2019 Annual Report
for the
Range-wide Oil and Gas
Candidate Conservation Agreement with Assurances for the Lesser Prairie-Chicken

Submitted to the

U.S. Fish and Wildlife Service

on

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by the

Western Association of Fish and Wildlife Agencies

and the

WAFWA Species Restoration Fund

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LIST OF ACROYNMS AND ABBREVIATIONS

CHAT	Crucial Habitat Assessment Tool
CI	Certificate of Inclusion
HEG	Habitat Evaluation Guide
LPC	lesser prairie-chicken
SRF	Species Restoration Fund
USFWS	U.S. Fish and Wildlife Service
WAFWA	Western Association of Fish and Wildlife Agencies
WCA	WAFWA Conservation Agreement
WCT	Western Conservation Toolkit

INTRODUCTION AND BACKGROUND

Entities and Business Structure

The Western Association of Fish and Wildlife Agencies (WAFWA) is a 501(c)4 non-profit organization representing the state and provincial fish and wildlife agencies from 24 states and Canadian provinces, an area covering nearly 3.7 million square miles of western North America. WAFWA's mission is to support sound resource management and build partnerships at all levels to conserve wildlife for the use and benefit of all citizens, now and in the future. WAFWA holds the permit for the *Range-wide Oil and Gas Candidate Conservation Agreement with Assurances for Lesser Prairie-Chicken* (*Tympanuchus pallidicinctus*) in Colorado, Kansas, New Mexico, Oklahoma, and Texas (hereafter the CCAA).

The WAFWA Species Restoration Fund (SRF) is a 501(c)4 nonprofit organization created by WAFWA to manage the financial operations for the CCAA. The CCAA and permit originally referenced The Foundation for Western Fish and Wildlife, but WAFWA transferred the responsibility for financial operations to SRF as part of a restructuring effort in May 2014.

Report Format

From 2014 through 2018, WAFWA included annual reporting of the CCAA in the annual progress report for the *Lesser Prairie-Chicken Range-wide Conservation Plan* (RWP; Van Pelt et al. 2013). Beginning with this 2019 report, WAFWA/SRF is changing the report format from summarizing all impact and conservation efforts outlined in the RWP to include only the CCAA program (USFWS 2014). Any additional tabular data covering the CCAA, WAFWA Conservation Agreement (WCA), and the RWP will be posted separately on the WAFWA website at:

https://www.wafwa.org/initiatives/grasslands/lesser_prairie_chicken/rwp_annual_performance_reports/

Program Overview and Goals

The CCAA represents a collaborative effort among the U.S. Fish and Wildlife Service (USFWS), WAFWA, SRF, interested oil and gas companies, and trade associations. The CCAA is one of the enrollment options for implementing the conservation strategy set forth in the RWP, which is a comprehensive conservation plan developed by the WAFWA Lesser Prairie-Chicken (LPC) Interstate Working Group. This CCAA utilizes the same impact metrics and conservation delivery system outlined in the RWP. The CCAA is a voluntary agreement intended to address the effects of oil and gas activities on LPC and its habitat within LPC's five-state range in Kansas, Colorado, Oklahoma, New Mexico, and Texas. The agreement is administered by WAFWA with oversight by USFWS.

Section XIX(B) of the CCAA specifies the following:

- The RWP mitigation framework is a biologically based system that incorporates space, time, and habitat quality to quantify impacts on habitat (impact units) as well as improvements to habitat (offset and remediation units).
- The mitigation framework assigns an impact multiplier depending on the Crucial Habitat Assessment Tool (CHAT) category; this multiplier ranges between 2.5 for CHAT category 1 and 1.6 for CHAT category 4 and, when averaged across the CHAT categories, produces an average 2:1 mitigation ratio.
- This 2:1 ratio ensures that mitigation efforts are greater than impacts, resulting in a conservation benefit for LPC habitat and ultimately its populations.

Data Sources and Access to Data

All raw data and data summaries represented in this report are housed within the WAFWA Conservation ToolKit website (WCT; https://wafwawct.org/Dashboard).This website is a data portal that allows for:

- Tracking of industry and conservation enrollments including spatial mapping of enrollments;
- Mitigation project documentation including project submission, mapping, evaluation, and approval;
- Industry compliance monitoring and reporting;
- Conservation contract documentation including site monitoring, evaluation, and payment calculations;
- Ledger tracking for monitoring credits, debits, and balances; and
- Reporting tools and data summaries.

Data confidentiality is maintained by managing and restricting data access for industry and conservation participants, technical service providers, and regulatory agencies. USFWS has secure log-in access to this site to view but cannot download the data housed on that site. USFWS can log into the site independently to confirm the data represented in this report.

Reporting Requirements

Section XX of the CCAA requires that WAFWA provide an annual report describing implementation of the CCAA, including the following:

a) Participants enrolled under the CCAA over the past year, including copies of the executed Certificates of Inclusion (CIs), excluding Exhibit 1;
b) A summary of habitat management and habitat conditions in the Covered Area and on all Enrolled Property over the past year with any identifying information related to Participants removed;
c) Summary of the effectiveness of the conservation activities implemented in previous years at meeting the intended conservation benefits;
d) Population surveys and studies conducted over the past year with any identifying information related to Participants removed;
e) Any LPC mortalities or injuries that are observed of the species over the previous year;
f) Compliance issues as provided in Section XXIX (Participant Compliance) or any other issues with implementation of the CCAA. Compliance reporting will be provided on the password-protected website in accordance with Section XXI (Confidentiality); and
g) A discussion on the funds used for habitat conservation on private/state lands.

The permit issued to WAFWA by USFWS (Permit #TE27289B-0) further stipulates that incidental take of LPC not exceed 8,530 birds, as measured by habitat impacts:

a) At 10 years from the effective date of this permit, more than 622,272 acres of habitat are developed by oil and gas activities within the Covered Area;
b) At 20 years from the effective date of this permit, more than 1,244,545 acres of habitat are developed by oil and gas activities within the Covered Area; and
c) At 30 years from the effective date of this permit, more than 1,866,855 acres of habitat are developed by oil and gas activities within the Covered Area.

Reporting Summary

In this section, WAFAWA/SRF is including a tabular summary of all reporting requirements for the CCAA, a brief description of the result for each requirement, and a section and page number where that information is provided in this report (Table 1).

Table 1. Report Summary

Reporting Requirement	Result	Report Section
Participants enrolled under the CCAA over the past year	No new enrollment during 2019, 111 current participants, 6,228,136acres enrolled	See *Industry Participation* (note: Exhibit 1 information is provided on the WCT)
A summary of habitat management and habitat conditions in the Covered Area and on all Enrolled Property over the past year with any identifying information related to Participants removed	66 development projects impacting 433 acres in 2019. Over 149,653 acres[a] of current conservation enrollment (25% permanent, 75% iterative term) and 296 acres of restoration completed in 2019 (17,602 total).	See *Habitat Management and Condition on Enrolled Property*
Summary of the effectiveness of the conservation activities implemented in previous years at meeting the intended conservation benefits	Development projects exhibit 79% co-location rate and an average HEG score of 0.28. Conservation contracts address threats to LPC. Conservation properties have an average HEG score of 0.65.	See *Effectiveness of Conservation Actions*
Population surveys and studies conducted over the past year with any identifying information related to Participants removed	2019 population estimates based on ground surveys from the states. Populations estimated to be stable from 2018 to 2019.	See *Population Surveys*
A discussion on the funds used for habitat conservation on private/state lands	$2,141,811 paid to landowners for annual maintenance payments and $110,831 in restoration payments during 2019.	See *Financial Summary* and *2019 Program Audit and Audit Response*
Incidental take of LPC not to exceed 8,530 birds	No mortality reported since implementation in 2014.	See *Mortality* subsection
At 10 years from the effective date of this permit, more than 622,272 acres of habitat are developed by oil and gas activities within the Covered Area	17,478 acres impacted by mitigated development since 2014.	See *Mitigation Projects* subsection

[a] *Total conservation enrollment acreage for all 22 properties (Table 11) is 149,653 acres. The total acreage for term contract properties secured by WAFWA (Table 5) of 112,037 acres and permanent conservation sites (Table 7) of 37,569 acres is 149,606 acres, resulting in a discrepancy of 47 acres. WAFWA is working to resolve this discrepancy in its database.*

Abbreviations: HEG = Habitat Evaluation Guide; LPC = lesser prairie-chicken; WCT = Western Conservation Toolkit

INDUSTRY PARTICIPATION

As of December 31, 2019, there were 111 active agreements in the CCAA (Appendix A)—the same as reported in the 2018 report. Active agreements are those in which enrollment was not terminated or suspended. Enrollment totaled 6,228,136 acres as of December 31, 2019 (Table 2, Figures 1 and 2). Industry enrollment in the CCAA was closed in March for the remainder of 2019 for restructuring, but 492 acres of pipeline enrollment was added before that. A total of 1,027 acres of enrollment were voluntarily terminated by companies in 2019, and 243,624 acres remain suspended under previous compliance issues (see *Industry Compliance Monitoring and Reporting* section).

Table 2. Summary of Active CCAA Enrollment Acreage by Ecoregion, CHAT Category, and Industry and the Percentage that these Enrollments Represent of the Total Acreage in Each CHAT Category within the EOR+10 as of December 31, 2019

Ecoregions	CHAT Score	Oil and Gas	Pipeline	Total Acres	% Total Area
Mixed Grass Prairie	CHAT1	524,071	73,209	597,280	23.2%
	CHAT2	237,990	48,201	286,190	25.6%
	CHAT3	1,565,328	192,224	1,757,552	33.9%
	CHAT4	476,716	114,135	590,851	15.7%
	Ecoregion Total:	**2,804,104**	**427,769**	**3,231,873**	**26%**
Sand Sagebrush Prairie	CHAT1	518,981	24,702	543,683	34.3%
	CHAT2	14,533	1,085	15,618	6.4%
	CHAT3	284,174	18,213	302,387	16.1%
	CHAT4	1,019,115	56,589	1,075,704	24.9%
	Ecoregion Total:	**1,836,803**	**100,589**	**1,937,392**	**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	360,954	11.4%
	Ecoregion Total:	**565,316**	**172,520**	**737,836**	**7%**
Shortgrass Prairie	CHAT1	52,427	4,590	57,017	3.0%
	CHAT2	17,424	1,066	18,489	10.1%
	CHAT3	43,020	6,181	49,201	2.8%
	CHAT4	174,100	22,230	196,329	4.1%
	Ecoregion Total:	**286,970**	**34,066**	**321,036**	**4%**
EOR+10 Total:		**5,493,193**	**734,943**	**6,228,136**	**15%**

Figure 1. Map Displaying All Oil and Gas Leases Enrolled in the Range-wide Oil and Gas CCAA as of December 31, 2019

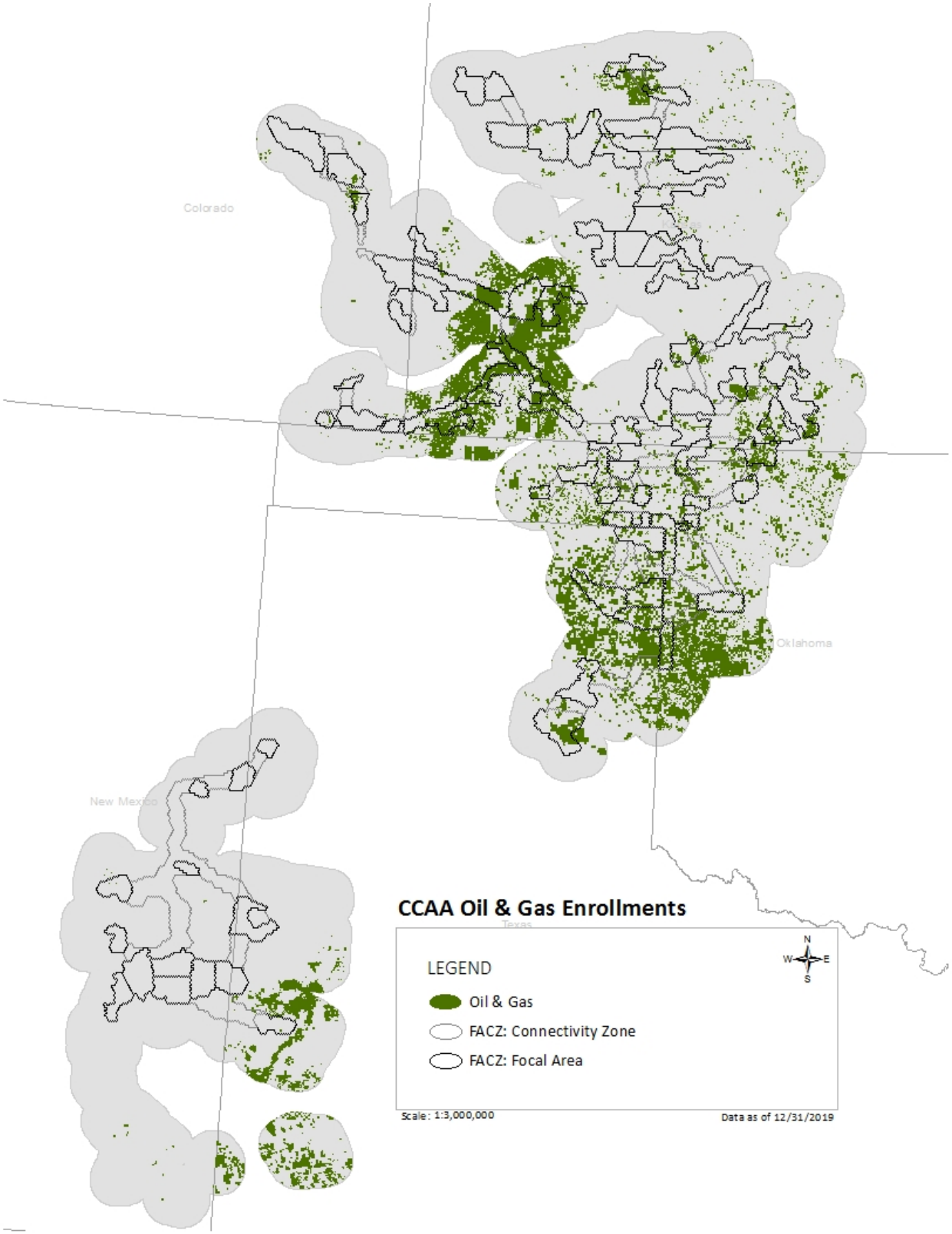
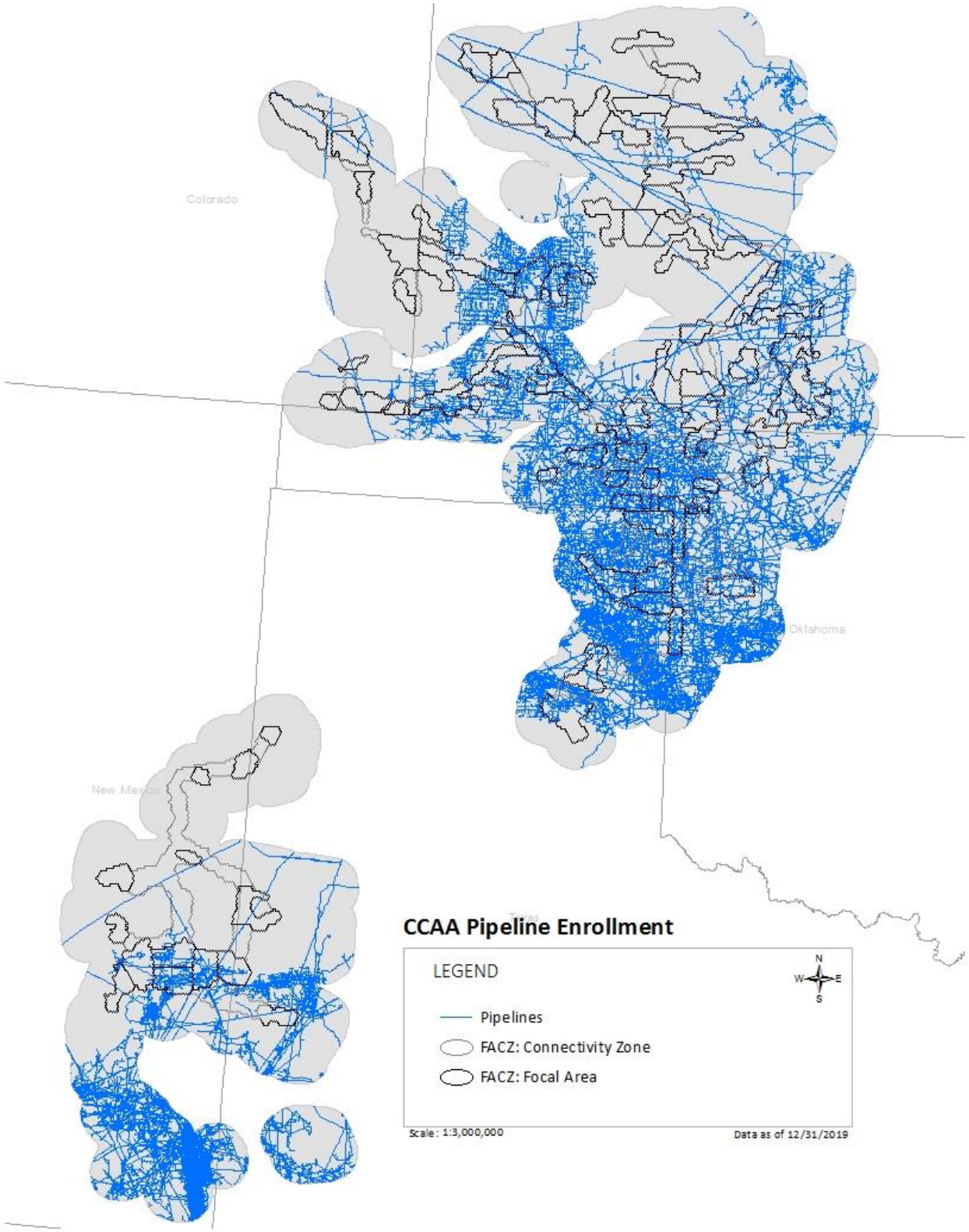


Figure 2. Map Displaying All Pipelines Currently Enrolled in the Range-wide Oil and Gas CCAA as of December 31, 2019



INDUSTRY COMPLIANCE MONITORING AND REPORTING

Compliance Monitoring

The CCAA requires a set of avoidance and minimization measures of all industry participants as part of the CCAA conservation strategy (see CCAA Section XII). WAFWA evaluates industry compliance with these avoidance and minimization measures annually based on two methods:

- Random site visits to evaluate compliance with conservation measures on mitigated projects, and
- Evaluation of public project permitting data to evaluate whether all projects are being mitigated that are under the control of participants and on enrolled property.

In 2019, WAFWA randomly selected up to 15 mitigation projects per ecoregion for random site visits (see Appendix B for a summary of industry compliance monitoring results), which resulted in a sample of 44 projects. WAFWA/SRF staff contacted each company responsible for those projects and received responses from all but one during the monitoring period. The company that did not respond was also implementing staffing changes at the time but has a history of compliance during past site visits. Of the 43 projects for which responses were received, 2 were not constructed. Staff scheduled site visits to the remaining 41 projects, and no instances of non-compliance were detected.

Due to staff reductions and restructuring, WAFWA/SRF was not able to conduct the evaluation of project permitting data in 2019 but plans to reinstate these efforts in 2020. In previous years, all projects drilled on enrolled property were evaluated using project permitting data to ensure that every project requiring mitigation was reported to WAFWA by participant companies.

Two companies are currently suspended (243,624 acres total) for activities that occurred from 2014 to 2017. All options to resolve these issues under the agreement have been expended, and WAFWA/SRF is evaluating or pursuing options outside the agreement to develop resolutions.

Emergency and Non-emergency Operations

There are several avoidance and minimization measures related to emergency and non-emergency operations. Emergency operations are defined as 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. Non-emergency operations are defined as construction and maintenance activities that occurred 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 of the previous calendar year that are within 1.25 miles of LPC leks active within the previous 5 years.

No instances of emergency or non-emergency operations were reported by participating companies in 2019.

Mortality

No LPC mortalities were reported in 2019 by industry participants or in any previous years since 2014.

HABITAT MANAGEMENT AND CONDITION ON ENROLLED PROPERTY

Mitigation Projects

In 2019, WAFWA/SRF processed 66 new mitigation projects under the CCAA totaling $244,752.64 in mitigation costs (Table 3). All 66 projects were new oil and gas wells. These projects impacted a total of 433 new acres of habitat and resulted in 203 new impact units.

Table 3. Summary of 2019 Mitigated Projects under the CCAA by Impact Type and by Ecoregion

Ecoregions	Number of Projects	Potential Acres	Impact Acres	Annual Units	Cost
Mixed Grass Prairie	6	186	80	108.70	$156,194.85
Sand Sagebrush Prairie	21	652	251	4.26	$2,493.94
Shinnery Oak Prairie	38	1,179	99	90.43	$85,985.95
Shortgrass Prairie	1	31	2	0.08	$77.90
CCAA Total:	**66**	**2,048**	**433**	**203.47**	**$244,752.64**

Over the life of the program (2014–2019), a total of 1,324 projects have been mitigated under the CCAA program. Those projects impacted a total of 17,478 acres of habitat (Table 4). The acres impacted to date represent 2.8% of the total impacted acreage allowed by the CCAA permit in the first 10 years of the program (622,272 acres) and less than 0.1% of the total allowable impact over the 30-year life of the program (1,866,855 acres). Through December 31, 2019, the projects mitigated under the CCAA have generated 11,166.21 annual impact units. Impact units are debited every year from the ledger on the anniversary date of the project.

Table 4. Summary of Projects Mitigated under the CCAA since Inception (2014–2019) by Ecoregion including the Potential (full impact buffer) and Actual Impact Acres (new impact area), Annual Impact Units, and Mitigation Fees

Ecoregions	Years	Number of Projects	Potential Acres	Impact Acres	Annual Units	Cost
Mixed Grass Prairie	2014	180	5,600	3,274	2,598.54	$3,416,061.42
	2015	299	9,346	5,655	4,684.38	$6,079,395.38
	2016	10	371	105	69.27	$92,955.24
	2017	53	1,656	908	941.28	$1,296,426.32
	2018	19	632	268	219.15	$315,055.18
	2019	6	186	80	108.70	$156,194.85
	Total:	**567**	**17,792**	**10,290**	**8,621.32**	**$11,356,088.39**
Sand Sagebrush Prairie	2014	45	1,367	629	7.21	$4,440.73
	2015	72	2,236	1,345	514.59	$271,212.42
	2016	22	683	338	53.12	$28,993.47

Ecoregions	Years	Number of Projects	Potential Acres	Impact Acres	Annual Units	Cost
	2017	33	1,024	534	20.63	$11,444.27
	2018	16	497	136	12.36	$7,237.88
	2019	21	652	251	4.26	$2,493.94
	Total:	**209**	**6,457**	**3,232**	**612.17**	**$325,822.71**
Shinnery Oak Prairie	2014	47	1,453	162	161.98	$146,512.43
	2015	124	3,844	752	631.60	$549,689.08
	2016	71	2,203	222	112.08	$98,321.73
	2017	78	2,403	242	200.43	$181,925.36
	2018	77	2,372	169	118.66	$112,836.12
	2019	38	1,179	99	90.43	$85,985.95
	Total:	**435**	**13,454**	**1,647**	**1,315.18**	**$1,175,270.67**
Shortgrass Prairie	2014	31	950	783	208.74	$166,374.38
	2015	71	2,074	1,350	343.97	$293,655.04
	2016	5	155	83	14.85	$12,344.02
	2017	3	93	56	15.52	$13,614.84
	2018	2	62	34	34.38	$30,154.41
	2019	1	31	2	0.08	$77.90
	Total:	**113**	**3,365**	**2,309**	**617.54**	**$516,220.59**
CCAA Total:		**1,324**	**41,069**	**17,478**	**11,166.21**	**$13,373,402.36**

Habitat Conservation Enrollments

WAFWA/SRF enrolls private lands in the mitigation program to offset development impacts. The properties summarized in this section provide habitat that is quantified annually to offset impacts for both the CCAA and the WCA under the RWP. Offset units can be used by either agreement, but not both. The habitat offset units are annually assigned to each conservation program (the CCAA or RWP) and to each participant's impacts within each program to ensure that habitat units are meeting or exceeding CCAA and RWP requirements to offset each impact unit.

All conservation under the LPC mitigation program is designed to be implemented in perpetuity. However, the CCAA allows for conservation enrollment based on a shifting habitat mosaic strategy which targets 25% of enrollments toward permanent easements and 75% toward iterative term (5- to 10-year) contracts. The iterative term contracts can be renewed to retain conservation in the same location. But if conservation priorities change due to climate change or changes in adjoining land use patterns or habitat quality, or if an individual landowner decides to opt out of the program, the iterative term contracts can be shifted to new areas to ensure continued LPC conservation benefits.

Conservation enrollment as of December 31, 2019, included 22 properties totaling 149,653 acres (128,230 unimpacted acres) (Tables 5 and 7). There are an additional 24 properties (91,822 acres) with

enrollment applications on file awaiting additional mitigation funding (Table 6).The iterative term portion of the current enrollment includes 15 contracts totaling 112,037 acres (75% of the total enrolled acres) (Table 5). Permanent enrollment includes seven contracts totaling 37,569 acres (25% of the total enrolled acres) (Table 7). Sixty-seven percent of iterative term contracts are located within CHAT 1 and 2, and 94% of permanent easements are within CHAT 1 and 2 (Table 5 and 7). Based on the ledger, 52% percent of the total units from the enrolled conservation acreage (-102,880.12 debits) has been used to offset mitigation projects for the CCAA and WCA (Appendix C: Table C.2). Of the 52% used for offsets, 56% of that (-57,818.99 debits) has been used to offset projects specifically for the CCAA (Table 14).

Table 5. Summary of the 10-Year Term Contract Conservation Properties Secured by WAFWA through the Lesser Prairie-Chicken Range-wide Conservation Plan, 2019

Ecoregions	Contract	Raw Acres[a]	Total Unimpacted Acres[b]	CHAT 1 Unimpacted Acres	CHAT 2 Unimpacted Acres	CHAT 3 Unimpacted Acres	CHAT 4 Unimpacted Acres
Mixed Grass Prairie	7	73,902	62,315	46,131	374	677	15,132
Sand Sagebrush Prairie	1	12,575	8,799	8,799	0	0	0
Shinnery Oak Prairie	3	16,059	12,709	11,389	0	1,320	0
Shortgrass Prairie	4	9,501	8,772	4,867	3,808	97	0
Grand Total:	**15**	**112,037**	**92,595**	**71,186**	**4,182**	**2,094**	**15,132**

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

Table 6. Summary of Term Applications Received for the WAFWA Offset Unit Generation Program. Data are Summarized through December 31, 2019

Ecoregions	Number of New Applications[a]	New Applications Acres	Number of Open Applications on File[b]	Open Applications Acres
Mixed Grass Prairie	0	0.00	10	61,600
Sand Sagebrush Prairie	0	0.00	4	16,507
Shinnery Oak Prairie	0	0.00	5	6,403
Shortgrass Prairie	0	0.00	5	7,312
Range Wide:			**24**	**91,822**

[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 previously received.

Table 7. Summary of the Permanent Conservation Sites Secured by WAFWA through the Lesser Prairie-Chicken Range-wide Conservation Plan through December 31, 2019

Ecoregions	Active Contracts	Raw Acres	Total Unimpacted Acres	CHAT 1 Unimpacted Acres	CHAT 2 Unimpacted Acres	CHAT 3 Unimpacted Acres	CHAT 4 Unimpacted Acres
Mixed Grass Prairie	2	2,726	2,708	2,597	0	0	110
Sand Sagebrush Prairie	1	29,593	28,840	28,738	0	102	0
Shinnery Oak Prairie	1	1,554	1,208	862	296	51	0
Shortgrass Prairie	3	3,696	2,880	2,880	0	0	0
Total:	**7**	**37,569**	**35,635**	**35,076**	**296**	**153**	**110**

Habitat Restoration

Both rangeland management and planted grass management plans may qualify for restoration practices with a minimum 10-year contract. In 2019, a total of 803 acres of restoration were contracted through mesquite and cedar removal. Tree removal was completed on 296 acres, with 508 to be completed in spring 2020. Since implementation, the program has contracted for 17,602 acres of habitat restoration and completed 17,094 acres (Table 8).

Table 8. Acreage of Restoration Completed and Prescribed under WAFWA Conservation Agreements through December 31, 2019

Ecoregions	Date Completed	Chemical Brush Management	Heavy Brush Management	Light Brush Management	Moderate Brush Management	Range Planting	Total Acres
Mixed Grass Prairie	Completed since Inception of RWP	0	1,011	727	778	0	2,516
Shinnery Oak Prairie	Completed during Reporting Period	0	0	0	803	0	803
	Completed since Inception of RWP	8,272	1,148	1	4,416	629	14,465
Shortgrass Prairie	Completed since Inception of RWP	0	0	0	0	620	620
Cumulative 2014–2019 Total:		**8,272**	**2,159**	**728**	**5,194**	**1,250**	**17,602**
Year 2019 Total:		**0**	**0**	**0**	**803**	**0**	**803**

EFFECTIVENESS OF CONSERVATION ACTIONS

Avoidance and Minimization for Mitigation Projects

The CCAA includes a series of discretionary and required conservation measures designed to reduce disturbance and mortality for LPC, minimize impacts on habitat, and incentivize siting of new development in low quality habitat. The required measures include breeding season timing restrictions, noise restrictions near leks, off-road travel restrictions to minimize disturbance to breeding birds, requirements for fence marking near leks and escape ramps in open water sources to minimize potential mortality, and requirements to mitigate for impacted habitat. The discretionary measures focus on co-location with existing infrastructure and avoidance of high-quality habitat.

The methods used to evaluate the impact of projects enrolled in the CCAA are designed to incentivize minimization of habitat loss through co-location of new development with pre-existing development and focusing development on lower quality habitat. Co-location is assessed as the percent overlap of impact buffers (Van Pelt et al. 2013:95) for new versus pre-existing development. Habitat quality is quantified based on the Habitat Evaluation Guide (HEG) (Van Pelt et al., 2013:98–99).

Projects mitigated under the program in 2019 exhibited a 78.86% co-location rate with pre-existing development (Table 9). Co-location also decreased the resulting habitat impacted from 2,048 potential acres to 433 acres. It also documents a high-level of compliance with discretionary conservation measures among participant companies.

Table 9. Reduced Impact Area (all project types) in 2019 Due to Project Co-Location.

Ecoregions	Count	Potential Acres	Actual New Acres	% overlap
Mixed Grass Prairie	6	186	80	56.91%
Sand Sagebrush Prairie	21	652	251	61.47%
Shinnery Oak Prairie	38	1,179	99	91.57%
Shortgrass Prairie	1	31	2	92.85%
Grand Total:	**66**	**2,048**	**433**	**78.86%**

Participant companies also documented compliance with discretionary conservation measures in the CCAA by consistently selecting low quality habitat to site new development projects. Since implementation, the mean HEG score for all mitigated projects was 0.28, representing low quality habitat on a 0–1 scale (Table 10).

Table 10. Habitat Evaluation Guide Scores Quantifying Habitat Quality across All Evaluation Units Associated with Industry Impact Areas (2014–2019)

Industry Impact	Mixed Grass Prairie	Sand Sagebrush Prairie	Shinnery Oak Prairie	Shortgrass Prairie	EOR+10
Mean	0.35	0.15	0.20	0.19	0.28
Median	0.25	0.05	0.01	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	3,307	780	996	344	5,427

Conservation Plans and Practices

For each conservation contract, WAFWA/SRF works with landowners to develop an LPC-specific management plan directed at addressing threats to the species and maintaining and improving habitat quality. Landowners have the option of choosing a rangeland management plan that includes livestock grazing or a planted grass management plan that does not include livestock grazing.

Rangeland management plans address threats to the species from overgrazing by capping livestock forage utilization at 33%. Every landowner currently enrolled in a rangeland management plan is required to reduce stocking rates to qualify for enrollment, and some reduced their herds by as much as 70%. Rangeland management plans also require that landowners address threats related to exotic and invasive plants and trees through approved herbicide use, tree removal, seeding native plants, and temporary grazing deferments. These plans also address drowning and collision mortality threats by installing escape ramps in water sources and marking fences near leks. Landowners are also required to manage prescribed disturbance to improve habitat quality. If properties under rangeland management plans meet all the goals of those plans and have sufficient rainfall, there are options to increase stocking rates that result in up to 50% forage utilization rates as long as those properties have met and maintain the habitat goals of the plan. Of the total current conservation enrollment, 148,409 acres (128,230 unimpacted acres) are under rangeland management plans (Table 11).

Planted grass management plans do not include livestock grazing but require landowners to address threats related to exotic and invasive plants and trees through approved herbicide use, tree removal, seeding native plants. Landowners are required to address mortality threats by marking fences near leks. Planted grass plans also require prescribed disturbances like fire or tilling and planting native forbs to improve habitat quality. There are currently 1,246 acres enrolled in grassland management plans, representing less than 1% of the current total conservation enrollment (Table 5, 7, and 11).

Table 11. Property-Specific Information for Each of the 22 Contracted Sites that Produced Mitigation Offset Units during the 2019 Reporting Period

WAFWA Site ID	Ecoregions	Conservation Plan Type	Expiration Year	Primary CHAT	Total Acres	Active Lek Observations within 3 miles (2014–2019)[a]	2019 Habitat Evaluation Guide Score (0–1)[b]
CZ003	Shinnery Oak Prairie	Rangeland	2024	1	15,433	33	0.43
CZ008	Mixed Grass Prairie	Rangeland	2024	1	625	1	0.41
CZ013	Shinnery Oak Prairie	Planted Grass	2024	1	316	31	0.60
CZ014	Shinnery Oak Prairie	Planted Grass	2023	1	310	1	1.00
CZ016	Sand Sagebrush Prairie	Rangeland	2024	1	12,575	2	0.76
CZ024	Sand Sagebrush Prairie	Rangeland	2999[c]	1	29,626	23	0.68
CZ026	Shinnery Oak Prairie	Rangeland	2999[c]	1	1,554	6	0.85
CZ033	Shortgrass Prairie	Rangeland	2024	2	4,024	1	0.58
CZ035	Shortgrass Prairie	Rangeland	2024	1	1,109	6	0.51
CZ036	Mixed Grass Prairie	Rangeland	2024	1	27,646	0	0.77
CZ037	Mixed Grass Prairie	Rangeland	2024	4	10,255	0	0.78
CZ038	Mixed Grass Prairie	Rangeland	2024	1	21,256	0	0.68
CZ040	Mixed Grass Prairie	Rangeland	2026	1	1,222	5	0.47
CZ061	Shortgrass Prairie	Rangeland	2025	1	3,749	6	0.44
CZ062	Shortgrass Prairie	Planted Grass	2025	1	620	3	0.28
CZ063	Mixed Grass Prairie	Rangeland	2999[c]	1	1,758	4	0.69
CZ065	Mixed Grass Prairie	Rangeland	2999[c]	1	968	4	0.90
CZ066	Mixed Grass Prairie	Rangeland	2026	1	172	4	0.90
CZ067	Mixed Grass Prairie	Rangeland	2026	1	12,739	7	0.77
CZ081	Shortgrass Prairie	Rangeland	2999[c]	1	276	1	0.86
CZ082	Shortgrass Prairie	Rangeland	2999[c]	1	1,429	2	0.55
CZ083	Shortgrass Prairie	Rangeland	2999[c]	1	1,991	2	0.68

WAFWA Site ID	Ecoregions	Conservation Plan Type	Expiration Year	Primary CHAT	Total Acres	Active Lek Observations within 3 miles (2014–2019)[a]	2019 Habitat Evaluation Guide Score (0–1)[b]
Range-Wide Total:		**NA[d]**	**NA**	**NA**	**149,655**	**142[e]**	**0.66**

[a] The WAFWA database indicates that only 15.7% 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] Permanent WAFWA Sites.

[d] NA = not applicable.

[e] The total is less than the sum of the column because some lek sites occur within 3 miles of multiple enrolled properties.

Habitat Quality and LPC Occurrence

The conservation plans and actions are designed to improve and maintain habitat quality for LPC. In 2019, enrolled conservation properties had an average HEG score of 0.66 (Table 11), and the average HEG score for conservation properties since program implementation is also 0.66. This HEG score represents a very high level of habitat quality when measured across a large landscape.

It is important to recognize that it is likely optimistic to assume that management could achieve a 1.0 score across all conservation properties. The HEG was designed around vegetative cover to be a stable measure of habitat quality, but it is still affected by both drought and the season when the property is sampled. Drought can affect forage production, which may decrease vegetative cover. Seasonal effects may be related to the timing of spring green up and the timing of rotational grazing or other disturbances, both of which can affect vegetative cover and plant species composition. The distribution of soil types on the landscape can also affect variability in HEG scores. The LPC mitigation program focuses on enrolling entire ranches that may be several thousand acres in size. Properties of that scale will always encompass some soil types that will support the preferred vegetation for LPC and some that will not.

Table 12. Habitat Evaluation Guide Scores from the 2019 Monitoring Season Depicting 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	0.70	0.66	0.53	0.55	0.66
Median	0.85	0.77	0.60	0.54	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	0.09	0.08	0.08
Count	90	97	22	43	252

Lek occurrence can be another measure of habitat quality and conservation success. Despite limited survey coverage, 19 of 22 conservation properties have one or more leks identified within a 3-mile buffer of the property (Table 11), indicating that these properties are providing lekking, nesting, brooding, and

foraging habitat for LPC. LPC has been regularly observed on the remaining three conservation properties, but no leks have been detected to date.

Mitigation Ratio and Ledger

The CCAA was designed to mitigate impacts at a 2:1 ratio of two habitat units conserved for every one habitat unit of impact. Habitat units are defined as the impacted or conserved acreage multiplied by a proportional habitat quality score (HEG) and a CHAT multiplier.

The HEG is the product of rankings representing:

- Proportion of vegetation versus bare ground,
- Percent cover of seven preferred species of vegetation for LPC,
- Density of trees per acre present, and
- Percentage of suitable habitat expressed as grassland within 1 mile of the site.

The CHAT multiplier is designed to accomplish two objectives: 1) incentivize avoidance and minimization within focal areas and connectivity zones that are important for the management of LPC populations, and 2) establish the mitigation ratio for the program. To accomplish these objectives, separate multipliers for impacts from projects and offset units from conservation contracts were developed. The ratio between impact and offset multipliers is 2:1 within a CHAT category and averages 2:1 across all CHAT categories (Table 13).

Table 13. CHAT Multipliers for Impacts and Offsets Representing the Mitigation Ratio within CHAT Categories and the Average across all CHAT Categories for the CCAA

CHAT Category	Impact Multiplier	Offset Multiplier	Mitigation Ratio
CHAT 1	2.5	1.25	2:1
CHAT 2	2.1	1.05	2:1
CHAT 3	1.8	0.9	2:1
CHAT 4	1.6	0.8	2:1
Average	2	1	2:1

Annual impact units (debits) and offset units (credits) are calculated in the same manner using the impact multiplier for debits and the offset multiplier for credits. Credits and debits are generated annually from each conservation property and impact project based on the HEG score (quantifying habitat quality) measured onsite. For impacts, debits are generated based on the HEG score assessed before construction occurred and are debited annually from the ledger on the anniversary date of the project. For offsets, credits are generated based on the HEG score measured within the current year. Credits for individual conservation properties are generated and recorded on the ledger in two stages. Half of the estimated annual credits for each property are released on January 1. The remaining credits are released each year upon completion of annual habitat monitoring (for a thorough discussion of the HEG, debits, and credits, see Van Pelt et al. 2013:Appendix I).

Debits and credits are specific to the ecoregion in which they occur and are tallied in four separate ledgers maintained within the WCT and USFWS has access to those ledgers. Because credits and debits are

tallied annually for each impact project and offset property, the raw ledgers include thousands of records. In the interest of brevity, only summary tables of the ledgers are included in this report.

The ledgers maintained by WAFWA/SRF for the LPC mitigation program include debits and credits for both the CCAA and the WCA. Table 14 summarizes debits from the ledger by ecoregion, CHAT category, and contract type. A total of 57,818.99 debits have been assessed from the CCAA, accounting for 56.2% of all debits under the mitigation program.

Table 14. Ledger Summary by Ecoregion, CHAT Category, and Contract Type (2019)

Ecoregion	CHAT	CCAA Debits	WCA Debits	Total Debits
Mixed Grass Prairie	CHAT 1	-13,695.91	-17,144.76	-30,840.67
Mixed Grass Prairie	CHAT 2	-5,603.67	-1,589.2	-7,192.87
Mixed Grass Prairie	CHAT 3	-22,531.36	-20,581.91	-43,113.27
Mixed Grass Prairie	CHAT 4	-3,593.1	-2,496.11	-6,089.21
Mixed Grass Prairie	**Region Total**	**-45,424.04**	**-41,811.98**	**-87,236.02**
Sand Sagebrush Prairie	CHAT 1	-1,996.82	-227.3	-2,224.12
Sand Sagebrush Prairie	CHAT 2	0	0	0
Sand Sagebrush Prairie	CHAT 3	-792.99	0	-792.99
Sand Sagebrush Prairie	CHAT 4	-400.53	-130.56	-531.09
Sand Sagebrush Prairie	**Region Total**	**-3,190.34**	**-357.86**	**-3548.2**
Shinnery Oak Prairie	CHAT 1	0	0	0
Shinnery Oak Prairie	CHAT 2	-175.16	-1.28	-176.44
Shinnery Oak Prairie	CHAT 3	-3,910.61	-1,512.49	-5,423.1
Shinnery Oak Prairie	CHAT 4	-1,837.33	-1,092.65	-2,929.98
Shinnery Oak Prairie	**Region Total**	**-5,923.1**	**-2,606.42**	**-8,529.52**
Shortgrass Prairie	CHAT 1	-1,823.77	-77.18	-1,900.95
Shortgrass Prairie	CHAT 2	-33.8	0	-33.8
Shortgrass Prairie	CHAT 3	-941.62	-200.99	-1,142.61
Shortgrass Prairie	CHAT 4	-482.32	-6.7	-489.02
Shortgrass Prairie	**Region Total**	**-3,281.51**	**-284.87**	**-3,566.38**
Range-wide Summary	**Region Total**	**-57,818.99**	**-45,061.13**	**-102,880.12**

Impact units must be debited from the same ecoregion in which they occurred and credited in an equal or higher CHAT category. Table C.1 in Appendix C summarizes all debits by both ecoregion and CHAT category. Between 2014 and 2019, a total of 102,880.12 debits have been entered into the ledger, and there is a current balance of 82,815.41 available credits (44.6%) for use by the CCAA and WCA for future mitigation projects. All ecoregions have positive credit balances. Negative balances within lower CHAT categories reflect that debits within these CHAT categories that have been offset with credits from conservation properties in higher CHAT categories.

Table C.2 in Appendix C summarizes the ledger by ecoregion and individual conservation property. Of the 22 conservation properties enrolled in the program, 20 have available credit remaining, 13 have more than 100 credits available, and 11 have more than 1,000 credits available for future mitigation.

POPULATION SURVEYS

In March 2019, WAFWA began re-evaluating its role in the administration of the industry mitigation framework identified in the RWP and associated CCAA. As a result of this evaluation, the aerial survey used to estimate LPC populations was cancelled prior to its initiation.

In April, WAFWA partnered with the LPC Interstate Working Group and Dr. Christian Hagen from Oregon State University and developed a method to estimate the LPC population using ground survey data collected by the state agencies in 2019. This alternative methodology also used aerial survey data from prior years to refine the 2019 population estimate and estimates of variability. A draft report was sent to the Science Subcommittee for review on August 5. Comments and suggestions were considered in finalizing the estimate. The attached report was submitted to USFWS on September 6, 2019 (Appendix D).

The report finds that LPC populations were likely stable range-wide from 2018 to 2019. While the author suggests that the results should be interpreted cautiously due to some of the caveats associated with this method, it does provide a population estimate based upon ground surveys and past validation methods. The report highlighted the need for future aerial surveys and better integration of those surveys with ground survey efforts. The state agencies and WAFWA are currently evaluating funding options for future survey efforts and recognize the importance of aerial surveys for management decisions.

FINANCIAL SUMMARY

Section XX of the CCAA requires “a discussion on the funds used for habitat conservation on private/state lands.” Table 15 summarizes all iterative term conservation offset payments by ecoregion for 2019, and Table 16 summarizes the same information for permanent easements. Total conservation payments for 2019 equaled $2,141,811. The LPC mitigation program mitigated for both CCAA and WCA projects on the same conservation properties based on habitat units, and the current accounting system employed by WAFWA/SRF does not separate landowner payments by agreement. The proportion of debits applied to the CCAA for the program is currently 56.2% (Table 14). Therefore, payments made for conservation under the CCAA in 2019 totaled $1,203,698. Table 17 summarizes all iterative term and permanent conservation payments from 2014 to 2019. These payments total $11,058,130, and the CCAA proportion is $6,214,669.

Table 15. Summary of All 2019 Iterative Term Conservation Offset Payments by Ecoregion for the CCAA.

	Mixed Grass	Short Grass	Shinnery Oak	Sand Sagebrush	Total
Incentive Payments	$-	$-	$-	$-	$-
Annual Management Payments	$1,266,287	$86,056	$82,483	$124,166	$1,558,993
Habitat Restoration Payments	$-	$-	$110,831	$-	$110,831
Total	**$1,266,287**	**$86,056**	**$193,314**	**$124,166**	**$1,669,823**

Table 16. Summary of All 2019 Permanent Conservation Offset Payments by Ecoregion for the CCAA

	Mixed Grass	Short Grass	Shinnery Oak	Sand Sagebrush	TOTAL
Incentive Payments	$-	$-	$-	$-	$-
Annual Management Payments	$61,673	$37,086	$11,369	$361,859	$471,988
Habitat Restoration Payments	$-	$-	$-	$-	$-
Total	**$61,673**	**$37,086**	**$11,369**	**$361,859**	**$471,988**

Table 17. Summary of All 2014–2019 Iterative Term and Permanent Conservation Offset Payments by Ecoregion for the CCAA

	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	19%	$68,413	3%	$1,720,061	77%	$-	0%	**$2,220,251**
Landowner Management Plan/Maint Payments	$5,451,834	80%	$336,807	5%	$408,078	6%	$617,349	9%	**$6,814,068**
Landowner Permanent Maint Exp	$192,527	14%	$124,103	9%	$52,645	4%	$1,042,514	74%	**$1,411,790**
Landowner Long Term Restoration Exp	$-	0%	$-	0%	$15,646	0%	$-	0%	**$15,646**
Total Conservation Expenses	**$6,355,531**		**$580,943**		**$2,263,070**		**$1,858,587**		**$11,058,130**

2019 PROGRAM AUDIT AND AUDIT RESPONSE

Since 2013, WAFWA has been implementing two important programs to help conserve the lesser prairie-chicken. The first is the RWP for the species. The RWP is a collaborative effort of WAFWA and the state wildlife agencies of Texas, New Mexico, Oklahoma, Kansas, and Colorado. It was developed to ensure the conservation of LPC through voluntary cooperation of landowners and industry. Voluntary industry contributions support conservation actions implemented by participating private landowners. While the

species was listed as threatened between 2014 and 2016,[1] the RWP was the basis for a broad exemption from take prohibition provided by USFWS under Section 4(d) of the Endangered Species Act, often called a "4d Rule."

The second program is the CCAA for LPC. Industry participants enrolled in the CCAA are permitted for incidental take coverage under the CCAA if LPC is listed as threatened or endangered in the future. It relies heavily on implementation of the mitigation framework within the RWP. The CCAA is authorized by a permit issued by USFWS that is held by WAFWA. The permit will provide incidental take authorization if and when LPC is listed again. The CCAA describes the conservation actions participants voluntarily agree to implement as part of the mitigation framework that allows them to continue oil and gas operations. These conservation actions are designed to provide conservation benefits to LPC and its habitat. Both programs, the RWP and the CCAA, are implemented with the close coordination with and support of USFWS.

In 2019, after 5 years of implementing both programs, WAFWA began a review of these programs to assess finances, regulatory compliance, biological effectiveness, and administrative efficiency. The first part of this review was a financial audit of the CCAA program; this review was commissioned by WAFWA to an independent financial specialist in species mitigation programs. The audit results were presented to WAFWA directors at WAFWA's annual summer meeting held in July 2019 in Manhattan, Kansas.

The audit identified a number of issues for WAFWA to address to improve its operational structure and financial management (see Appendices E and F). Based on the audit's recommendations, WAFWA immediately took several actions to improve its short-term financial situation and organizational structure, including measures to reduce the cost of administering the CCAA. WAFWA continues to implement new procedures and approaches to address the recommendations of the audit. These measures have included:

- WAFWA modified its bylaws and organizational structure and established an Executive Director position to provide improved oversight and accountability to the LPC programs. WAFWA believes the new structure will streamline program decisions and provide leadership for program implementation.
- WAFWA will prepare a business plan specifically for a realigned CCAA, separate and apart from the business plan for the RWP, which will incorporate any necessary changes to the financial and conservation aspects of the CCAA to ensure long-term sustainability and regulatory assurances.
- Pending completion of the revised business plan, WAFWA reduced administrative costs through staff reductions, lower data management costs, and a greater reliance on state fish and wildlife agencies for direct support.
- WAFWA is forming an investment committee of financial experts to advise WAFWA's Executive Director regarding the management of the endowment funds that support LPC conservation under the programs.

[1] In September 2015 a federal court in Texas overturned the listing decision. USFWS officially removed the species from the list of threatened species in July 2016. LPC has since been under review by USFWS, triggered by another lawsuit on the de-listing.

- WAFWA will create a separate annual report on the status of the CCAA program. This stand-alone annual report will help to increase transparency in the CCAA program and allow stakeholders to better evaluate its compliance and effectiveness.

WAFWA continued its thorough review of the CCAA program in December 2019, focusing on an assessment of the compliance and effectiveness of the CCAA. To lead the assessment, WAFWA hired a consultant with a national reputation in designing and assessing species mitigation programs. This consultant is currently working closely with WAFWA, USFWS, oil and gas industry participants, and landowners to assess the long-term regulatory assurances and financial sustainability of the CCAA. WAFWA anticipates completing this review by summer 2020. It would then implement these recommendations as part of a broader "realignment" process to improve the long-term implementation and effectiveness of the RWP and CCAA for LPC.

The realignment process will occur as USFWS evaluates whether to propose LPC for listing. A proposed listing announcement is anticipated in May 2021. If USFWS proposes to list LPC, a final listing decision will be made about 1 year later.

LITERATURE CITED

Van Pelt, W.E., S. Kyle, J. Pitman, D. Klute, G. Beauprez, D. Schoeling, A. Janus, J. Haufler, 2013. *The Lesser Prairie-Chicken Range-wide Conservation Plan*. Western Association of Fish and Wildlife Agencies. Cheyenne, Wyoming, 367 pp.

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APPENDICES

Appendix A. Companies with an Active Enrollment Status in the CCAA for the 2019 Reporting Year

Number	Company Name	Number	Company Name	Number	Company Name
1	Anadarko Minerals, Inc	38	Energy Alliance Company, Inc	75	Pintail Petroleum, Ltd
2	Apache Corporation	39	Energy Transfer Partners, LP	76	Pioneer Natural Resources USA, Inc
3	Apache Corporation (Permian)	40	EnerVest Operating, LLC	77	Plains All American Pipeline, LP
4	Beren Corporation	41	EOG Resources, Inc	78	QEP Energy Company
5	Berexco, LLC	42	Fasken Oil and Ranch, Ltd	79	Questa Energy, Corporation
6	BP America Production Company	43	Griffin Management, LLC	80	Range Production Company, LLC
7	Casillas Petroleum Corporation	44	Imperial American Oil, Inc	81	Red Oak Energy, Inc
8	Castelli Exploration, Inc	45	Jayhawk Pipeline, LLC	82	Rio Petroleum, Inc
9	Central Operating, Inc	46	JMA Energy Company, LLC	83	Samuel Gary Jr. & Associates, Inc
10	Centurion Pipeline, LP	47	Jolen Operating Company	84	SandRidge Exploration and Production, LLC
11	Cimarex Energy Company	48	Kenneth W. Cory, Ltd	85	SemGroup Corporation
12	Cimarex Energy Company (West Texas)	49	Kinder Morgan, Inc	86	Strand Energy, LC
13	CMX, Inc	50	Kirkpatrick Oil Company, Inc	87	Strat Land Exploration Company
14	Coats Energy, Inc	51	Laddex, Ltd	88	Superior Pipeline Company, LLC
15	COG Operating, LLC	52	Landmark Resources, Inc	89	Tabula Rasa Partners, LLC
16	ConocoPhillips Company	53	Legacy Reserves Operating, LP	90	Tandem Energy Corporation
17	Continental Resources, Inc	54	M&M Exploration, Inc	91	Tapstone Energy, LLC
18	Corlena Oil Company	55	Magellan Midstream Partners, LP	92	Tengasco, Inc
19	Crawley Petroleum Corporation	56	MarkWest Oklahoma Gas Company, LLC	93	Texakoma Exploration Production, LLC
20	Culbreath Oil and Gas Company, Inc	57	Maverick Brothers Resources, LLC	94	Texland Petroleum, LP
21	Cynosure Energy, LLC	58	McGinness Oil Company of Kansas, Inc	95	Thomason Petroleum, Inc

Number	Company Name	Number	Company Name	Number	Company Name
22	DaMar Resources, Inc	59	Meridian Energy, Inc	96	Toto Energy, LLC
23	Daystar Petroleum, Inc	60	Merit Energy Company, LLC	97	Triad Energy, Inc
24	DCP Midstream, LLC	61	Mewbourne Oil Company	98	Unit Petroleum Company
25	Devon Energy Corporation (Kansas)	62	MIDCO Exploration, Inc	99	Versado Gas Processors, LLC
26	Devon Energy Corporation (Oklahoma)	63	Midcoast Operating, LP	100	Viking Resources, Inc
27	Devon Energy Corporation (Permian Basin)	64	Mid-Con Energy Operating, LLC	101	Vincent Oil Corporation
28	Devon Energy Corporation (Rockies)	65	Midnight Hour, LLC	102	W.R. Williams, Inc
29	Devon Energy Corporation (Texas Panhandle)	66	Murfin Drilling Company, Inc	103	Ward Petroleum Corporation
30	Diehl Oil, Inc	67	O`Benco IV, LP - O`Brien Resources, LLC	104	Western Operating Company
31	Dorchester Minerals Operating, LP (Oklahoma)	68	ONEOK Partners, LP	105	White Exploration, Inc
32	Duncan Oil Properties, Inc	69	Oolite Energy Corporation	106	Younger Energy Company
33	Edison Operating Company, LLC	70	Osage Investors, LLC	107	Zinszer Oil Company, Inc
34	Edmiston Oil Company, Inc	71	Osage Oil, LLC	108	RG Exploration, LLC
35	Elevation Resources, LLC	72	Oxy Oil and Gas	109	Williams Midstream
36	Empire Energy E&P, LLC	73	Panhandle Topeka, LLC	110	Riviera Operating, LLC
37	Enable Midstream Partners, LP	74	Pickerell Drilling Company, Inc	111	ONE Gas, Inc

Appendix B. Summary of Results from Industry Compliance Monitoring for 2019.

WAFWA LPC-RWP Compliance Summary for 2019

Where efforts to reach the company successful?	**Yes**	**No**	**Sold**	**Dry**		
	43	1	0	0		
Is the project constructed?			**Yes**	**No**		
			41	2		
Is the loaction of the project mapped accurately within WAFWA standards?			**Yes**	**No**		
			41	0		
If this is a transmission project, are all poles in CHAT 1-3 monopole?		**Yes**	**No**	**N/A**		
		3	0	38		
If the site is within 1.25 miles of a lek and in CHAT 1-3, are there any impacts under the control of the participant company that were not mitigated for in this project that are not represented in the impact buffer map, including new above ground distribution lines?			**Yes**	**No**		
			0	41		
If the site is within 1.25 miles of a lek and in CHAT 1-3, are there escape ramps in all associated human-made water containment sources?		**Yes**	**No**	**N/A**		
		3	0	38		
If the site is within 1.25 miles of a lek and in CHAT 1-3, is there evidence of broadcast herbicide use outside the facility boundary that is attributed to the participant?			**Yes**	**No**		
			0	41		
If the site is within 1.25 miles of a lek and in CHAT 1-3, is the project compliant with respect to noise levels recoreded at 30 fet from the facility boundary?		**Yes**	**No**	**N/A**		
		27	0	14		
Esimated the wind speed using the Beaufort Scale (miles/hr)	**0-4**	**5-7**	**8-11**	**12-18**	**19-24**	**25+**
	8	19	10	4	0	0
Maximum recorded decibles					**<=75dB**	**>75dB**
					41	0
Are all fences associated with this project and under the control of the participant marked as needed (Necessary if not surveyed or within 0.25 miles of known leks)?					**Yes**	**No**
					41	0
Is there evidence of off-road travel during the breeding season?			**Yes**	**No**	**N/A**	
			0	15	26	
Is there evidence of violations of breeding season timing restrictions?			**Yes**	**No**	**N/A**	
			0	14	27	
Were there any compliance issues found?					**Yes**	**No**
					0	41

Appendix C. 2019 Ledger Summaries

Table C.1. Ledger Summary by Ecoregion and CHAT Category

Ecoregion	CHAT	Conservation Credits	Gross Debits	Refund Credits	Net Debits	Expired Credits	Expired Refund Credits	Current Balance	Remaining Annuals	Year End Balance
Mixed Grass Prairie	CHAT 1	213043.22	-33446.36	2605.69	-30840.67	-91678.55	-1639.9	88884.1	-2507.82	86376.28
Mixed Grass Prairie	CHAT 2	0	-8365.34	1172.47	-7192.87	0	0	-7192.87	-1312.25	-8505.12
Mixed Grass Prairie	CHAT 3	4805.65	-47437.73	4324.46	-43113.27	0	0	-38307.62	-4832.4	-43140.02
Mixed Grass Prairie	CHAT 4	26474.86	-6626.05	536.84	-6089.21	-15021.06	0	5364.59	-1062.57	4302.02
Mixed Grass Prairie	**Region Total**	**244323.73**	**-95875.48**	**8639.46**	**-87236.02**	**-106699.61**	**-1639.9**	**48748.2**	**-9715.04**	**39033.16**
Sand Sagebrush Prairie	CHAT 1	113237.98	-2665.77	441.65	-2224.12	-77224.89	-1.84	33787.13	-383.98	33403.15
Sand Sagebrush Prairie	CHAT 2	0	0	0	0	0	0	0	0	0
Sand Sagebrush Prairie	CHAT 3	0	-966.36	173.37	-792.99	0	0	-792.99	-42.84	-835.83
Sand Sagebrush Prairie	CHAT 4	0	-583.51	52.42	-531.09	0	0	-531.09	-119.54	-650.63
Sand Sagebrush Prairie	**Region Total**	**113237.98**	**-4215.64**	**667.44**	**-3548.2**	**-77224.89**	**-1.84**	**32463.05**	**-546.36**	**31916.69**
Shinnery Oak Prairie	CHAT 1	42751.6	0	0	0	-26968.68	-228.34	15554.58	0	15554.58
Shinnery Oak Prairie	CHAT 2	0	-176.44	0	-176.44	0	0	-176.44	-0.32	-176.76
Shinnery Oak Prairie	CHAT 3	0	-5960.14	537.04	-5423.1	0	0	-5423.1	-987.58	-6410.68
Shinnery Oak Prairie	CHAT 4	0	-3210.89	280.91	-2929.98	0	0	-2929.98	-611.02	-3541
Shinnery Oak Prairie	**Region Total**	**42751.6**	**-9347.47**	**817.95**	**-8529.52**	**-26968.68**	**-228.34**	**7025.06**	**-1598.92**	**5426.14**
Shortgrass Prairie	CHAT 1	20017.29	-2287.1	386.15	-1900.95	-13223.11	-47.03	4846.2	-264.84	4581.36
Shortgrass Prairie	CHAT 2	8606.66	-48.34	14.54	-33.8	-4699.27	-129.58	3744.01	-2.61	3741.4
Shortgrass Prairie	CHAT 3	0	-1481.69	339.08	-1142.61	0	0	-1142.61	-178.36	-1320.97
Shortgrass Prairie	CHAT 4	0	-639.37	150.35	-489.02	0	0	-489.02	-73.35	-562.37
Shortgrass Prairie	**Region Total**	**28623.95**	**-4456.5**	**890.12**	**-3566.38**	**-17922.38**	**-176.61**	**6958.58**	**-519.16**	**6439.42**
Rangewide Summary	**CHAT1**	**389050.09**	**-38399.23**	**3433.49**	**-34965.74**	**-209095.23**	**-1917.11**	**143072.01**	**-3156.64**	**139915.37**
Rangewide Summary	**CHAT2**	**8606.66**	**-8590.12**	**1187.01**	**-7403.11**	**-4699.27**	**-129.58**	**-3625.3**	**-1315.18**	**-4940.48**
Rangewide Summary	**CHAT3**	**4805.65**	**-55845.92**	**5373.95**	**-50471.97**	**0**	**0**	**-45666.32**	**-6041.18**	**-51707.5**
Rangewide Summary	**CHAT4**	**26474.86**	**-11059.82**	**1020.52**	**-10039.3**	**-15021.06**	**0**	**1414.5**	**-1866.48**	**-451.98**
Rangewide Summary	**Region Total**	**428937.26**	**-113895.09**	**11014.97**	**-102880.12**	**-228815.56**	**-2046.69**	**95194.89**	**-12379.48**	**82815.41**

Table C.2. Ledger Summary by Ecoregion and Conservation Property

Ecoregion	Conservation Site	Site Credits	Gross Debits	Refund Credits	Net Debits	Expired Credits	Expired Refund Credits	Site Balance
MixedGrass Prairie	CZ008	2349.85	-2707.77	631.32	-2076.45	-0.14	-273.26	0
MixedGrass Prairie	CZ036	95970.65	-15341.03	149.05	-15191.98	-60895.14	0	19883.53
Mixed Grass Prairie	CZ037	26474.86	-6626.05	536.84	-6089.21	-15021.06	0	5364.59
Mixed Grass Prairie	CZ038	67795.91	-30705.9	7322.25	-23383.65	-29635.24	-1366.64	13410.38
Mixed Grass Prairie	CZ040	2477.21	-2477.09	0	-2477.09	-0.04	0	0.08
Mixed Grass Prairie	CZ063	4711.97	-4694.98	0	-4694.98	-16.94	0	0.05
Mixed Grass Prairie	CZ065	3273.15	-3272.85	0	-3272.85	-0.11	0	0.19
Mixed Grass Prairie	CZ066	581.52	-581.26	0	-581.26	-0.2	0	0.06
Mixed Grass Prairie	CZ067	35882.96	-24662.9	0	-24662.9	-1130.74	0	10089.32
Mixed Grass Prairie	Remediation Credit	4805.65	-4805.65	0	-4805.65	0	0	0
Mixed Grass Prairie	**Region Total**	**244323.73**	**-95875.48**	**8639.46**	**-87236.02**	**-106699.61**	**-1639.9**	**48748.2**
Sand Sagebrush Prairie	CZ016	42411.98	-3531.38	667.44	-2863.94	-31499.38	-1.84	8046.82
Sand Sagebrush Prairie	CZ024	70826	-684.26	0	-684.26	-45725.51	0	24416.23
Sand Sagebrush Prairie	Region Total	113237.98	-4215.64	667.44	-3548.2	-77224.89	-1.84	32463.05
Shinnery Oak Prairie	CZ003	33678.72	-868.33	122.27	-746.06	-26460.36	0	6472.3
Shinnery Oak Prairie	CZ013	1513.51	-1648.24	238.04	-1410.2	-0.66	-102.57	0.08
Shinnery Oak Prairie	CZ014	1499.73	-1578.33	190.78	-1387.55	-0.35	-111.8	0.03
Shinnery Oak Prairie	CZ026	6059.64	-5252.57	266.86	-4985.71	-507.31	-13.97	552.65
Shinnery Oak Prairie	**Region Total**	**42751.6**	**-9347.47**	**817.95**	**-8529.52**	**-26968.68**	**-228.34**	**7025.06**
Shortgrass Prairie	CZ033	8606.66	-2169.4	503.97	-1665.43	-4699.27	-129.58	2112.38
Shortgrass Prairie	CZ035	3637.06	-1295.72	386.15	-909.57	-2003.51	-47.03	676.95
Shortgrass Prairie	CZ061	8160.53	-412.97	0	-412.97	-5932.35	0	1815.21
Shortgrass Prairie	CZ062	383.37	-340.43	0	-340.43	-10.86	0	32.08
Shortgrass Prairie	CZ081	750.79	-237.98	0	-237.98	-274.81	0	238
Shortgrass Prairie	CZ082	2692.3	0	0	0	-1920.1	0	772.2
Shortgrass Prairie	CZ083	4393.24	0	0	0	-3081.48	0	1311.76
Shortgrass Prairie	**Region Total**	**28623.95**	**-4456.5**	**890.12**	**-3566.38**	**-17922.38**	**-176.61**	**6958.58**
Rangewide Summary	**Region Total**	**428937.26**	**-113895.09**	**11014.97**	**-102880.12**	**-228815.56**	**-2046.69**	**95194.89**

Appendix D. 2019 Population Estimate Report

Population Trend Estimation of Lesser Prairie-Chickens from Ground Counts and Aerial Survey data, 2012-2019

Prepared by Christian A. Hagen, 4 September 2019

The lesser prairie-chicken (*Tympanuchus pallidinctus;* hereafter LEPC) has been a species of conservation concern since at least the mid-1990s. Recently, comprehensive conservation efforts were initiated through the Western Association of Fish and Wildlife Agencies (WAFWA) and the USDA Natural Resources Conservation Service (NRCS) to reduce threats facing LEPC and increase its distribution and abundance (WAFWA, NRCS). Coupled with these efforts was the establishment of a rigorous sampling frame to estimate LEPC abundance using aerial surveys (McDonald et al. 2013). Annual estimates were derived for each of 4 ecoregions and for the entire distribution from 2012-2018. These annual estimates have allowed biologists to assess trends in populations. However, in 2019 the aerial survey was not conducted because of a lack of funding.

The conservation partners use these annual estimates and the longer-term trends as an indicator population status. Therefore, there was a need to estimate abundance for 2019 to maintain the population monitoring efforts. Because LEPC are also monitored on a state-by-state basis using traditional ground lek counts, it is possible to estimate a population rate of change from 2018 to 2019, and project an abundance estimate for 2019.

The goal of this report is to provide partners with an estimate of the 2019 population using the best available information. Population reconstruction methods were used to extrapolate trend and abundance of LEPC in 2019 among the 4 ecoregions.

Methods

Using the four ecoregions delineated by WAFWA (i.e., Mixed Grass Prairie, Short-grass/CRP-Mosaic Prairie, Sand Sagebrush Prairie, and Sand Shinnery Oak Prairie) and implemented in previous analyses, ground count data were amalgamated accordingly from each of the individual 5 state databases from 2012-2019. Raw count data were handled as in previous analyses (for details see, Garton et al. 2016, Hagen et al. 2017). New Mexico's database was not complete for 2019, as it mostly contained count information from private lands and Nature Conservancy property. Public land count data had not been entered at the time of this report. Overall trends from this dataset was compared to an overview dataset provided by New Mexico Game and Fish and the overall patterns seemed to be highly correlated. Thus, for this report to remain timely, the partial 2019 New Mexico dataset was used.

Analytical Approach

Ground lek counts offer two metrics by which trend analyses can be conducted: average number of birds counted per lek, and the annual rate of change (λ) of leks that were counted in successive years (Garton et al. 2016). The latter has been used to reconstruct population size over time, and the former has been used to estimate trends as a measure of relative abundance.

I developed 3 different models to provide an abundance estimate in 2019. First, the simplest model, which estimated λ for the 2018-2019 interval from ground counts and multiplied 2018 estimated abundance from aerial surveys by that ratio. To estimate the finite rate of change for the population using males counted from the ground at each lek, lek complex or lek route (hereafter lek) surveyed in both 2018 and

2019, we treated each count as cluster samples of individual males in successive years and the pair of counts in 2 successive years as a ratio estimator. The ratio of males counted in a pair of successive years served as an estimate of the finite rate of change for males at that lek or lek complex in that 1-year interval. These ratios were combined across leks, complexes or surveys within an ecoregion for each year to estimate the finite rate of change, $\lambda(t)$ as the ratio estimator:

$$\hat{\lambda}(t) = \frac{\sum_{i=1}^{n} M_i(t+1)}{\sum_{i=1}^{n} M_i(t)}, \quad \text{(Eq.1)}$$

where $M_i(t)$ = number of males counted at lek i in year t, across $n$leks counted in both years t and t+1. Note that when the number of leks or lek complexes counted varied from one year to the next, this estimator was unbiased by sample size though we did not use counts for leks or lek sites counted in only one of the paired years. Precision (variance and SE[$\sqrt{Var}$]) of finite rates of change was estimated conservatively by treating this finite rate of change, $\lambda(t)$, as a standard ratio estimator:

$$\hat{Var}(\lambda(t)) = \frac{fpc}{n\bar{M}(t)^2} \frac{\sum_{i=1}^{n} [M_i(t+1) - \lambda(t)M(t)]^2}{n-1}, \quad \text{(Eq.2)}$$

where $fpc$was assumed to be 1.0 and $\bar{M}(t) = (\sum_{i=1}^{n} M_i(t))/n$, and fpc is a finite population correction (Scheafer et al. 1996)

I used the overlap of 90% confidence intervals to evaluate trends from 2018 to 2019. In the case of λ, if confidence intervals did not overlap 1, then decreasing (<1) or increasing (>1) population trend could be inferred, otherwise it was considered stable. It is important to clarify terminology of our population of study. Although ground counts of leks are likely comprised mostly of males (Garton et al. 2016), I refer to minimum abundance and population to maintain consistency with language from the aerial surveys.

I calculated an index to population size by first considering the estimated abundance present in the 2018 aerial survey as a minimum estimate of population size within an ecoregion. We then projected the 2019 minimum abundance index by multiplying the 2018 abundance by the ratio estimator of the relative number of birds attending the same leks in 2018 compared to 2019.Each of these estimators have an associated variance and by multiplying them the variance is likely compounded with this approach.

For the second model, I used linear regression to predict λ from aerial counts (λ_{aerial})as a function of λ estimated from ground counts (λ_{ground}). In this case, there were 6 time intervals from 7 years (2012-2018) for each ecoregion to estimate λ_{aerial} from λ_{ground}. Using the regression coefficients, I estimated λ_{aerial} from λ_{ground} in 2019. This ratio was multiplied by the 2018 aerial estimated population to estimate the 2019 abundance. The fundamental assumption is $\lambda_{ground}$is linearly related to λ_{aerial}.

For the third model, I used least squares linear regression and average numbers of males per lek from the ground count to predict N_{aerial}. In this case, there were 7 time intervals for each ecoregion to estimate N_{aerial}. Using the regression coefficients, I estimated N_{aerial} from the males per lek for the 2019 ground surveys.

In addition to using standard diagnostics (i.e., residual plots, r^2) in regression, previous estimates of N_{aerial} were projected against modeled estimates of λ and N_{aerial} to assess how well the model performed. For example, in 2013 and 2014 abundance was estimated at 18,220 and 9,870 for the SGPR, respectively from the aerial surveys. Using coefficients from the regression of males per lek ~N_{aerial} resulted in predicted abundances of 16,430 and 13,913 for 2013 and 2014, respectively (Fig 1.). The same approach was used for the other 2 models to reconstruct population estimates from 2012 to 2018.

Results/Discussion

Mixed Grass Prairie (MGPR). Twenty-one lek routes were counted in the MGPR from 2012, 12 of which were still active and counted in 2019. Population rate of change was relatively stable over this time period λ = 1.01 (90% CI: 0.81–1.21), as well as for 2018-19 interval λ = 0.97 (90% CI: 0.842–1.09), although the point estimate suggested a 3% decline. Using λ_{ground} to project N_{aerial} resulted in a population estimate of 6,801 (90% CI: 5,918-7,684). The regression model of $\lambda_{ground} \sim \lambda_{aerial}$ had a moderate fit and predictive power ($F_{1,4}$ = 3.85, P = 0.12, r^2 = 0.490). The extrapolated estimate of λ_{aerial} from β_0 (0.023) + $\beta_{\lambda ground}$ (1.025)x = 1.02 (90% CI: 0.68-1.35). Using λ_{aerial} to project N_{aerial} resulted in a population estimate of 7,141 (90% CI: 4,788-9,493). The regression model of males/lek ~ N_{aerial} had a weak fit and predictive power $F_{1,4}$ = 0.17, P = 0.57, r^2 = 0.068). The extrapolated estimate of N_{aerial} from β_0 (5034) + $\beta_{male/lek}$ (182)x = 6,200 (90% CI: 3,714-8,685).

Short-grass/CRP-Mosiac Prairie (SGPR). Three lek routes were counted in the SGPR from 2012 - 2019. Population rate of change was relatively stable over this time period λ = 1.09 (90% CI: 0.93–1.24), as well as for 2018-19 interval λ = 1.09 (90% CI: 0.30–1.89), although the point estimate suggested a 9% increase. Using λ_{ground} to project N_{aerial} resulted in a population estimate of 24,771 (90%CI: 6,804-42,738). The regression model of $\lambda_{ground} \sim \lambda_{aerial}$ had a weak fit and predictive power ($F_{1,4}$ = 0.80, P = 0.42, r^2 = 0.166). The extrapolated estimate of λ_{aerial} from β_0 (0.444) + $\beta_{\lambda ground}$ (0.606)x = 1.11 (90% CI: 0.73-1.40). Using λ_{aerial} to project N_{aerial} resulted in an population estimate of 25,106 (90% CI: 17,566-32,646). The regression model of males/lek ~ N_{aerial} had a reasonable fit and predictive power $F_{1,4}$ = 11.57, P = 0.02, r^2 = 0.698). The extrapolated estimate of N_{aerial} from β_0 (1020) + $\beta_{male/lek}$ (228)x = 23,983 (90% CI: 18,638-29,328).

Sand Sagebrush Prairie (SSPR). Eight lek routes and an average of 91 leks were counted in the SSPR from 2012 - 2019. Population rate of change was relatively stable over this time period λ = 0.97 (90% CI: 0.72–1.19), as well as for 2018-19 interval λ = 1.10 (90% CI: 0.76–1.43), although the point estimate suggested a 10% increase. Using λ_{ground} to project N_{aerial} resulted in a population estimate of 3,379 (90% CI: 2,347-4,410). The regression model of $\lambda_{ground} \sim \lambda_{aerial}$ had a reasonable fit and predictive power ($F_{1,4}$ = 12.07, P = 0.03, r^2 = 0.751). The extrapolated estimate of λ_{aerial} from β_0 (–0.230) + $\beta_{\lambda ground}$ (1.606)x = 1.53 (90% CI: 1.44-1.92). Using λ_{aerial} to project N_{aerial} resulted in a population estimate of 4,718 (90% CI: 3,528-5,908). The regression model of males/lek ~ N_{aerial} had a strong fit and predictive power $F_{1,4}$ = 52.30, P = 0.001, r^2 = 0.913). The extrapolated estimate of N_{aerial} from β_0 (131) + $\beta_{male/lek}$ (1535)x = 2,359 (90% CI: 2,048-2,669).

Sand Shinnery Oak Prairie (SOPR). Thirty-eight lek routes and an average of 192 leks were counted in the SOPR from 2012 - 2019. Population rate of change was relatively stable over this time period λ = 1.02 (90% CI: 0.72–1.32), as well as for 2018-19 interval λ = 0.84 (90% CI: 0.46–1.22), although the point estimate suggested a 16% decrease. Using λ_{ground} to project N_{aerial} resulted in a population estimate of 4,878 (90%CI: 2,667-7,090). The regression model of $\lambda_{ground} \sim \lambda_{aerial}$ had a moderate fit and predictive power ($F_{1,4}$ = 3.57, P = 0.13, r^2 = 0.467). The extrapolated estimate of λ_{aerial} from β_0 (–0.549) + $\beta_{\lambda ground}$ (1.758)x = 0.93 (90% CI: 0.50-1.36). Using λ_{aerial} to project N_{aerial} resulted in a population estimate of

5,384 (90% CI: 2,874-7,894). The regression model of males/lek ~ N_{aerial} had a moderate fit and predictive power $F_{1,5}$ = 1.82, P = 0.23, r^2 = 0.254). The extrapolated estimate of N_{aerial} from β_0 (1193) + $\beta_{male/lek}$ (530)x = 4,975 (90% CI: 1,310-8,640).

Examining the overall fit of these modeled estimates to previous years aerial surveys provided reasonable support for these estimators derived from all 3 models (Figure 1). Combining the estimates from across the 4 ecoregions and 3 different models suggested that the rangewide population was relatively stable from 2018 to 2019 with point estimates ranging from 37,516 to 41,417 (Table 1).

Implications

All 3 models yielded similar estimates of LEPC populations for 2019. However, there are a few caveats to consider. First, ground counts do not originate from a statistically designed random sample; as such they are considered an index of the population or a measure of relative abundance and not an estimator of actual population size. Therefore, they are not a replacement for the aerial surveys and the resulting abundance estimator. Second, λ is an estimated ratio with an associated variance. When using one estimator to predict another, variance estimates can be compounded. These variances were not assessed in this streamlined analysis. It is likely that the standard errors and confidence intervals reported herein are an underestimate. New approaches have been developed in demographic modelling that are more effective in dealing with counts and variances from different sources. The use of integrated population models (IPMs) is becoming more common place and should be strongly considered for development for LEPC population monitoring in the future. Building an IPM is an endeavor well beyond the scope of this report in terms of both time and human resources. Additionally, it would be advantageous if the 5 states developed a standardized and centralized database for all ground lek count data for ease of future analyses. The development of an IPM and database would facilitate more robust estimates of abundance in the event aerial surveys were unable to be conducted in a given year. As in any analysis of extrapolation, the more time intervals that you extrapolate the greater the uncertainty. Therefore, maintaining annual aerial surveys until an IPM can be developed is important to ensure the most accurate and precise LEPC population estimates in the future.

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Table D.1. Estimated Lesser Prairie-Chickens Population Size from 3 Models Using Ground Count Data in the 4 Ecoregions of the 5-State Distribution in 2019 and in Comparison to the 2018 Aerial Estimate

	2018 Aerial Estimate	Ground Count λ			Modeled λ			Modeled males / lek		
Ecoregion	*N* 90%CI	*N*	90% CI		*N*	90% CI		*N*	90% CI	
MGPR[a]	7,028 3,314 – 9,367	6,801	5,918	7,684	7,141	4,788	9,493	6,200	3,714	8,685
SGPR	22,714 9,362 – 31,082	24,771	6,804	42,738	24,175	16,620	31,729	23,983	18,638	29,328
SSPR	3,083 1,184 – 4,742	3,379	2,347	4,410	4,718	3,528	5,908	2,359	2,048	2,669
SOPR	5,8121,691 – 11,408	4,878	2,667	7,090	5,384	2,874	7,894	4,975	1,310	8,640
Range	38,36720,233 – 49,698	39,830	17,737	61,923	41,417	27,810	55,025	37,516	25,711	49,322

[a]Ecoregion acronyms are as follows, MGPR = Mixed Grass Prairie, SGPR = Short-grass/ CRP mosaic, SSPR= Sand Sagebrush Prairie, and SOPR = Sand Shinnery Oak Prairie

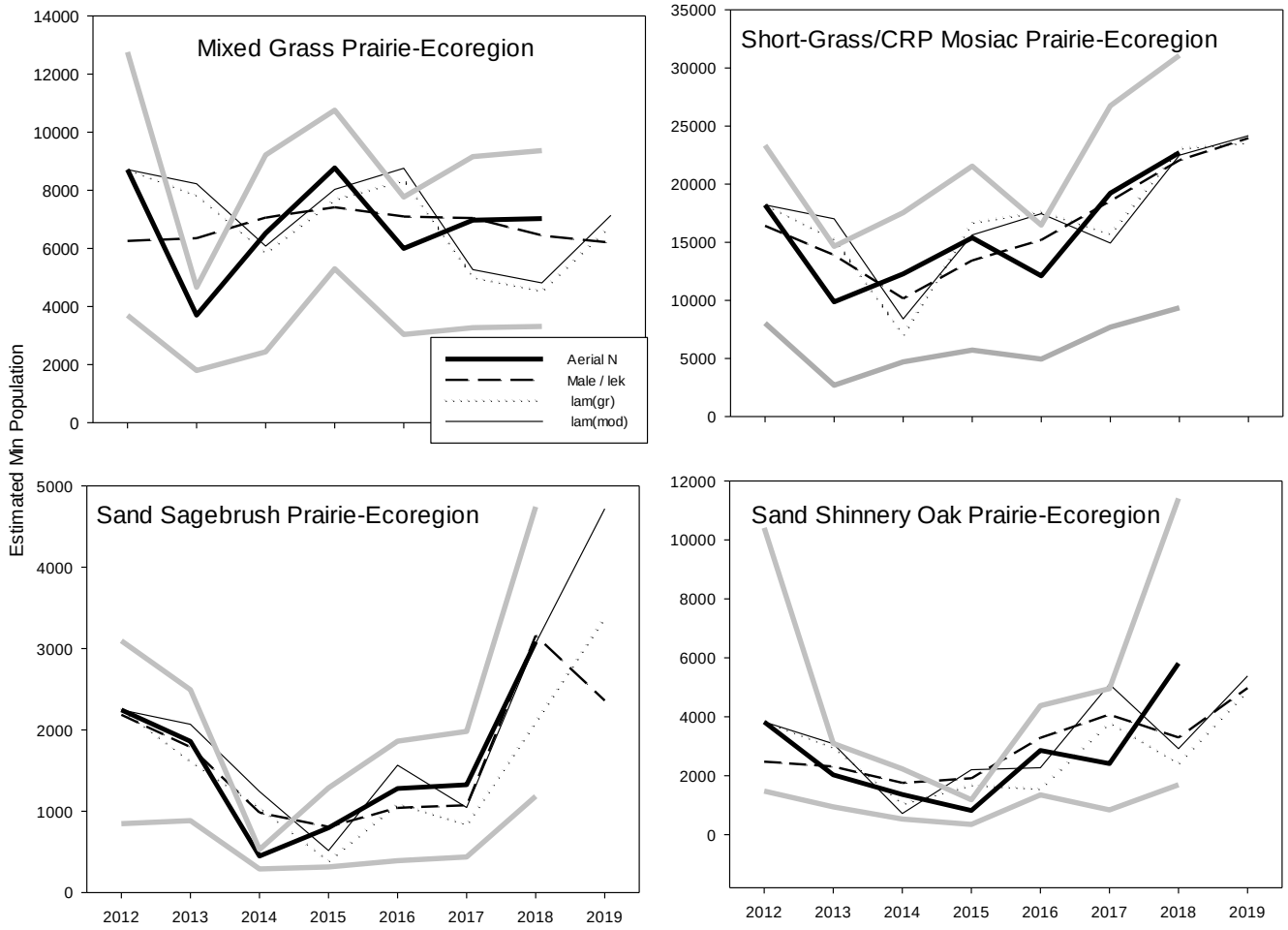

Figure D.1. Estimated abundance of lesser prairie-chickens from 2012-2019. Aerial survey estimates (thick black line) and their 90% confidence intervals (thick gray lines) did not occur in 2019. The three other estimates were from projected rates of change from ground counts (gr; dotted line), modeled rates (mod;thin black line) of change where λ_{aerial} was predicted as function of λ_{ground}, and N_{aerial} was modeled as a function of the average males per lek (male/lek; long dash). Confidence intervals are not presented for these estimates but can be found in Table D.1.

Appendix E. Audit of the Lesser Prairie Chicken Mitigation Framework

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Conservation Investment Management

Audit of the Lesser Prairie Chicken Mitigation Framework

Prepared for The Western Association of Fish and Wildlife Agencies

By Dr. Ben Guillon, CFA

July 10, 2019

Conservation Investment Management
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This audit was ordered by WAFWA. WAFWA and Lesser Prairie Chicken Conservation, LLC, a subsidiary of Common Group Capital paid equally for the cost associated with the audit.

All opinions expressed are my own.

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1 Acronyms

CCAA	Candidate Conservation Agreement with Assurance
CFA	Chartered Financial Analyst
CGC	Common Ground Capital
CIM	Conservation Investment Management
ENGO	Environmental Non-governmental Organizations
GAAP	Generally Accepted Accounting Principles
KU	Kansas University
LPC	Lesser Prairie Chicken
LPCC	LPC Conservation, LLC
RBC	Royal Bank of Canada
SRF	WAFWA Species Restoration Foundation Inc., an Idaho nonprofit corporation granted 501(c)(4) status by the Internal Revenue Service
U.S. FWS	United States Fish and Wildlife Service
WAFWA	Western Association of Fish and Wildlife Agencies, Inc., an Idaho nonprofit corporation granted 501(c)(4) status by the Internal Revenue Service

2 Qualification of the Auditor and Contact Information

The audit was conducted by Dr. Ben Guillon, CFA. Dr. Guillon is a recognized expert on mitigation markets with over 15 years of experience. He has worked for some of the most sophisticated investors in the space including the World Bank and New Forests. He also served as expert witness for the U.S. Department of Justice on a case related to mitigation banking and in-lieu-fee programs in Alaska. Dr. Guillon has been teaching on the business of mitigation and conservation banking at the mitigation banking conference for many years and has published several articles on the subjects. Among other degrees and certifications, Dr. Guillon holds a Doctorate Degree in Veterinary Medicine with a specialization in wildlife management and a master's degree in environmental economics. Dr. Guillon also holds the CFA designation from the Chartered Financial Analyst Institute. A full resume is available in Appendix B

Dr. Guillon can be reached at: ben@conservationinvestment.com

3 Scope of the Audit, Approach, Methodology and Timeline

3.1 Scope

The audit conducted by Conservation Investment Management (CIM) has been focused on the implementation of the Range-Wide Oil and Gas Candidate Conservation Agreement with Assurances for the Lesser Prairie-Chicken (***Tympanuchus pallidicinctus***) in Colorado, Kansas, New Mexico, Oklahoma and Texas between the U.S. Fish and Wildlife Service and the Western Association of Fish and Wildlife Agencies / Foundation for Western Fish and Wildlife dated February 28, 2014 ("CCAA", also referred to as the "Mitigation Framework") (Appendix C). The implementation of the CCAA is referred to in this audit report as the "Program". I have limited my analysis of The Lesser Prairie-Chicken Range-wide Conservation Plan dated October 2013 ("Range-wide Plan") and of WAFWA as an organization to the points relevant to the Audit of the implementation of the CCAA.

Based on the audit engagement agreement, I focused my analysis of the following points:

- Financial situation of the Species Restoration Foundation ("SRF")
- Conservation performance of the Program
- Compliance of the Program with the CCAA
- Future market for Lesser Prairie-Chicken ("LPC") mitigation
- Stakeholder support of the Program

In addition, I presented a list of options for the future of the Program.

3.2 Approach

The Program is a complex system that is influenced by a large number of decision makers, staff members and external organizations. For the ease of the reader of this report, I organized the audit using the framework depicted in Figure 1. The Program lies at the intersection of three key functions: financial management, conservation delivery and regulatory compliance. The three functions are coordinated through the management provided by WAFWA to the Program. The State Agencies, as well as some external stakeholders are providing the governance of the Program. Finally, other stakeholders have an interest in the Program, including Program participants, landowners providing mitigation, the U.S. Fish and Wildlife Service as well as different environmental non-governmental organizations ("ENGO").

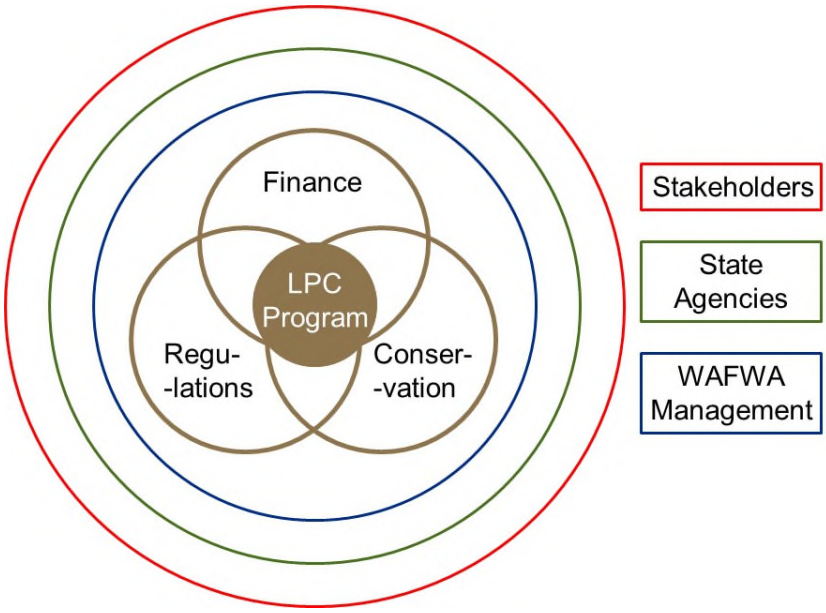

Figure 1: Audit framework

3.3 Methodology

I started with an extensive review of the existing documentation, followed by interviews with WAFWA's current staff as well as interviews of representatives of the different stakeholder groups. I requested additional information from WAFWA to better understand the performance of the Program. However, in most cases, the information was not readily available and required that I worked with WAFWA's staff to generate it.

3.4 Confidentiality

During the course of this engagement, in this audit report and in any presentation relative to this audit, I have respected the confidentiality provisions of the CCAA, of the certificate of inclusion and of the landowner agreements. All information provided was anonymized to maintain confidentiality of names and locations of industry parties and landowners.

3.5 Combination with Due Diligence

In parallel to the audit process, LPC Conservation, LLC ("LPCC"), a subsidiary of Common Ground Capital ("CGC") has been conducting a due diligence process in order to present a proposal to WAFWA on the future of the Program by July 11th.

3.6 Timeline

April 3	Execution of audit engagement agreement
April 4-5	Interviews in Lawrence with WAFWA's program management
April 7-8	Interviews in Boise with WAFWA's CFO
April 10 – May 3	Document review and conservation effectiveness analysis

April 26	Initial results briefings to WAFWA's Directors and to Chris Moore, WAFWA's Executive Director
May 4 – June 30	Interviews with participants and FWS – Finalization of the report

3.7 Audit Limitations

As indicated in the engagement agreement the success of this audit relies on the full cooperation of WAFWA's staff and management, in particular with regard to access to important program information such as financial and conservation performance. Most WAFWA's employees and contractors has considered this audit as "friendly" and have been proactive in sharing information. However, a limited number of WAFWA's employees may have considered the audit as being "adversarial" and have been significantly less forthcoming with information. In addition, as presented in this audit, WAFWA does not maintain customary business analytics related to financial and operational (conservation) performances. WAFWA also used three different accounting programs and charts of accounts for the 5-year period covered by the audit. The different systems and charts of accounts do not match one another rendering any longitudinal analysis almost impossible. Because of the limited time and resources of the audit, I was only able to do a more limited analysis than anticipated.

[redacted]

The highly divided culture between the conservation program staff and the accounting staff has also limited the ability to easily capture a comprehensive picture of the Program. Although WAFWA's Executive Director has been very cooperative and has tried to make himself available as needed, the fact that he was only available on a part time basis and had only a few months of history with the Program has been an added limitation to the audit. Finally, combining an audit with a third-party due diligence created a level of confusion, and sometime suspicion, that may have limited the transparency of the information provided by WAFWA's staff to the auditor.

Despite these limitations, I believe that this report provides a fair overview of the Program.

4 Results of the Audit

4.1 Finances

4.1.1 Although accounting systems and procedures are in place, WAFWA does not properly administer the Program from a financial standpoint

WAFWA has retained a well-trained staff of accountants as well as a Chief Financial Officer. WAFWA has had 4 CFOs over the 5-year period and has used three different accounting software, which is highly unusual. However, financial operations are implemented in a customary manner and WAFWA has successfully passed its annual accounting audits with limited questions or restatements. However, WAFWA's financial management is deficient for the following reasons:

- Financial controls are deficient

Because of the lack of communication between the accounting staff and the management of the program staff, it is unclear how WAFWA ensures that reimbursement to staff are properly approved. In addition, in part due to the lack of funding, WAFWA's accounting team does not maintain the customary checks and balances when approving and making payments to contractors and other third parties. Although I did not identify specific issues, the lack of proper controls could lead to improper practices by staff members and management.

- The financial reporting is inadequate because of multiple software migrations

Over the 5 years covered by the audit, WAFWA used three different accounting software. The charts of accounts for each of the three software are different and expenses cannot be easily compared between years. In addition, WAFWA's CFO is not familiar enough with the three software to easily create meaningful reports.

- The financial reporting gives a distorted view of financial position

The Program's financial statements have been developed using Generally Accepted Accounting Principles, which is the standard used in the industry. However, these financial statements do not give a fair picture of the financial position of the Program. WAFWA's CFO should either add footnotes to the financials or produce a different set of financials for WAFWA's Directors to understand the actual financial position of the Program. For example, WAFWA does not record the liabilities created by the pre-paid mitigation by Program participants. In addition, the Program's fixed assets are overvalued (see 4.1.3).

- The budgeting process is disconnected from Program operations

After discussion with both WAFWA's CFO and the management of the conservation program, it appears clearly that the lack of communication does not allow an effective budgeting process. WAFWA's CFO reported that Program operations would authorize purchase orders without regard for the budget while the Program management complained that the budget was prepared with limited input from them. The result is that WAFWA has only a limited understanding of the Program budget and of how it could be effectively reduced.

- WAFWA does not properly supervise SRF's financial advisor

Based on interviews with WAFWA's CFO and with Royal Bank of Canada ("RBC"), the investment adviser for SRF's endowments, RBC's performance is only reviewed by WAFWA on an annual basis as part of the general accounting report. My recommendation is to assess fund performance quarterly and to review the investment policy, as well as the performance of the investment manager, annually. The agreement between WAFWA and RBC was not available when requested and WAFWA's CFO indicated that she had not reviewed it since she had taken her position. The investment policy statement has not been reviewed in the past 5 years. Reports provided by RBC are particularly confusing and do not give a good overview of the investment performance. Since all endowments have the same goals, they should be maintained as in the same pool and tracked separately, and not through separate accounts as it is currently the case for SRF. Maintaining separate accounts with different asset mixes significantly increases the fees paid by WAFWA to RBC and increases the complexity of the monitoring investment performance. Some of the investment strategies included in SRF's portfolios are not customary and it is not clear why they were chosen. Specifically, most strategies for smaller endowments are focused on index funds and mutual funds. RBC instead opted to create a portfolio composed of individual stocks. This does not ensure the appropriate level of diversification and tends to significantly raise the overall costs of the portfolio. Finally, RBC has been providing erroneous advice to WAFWA's CFO on how to manage SRF's endowments when those questions should have been directed to WAFWA's legal counsel instead. Based on the findings above, my recommendation is for WAFWA to select a new investment adviser and terminate its relationship with RBC as soon as possible. In addition, WAFWA may consider sending a complaint to RBC's management and request that they review their employees' practices and refund any amount of fee that was improperly charged to SRF.

4.1.2 WAFWA's finance team does not provide the strategic overlay that is required to run the Program

[redacted] This translates in a quasi-absence of business analytics beyond the financial statements, the absence of medium- and long-term financial planning and of financial risk management. WAFWA's CFO is disconnected from the conservation operations and has a limited understanding of the implementation of the Program. This would limit any attempt to provide strategic guidance on the Program. [redacted]

One of the direct consequences of the lack of strategic thinking at the financial level is the fact that WAFWA does not conduct proper financial analysis before accepting new initiatives leading to unprofitable arrangements (Such a grant administration). One of the main reasons for the low administrative overhead that can be charged on federal grants stems from the aftermath of the situation related to Steve Barton. However, similar low administrative fees are also charged on state-provided grants. The level of administrative expenses levied on those grants does not cover the administrative costs incurred by WAFWA. [redacted]

4.1.3 WAFWA's financial reporting overvalues its assets

At the end of the fiscal year 2018, SRF is reporting the following assets

Table 1: SRF Fixed Asset (As reported at the end of FY2018)

Land	$	9,250,000
Conservation Easement Asset	$	1,552,597
Software	$	730,744
Furniture and Equipment	$	149,652

The land category refers to the Tate Ranch. However, this value is incorrect for two reasons. First the total purchase price was $10 million. SRF paid $9.25 million at closing because it received a $750,000 credit associated with a 5-year grazing and hunting granted to the previous owners. The $750,000 should have been recorded as a liability and the full $10 million should have been recorded as the value of the asset. Second, WAFWA placed a conservation easement onto the Tate Ranch limiting the development opportunities. WAFWA should have at least inserted a footnote in the financials to disclose the fact that the Tate Ranch's value may be 30% to 50% lower than the initial value. A better approach would have been to do a new appraisal of the ranch to arrive at the current value. Finally, the ranch has been titled in the name of WAFWA and not SRF and is not therefore an SRF asset (WAFWA's CFO disputes this later point).

Conservation easement assets refers to the conservation easements that have been placed on third-party ranches for permanent mitigation. Although it is correct from an accounting standpoint that the conservation easements would be considered as assets, they have no market value (those easements could be considered a net liability to WAFWA because their management by WAFWA creates a perpetual annual cost that is not matched by any proceed). The same is true for the software system that was purchased by SRF. It is highly customized, and it is unlikely the system could be resold to another entity.

We highly recommend that SRF maintains at least 2 sets of financials. One set would be GAAP compliant while the second set of financials would be designed for management and reflect the real value of the assets and of the liabilities.

Finally, the list of fixed assets of SRF reflects neither the Boise building nor the loan to WAFWA for its share of the purchase of the building (see more details in the next section).

After full restatement, I estimated the value of SRF's fixed assets at between $5.8 and $7.8 million, or between 47% and 63% of the value reported in SRF's balance sheet. If the Tate Ranch is removed from SRF's assets, then the value of SRF's fixed assets is close to null.

4.1.4 The purchase of the Boise building using SRF's administrative funds and the associated loan of SRF's funds to WAFWA were not appropriate uses of funds. WAFWA took 100% ownership of the building paid using SRF funds.

In 2016, WAFWA purchased for $650,000 a building in Boise to house WAFWA's and SRF's operations. SRF was responsible for 75% of the funding and WAFWA used funds from SRF's administrative account. WAFWA was responsible for 25% of the purchase price but did have neither the available cash nor the ability to contract a loan. WAFWA decided a take a $162,500 loan from SRF to cover its side of the transaction. I requested the documentation for this loan but was told by WAFWA's CFO that it was never prepared, and only a repayment schedule was prepared and approved by the executive committee.

WAFWA did not request a review by its legal counsel before deciding to purchase a building for WAFWA and SRF using SRF's funds. WAFWA also did not request a review by legal counsel before extending itself a loan from SRF. Neither the CCAA nor the Lesser Prairie Chicken Conservation Delivery Business Plan (Appendix D) clearly describe the expenses that are appropriate under the administrative account. However, the business plan includes a budget that does not contemplate the purchase of a building. In addition, purchasing the building required invading the principal of the endowment, which goes against the business plan. For those reasons, it is my opinion that both the purchase of the building using SRF funds and the loan from SRF to WAFWA were inappropriate use of SRF's funds.

WAFWA decided to use SRF's funds to purchase a building that is titled entirely to WAFWA. No compensation was paid from WAFWA to SRF. Again, legal counsel was not consulted on the appropriateness of these decisions. In addition, WAFWA started charging rent to SRF for its use of the building. When asked about this situation, WAFWA's CFO indicated that "WAFWA had to charge SRF rent because one non-profit cannot benefit from the assets of another non-profit without appropriate compensation". WAFWA's CFO could not explain why the same reasoning did not apply when the SRF's funds were used to purchase the building on behalf of WAFWA. [redacted]

4.1.5 The Program does not track its liabilities properly and may not have enough assets to cover its future potential liabilities

The Program raised around $65 million from participants. Although SRF is a not-for-profit, these contributions were not philanthropic donations but instead a pre-payment for future mitigation. SRF's balance sheet does not reflect that pre-payment in its liability leading SRF to undervalue its actual liabilities by between $30 and $45 million. In addition, when SRF enters into a contract with a landowner, whether into a 10-year contract, or a permanent contract, these contracts lead to a long-term liability for SRF in the form of an obligation to pay the landowners over the period of the contract. Again, none of these liabilities are actually reflected in SRF's balance sheet. Although we may discuss whether such liabilities should be included under GAPP, it is clear that the net present value of these liabilities should be included in any report to the directors to ensure that they are provided with a clear picture of the financial position of the Program. Further analysis would be required beyond what was possible during the audit to determine the actual financial position of the Program. Based on the limited information available for the audit, it appears possible that the Program does not have enough assets to cover its potential liabilities.

4.1.6 WAFWA did not manage its administrative endowment to ensure that it remains permanent

Based on the CCAA and on the business plan, WAFWA was expected to deposit administrative fees into an endowment fund from which only the proceeds should be used to cover expenses. This would have guaranteed that the endowment fund would remain permanently available. Instead, WAFWA decided to staff-up as soon as funds started coming in and immediately started using the endowment principal. According to WAFWA's CFO, the rational was that future fees could be used to make up for the money that had already been spent. Consequently, the administrative endowment was converted in a checking account in 2017 because of its low balance and will be exhausted by the end of July 2019. It could be argued that the concept of an administrative endowment was doomed from the beginning. Based on the business plan's assumptions, the endowment required to cover this level of expenses would need to amount to $75 million, way beyond what SRF and WAFWA could generate based on the business plan. In addition, the business plan did not make any arrangement to cover SRF's administrative expenses while the endowment was being progressively funded over the initial three-year period. Because of the lower balance in the endowments, interests would be not have been enough to cover administrative expenses and WAFWA would have had to invade the principal.

4.1.7 The Program does not generate the financial resources needed to support its administrative costs and will run out of administrative funds by the end of the July 2019

For the fiscal year 2017, total expenses charged to the administrative account were around $3 million. Details are provided in Table 2.

WAFWA has been steadily reducing this budget by not replacing leaving staff members, by reducing the budget allocated to Kansas University ("KU") and by shifting a large portion of the cost of the aerial surveys onto some of the WAFWA States. WAFWA's CFO estimated the bare minimum level of expenses to run the program at $900,000 in addition to staffing costs. Based on my experience with similar programs, WAFWA could modify the Program to greatly reduce the need for biology staff and reduce its costs, including staffing to around $1 million a year. Regardless of the level of expenses, the Program has only generated around $40,000 in administrative fees this fiscal year, only 4% of the most conservative budget estimate. As of February 2019, SRF had a balance of $225,000 on its admin account, counting both cash and account receivable. We estimated that by the end of July, the administrative account will be fully depleted.

Table 2: SRF Admin budget for FY 2017

Staffing	$920,209
IT costs (including KU contract)	$611,143
Aerial surveys	$479,020
Accounting Services	$129,787
Legal Services	$65,333
Investment advisory fees	$287,671
Payment to landonwers	$156,736
Bad Debt	$158,325
Misc	$203,536
Office Rent	$57,073
TOTAL	$3,068,833

4.1.8 The Program does have appropriate resources to support its permanent conservation. However, the Tate Ranch endowment needs to be fully funded immediately.

WAFWA anticipated that payments to landowners for permanent conservation should amount to around $450,000 in 2019. The status of the different permanent conservation endowment accounts is presented in Table 3 below.

Table 3: Status of the permanent conservation endowments

	As of 06/2018	With Tate Ranch Endowment fully funded
Tate Ranch	$5,037,699	$ 9,537,699
TNH Easement	$1,250,989	$ 1,250,989
Endowment 3	$1,180,534	$ 1,180,534
Endowment 4	$1,364,612	$ 1,364,612
TOTAL	**$8,833,834**	**$ 13,333,834**
4% distribution	$ 353,353	$ 533,353

Conservation endowments related to permanent mitigation amounted to close to $9 million at the end of fiscal year 2018. Based on the 4% distribution anticipated in the business plan, these endowments could sustainably generate only $350,000 leaving a $100,000 annual deficit. However, WAFWA made the decision to only partially fund the endowment for the Tate Ranch (discussed in more details in section 4.1.10). At the end of fiscal year 2018, $4.5 million the remained to be deposited in the Tate Ranch endowment. If this amount is included in the total endowment amount for permanent conservation, over $530,000 could be generated annually.

4.1.9 The Program spending on temporary mitigation is unsustainable

SRF's balance sheet shows that $28,096,180 was available in the general conservation endowment used to pay for temporary mitigation at the end of fiscal year 2018. However, this amount includes the $4,5 million discussed in the previous section and that should be deposited into the Tate Ranch endowment. The actual amount available in the general conservation endowment is $23,596,180. Assuming a 4% distribution rate, the endowment can generate $943,847 annually, well short of the $1.6 million that WAFWA has anticipated paying to landowners in 2019. At the current spending rate, I estimated that the general conservation endowment could be depleted by 2041. The level of temporary mitigation provided by SRF is clearly unsustainable in the long run. In addition, the principal in the general conservation endowment should be used in the future to purchase additional permanent conservation further reducing the total amount available to pay for temporary mitigation.

4.1.10 Adaptive management cannot effectively solve the financial issues outlined in this audit

The CCAA provides an adaptive management plan that was designed to help in alleviating some of the shortfalls listed in this report but is ineffective. The total annual increase in mitigation fees that is allowable is limited to 7%: 3% to match inflation and 4% to increase conservation practices, well short of the amounts discussed in this report. The adaptive management plan also provides for the administrative fees to be increased if the endowment is at risk of depletion. However, no clear process is laid out for this purpose. In 2018, WAFWA increased the fees from 12.5% to 16.5% and it remains unclear if this is allowable by the CCAA. Because the administrative fees are levied on new impacts, and those have been scarce, raising the level of fees has been unable to raise any significant funds for the administrative account.

4.1.11 WAFWA improperly transferred money from the conservation endowment to fund the administrative costs of the Program, including salaries of WAFWA's staff

After reviewing SRF's financials and interviewing WAFWA's CFO, my opinion is that WAFWA misallocated resources from RSF on multiple occasions. The decisions to reallocate resources were made by the Executive Committee and implemented by WAFWA accounting team:

- Endowment and conservation payments related to the Tate Ranch

The concerns related to the endowment of the Tate Ranch are twofold. First, WAFWA decided not to fund 100% of the endowment after a conservation easement was placed on the property, in contradiction with the CCAA. Despite having the money available in the general conservation endowment, WAFWA, after consulting with its investment adviser but not with its legal counsel, decided to fund the Tate Ranch endowment over 4 years. The stated goal according to WAFWA's CFO was to keep as much capital in the general conservation endowment because the proceeds of those investments were then diverted to the SRF's administrative account and used to pay salaries and administrative operation costs. On the other hand, WAFWA paid off amounts from the endowment that were calculated for a full endowment. Because the interests on the partial endowment were not enough to cover these payments, it resulted in an invasion of the principal of the endowment. The effect is that the Tate Ranch endowment is expected to reach around $9.1 million by the end of the payment plan in 2020 when, based on WAFWA own assumptions, this amount should be at least $11 million. The second concern has to do with the use of the conservation payments drawn from the Tate Ranch endowment. Based on the CCAA, these payments should be used exclusively to reimburse the landowner for the conservation activities that have taken place on the land. However, in the case of the Tate Ranch, WAFWA's CFO indicated that these payments were used not solely for conservation activities on the Ranch but instead reincorporated into the administrative account.

The annual conservation payments amounted to around $680,000. In addition, SRF paid itself a $180,000 incentive payment (similar to third-party landowners) to join the Program.

- Use of proceeds from the conservation account for administrative costs

As stated before, WAFWA withdrew the proceeds from investments from the general conservation account to deposit them into the administrative account. In the meantime, SRF also paid in full landowners who signed a temporary contract. Without any investment proceeds left, WAFWA's CFO had to use the endowment principal to pay landowners. This is a direct violation of the CCAA since these endowments are expected to be perpetual. I estimated the improper transfers to around $3 million over the period. [redacted]

- Transfer of $1,000,000 from the general conservation endowment to the administrative endowment

WAFWA's CFO indicated that based on a decision of the Executive Committee, she transferred on two occasions $500,000 from the SRF's conservation account to SRF's administrative account to ensure that SRF would be able to meet its administrative obligations.

Based on the above analysis, I estimated that between $5 and $7 million are been diverted from the conservation endowment accounts and have been improperly used to cover administrative costs.

4.1.12 [redacted] I would like to highlight the following points:

- [redacted]
- WAFWA extended itself a loan from SRF without discussion with the USFWS and the participants and without properly documenting the loan
- WAFWA assumed ownership of a building paid for with at least 75% of SRF's funds to WAFWA's sole ownership
- WAFWA charged SRF rent on the same building, when it could easily be argued that WAFWA should have paid SRF rent for its use of the building
- Finally, the Tate Ranch was purchased entirely with SRF's funds but WAFWA took ownership of it. [redacted]

[redacted]

4.1.13 [redacted]

[redacted]

4.2 Conservation

4.2.1 The Program is supported by dedicated staff with deep subject matter expertise. However, the staffing structure of the conservation team may not be the most efficient

WAFWA has been able to hire and retain a staff with the expertise, experience and local contact necessary for the Program to operate. However, it may have been more efficient for WAFWA to rely more on contractors and state agency staff for the implementation of the Program. For example, it is unclear that SRF needs the same level of staffing during the survey seasons and during the winter months where no surveys are necessary.

4.2.2 The goals of the Program do not match the criteria that USFWS is using to judge the effectiveness of LPC conservation

Based on a series of interviews and a meeting with USFWS, it is clear that USFWS' main criteria for the effectiveness of LPC conservation activities is the presence of large unbroken tracts of adequate LPC habitat that are protected in the long term. In addition, USFWS indicated that population surveys are not reliable on a short timeframe and only trends greater than 20 years should really be considered to assess the effectiveness of conservation activities. Based on the criteria, the Program should focus on securing long term conservation (probably through permanent conservation easements or conservation bank credits) of properties located in or near potential population strongholds. In addition, these properties either should already have adequate habitat but are at risk of development or they could be restored to provide habitat. The goal pursued by the Program was mainly to increase habitat quality on properties with existing habitat through temporary conservation (10-year contracts). Limited restoration activities took place to convert non habitat to habitat and little attention was paid to fragmentation.

4.2.3 WAFWA does not have a well-articulated conservation strategy and does not properly track its progress against the needs and payments of participants

Based on interviews with the Program staff, it appears clearly that they were focused on applying the framework of the CCAA and the business plan in a formulaic way and did not have a well-articulated strategy to achieve goals such as maximizing restoration opportunities, securing strongholds, limiting fragmentation or minimizing costs. WAFWA also did not conduct regular analysis of the liabilities created by the mitigation that had been pre-paid by participants. For example, as described in Section 4.1.9, the amount of temporary mitigation provided is in excess of what can be supported by the endowment account.

4.2.4 WAFWA has developed a sophisticated database to manage the Program. However, the database is expensive and was not included in the original budget.

WAFWA developed through a contract with KU and Timmons a comprehensive on-line database that allows companies to quickly assess their potential impacts and to track their mitigation requirements. The database rebalances on a daily basis the impacts and the mitigation that was provided to ensures that there is enough mitigation available. This is the most advanced system that I have observed for any environmental markets and has been highly praised by participants. The cost of developing the database, the interfaces and the development modules was in excess of $1 million without counting WAFWA's and KU's staff costs. This cost had not been budgeted in the business plan and WAFWA did not issue a "special assessment" to the Program participants to pay for this unbudgeted cost.

4.2.5 The design of the Program is overly complicated leading to a lack of understanding of the relationship between impacts and mitigation

The conservation delivery system that WAFWA developed to connect acres of impacts to acres conserved is very complex. For example, calculating the fee paid by a company for one acre of impact involves: i) a lengthy calculation involving the cost of implementation of various USDA practices (this calculation changes for each eco-region) ii) the use of a modifier based on the Critical Habitat Assessment Tool (CHAT) iii) a modifier for the quality of the habitat based on the Habitat Evaluation Guide, itself composed of 6 different variables and iv) different impact buffers associated with the Activities. Once the money has been collected by SRF, a similar process is used to determine payments to landowners and the acres that will be conserved. This system is potentially grounded in good science. However, it is not transparent and does not allow WAFWA to clearly make the connection between an impact and the mitigation that was provided. I recommend that this system be deeply modified to make it easier for WAFWA to demonstrate the number of acres of mitigation that are provided for each acres of impact.

4.2.6 The mitigation fee collected by WAFWA does not reflect the actual cost of conservation activities being implemented

The fee collected by SRF reflects a number of assumptions regarding the type and quantity of activities that would be performed by the Program. Although the Program did deviate significantly from the assumptions, WAFWA never sought to analyze the deviation from the initial plan and to reconcile the fee with the conservation activities that were actually implemented. In addition, a careful review of the calculation of the fee revealed some probable errors that significantly underestimated the fee to be paid by Participants.

4.2.7 Although the Program provided valuable mitigation in excess of its initial target, it is unclear if the effort was effective at reducing the threats to the LPC

Based on an analysis conducted with WAFWA's staff, and assuming that the mitigation units provided by WAFWA are valid, my opinion is that the Program is currently offering more mitigation than would be required if all participants were to use their entire prepaid balance. (see Appendix F). However, it is unclear whether the conservation provided is effective:

- WAFWA's staff has not requested a review, formal or informal, by USFWS of the mitigation it provided to ensure that it would comply with the CCAA. This is particularly concerning that this consultation did not happen when WAFWA committed $20 million to the purchase of the Tate Ranch and to fund the associated endowment.
- SRF has not maintained a 75/25 ratio between temporary and permanent conservation as required by the CCAA. The mitigation is generally skewed toward temporary mitigation that is cheaper. Temporary mitigation is used to offset permanent impact and need to be renewed every 10 years. However, as discussed in Section 4.1.9, SRF does not have the resources to maintain this level of temporary mitigation. In the future, SRF may not be in a position to renew the temporary contract and the mitigation provided may fall well short of the impacts.
- SRF has not made significant progress towards creating strongholds and restoring former habitat in part due to the lack of an adequate acquisition strategy.
- In most cases, the landowners that are under contact with SRF are receiving credits for habitat that was already adequate for LPC and was not at risk of being converted. It is questionable in these conditions whether SRF's payments made any positive impact on the conservation of the LPC.

4.2.8 WAFWA should have triggered the adaptive management plan because of the lack of progress on the conservation objectives

The CCAA includes an adaptive management plan that details actions that need to be taken if some of the initial assumptions in the business plan prove not to be correct. However, one of the weaknesses of this plan is that it does not specify timelines for the review of the assumptions and of the Programs performance. Since WAFWA has already identified that several of those metrics cannot be met, it should have triggered the adaptive management plan and communicated with USFWS on the ways it was planning on addressing the shortcomings. The upcoming 5-year review of the performance of the RWP should be used by WAFWA to analyze its performance and use the adaptive management plan to modify the Program.

4.2.9 The Program as currently structured and operated does not provide a net gain in conservation

WAFWA and SRF have not clearly defined how a net gain in conservation could be measured and achieved. If we use one simple measure of success which is the number of acres of adequate habitat for the LPC, it appears quickly that the Program cannot yield a conservation benefit. The Program calls for 20% of the mitigation to be provided through restoration and 80% through the enhancement of existing habitat. In Chat 1 habitat, the most important habitat, the system may result in twice the amount of mitigation compared to the impacts. The Program therefore would result in 40% of the acres impacted being replaced by restored acres of habitat. The current structure of the Program guaranties a net loss of habitat. Since quantity of habitat is the main parameter used by the USFWS to determine conservation effectiveness, my conclusion is that the Program does not provide effective conservation for the LPC and does not ensure a net gain in conservation.

4.3 Regulatory

4.3.1 The Program does not offer any regulatory benefit to electric utility companies or any other industry beyond oil and gas, thereby limiting their potential participation in the Program

Over the course of this audit, I have heard several interviewees complain that the electric utility companies active in the area covered by the CCAA did not enroll in the Program. A review of the CCAA shows that there is no incentive for them to do so. Indeed, they are not in a position to enroll land in advance of impacts, as the oil and gas industry does, as they usually don't know in advance where a new corridor will be located. In addition, they do not own the land or the mineral resources but usually get an easement under eminent domain law. For that reason, they could not benefit from an enhancement-of-survival permit. If WAFWA wanted to increase the enrollment of electric utility companies, I recommend that a new CCAA be designed that would include tangible benefits for this industry.

4.3.2 [redacted]

[redacted]

4.3.3 The Program is out of compliance with the CCAA. However, FWS is currently unlikely to either terminate the CCAA or to deny the issuance of the associated enhancement-of-survival permit

The CCAA includes 27 points of compliance (A summary list can be found in Appendix G). Out of 27 compliance points in the CCAA, WAFWA failed 6 points including:

- all points related to financial management
- all points related to reporting to the FWS

The CCAA does not specifically spell out SRF's compliance obligations with regard to conservation. However, it is clear that SRF also failed to meet expectation regarding the effectiveness of its conservation activities.

The CCAA is currently out of compliance. However, none of the points of non-compliance are currently fatal flaws and all could be corrected within 12 to 24 months, if the necessary financial resources are available. Conversations with USFWS' management indicated a lack of willingness in the current administration to terminate the CCAA over this non-compliance and over the lack of conservation effectiveness. Similarly, it is likely that, under this administration, if the LPC were to become listed, the USFWS would issue the enhancement-of-survival permit associated with the permit. A word of caution is necessary, a different administration may have an entirely different perspective on these two points.

4.3.4 The Program may not be providing enough certainty of the effectiveness of the conservation effort to guaranty that the associated enhancement-of-survival permit will not be successfully challenged by environmental groups

The compliance with the CCAA is not the final goal of the participants in the Program. The participants are looking to limit their future regulatory obligations in case of a listing of the LPC by obtaining an enhancement-of-survival permit from the USFWS. Based on my review of the federal CCAA policy (Appendix H) and of the federal Policy for Evaluation of Conservation Efforts when Making Listing Decisions (PECE) (Appendix I) as well as numerous interviews with current and retired USFWS staff, my opinion is that a permit associated with the current CCAA may be successfully challenged by environmental groups. If that were the case, the permit could be canceled by a judge and the investments by the participants in pre-listing conservation activities would be lost. Given the recent history of lawsuits by environmental groups related to the LPC, it is likely that any permit issued under this CCAA would be challenged. I recommend that WAFWA conveys this information to the participants and discuss with them the need to either increase the effectiveness of conservation activities of the current CCAA or to negotiate a new, more robust CCAA with USFWS.

4.4 Management

4.4.1 WAFWA's management does not have the resources to properly oversee and manage the Program which create a lack of accountability across the entire organization

WAFWA's management is experienced and dedicated to the organization's mission and to its staff. Historically, the executive secretary had a very ambiguous role neither fully an executive director nor just a corporate secretary. Recently, WAFWA hired an executive director delegated by his east coast organization on a pro-bono basis up to five days a month. While in practice, the new executive director has dedicated to WAFWA a greater amount of time than planned, he remains on a part time basis. This situation limits both his availability and his authority internally and externally. In effect, WAFWA operated without a leader, executive director or CEO since its inception. This is particularly detrimental when the organization needs to reinvent itself to go from a coordinating structure and social club to a full scale $65 million program. Someone needs to have the authority, and the associated accountability, to define a strategy and make decisions for the benefit of WAFWA. In addition to its executive director, WAFWA employs a CFO as well as a contractor from a state agency to run its main program. The manager for SRF's conservation program recently resigned and has not been replaced yet.

Based on my observations, WAFWA management has not been empowered to make decisions for WAFWA and they need to rely on multiple committees of directors and stakeholders in order to get the job done. This situation created a lack of accountability through the entire organization, including at the staff level.

4.4.2 WAFWA does not have a business plan in place to manage the Program

A business plan was initially prepared as part of the RWP (see appendix). However, after review, it is clear that the document is not a customary business plan and could not be used to run the Program. For example, the body of the document is less than 40 pages long. However, 14 pages are focused on WAFWA's evolution and history. In addition, some of the assumptions are widely unrealistic or just wrong (such as the assumptions associated with the administrative endowment). During one of the interviews, WAFWA's CFO mentioned that the business plan was found inadequate as soon as the Program started and that when she was hired, she also recognized that it could not reflect the reality of the Program. However, nobody felt they had the responsibility to update the business plan and to present it to the WAFWA's directors for approval. Instead tactics and processes developed organically without any clear strategy. A corollary of the lack of a business plan is that WAFWA's management has not provided a strategic approach to the Program and has not sought to monitor it results from a conservation and finance standpoint.

4.4.3 WAFWA has a [redacted] organizational culture that prevents an effective management of the Program

[redacted] culture at WAFWA where conservation, finance and management staff don't communicate with each other in a proactive and efficient way. A culture of [redacted] has been established and is preventing the organization to operate as a single entity. One of the symptoms of this culture is the dislocation between the finance and conservation functions leading to an ineffective budgeting process. The fact that SRF's program management and staff work in different states than WAFWA's entire accounting team made communication even more difficult.

One of the key issues that were noted are that nobody is formally in charge of human resources at WAFWA. [redacted]

4.4.4 WAFWA use of staff and contractors is inefficient and creates undue costs on the Program

Associated is the lack of a formal human resources function, is the lack of proper supervision and efficient use of employees and contractors. Reviews of employees and raise recommendations are conducted by direct supervisors only without clear guidance or transparency. This lack of information did not allow WAFWA to have discussions critical to containing costs. [redacted]

[redacted]

4.5 Governance

4.5.1 WAFWA strategic priorities are not clear and may not be supportive of the Program

During my interviews with WAFWA's directors, it appeared clearly that there is not a common agreement on the goals of WAFWA as an organization. Some of the directors feel that WAFWA's role should be limited to a platform that allows for coordination among agencies, in particular for the purpose of lobbying, as well as for receiving federal grants. Other directors would like to see an organization with its own voice and direction and the ability to create and manage large cross boundary programs such as the Program. There is an urgent need for WAFWA's directors to be generally aligned on the role of WAFWA. This is where a strong executive director would have the capacity to make a difference for the organization by proposing a vision that the directors could rally around. Based on the options for the future of the Program presented in the next sections, it will be critical for WAFWA's directors to engage and decide, in the coming months, on the mission of WAFWA and on its strategic priorities.

4.5.2 The Program's current committee structure, and WAFWA's decision making process and culture are inadequate to provide proper governance to the Program

During the interview process, it appeared clearly that the governance of the Program is a key issue. Both WAFWA's CFO and the Program manager described a Kafkian process of committees and sub-committees for any decisions, including those who should be left to management. I won't speculate on the reasons for which this system was created. However, it prevents initiatives, limits authority and foster a feeling of unaccountability among WAFWA's management and needs to be changed as soon as possible.

WAFWA's leadership, by the organization's nature, is transient and the tenure of its directors is, on average, much shorter than for a regular non-profit. In addition, WAFWA's directors need to manage their own agencies and are much busier than the average non-profit director. It is critical for WAFWA's directors to define to what extent they are willing to stay informed, involved in discussions and make decisions. Anything else should be left to management who should be held accountable for any shortcoming.

Finally, WAFWA's directors recognize the political nature of the organization. It is uncomfortable to call another director out or to ask for additional information, especially when the decision does not involve the specific state of the director asking the question. However, if WAFWA is to pursue this Program and other similar projects, it is critical for the WAFWA's directors to function more as the board of a well-run company where hard questions and robust discussions are welcome.

4.6 Stakeholder Involvement

4.6.1 WAFWA failed to fully disclose transparent information on the conservation and financial performance of the Program to stakeholders, including to USFWS

WAFWA published an annual report for each year of operation of the Program. The report is well detailed and covers the full range operations such as participation, conservation, and financial management. However, WAFWA's reporting of the program faces several shortcomings:

- WAFWA includes SRF's financials in its own reporting and accounting. Given the size of the Program, it would be more appropriate for the Program to have its ow separate accounting audit and audit report so WAFWA's directors, and other stakeholders, can have access to more detailed information. In addition, any annual report on the financials should include a written management discussion of the results.
- The annual report of the Program is neither prepared nor reviewed by an independent third-party before it is released. This is a best management practice and a requirement of the CCAA.
- More generally, the information in the annual report is presented in a way that makes it confusing to the reader and not user-friendly. Information is often incomplete and does not allow the reader to fully grasp the operation and finances of the Program

4.6.2 USFWS did not ensure that the CCAA was written in a way that ensured the success of the conservation goals

The CCAA as written does not allow USFWS to properly assess the effectiveness of the conservation provided by the Program against a pre-established benchmark. In particular, the CCAA does not include performance criteria or a monitoring plan as can be found in most species conservation banks approved by USFWS. Consequently, it is difficult to objectively assess the compliance or non-compliance of WAFWA with the conservation requirements of the CCAA.

4.6.3 USFWS is supportive of the Program but failed to properly supervise it

USFWS initially approved the RWP and Program, despite opposition at the staff level. During a meeting in Denver in June 2019, USFWS' management met with several WAFWA's directors and indicated that the USFWS remains supportive of the effort. However, they also indicated that changes to the Program would be needed in the near future in order to keep this support. They indicated a willingness for USFWS to engage with WAFWA on an assessment and a restructuring of the Program.

Based on the CCAA, FWS failed to properly supervise the program. In particular, it should have raised concerns to WAFWA's directors when it knew the Program was out of compliance with the CCAA

4.6.4 Participants are supportive of the Program but failed to properly supervise it

Based on a limited number of interviews with Program participants, my opinion is that they remain supportive of the goals of the Program, especially the potential issuance of the permit. It is still unclear how many participants would be willing to increase the conservation requirements in order to reduce the risk of a successful challenge to the permit once it is potentially issued.

Participants have secured several seats on the Program governing committees but failed to properly monitor the progress of the Program.

4.6.5 Environmental Non-governmental Organizations range from openly adverse to engaging in a constructive dialogue

ENGOs are not a homogeneous group. Several organizations are involved in the Program and supportive of its overall goal. Other groups are opposed to further development in LPC habitat and should be expected to pursue legal action against a potential permit.

4.7 Future Market for LPC Mitigation

4.7.1 Although participants are expecting that exploration and production will remain strong, the Program created a strong incentive for avoiding and minimizing impact leading to a much lower need for mitigation than anticipated.

Interviewed participants and experts indicated that they believe that oil and gas production will continue to grow, especially in the Permian Basin. However, this may not translate in a growth of similar scale for the Program because industry has learned to change well location to reduce impacts.

There is limited incentive for non-participants to join the Program and enroll land. This has led to over 200,000 acres of impacts not being mitigated according to a report by Defenders of Wildlife. This could change when we get closer to the presidential election, if the Program is seen as more reliable and if Participants accept to exercise peer-pressure on oil and gas companies that are either not members or have only enrolled a portion of their landholdings.

5 Options for the Future of the Program

5.1 Key Considerations when considering options

When assessing the different options presented for the future of the Program, WAFWA's directors should keep in mind the following criteria

- Fit with WAFWA's mission, vision and strategies
- WAFWA's financial and management capacity to take on a program of this scale
- WAFWA's interest in building a specialized staff
- The potential risk for WAFWA's public relations and credibility
- [redacted]

5.2 Option 1 - Terminate the Program without replacement

The process for this option is simple. WAFWA first notifies USFWS that it will terminate the Program. WAFWA then notifies the landowners that it plans on terminating its short-term contracts at the end of the year. WAFWA also transfers any properties and easements to partners, such as state agencies with their endowment. Finally, because the purpose of the CCAA has been frustrated, WAFWA, USFWS and the participants could agree to amend the CCAA to allow any remaining funds to be returned to participants. An alternative could be for the funds to be distributed to other non-profit organizations with a mission similar to SRF.

The positive sides of this options are that the decision can be made immediately, the process is simple and does not require additional resources or negotiations with stakeholders. However, the negative consequences of this option may be high. Most stakeholders would probably feel that WAFWA did not stand by its word. This would create bad public relations for both WAFWA and the members states. USFWS is less likely to want to engage on pre-listing mitigation with states. Landowner relationships may be strained. More importantly, participants' investment would be lost since USFWS would not issue a permit if the species is listed. [redacted]

5.3 Option 2 - "Freeze" the current Program

WAFWA would not terminate the CCAA but participants could only use up their pre-paid balance and would not be allowed to contribute additional funds. The process would unfold as follows: WAFWA notifies FWS that it will freeze the CCAA. WAFWA notifies participants that they will not be allowed to enroll additional land or contribute more money to the program. Participants would be allowed to use their existing balance for the coming two years after which any remaining money is forfeited. WAFWA would then convert all short-term contracts to permanent mitigation, as allowed by the status of the general conservation endowment.

The positive aspects of this option are that a decision can be made immediately with limited additional resources and negotiation needed. Because the temporary conservation is converted to permanent, administrative expenses are kept low. It is also possible that some regulatory benefit may be preserved for the participants, such as an issuance of an enhancement-of -survival permit. [redacted]

On the negative side, it is unlikely that the Program would still have enough funds available to cover all its mitigation needs with permanent mitigation, leaving some impacts unmitigated. Because of this situation and because future impacts would not be mitigated it is unlikely that USFWS would issue a permit and if they do, the permit is unlikely to survive a legal challenge. The Program would require some level of administration for which no money is currently available so WAFWA would need to negotiate some form of special contribution by the participants. [redacted]

5.4 Option 3 - Transfer the Program to a third-party immediately

WAFWA notifies the FWS, participants and landowners that it plans to transfer the Program to a third-party. WAFWA then defines the criteria needed to select the third-party and conduct a public bidding process. WAFWA would then have two different sub-options. It could either - option 3.a - remain the permit holder and contract with the third-party for the administration of the Program, or – option 3b - WAFWA could request an amendment to the CCAA to transfer its entire responsibility to the third-party.

The positive aspects of option 3a are that this could be a quick process from start to finish since it does not require amending the CCAA. It would also allow WAFWA to keep some control over the Program since only the day-to-day management is transferred to the third-party. As long as the contract with the third-party is not too onerous for WAFWA, it can be maintained with limited WAFWA resources. Finally, it is likely that the participants may be able to maintain some regulatory benefits for the participation in the program. On the negative side, WAFWA is not in a position to hire a third-party administrator until the funding issues are resolved. In this model, WAFWA would also retain some level of liability as a party to the CCAA.

The positive aspects of option 3b is that it could be started quickly if third parties are willing to take over and it requires limited resources from WAFWA. In addition, participants may maintain their benefits from participating in the Program. The negative aspects are that it is unlikely that a third-party would accept to take over the Program without WAFWA accepting very onerous provisions such as indemnification and limitation of liabilities and losses. In addition, it is likely that the third-party would try to amend the CCAA outside of the control of WAFWA. This option also requires amending the CCAA which would require the support of the participants and around 12 months for the USFWS to approve. Finally, if the third-party managing the Program is also in the business of providing mitigation, this would likely result in a conflict of interest.

5.5 Option 4: Restructure the Program

The goal of this option would be to restore financial sustainability, compliance with the CCAA, ecological integrity, and professional execution. This restructuring would be conducted while the Program is still housed at WAFWA and after restructuring the Directors would be able to decide whether the Program should be administered by WAFWA or by a third-party (Option 3a or 3b). This restructuring could take between 6 and 18 months based on the model that WAFWA decides to pursue. Below are some ideas for consideration for the restructuring:

- Adapt WAFWA management structure to the demand of a program of that scale – Need for a full time Executive Director and a business analytics position
- Modify the decision-making structure so it is more straightforward, empowers WAFWA management, creates accountability, limits political pressure and is more inclusive of other important stakeholders (FWS)
- Move to a leaner structure where third parties are in charge of most field assessments
- Redesign the conservation strategy to ensure the integrity of the permit in case of legal challenge. This may include modifying the HEG, the crediting methodology and/or the ratio of temporary to permanent mitigation
- Formalize loan/grant from conservation account to administrative account to allow for a runway of 12 to 24 months
- Define what costs should be borne by the Program vs. by the states through the Range Wide Plan
- Restructure contract with key vendors (KU)
- Require an application fee for each action, regardless of the impact, to be paid to the administrative account
- Require a “membership fee” from each participant, equal in aggregate to the administrative costs of the Program. Each company would pay a prorated share based on either their activity in the past year or the amount of land enrolled
- Open the provision of mitigation to third-party through a transparent RFP process. This would allow the establishment of a clear market price.

Appendix F. WAFWA Response to 2019 Audit of the Lesser Prairie Chicken Mitigation Framework

WAFWA Response to 2019 *Audit of the Lesser Prairie Chicken Mitigation Framework*

Since 2013, the Western Association of Fish and Wildlife agencies (WAFWA) has been implementing two related programs to help conserve the lesser prairie-chicken (LPC): a Range-Wide Conservation Plan (RWP) and a Range-Wide Oil and Gas Candidate Conservation Agreement with Assurances (CCAA). In 2019, WAFWA initiated a financial and organizational audit of the CCAA program by a third-party reviewer. The results of that audit were compiled into a report entitled *Audit of the Lesser Prairie Chicken Mitigation Framework* (Audit Report) that was completed in July 2019.

Based on the Audit Report's recommendations, WAFWA acted immediately to improve its short-term financial situation and overall organizational structure. WAFWA continues to implement new procedures and approaches to address the recommendations from the audit. WAFWA is providing this document in an effort to inform WAFWA members, CCAA participants, and other interested stakeholders about how, specifically, WAFWA has addressed or plans to address each of the Audit Report's findings or recommendations. Responses to every finding (Audit Statements) of the Audit Report are provided below in the order in which they appear in the Audit Report. Note that several sections related to personnel matters are excluded to maintain confidentiality. Topics used in the Audit Report are used to organize the material in this response: finances, conservation, regulatory, organizational management, governance, and stakeholder involvement. Each Audit Statement is given a numeric code that corresponds to the heading numbers used in the conclusions section of the Audit Report.

Topic 1: Finances

1.1 Although accounting systems and procedures are in place, WAFWA does not properly administer the Program from a financial standpoint.

WAFWA has modified accounting procedures and made changes to staff to more efficiently and effectively administer the program, allowing for increased transparency and accountability. To ensure the CCAA's financial and ecological sustainability, WAFWA is evaluating different components of the CCAA mitigation framework and fee and funding structure that may require amendment. WAFWA has also hired a consultant to help identify the best strategies to improve the CCAA. WAFWA is also forming an Investment Committee—composed of financial experts—to provide strategic investment recommendations to the Budget and Finance Committee.

1.2 WAFWA s finance team does not provide the strategic overlay that is required to run the Program.

Please see response to Audit Statement 1.1.

1.3 WAFWA s financial reporting overvalues its assets.

WAFWA financials have been prepared in accordance to Generally Accepted Accounting Principles (GAAP). Assets and liabilities are appropriately recorded and disclosed to GAPP requirements and are consistent with the requirements of the CCAA and incidental take permit issued by the U.S. Fish and Wildlife Service in 2014.

1.4 The purchase of the Boise building using [WAFWA Species Restoration Foundation s (SRF s)] administrative funds and the associated loan of SRF s funds to WAFWA were not appropriate uses of funds. WAFWA took 100% ownership of the building paid using SRF funds.

WAFWA is liquidating this asset. Funds from the sale of this building will be returned to WAFWA Species Restoration Foundation fund that is the financial manager of the CCAA.

1.5 The Program does not track its liabilities properly and may not have enough assets to cover its future potential liabilities.

Please see response to Audit Statements 1.1 and 1.3.

1.6 WAFWA did not manage its administrative endowment to ensure that it remains permanent.

Please see response to Audit Statement 1.1.

1.7 The Program does not generate the financial resources needed to support its administrative costs and will run out of administrative funds by the end of July 2019.

Prior to the Audit Report, WAFWA recognized the lack of administrative funds and was addressing this issue through the adaptive management process specified in the CCAA.

WAFWA continues to address this issue in the short term through two approaches, cost reduction and funding expansion. First, to reduce administrative costs and improve efficiency, WAFWA is continuing to evaluate and adjust current personnel obligations and contracts. In 2019, WAFWA made significant staffing reductions. The organization is currently using state fish and wildlife agency staff and contractors—rather than full-time, in-house staff—to handle collection of field data. WAFWA has also significantly reduced the cost of several vendor contracts.

Second, WAFWA and its partners have begun expanding its funding sources to increase immediate and near-term financial support to the program, including state wildlife agencies in the five LPC states.

WAFWA, working with a consultant and in coordination with stakeholders, is now evaluating its long-term costs and funding needs. As part of this effort, WAFWA and will identify sustainable long-term funding strategies to support the CCAA program.

1.8 The Program does have appropriate resources to support its permanent conservation. However, the Tate Ranch endowment needs to be fully funded immediately.

WAFWA implemented a strategy to fully fund the Tate Ranch endowment within the timeframe allowed by the CCAA and USFWS and expects the endowment to be fully funded this year. Please also see response to Audit Statement 1.1.

1.9 The Program spending on temporary mitigation is unsustainable.

Because current commitments for temporary mitigation appear to be unsustainable over the long term, WAFWA is evaluating investment strategies and program needs to meet these obligations in a more financially sustainable way. Results from this evaluation will inform temporary mitigation commitments. WAFWA is also forming an Investment Committee; for details, please see response to Audit Statement 1.1.

1.10 Adaptive management cannot effectively solve the financial issues outlined in this audit.

Industry participation through enrollment fees and mitigation fees ultimately determine funding levels for the Program. Although adaptive management is critical for maintaining and improving industry participation, the CCAA's adaptive management plan does limit options. WAFWA has hired a consultant, working in consultation with stakeholders, to recommend improvements to the CCAA. These improvements may include adaptive management changes that could also improve program finances.

1.11 WAFWA improperly transferred money from the conservation endowment to fund the administrative costs of the Program, including salaries of WAFWA s staff.

WAFWA transferred funds from the conservation endowment to cover necessary administrative costs that could not be addressed through adaptive management changes. WAFWA has contracted with a consultant to advise WAFWA on how the CCAA can be adjusted to ensure that administrative and conservation funds are sufficient and sustainable.

Topic 2: Conservation

2.1 The Program is supported by dedicated staff with deep subject matter expertise. However, the staffing structure of the conservation team may not be the most efficient.

WAFWA has implemented significant changes to its staffing structure and will continue to do so in order to better align staffing with workload. Please see responses to Audit Statements 1.7 and 4.1.

2.2 The goals of the Program do not match the criteria that USFWS is using to judge the effectiveness of LPC conservation.

The Audit Report states that USFWS measures effectiveness of LPC conservation based on the presence of large tracts of permanently conserved habitat. However, the CCAA approved by USFWS affords a broader approach, not one that is solely focused on large tracts of permanently conserved habitat. The mitigation framework approved by USFWS provides for conserving species habitat using a combination of permanent conservation easements (25% of total) and term contracts that may shift on the landscape (75% of total). To help determine effectiveness, the CCAA utilizes several approaches, including contributing to an annual population survey to generate range-wide population estimates.

The Audit Report states that population surveys by SRF may be unreliable on a short timeframe and that trends greater than 20 years should be used to assess conservation activities. The mitigation framework approved by USFWS recognizes the limitations of annual or short-term surveys and uses a 5-year running average of range-wide population to determine trends. WAFWA believes that the aerial surveys represent the best field sampling and statistical methodologies currently available to wildlife managers. WAFWA continues to reassess the methodology and improve them to incorporate the best available survey methods.

2.3 WAFWA does not have a well-articulated conservation strategy and does not properly track its progress against the needs and payments of participants.

From the beginning of the Program in 2014, WAFWA produced one annual report each year that summarized compliance and effectiveness of the RWP and the CCAA together. Information on the progress of the CCAA was often difficult to identify or extract from the reporting on the RWP as a whole.

Starting in 2020, WAFWA will produce a stand-alone annual report only for the CCAA Program. The 2019 CCAA Annual Report is expected to improve clarity regarding the progress of the CCAA in meeting its compliance requirements and conservation goals.

WAFWA makes available to CCAA participants all data related to impacts, payments, and conservation credits of each company. These data will be summarized for the entire CCAA program in the new 2019 annual report. WAFWA is also examining ways in which the conservation targets of the CCAA can be clarified as they relate to the larger goals of the RWP.

2.4 WAFWA has developed a sophisticated database to manage the Program. However, the database is expensive and was not included in the original budget.

The Audit Report notes that the cost for developing the database, interface, and modules was "in excess of $1 million without counting WAFWA's and KU's staff costs." However, this amount includes staffing costs by KU for processing mitigation projects, conservation contract management, database management, and reporting over a 5-year period. The actual cost to develop the database was roughly $440,000. It is fairly typical in any conservation program that some implementation costs are over-estimated or under-estimated in original program budgets. WAFWA management developed the database in order to meet a critical need of program administration. The database and on-line reporting tool has become an essential part of the effective management of the Program. In addition, WAFWA recently took over the database management task, resulting in substantial cost savings for the program.

2.5 The design of the Program is overly complicated leading to a lack of understanding of the relationship between impacts and mitigation.

WAFWA has improved its implementation of the CCAA since the Audit Report. WAFWA is exploring ways in which the CCAA may be simplified while still meeting the regulatory standards of the enhancement of survival permit issued to WAFWA by USFWS (also see response to Audit Statement 1.1).

2.6 The mitigation fee collected by SRF does not reflect the actual cost of conservation activities being implemented.

Mitigation fees are intended to fund conservation endowments that support conservation action and habitat management in perpetuity. Management actions vary from property to property, so assumptions must be made to calculate mitigation fees. As a basis of those assumptions, SRF used the following:

- The relative use of LPC management practices and the relative cost of each practice from the USDA Natural Resources Conservation Service
- Public information about average agricultural land values for each ecoregion
- A target of 25% permanent easements and 75% iterative term contracts, as agreed upon by USFWS
- An assumed long-term rate of a return of 4% on the conservation endowments.

The CCAA called for a working group to periodically assess these costs and adjust mitigation fees through adaptive management as necessary to adequately cover changing costs. As recognized earlier, WAFWA is working with stakeholders through the assistance of a consultant to make further adjustments where adaptive management may fall short.

2.7 Although the Program provided valuable mitigation in excess of its initial target, it is unclear if the effort was effective at reducing the threats to the LPC.

The CCAA has provided more conservation than currently required based on impacts and mitigation needs. This conservation is addressing and reducing threats to LPC through improved habitat quality (e.g., reduced grazing intensity), habitat restoration (woody plant removal, abandoned infrastructure removal), acquisition and conservation of large tracts of suitable habitat, and on-going monitoring. Please also see response to Audit Statements 2.2, 2.3, and 2.8 and the 2019 CCAA annual report issued in April 2020. The Program has also reduced threats by providing strong incentives for the oil and gas industry to co-locate facilities and reduce project footprints in the highest quality habitat for LPC.

2.8 WAFWA should have triggered the adaptive management plan because of the lack of progress on the conservation objectives.

WAFWA has triggered adaptive management responses several times in an effort to improve the program and respond to changing conditions. These adaptive management responses have included changes in conservation unit values, administrative funding, addition of new impact types, redefining existing impact types, and improving survey strategies. WAFWA is currently working closely with its partners, including USFWS, to assess the need for additional program changes to improve performance. Please also see response to Audit Statement 2.3.

2.9 The Program as currently structured and operated does not provide a net gain in conservation objectives.

WAFWA continues to implement the CCAA consistent with the enhancement of survival permit issued by USFWS that presumes the program will result in a "net conservation benefit" to the lesser prairie-chicken. WAFWA is working closely with USFWS to ensure that the program clearly provides this net conservation benefit, and that this benefit can be documented through the effectiveness monitoring program of the RWP and CCAA (e.g., amount of conservation of high-quality habitat, habitat restoration, habitat enhancement, and range-wide population survey estimates).

Topic 3: Regulatory

3.1 The Program does not offer any regulatory benefit to electric utility companies or any other industry beyond oil and gas, thereby limiting their potential participation in the Program.

This is correct. There are currently 111 oil and gas companies participating in the CCAA, providing substantial benefit to this large industry operating in the range of the LPC. WAFWA is considering all options available to improve the effectiveness and support of the CCAA, including possibly expanding it to include other industries interested in participating if doing so will benefit the CCAA and those industries already participating in it.

3.3 The Program is out of compliance with the CCAA.

While the Program may have been out of compliance with respect to financial management, the same is not true with regard to compliance with the conservation goals of the CCAA. WAFWA is working to address CCAA issues identified in the Audit Report through a working group that includes stakeholders and USFWS staff.

3.4 The Program may not be providing enough certainty of the effectiveness of the conservation effort to guarantee that the associated enhancement-of-survival permit will not be successfully challenged by environmental groups.

WAFWA will work with all stakeholders, including USFWS, through the CCAA realignment process mentioned above, to ensure that the conservation effort delivered through the CCAA continues to be grounded in science, and is durable and defensible to the long-term benefit of LPC.

Topic 4: Organizational Management

4.1 WAFWA s management does not have the resources to properly oversee and manage the Program which create a lack of accountability across the entire organization.

WAFWA has modified its structure to create an Executive Director position. This director will provide leadership, oversight, and accountability to the Program. To ensure greater accountability, the director has clarified the roles and responsibilities of all WAFWA staff.

4.2 WAFWA does not have a business plan in place to manage the Program.

WAFWA created a business plan as part of the RWP, which included the CCAA. The business plan's cost estimates were based on information available to authors at that time. WAFWA will develop a business plan specifically for the CCAA using actual costs to date and revised expected costs into the future. These revised expected costs will be informed by the results of the CCAA evaluation underway now.

4.3 WAFWA has an organizational culture that prevents an effective management of the Program.

Please see response to Audit Statement 4.1.

4.4 WAFWA use of staff and contractors is inefficient and creates undue costs on the Program.

WAFWA has implemented an interim staffing plan to operate within current funding constraints while also addressing critical compliance needs. Future staffing needs and corresponding funding will be determined as a part of the CCAA realignment process. Please also see response to Audit Statement 1.7.

Topic 5: Governance

5.1 WAFWA strategic priorities are not clear and may not be supportive of the Program.

In 2019, WAFWA completed a strategic planning effort, which includes goals and priorities that are supportive of the CCAA Program.

5.2 The Program s current committee structure, and WAFWA s decision making process and culture are inadequate to provide proper governance to the Program.

Program committee structure will be reviewed and amended as appropriate as a part of the CCAA realignment process. Please see response to Audit Statement 4.1 relative to WAFWA's decision-making process

Topic 6: Stakeholder Involvement

6.1 WAFWA failed to fully disclose transparent information on the conservation and financial performance of the Program to stakeholders, including to USFWS.

WAFWA reported its conservation performance multiple times per year to stakeholders and USFWS, although limited information was provided on financial performance. Moving forward, an Executive Director will oversee all disclosures to ensure appropriate transparency. Starting in 2020, WAFWA will also be producing a CCAA Annual Report focused on the requirements of the CCAA Program (in the past CCAA reporting was combined with RWP reporting). The 2019 CCAA Annual Report is expected to improve transparency (please also see response to Audit Statement 4.1).

6.2 USFWS did not ensure that the CCAA was written in a way that ensured the success of the conservation goals.

The conservation goals of the CCAA are tied to the conservation goals of the RWP. The RWP has broad conservation goals directed at the recovery of the species through all conservation delivery tools. The CCAA is just one of those tools and is directed at offsetting the new developments of oil and gas industry participants, using the goals of the RWP to guide conservation targeting.

6.3 USFWS is supportive of the Program but failed to properly supervise it.

Please see response to Audit Statement 6.2. Also please note that bi-weekly conference calls and quarterly face-to-face meetings have been held with USFWS to discuss program progress. WAFWA will continue to work closely with USFWS staff to provide the information they need to evaluate the compliance and effectiveness of CCAA implementation.

6.4 Participants are supportive of the Program but failed to properly supervise it.

The mechanism provided for participants to "supervise" the Program was the Lesser Prairie-Chicken Advisory Committee (Advisory Committee). Numerous modifications to the CCAA were proposed through the CCAA adaptive management process and approved by the Advisory Committee. Some of these modifications required WAFWA to make management or financial changes. WAFWA continues to work with CCAA participants to ensure that they have access to the information they need to verify their level of participation and determine their own compliance in the program. WAFWA is open to ideas for enhancing engagement and oversight by participants and the potential for developing new options as a part of the CCAA realignment process.

6.5 Environmental Non-governmental Organizations range from openly adverse to engaging in a constructive dialogue.

Comment noted.

Topic 7: Future Market for LPC Mitigation

7.1 Although participants are expecting that exploration and production will remain strong, the Program created a strong incentive for avoiding and minimizing impact leading to a much lower need for mitigation than anticipated.

WAFWA concurs. See the 2019 annual report for details.