 acres of brush management (314), and 6,000 acres of range planting (550) within the LPC action area.

In total, there were 323,859 acres of prescribed grazing (528) implemented by producers in 2017 through LPCI and General EQIP in the LPC action area (Table 18, Appendices A-B). Of those acres, there were 189,131 (58.4%) implemented in CHAT 1 & CHAT 2 (Table 18, Appendices A-B). Through LPCI and General EQIP there were also 19,356 acres of brush management (314) and 5,772 acres of range planting (550) implemented in 2017 in the LPC action area. The bulk of those restoration efforts (>85%) occurred in CHAT 3 and CHAT 4 during this reporting period.

CONSERVATION RESERVE PROGRAM (CRP)

The CRP is a voluntary program for agricultural landowners administered by the Farm Service Agency (FSA) that incentivizes landowners to take cropland out of production and maintain it in permanent vegetation (e.g. native grasses and forbs). The conversion of these lands back to permanent vegetation promotes habitat connectivity, which helps address LPC threats like climate change and extreme weather events. The program also addresses the threat of excessive grazing utilization of grassland habitat by providing millions of acres of grass that isn't regularly grazed by domestic livestock. Participants in the program are required to maintain the prescribed vegetation conditions which include regular control of noxious weeds. They are also required to implement some type of periodic management to promote wildlife habitat. The various management practices

that can be implemented include shallow disking, prescribed burning, herbicide usage, inter-seeding with legumes and forbs, and periodic managed grazing. The USFWS completed a biological opinion of the CRP on April 14, 2014 which states that effective implementation of the program is anticipated to result in a positive LPC population response by reducing or eliminating adverse effects. The FSA continues to apply conservation practices within the standards laid out in the biological opinion even though the LPC is not currently receiving federal protections under the ESA.

There is fluidity in CRP enrollment as individual contracts expire at the end of a 10 or 15-year term and new contracts get enrolled in other locations. These acres provide important habitat for LPC and support a large proportion of the range-wide population; especially in the Shortgrass Ecoregion (Fields 2004, Rodgers and Hoffman 2005, McDonald et al. 2014, Spencer et al. 2017). The most recent data available to WAFWA (February 2017) indicates that 3,145,629 acres are enrolled within the LPC action area (Table 18; Appendices A-B). Of those acres, there are 763,693 that lie within the boundaries of CHAT 1 and CHAT 2 which equates to 8.0% of that total area.

The total CRP enrollment in the LPC action area is currently 84,803 acres less than what was reported in the last WAFWA annual report which utilized data from August 2016. Lower enrollment in CHAT 1 and CHAT 2 accounted for 23,176 acres of that overall decline. Of note, a study conducted in 2012 found that the majority of expired CRP acreage remained in permanent cover even after several years outside the program (USDA 2012). So, the realized amount of LPC habitat loss is likely less than the reported annual decline in program acreage.

PARTNERS FOR FISH AND WILDLIFE PROGRAM

The USFWS Partners for Fish and Wildlife (PFW) Program restores, improves and protects fish and wildlife habitat on private lands through partnerships between the USFWS, landowners and others. The objectives of this national program are to: 1) Restore, enhance and manage private lands for fish and wildlife habitat, 2) Significantly improve fish and wildlife habitat while promoting compatibility between agricultural and other land uses, 3) Restore declining species and habitats; and 4) Promote a widespread and lasting land use ethic.

The PFW program applies habitat practices on private lands to address threats to the LPC. This program utilizes practices and targets limiting factors similar to NRCS programs. Projects are designed to benefit LPC and other wildlife while also supporting working lands including farming and ranching operations. Typical conservation practices directed to LPC habitat conservation include invasive species removal, fence marking or removal, native vegetation planting, prescribed fire, prescribed grazing, and brush control. Through the PFW, the USFWS provides technical assistance and financial incentives to landowners that improve habitat on their property for LPC and other species. Cooperating landowners agree to use funds for approved wildlife-related projects and manage and maintain the project area for at least 10 years. The program provides technical and financial assistance through a 10-year cost-share agreement. Landowners agree to maintain the conservation practices for the duration of the agreement.

The USFWS provided data from their PFW program in all 5 states occupied by LPC. During this reporting period, the USFWS implemented restoration and improvement practices on 9,174 acres within the LPC action (Table 18). Those acres were distributed between the Mixed Grass (2,840 acres) and Shortgrass Ecoregions (6,334 acres; Table 18, Appendices A-B). Mechanical removal of invasive trees and range planting were the two primary practices that were implemented.

CANDIDATE CONSERVATION AGREEMENTS

Candidate Conservation Agreements (CCA) are formal, voluntary agreements between the USFWS and one or more parties to address the conservation needs of a candidate species or a species likely to become a candidate. Participants voluntarily commit to implement specific actions designed to remove or reduce threats to the covered species. They can be entered by industry or landowners and strong participation can be enough to preclude the need to list a species. There are no payments, specific permits, or assurances associated with a CCA and they are entered primarily by federal agencies or other entities operating on federally-owned lands. Candidate Conservation Agreements with Assurances (CCAA) are formal agreement between the USFWS and non-federal entities. A CCAA differs from a CCA in that it includes a permit that provides assurances that the holder will never be required to implement additional conservation measures beyond those in the agreement. These assurances apply even if the species is eventually listed

under the Endangered Species Act.

Landowner CCAs and CCAAs require the development of site-specific management plans for addressing LPC threats in the following manner:

- Agricultural conversion: Landowner commits to refrain from plowing additional rangeland when they are in the program.
- Loss of CRP: Landowner commits to re-enrolling or maintaining expired CRP in grass when they are in the program.
- Woody invasive species: Landowner commits to addressing the spread of these species as funding sources become available.
- Shrub control: Agreements restrict sand shinnery control but allow for shinnery oak suppression using reduced rate chemical application.
- Altered fire regimes: Agreements use prescribed fire as a potential option for management and provide cost share options for its application.
- Collision: Agreements require fence marking near known leks.
- Design grazing management plans for incompatible grazing regimes to meet habitat specific goals for individual ranches. This may include stocking rates, rotation patterns, grazing intensity and duration, and contingency plans for varying prolonged weather patterns including drought.
- Climate Change: Increased habitat quality, quantity, and connectivity through the above actions to improve the ability of the LPC to move and respond to climate change.
- Extreme weather events: Increased habitat quality, quantity, and connectivity improve the ability of the LPC to move and respond to weather events like droughts and storms.
- Predation: Increased habitat quantity and improved habitat quality decrease predation on nests, juveniles and adults.
- Disease: Increased habitat quality results in improved physical condition of individual LPC.

In New Mexico, there is a CCA and a CCAA available to industry and landowners operating on public land and private land, respectively. The New Mexico CCA and CCAA are administered by the Center of Excellence (CEHMM). CEHMM has enrolled 1,580,209 industry acres and 1,618,687 ranching acres through their CCA/CCAA program (Table 18, Appendices A-B). Of those acreages, there are over 137,000 industry acres and 345,000 ranching acres in CHAT 1. In 2017, CEHMM also removed over 1,000 acres of dead standing mesquite in CHAT 1, with over 800

additional acres removed in both CHAT 2 and CHAT 3 combined. The CEHMM programs do not have any acreage caps so they will be continuously accepting new enrollments as long as the LPC remains a state trust species.

In Oklahoma and Texas, there are ranching CCAAs available to private landowners. Those programs are administered by ODWC and TPWD, respectively. Currently, implementation is occurring on 368,102 acres in Oklahoma (145,943 in CHAT 1) and 596,775 acres in Texas (278,480 in CHAT 1) within the LPC action area (Table 18, Appendices A-B). The ODWC is not currently accepting new enrollments into their program because they have achieved their acreage cap of 400,000 for their eligibility area which applies to all the counties intersecting the LPC action area. The Texas program is short of its 1.2-million-acre cap so new enrollments are

currently being accepted with approximately 543,000 acres still available to private landowners. The TPWD will continue to accept new enrollments if they have available acres and the LPC remains a state trust species.

NON-CCAA PRIVATE LAND CONSERVATION PROGRAMS DELIVERED BY STATE WILDLIFE AGENCIES

Most of the state wildlife agencies operating within the range of the LPC deliver non-CCAA private land conservation programs. Those programs are funded from a variety of sources including license fee funds from the wildlife agency constituents. The available conservation programs generally allow the agencies to cost-share with private landowners for conservation practices such as brush management, range planting, prescribed fire, fence marking and removal, prescribed grazing, livestock deferment, etc. WAFWA acquired data from all five state wildlife agencies operating within LPC range including the Texas Parks and Wildlife Department (TPWD), Oklahoma Department of Wildlife Conservation (ODWC), Kansas Department of Wildlife, Parks and Tourism (KDWPT), Colorado Parks and Wildlife (CPW), and New Mexico Department of Game and Fish (NMDGF). The available data indicated that the five state wildlife agencies applied conservation practices through their non-CCAA programs to at least 9,156 acres within the LPC action area (Table 18, Appendices A-B).

NON-WAFWA PROPERTIES IDENTIFIED AS QUALIFYING STRONGHOLDS

There is a high degree of certainty that the properties falling in this category will continue to provide LPC habitat into the foreseeable future. However, the bar is slightly lower for these properties than for sites producing permanent mitigation credits (USFWS 2012). In the past, WAFWA staff have tried to utilize the criteria in the USFWS white paper to identify qualifying properties across LPC range. The criteria were found to be too vague to apply, which hindered our ability to identify qualifying stronghold properties. To alleviate that issue, the LPCIWG recommended some more specific criteria to the LPCIC based on their interpretation of the USFWS white paper (2012) and the previous RWP interpretations (Van Pelt et al. 2013; Figure 9). The LPCIC approved that recommendation on September 12, 2017 and WAFWA started coordinating with the LPCIWG to identify qualifying properties across the range utilizing those criteria. That work was completed during this reporting period.

According to the LPCIWG assessment, there are 110,551 Non-WAFWA acres identified across the range that could contribute towards a stronghold (Table 18). The qualifying tracts will be considered along with the WAFWA permanent mitigation sites when assessing progress towards the stronghold

goals of the RWP. All the stronghold criteria must be satisfied for a property or complex of properties to be considered a stronghold and not just long-term protection from development and management certainty. These other criteria include an acreage requirement, LPC occupancy, land cover composition, etc. (USFWS 2012, Van Pelt et al. 2013). WAFWA has a goal of securing at least one stronghold within each of the four ecoregions by the end of the 10th year of RWP implementation. The LPCIWG will be assessing that goal during their 5-year review of the RWP by reviewing the spatial juxtaposition of qualifying properties along with all the other required stronghold criteria. In the process, the LPCIWG will also be identifying priority areas in each ecoregion for future permanent conservation acquisitions.

Requirements for a Property to Contribute toward a LPC Stronghold

- Long-term protection from development (must meet one)
  - Conservation easement with ≥15-year duration that protects LPC habitat by restricting all detrimental development activities as defined by the lesser prairie-chicken range-wide plan (RWP) administered by the Western Association of Fish & Wildlife Agencies (WAFWA)
  - Conservation easement and a surface use agreement with the mineral owner or lessee that in combination protect LPC habitat for ≥15-year by restricting all detrimental development as defined by the RWP
  - Conservation easement that protects LPC habitat for ≥15-years by restricting all detrimental non-mineral development as defined by the RWP and an assessment from a certified geologist indicating that the likelihood of future mineral development is low
  - Fee title ownership of surface and subsurface rights by Government or a non-profit conservation organization and a policy or formal commitment to protect LPC habitat for ≥15 years from all detrimental development activities as defined by the RWP
  - Fee title ownership of surface rights by Government or a non-profit conservation organization and a policy or formal commitment to protect LPC habitat coupled with a surface use agreement with the mineral owner or lessee that in combination protect LPC habitat for ≥15 years by restricting all detrimental development as defined by the RWP
  - Fee title ownership of surface rights by Government or a non-profit conservation organization and a policy or formal commitment to protect LPC habitat for ≥15-years from detrimental development as defined by the RWP coupled with an assessment from a certified geologist indicating that the likelihood of future mineral development is low
- Certainty of LPC habitat management (must meet both criteria)
  - Written conservation plan prepared or approved by a state wildlife agency, WAFWA, U.S. Fish &Wildlife Service, or the Natural Resources Conservation Service that specifically targets the creation, enhancement, or maintenance of LPC habitat
  - Commitment for the conservation plan to be implemented for ≥15 years through a policy, formal commitment, or contractual agreement

Figure 9. Criteria used to determine if a specific property can contribute towards a stronghold. All other stronghold criteria listed in the USFWS white paper (2012) and lesser prairie-chicken range-wide plan (2013) must also be satisfied for a property or complex of properties to be considered a stronghold (i.e. acreage, LPC occupancy, land cover composition, etc.).

OTHER NON-QUALIFYING STRONGHOLD ACRES

There are an additional 296,610 acres within the LPC action area that are managed or encumbered by entities that list conservation as one of their primary missions (Table 18, Appendices A-B). Some of this acreage is still being reviewed to determine if it can qualify toward a stronghold (77,333 acres). The remaining 218,877 acres has already been deemed to not qualify. However, these non-qualifying acres still provide some value to LPC because they either offer some protection from development or provide more consistently usable habitat due to more management certainty. They might also offer good future opportunities for acquiring additional qualifying stronghold acreages. The tracts in this category include state wildlife management areas, national wildlife refuges, the BLM area of critical concern for LPC, the LPC Zoological Area on Comanche National Grasslands, and private lands encumbered by conservation easements.

There are also 2,915,935 additional acres owned by Department of Defense; Non-Government Organizations; State Land Boards; State Parks and Recreation Agencies; Bureau of Land Management; Forest Service; National Park Service; Agricultural Research Service; Bureau of Reclamation; and City or County Governments. These tracts are managed for a multitude of purposes and are less likely to provide benefits to LPC. However, there is potential to create or enhance LPC habitat on some of these properties through new or improved partnerships. WAFWA and its state wildlife agency members readily pursue those opportunities when they arise.

SUMMARY OF ALL CONSERVATION EFFORTS

It is evident that an enormous amount of effort continues to be placed on conserving the LPC across its range (Table 18, Appendices A-B). There are numerous voluntary conservation programs being delivered on private lands by multiple government agencies and non-government organizations. Those entities facilitated implementation of conservation practices on more than five million acres of private land within the LPC action area in 2017. It is also apparent the private land programs are being targeted towards the higher priority LPC areas as evidenced by a higher percentage of CHAT 1 and CHAT 2 acreages being enrolled in some type of voluntary conservation program (Table 18; Appendices A - B).

In total, conservation practices beneficial to LPC were implemented on more than 6.6 million acres of land across both private and publicly owned lands. This amount equates to 16.4% of the 40 million-acre LPC action area that is in CHAT 1 – CHAT 4. The minimum percentage of each CHAT area managed in a way that was beneficial to LPC during 2017 was as follows: CHAT 1 (25.9%), CHAT 2 (16.8%), CHAT 3 (20.7%), and CHAT 4 (8.3%).

Table 18. Total conservation acreage within each LPC ecoregion by CHAT category, 2018.

Ecoregion – Location	Total Area	WAFWA Term Contracts	WAFWA Non-Offset Agreements	Conservation Reserve Program[a]	NRCS Programs[b]	USFWS Partners for Fish & Wildlife[a]	State Wildlife Agency Private Land Programs[a]	New Mexico Ranching CCA/CCAA[c]	Texas Ranching CCAA[d]	Oklahoma Ranching CCAA[e]	WAFWA Permanent Conservation Agreements	Other Qualifying Stronghold Acreage[f]	Non-Qualifying Conservation Acreage[g]	Total Conservation Acreage
Shinnery Oak														
CHAT 1	1,046,405	14,061	933	106,304	69,142	0	0	345,000	36,495	0	1,058	55,197	71,378	699,568
CHAT 2	892,804	0	0	115,095	6,786	0	0	69,778	17,433	0	391	1,427	1,458	212,368
CHAT 3	5,917,159	1,984	0	646,891	46,001	0	0	1,070,179	109,537	0	105	16,881	9,722	1,901,300
CHAT 4	3,177,658	15	0	201,168	8,459	0	0	133,370	20,579	0	0	0	85	363,676
Total	*11,034,026*	16,059	*0*	*1,069,458*	*130,388*	**0**	*0*	*1,618,327*	*184,044*	*0*	1,554	73,505	82,643	3,175,978

Mixed Grass														
CHAT 1	2,576,012	55,759	1,071	117,161	41,764	1,093	3,127	0	241,985	145,943	2,615	15,552	28,935	655,005
CHAT 2	1,116,165	538	0	65,310	13,733	0	1,035	0	33,055	40,616	0	0	2,862	157,149
CHAT 3	5,185,506	905	965	271,304	38,803	1,632	2,566	0	81,093	158,134	0	1,399	65,554	622,355
CHAT 4	3,768,280	17,713	6,875	117,101	11,077	115	161	0	56,598	23,409	110	71	11,140	244,370
Total	*12,645,963*	74,916	*8,912*	*570,876*	*105,376*	*2,840*	*6,889*	*0*	*412,731*	*368,102*	2,726	17,022	108,492	1,678,882
Sand Sagebrush														
CHAT 1	1,583,367	12,683	0	150,799	39,089	0	0	0	0	0	29,502	4,180	44,198	280,451
CHAT 2	245,121	0	0	20,396	4,376	0	0	0	0	0	0	0	38	24,810
CHAT 3	1,883,282	0	0	336,132	11,208	0	607	0	0	0	124	0	5,873	353,944
CHAT 4	4,322,390	0	0	424,719	9,600	0	184	0	0	0	0	0	25,483	459,986
Total	*8,034,160*	12,683	*0*	*932,047*	*64,273*	0	*791*	*0*	*0*	*0*	29,626	4,180	75,593	1,119,193
Shortgrass														
CHAT 1	1,872,009	5,389	0	176,798	13,140	0	404	0	0	0	3,710	15,845	7,983	223,269
CHAT 2	183,681	4,024	0	11,830	1,102	0	0	0	0	0	0	0	0	16,956
CHAT 3	1,769,583	99	0	158,317	5,995	6,130	80	0	0	0	0	0	7,331	177,952
CHAT 4	4,820,373	0	0	226,302	3,586	204	993	0	0	0	0	0	3,541	234,626
Total	*8,645,645*	9,512	*0*	*573,248*	*23,823*	6,334	*1,477*	*0*	*0*	*0*	3,710	15,845	18,855	652,804
Range- wide														
CHAT 1	7,077,793	87,892	2,004	551,062	163,135	1,093	3,531	345,000	278,480	145,943	36,885	90,774	152,494	1,858,293
CHAT 2	2,437,771	4,562	0	212,631	25,996	0	1,035	69,778	50,488	40,616	391	1,427	4,358	411,282
CHAT 3	14,755,530	2,988	966	1,412,645	102,007	7,762	3,253	1,070,179	190,630	158,134	229	18,280	88,480	3,055,553
CHAT 4	16,088,701	17,727	6,908	969,291	32,721	319	1,338	133,370	77,177	23,409	110	71	40,250	1,302,691
Grand Total	**40,359,795**	**113,169**	**9,845**	**3,145,629**	**323,859**	**9,174**	**9,156**	**1,618,327**	**596,775**	**368,102**	**37,616**	**110,551**	**285,583**	**6,627,786**

[a] Data are from 2017.

[b] These figures represent the acres of prescribed grazing (528) that were implemented in 2017 through the Lesser Prairie-Chicken Initiative and the Environmental Quality Incentives Program. Approximately 134,027 of these acres were applied through the Lesser Prairie-Chicken Initiative. Prescribed grazing is a core conservation practice that is supposed to occur on every contracted acre were livestock are present.

[c] The Center of Excellence (CEHMM) has also enrolled 1,580,209 industry acres in CCA/CCAAs.

[d] An additional 41,225 acres are enrolled outside the LPC action area within other portions of intersecting counties.

[e] Approximately 32,000 additional acres are enrolled outside the LPC action area within other portions of intersecting counties.

[f] Includes acreages meeting all the stronghold criteria as interpreted by WAFWA. These figures do not include the acres permanently conserved through the WAFWA program which also qualify.

[g] This category includes private land encumbered by a conservation easement and properties owned by a government or non-government entity that lists conservation as a primary mission. There are 77,733 of these acres still being evaluated to determine if they can qualify towards a stronghold (16,617 acres in Shinnery Oak, 14,021 acres in Mixed Grass, 9,138 in Sand Sagebrush, and 37,956 in Shortgrass). There are an additional 2,915,935 acres across the LPC action area that are owned by public entities but not managed with conservation as a primary focus.

Finally, it cannot be forgotten that the enhancement and restoration acreages presented in this section do not include any of the good conservation being implemented by private landowners outside of voluntary conservation programs. Private landowners are managing thousands of additional acres across the LPC range in a way that is beneficial to the species without participating in any of the available programs. Their efforts should not be totally discounted just because they can't be easily quantified.

INDUSTRY COMPLIANCE AND PARTICIPATION MONITORING

CONSERVATION MEASURES COMPLIANCE

The CCAA and WCA contracts that industries sign to participate in WAFW's Range Wide Plan are voluntary agreements. Those that participate agree to follow the conservation measures defined in the CCAA and WCA agreements that include potential timing and travel restrictions during the breeding season, noise restrictions, installing escape ramps in surface water, fence marking, and

mitigation of new development projects. The conservation measures defined in these two agreements are identical. Staff biologists from WAFWA annually conduct random compliance checks on mitigated projects to ensure compliance with the conservation measures.

Mitigated projects are randomly selected to monitor compliance with the conservation measures outlined in Section XIII of the WCA and Section XII of the CCAA. That selection process draws a single sample of projects from both CCAA and WCA submissions. Due to staffing limitations, WAFWA limits that sample to a maximum of 200 projects per year (50 from each of the four ecoregions). To spread this compliance monitoring across a wide sample of companies, WAFWA selected those projects at random in 2017, but established a maximum of 10 projects per company in an effort to sample more companies. If a project is evaluated for compliance, it is removed from the pool for 3 years then becomes available again for random samples.

The sampling process selected a total of 134 projects to evaluate in 2018. Of that total, 20 projects were mitigated for under the WCA. Those 17 projects were submitted by 12 companies. The breakdown of projects by ecoregion was as follows: 7 in the Mixed Grass, 6 in the Sand Sagebrush, 0 in the Shinnery Oak, and 4 in the Shortgrass. The compliance monitoring process assesses mapping accuracy for the projects to confirm they were mitigated for correctly, presence of additional structures on site that were not mitigated, compliance with noise, off-road travel, and timing restrictions, the presence of escape ramps or rafts in man-made water sources, and herbicide use. Of the 24 WCA projects that were monitored, one was sold, and the company no longer had access to the site, three were unsuccessful oil and gas wells that were remediated, and 14 were constructed. No instances of noncompliance were detected on any of these projects.

Of the total 134 projects evaluated, 114 projects were mitigated under the CCAA. Those 97 projects were submitted by 21 companies. The breakout of projects by ecoregion is as follows: 38 in the Mixed Grass, 15 in the Sand Sagebrush, 32 in the Shinnery Oak, and 29 in the Shortgrass. Of the 114 CCAA projects that were monitored, 17 projects were sold, and the company no longer had access to the site, 14 projects were unsuccessful oil and gas wells that were remediated, 25 projects were not constructed, 58 projects were constructed. One project had an instance of noncompliance due to a mapping error (0.7%) and received Noncompliance Notices. That non-compliance issue was resolved by the company within 30 days of the date of the Noncompliance Notice. An additional 4 projects were determined to have unmarked fences in areas near leks or unsurveyed areas of CHAT 1-3. Noncompliance Notices were not issued for these projects because fence marking was removed as a requirement under the agreement through the adaptive management process in 2018.

ANALYSIS OF INDUSTRY PARTICIPATION RATES

WAFWA utilized publicly available data to estimate the proportion of oil/gas, wind energy, and telecommunications development that was enrolled and mitigated in the CCAA and WCA. This analysis is conducted each year in April for the previous to allow for data submission and confirmation, therefore we report on the year before the current reporting year (2017). Well participation was assessed by examining drilling records between 01-01-2017 through 12-31-2017 within the EOR+10 and still listed as active at the end of this date range. Wind farms and telecommunications towers constructed in 2017 were also assessed for participation rates. This participation assessment focused primarily on wells, wind farms, and telecommunications towers because their construction data is publicly available for evaluation compared to other impact types (i.e. electric transmission and distribution lines)

An analysis of FAA vertical obstruction data demonstrates the wind energy and telecommunications industries had a significant impact on potential LPC habitat. 327 structures were constructed in the EOR+10 during 2017 (320 wind turbines, and 7 other tower types). None of those structures were mitigated through the RWP. Based on the impact buffers defined in the RWP and after preexisting development impacts were considered, WAFWA estimates that these developments may have impacted over 150,000 acres of potential LPC habitat and, if mitigated, might have generated more than $34 million in habitat conservation funding. Efforts to outreach for enrollment in the RWP among these industries have been unsuccessful.

The analysis of oil and gas development participation demonstrates that while many companies are participating in the voluntary mitigation program, companies who are not enrolled in the agreement are creating significant impacts on the species. Results from the IHS database indicate a total of 656 oil and gas wells were drilled within the LPC EOR+10 in 2017 with 393 (58.4%) of these wells drilled by companies that were not participating in the RWP agreements. Using the impact buffers defined in the RWP, and after removing pre-existing development impacts, WAFWA estimates that non-participant wells drilled within the EOR+10 in 2017 may have impacted more than 5,500 acres of potential LPC habitat and, if mitigated, could have generated more than $4.2 million in funding for habitat conservation. Outreach efforts to increase participation among these companies have not been successful. Most of them are small companies that drill fewer than 5 wells per year (83%), that have little interaction with trade associations, however there are six companies that drilled 10 or more wells within the EOR+10in 2017 without mitigating any of them.

Within the oil/gas industry, many companies have voluntarily chosen to participate in WAFWA's RWP by enrolling parcels of land where they agree to follow certain practices and mitigated for any new impacts. This section will analyze the participation rate for companies that have chosen to participate in the RWP by examining all the wells they drilled against the wells they submitted for mitigation. Of the participating companies, the analysis of well permitting data shows that 13 companies mitigated for 161 wells in the EOR+10 during 2017, or 24.5% of the total 656 wells drilled within the EOR+10. Thirty-three of the participating companies also drilled 102 additional wells within the EOR+10 on properties that were not enrolled in the agreement during 2017. The data indicate that RWP participating companies mitigated for 161 wells of the 263 (61.2%) wells drilled within the EOR+10. Under the RWP, not every well drilled by participating companies needs to be mitigated, just those on enrolled land. Efforts to expand enrollment among participating companies have also not been successful.

In summary, an analysis of RWP participation categories vs CHAT location found that overall, RWP mitigated wells accounted for just 24.5% of all the wells drilled (161 of 656), with additional 102 wells (15.5%) drilled by participants off enrollment and therefore not mitigated, and a total of 393 wells (60%) of the wells within the EOR+10 drilled in 2017 were drilled by companies not participating in the LPC RWP (Table 19).

Table 19. Summary of participation in the RWP by CHAT category for wells drilled in 2017. Data excludes wells in New Mexico since they have their own CCAA mitigation program.

CHAT/Participation	# of wells	% of CHAT wells
1	79	100%
RWP participant, mitigated	8	10%
RWP participant, off enrollment	18	23%
Non-WAFWA RWP participant	53	67%
2	27	100%
RWP participant, mitigated	6	22%
RWP participant, off enrollment	6	22%
Non-WAFWA RWP participant	15	56%
3	209	100%
RWP participant, mitigated	31	15%
RWP participant, off enrollment	40	19%
Non-WAFWA RWP participant	138	66%
4	341	100%
RWP participant, mitigated	116	34%
RWP participant, off enrollment	38	11%
Non-WAFWA RWP participant	187	55%
Rangewide	656	100%
RWP participant, mitigated	161	25%
RWP participant, off enrollment	102	16%
Non-WAFWA RWP participant	393	60%

Participation and targeted enrollment is also a business strategy. Participant companies may target their participation in regions more likely to have LPC and opt not to enroll and mitigate for operations in areas of CHAT 4, where LPC are less likely to occur. An assessment of the wells drilled versus those mitigated for by CHAT category does indicate that there were 102 wells drilled by participants on un-enrolled land and over 75% of these were in CHAT 3-4 (Table 20). While 102 wells is a sizeable number, it represents only 15.5% of all the wells drilled. These wells on unenrolled areas represent an opportunity for increased participation from companies already in the program.

Table 20. Location of participant wells not on enrollment, not mitigated by CHAT in 2017. This does not include wells drilled in New Mexico because of their separate mitigation agreement with CEHMM.

	CHAT 1	CHAT 2	CHAT 3	CHAT 4	Total
Grand Total	18	6	40	38	102

MITIGATION COMPLIANCE

Under the terms of the WCA and CCAA agreements, all new impacts on enrolled parcels must be mitigated. This assessment is done with a one-year lag time to account for wells being included in the database. To evaluate compliance with this requirement for the 2018 annual report, we examined wells with spud dates between January 1, 2017 – December 31, 2017 from the IHS database and

compared these wells against the wells mitigated by participating companies. Any wells drilled by the company on enrolled parcels and not mitigated for are considered a potential compliance violation. Companies were contacted to solicit information to confirm that 1) the well was drilled, 2) the company was responsible for drilling it, and 3) that the well name, location and dates in the IHS database and the enrollment dates for the parcel were correct. If needed, WAFWA staff confirmed some of these details with a site visit. This analysis was retroactive back to each company's enrollment date, but in subsequent reports, we will evaluate only the prior year's drilling data.

The initial assessment indicated there were 55 wells from 12 participant companies that were identified as potential compliance violations. Through consultation with industry and a thorough review of all the data available, each well was reviewed and classified. There were 47 wells that were found to be in violation because they were not mitigated per the agreement. We identified 8 wells that were mitigated but were incorrectly identified due to shifted locations or name changes in the drilling records. (Table 21).

Table 21. Summary of the wells in 2017 that initially appeared as not mitigated and the resolution category that those wells were classified into.

Resolution category	# wells	% of questionable wells
Mitigation required	47	85.5%
Already mitigated, mitigation not need	8	14.5%

The 47 wells that were missing the necessary mitigation were drilled by 12 companies, with 10 of these companies having less than or equal to 5 wells that should have been mitigated and two companies having over 5 unmitigated wells each (Table 22). As these mitigation compliance issues were addressed, most companies were very cooperative with addressing the mistakes that often occurred from stalled processing, or new staff that were unaware of the requirements. Most companies immediately paid for these wells by debiting their existing account balances while a few paid in new fees to cover the mitigation costs.

Table 22. The number of companies per category of wells that were not mitigated for.

# wells lacking mitigation	0-5	6-10	11-20	21-30
# companies	10	1	0	1

By the end of the 2018 reporting period 19 of the 47 wells needing mitigation had been processed and mitigated, resolving potential non-compliance issues for 9 of the 12 companies. The impacts of all these wells have been assigned to conservation sites and their impacts offset retroactively from when they were initially drilled. The remaining 36 non-compliant wells belong to 3 companies, with 34 of the wells belonging to 2 companies. These same two companies also have a total of over 200 unresolved mitigation compliance wells from 2014-2016. All three companies with outstanding mitigation compliance wells have had their participation either terminated or notices of suspension sent and the USFWS notified of their non-compliance from failure to mitigate for impacts as required under their WCA or CCAA agreements. The staff of WAFWA are still attempting to work with these companies to collect on mitigation due and offset these impacts.

WAFWA MITIGATION TRACKING

The WAFWA mitigation framework incentivizes avoidance and minimization of impacts to LPC habitat. The metrics system within this framework also provides a pathway to mitigate for new impacts to habitat through a biologically-based system that incorporates project location, duration, affected acreage, and habitat quality (Van Pelt et al. 2013). The system utilizes a 2:1 mitigation ratio to ensure that mitigation offsets are greater than impacts which results in a net conservation benefit for the LPC. Offsetting mitigation units must be secured from the same ecoregion as a planned impact and assigned to the project before construction can start. In addition, the offsetting conservation must occur in a location that is of equal or higher priority for LPC conservation as defined by the CHAT.

Industry sites annually produce mitigation impact units in perpetuity based on a one-time assessment that is completed prior to construction. The annual impact units are entered into the mitigation ledger each year and must be continually balanced with conservation offset credits forever. WAFWA can provide perpetual conservation for each of the impact sites because the mitigation fees are assessed after an endowment multiplier has been applied to the impact units. That endowment multiplier is currently set at 25 and is based on a 4% expected rate of return on WAFWA investments. The mitigation fees are assessed on the endowment impact units after the multiplier has been applied. Thus, the assessed mitigation fees produce enough interest to provide for annual payments to landowners who are implementing offsetting conservation actions.

Conservation offset units are generated from WAFWA term and permanent conservation sites. One-half of the expected annual conservation offset units are immediately generated upon execution of a management agreement. The true number of annual units produced in year one of an agreement is calculated using vegetation data collected during the breeding season (March 15– July 15). The difference between the calculated year one total and the initial release is then generated and available to offset industry projects. In subsequent contract years, all the annually generated conservation offset units are available upon completion of the breeding season vegetation monitoring. The maximum rate that offset units may be generated is 1.25 units per acre per year where the habitat quality is perfect (HEG = 1.0) and the property falls within a focal area.

Remediation offset units are generated by the removal of an existing impact's infrastructure and completion of native grass seeding activities. If the remediated impact was previously mitigated through the plan, the resulting remediation offset units are calculated using the mitigation impact multipliers that are utilized for industry sites. As a result, the remediation offset units will equal the impact units that were originally calculated for the site if the habitat quality has not changed. If the remediated site was not previously mitigated through the plan, the remediation offset units are calculated using the mitigation offset multipliers that are utilized for conservation sites. Using these offset multipliers results in half the remediation units that would be generated by using the impact multipliers (i.e. 2:1 mitigation ratio). The remediation of impacts on the landscape that were not mitigated for within the RWP is an option for entities that wish to receive conservation credits that can be used to offset future impacts instead of paying mitigation fees for new projects. Remediated areas are assessed by WAFWA staff to calculate their HEG score and the resulting number of annual habitat credits the site will generate. Remediated sites will generate annual mitigation units for the site each year, in perpetuity. Because these credits are generated at ½ the level of new impacts, many new impacts may not be able to be offset by a single reclamation site. To solve this issue and make the process of reclaiming old sites worthwhile to companies, reclaimed credits will be aggregated into ecoregion and CHAT specific "bins" that future new impacts can be associated with to offset

new impacts (Figure 10). Using this method, annual credits from remediation sites are recorded and can be used to offset an impact debit from a matching ecoregion/CHAT as long as the annual impact units do not exceed the amount of annual credits being generated.

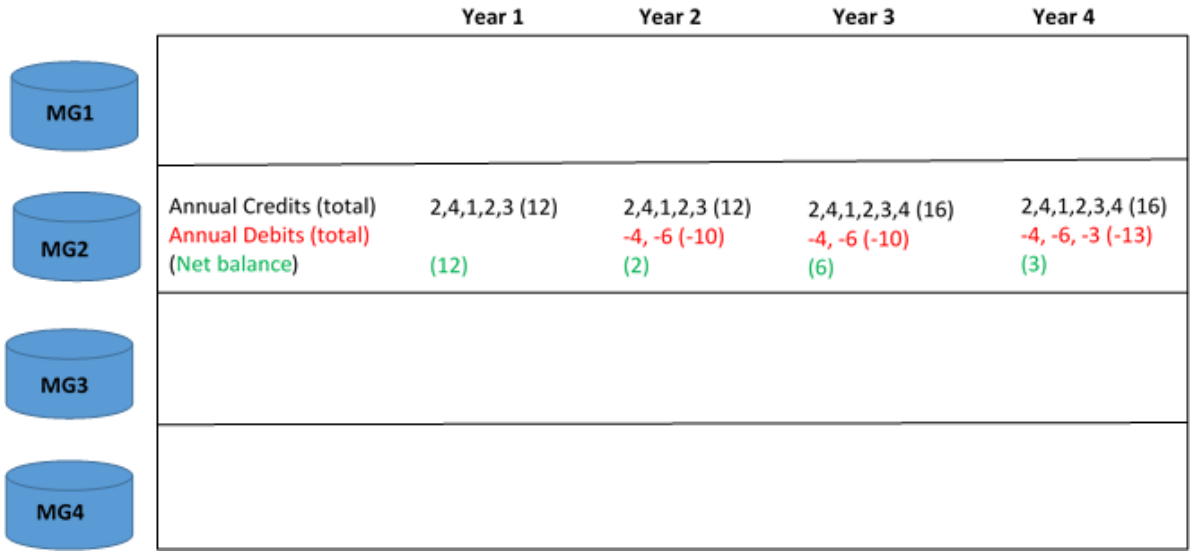

Figure 10. Annual credits are generated from the reclamation of a series of non-wafwa mitigated existing infrastructure (black) and the annual debits (red) are generated from new projects. The credits and impacts are associated with reclamation credit bins for offsetting impacts. The net balance of annual units (green) must remain positive or 0, annual debits cannot exceed the rate of annual credit input.

Participating companies can use conservation offset units, remediation offset units, or in some cases, a combination of the two to mitigate future impacts. The two types of offset units have the same mitigation value, but they do have different utility. Conservation offset units are purchased by industry participants on a first-come first-served basis. Construction of a project being mitigated with conservation offset units must begin within one year of the units being assigned. If construction has not started by that date, WAFWA can reallocate the conservation offset units to another project and credit the company's account with the original purchase amount. The company will then have to re-submit their project and get different offset units assigned to it before they can begin construction of their project. Remediation offset units are reserved for the company that completed the restoration work. The company that owns the resulting remediation offset units can use them toward a future mitigation need or continue purchasing conservation offset units. The RWP requires that remediation units be used to offset any new impacts that occur in reporting units that exceed the impact goals for CHAT 1 (30%) and CHAT 2 (60%). A participant company may choose to save their remediation offset units if they anticipate having future projects within an area that is approaching or currently exceeding the established impact goal. A company can also sell their remediation offset units directly to another WAFWA participant who has a need for that type of mitigation units.

INDUSTRY IMPACT UNIT GENERATION

In this portion of the report, impact generation at the scale of ecoregions, CHAT categories, and agreement types will be provided. For the 2018 reporting period, there were 118 projects that had 368 annual impact units and paid $452,628.65 in mitigation fees. By ecoregion, the Shinnery Oak Ecoregion had the most projects (79 or 21.5%), however, the Mixed Grass Ecoregion had the most

impact units (221or 60.2%) (Table 23). This difference was due to most of the impacts in the Shinnery Oak region being infield drilling with little new impact, while impacts in the Mixed Grass were from wells that had more unique impact areas.

Overall since the RWP began in 2014, the CCAA has a much larger share of the total number of projects (1,252 or 85.2%), but it accounts for about an equal percentage of the annual impact units (10,724 or 52.9%) and the mitigation fees ($12,809,238 or 50.8%). This is because the CCAA projects are primarily oil and gas wells which, while numerous, have smaller impact buffers than many of the WCA projects such as wind farms, and electric transmission lines. Table 24 provides a summary of all the mitigated projects since the plan began in 2014.

Table 23. Summary of projects mitigated for under the Lesser Prairie-Chicken Range-wide Conservation Plan during the 2018 reporting period by ecoregion and agreement type with the potential (full impact buffer) and actual impact acres (new impact area), annual impact units and mitigation fees.

Ecoregions	Enrollment Program	Number of Projects	Potential Acres	Impact Acres	Annual Units	Cost
Mixed grass Prairie	CCAA	19	631.85	267.89	219.15	$315,055.18
	WCA	2	3.50	2.91	2.09	$3,001.00
	Ecoregion Total:	**21**	**635.35**	**270.80**	**221.24**	**$318,056.18**
Sand Sagebrush Prairie	CCAA	16	496.51	135.73	12.36	$7,237.88
	Ecoregion Total:	**16**	**496.51**	**135.73**	**12.36**	**$7,237.88**
Shinnery Oak Prairie	CCAA	79	2,434.12	200.21	132.63	$126,118.73
	Ecoregion Total:	**79**	**2,434.12**	**200.21**	**132.63**	**$126,118.73**
Shortgrass Prairie	CCAA	1	31.03	6.93	1.39	$1,215.86
	WCA	1	31.03	0.00	0.00	$0.00
	Ecoregion Total:	**2**	**62.06**	**6.93**	**1.39**	**$1,215.86**
CCAA Total:		**115**	**3,593.51**	**610.76**	**365.53**	**$449,627.65**
WCA Total:		**3**	**34.53**	**2.91**	**2.09**	**$3,001.00**
Grand Total:		**118**	**3,628.04**	**613.67**	**367.62**	**$452,628.65**

Table 24. Summary of projects mitigated for under the Lesser Prairie-Chicken Range-wide Conservation Plan since inception (2014 - 2018) by ecoregion and agreement type with the potential (full impact buffer) and actual impact acres (new impact area), annual impact units and mitigation fees.

Ecoregions	Enrollment Program	Years	Number of Projects	Potential Acres	Impact Acres	Annual Units	Cost
Mixed grass Prairie	CCAA	2014	180	5,599.85	3,274.40	2,598.54	$3,416,061.42
		2015	298	9,315.18	5,625.28	4,652.51	$6,036,844.87
		2016	10	371.45	104.77	69.27	$92,955.24
		2017	49	1,532.16	819.53	771.51	$1,052,434.26
		2018	19	631.85	267.89	219.15	$315,055.18
		Total:	556	17,450.49	10,091.87	8,310.98	$10,913,350.97
	WCA	2014	52	9,843.52	1,692.60	703.91	$945,267.95
		2015	95	22,135.60	5,449.36	4,961.76	$6,638,286.36

		2016	14	27,658.38	16,201.66	3,049.48	$4,066,770.16
		2017	4	3,909.31	739.53	134.81	$183,798.79
		2018	2	3.50	2.91	2.09	$3,001.00
		Total:	167	63,550.31	24,086.06	8,852.05	$11,837,124.26
	Ecoregion Total:		723	81,000.80	34,177.93	17,163.03	$22,750,475.23
Sand Sagebrush Prairie	CCAA	2014	45	1,366.97	628.53	7.21	$4,440.73
		2015	72	2,235.58	1,344.79	514.59	$271,212.42
		2016	22	682.68	338.08	53.12	$28,993.47
		2017	33	1,024.04	534.05	20.63	$11,444.27
		2018	16	496.51	135.73	12.36	$7,237.88
		Total:	188	5,805.78	2,981.18	607.91	$323,328.77
	WCA	2015	2	62.07	44.19	38.02	$18,247.48
		2017	4	653.10	126.23	43.52	$24,102.79
		Total:	6	715.17	170.42	81.54	$42,350.27
	Ecoregion Total:		194	6,520.95	3,151.60	689.45	$365,679.04
Shinnery Oak Prairie	CCAA	2014	47	1,452.73	162.27	161.98	$146,512.43
		2015	124	3,844.04	752.20	631.60	$549,689.08
		2016	71	2,203.15	222.01	112.08	$98,321.73
		2017	76	2,341.03	223.47	182.33	$164,712.75
		2018	79	2,434.12	200.21	132.63	$126,118.73
		Total:	397	12,275.07	1,560.16	1,220.62	$1,085,354.72
	WCA	2014	6	186.18	0.00	0.00	$0.00
		2015	14	12,509.16	6,731.91	491.98	$444,809.63
		2016	5	48.03	37.14	33.84	$30,566.65
		2017	3	84.72	8.35	3.72	$3,358.75
		Total:	28	12,828.09	6,777.40	529.54	$478,735.03
	Ecoregion Total:		425	25,103.16	8,337.56	1,750.16	$1,564,089.75
Shortgrass Prairie	CCAA	2014	31	950.17	783.18	208.74	$166,374.38
		2015	71	2,073.62	1,350.34	343.97	$293,655.04
		2016	5	155.17	83.16	14.85	$12,344.02
		2017	3	93.09	55.59	15.52	$13,614.84
		2018	1	31.03	6.93	1.39	$1,215.86
		Total:	111	3,303.08	2,279.20	584.47	$487,204.14
	WCA	2014	6	186.26	133.53	34.92	$28,249.39
		2015	8	222.71	127.48	14.97	$12,108.52
		2018	1	31.03	0.00	0.00	$0.00
		Total:	15	440.00	261.01	49.89	$40,357.91
	Ecoregion Total:		126	3,743.08	2,540.21	634.36	$527,562.05
CCAA Total:			1252	38,834.42	16,912.41	10,723.98	$12,809,238.60
WCA Total:			216	77,533.57	31,294.89	9,513.02	$12,398,567.47
Grand Total:			1,468	116,367.99	48,207.30	20,237.00	$25,207,806.07

While oil and gas wells are the most common type of impact, the larger impact buffers of wind turbines, compressor stations, communications towers, and electric transmission lines that have WCA agreements usually generate more annual impact units and mitigation fees per project. The larger the impact buffer, the more important it is to site these projects to take advantage of pre-existing impact buffers and cropland to minimize impacts on LPC habitat and mitigation fees. Electric distribution lines are an example of a smaller scale project that produces few annual impact units or mitigation fees. These projects have smaller impact buffers and are often sited within pre-existing impact buffers along roads. Table 25 and 26 break impact unit generation and mitigation fees down further to demonstrate the proportion of impact types mitigated for in 2018 and since the plan began.

Table 25. Summary of 2018 projects by impact type.

Ecoregions	Impact Type	Count	Potential Acres	Impact Acres	Annual Units	Mitigation Cost
Mixed grass Prairie	Compressor Station > 5 acres	1	73.29	59.40	64.87	$93,237.08
	Electrical Distribution Line < 69 KV	2	3.50	2.91	2.09	$3,001.00
	Well	18	558.56	208.49	154.28	$221,818.10
	Ecoregion Total:	21	635.35	270.80	221.24	$318,056.18
Sand Sagebrush Prairie	Well	16	496.51	135.73	12.36	$7,237.88
	Ecoregion Total:	16	496.51	135.73	12.36	$7,237.88
Shinnery Oak Prairie	Tank Battery	1	13.72	0.00	0.00	$0.00
	Well	78	2,420.40	200.21	132.63	$126,118.73
	Ecoregion Total:	79	2,434.12	200.21	132.63	$126,118.73
Shortgrass Prairie	Electrical Substation <= 5 acres	1	31.03	0.00	0.00	$0.00
	Well	1	31.03	6.93	1.39	$1,215.86
	Ecoregion Total:	2	62.06	6.93	1.39	$1,215.86
Grand Total:		118	3,628.04	613.67	367.62	$452,628.65

Table 26. Summary of projects (2014-2018) by impact type.

Ecoregions	Impact Type	Count	Potential Acres	Impact Acres	Annual Units	Mitigation Cost
Mixed grass Prairie	Compressor Station <= 5 acres	6	186.22	72.00	46.90	$62,505.63
	Compressor Station > 5 acres	2	165.47	59.40	64.87	$93,237.08
	Electrical Distribution Line < 69 KV	37	176.49	46.15	53.22	$64,451.84
	Electrical Substation <= 5 acres	1	31.03	0.00	0.00	$0.00
	Electrical Transmission Line >= 69 KV	8	37,764.73	6,189.83	4,728.46	$6,343,799.33
	Private Road	1	3.28	2.87	2.22	$2,639.00
	Raised Pipeline	1	30.60	26.62	24.89	$29,543.00
	Tank Battery	1	42.61	22.48	24.28	$33,096.77
	Well	663	20,838.61	11,757.26	9,411.65	$12,374,104.15
	Wind Turbine	3	21,761.76	16,001.32	2,806.54	$3,747,098.43
	Ecoregion Total:	723	81,000.80	34,177.93	17,163.03	$22,750,475.23
Sand Sagebrush Prairie	Electrical Substation <= 5 acres	3	93.09	0.00	0.00	$0.00
	Electrical Transmission Line >= 69 KV	1	560.01	126.23	43.52	$24,102.79
	Private Road	1	1.56	0.73	0.70	$865.00
	Well	189	5,866.29	3,024.64	645.23	$340,711.25
	Ecoregion Total:	194	6,520.95	3,151.60	689.45	$365,679.04

Shinnery Oak Prairie	Cell / Radio Tower	1	345.30	32.41	14.58	$19,471.67
	Compressor Station <= 5 acres	1	13.73	0.00	0.00	$0.00
	Compressor Station > 5 acres	2	541.50	463.69	250.19	$223,056.74
	Electrical Distribution Line < 69 KV	16	141.25	22.46	9.19	$7,944.48
	Electrical Transmission Line >= 69 KV	1	11,551.80	6,209.57	216.32	$192,861.26
	Tank Battery	1	13.72	0.00	0.00	$0.00
	Well	403	12,495.86	1,609.43	1,259.88	$1,120,755.60
	Ecoregion Total:	425	25,103.16	8,337.56	1,750.16	$1,564,089.75
Shortgrass Prairie	Compressor Station <= 5 acres	3	93.10	24.22	1.25	$1,008.31
	Electrical Substation <= 5 acres	2	62.07	0.00	0.00	$0.00
	Private Road	2	10.91	5.15	1.12	$470.36
	Tank Battery	11	125.00	21.39	1.73	$2,063.48
	Well	108	3,452.00	2,489.45	630.26	$524,019.90
	Ecoregion Total:	126	3,743.08	2,540.21	634.36	$527,562.05
Grand Total:		1,468	116,367.99	48,207.30	20,237.00	$25,207,806.07

When comparing projects completed by CHAT category in 2018 (Table 27), it can be demonstrated how industry is avoiding higher quality habitat. The overall number of projects is much lower in CHAT's 1-2 (10) compared to the number of projects in CHAT's 3-4 (108) indicating companies may be choosing these areas over focal areas and connectivity zones. Similarly, the total acreage of new impacts is lower in the CHAT 1-2 than CHAT 3-4 (102.4 vs 511.5 acres). In the 2018 reporting period, mitigation totaled $98,046.48 in CHAT 1-2, compared to $354,582.17 in CHAT 3-4.

Table 27. Summary of the project's mitigated for in 2018 by CHAT category, including the number of projects, potential acres impacted, the actual impact acres, annual units and mitigation.

CHAT	Impact Type	Count	Potential Acres	Impact Acres	Annual Units	Mitigation Cost
CHAT1 (unit 35F)	Well	3	93.10	10.50	0.38	$224.00
	CHAT Total:	3	93.10	10.50	0.38	$224.00
CHAT2 (unit 108)	Well	7	217.23	91.63	68.03	$97,822.48
	CHAT Total:	7	217.23	91.63	68.03	$97,822.48
CHAT3	Compressor Station > 5 acres	1	73.29	59.40	64.87	$93,237.08
	Electrical Distribution Line < 69 KV	2	3.50	2.91	2.09	$3,001.00
	Well	19	589.57	235.18	178.55	$211,132.00
	CHAT Total:	22	666.36	297.49	245.51	$307,370.08
CHAT4	Electrical Substation <= 5 acres	1	31.03	0.00	0.00	$0.00
	Tank Battery	1	13.72	0.00	0.00	$0.00
	Well	84	2,606.60	214.05	53.70	$47,212.09
	CHAT Total:	86	2,651.35	214.05	53.70	$47,212.09
Grand Total:		118	3,628.04	613.67	367.62	$452,628.65

When impacts are examined by CHAT category over the life of the RWP, the pattern of projects being concentrated in CHAT 3-4 is even more pronounced (Table 28). Since the plan began, 80.6% of the projects, and 84.3% of the actual new impact acres have been in CHAT categories 3-4. Additionally, 49.3% of projects and 48.3% of the new impact area has been in CHAT 4. Care should be taken however when interpreting these project location proportions because there is significantly

more CHAT 3-4 area (36.6% and 39.9%) within the EOR+10 then CHAT 1-2 area (17.5% and 6.0%), so it is probable that more projects are in CHAT 3-4 simply because there is more of it.

Table 28. Summary of mitigated projects by CHAT category and feature type since the RWP began (2014-2018).

CHAT	Impact Type	Count	Potential Acres	Impact Acres	Annual Units	Mitigation Cost
CHAT1	Compressor Station <= 5 acres	3	93.13	31.84	9.27	$11,808.04
	Electrical Distribution Line < 69 KV	4	48.80	17.47	29.10	$34,549.60
	Electrical Transmission Line >= 69 KV	1	4,796.60	2,414.14	3,175.73	$4,239,897.18
	Private Road	1	1.56	0.73	0.70	$865.00
	Well	170	5,400.61	3,426.05	3,344.42	$3,958,459.95
	CHAT Total:	179	10,340.70	5,890.23	6,559.22	$8,245,579.77
CHAT2	Compressor Station > 5 acres	1	92.18	0.00	0.00	$0.00
	Electrical Distribution Line < 69 KV	4	30.87	13.29	7.22	$8,474.52
	Electrical Substation <= 5 acres	1	31.03	0.00	0.00	$0.00
	Tank Battery	1	13.72	0.00	0.00	$0.00
	Well	99	3,127.79	1,678.82	1,431.07	$1,888,070.42
	CHAT Total:	106	3,295.59	1,692.11	1,438.29	$1,896,544.94
CHAT3	Cell / Radio Tower	1	345.30	32.41	14.58	$19,471.67
	Compressor Station <= 5 acres	2	62.07	27.76	38.23	$51,034.65
	Compressor Station > 5 acres	3	614.79	523.09	315.06	$316,293.82
	Electrical Distribution Line < 69 KV	28	185.16	27.17	20.42	$23,802.46
	Electrical Substation <= 5 acres	1	31.04	0.00	0.00	$0.00
	Electrical Transmission Line >= 69 KV	4	16,224.10	3,681.91	1,473.38	$1,997,955.09
	Private Road	2	10.91	5.15	1.12	$470.36
	Raised Pipeline	1	30.60	26.62	24.89	$29,543.00
	Tank Battery	2	56.33	27.94	24.53	$33,427.69
	Well	414	13,008.57	7,906.01	5,815.24	$7,034,227.31
	Wind Turbine	1	6,239.80	5,060.48	2,371.00	$3,165,593.81
	CHAT Total:	459	36,808.67	17,318.54	10,098.45	$12,671,819.86
CHAT4	Compressor Station <= 5 acres	5	137.85	36.62	0.65	$671.25
	Electrical Distribution Line < 69 KV	17	52.91	10.68	5.67	$5,569.74
	Electrical Substation <= 5 acres	4	124.12	0.00	0.00	$0.00
	Electrical Transmission Line >= 69 KV	5	28,855.84	6,429.58	339.19	$322,911.11
	Private Road	1	3.28	2.87	2.22	$2,639.00
	Tank Battery	10	111.28	15.93	1.48	$1,732.56
	Well	680	21,115.79	5,869.90	1,356.29	$1,478,833.22
	Wind Turbine	2	15,521.96	10,940.84	435.54	$581,504.62
	CHAT Total:	724	65,923.03	23,306.42	2,141.04	$2,393,861.50
Grand Total:		1,468	116,367.99	48,207.30	20,237.00	$25,207,806.07

Companies are adapting their development strategies to incorporate the RWP habitat metrics in an effort to reduce higher mitigation costs by co-locating new projects with pre-existing development. WAFWA quantifies co-location from the percent overlap between new impact acres and acres within impact buffers of existing infrastructure. Prior to the implementation of the RWP, the average project co-location was only 12% for all impact types and 42% for oil and gas developments (Van Pelt et al. 2013:136-137). For all projects mitigated for in 2018, the co-location was 83% across all project types, and it was 84% for wells specifically. This indicates that project impact overlap is up 71% since implementation for all impact types and up 42% for oil and gas wells (Table 29). The degree of co-location in 2018 varied widely between ecoregions, but was most effective in the Shinnery Oak, where wells had a combined overlap of 90% with existing impacts. (Tables 30-32).

Table 29. Area of potential impact acres, the actual impact acres as a result of co-siting projects, and the proportion the impact area was reduced due to co-siting in 2018.

Impact Type	Count	Potential Acres	Actual New Acres	% overlap
Compressor Station > 5 acres	1	73.29	59.40	18.95%
Electrical Distribution Line < 69 KV	2	3.50	2.91	16.86%
Electrical Substation <= 5 acres	1	31.03	0.00	100.00%
Tank Battery	1	13.72	0.00	100.00%
Well	113	3,506.50	551.36	84.28%
Grand Total:	**118**	**3,628.04**	**613.67**	**83.09%**

Table 30. Overall percentage that new impact areas (all project types) in 2018 were reduced by co-locating the project so that it overlapped with existing impact areas.

Ecoregions	Count	Potential Acres	Actual New Acres	% overlap
Mixed grass Prairie	21	635.35	270.80	57.38%
Sand Sagebrush Prairie	16	496.51	135.73	72.66%
Shinnery Oak Prairie	79	2,434.12	200.21	91.77%
Shortgrass Prairie	2	62.06	6.93	88.83%
Grand Total:	**118**	**3,628.04**	**613.67**	**83.09%**

Table 31. Overall percentage that new impact areas (all project types) in 2014-2018 were reduced by co-locating the project so that it overlapped with existing impact areas.

Ecoregions	Count	Potential Acres	Actual New Acres	% overlap
Mixed grass Prairie	723	81,000.80	34,177.93	57.81%
Sand Sagebrush Prairie	194	6,520.95	3,151.60	51.67%
Shinnery Oak Prairie	425	25,103.16	8,337.56	66.79%
Shortgrass Prairie	126	3,743.08	2,540.21	32.14%
Grand Total:	**1,468**	**116,367.99**	**48,207.30**	**58.57%**

Table 32. Summary of the potential impact vs the new impact acres and their combined ability to co-locate (reduce impact area) for projects done in 2014-2018.

Impact Type	Count	Potential Impacts Acres	New Impact Acres	% Reduction
Cell / Radio Tower	1	345.30	32.41	90.61%
Compressor Station <= 5 acres	10	293.05	96.22	67.17%
Compressor Station > 5 acres	4	706.97	523.09	26.01%
Electrical Distribution Line < 69 KV	53	317.74	68.61	78.41%
Electrical Substation <= 5 acres	6	186.19	0.00	100.00%
Electrical Transmission Line >= 69 KV	10	49,876.54	12,525.63	74.89%
Private Road	4	15.75	8.75	44.44%
Raised Pipeline	1	30.60	26.62	13.01%
Tank Battery	13	181.33	43.87	75.81%
Well	1,363	42,652.76	18,880.78	55.73%
Wind Turbine	3	21,761.76	16,001.32	26.47%
Grand Total:	**1,468**	**116,367.99**	**48,207.30**	**58.57%**

Since 214, oil and gas wells have been the most frequent impacts mitigated for through the RWP (1,363) and they also had the largest potential impact area (42,652 acres) of projects submitted through the RWP. This makes wells a good indicator for how the RWP can influence projects siting behavior. When the rate of co-location of wells through time is examined, it provides clear evidence that the economic disincentives in the RWP are working as intended, as the percent overlap has increased from 50.6% in 2014 to 84.3% overlap in 2018 (Table 33). In the RWP, a new well initially has a 31-acre impact area (200-meter buffer), but it can be reduced by co-locating it so its impact area overlaps with areas already impacted. Figure 11 shows the trend to site new wells as both a percentage of overlap and as new acres impacted. As one might expect, when the area of new impact is a driving component of mitigation fees, companies are adjusting their well siting behaviors to both minimize impacts and save money. This level of avoidance by RWP participants occurring across millions of acres within the LPC range is a significant benefit to LPC which is often overlooked by those following the RWP mitigation component.

Table 33. Trend in co-locating wells with other existing infrastructure to minimize new impact area (and corresponding mitigation costs) is evident here as the rate of co-location has increased since the plan began.

YEARS	Counts	Potential Impact Acres	New Impact Acres	Average New Impact Acres	%Reduction
2014	353	11,128.92	5,495.12	15.57	-50.62%
2015	627	19,638.99	10,363.33	16.53	-47.23%
2016	111	3,444.38	860.81	7.76	-75.01%
2017	159	4,933.97	1,610.16	10.13	-67.37%
2018	113	3,506.50	551.36	4.88	-84.28%
Total:	**1,363**	**42,652.76**	**18,880.78**	**13.85**	**-55.73%**

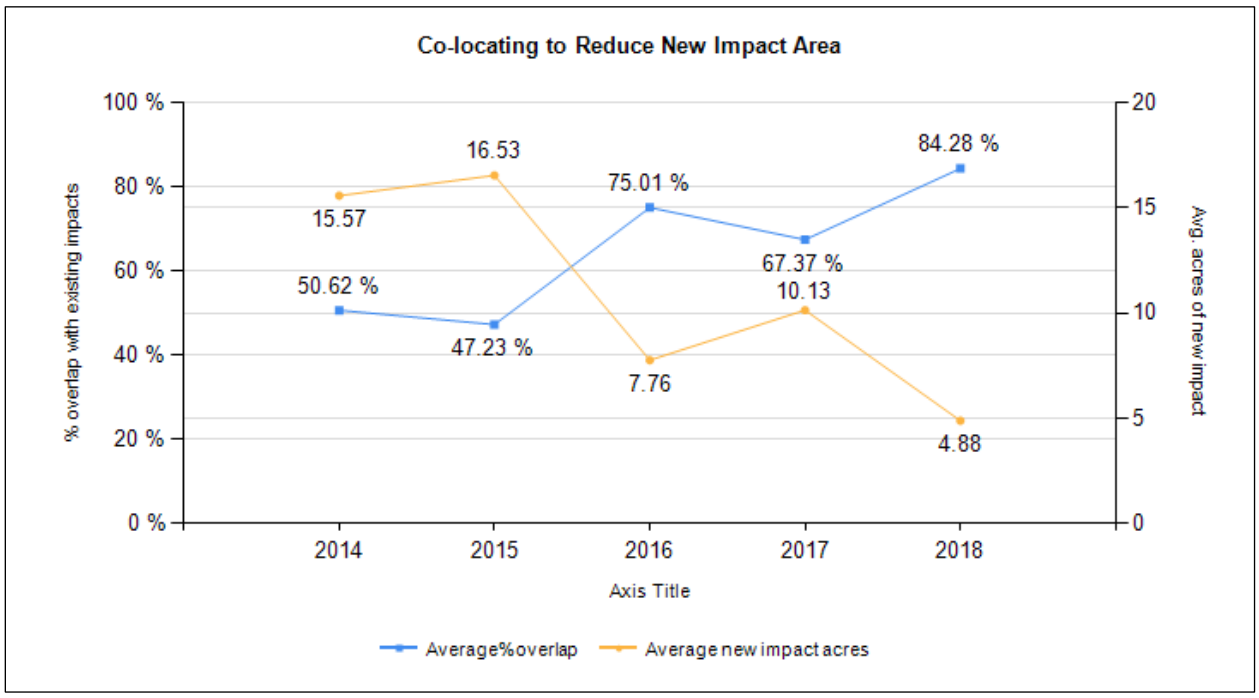

Figure 11. Plot showing the increasing trend by companies to co-locate wells to reduce new impact area on new well projects with existing infrastructure, thereby lowering the total impact area.

RECLAMATION OF IMPACTS TO GENERATE OFFSET UNITS

Offset units can also be generated by remediation of existing impacts as described in the RWP. Those remediation units are reserved for the company which generates them and can be banked for their use for future developments. In some instances, remediation offset units are required before development can occur. The RWP establishes impact thresholds of 30% for CHAT 1 reporting units and 60% for CHAT 2 reporting units. Nine focal areas and one connectivity zone already meet or exceed those goals, which means that remediation must occur to offset any new impacts by participants in these units (Appendix D, Van Pelt et.al 2013). Within the RWP there are two primary impact credit processes, one for projects initially mitigated through the RWP and a second process for the remediation of projects not mitigated through the RWP (existing infrastructure). For projects initiated within the RWP, it is required that mitigation and habitat offsets units be paid and allocated before construction begins. Companies often plan and pay mitigation months before a project starts. When this is done, WAFWA assesses the habitat impact and then calculates the habitat units and the mitigation fee that will offset this development. The mitigation fee is deducted from the companies' mitigation account with WAFWA and the habitat units are deducted from an appropriate conservation offset site. Once the mitigation of new impacts is completed, one of the following things will occur:

1. The project gets cancelled after the mitigation was paid, but before any ground disturbances or infrastructure are installed.
    a. As development plans change, for whatever reason, projects may be cancelled before any habitat impacts occurred. In these instances, the company should notify WAFWA that the project was cancelled before any impacts occurred and WAFWA will credit the company back its full mitigation payment (minus the administrative fee) to its account and the habitat credits will be added back to the conservation offset site they were deducted from. The net result is no mitigation fees and no habitat units

used.

2. The project is initiated, completed, and remains on the landscape (i.e. viable well). Each year on the anniversary of the project's completion, the annual impact units will be associated with a conservation offset site and units deducted from that site.

3. The project was started (ground disturbed or infrastructure installed) after mitigation payments were made, but the project was not completed and subsequently removed (i.e. dry well). These projects may be credited back in full (minus the administrative fee) after the site is verified to be reclaimed. To reclaim the site back to its original state and be credited as doing so, the company should follow the below process.

    a. The company should remove any/all infrastructure they installed, refill and level any pits, and grade the ground back to a slope and condition approximating the condition before impacts were made.

    b. The company should contact WAFWA regional biologists for a recommended native seed mixture for that site and apply the seed mix per recommendations. If restoring back to active cropland, no seeding mixture is required.

    c. Once the site is repaired and the seed is distributed, the company should notify WAFWA regional biologist to assess and verify the completed reclamation work.

    d. Once verified, the regional biologist will notify WAFWA GIS that the work was done and then WAFWA GIS will refund all the habitat credits to the offset property they were initially deducted from and notify accounting to credit the companies account back for the full impact mitigation (less the 12.5% administration fee) paid towards the project.

4. If the project is completed and mitigated within the RWP, then at some future date the project is to be reclaimed, a process similar to scenario 2 (project started but not completed) would be utilized. After the site has been confirmed reclaimed, the company receives credit back on mitigation dollars paid (less the administration fee), the impact no longer generates annual debits in the impact ledger, and the impact units are no longer deducted from its associated conservation site. Habitat units from the project and the conservation site are not credited, they just stop occurring annually as they were when the project was on the landscape.

For projects that were developed on the landscape without mitigation through the RWP, there exists the opportunity for companies to remove these existing infrastructure impacts and receive habitat credits that can be applied to future projects. If a company removes the infrastructure and reseeds the area in native vegetation to reclaim the habitat, the company will receive a company specific allocation of half the habitat units identified as reclaimed by a HEG habitat evaluation of the surrounding area. So far in the RWP, there has been one transmission line project reclaimed and three wells submitted for reclamation credits. These projects are inventoried and associated with the appropriate company that will earn the credits, but the credit allocation has not been issued yet because WAFWA is working with the USFWS to resolve some details on how these will be tracked and credited.

Since the RWP began, there have been 24 unsuccessful and reclaimed projects (Table 34). These projects were reclaimed per the specifications, verified by WAFWA staff, and then the mitigation was credited back to the company and the impacts were credited back to the

conservation offset property.

Table 34. Projects that were reclaimed since the plan began (2014-2018) after the project failed to be completed.

Ecoregions	CHAT	Counts	Potential Acres	Impact Acres	Annual Units
Mixed Grass Prairie	CHAT1	2	62.06	55.10	93.67
	CHAT4	2	62.06	18.20	0.58
	Ecoregion Total:	**4**	**124.12**	**73.30**	**94.25**
Sand Sagebrush Prairie	CHAT1	3	93.09	43.88	5.03
	Ecoregion Total:	**3**	**93.09**	**43.88**	**5.03**
Shortgrass Prairie	CHAT1	7	220.73	188.15	158.27
	CHAT3	4	124.77	120.95	111.20
	CHAT4	6	168.89	100.28	21.38
	Ecoregion Total:	**17**	**514.39**	**409.38**	**290.85**
Grand Total:		**24**	**731.60**	**526.56**	**390.13**

Getting information on the restoration of habitat from the removal of the existing infrastructure has proven difficult and currently WAFWA has not accounted for any reclamation projects outside of the RWP. Oil and gas wells are routinely plugged and restored, but a way to verify site restoration has not been identified through our well database subscription service. WAFWA is exploring other data options for accessing data that would show the wells plugged and restored to state environmental requirements. Based on the data available, it appears there have been a total of 5,113 wells plugged within the EOR+10 since 2014 (Table 35).

Table 35. The number of wells reported as plugged* each year by welldatabase.com in the EOR10.

Ecoregion	CHAT Score	2014	2015	2016	2017	2018	Total
Mixed grass Prairie	**CHAT1**	59	50	33	36	30	208
	CHAT2	37	26	22	11	9	105
	CHAT3	133	96	80	55	52	416
	CHAT4	159	138	89	107	80	573
	Total	**388**	**310**	**224**	**209**	**171**	**1,302**
Sand Sagebrush Prairie	**CHAT1**	48	48	26	32	27	181
	CHAT2	0	1	2	2	0	5
	CHAT3	42	36	23	18	22	141
	CHAT4	144	117	64	83	67	475

	Total	**234**	**202**	**115**	**135**	**116**	**802**
Shinnery Oak Prairie	**CHAT1**	9	14	12	0	0	35
	CHAT2	3	2	4	1	0	10
	CHAT3	161	125	165	48	0	499
	CHAT4	168	159	129	70	0	526
	Total	**341**	**300**	**310**	**119**	**0**	**1,070**
Shortgrass Prairie	**CHAT1**	94	48	46	42	33	263
	CHAT2	10	3	7	2	3	25
	CHAT3	141	87	67	76	64	435
	CHAT4	425	220	171	214	186	1,216
	Total	**670**	**358**	**291**	**334**	**286**	**1,939**
Grand Total		**1,633**	**1,170**	**940**	**797**	**573**	**5,113**

*No plugged well data available from Oklahoma.

OFFSET UNIT GENERATION

The 23 conservation sites currently enrolled in the RWP produced 101,158.4 conservation offset units during the 2018 reporting period from 149,616 total acres. There are permanent conservation easements in each of the four ecoregions as well as 10-year term contracts that allow conservation efforts to shift as the landscape changes to ensure that efforts are being focused in the best possible areas. Additionally, across all the conservation sites there are 128,252 unimpacted acres (that credits and payments are based on) and 82.5% of these are located in CHAT 1. The 101,158.4 credits generated in 2018 far exceed the number of impacts needed to offset participants' impacts. WAFWA maintains a surplus of offset units in each region by appropriating all available funds in the conservation endowment and targeting conservation agreements in proportion to the distribution of industry impacts. The individual industry impacts in 2018 had a total annual impact of –367.6 habitat units, and cumulatively since the plan began these projects have netted a total impact of –20,424.8 habitat units, that WAFWA offsets. When the –20,424.8 impacts are subtracted from the 101,158.4 credits generated in 2018, the result is a credit surplus of 80,733.6 habitat units across the range. The Range Wide Plan has maintained a positive credit balance in each year since 2015 as required by the plan (Figure 12), and this surplus helps to ensure that the RWP has credits on-hand to offset new projects thereby the risk of any industry delays.

Habitat units to offset industry impacts are generated through land management contracts, conservation easements, and reclamation of previously impacted habitat. The RWP tracks credits generated on enrolled conservation parcels through annual field assessments. The annual credits generated are summarized by ecoregion and CHAT in Table 36 and listed individually by property in Table 37.

Table 36. Conservation offset units generated in each reporting period and cumulatively since the inception of the RWP. Data are reported for the primary CHAT category within which the site occurs.

		Credits					
Ecoregions	**CHAT Score**	**2014**	**2015**	**2016**	**2017**	**2018**	**2014-2018**
Mixed grass Prairie	CHAT1	4,542	24,469	34,892	50,955	49,641	164,500
	CHAT4	0	4,351	5,149	5,454	5,739	20,693
	Ecoregion Total:	4,542	28,820	40,042	56,409	55,380	185,193
Sand Sagebrush Prairie	CHAT1	0	8,488	8,385	32,805	30,765	80,443
	Ecoregion Total:	0	8,488	8,385	32,805	30,765	80,443
Shinnery Oak Prairie	CHAT1	288	10,060	7,649	8,881	7,637	34,514
	Ecoregion Total:	288	10,060	7,649	8,881	7,637	34,514
Shortgrass Prairie	CHAT1	147	511	2,654	6,085	5,615	15,012
	CHAT2	0	1,483	1,274	1,762	1,762	6,281
	Ecoregion Total:	147	1,994	3,928	7,847	7,377	21,293
Grand Total:		4,976	49,362	60,005	105,941	101,158	321,443

Table 37. Habitat credits earned by each enrolled conservation property (total 22 properties) by year and as a cumulative total since they were enrolled.

	Credits					
Site ID	**2014**	**2015**	**2016**	**2017**	**2018**	**2014-2018**
CZ003	0.0	8,557.3	5,903.9	7,028.2	5,717.0	27,206.4
CZ008	520.9	158.3	744.0	309.2	308.8	2,041.1
CZ013	151.7	205.0	298.0	350.6	298.0	1,303.2
CZ014	136.3	124.2	229.0	336.8	336.8	1,163.0
CZ016	0.0	8,488.3	8,385.4	8,607.4	8,552.3	34,033.4
CZ024	0.0	0.0	0.0	24,197.5	22,212.3	46,409.8
CZ026	0.0	1,173.1	1,218.3	1,165.1	1,284.8	4,841.3
CZ033	0.0	1,482.9	1,273.9	1,761.5	1,762.1	6,280.5
CZ035	146.7	510.9	677.0	948.6	677.0	2,960.1
CZ036	0.0	15,933.3	20,580.1	20,229.2	19,344.6	76,087.1
CZ037	0.0	4,351.1	5,149.4	5,453.8	5,738.9	20,693.1
CZ038	4,021.0	8,377.7	12,353.3	15,010.7	14,622.9	54,385.5
CZ040	0.0	0.0	485.1	554.2	752.1	1,791.3

CZ061	0.0	0.0	1,964.3	2,204.7	2,176.3	6,345.3
CZ062	0.0	0.0	13.2	80.6	98.5	192.2
CZ063	0.0	0.0	730.0	974.8	1,558.3	3,263.0
CZ065	0.0	0.0	0.0	1,091.1	1,091.1	2,182.1
CZ066	0.0	0.0	0.0	193.8	193.8	387.7
CZ067	0.0	0.0	0.0	12,592.1	11,769.9	24,362.0
CZ081	0.0	0.0	0.0	267.2	245.6	512.8
CZ082	0.0	0.0	0.0	1,065.8	854.3	1,920.1
CZ083	0.0	0.0	0.0	1,518.3	1,563.2	3,081.5
Grand Total:	**4,976.5**	**49,362.1**	**60,004.7**	**105,940.9**	**101,158.4**	**321,442.6**

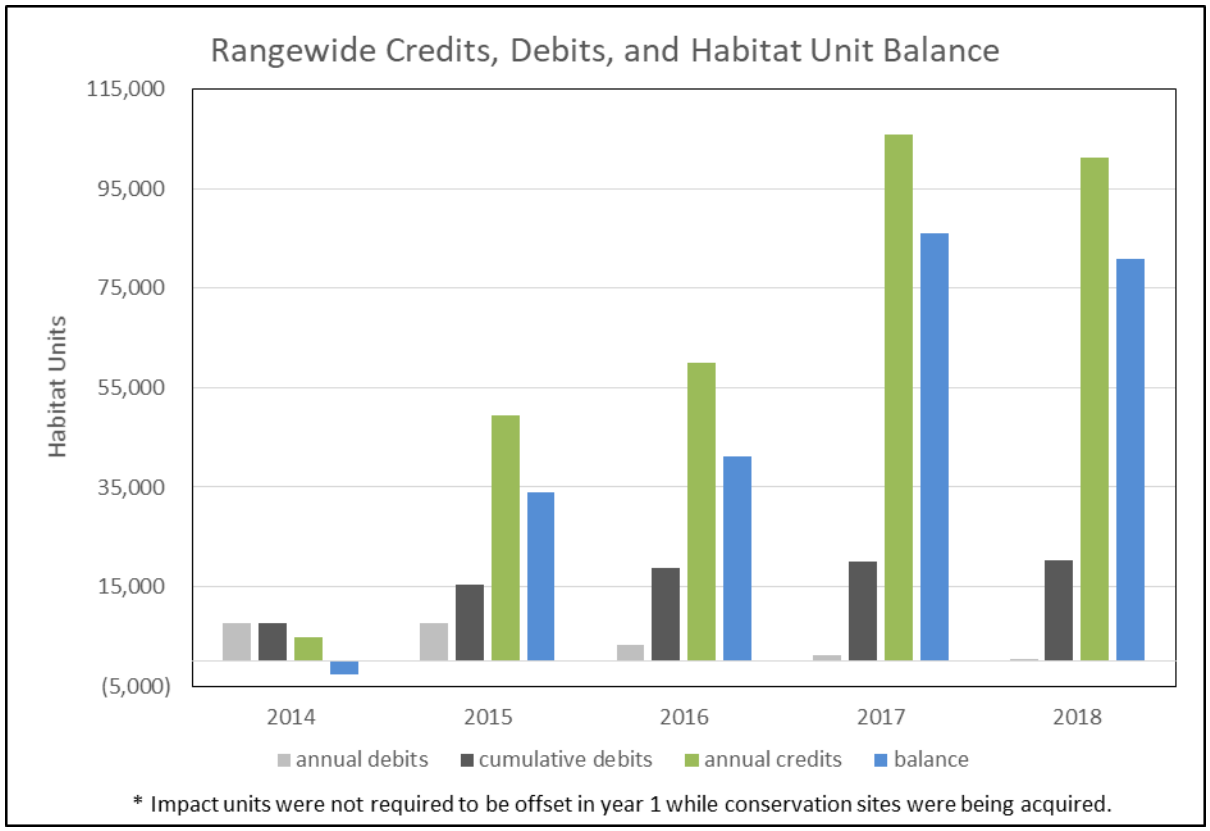

Figure 12. Plot of the range-wide annual credits earned, cumulative debits required to be offset, and the resulting habitat unit balance.

HABITAT QUALITY AT IMPACT SITES VERSUS CONSERVATION SITES

A principal concept behind the RWP is that the habitat metrics and mitigation incentivize industry to avoid important habitat areas and minimize impacts to LPC habitat. Those metrics consider both the acreage impacted, acreage conserved, and the habitat quality of those acres. In this portion of the report, we describe how companies are minimizing acreage impacts of new development by co-locating projects with pre-existing infrastructure. What about the habitat that is still impacted? Has industry been avoiding good habitat areas and concentrating development in poorer habitat areas? To answer these questions, we compared the habitat quality of sites impacted by new development throughout the history of the RWP (2014-2018) with the habitat quality at sites that were conserved and confirmed that impacts were happening in poorer quality habitat and being offset with conservation on higher quality habitat.

This comparison of habitat quality uses the Habitat Evaluation Guide (HEG) score described in Appendix I of the RWP (Van Pelt, et al. 2013). This robust scoring system ranks LPC habitat quality on a scale from 0 to 1, where 1 is the highest quality. This system uses a simple set of criteria to identify LPC habitat including the percent bare ground, percent cover of seven preferred species of grasses and shrubs, percent cover of trees greater than three feet tall, and the percent potentially suitable habitat (grass/shrubland) within a one-mile radius of the evaluation site.

Of the 5,297 habitat evaluations conducted at proposed industry impacts sites (stages 5,6,7) across the EOR+10 for wells, tank batteries, wind turbines, and electrical lines, the mean HEG habitat quality score (including zeros) was 0.28 with a median of 0.20 (Table 38, Figure 13). Even if the 1,164 units that had a HEG score of zero are excluded, the new range-wide mean and median scores would be 0.34 and 0.25 respectively. These impacts to low quality habitat are mitigated for and generate funds used to secure and improve moderate to high quality habitat on targeted private conservation properties.

Table 38. Habitat Evaluation Guide (HEG) scores relating habitat quality across all evaluation units associated with industry impact areas.

Industry Impact	Mixed Grass Prairie	Sand Sagebrush Prairie	Shinnery Oak Prairie	Shortgrass Prairie	EOR+10
Mean	0.35	0.16	0.18	0.19	0.28
Median	0.25	0.05	0.00	0.10	0.20
Min - Max	0.00 - 1.00	0.00 - 1.00	0.00 - 1.00	0.00 - 1.00	0.00 - 1.00
Variance	0.11	0.05	0.09	0.05	0.10
Count	3,293	734	933	337	5,297

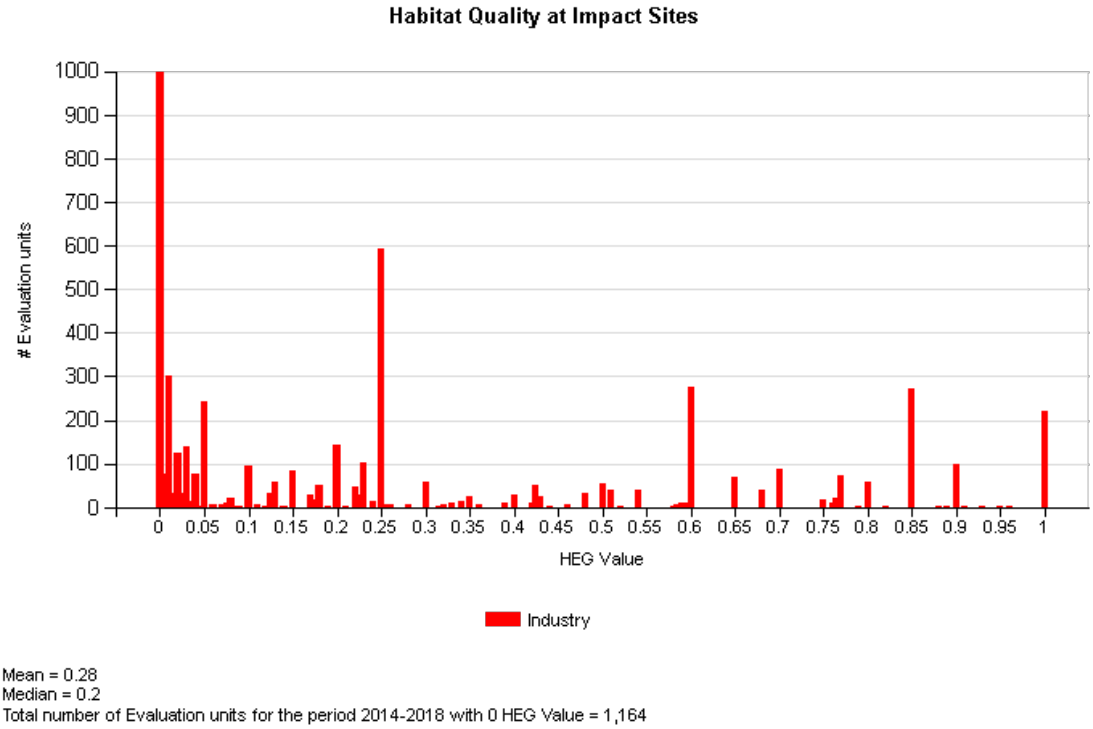

Figure 13. Habitat quality scores from industry evaluation units showing that most of the areas impacted were of lower quality habitat.

At the end of the 2018 reporting period, WAFAW had 22 conservation properties across the EOR+10 generating conservation offset credits. Vegetation transects done across the properties during the 2018 spring monitoring season showed these properties to have a mean habitat score of 0.64 and a median of 0.70 (Table 39, Figure 14). This difference between the quality of the habitat being impacted and the habitat being conserved is evidence industry is minimizing their impacts by selecting low quality sites to develop and the mitigation funds from those developments is being spent to maintain and improve high quality habitat.

Table 39. Habitat Evaluation Guide (HEG) scores from the 2018 monitoring season relating habitat quality across all evaluation units associated with conservation offset properties.

Conservation	Mixed grass Prairie	Sand Sagebrush Prairie	Shinnery Oak Prairie	Shortgrass Prairie	EOR+10
Mean	0.71	0.64	0.52	0.56	0.64
Median	0.85	0.68	0.25	0.60	0.70
Min - Max	0.00 - 1.00	0.15 - 1.00	0.20 - 1.00	0.13 - 1.00	0.00 - 1.00
Variance	0.08	0.07	0.10	0.09	0.08
Count	90	97	22	43	252

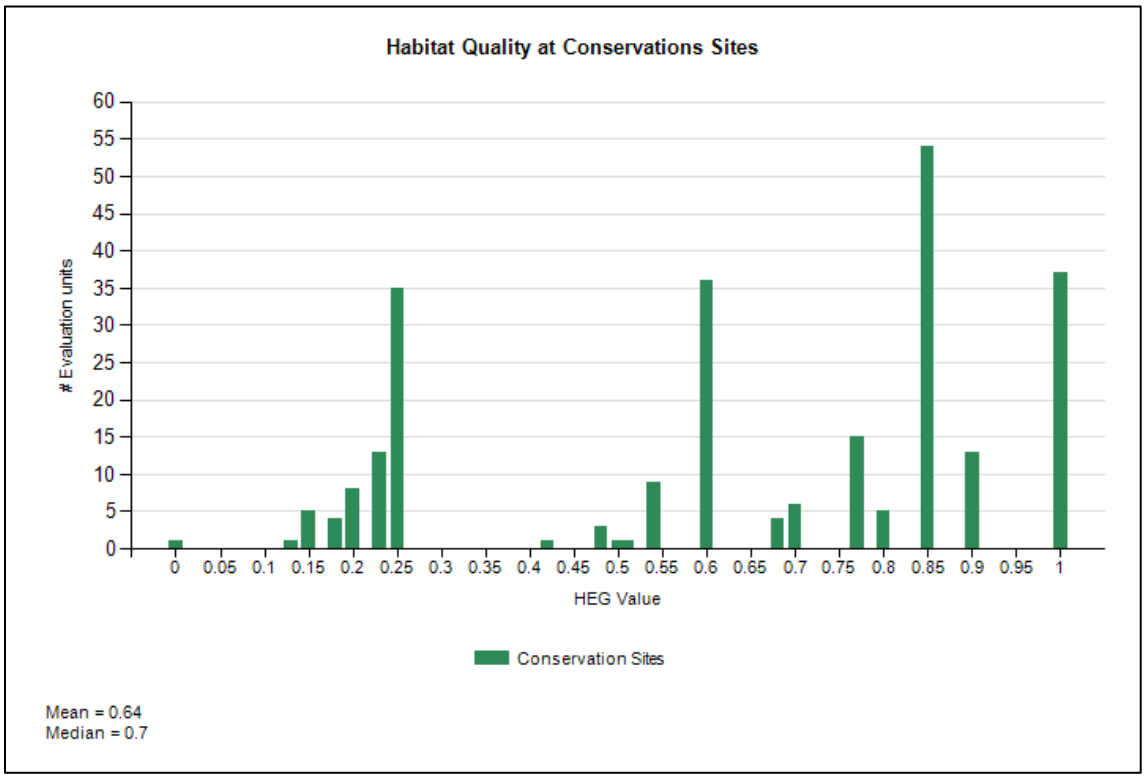

Figure 14. Habitat quality scores collected in 2018 from evaluation units in conservation properties showing that most of the areas conserved are of higher quality habitat.

Reducing a project's new impact footprint has a direct result on the mitigation fees associated with that project. The formula for calculating mitigation fees start with the habitat quality at the site multiplied by the new impact acreage, and then the CHAT category, 25-year term, and administration fees are factored in. Of these variables, the impact footprint is often the variable companies have the most control over.

After five years of implementation, a review of projects completed under the plan shows that the mean cost of all the projects (excluding wind farms and Transmission lines) varies by ecoregion from $3,178 in the Sand Sagebrush to $22,264 in the Mixed Grass for an EOR+10 mean of $13,621 (Table 40). A histogram plot of all the mitigation fees (except wind facilities and transmission lines) (Figure 15), indicates a distribution where most of the fees are relatively low, with 688 of the 1,474 projects (46.7%) of the projects less than $500. This trend of low mitigation fees is a reflection of companies avoiding good habitat and minimizing impact area.

Large projects such as transmission lines and wind farms have also been successfully mitigated in the RWP. Wind farms and transmission lines were excluded from the general project summary because they are of a frequency and scale that would distort the results. There has been a total of 10 transmission lines spanning 152 miles completed under the RWP (none in 2018). Once buffered, these lines ranged from 500 - 11,000 acres of potential impact that resulted in costs between $0 - $4.2 million (avg. = $656,000). The average fee of a transmission line (>69kV) was $43,092 per mile. The RWP has mitigated for two wind farms in the past but did not mitigate for any in 2018. Wind farms mitigated through the RWP have total project costs that averages out to $31,577 per turbine. Both facilities were

about 11,000 acres with around 60 turbines. The average fee for these wind facilities was about $1.2 million, yet individually the two facilities are quite different. One project had 2,426 habitat units of impact and cost over $3 million, and the other was sited largely in cropland with a total of only 380 habitat units impacted and had a final cost of less than $600,000. This difference in final impacts and mitigation costs for two windfarms of similar size in the same ecoregion show that project siting and configuration can have a huge impact.

Table 40. Summary statistics of the mitigation fees associated with all projects mitigated for within the Range Wide Plan since implementation (2014-2018). The Mean and Sum rows exclude transmission and wind facilities, while the "All Sum" row includes all feature types.

	Mixed grass Prairie	Sand Sagebrush Prairie	Shinnery Oak Prairie	Shortgrass Prairie	EOR+10
Mean	$22,264.42	$3,178.27	$3,568.19	$5,512.19	$13,621.33
Sum	$22,798,767.54	$731,002.51	$1,744,843.93	$1,041,803.51	$26,316,417.49
All Sum	$35,534,964.22	$3,724,617.53	$9,111,630.22	$1,058,629.05	$49,429,841.02

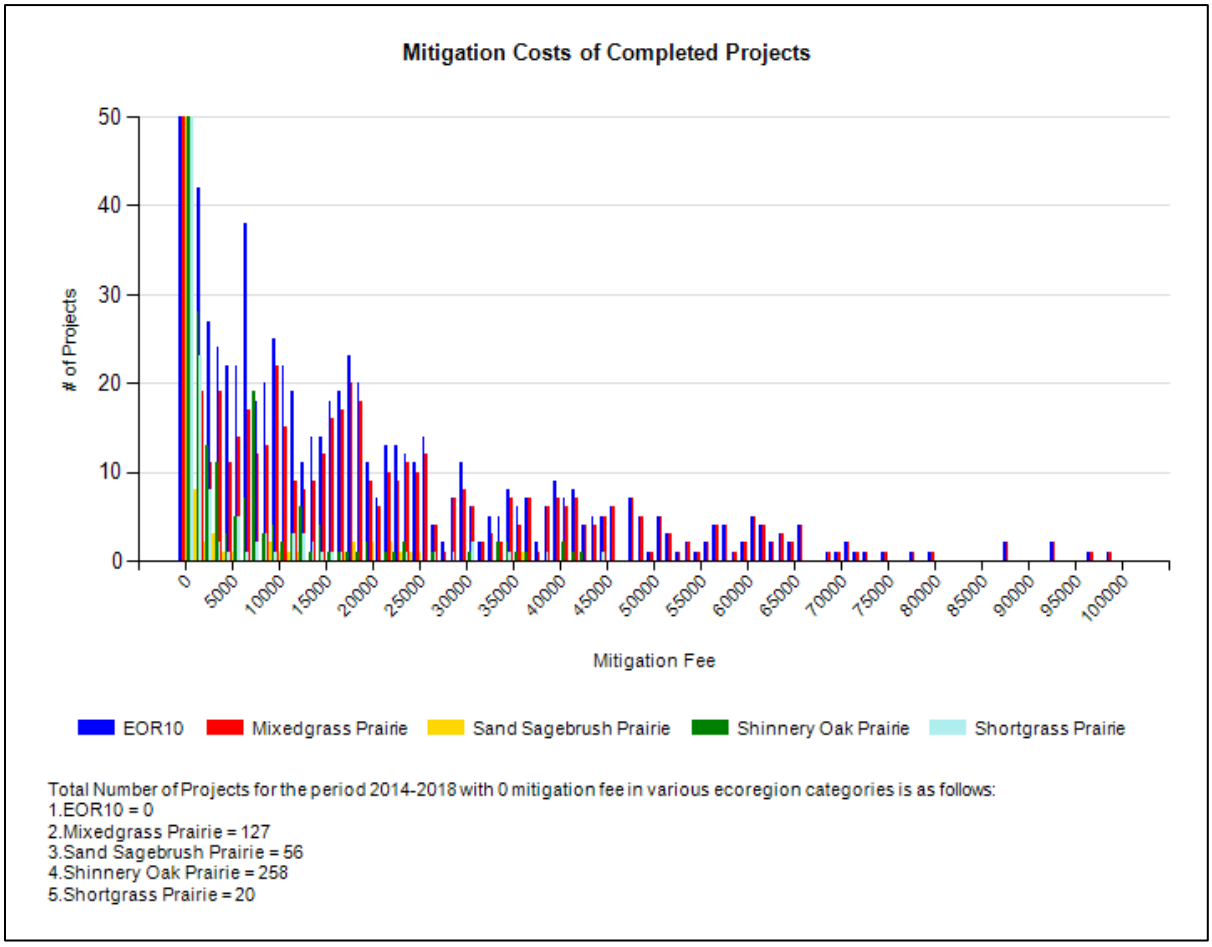

Figure 15. Distribution of mitigation fees for projects assessed within the Range-wide Plan (2014-2018), excluding wind power facilities and transmission lines.

Looking just at 2018 impact mitigation fees, a couple things can be seen. While there were fewer projects completed in 2018 compared to in 2014-2017 because of generally low oil prices, the development that did take place was done with minimal impact to LPC habitat. The mean mitigation cost across all ecoregions was $3,836 ranging from $0 to $93,237 (Table 41). The mean is skewed by of a couple large projects, so the median values may be more informative, and show that two ecoregions had median impacts of less than $100.00 and the entire EOR+10 had median mitigation costs of $0.00. This cost skew indicates that for the majority of projects done, there was very little new impact to LPC habitat.

Table 41. Summary of mitigation by ecoregion for 118 projects in 2018.

	Mixed grass Prairie	Sand Sagebrush Prairie	Shinnery Oak Prairie	Shortgrass Prairie	EOR+10
Count	21	16	79	2	118
Mean	$15,145.53	$452.37	$1,596.44	$607.93	$3,835.84
Median	$6,214.06	$59.35	$0.00	$607.93	$0.00
Sum	$318,056.18	$7,237.88	$126,118.73	$1,215.86	$452,628.65

PROJECT LOGS AND LEDGERS

The tracking of information about a project, its status within the RWP workflow, and the balancing of impact/conservation habitat units is an important component of RWP reporting. Since 2015, great effort was expended to get all the tracking information into a comprehensive relational SQL GIS geodatabase that had automatic updates of project information pulled from the GIS data. The new tracking log and ledgers are part of the geodatabase shared with the USFWS and key summaries are also available in the new web interface that RWP participants have access to. The web and mobile tablet interface tools (collectively referred to as the Western Conservation Toolkit - WCT) can be used to access project data and submit field data. The WCT was created to help provide several important improvements to implementing and accessing data in the Range Wide Plan (Figure 16-17).

- Secure online access to WAFWA, USFWS, and company participants to review their pending/completed projects and their enrollment area.
- Provide companies an interface to draft projects, review impact estimates and potential restrictions, submit proposals for field assessment, and approve final mitigation costs.
- Provide a mobile application for tablets (iOS and Android) to collect field data, transect coordinates and a photograph, then upload them all directly to the database.
- Provide an interface for companies to submit incident reports for emergency operations.
- Provide an online portal for access to the ArcSDE SQL geodatabase where authorized users can see projects logs, query for projects, and generate custom summary reports.

The web interface for the WCT provides secure, role-based access to authorized data sets. Company representatives will only have access to information for the company they are connected to, while users from WAFWA and USFWS can access information for all companies, conservation enrollments, as well as access the summary logs, and the impact balance ledgers. Figure 16 shows an example of a page that lists and maps projects that are under review, but not yet finalized. The information displayed in the WCT web site is from a direct link to the relational ArcSDE SQL geodatabase, so it is always synchronized with displaying current data.

Projects are listed and mapped, with the list functioning as a link to specific project details. The RWP

requires WAFWA to always have enough conservation credits in a region to cover new impacts occurring in the region. To track the balance of conservation offset credits and impact debits, a series of ecoregion specific ledgers was created. Within each ecoregion ledger, conservation offsets from enrolled properties create a balance of available credits. As projects are mitigated for through WAFWA, the projects are associated with a specific conservation offset property and the impact units for that project are then deducted from that properties' available credits. If a mitigated project is cancelled or the well is a dry hole, then the company can receive financial credit for the site by repairing the impacts and the habitat units are credited back to the conservation site they were deducted from in the ledger. The ledgers, ledger summaries, and project log are created daily with a SQL script triggered to run at 5:00 am Central Time. By automating this process, we have removed the possibility of transcription errors and ensured each impact can be fully accounted moving forward.

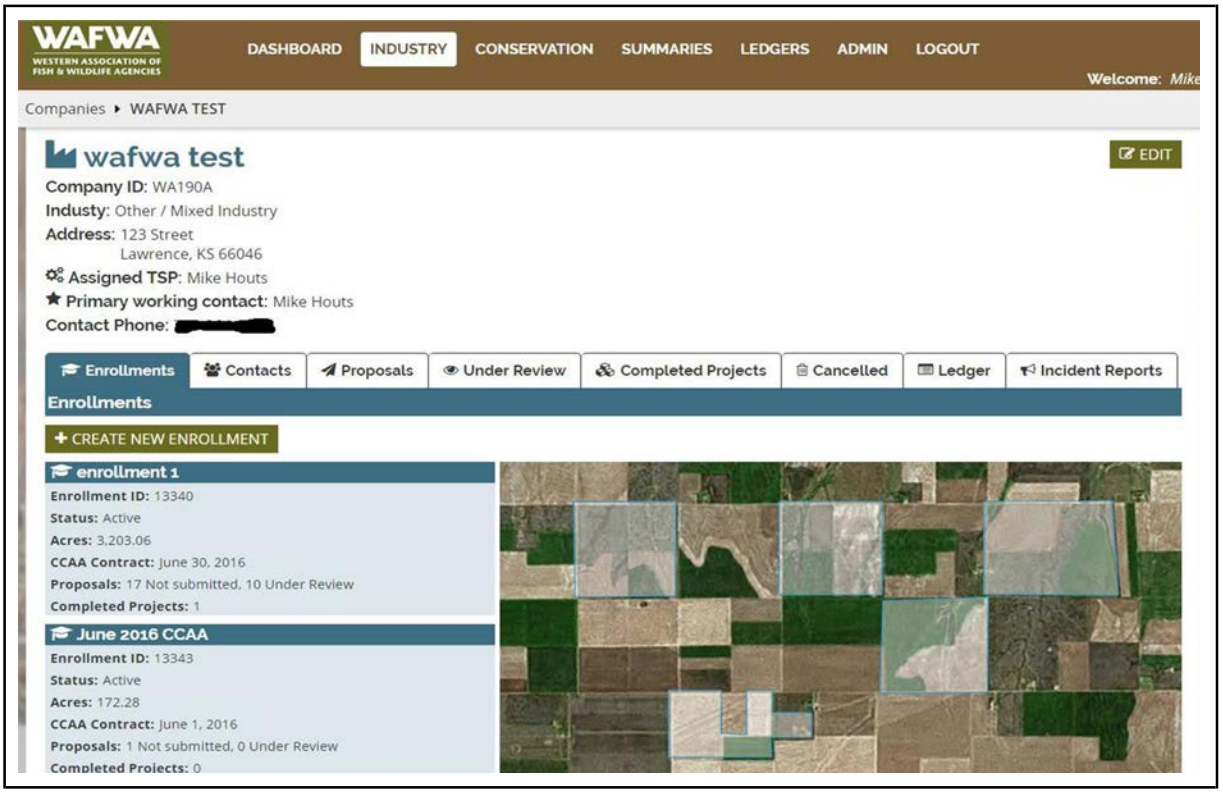

Figure 16. View of the WCT web interface showing enrollment parcels for a hypothetical "WAFWA Test" company. Tabs within the view provide access to unique sets of data and tools.

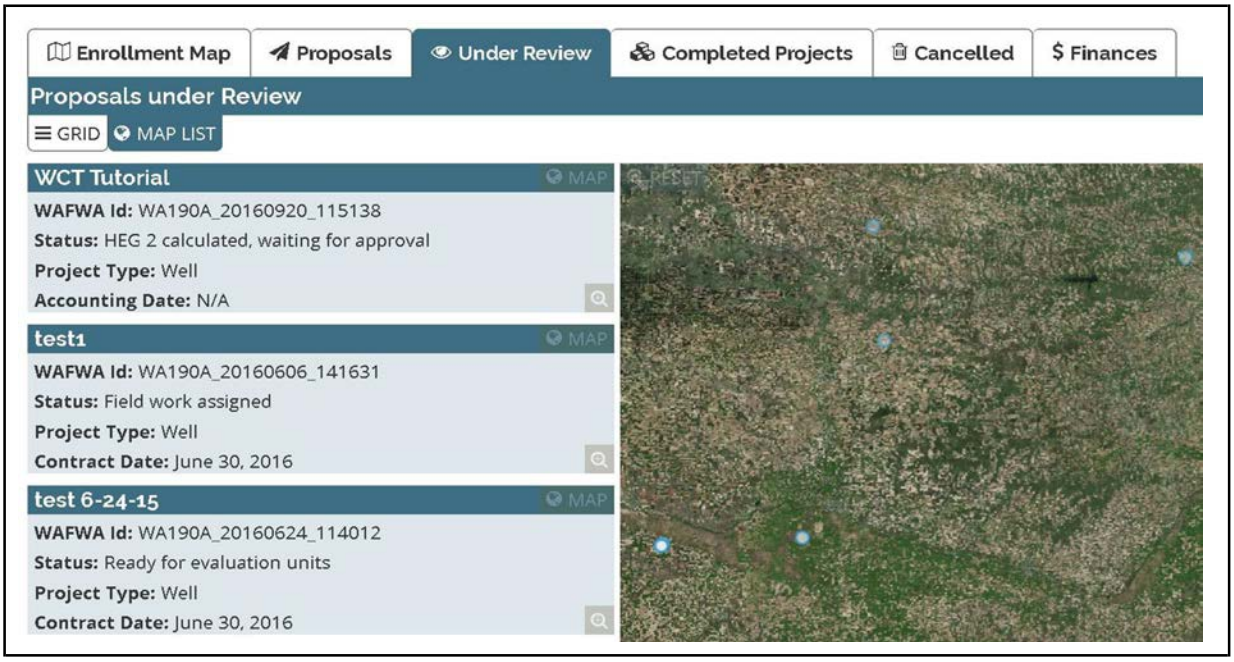

Figure 17. View of projects listed in "Under Review" tab for the hypothetical WAFWA Test company.

The line-by-line ecoregion ledgers that track every credit and debit, show which projects are associated with which conservation sites, and provide a running balance of that conservation sites available credit are available by ecoregion in the WCT app through the Ledger tab. A subset of this ledger is shown in Figure 18. Within the ledgers, the entry date references the date the action was taken, the WAFWA ID is the unique project identification code, project name is the name of the project and the CHAT columns identify where the project occurred. The Charge Type column identifies the type of action taken. Entries with a "2014-annual impact" signify these impacts were made in 2014, and this is the latest annual re-application of that impact. A Final Impact entry indicates the debits of units for a new project. Two other charge types not visible in this subset are "Expired Credits" that are entered on July 31 of each year and cancel out any remaining credit balance for conservation properties. On August 1st of each year the ledger has a series of "Conservation Credit" entries that replenish the ledger with the conservation credits from each property as measured that spring. The Conservation offset properties have WAFWA IDs that begin with CZ (for Conservation Zone) and then a unique number associated with each property. For each ledger transaction line, the debits or credits for that project are associated with a specific conservation property as indicated in the Offset Site column of the table. The last column in the table is the Site Balance, which is a running balance of that conservation site's annual available credits. When the impact debits are subtracted from the credits generated within each ecoregion it can be seen that the mixed grass region has the most development activity, the most conservation effort, and largest remaining balance of conservation credits, though all regions have a positive balance (Figure 19).

Conservation Site Ledgers

Clicking on the site's ID will take you to its summary page where site specific information may be accessed.

These lists may be sorted by clicking on any column heading.

MIXED GRASS | SHORT GRASS | SAND SAGEBRUSH | SHINNERY OAK

Mixed Grass Prairie Ecoregion

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Date	WAFWA ID	Name	CHAT	Charge Type	Credits	Debits	Offset	Balance
Oct 6, 2018	VI187A_20150203_183102	Keough #2-34	1	2014 Annual Impact	0.00	-36.26	CZ063	1,210.20
Oct 3, 2018	EO063A_20180927_144530	Holloway 22 #3H	2	Final Impact	0.00	-1.15	CZ063	1,316.17
Oct 3, 2018	EO063A_20180927_145442	Brown 18 #3H/#4H	2	Final Impact	0.00	-4.32	CZ063	1,311.85
Oct 3, 2018	ME110A_20170623_074831	Barton tootie 4445H	2	2014 Annual Impact	0.00	-0.26	CZ065	0.05
Oct 3, 2018	ME110A_20170623_093738	McLain 116 1HC	4	2014 Annual Impact	0.00	-2.76	CZ037	5,609.75
Oct 2, 2018	AP005A_20140514_011018	Begert 38 #3H	2	2014 Annual Impact	0.00	-18.07	CZ063	1,428.30
Oct 2, 2018	AP005A_20140528_012257	Thoral 24-15-26 1H	1	2014 Annual Impact	0.00	0.00	CZ065	0.31

Figure 18. Subset of the line-item ledger for the Mixed Grass Ecoregion where the habitat unit credits and debits for each project and conservation site are tracked. For each impact, the region, CHAT category, impact units, and offset site associated with it are shown.

2018 ledger units	credits	debits	balance
Mixedgrass Prairie	55,380	17,333	38,047
Sand Sagebrush Prairie	30,765	689	30,076
Shinnery Oak Prairie	7,637	1,768	5,869
Shortgrass Prairie	7,377	634	6,743
Rangewide	101,159	20,425	80,734

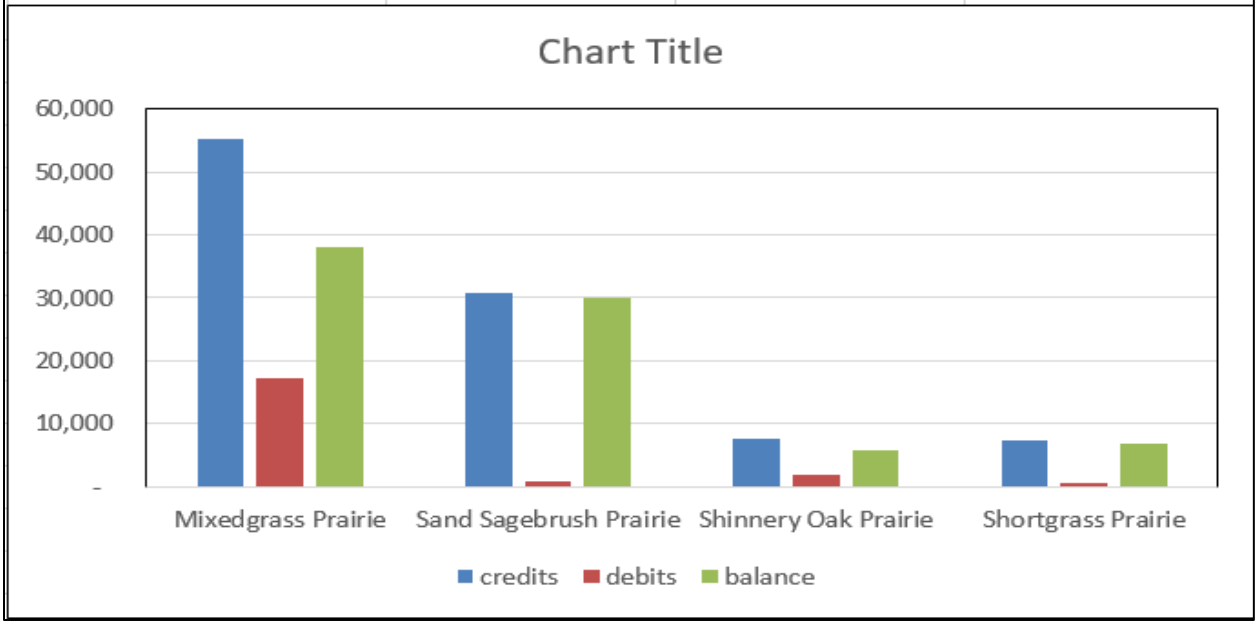

Figure 19. Summary of the total credits, debits, and balance of habitat units remaining in each ecoregion. The mixed grass region has had many more impact units debited, but all ecoregions maintain a positive balance of habitat units.

REPORTING UNITS AND DEVELOPMENT LEVEL THRESHOLDS

Within the RWP, the maximum recommended development level within reporting units was established to define acceptable limits of development related impacts within focal areas and connectivity zones. A development proportion threshold of 30% was established for focal areas, and a threshold of 60% was established for connectivity zones. These thresholds are defined as a percentage of the total reporting unit area that is covered by impact buffers around existing infrastructure. This area of impact is calculated twice a year (July and January) and includes impact buffers around the latest download of vertical structure data, the latest IHS active well data, new RWP wells, tank batteries, and all known roads and electrical distribution/transmission lines as updated and represented within the SGP CHAT website. The totals of these impact buffers are then divided by the reporting unit area to identify the percentage of impact. For RWP participants, if a proposed project is within a reporting unit that is over the impact threshold, impact reclamations must be done to account for any new impacts of the proposed project (no net increase in impacted acres) before that project can be mitigated and constructed.

Each reporting unit has a unique ID number associated with it so that they can be related back to tables conveying the percent of impact within each unit. Appendix D and E show the percentages of impact within each reporting unit in focal areas and the reporting units of connectivity zones respectively. The percentages of impact based on the January 2019 assessment are presented graphically in Figures 21-24 to help illustrate the areas that are either above, below, or approaching the threshold. There are currently eight focal areas reporting units over the 30% threshold, five in the sand sagebrush, two in the Mixed Grass, and one in the Shinnery Oak. The highest impacted focal area is calculated at 42% (unit 14 in the Mixed Grass) followed by one unit with 37.7% impact (unit 8 in the Shinnery Oak). Unit 14 is an anomaly in that it is only nine square miles after it was separated from its larger unit when the units were being delineated. Due to its small size, the primary road running through it and the existing wells, it has been over the 30% threshold since it was created. Focal Area unit 8 was 23% impacted from 2015-2017, but a wind farm was constructed in and around that unit, increasing its impact proportion by 15%. There are six focal areas that are near the threshold, with between 25% and 30% impact where future development should be cautioned to avoid pushing these units over the threshold. There are no connectivity zone over the 60% threshold, however, unit 106 in the Mixed Grass is 55.5% impacted. After this Connectivity Zone unit, the next highest impacted unit is 38% impacted.

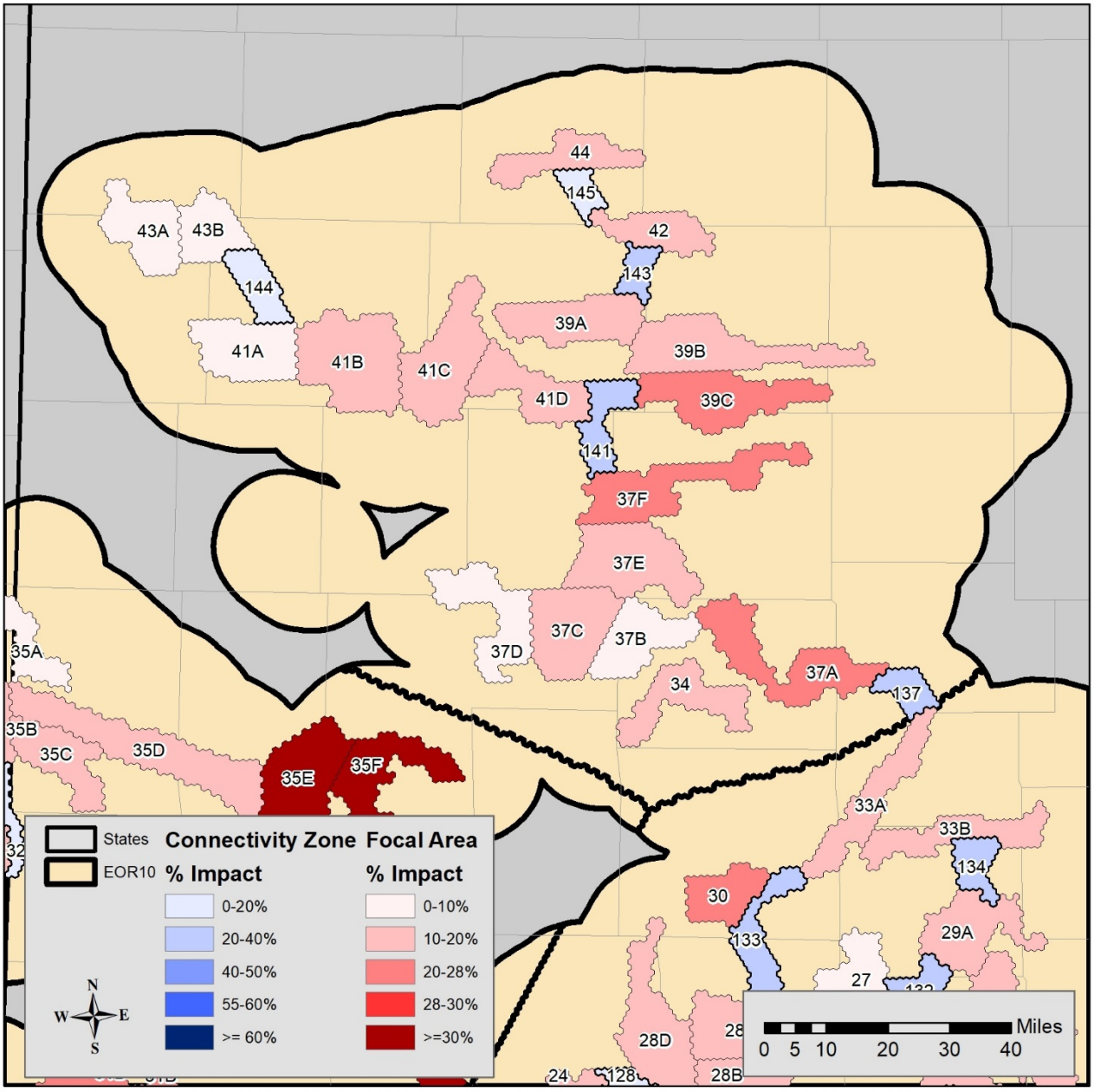

Figure 21. Focal Area and Connectivity Zone impact levels within the shortgrass region. There are no Connectivity Zones or Focal Areas near or over the impact thresholds in this region

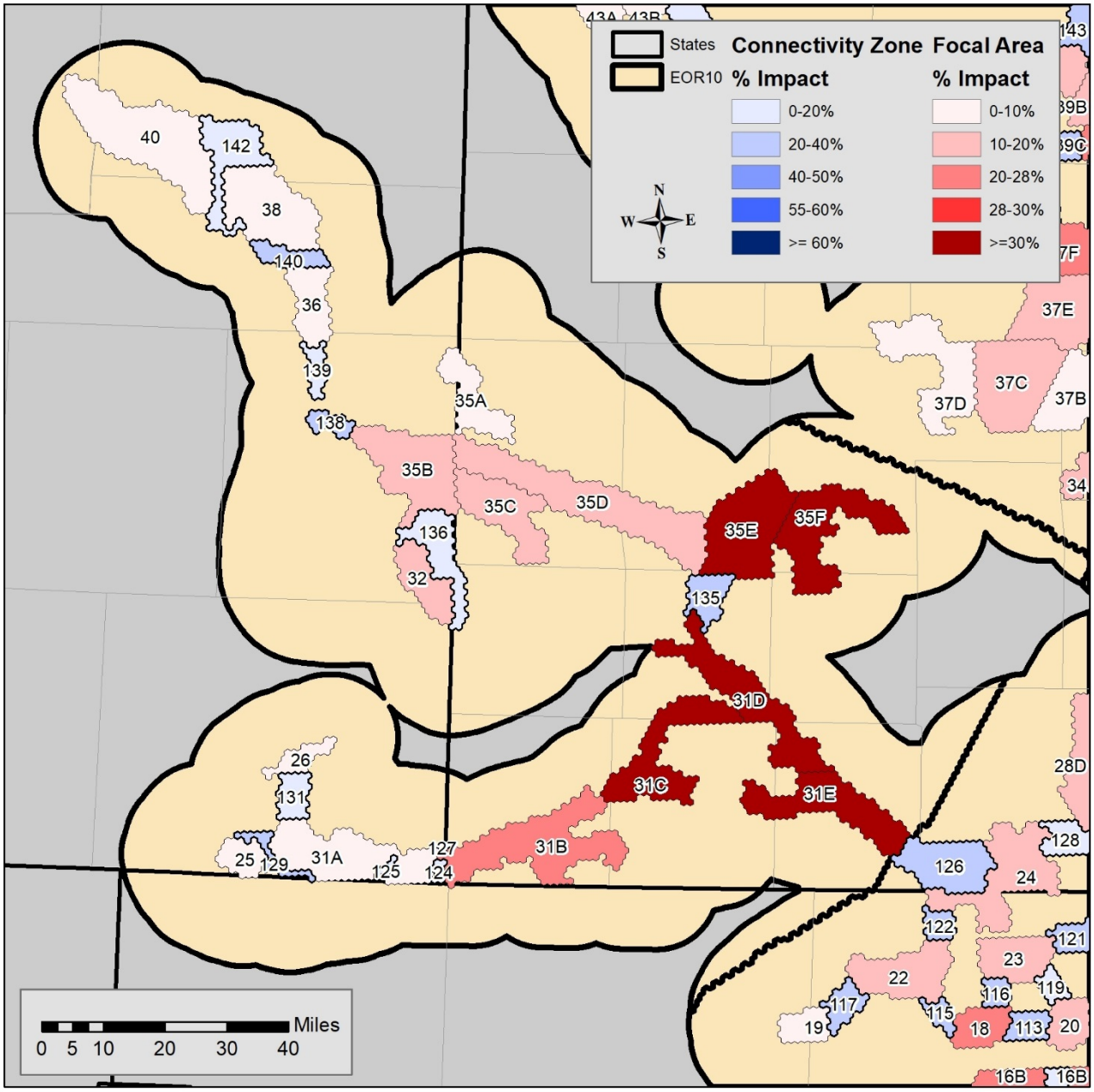

Figure 22. Focal Area and Connectivity Zone impact levels within the sand sagebrush region. There are no Connectivity Zones close to the impact threshold, and five Focal Area units over the threshold in this region.

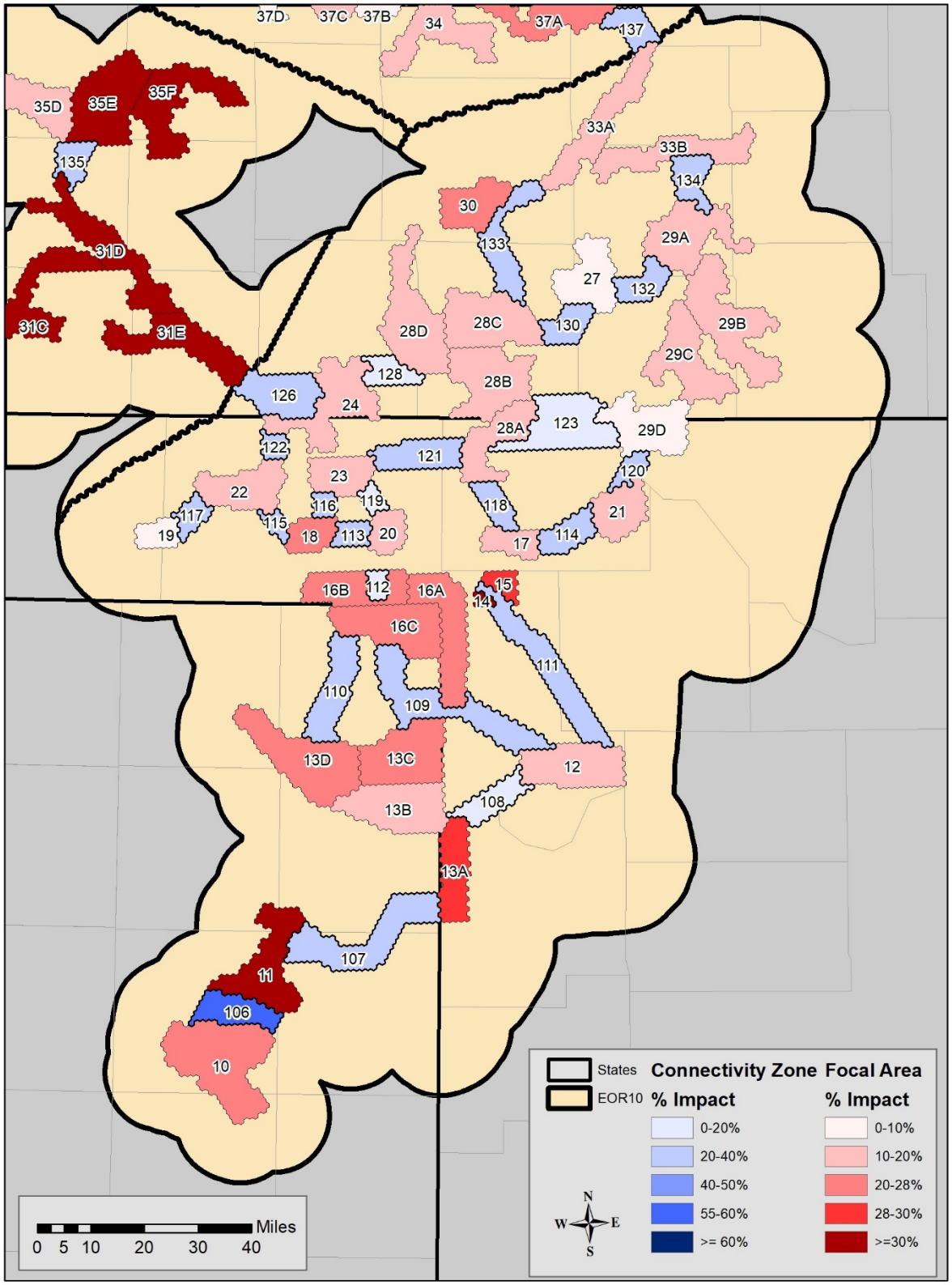

Figure 23. Focal Area and Connectivity Zone impact levels within the mixed grass region. There is one Connectivity Zone close to the impact threshold. Additionally, there are two Focal Area units close to the threshold and two Focal Area units over the threshold in this region.

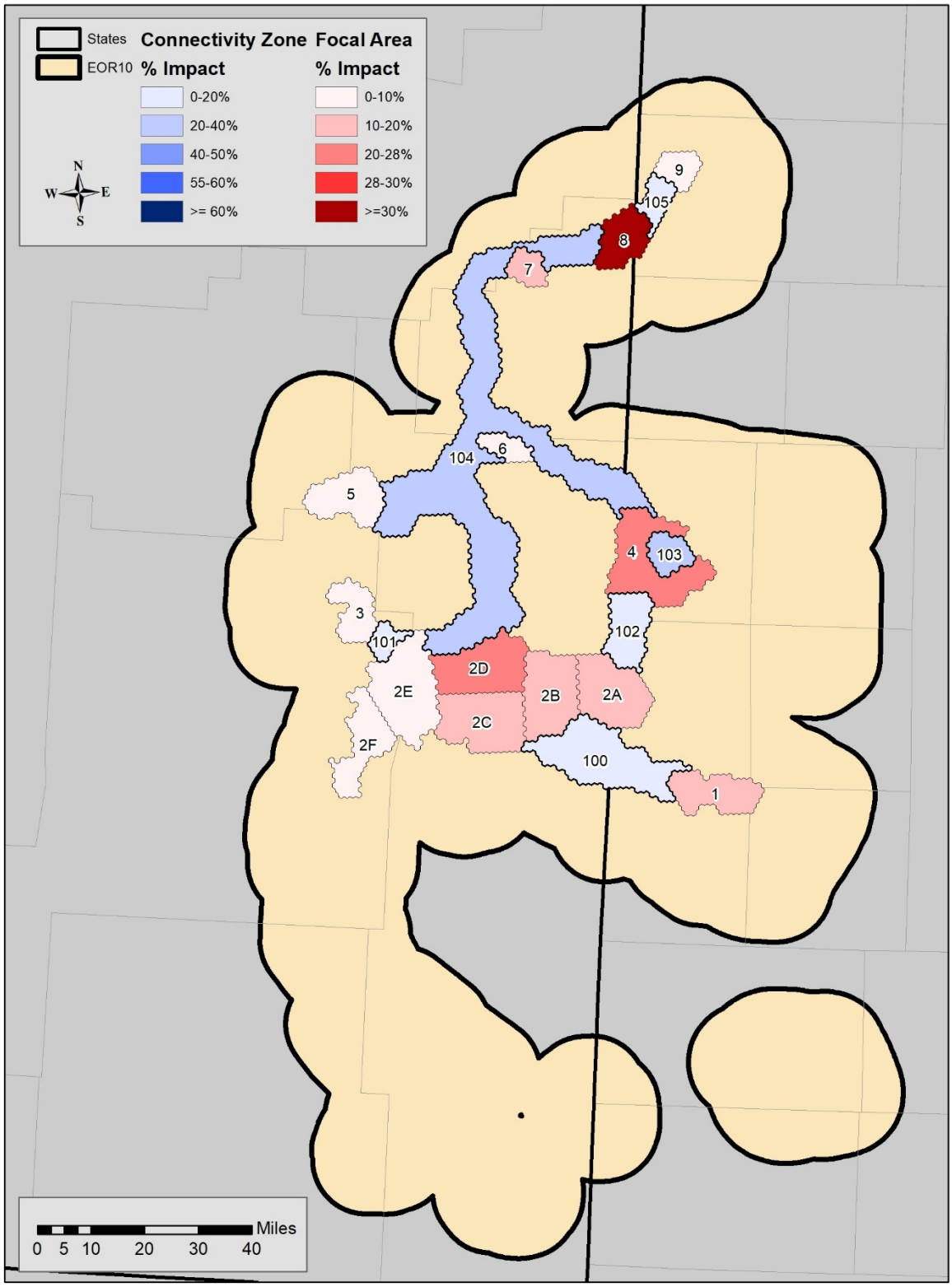

Figure 24. Focal Area and Connectivity Zone impact levels within the Shinnery oak region. There is one Focal Area unit over the threshold in this region.

TRACKING PROGRESS TOWARDS RWP CONSERVATION GOALS

The RWP establishes goals for four basic conservation components. They are:1) LPC breeding population size; 2) habitat restoration acreages; 3) habitat availability; and; 4) permanently conserved acreage. This section will outline the specific goals, the methodology that will be used to assess them, and the frequency at which the goals will be evaluated by the various committees that administer the RWP.

POPULATION GOALS

A committee consisting of academics and the LPC interstate working group developed the RWP population goals for each ecoregion and range-wide (Figure 25). Those goals will be assessed in full after the 10th year of RWP implementation using the average estimated population size over the previous 10-year period. Moving averages better represent the number of birds that can be supported by existing habitat because they smooth variations that are associated solely with environmental conditions. If the 10-year population goals are not achieved, the LPC Initiative Council could take corrective actions by making adaptive management changes. Action may include reallocation of conservation dollars, shifting of priority area locations, and adjustment of offset ratios.

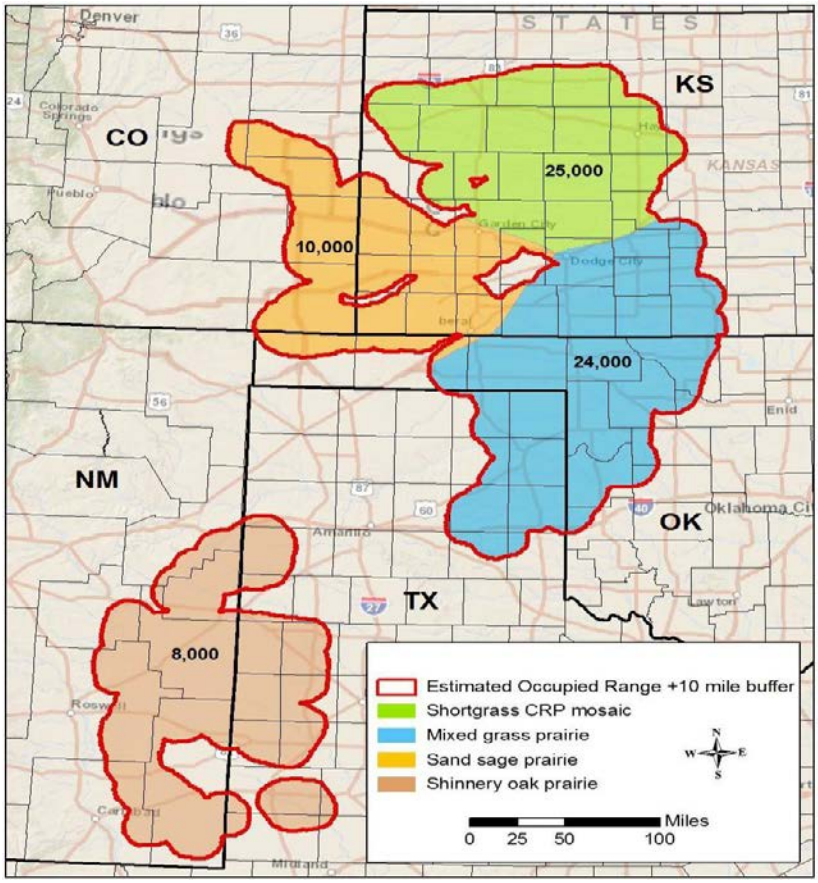

Figure 25. Lesser prairie-chicken population goals established by the WAFWA range-wide plan. The goals will be assessed using population estimates averaged over the previous 10-year period.

The adaptive management section of the RWP also calls for annual evaluations of population size starting after the 2016 breeding season survey. The annual evaluations will assess whether a 3- year moving average of the estimated population size is >50% of the goal at the ecoregion and range-wide

scales. If the 3-year average population size falls below that level in any ecoregion, or range-wide, it will trigger a discussion with the WAFWA Science Sub-committee. The sub- committee will attempt to identify causes of the low population size and will have the opportunity to make recommendations for corrective actions that include such changes as reprioritization of conservation actions and adjustment of mitigation multipliers and ratios.

The LPC population estimates are derived from the annual range-wide aerial survey that was initiated by WAFWA in 2012 (McDonald et al. 2012). The survey utilizes helicopters flying two standard transects within 15 X 15 km grid cells distributed across the four WAFWA ecoregions. A total of 303 grid cells are now being surveyed annually during the LPC breeding season and they are selected using a rotating panel design. Approximately 80% of the grid cells are held constant from the previous year and 20% are dropped and replaced with new cells within the sampling frame. The survey field methodology and analyses are described in detail in McDonald et al (2012,2014) and Nasman et al. (2018). The data from the 2018 aerial survey produced an estimated range- wide population of 38,637 breeding birds which was up approximately 29% from the previous year (Table 44). However, this increase was not statistically significant at the 80% confidence level.

Table 42. Lesser prairie-chicken breeding population estimates for 2018 and 3 and 10-year moving averages for each of WAFWA ecoregions and range-wide (Nasman et al. 2018).

Ecoregion	2018 Population Estimate (90% CIs)	Annual Percent Change	3-Yr Ave. Pop. Size (% of goal)	10-Yr Ave. Pop. Size (% of goal)
Shinnery Oak	5,812 (1,691 – 11,408)	141%[a]	3,692 (46%)	3,220 (40%)
Sand Sagebrush	3,083 (1,184 – 4,742)	133%[b]	1,896 (19%)	1,917 (19%)
Mixed Grass	7,028 (3,314 – 9,367)	0.8%	6,666 (28%)	9,779 (41%)
Shortgrass	22,714 (9,362 – 31,082)	18%	18,019 (72%)	19,587 (78%)
Range-wide	38,637 (20,233 – 49,698)	29%	30,272 (45%)	34,503 (51%)

[a] $P < 0.2$
[b] $P < 0.1$

Data from the 2018 aerial survey indicate that the population increased from the previous year at all scales, but the only statistically significant changes occurred in the Shinnery Oak and Sand Sagebrush Ecoregions (Table 42). Those increases were likely due to good production because of suitable habitat conditions during the previous summer.

Despite the general population increases, the 3-year and 10-year moving averages are still below the population goals in every ecoregion and range-wide (Figure 26, Table 43). The 3-year moving averages are <50% of the population goal for 3 of 4 ecoregions and range-wide. That fact will trigger a discussion with the Science Sub-committee at their next meeting. After that discussion, the sub-committee could make recommendations for corrective actions to the LPC Advisory Committee or they could choose to continue with status quo.

Figure 26. Lesser prairie-chicken population goals established in the RWP and 10-year trends for each ecoregion and range-wide (Garton 2012, Nasman et al. 2018). Confidence intervals (90%) are depicted around the population estimates that were derived from the aerial survey (2012-present).

HABITAT RESTORATION GOALS

The RWP established long-term and annual reporting unit-specific acreage goals for cropland restoration and remediation of existing impacts [Van Pelt et al. 2013, (Appendices E-F)]. Those goals were intended to be assessed using the collective efforts of all the conservation agencies and organizations who are delivering those practices in LPC range. However, assessing the annual and long-term habitat restoration goals in the RWP has proven to be difficult during the first few years of the program. This has been true because WAFWA has not been able acquire consistent annual data from all our conservation partners at the necessary scale.

At the time the RWP was written, the long-term range-wide acreage goals for cropland restoration and remediation were 953,693 and 27,820, respectively. Those values

represented the estimated minimum amount of restoration needed to achieve 70% and 40% suitable habitat in focal areas and connectivity zones, respectively. Addressing tree encroachment into grasslands is also a major restoration need across a large portion of the LPC action area. However, the RWP did not specify acreage goals for brush management because there were no spatial data available at the time that could be used to accurately assess the extent of woody invasion. Data are now available to estimate the extent of the problem and target conservation efforts. Those products will be used along with other current information to establish new and revised habitat goals during the 5-year review of the RWP.

WAFWA has facilitated the completion of 1,242 acres of range planting since inception of the RWP. Those data have not been available every year of RWP implementation from our partners, so it is not possible to assess collective efforts over that entire time frame. Incomplete data continues to be a problem for this practice as WAFWA was not able to acquire range planting acreage from all our conservation partners for this reporting period. The entities that did report acreage completed 1,484 acres of range planting in the LPC action area during 2018 (Table 43, Appendices E-F). However, this value does not include any range planting that occurred through the CRP which is the primary program facilitating the conversion of cropland to permanent grass cover.

WAFWA has also facilitated the completion of 16,798 acres of brush management since inception of the plan. Those data have not been available every year of RWP implementation from our partners, so it is not possible to assess collective efforts over that entire time frame. However, during this reporting period, WAFWA and our partners collectively completed at least 48,029 acres of brush management in the LPC action area (Table 43, Appendices E-F).

Our WAFWA industry partners have also completed 2,008 acres of impact remediation since inception of the RWP. There were no remediation projects during 2018 by our RWP industry partners. However, the bulk of remediation activities occur outside the RWP and are difficult to quantify. In the past, WAFWA has attempted to assess the amount of total remediation that occurred during the previous year using spatial data. It has been determined that there are too many inaccuracies associated with those data to reliably estimate annual remediation acreages. The current spatial data indicate that an estimated 18,120 impact acres will need to be removed for all the reporting units to fall below the impact threshold goals (Appendix D).

Habitat restoration goals provide meaningful targets for the conservation entities to pursue over 5-year intervals. However, it is important to remember that restoration work will never be complete if habitat degradation continues to occur. It will be important to re-establish habitat restoration goals at least every five years as long as that is the case. This will ensure that conservation dollars will continue to be targeted towards the highest priority current restoration needs. Achieving these habitat restoration goals would be a big step in the right direction but it cannot be forgotten that the net change in available LPC habitat is the real measure of progress.

HABITAT AVAILABILITY GOALS

The RWP established goals of 70% and 40% good to high quality LPC habitat for focal area and connectivity zone reporting units, respectively (Van Pelt et al. 2013). The adaptive management section of the RWP specifies that those goals will be assessed after the fifth year of implementation

using results from an occupancy model. WAFWA has already helped to support development of an initial occupancy model in hopes of having the process more refined by the time of the 5-year assessment (McDonald et al. 2013). Shortly after the fifth year of implementation (2019), WAFWA will support the development of a new occupancy model with the most current spatial data. If the results indicate that the established occupancy goals have not been achieved or maintained, the LPCIC could adopt adaptive management changes such as shifting reporting unit boundaries, adjusting mitigation multipliers, and reprioritizing WAFWA-delivery of conservation practices. The result from the occupancy modelling effort will be presented in the 5-year review and utilized to revise the habitat goals accordingly.

PROGRESS TOWARD PERMANENT CONSERVATION GOALS

The RWP establishes a goal of creating at least one stronghold within each WAFWA ecoregion by the end of the 10th year of RWP implementation (Van Pelt et al. 2013). The adaptive management section of the RWP dictates that progress towards the stronghold goals will be assessed after the 5th full year of implementation (2019). If the LPCIC deems that insufficient progress has been made at that point they can take corrective actions through the adaptive management process laid out in the RWP. Some of the changes that they might consider include an increase to the percentage of mitigation offset units going into permanent conservation and an increased mitigation offset ratio.

A landscape will only be considered as a stronghold if it meets all the criteria listed in the USFWS stronghold white paper (2012) as interpreted by WAFWA. A stronghold must be at least 25,000 acres in size but could be as much as 50,000 acres, if lower quality habitat is interspersed. A stronghold must also contain at least six LPC leks containing six males each, provide verifiable long-term development protection, provide for a full range of LPC habitat needs, and ensure long- term management certainty. The WAFWA permanent mitigation sites and all other qualifying acreages will be considered when assessing progress towards the stronghold goals listed in the RWP.

At the end of 2018, WAFWA had secured 37,616 qualifying acres across the LPC action area (Table 43). Those acres are distributed across the four ecoregions as follows: 1,554 in Shinnery Oak, 2,726 in Mixed Grass, 29,626 in Sand Sagebrush, and 3,710 in Shortgrass. The LPCIWG has also identified 110,551 Non-WAFWA qualifying acres across the LPC action area. The WAFWA ranch in the Sand Sagebrush should qualify as an LPC stronghold by itself because it appears to satisfy all the criteria. No other areas have been critically evaluated relative to the required criteria, but it is likely that at least one additional stronghold already exists within the Shinnery Oak simply due to the large amount of qualifying acreage that has been identified within CHAT 1 (Table 43). The LPCIWG will review all the qualifying stronghold properties during the 5-year review of the RWP and determine where strongholds currently exist within the LPC range. They will also identify priority areas within each ecoregion for future permanent conservation efforts.

Table 43. Acreage summary of WAFWA permanent conservation agreements and other Non-WAFWA qualifying stronghold properties, 2018.

Ecoregion – Location	WAFWA Permanent Conservation Agreements	Non-WAFWA Qualifying Stronghold Acreage[a]	Total Qualifying Stronghold Acreage
Shinnery Oak			
CHAT 1	1,058	55,197	56,255
CHAT 2	391	1,427	1,818
CHAT 3	105	16,881	16,986
CHAT 4	0	0	0
Total	*1,554*	*73,505*	*75,059*
Mixed Grass			
CHAT 1	2,615	15,552	18,168
CHAT 2	0	0	0
CHAT 3	0	1,399	1,399
CHAT 4	110	71	181
Total	*2,726*	*17,022*	*19,748*
Sand Sagebrush			
CHAT 1	29,502	4,180	33,682
CHAT 2	0	0	0
CHAT 3	124	0	124
CHAT 4	0	0	0
Total	*29,626*	*4,180*	*33,806*
Shortgrass			
CHAT 1	3,710	15,845	19,536
CHAT 2	0	0	0
CHAT 3	0	0	0
CHAT 4	0	0	0
Total	*3,710*	*15,845*	*19,536*
Range-wide			
CHAT 1	36,885	90,774	127,641
CHAT 2	391	1,427	1,818
CHAT 3	229	18,280	18,509
CHAT 4	110	71	181
Grand Total	**37,616**	***110,551***	***148,149***

[a]These acreages are summed across sites that provide long-term protection from development and provide management certainty. The tracts meet the level of certainty required by the USFWS stronghold white paper (2012) as interpreted by WAFWA.

FINANCIAL SUMMARY

The Range Wide Business Plan utilizes a defined investment strategy that is expected to achieve or exceed the conservative investment earnings, projecting a 'real' rate of return over the long term of 4%. The investment asset allocation targets 50% Equities, 10% Alternatives/ Real Assets, and 40% Fixed Income. Enrollment and impact fees are separated into two different accounts. When companies are invoiced, revenue is recognized by WAFWA. Upon receipt, fee revenues are split

accordingly; 83.5% are allocated to a conservation trust for conservation offsets and 16.5% are deposited into an administration account for operation related expenses, such as salaries, aerial surveys GIS support and other program needs. These percentage allocations were updated on January 1, 2018 from 87.5% for conservation and 12.5% going to administration. When permanent easements are purchased, individual endowments are established, and individual investment strategies are defined and monitored to achieve conservation management perpetuity payments. WAFWA has an outside audit firm conduct a consolidated audit annually and posts three years of 990s on its website, https://www.wafwa.org/about_us/by_laws_irs_990s/.

The annual real rate of return is calculated by taking the rate of return and subtracting the inflation average rate. The rate represents the rate of return one would achieve if they were to sell the investments at this point in time. The conservation endowment balance is $26,823,788 with an average annual rate of return for the 12-month reporting period (January 1-December 31, 2018) was -6.07% and an average annual real rate of return of, -7.97%. The conservation endowment was implemented in February 1, 2015 and since inception has a real rate of return of 2.70%.

The TPWD Permanent Trust has a December 31, 2018 balance of $326,862 and current year return of -1.75% and a real rate of return of -3.65%. WAFWA Ranch's Trust was effective August 18, 2016. The partially funded account reflects a balance of $5,603,421; yearend rate of return of -4.28%, real rate of return of -6.18% and a return of .63% since inception. TNH Permanent Easement endowment was effective February 23, 2017 and has a balance of $1,225,425. The yearend rate of return of -1.46% and real rate of return of -3.36%. Harter-Ladwig and our Joint Fund Permanent Endowments were instituted January 11, 2018 and have not been invested long enough to reflect an annual rate of return, however have balances respectively, of $1,155,558 and $1,282,194. As mentioned above, the expected 'real' rate of return over the long term is 4% and due to market conditions there will be years of up markets and down-market trends. The investment assets are closely monitored, and investment adjustment decisions are made to take advantage of up market years and limit negative impacts during down market years.

Since the inception of the RWP through December 2017, WAFWA invoiced $66.1 million in enrollment and impact fees and collected $64.3 million of which 87.5% or $56.2 million was restricted for conservation efforts. Effective January 2018 the allocation percentage changed to 83.5% and for calendar year 2018, we added additional $127,476 for conservation. As of December 31, 2018, $60,870 are in account receivables and $1.7 million has been written off to bad debt.

During the current enrollment period, conservation income resulted in $127,476 of enrollment and impact fees. No new landowner contracts, permanent easements, or land purchase were made however, we paid $1.8 million to landowners for their annual management plans and $447,914 for permanent management plans.

The total number of landowner term contracts remains at fifteen. In addition to the term contracts, each representing ten-year terms with the last contract ending in our fiscal year 2027, WAFWA 's permanent conservation habitats total seven, including an easement in Texas in the Shinnery Oak, easements in Kansas in the Mixed Grass and Short Grass and WAFWA's Kansas ranch in the Sand Sagebrush ecoregion. The landowner contracts and permanent easement reflect conservation efforts within the four designated LPC ecoregions. (Table 44) Average annual habitat replacement costs per acre are utilized in calculating the mitigation fees charged to industry and in the payments

to secure offset habitats. The calculation is based on total expenditures to landowners in the current reporting period including the actual cost of acquiring permanent conservation and spread over twenty-five years, even though the actual payment to the landowner is made during year one. This is done to align with the way the industry fees are calculated and therefore a more stabilized value of what is paid to landowners for offsets in comparison to what is charged to industry for impacts. Even though some of the payments for offsets are higher than what is currently charged to industry, as WAFWA acquires more permanent conservation, you will see the future cost of the landowner offsets decrease.

Table 44. Mitigation per unit cost by ecoregion 1/1-12/31, 2018		
	Industry Impacts	Landowner / Offsets
Mixed Grass	49.35	23.72
Short Grass	30.12	18.20
Shinnery Oak	32.65	34.36
Sand Sagebrush	20.12	4.23

There are four distinctive ecoregions in the Lesser Prairie-Chicken habitat that include mixed grass, short grass, and shinnery oak and sand sagebrush. The decision regarding ecoregion fund allocation is based upon current conservation habitats that are experiencing impacts. When contracts and permanent easements are acquired, payments are issued for a onetime incentive payment; an annual rangeland management payment each October; and if applicable, habitat restoration upon completion. The incentive and rangeland management payments within term contracts and permanent easements reflect $2.3 million in fee revenues (Table 45 and 46) that were used for conservation offsets in this reporting period and $8.9 million since the plan's inception (Table 45).

Table 45. Term Contract Payments by Ecoregion: 1/1/2018 - 12/31/2018					
	Mixed Grass	Short Grass	Shinnery Oak	Sand Sagebrush	TOTAL
Incentive Payments	$ -	$ -	$ -	$ -	$ -
Rangeland Management Plan	$ 1,289,461	$ 78,171	$ 78,878	$ 126,741	$1,573,251
Habitat Restoration Payments	$ 23,573	$ 55,668	$ 234,741	$ -	$ 313,981
TOTAL	$ 1,313,033	$ 133,839	$ 313,619	$ 126,741	$ 1,887,232

Table 46. Permanent Easement Payments by Ecoregion: 1/1/2018 - 12/31/2018					
	Mixed Grass	Short Grass	Shinnery Oak	Sand Sagebrush	TOTAL
Incentive Payments	$ -	$ -	$ -	$ -	$ -

Rangeland Management Plan	$ 64,323	$ 42,414	$ 11,988	$ 329,189	$ 447,914
Habitat Restoration Payments	$ -	$ -	$ -	$ -	$ -
TOTAL	$ 64,323	$ 42,414	$ 11,988	$ 329,189	$ 447,914

Current ecoregion impacts (Table 47) reflects $8.9 million in fee revenues that were used for conservation offsets for both landowner contracts and permanent conservation since the inception of the RWP in 2014. Table 43 summarizes the percentage of dollars spent in each payment category by ecoregion to the total dollars within that payment category. For instance, of the $596,375 of landowner incentive payments issued, 47% of the funds were allocated to Mixed Grass whereas 9% of the funds were allocated to the Short Grass ecoregion. Overall, 24% of the total $8.9 million in payments are going toward habitat restoration.

Table 47. Contract and Permanent Easement payments by Ecoregion and % to total since plan inception

	Mixed Grass	% to Total	**Short Grass**	% to Total	**Shinnery Oak**	% to Total	**Sand Sage**	% to Total	**TOTAL**
Landowner Incentive Payments **includes contract and permanent*	$ 279,393	47%	$ 51,620	9%	$ 66,640	11%	$ 198,723	33%	**$ 596,375**
Landowner Contract Restoration Payments	$ 431,777	21%	$ 68,413	3%	$ 1,609,230	76%	$ -	0%	**$ 2,109,420**
Landowner Management Plan Payments	$ 4,185,547	80%	$250,752	5%	$ 325,594	6%	$ 493,183	9%	**$ 5,255,075**
Landowner Permanent Exp	$ 130,854	14%	$ 87,017	9%	$ 41,277	4%	$ 680,655	72%	**$ 939,803**
Landowner Long Term Restoration Exp	$ -	0%	$ -	0%	$ 15,646	0%	$ -	0%	**$ 15,646**
TOTAL CONSERVATION EXPENSES	**$ 5,027,570**		**$457,801**		**$ 2,058,387**		**$1,372,561**		**$ 8,916,319**

RESPONSIBLE PARTIES FOR RWP ADMINISTRATION

WAFWA was founded in 1922. It currently consists of 24-member states and provinces that have primary responsibility and authority for protecting and managing fish and wildlife in the western United States and Canada. The 19-member states encompass over 2.5 million square miles. The chief executive officer of each fish and wildlife agency is on the Board of Directors of three non- profit business entities, the Western Association of Fish and Wildlife Agencies, its fund-raising arm, the Foundation for Western Fish and Wildlife (FWFW) and the Species Restoration Foundation (SRF).

The WAFWA Board of Directors established the LPCIC in October 2013 when the RWP was endorsed by the USFWS. The directors of the state fish and wildlife agencies within the LPC range are members of WAFWA, FWFW, and SRF Boards of Directors and comprise the LPCIC, along with a member of the Executive Committee, appointed by the President, and representing an agency with extensive experience with ESA issues as it pertains to private lands. This relationship ensures decision-making roles regarding how and where funds are spent for the state agencies, as well as coordination with other WAFWA/SRF conservation efforts.

The LPCIC established a Lesser Prairie-Chicken Advisory Committee (LPCAC) and associated working groups and maintained the Interstate Working Group (IWG). The LPCAC and IWG are strictly advisory in nature and provide recommendations to the LPCIC for final approval through the adaptive management process. The intent of these groups is to support the RWP, promote effective communication between the parties, resolve disputes, revise cost structures, and make adaptive management recommendations. The LPCAC is supported by: (1) Fee Structure Sub-committee and (2) Science Sub-committee.

COMMITTEE COMPOSITION & RESPONSIBILITIES

Committee composition and responsibilities are included in previous annual reports. Please refer to those reports for further details on RWP related committees.

COMMITTEE MEETINGS

The reporting period for committee activities for this report is January 1, 2018 through December 31, 2018. Appendix G provides additional information about committee and sub-committee meetings.

During the reporting period, the LPC Program Manager, with assistance of WAFWA LPC program staff, coordinated conference calls and in- person meetings of the various committees and sub-committees described in the RWP.

Interstate Working Group

During 2018, the Interstate Working Group had three in-person meetings—one in conjunction with the LPC Conservation Partners Forum, one in conjunction with the WAFWA Annual Meeting and another to discuss and make progress on the 5-year Review. Multiple conference calls were also convened throughout the year.

Advisory Committee

The Advisory Committee met three times during this reporting period via conference call. The LPCAC also held one face-to-face meeting in Oklahoma City, Oklahoma. Appendix G is the report

from the LPCAC for 2018.

Fee Structure Sub-Committee
During the reporting year Fee Structure Sub-Committee met three times via conference call. There was also a vote conducted by email relative to the administrative fee percentage change.

Science Sub-Committee
The Science Sub-Committee met two times via conference call.

STAFFING

There were no staffing changes during 2018. Staffing details are outlined in previous annual reports. Please refer to those reports for more detail on staffing related to the RWP.

RESEARCH PRIORITIES

The RWP identifies the LPC Sub-Committee as the entity to identify potential research needs and monitor for new and emerging science.

Current Research Projects:
Developing best practices for using drones to monitor lek-mating grouse

Linking parasite loads, social networks, and coloration in lesser prairie-chickens

Proximate and ultimate perspectives of foot-stomping behavior in prairie-chickens

Parasitological survey of lesser prairie-chickens in Texas and New Mexico

Population Biology and Landscape Ecology of the Lesser Prairie-Chicken (Oklahoma)

Response of Lesser Prairie-Chickens to Patch Burn Grazing in the Red Hills, Kansas (USDA Lesser Prairie-Chicken Initiative).

A multi-species approach to managing the effects of weather and land cover on population demography of upland game birds (includes lesser prairie-chickens; USDA Lesser Prairie-Chicken Initiative, SCCFWRU, KSCFWRU)

Use of Grazing Management and Prescribed Fire for Conservation of Lesser Prairie-Chickens

Habitat Selection by Lesser Prairie-Chickens During Dispersal (USDA Lesser Prairie-Chicken Initiative, KSCFWRU)

Strategic Application of Management Actions to Benefit Lesser Prairie-Chickens (KSCFWRU, USDA Lesser Prairie-Chicken Initiative)

Spatial and Temporal Variation in Lesser Prairie-Chicken Morphology (KSCFWRU)
Testing Predications of the Hotspot Hypothesis for Placement of Lesser Prairie-Chicken Leks (KSCFWRU)

Recently Published Research:

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APPENDIX A. CONSERVATION ACREAGE WITHIN EACH LPC CHAT 1 (FOCAL AREA) REPORTING UNIT, 2018.

Ecoregion – reporting unit	Total Area	WAFWA Term Contracts	WAFWA Non-Offset Agreements	Conservation Reserve Program[a]	NRCS Programs[b]	USFWS Partners for Fis	State Wildlife Agency Private Land Programs[c]	New Mexico Ranching CCA/CCAA	Texas RanchingCCAA	Oklahoma Ranching CCAA	WAFWA Permanent Conservation Agreements	Other Qualifying Stronghold Acres[d]	Non-Qualifying Conservation Acreage[e]	Total Conservation Acreage
Shinnery Oak														
1	69,760	13,435	933	1,591	0	0	0	ND	ND	0	1,058	1,869	10,211	29,097
2A	96,000	0	0	18,352	1,434	0	0	ND	ND	0	0	3,540	12,508	35,834
2B	95,360	316	0	4,809	12,762	0	0	ND	ND	0	0	446	9,043	27,376
2C	106,880	0	0	0	5,706	0	0	ND	ND	0	0	0	9,130	14,836
2D	100,480	0	0	257	20,468	0	0	ND	ND	0	0	0	24,483	45,208
2E	123,521	0	0	0	7,309	0	0	ND	ND	0	0	4,208	898	12,415
2F	74,240	0	0	0	871	0	0	ND	ND	0	0	40,701	2,712	44,284
3	48,000	0	0	0	0	0	0	ND	ND	0	0	0	0	0
4	122,241	310	0	50,218	4,544	0	0	ND	ND	0	0	4,432	1	59,505
5	72,320	0	0	0	12,934	0	0	ND	ND	0	0	0	2,392	15,326
6	25,600	0	0	98	1,532	0	0	ND	ND	0	0	0	0	1,630
7	26,880	0	0	5,362	0	0	0	ND	ND	0	0	0	0	5,362
8	55,680	0	0	13,270	0	0	0	ND	ND	0	0	0	0	13,270
9	29,440	0	0	12,348	1,580	0	0	ND	ND	0	0	0	0	13,928
Total	1,046,405	*14,061*	*933*	*106,304*	*69,142*	*0*	*0*	*345,000*	*36,495*	*0*	*1,058*	*55,197*	*71,378*	699,568
Mixed Grass														
10	160,001	26,264	0	451	0	0	0	0	ND	0	0	0	0	26,715
11	104,960	0	0	1,239	4,986	0	0	0	ND	0	0	0	0	6,225
12	93,440	0	0	964	512	0	3,008	0	ND	46,612	0	0	2,213	53,309
13A	64,000	0	0	1,446	0	0	0	0	ND	999	0	0	0	2,445
13B	100,480	0	0	328	0	0	0	0	ND	0	0	0	2,351	2,679
13C	102,400	0	0	1,201	1,842	0	0	0	ND	0	0	0	0	3,043
13D	129,921	0	0	5,406	1,535	0	0	0	ND	0	0	0	0	6,941
14	5,760	0	0	1,309	0	0	0	0	ND	0	0	0	0	1,309
15	17,920	0	0	1,818	0	0	0	0	ND	0	0	0	0	1,818
16A	96,000	0	0	8,157	0	0	54	0	ND	7,376	0	0	0	15,587
16B	64,640	0	0	6,784	0	0	0	0	ND	12,350	0	0	0	19,134
16C	100,480	0	0	7,731	247	0	0	0	ND	0	0	0	0	7,978
17	33,280	0	0	821	2,202	0	0	0	ND	240	0	0	0	3,263
18	34,560	0	0	2,125	0	0	0	0	ND	458	0	0	0	2,583
19	26,240	0	0	835	0	0	0	0	ND	12,279	0	0	0	13,114
20	32,640	0	0	543	153	0	0	0	ND	1,380	0	0	0	2,076
21	56,320	625	0	1,790	0	0	0	0	ND	11,309	0	0	3,008	16,732
22	73,600	0	0	6,836	913	0	0	0	ND	1,292	0	15,552	10,321	34,914
23	51,200	0	0	1,542	16,691	0	0	0	ND	23,499	0	0	0	41,732
24	104,960	1,217	0	4,822	0	0	0	0	ND	803	0	0	0	6,842
27	74,880	0	0	4,606	0	0	0	0	ND	0	0	0	0	4,606
28A	70,400	0	0	6,542	0	0	0	0	ND	3,009	0	0	0	9,551
28B	103,040	0	0	7,652	111	0	0	0	ND	136	0	0	0	7,899
28C	104,320	0	0	2,346	8,007	0	0	0	ND	0	0	0	1,740	12,093
28D	120,961	0	0	9,495	1,626	0	0	0	ND	0	0	0	86	11,207
29A	97,920	25	0	9,652	764	0	0	0	ND	0	0	0	0	10,441
29B	129,281	26,169	1,072	243	1,082	1,093	0	0	ND	0	0	0	0	29,659
29C	96,000	376	0	2,743	897	0	0	0	ND	0	0	0	0	4,016
29D	87,680	0	0	2,204	38	0	0	0	ND	24,201	0	0	3,749	30,192
30	60,800	0	0	6,267	158	0	65	0	ND	0	0	0	0	6,490
33A	92,800	172	0	2,999	0	0	0	0	ND	0	2,615	0	0	5,786
33B	85,120	0	0	6,266	0	0	0	0	ND	0	0	0	5,467	11,733
Total	2,576,012	*55,759*	*1,072*	*117,161*	*41,764*	1,093	3,127	*0*	*241,985*	145,943	*2,615*	15,552	28,935	655,006
Sand Sagebrush														
25	25,600	0	0	430	0	0	0	0	0	0	0	0	0	430
26	20,480	0	0	2,353	0	0	0	0	0	0	0	0	0	2,353
31A	111,361	0	0	6,906	0	0	0	0	0	0	0	0	9,295	16,201
31B	141,441	0	0	14,353	0	0	0	0	0	0	0	0	0	14,353
31C	96,640	0	0	14,966	1,529	0	0	0	0	0	0	0	0	16,495
31D	110,721	0	0	14,198	0	0	0	0	0	0	0	0	0	14,198
31E	97,920	0	0	4,062	1,215	0	0	0	0	0	0	0	0	5,277
32	46,720	0	0	10,831	0	0	0	0	0	0	0	0	0	10,831
35A	51,200	0	0	16,894	0	0	0	0	0	0	0	0	0	16,894
35B	107,520	0	0	11,692	0	0	0	0	0	0	0	4,180	815	16,687
35C	78,080	0	0	25,202	0	0	0	0	0	0	1,612	0	0	26,814
35D	165,761	8,515	0	4,226	0	0	0	0	0	0	27,890	0	175	40,806
35E	115,841	4,167	0	9,400	0	0	0	0	0	0	0	0	0	13,567
35F	108,160	0	0	1,150	0	0	0	0	0	0	0	0	2,790	3,940
36	45,440	0	0	3,065	0	0	0	0	0	0	0	0	0	3,065
38	101,120	0	0	6,711	2,756	0	0	0	0	0	0	0	0	9,467
40	159,361	0	0	4,360	33,588	0	0	0	0	0	0	0	31,124	69,072
Total	1,583,367	12,683	0	*150,799*	*39,089*	*0*	*0*	*0*	*0*	*0*	29,502	4,180	44,198	280,451
Shortgrass														
34	86,400	0	0	8,784	72	0	404	0	0	0	0	0	112	9,372
37A	129,921	0	0	18,613	899	0	0	0	0	0	0	0	0	19,512
37B	82,560	0	0	10,803	494	0	0	0	0	0	0	0	0	11,297
37C	112,001	0	0	17,347	0	0	0	0	0	0	0	0	1,057	18,404
37D	100,480	0	0	11,205	0	0	0	0	0	0	0	0	501	11,706
37E	126,721	0	0	28,298	0	0	0	0	0	0	0	0	0	28,298
37F	129,281	0	0	12,354	0	0	0	0	0	0	0	0	0	12,354
39A	101,120	0	0	3,027	1,461	0	0	0	0	0	0	0	0	4,488
39B	139,521	0	0	9,079	88	0	0	0	0	0	0	0	946	10,113
39C	121,601	0	0	8,796	2,262	0	0	0	0	0	0	0	2,455	13,513
41A	96,640	0	0	5,904	1,451	0	0	0	0	0	0	0	0	7,355
41B	149,761	0	0	8,328	0	0	0	0	0	0	690	15,826	965	25,809
41C	127,361	4,270	0	9,194	0	0	0	0	0	0	3,002	19	0	16,485
41D	86,400	0	0	8,916	4,953	0	0	0	0	0	0	0	0	13,869
42	62,720	0	0	2,660	1,459	0	0	0	0	0	0	0	455	4,574
43A	84,480	1,109	0	9,146	0	0	0	0	0	0	0	0	1,492	11,747
43B	62,720	0	0	2,562	0	0	0	0	0	0	0	0	0	2,562
44	72,320	0	0	1,780	0	0	0	0	0	0	0	0	0	1,780
Total	1,872,009	5,389	0	*176,798*	*13,140*	*0*	404	*0*	*0*	*0*	3,710	15,845	7,983	223,269
Grand Total	**7,077,792**	**87,892**	**2,004**	**551,062**	**163,135**	**1,093**	**3,531**	**345,000**	**278,480**	**145,943**	**36,885**	**90,774**	**127,641**	**1,833,440**

APPENDIX B. CONSERVATION ACREAGE WITHIN EACH LPC CHAT 2 (CONNECTIVITY ZONE) REPORTING UNIT, 2018.

Ecoregion – reporting unit	Total Area	WAFWA Term Contracts	WAFWA Non-Offset Agreements	Conservation Reserve Program[a]	NRCS Programs[b]	USFWS Partners for Fish & Wildlife[a]	State Wildlife Agency Private Land Programs[a]	New Mexico Ranching CCA/CCAA[c]	Texas Ranching CCAA	Oklahoma Ranching CCAA	WAFWA Permanent Conservation Agreements	Other Qualifying Stronghold Acres[d]	Non-Qualifying Conservation Acreage[e]	Total Conservation Acreage[f]
Shinnery Oak														
100	148,481	0	0	15,196	236	0	0	ND	ND	NA	391	0	424	16,247
101	20,480	0	0	0	0	0	0	ND	ND	NA	0	0	0	0
102	64,000	0	0	18,477	0	0	0	ND	ND	NA	0	1,106	9	19,592
103	33,280	0	0	9,859	0	0	0	ND	ND	NA	0	0	1,025	10,884
104	599,043	0	0	58,457	6,550	0	0	ND	ND	NA	0	321	0	65,328
105	27,520	0	0	13,105	0	0	0	ND	ND	NA	0	0	0	13,105
Total	892,804	*0*	*0*	*115,095*	*6,786*	*0*	*0*	69,778	*17,433*	*NA*	*391*	*1,427*	*1,449*	212,359
Mixed Grass														
106	49,920	538	0	0	0	0	0	0	ND	0	0	0	0	538
107	112,641	0	0	2,661	0	0	0	0	ND	0	0	0	1,694	4,355
108	42,240	0	0	1,363	0	0	0	0	ND	3,571	0	0	0	4,934
109	119,681	0	0	6,839	3,890	0	0	0	ND	4,984	0	0	0	15,713
110	72,320	0	0	3,528	2,267	0	0	0	ND	0	0	0	0	5,795
111	99,840	0	0	8,007	247	0	1,035	0	ND	17,734	0	0	0	27,023
112	13,440	0	0	1,003	0	0	0	0	ND	477	0	0	0	1,480
113	19,840	0	0	1,028	0	0	0	0	ND	0	0	0	0	1,028
114	37,760	0	0	715	1,008	0	0	0	ND	0	0	0	0	1,723
115	12,160	0	0	805	0	0	0	0	ND	544	0	0	0	1,349
116	12,800	0	0	666	0	0	0	0	ND	0	0	0	0	666
117	22,400	0	0	2,185	3,373	0	0	0	ND	242	0	0	0	5,800
118	29,440	0	0	2,551	43	0	0	0	ND	0	0	0	0	2,594
119	12,800	0	0	0	0	0	0	0	ND	8,017	0	0	0	8,017
120	18,560	0	0	485	0	0	0	0	ND	2,280	0	0	79	2,844
121	55,680	0	0	4,396	2,227	0	0	0	ND	2,171	0	0	0	8,794
122	14,720	0	0	2,854	0	0	0	0	ND	0	0	0	0	2,854
123	99,200	0	0	7,699	0	0	0	0	ND	596	0	0	77	8,372
126	69,120	0	0	1,615	317	0	0	0	ND	0	0	0	0	1,932
128	30,080	0	0	3,194	0	0	0	0	ND	0	0	0	0	3,194
130	34,560	0	0	2,687	0	0	0	0	ND	0	0	0	0	2,687
132	35,200	0	0	4,977	63	0	0	0	ND	0	0	0	0	5,040
133	64,640	0	0	1,206	0	0	0	0	ND	0	0	0	1,012	2,218
134	37,120	0	0	4,849	298	0	0	0	ND	0	0	0	0	5,147
Total	1,116,165	*538*	*0*	*65,310*	*13,733*	*0*	*1,035*	*0*	*33,055*	40,616	*0*	*0*	*2,862*	157,149
Sand Sagebrush														
124	5,120	0	0	0	0	0	0	0	0	NA	0	0	0	0
125	3,200	0	0	0	0	0	0	0	0	NA	0	0	0	0
127	1,920	0	0	0	0	0	0	0	0	NA	0	0	0	0
129	14,720	0	0	1,901	0	0	0	0	0	NA	0	0	38	1,939
131	23,680	0	0	4,813	195	0	0	0	0	NA	0	0	0	5,008
135	29,440	0	0	3,528	0	0	0	0	0	NA	0	0	0	3,528
136	53,120	0	0	6,096	0	0	0	0	0	NA	0	0	0	6,096
138	14,080	0	0	98	0	0	0	0	0	NA	0	0	0	98
139	15,360	0	0	276	0	0	0	0	0	NA	0	0	0	276
140	23,040	0	0	606	0	0	0	0	0	NA	0	0	0	606
142	61,440	0	0	3,079	4,182	0	0	0	0	NA	0	0	0	7,261
Total	245,121	*0*	*0*	*20,396*	*4,376*	*0*	*0*	*0*	*0*	*NA*	*0*	*0*	*38*	24,810
Shortgrass														
137	32,640	0	0	2,784	0	0	0	0	0	NA	0	0	0	2,784
141	52,480	0	0	6,152	1,016	0	0	0	0	NA	0	0	0	7,168
143	26,240	0	0	264	86	0	0	0	0	NA	0	0	0	350
144	46,720	4,024	0	1,849	0	0	0	0	0	NA	0	0	0	5,873
145	25,600	0	0	782	0	0	0	0	0	NA	0	0	0	782
Total	183,681	*4,024*	*0*	*11,830*	*1,102*	*0*	*0*	*0*	*0*	*NA*	*0*	*0*	*0*	16,956
Grand Total	**2,437,771**	**4,562**	**0**	**212,631**	**25,996**	**0**	**1,035**	**69,778**	**50,488**	**40,616**	**391**	**1,427**	**4,349**	**411,273**

ND = no data provided

[a] Data are from 2017.

[b] These values represent the acres of prescribed grazing (528) that were implemented in 2017 through the Lesser Prairie-Chicken Initiative and the Environmental Quality Incentives Program. Prescribed grazing is a core conservation practice that is supposed to occur on every contracted acre were livestock are present.

[c] The Center of Excellence (CEHMM) has also enrolled 46,096 industry acres in CCA/CCAAs in CHAT 2.

[d] Includes acreages meeting all the stronghold criteria as interpreted by WAFWA. These values do not include the acres permanently conserved by WAFWA which also qualify.

[e] This category includes private land encumbered by a conservation easement and properties owned by a government or non-government entity that lists conservation as a primary mission. There are 1,479 of these acres still being evaluated to determine if they can qualify towards a stronghold (171 in Shinnery Oak, 1,270 in Mixed Grass, 38 in Sand Sagebrush, and 0 in Shortgrass). Additionally, there are 91,184 acres in CHAT 2 that are owned by public entities but not managed with conservation as a primary focus.

[f] The total is greater than the sum of the sub-categories because some data were not reported at the finer scale.

APPENDIX C. THE NUMBER OF WELLS DRILLED IN 2017 WITHIN THE EOR+10 BY COMPANIES NOT PARTICIPATING IN THE RWP. COMPANIES ARE LISTED ANONYMOUSLY BY A COMPANY CODE, WITH THE NUMBER OF WELLS DRILLED PER CHAT CATEGORY AND IN TOTAL WITHIN THE EOR+10. THE TABLE IS SORTED BY TOTAL WELLS DRILLED.

Company Code	CHAT 1	CHAT 2	CHAT 3	CHAT 4	Total
1	0	0	12	25	37
2	0	0	0	16	16
3	4	0	6	4	14
4	0	0	2	10	12
5	0	1	3	7	11
6	0	0	2	8	10
7	0	0	9	0	9
8	4	0	1	3	8
9	2	0	5	1	8
10	5	0	0	2	7
11	4	0	2	1	7
12	0	6	1	0	7
13	0	0	6	1	7
14	0	0	3	4	7
15	0	0	1	6	7
16	5	0	1	0	6
17	3	0	0	3	6
18	1	0	3	2	6
19	0	0	4	2	6
20	0	0	0	6	6
21	0	0	4	1	5
22	0	0	3	2	5
23	0	0	1	4	5
24	0	0	0	5	5
25	2	1	1	0	4
26	2	0	1	1	4
27	1	0	0	3	4
28	0	0	4	0	4
29	0	0	4	0	4
30	0	0	4	0	4
31	0	0	4	0	4
32	0	0	2	2	4
33	0	0	0	4	4
34	0	0	0	4	4
35	1	2	0	0	3
36	1	0	0	2	3
37	0	0	2	1	3
38	0	0	2	1	3

39	2	0	0	0	2
40	2	0	0	0	2
41	2	0	0	0	2
42	1	0	1	0	2
43	1	0	0	1	2
44	1	0	0	1	2
45	0	2	0	0	2
46	0	0	2	0	2
47	0	0	2	0	2
48	0	0	2	0	2
49	0	0	2	0	2
50	0	0	2	0	2
51	0	0	2	0	2
52	0	0	2	0	2
53	0	0	1	1	2
54	0	0	1	1	2
55	0	0	1	1	2
56	0	0	1	1	2
57	0	0	1	1	2
58	0	0	0	2	2
59	0	0	0	2	2
60	0	0	0	2	2
61	0	0	0	2	2
62	0	0	0	2	2
63	0	0	0	2	2
64	0	0	0	2	2
65	0	0	0	2	2
66	0	0	0	2	2
67	0	0	0	2	2
68	0	0	0	2	2
69	0	0	0	2	2
70	0	0	0	2	2
71	6	2	18	28	54

There were 54 non-participant companies that drilled one well each, and their results are summarized here as one record # 71.

APPENDIX D. FOCAL AREA REPORTING UNITS AND THE PERCENT IMPACT AS OF JANUARY 1, 2019. THE PERCENT IMPACT AT THE BEGINNING OF THE RWP INCLUDED FOR CHANGE DETECTION REFERENCE. CELLS HIGHLIGHTED ARE APPROACHING OR OVER THE 30% IMPACTED THRESHOLDS.

FACZ ID	FACZ class	Percent Impacted Jan 2015	Percent Impacted Jan 2016	Percent Impacted Jan 2017	Percent Impacted Jan 2018	Percent Impacted Jan 2019
1	Focal Area	16.8%	16.7%	16.0%	15.9%	**15.5%**
3	Focal Area	8.1%	8.1%	8.0%	6.7%	**6.7%**
4	Focal Area	24.8%	24.8%	25.0%	24.8%	**21.9%**
5	Focal Area	3.6%	3.6%	4.0%	1.2%	**1.2%**
6	Focal Area	14.2%	14.2%	13.0%	9.5%	**9.5%**
7	Focal Area	20.5%	20.3%	20.0%	17.3%	**17.3%**
8	Focal Area	23.0%	23.0%	23.0%	38.2%	**37.7%**
9	Focal Area	5.2%	5.2%	6.0%	4.3%	**4.3%**
10	Focal Area	29.2%	29.0%	29.0%	29.9%	**27.9%**
11	Focal Area	30.7%	33.4%	32.0%	31.3%	**31.3%**
12	Focal Area	12.4%	12.4%	12.0%	10.7%	**11.6%**
14	Focal Area	39.4%	39.1%	39.0%	40.8%	**42.0%**
15	Focal Area	28.8%	28.0%	28.0%	28.9%	**29.0%**
17	Focal Area	23.5%	23.6%	18.0%	17.7%	**19.2%**
18	Focal Area	25.5%	25.0%	25.0%	24.6%	**25.1%**
19	Focal Area	8.1%	8.1%	8.0%	5.8%	**6.2%**
20	Focal Area	19.1%	19.0%	18.0%	17.6%	**18.1%**
21	Focal Area	15.5%	15.5%	14.0%	14.2%	**14.8%**
22	Focal Area	16.4%	16.6%	17.0%	16.9%	**17.0%**
23	Focal Area	20.0%	17.8%	17.0%	19.2%	**17.8%**
24	Focal Area	10.2%	10.1%	10.0%	11.4%	**11.9%**
25	Focal Area	9.9%	9.9%	10.0%	3.9%	**4.0%**
26	Focal Area	12.7%	12.7%	13.0%	6.1%	**6.1%**
27	Focal Area	7.8%	7.6%	7.0%	6.8%	**8.0%**
30	Focal Area	23.2%	23.2%	24.0%	22.4%	**22.8%**
32	Focal Area	18.6%	18.6%	19.0%	13.6%	**13.6%**
34	Focal Area	15.4%	17.0%	16.0%	15.2%	**16.2%**
36	Focal Area	8.6%	8.6%	9.0%	4.9%	**4.1%**
38	Focal Area	7.4%	7.4%	8.0%	4.5%	**4.2%**
40	Focal Area	9.3%	9.3%	9.0%	2.1%	**2.1%**
42	Focal Area	15.7%	15.7%	16.0%	16.0%	**15.0%**
44	Focal Area	13.3%	13.3%	13.0%	12.8%	**15.6%**
13A	Focal Area	27.7%	28.3%	28.0%	28.3%	**28.2%**
13B	Focal Area	18.5%	18.8%	19.0%	19.4%	**19.3%**

13C	Focal Area	23.3%	23.8%	24.0%	25.1%	**25.6%**
13D	Focal Area	24.1%	25.2%	25.0%	26.3%	**25.6%**
16A	Focal Area	21.5%	21.3%	21.0%	22.6%	**21.5%**
16B	Focal Area	20.8%	20.8%	20.0%	22.5%	**20.1%**
16C	Focal Area	22.4%	22.3%	22.0%	24.1%	**26.0%**
28A	Focal Area	16.2%	16.4%	16.0%	17.1%	**17.0%**
28B	Focal Area	10.2%	10.0%	10.0%	10.1%	**10.8%**
28C	Focal Area	9.0%	8.9%	11.0%	11.5%	**11.0%**
28D	Focal Area	12.7%	13.2%	13.0%	12.8%	**12.7%**
29A	Focal Area	13.2%	13.1%	12.0%	13.2%	**16.7%**
29B	Focal Area	11.2%	11.7%	11.0%	11.3%	**13.7%**
29C	Focal Area	9.5%	9.7%	9.0%	9.9%	**11.1%**
29D	Focal Area	10.0%	10.1%	10.0%	10.6%	**9.6%**
2A	Focal Area	15.9%	15.9%	16.0%	16.7%	**17.0%**
2B	Focal Area	15.7%	15.7%	16.0%	16.9%	**15.2%**
2C	Focal Area	12.3%	12.2%	12.0%	13.8%	**12.1%**
2D	Focal Area	19.8%	21.4%	20.0%	27.3%	**23.2%**
2E	Focal Area	11.3%	13.5%	8.0%	10.6%	**9.2%**
2F	Focal Area	5.4%	5.3%	5.0%	6.4%	**6.2%**
31A	Focal Area	14.1%	14.1%	14.0%	13.7%	**8.7%**
31B	Focal Area	22.8%	22.7%	22.0%	22.2%	**26.5%**
31C	Focal Area	34.7%	34.2%	33.0%	32.5%	**35.4%**
31D	Focal Area	33.5%	33.2%	31.0%	32.0%	**36.1%**
31E	Focal Area	30.7%	30.7%	29.0%	31.3%	**35.4%**
33A	Focal Area	12.8%	12.8%	12.0%	12.7%	**13.6%**
33B	Focal Area	12.3%	12.9%	12.0%	12.9%	**16.1%**
35A	Focal Area	13.6%	13.5%	10.0%	8.4%	**8.5%**
35B	Focal Area	23.4%	23.4%	20.0%	19.5%	**16.6%**
35C	Focal Area	11.3%	11.3%	11.0%	11.4%	**10.8%**
35D	Focal Area	13.6%	13.9%	13.0%	13.8%	**14.9%**
35E	Focal Area	31.8%	32.0%	30.0%	30.5%	**33.1%**
35F	Focal Area	32.0%	34.4%	32.0%	34.6%	**37.0%**
37A	Focal Area	19.4%	20.4%	20.0%	20.6%	**22.3%**
37B	Focal Area	7.3%	7.3%	7.0%	7.7%	**8.6%**
37C	Focal Area	10.4%	10.4%	10.0%	10.2%	**10.3%**
37D	Focal Area	7.0%	6.8%	7.0%	6.6%	**6.8%**
37E	Focal Area	8.7%	8.7%	9.0%	9.5%	**10.8%**
37F	Focal Area	18.3%	18.7%	18.0%	20.5%	**24.6%**
39A	Focal Area	13.3%	13.3%	13.0%	13.2%	**12.4%**
39B	Focal Area	13.4%	13.3%	14.0%	14.7%	**16.8%**

39C	Focal Area	20.5%	20.4%	20.0%	21.3%	**23.2%**
41A	Focal Area	7.6%	7.6%	8.0%	7.7%	**7.3%**
41B	Focal Area	9.8%	9.8%	10.0%	10.8%	**11.6%**
41C	Focal Area	10.5%	10.5%	11.0%	12.3%	**12.8%**
41D	Focal Area	11.2%	11.2%	11.0%	12.0%	**14.5%**
43A	Focal Area	10.1%	9.9%	10.0%	8.4%	**8.5%**
43B	Focal Area	4.4%	4.4%	4.0%	3.2%	**3.3%**

0-25% 25-30% 30+ %

APPENDIX E. ANNUAL CROPLAND RESTORATION AND MECHANICAL BRUSH MANAGEMENT ACREAGES REPORTED FOR EACH LPC CHAT 1 (FOCAL AREA) REPORTING UNIT, 2018.

Ecoregion– reporting unit	Reported Cropland Restoration Acreage[a]	Reported Mechanical Brush Management Acreage	Total Reported Restoration Acreage
Shinnery Oak			
1	0	1,494	
2A	18	166	
2B	105	818	
2C	0	0	
2D	0	0	
2E	0	146	
2F	0	0	
3	0	0	
4	0	447	
5	0	0	
6	0	0	
7	0	0	
8	0	0	
9	0	0	
Total	*124*	*4,072*[b]	
Mixed Grass			
10	0	212	
11	0	0	
12	0	1,060	
13A	0	0	
13B	37	437	
13C	4	0	
13D	58	0	
14	0	0	
15	0	0	
16A	54	0	
16B	0	0	
16C	30	0	
17	0	0	
18	0	0	
19	0	0	
20	0	0	
21	0	0	
22	0	0	
23	0	277	
24	0	0	
27	0	0	
28A	0	0	
28B	0	0	
28C	0	0	
28D	0	5	
29A	0	0	
29B	0	*1,107*	
29C	0	0	
29D	0	0	
30	0	0	
33A	0	0	
33B	0	0	
Total	*184*	*3,097*	
Sand Sagebrush			
25	0	0	

Ecoregion– reporting unit	Reported Cropland Restoration Acreage[a]	Reported Mechanical Brush Management Acreage	Total Reported Restoration Acreage
26	0	0	
31A	0	0	
31B	0	0	
31C	0	0	
31D	0	0	
31E	0	0	
32	0	0	
35A	0	0	
35B	0	0	
35C	0	0	
35D	0	0	
35E	0	0	
35F	0	0	
36	0	0	
38	0	0	
40	0	0	
Total	*0*	*0*	
Shortgrass			
34	0	0	
37A	0	0	
37B	0	0	
37C	0	0	
37D	0	0	
37E	0	0	
37F	0	0	
39A	0	0	
39B	0	0	
39C	22	0	
41A	0	0	
41B	0	0	
41C	378	0	
41D	0	0	
42	0	0	
43A	0	0	
43B	0	0	
44	0	0	
Total	*400*	*0*	
Grand Total	**708**	**7,169**[b]	

[a] Data not reported for the Conservation Reserve Program which facilitates the overwhelming majority of cropland restoration.
[b] The total is greater than the sum of the sub-categories because some data were not reported at the finer scale.

APPENDIX F. ANNUAL CROPLAND RESTORATION AND MECHANICAL BRUSH MANAGEMENT ACREAGES WITHIN EACH LPC CHAT 2 (CONNECTIVITY ZONE) REPORTING UNIT, 2018.

Ecoregion–reporting unit	Reported Cropland Restoration Acreage[a]	Reported Mechanical Brush Management Acreage	Total Reported Restoration Acreage
Shinnery Oak			
100	0	0	0
101	0	0	0
102	0	0	0
103	0	0	0
104	67	0	67
105	0	0	0
Total	*67*	0	*67*
Mixed Grass			
106	0	0	0
107	0	0	0
108	0	54	54
109	0	0	0
110	0	0	0
111	16	0	16
112	0	0	0
113	0	0	0
114	0	183	183
115	0	0	0
116	0	0	0
117	0	0	0
118	170	0	170
119	0	0	0
120	0	0	0
121	0	0	0
122	0	0	0
123	0	59	59
126	0	0	0
128	0	0	0
130	0	0	0
132	0	5	5
133	0	0	0
134	0	0	0
Total	*186*	*301*	*487*
Sand Sagebrush			
124	0	0	0
125	0	0	0
127	0	0	0
129	0	0	0
131	0	0	0
135	0	0	0
136	0	0	0
138	0	0	0
139	0	0	0
140	0	0	0
142	0	0	0
Total	*0*	*0*	*0*
Shortgrass			
137	0	0	0
141	0	0	0
143	0	0	0
144	0	0	0
145	0	0	0
Total	*0*	*0*	*0*
Grand Total	**253**	**301**	**554**

[a] Data not reported for the Conservation Reserve Program which facilitates the overwhelming majority of cropland restoration.

APPENDIX G. LESSER PRAIRIE-CHICKEN ADVISORY COMMITTEE ANNUAL REPORT AND RWP COMMITTEE INFORMATION

Date: February 19, 2019
To: Western Association of Fish and Wildlife Agencies – Lesser Prairie-Chicken Initiative Council
From: The Lesser Prairie Chicken Advisory Committee
Subject: 2018 LPCAC Annual Report

Summary

The Lesser Prairie-Chicken Range-wide Conservation Plan ("RWP") is the culmination of an unprecedented collaboration between the United States Fish and Wildlife Service ("FWS"), the Western Association of Fish and Wildlife Agencies ("WAFWA"), wildlife agencies in each of the five states in the range of the lesser prairie chicken, conservation groups, property owners and industry members.

WAFWA is responsible for the administration of the RWP. The WAFWA Board of Directors established the lesser prairie-chicken initiative council ("LPCIC"). Directors of the state wildlife agencies within the LPC range comprise the LPCIC along with members of the Executive Committee.

In accordance with the RWP, the LPCIC established an Advisory Committee ("LPCAC"), Fee Structure Subcommittee ("FSSC"), Science Subcommittee ("SSC") and Interstate Working Group ("IWG"). The LPCAC and IWG are advisory in nature and provide recommendations to the LPCIC for final approval. The LPCAC serves to inform and support the RWP, to promote effective communication between the parties, resolve disputes, revise cost structures and make adaptive management recommendations for consideration and/or approval by the LPCIC. The LPCAC is supported by the FSSC and SSC.

During the period January 2018 through December 2018, the LPCAC convened four times, three times by conference call and once in person.

Lesser Prairie-Chicken Advisory Council Composition

The LPCAC is composed of up to 17 representatives, including:

- One representative from three of the five state wildlife agencies, serving on a rotating schedule;
- One representative from each of the two primary federal agencies closely involved with LPC conservation (FWS and the Natural Resources Conservation Service, "NRCS");
- Three representatives from industry organizations (e.g., oil and gas, wind, transmission, etc.);
- Three representatives from agricultural and landowner organizations (e.g., Cattleman's Association, National Corn Growers Association, Farm Bureau, etc.);

- Three representatives from conservation organizations (e.g., the Nature Conservancy, North American Grouse Partnership, National Audubon Society, etc.); and,
- Three representatives from local government, municipalities and cooperatives.

During the period January 2018 through December 2018, the membership of the LPCAC comprised the following individuals:

State Fish & Wildlife Agencies

Mr. Clayton Wolf, Wildlife Division Director, Texas Parks and Wildlife

Mr. Jake George, Wildlife Section Chief, Kansas Dept. of Wildlife, Parks & Tourism

Mr. Stewart Liley, Chief, Wildlife Management Division, New Mexico Dept. of Game and Fish

Federal Agencies

Mr. Tim Griffiths, Acting LPC Initiative Coordinator, Natural Resources Conservation Service

Ms. Debra Bills, US Fish and Wildlife Service, Field Supervisor

Industry Organizations

Mr. Myles Culhane, Assistant General Counsel, Occidental Petroleum Corp

Ms. Alyssa Edwards, Associate Director, Environmental Permitting, EDF Renewable Energy

Mr. Erv Warren, Manager of Wildlife, OGE Energy Corp

Agricultural and Landowner Association

Mr. Bill Barby, Kansas Grazing Lands Coalition

Mr. Jay Evans, Ranch Manager

Mr. Dan O'Hair, Owner/Operator, Circle D Ranch

Conservation Organizations

Mr. Chris McLeland, Director-South Region Pheasants Forever

Mr. Rob Manes, Director, The Nature Conservancy, KS

Unfilled position

Local Government, Municipalities, Co-ops

Mr. John McCreight, (Chair) Environmental Coordinator, Western Farmers Electric Co-op

Ms. Ruth Calderon, Environmental and Regulatory Policy Mgr., Golden Spread Electric Co-op

Mr. Bill Carson, (Vice-chair) Manager of Member Services, North Plains Electric Co-op

LPCAC Meetings

LPCAC convened via conference calls on February 28, May 9, 2018, August 8, 2018, November 14, 2018. The LPCAC also met in Oklahoma City, OK on February 7, 2018. At each meeting the LPCAC reviewed reports from the LPCIC, industry participation in the RWP, progress toward meeting conservation goals through the mitigation framework, and made recommendations to the FSSC, SSC and LPCIC as needed.
Action Items for the year:
At the February 7 meeting, the LPCAC voted to send four resolutions to the LPCIC for consideration:
Resolution #1: The LPCAC recommends that the LPCIC ask the FWS to immediately release the LPC Species Status Assessment (SSA) because a release of the document will inform and encourage engagement by industry, landowners, states and other stakeholders in formulating conservation strategies prior to a listing decision.
Resolution #2: The LPCAC recommends that the LPCIC consider removing the fence marking requirement associated with both impact and conservation properties.
Resolution #3: Recommend that the Science Sub-Committee be allowed to modify their by-laws to designate that their meetings will be closed to the public except by invitation only.
Resolution #4: Recommend a proposal from the SSC to modify the Protocol for WAFWA Prescribed Grazing Planning with the additional recommendation that existing agreements be modified to reflect this proposal.
On the February 28 conference call, John McCreight was elected chair and Bill Carson as vice-chair.
On the November 14 call, it was determined that since the recommendation from the FSSC was to not make changes to landowner payments in 2019 no action was necessary. A motion was made and approved unanimously to recommend to the LPCIC that proposed changes to how ledger calculations are made so they are calculated on an annual basis be completed.

Fee Structure Subcommittee

The Lesser Prairie-Chicken FSSC serves to inform and support the RWP, promote effective communication, resolve disputes, revise cost structures and make adaptive management and policy recommendations for the consideration and/or approval by the LPCIC through the LPCAC.

The FSSC meets, at a minimum, annually and each member serves a two-year term. The role of the FSSC is as follows:

- Annually review and update mitigation costs and landowner enrollments in specific practices.

- Annually review adaptive management triggers and evaluated actions related to the fee structure for the mitigation framework.
- Annually provide a report to the LPC Advisory Committee.

The Lesser Prairie-Chicken FSSC convened on a conference call on November 15th. During the call, WAFWA staff provided the committee a proposal to not increase the landowner payment structure in 2019. The FSSC voted unanimously (via email vote due to lack of quorum on the call) to send the proposal to the LPCAC for consideration.

Science Subcommittee

Submitted by Kent Fricke, Chair

The Science Sub-Committee (SSC) met twice in 2018—one in-person meeting in January following the Lesser Prairie-Chicken Conservation Partners Forum in Edmond, Oklahoma and once in October via conference call. The SSC reviewed prescribed grazing adjustments to the RWP developed by WAFWA staff and voted to recommend the changes to the Advisory Committee. SSC members developed a proposal to remove fence-marking requirements from the RWP and voted to recommend those changes to the Advisory Committee. The SSC developed language to modify the subcommittee's bylaws to state that meetings are considered closed. The subcommittee voted to recommend the addition to the bylaws to the Advisory Committee. The SSC reviewed and discussed the 3-year average breeding population estimates derived from the aerial survey, per the adaptive management requirements of the RWP. No recommendations were forwarded to the Advisory Committee for consideration. One SSC member declined re-nomination due to other time commitments and one new SSC member was added. Brett Cooper (Oklahoma) was elected Subcommittee chair in October and the vice-chair position will be filled at the next Subcommittee meeting. The SSC will meet again in Spring 2019.

Committee Composition

- WAFWA LPC Program Manager will coordinate and facilitate the Science Sub-committee as an ex officio member
- Up to a maximum of 15 representatives will compose the sub-committee
- One representative from each of the five state fish and wildlife agencies and USFWS
- Up to nine additional members with expertise in LPC ecology, habitat modeling, population monitoring, impact evaluation, and other relevant topics may serve on the sub-committee

Subcommittee charges:

1. Review annual reports related to population estimates and trends, including aerial and ground-based surveys
2. Evaluate emerging science related to LPC, including habitat selection, responses to conservation practices, responses to impacts, etc.
3. Annually review adaptive management triggers and evaluate actions related to LPC population trends and emerging science

4. Review and update research needs for LPC
5. Annually provide a report to the Advisory Committee

Lesser Prairie-chicken Inter-State Working Group

During 2018, the Interstate Working Group had three in-person meetings—one in conjunction with the LPC Conservation Partners Forum, one in conjunction with the WAFWA Annual Meeting and another to discuss and make progress on the 5-year Review. Multiple conference calls were also convened throughout the year. The IWG provided input on the guidelines for stronghold development, discussed historical range issues, continued work on the 5-year Review and provided data relative to properties in their respective states that may be considered for stronghold inclusion. Finally, IWG members organized and hosted State Implementation Team meetings within their respective states to discuss improving targeting of conservation efforts, identify additional funding sources, and improve reporting of conservation efforts between and among conservation partners.

Questions regarding this report should be forwarded to the WAFWA LPC Program Manager.

Respectfully submitted on behalf of the LPCAC,

John McCreight
Chair, Lesser Prairie-Chicken Advisory Committee