

# **The 2016 Lesser Prairie-Chicken Range-wide Conservation Plan Annual Progress Report**



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## EXECUTIVE SUMMARY

In 2014, a new era in wildlife conservation was ushered in with the implementation of the Lesser Prairie-Chicken (LPC) Range-wide Conservation Plan (Van Pelt et al. 2013; RWP). The RWP describes a locally controlled and innovative approach for maintaining state authority to conserve the LPC.

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

1. Identifies range-wide and ecoregion breeding population goals for LPC, the range-wide benchmark being a 10-year average of 67,000 birds
2. Identifies desired habitat amounts and conditions to achieve the population goal within the first 10-year timeframe
3. Uses the Southern Great Plains Crucial Habitat Assessment Tool (CHAT) to identify priority areas where LPC conservation actions will be emphasized and development will be minimized
4. Enhances programs and cooperative efforts to encourage and expand voluntary landowner conservation programs
5. Promotes agreements that incentivize industry avoidance and minimization and require mitigation when that is not possible
6. Establishes a mitigation framework administered by WAFWA that includes contractual agreements with participating companies and private landowners. The framework requires unavoidable impacts to be offset with off-site conservation actions and utilizes a 2:1 mitigation ratio to ensure that a net conservation benefit occurs.
7. Identifies research needs and implements monitoring of the LPC population and enrolled properties
8. Outlines an adaptive management framework that will maximize conservation benefits to LPC by incorporating monitoring data and emerging science
9. Incorporates input received from agencies, organizations, landowners, industries, other stakeholders, and the public

During the reporting period, January 1, 2016 - December 31, 2016, significant progress was achieved across all nine elements identified in the RWP. More specifically:

1. The annual LPC aerial survey used to monitor progress toward the population goals was conducted between March and May 2016. In 2016, the estimated breeding population size was 25,651 (90% CI: 18,692–34,991). While there was an estimated range-wide population decline of 14.5% from 2015 to 2016, the point estimates did not statistically differ ( $P > 0.1$ ). Increases in abundance of LPC were estimated in two of the four ecoregions. The largest was a statistically significant 263.3% increase in the Shinnery Oak ecoregion, ( $P < 0.1$ ). The survey indicated that the population in the Sand Sagebrush ecoregion increased by 64.9% from 2015 but the change was not statistically significant ( $P > 0.1$ ). The populations in the Mixed Grass and Shortgrass ecoregions were estimated to have decreased by 31.3% and 22.8% from 2015, respectively. However, neither of those estimated declines were statistically significant ( $P > 0.1$ ). Data from the 2016 aerial survey generally indicate that the population remained stable from the previous year except in the Shinnery Oak where a significant increase was observed.
2. During this reporting period, WAFWA secured two permanent conservation sites. The first site consists of 1,781 acres of privately owned native rangeland in the Mixed Grass ecoregion of which 1,670 acres are in CHAT 1. WAFWA purchased a perpetual easement (held by Pheasants Forever) on the property that preserves the conservation values of the site. Those conservation values include both the LPC habitat and the ranching heritage. WAFWA also developed a dynamic management agreement that will be implemented in perpetuity by the landowner. There have been two different LPC lek sites documented on this property or within 3 miles of its perimeter within the last 5 years

WAFWA also acquired the title to a 29,718-acre ranch in the Sand Sagebrush ecoregion. This ranch was acquired by WAFWA from a willing seller in June 2016. The entirety of the property consists of native sand sagebrush prairie and all but 124 acres occur in CHAT 1. Despite minimal survey efforts, there have been 5 different LPC lek sites documented on the acquired property or within 3 miles of its perimeter within the last 5 years. The property will meet all the criteria to be considered a stronghold upon completion of all the required documentation. WAFWA will continue to manage the property as a working cattle ranch using livestock as the primary tool to create optimum LPC habitat. The grazing rights on the ranch are currently leased to a private producer.

In addition to these two new acquisitions, WAFWA had previously secured an additional 1,554-acre permanently conserved site in the Shinnery Oak Ecoregion. WAFWA is also conserving 100,650 additional acres across thirteen active 10-year term contracts. Three of those term contracts covering 5,602 acres were executed during the last year. At the end of 2016, WAFWA was conserving 16 sites totaling 133,703 acres of which 33,053 acres are permanently protected by perpetual easements or fee title ownership.

3. During 2016, significant progress was made in database development and accessibility. The highlights include an integration of impact and conservation sites into a relational ArcSDE SQL database that processes nightly scripts to ensure all impacts are offset by an appropriate conservation site. Also, a custom website was developed that

provides participant companies a way to submit and approve new projects as well as view all past submissions. WAFWA and the U.S. Fish and Wildlife Service (USFWS) can also use the web interface to query the database for site-specific summary statistics, habitat credit balances, and raw data.

In the 2015 annual report, WAFWA identified irregularities between the GIS data of enrolled acres and the acreage declared by companies when enrolling. WAFWA announced at that time that it was going to conduct an audit of enrolled acres during 2016. This audit was necessary to rectify conflicting figures between the number of contractual acres enrolled and the spatial data that were submitted by participating companies. Several issues were identified and upon further examination, there was a net decrease of reportable enrolled acres. Factors that contributed to this reduction included the duplicate submittal of acreage by companies, submittal of incorrect spatial data by companies, an erroneous submission of an entire service area by a participating co-op, and an early data processing error by WAFWA that created enlarged transmission line buffers to represent right of way widths.

The audit resulted in a net decrease of reported enrollment acres from approximately 10.4 million acres in 2015 to approximately 8.1 million acres in 2016, a difference of 2.3 million acres. Approximately 1.6 million acres of this difference came from correcting electrical enrollment data, and approximately 540,000 acres were eliminated because of corrections to oil/gas parcel boundaries. These changes had little effect on enrollment fees paid/due to WAFWA because a majority of the corrections were associated with linear enrollments for which participants pay a flat fee to participate in the RWP. Only ~165,000 (1.6%) acres were lost due to terminations and sale of acres to companies that were not enrolled in the RWP and hence were transferred out of the program (after paying all enrollment fees).

4. A 2-year renewable agreement with Pheasants Forever (PF) was signed to partially fund five positions located throughout the LPC range. This is a cooperative effort between NRCS, Pheasants Forever (PF) and WAFWA and the supported positions will assist all the partnering entities with program promotion, monitoring activities, and conservation planning.
5. There were 114 active CCAA contracts (Certificates of Inclusion) and 57 active WCA contracts (Certificates of Participation) as of December 31, 2016. WAFWA recognized that many of the participant companies were undergoing severe financial hardship in the face of an economic downturn that resulted in near stoppage of oil and gas development in the region. That drop in oil and gas prices and associated development activities rippled throughout most of the other industries enrolled in the RWP.

WAFWA's goal has been to retain as many companies in the program as possible, despite financial hardship. To further that goal, WAFWA developed a procedure in July of 2016 to address non-payment of enrollment fees. That procedure offered options to those companies, including payment plans and partial or full terminations. Payment plans

require payment of interest sufficient to cover the assumed 4% rate of return of the conservation endowment and any additional costs for WAFWA. The term of those plans can be up to three years for each remaining year of unpaid enrollment fees. If a company agrees to a payment plan and remains current, the compliance issue is considered resolved and WAFWA notifies USFWS of that resolution. WAFWA's procedure allows for some settlement of enrollment fees for partial or full terminations if the company can document severe financial hardship and can demonstrate that threats to the species from their activities are addressed on the parcels to be terminated.

6. In 2016, there were 114 industry projects processed and mitigated. These projects generated 3,179 annual impact units equating to \$4,172,852.64 in mitigation fees. By ecoregion, the Shinnery Oak region had the most projects (73 of 114 projects; 64%), however, the Mixed Grass ecoregion was the most impacted (3,069 of 3,179 impact units; 96.5%). This difference was due to the fact that most of the impacts in the Shinnery Oak ecoregion were infield drilling sites with little new impact compared to two wind power facilities that were mitigated in the Mixed Grass ecoregion. There continues to be a surplus of credits available with a range-wide positive value of 71,639 units. The distribution of available credits at the end of this reporting period was as follows: Sand Sagebrush (14,620), Shinnery Oak (15,366), Mixed Grass (37,279), and Short-grass (4,374).
7. There was continued effort to work with state wildlife agencies to identify and pursue research and management needs. Those activities included LPC translocation efforts that move birds from the shortgrass to sand sagebrush ecoregion. The partnership is also supporting research projects that are evaluating various land cover data, impacts of energy development on LPC space use, LPC movements, and climate-related effects to LPC populations.
8. WAFWA continued to monitor the need for adaptive management and identified or implemented two changes (Electric Distribution Proposal and Landowner Fee Increases for Certain Practices) to the program in 2016. In July, the Lesser Prairie-Chicken Initiative Council (LPCIC) approved changes to the requirements to bury electric distribution lines. Those changes were the culmination of a cooperative effort that included most of the electric distribution cooperatives across the LPC range. It also created a system that allows cooperatives to acquire credit for removing above ground electric lines providing a net conservation benefit for the species. The effort used WAFWA lek database and extensive proprietary electric data from the cooperatives to identify areas where above ground lines might be built with minimal impact to the species. Prior to approval by the LPCIC, these adaptive management changes were reviewed by the Science Sub-committee. The Science Sub-committee provided comments on the proposal to the LPCAC without providing a consensus recommendation. The LPCAC approved the proposal after reviewing the Science Sub-Committee comments and submitted it to the LPCIC which gave final approval.



The second adaptive management action in 2016 was a modification of the mitigation unit values that the RWP utilizes to calculate mitigation costs and conservation payments in each ecoregion. This process was initiated with a proposal that was developed by WAFWA staff and provided to the Lesser Prairie-Chicken Fee Structure Sub-committee (LPCFSS) for review and discussion. The proposal consisted of the current costs to implement all the necessary conservation practices as determined by WAFWA staff. It also included the new unit values that would take effect if the proposed payment rates were implemented. The LPCFSS discussed the proposal and recommended that it be forwarded with minor revisions to the Lesser Prairie-Chicken Advisory Committee (LPCAC). WAFWA staff prepared a revision and presented it to the LPCAC on a conference call in February 2016. The LPCAC made a recommendation to the LPCIC to approve the proposal as written. The LPCIC approved the proposal at their March 2016 meeting with an effective date of January 1, 2017. On that date, the mitigation unit values increased as follows: Mixed Grass (2.1%), Shortgrass (2.7%), Shinnery Oak (1.3%), and Sand Sagebrush (3.0%).

9. Through the LPCAC, representatives from industry, non-governmental agencies, as well as state and federal agencies addressed input and suggestions from agencies, organizations, landowners, industries, other stakeholders and the general public on the RWP. The LPCAC made recommendations to the LPCIC on multiple topics including the adaptive management topics previously outlined.

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**Edited by:**

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### **INTRODUCTION**

This report summarizes the 2016 activities associated with the lesser prairie-chicken (LPC, *Tympanuchus pallidicinctus*) range-wide conservation plan (RWP) administered by the Western Association of Fish and Wildlife Agencies (WAFWA, Van Pelt et al. 2013). The goal of the RWP is to conserve the LPC for future generations while facilitating continued and uninterrupted economic activity throughout the entire five-state LPC range (Figure 1). The RWP identifies a two-pronged strategy for LPC conservation: (1) the coordinated implementation of incentive-based landowner programs and (2) the implementation of a mitigation framework, which reduces threats and provides resources for off-site conservation activities.

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

### **BACKGROUND**

The USFWS was petitioned to list the LPC by the Biodiversity Legal Foundation in 1995 due to a declining population, range reduction, and increasing habitat impacts (USFWS 1997). In 1998, the USFWS determined that the species was warranted listing but precluded because of actions needed for higher priority species (USFWS 2012). The USFWS assigned the LPC a listing priority number of 8 (1 indicating the highest need for action and 12 the lowest). A candidate review conducted by USFWS in 2008 increased that priority number to 2 due to an increased threat of wind power and transmission line development within the LPC occupied range (USFWS 2012).

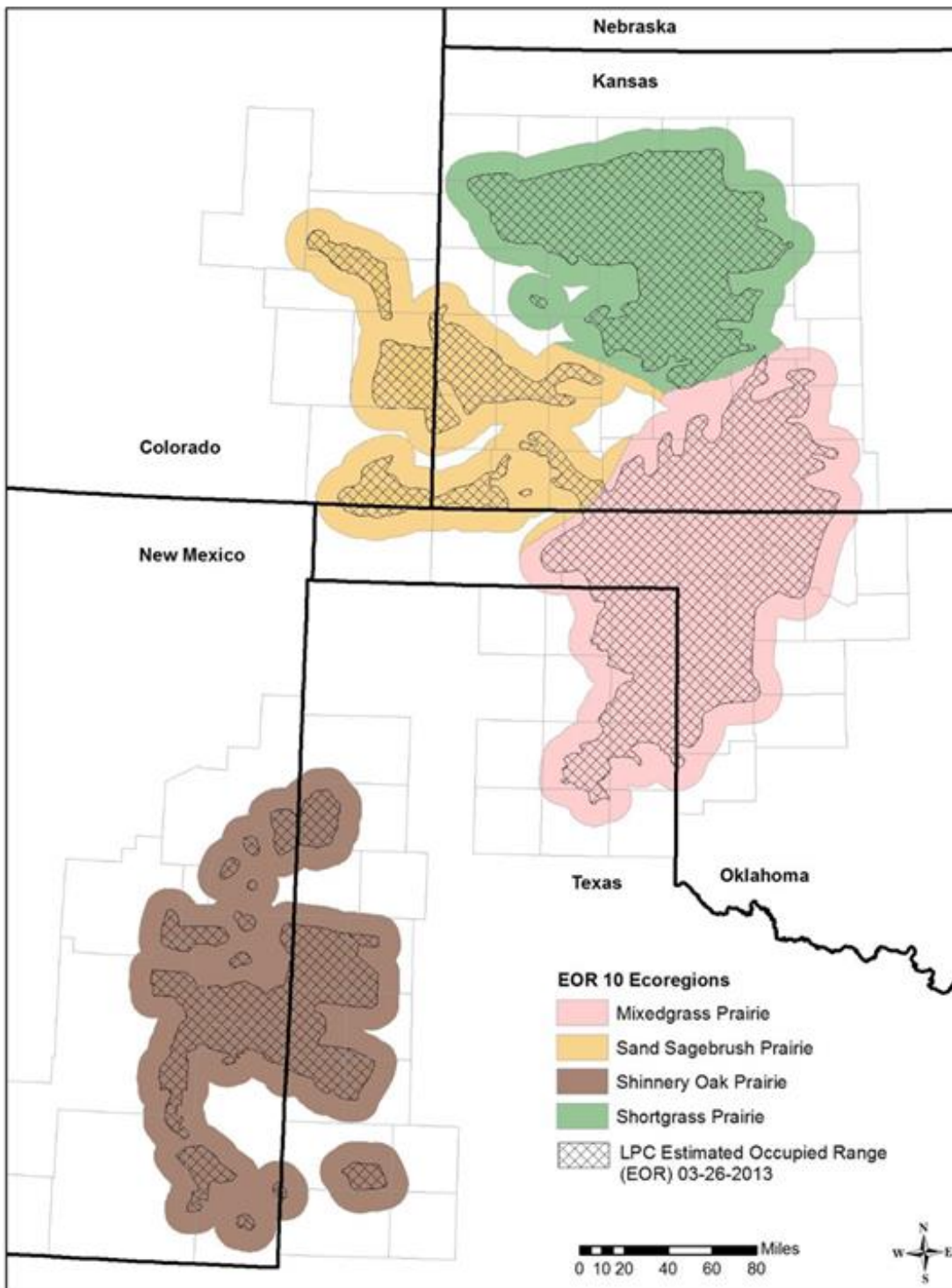


Figure 1. Current estimated occupied range plus 10 miles (EOR+10) of the lesser prairie-chicken and the four ecoregions delineated by the Western Association of Fish and Wildlife Agencies.

On December 11, 2012, the USFWS issued a proposed rule that would list the LPC as threatened. Their primary justification included historical, ongoing, and probable future impacts of cumulative habitat loss and fragmentation. These impacts are the result of: conversion of grasslands to agricultural uses; encroachment by invasive woody plants; wind energy development; petroleum production; and presence of roads and man-made vertical structures including towers, utility lines, fences, turbines, wells, and buildings. The USFWS proposed listing the LPC as threatened with a final listing decision scheduled for no later than September 30, 2013 (USFWS 2012).

On May 6, 2013, the USFWS issued a proposed special rule under the authority of section 4(d) of the ESA. A comment period on the proposed listing rule was opened to provide an opportunity for the public to simultaneously provide comments on the proposed listing rule with a proposed special rule, and a draft range-wide conservation plan for the LPC prepared by the five state wildlife agencies in collaboration with WAFWA.

On July 9, 2013, the USFWS announced a 6-month extension of the final listing determination based on their finding that there was substantial disagreement regarding the sufficiency or accuracy of the available data relevant to their determination regarding the proposed listing rule. The Service reopened the comment period to solicit additional information.

On October 23, 2013, the USFWS endorsed the RWP as “a comprehensive conservation plan that reflects sound conservation design and strategy that, when implemented will provide a net conservation benefit to the lesser prairie-chicken.” Following that endorsement, the USFWS reopened the comment period on a revised proposed special 4(d) rule and the proposed listing rule.

On March 27, 2014, the USFWS published a final rule listing the LPC as a threatened species under the ESA of 1973, as amended (USFWS 2014). In addition, the USFWS published a final special rule under section 4(d) of the ESA for the LPC. The final 4(d) special rule provided that take incidental to activities conducted by a participant enrolled in, and operating in compliance with, the LPC Interstate Working Group’s RWP would not be prohibited (Van Pelt et al. 2013). This rule became effective May 12, 2014.

On September 1, 2015, the U.S. District Court in the Western District of Texas vacated the USFWS rule in response to a suit filed by the Permian Basin Petroleum Association and four New Mexico counties. The suit claimed, in part, that the USFWS did not fully evaluate voluntary conservation efforts for LPC under the USFWS Policy for Evaluation of Conservation Efforts (PECE) prior to making the decision to list the species as threatened under the ESA. On July 19, 2016, the USFWS officially removed the LPC from the list of threatened and endangered species in fulfillment of the September 1, 2015 U.S. District Court order.

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

On November 30, 2016, the USFWS published a notice in the *Federal Register* in response to the September 8, 2016 listing petition. The USFWS found that the petition presented substantial positive information and therefore they would undergo the 12-month review process. During this 12-month review, a Species Status Assessment of the LPC will also be conducted.

### CONSERVATION STRATEGY

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

A key component of the RWP conservation strategy is applying the concept of focal areas and connectivity zones. This concept identifies the areas of greatest importance to the LPC, and focuses conservation efforts into those areas.

The strategy emphasizes delivery of habitat improvement in focal areas and connectivity zones by maximizing incentives to encourage those landowners to engage in LPC habitat maintenance and improvement.

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

### WAFWA MITIGATION AND METRICS SYSTEM

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

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

This performance-based system ensures participants are not paid in advance for un-generated offset units.

Offset units will be generated by enrolling a property into an agreement with WAFWA or one of its technical service providers. Participants may enroll in short-term (5-10 year) agreements or in long-term agreements requiring an easement. The value of 25% of the habitat offset units will be targeted towards permanent conservation to support long-term conservation and population strongholds. The remaining 75% of the conservation efforts will be targeted towards short-term contracts (5-10 years), which represent permanent conservation that may shift around on the landscape within the targeting goals of the RWP and the SGP CHAT. Finally, the WAFWA mitigation system incentivizes the remediation of impacts that are not permanent on the landscape by providing the opportunity to generate offset units that can count toward new developments elsewhere. The 25/75 ratio of long and short-term offset units will be evaluated through the adaptive management process and may need to be adjusted in the future.

### ADAPTIVE MANAGEMENT

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

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

The RWP identifies a series of activities or situations that will trigger the adaptive management process or specific conservation actions for LPC, as well as the timelines that those activities or situations will be evaluated (see Table 10 on page 110-121 in the RWP). There are eight individual

variables in that list which are to be evaluated on an annual scale:

- 1) Administrative fee—WAFWA reports on the sustainability of the administrative endowment in the annual reports (see the financial summary). In 2016, WAFWA did not adjust the administrative fee.
- 2) Individual technical service provider (TSP) compliance—Starting in May 2014, WAFWA has held five technical service provider training courses and has trained 267 individual TSPs on the use of spatial data available on the SGP CHAT website and the process for conducting field habitat evaluations. Certified TSPs submit habitat evaluations to the WAFWA GIS lab for review. These evaluations include photo points allowing for visual confirmation of collected data. No TSP compliance issues were identified in 2016.
- 3) Population size—WAFWA conducts annual population monitoring and a detailed description is included in this report. Populations are evaluated on a three-year moving average, and 2016 was the first window for evaluating the average for adaptive management triggers.
- 4) Conservation Practice Costs—As identified in the RWP, WAFWA established the LPC Fee Structure Sub-committee (LPCFSC) and held the inaugural meeting on November 18, 2014. It was determined that more information was needed on how payments tied to practices were perceived by landowners based on their acceptance of contracts. After another year of RWP implementation, another meeting of the LPCFSC was held on October 19, 2015. Upon presenting the information, WAFWA began development of a proposal recommending changes in conservation practice costs and the proposal was shared with the working group on December 7, 2015. The LPCFSC accepted the proposed changes and forwarded it to the LPCAC for action in 2016.
- 5) Emerging science—The RWP identified a Science Sub-committee, (LPCSSC), reviews and informs the LPC Advisory Committee on LPC science-related issues. Their reviews were incorporated into adaptive changes forwarded to the LPCAC and are summarized below.
- 6) Tangible mitigation unit offset ratio— The mitigation unit offset ratio in the RWP considers both acres and potential habitat quality of acres impacted and conserved. This combination of acres and habitat quality are represented as annual habitat units. This report contains an annual analysis of the acres impacted by industry development, habitat quality of those impacted acres and compares that to the acres conserved and the habitat quality of those acres. The comparisons are conducted on the scale of ecoregions, SGP CHAT categories, and reporting units.
- 7) Quality of the offset acreage—The habitat metric system defined in the RWP evaluates habitat quality for offset acreage on an annual basis. A summary of habitat quality is included in this report.
- 8) Habitat restoration goals—The RWP uses a system of focal areas and connectivity zones with goals of 70% suitable habitat in the focal areas and 40% in the connectivity zones. To achieve those goals, LPC habitat must be restored and maintained. Many LPC conservation programs across the region now use the SGP CHAT to target conservation efforts. This report will include an annual evaluation of those goals considering the restoration efforts of all conservation programs that provide data for that analysis. The strength of this approach is that common targeting helps leverage conservation efforts and funding with efforts from partner organizations.

Rigorous evaluations of habitat quantity, sustainability of the conservation endowment, conservation practices, avoidance of high priority CHAT categories, and strongholds are scheduled

for 2018. WAFWA also committed to expedited timelines for permanent conservation which will be evaluated after the 2016 reporting period. However, this report contains information on the progress towards each of the stated goals.

In addition to the evaluation periods defined in the RWP, WAFWA also brought other adaptive management issues before the committees in 2016. Those issues pertained to distribution line burial requirements and mitigation unit values. The adaptive management changes associated with those issues will be discussed in further detail in this report.

### **INDUSTRY PARTICIPATION**

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

### **LEK SURVEYS FOR PROJECT CLEARANCE**

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

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

In the spring of 2016, 12 companies conducted independent lek surveys for project clearance, while state and federal agencies did surveys for LPC leks. In addition, a cooperative effort funded through contributions of the members of the Oklahoma Independent Producers Association and Oklahoma Department of Wildlife Conservation began lek surveys intended to cover the EOR+10 within the State of Oklahoma. The total coverage of these 2016 surveys was 5,216,391 acres within the EOR+10 (Table 1, Figure 2). The total area covered by surveys considered as “active” (2012-2016) is 12,733,680 acres or 31.5% of the EOR+10 (Table 2). Companies, state and federal



agencies conduct lek surveys based on their own needs and many, if not most, of these surveys are non-random. Inferences on these data for local, regional, or range-wide LPC populations should not be made.

All lek detections from project clearance surveys are included in the WAFWA lek database, along with lek locations from the range-wide population surveys and those reported from state agencies and other data sources. If a new detection is recorded in an area that was surveyed in a prior year without detections, that new lek location supersedes the previous data and breeding season restrictions apply within 1.25 miles of that location for a minimum of five breeding seasons from the last detection. This database currently includes 3,056 lek observations recorded between 2005 and 2016, with 1,539 being from 2012-2016 and are considered “current leks” using the 5-year definition within the RWP. This total represents raw lek observations, and may include the same lek observed across multiple years. There were 210 leks observed during the 2016 survey season based on the data submitted to WAFWA (Figure 3). Of those leks observed between 2005 and 2016 (3,056 total) 2,305 were in CHAT 1 (75.4%), 304 were in CHAT 2 (9.9%), 355 were in CHAT 3 (11.6%), and 73 in CHAT 4 (2.4%) and 19 were outside of the EOR+10 (0.6%). Leks outside the EOR+10 were in northwest Kansas (18), and one lek was just across the border in Colorado. Of those leks outside the EOR+10 in Kansas, four were identified by KDWPT through ground surveys and 14 were identified from aerial surveys. Since this area of NW KS also has greater prairie chickens, the certainty that these are lesser prairie chickens has been raised and future aerial sightings in this region will be assessed with follow up ground observations.

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

#### INDUSTRY ENROLLMENT AUDIT

As reported in the 2015 Annual Report, WAFWA has conducted a spatial audit of all enrollments for the WCA and CCAA agreements. In 2014, prior to the listing decision, millions of acres were enrolled by companies over a period of six weeks. The spatial data for parcel enrollments was provided by the companies in a variety of different formats including legal descriptions, GIS shapefiles, Google Earth.kml/kmz files, CAD files and even hand drawn maps. Each of these data types required different methodologies to compile the data into a single database. Legal descriptions and hand drawn maps required digitizing. GIS shapefiles were submitted in a variety of different projections. Google Earth files and CAD files do not have a projection and require geo-referencing. At the time of these enrollments, WAFWA had two full-time staff and occasional interns to incorporate these data into a single database, while also addressing project submissions and mitigation of those projects. To process enrollments and invoice the companies for their enrollment fees, WAFWA allowed the participant companies to declare the number of acres enrolled and used this acreage for billing.

Table 1. Summary of acreage covered by lek surveys in 2016 by ecoregion and CHAT category. Most surveys are designed for industry clearance, but some are standard lek surveys by state/federal agencies.

Ecoregions	CHAT	Year	Acres	% of area
Shortgrass Prairie	1	2016	50,829.20	2.7%
Shortgrass Prairie	2	2016	0.00	0.0%
Shortgrass Prairie	3	2016	39,471.43	2.2%
Shortgrass Prairie	4	2016	18,844.45	0.4%
<b>Shortgrass</b>	<b>total</b>	<b>2016</b>	<b>109,145.08</b>	<b>1.3%</b>
Sand Sagebrush Prairie	1	2016	288,718.50	18.2%
Sand Sagebrush Prairie	2	2016	30,950.61	12.6%
Sand Sagebrush Prairie	3	2016	46,569.82	2.5%
Sand Sagebrush Prairie	4	2016	18,007.64	0.4%
<b>Sand Sagebrush</b>	<b>total</b>	<b>2016</b>	<b>384,246.57</b>	<b>4.8%</b>
Mixed Grass Prairie	1	2016	461,265.29	17.9%
Mixed Grass Prairie	2	2016	304,265.49	27.3%
Mixed Grass Prairie	3	2016	1,748,731.69	33.7%
Mixed Grass Prairie	4	2016	230,553.61	6.1%
<b>Mixed Grass</b>	<b>total</b>	<b>2016</b>	<b>2,744,816.07</b>	<b>21.7%</b>
Shinnery Oak Prairie	1	2016	451,047.78	43.1%
Shinnery Oak Prairie	2	2016	220,289.88	24.7%
Shinnery Oak Prairie	3	2016	1,139,010.97	19.3%
Shinnery Oak Prairie	4	2016	167,834.78	5.3%
<b>Shinnery Oak</b>	<b>total</b>	<b>2016</b>	<b>1,978,183.42</b>	<b>17.9%</b>
EOR+10	1	2016	1,251,860.76	17.7%
EOR+10	2	2016	555,505.98	22.8%
EOR+10	3	2016	2,973,783.91	20.2%
EOR+10	4	2016	435,240.49	2.7%
<b>EOR+10</b>	<b>Grand total</b>	<b>2016</b>	<b>5,216,391.14</b>	<b>12.9%</b>

Table 2. Summary of acreage covered by lek surveys performed in 2012-2016 (current active survey area).

Ecoregions	CHAT	Year	Acres	% of area
Shortgrass Prairie	1	2012-2016	133,174.72	7.1%
Shortgrass Prairie	2	2012-2016	18,098.13	9.9%
Shortgrass Prairie	3	2012-2016	94,073.41	5.3%
Shortgrass Prairie	4	2012-2016	73,939.63	1.5%
<b>Shortgrass</b>	<b>total</b>	<b>2012-2016</b>	<b>319,285.89</b>	<b>3.7%</b>
Sand Sagebrush Prairie	1	2012-2016	646,067.27	40.8%
Sand Sagebrush Prairie	2	2012-2016	112,455.82	45.9%
Sand Sagebrush Prairie	3	2012-2016	624,341.34	33.2%
Sand Sagebrush Prairie	4	2012-2016	357,357.70	8.3%
<b>Sand Sagebrush</b>	<b>total</b>	<b>2012-2016</b>	<b>1,740,222.13</b>	<b>21.7%</b>
Mixed Grass Prairie	1	2012-2016	1,348,770.75	52.4%
Mixed Grass Prairie	2	2012-2016	705,121.90	63.2%
Mixed Grass Prairie	3	2012-2016	3,367,671.14	64.9%
Mixed Grass Prairie	4	2012-2016	801,945.31	21.3%
<b>Mixed grass</b>	<b>total</b>	<b>2012-2016</b>	<b>6,223,509.10</b>	<b>49.2%</b>
Shinnery Oak Prairie	1	2012-2016	565,020.20	54.0%
Shinnery Oak Prairie	2	2012-2016	533,734.38	59.8%
Shinnery Oak Prairie	3	2012-2016	2,617,608.59	44.2%
Shinnery Oak Prairie	4	2012-2016	734,300.11	23.1%
<b>Shinnery Oak</b>	<b>total</b>	<b>2012-2016</b>	<b>4,450,663.29</b>	<b>40.3%</b>
EOR+10	1	2012-2016	2,693,032.95	38.0%
EOR+10	2	2012-2016	1,369,410.24	56.2%
EOR+10	3	2012-2016	6,703,694.48	45.4%
EOR+10	4	2012-2016	1,967,542.75	12.2%
<b>EOR+10</b>	<b>total</b>	<b>2012-2016</b>	<b>12,733,680.41</b>	<b>31.6%</b>

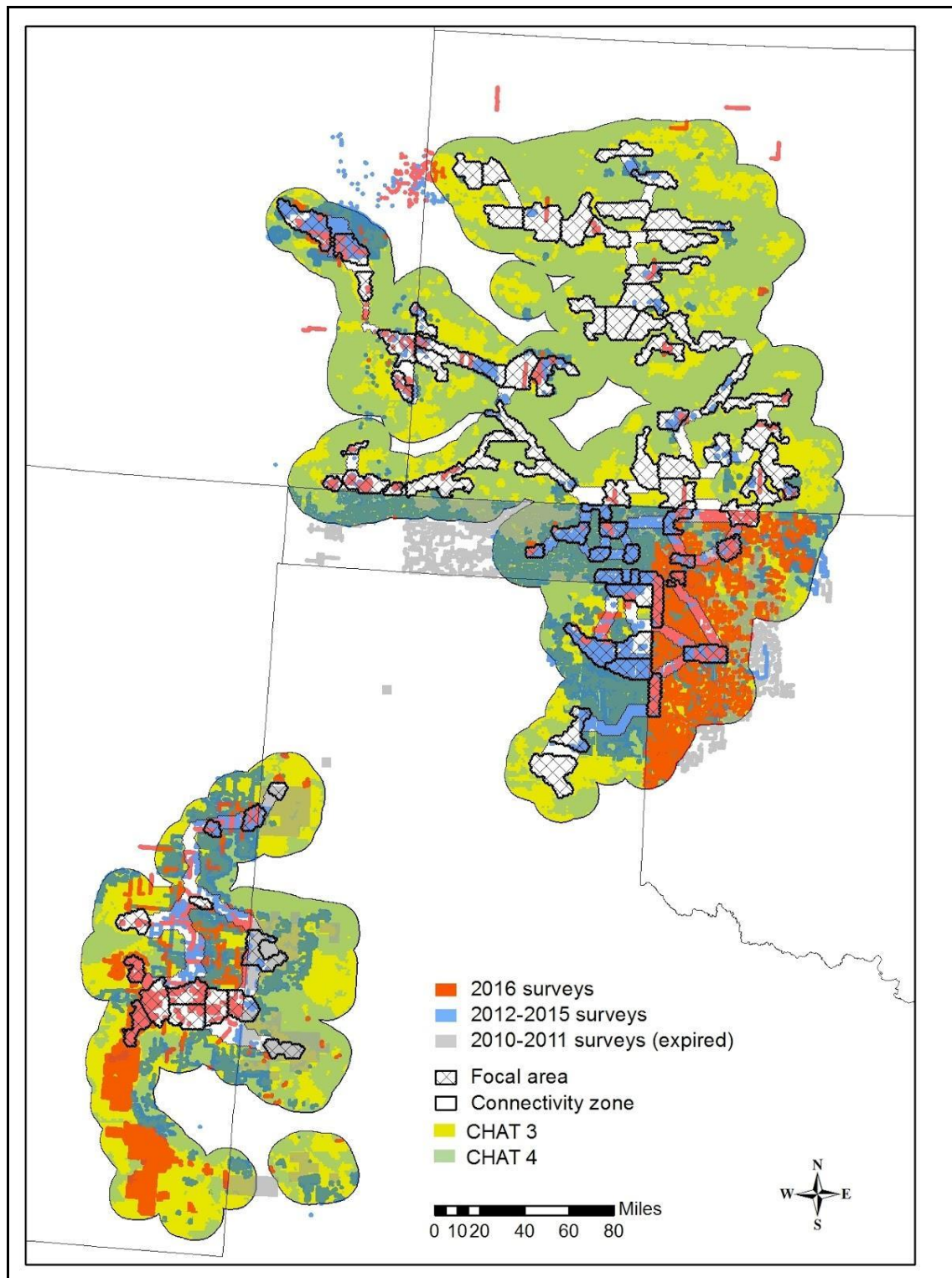


Figure 2. Lek surveys conducted in 2016 (new), 2012-2015 (active), and 2011 (just expired) across the estimated occupied range of the lesser prairie-chicken with a 10-mile buffer (EOR+10).

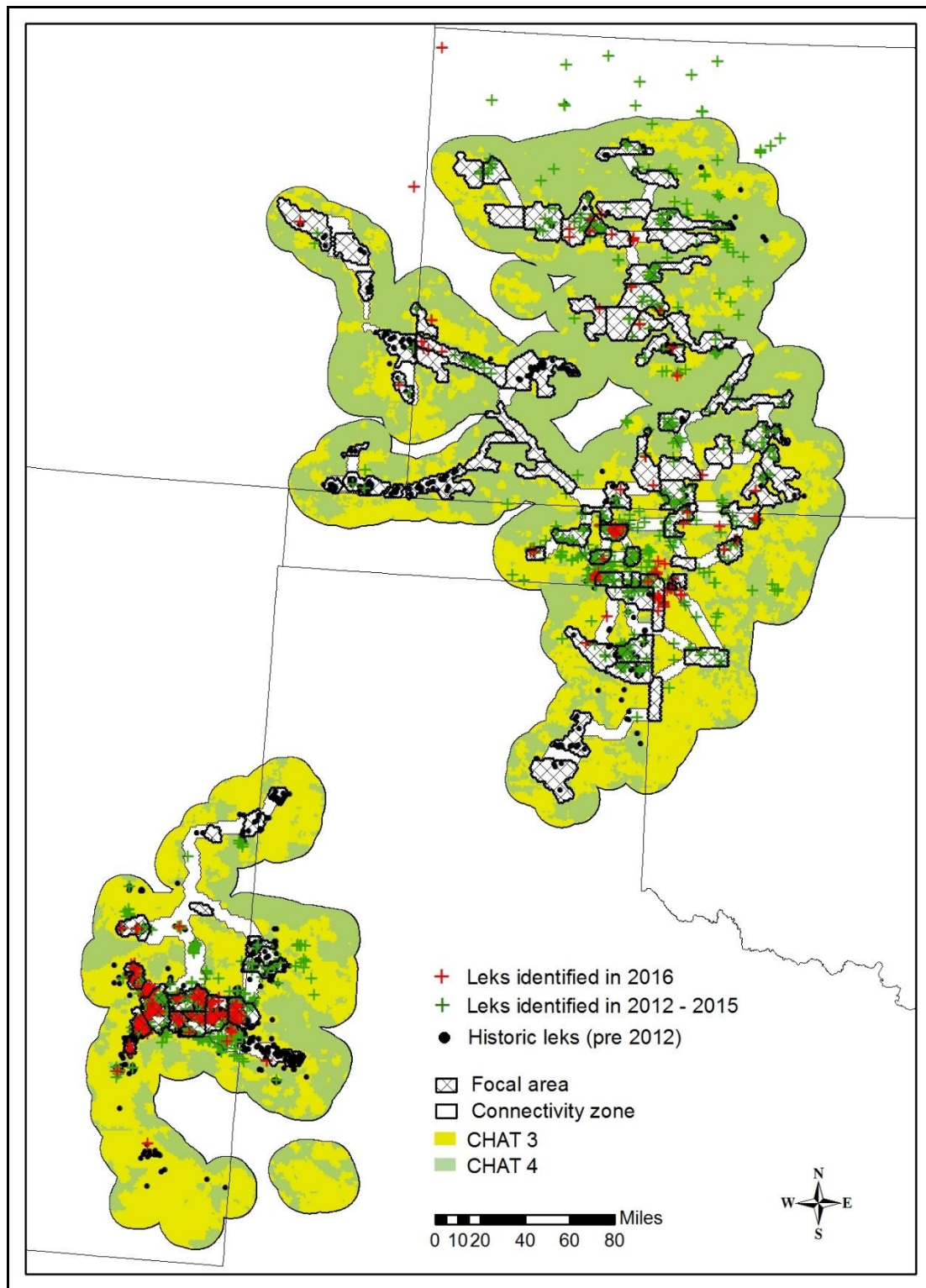


Figure 3. Leks identified in 2016 compared with those identified in 2012-2015 (still considered active) and leks last observed in 2011 or prior which are considered historic leks.

The CCAA and WCA also cover non-parcel based point and linear data such as electric lines and pipelines, as well as industrial sites such as compressor stations, trucking sites, gas plants, etc. Each of these enrollment types use a fixed enrollment rate that is not based on a declared acreage. These data were also submitted in a variety of data sources, and required incorporation and consolidation into a single database. These enrollments also required buffering these features by a fixed distance (15.25 meters, 50 feet) to represent the approximate right of way (30 meters/100feet) and to enable reporting as enrolled acres.

Following the listing decision, WAFWA began incorporating and consolidating those enrollments into a single GIS database. That process resulted in differences in the declared enrolled acreage and the GIS acreage for parcel enrollments. These differences can arise from differences in spatial projections, digitizing errors, calculation errors from both WAFWA and from the companies, including some related to industry specific software for managing parcel data. However, WAFWA staff were primarily focused on implementing the agreements and developing processes for that implementation. In late 2015 and throughout 2016, WAFWA staff began comparing and resolving differences between the declared acreage in the accounting databases and the spatial database. This process involved reviewing the initial enrollment data to confirm the declared acreage was consistent with enrollment information, reviewing the projected or digitized spatial data in the WAFWA database to ensure it was incorporated correctly, and sharing both data sources with the participant company to confirm.

The enrollment audit process was very successful in resolving data discrepancies between what was submitted as enrolled and what was intended to be enrolled. By working with each company for the last two years to review data submitted and resolve discrepancies, the audit discovered and resolved several major issues. Transmission lines submitted early in the program (WCA) were mapped as enrolled using a 500-meter buffer, creating corridors 1,000 meters wide and one electric cooperative had submitted their entire region as an enrollment area instead of the distribution lines themselves. After reducing the transmission lines down to its correct 15.25-meter buffer (30 meter/100 ft.) right of way corridor and replacing the cooperative area with specific lines, the electric enrollment acreage was reduced by 1,630,599.5 acres. There were 165,354 acres of “real” losses in enrollment due to terminations or transfers of acreage to companies who were not enrolled in the RWP. The remaining difference of 541,525 is the net difference of the parcel enrollment audit where companies clarified their declared acres vs the acreage they submitted (Table 3).

For the parcel enrollment audit process, differences in enrollment acres were addressed on an individual basis with each company. In cases where the GIS acreage was less than the declared acreage, companies were given the option to either add parcels to bring the GIS acreage in line with the declared acreage on which the enrollment fees were based or crediting the difference towards their remaining enrollment fees. In cases where the GIS acreage is greater than the declared acreage, companies were given the option of paying the additional enrollment fees or removing parcels from that enrollment that have not been developed during that period of enrollment so that the spatial extent of their enrollment matches the area they are paying enrollment fees.

Table 3. Detailed view of how the difference in enrollment between 2015 and 2016 is accounted for reveals most of the change is a result of data cleaning, not a real loss in enrollment.

<b>a) total difference (2016-2015)</b>	<b>-2,337,478.9</b>
b) terminated CCAA	-22,625.5
c) terminated WCA	-27,780.4
d) terminated total (b+c)	-50,405.9
e) trans out to non-RWP company	-114,948.5
<b>f) Total "real" loss (d+e)</b>	<b>-165,354.4</b>
g) electric difference (fix buffers and co-op)	-1,630,599.5
h) parcel audit change (a - (f + g))	-541,525
<b>i) total data clean difference (g + h)</b>	<b>-2,172,124.5</b>
<b>j) check (f + i) = a</b>	<b>165,354.4+2,172,124.5= 2,337,478.9</b>

Another issue identified with this spatial audit is addressing mitigation projects that are not associated with enrolled parcels. During the initial RWP implementation, millions of acres of enrolled parcels required digitizing to incorporate into the WAFWA spatial database. During that time, companies were also submitting new development projects for mitigation. Without a spatial database to compare project locations and enrollment, WAFWA had to rely on companies to ensure their projects submitted were on or associated with enrolled parcels. WAFWA identified 129 projects that were not on enrolled parcels that were submitted to WAFWA and mitigation payments were provided to acquire conservation offset units. Some of these projects are associated with enrolled properties, while others were submission errors. WAFWA contacted each company and requested documentation to confirm which projects are submission errors. Companies either enrolled these parcels or enrollment was corrected via the audit process so that all mitigated projects were on or accessing enrolled property. The retroactive assessment of past mitigated projects against current enrollments will be difficult (but possible) since enrolled areas can be dropped once fully paid for. Thus, a project that was once on enrollment and mitigated for may not always be on enrollment in the future. Currently, enrollment status is determined at the time a project is submitted/mitigated for and a project can't be mitigated for until its enrollment is confirmed. Because of the automation and data tests now built into the process, there were zero projects not associated with enrollment in 2016.

Several changes in project submittal methodology were also initiated in 2015 and 2016 to ensure enrollment acreage complications do not continue to occur. When new parcels are submitted to WAFWA for enrollment (or transfer), the GIS calculated acreage is compared against the declared acres and the GIS acres are confirmed with the company. Once agreed to by the company, it is the GIS acres that are sent to accounting to be used for billing. To ensure new projects are located on enrolled parcels, projects are intersected with the enrollment layer. If the project is not on a parcel,

the project is attributed as such and the company must enroll that area before the project can be mitigated for.

Overall, enrollment in the RWP is relatively stable with only a slight decline despite the bird being de-listed and the price of oil remaining very low. Looking strictly at the total number of acres reported as enrolled in the CCAA and WCA programs in the 2015 report versus this report gives a false impression of an overall loss of 2,337,479 acres. The bulk of this difference is due to incorrect spatial data being summarized for the 2014 and 2015 report and having that data corrected for the 2016 report.

The changes in acreage from the audit did not substantially affect the fees charged by the program. More than 75% of those differences resulted from linear enrollments that use flat enrollment fees. On the parcel-based enrollments, companies who declared more acres than they intended to enroll retain those enrollment fees for future mitigation. Those who declared fewer acres than they intended to enroll will be invoiced for that difference.

#### WAFWA CONSERVATION AGREEMENT PARTICIPATION BY INDUSTRY

The WAFWA conservation agreement (WCA) covers oil and gas, pipelines, wind energy, electric distribution and transmission and other activities (See Sec. 10 of the WCA). During 2016, overall participation in this agreement declined as oil and gas and pipeline companies transferred their enrollments to the CCAA agreement for its stronger legal assurances. As of December 31, 2016, there were 54 active WCA contracts by 54 companies (signed Certificates of Participation) and 29 inactive WCA contracts where the acres were transferred to the CCAA (Table 4). WAFWA maintains those WCA contracts as inactive, so that the companies may enroll new properties as they acquire them. Four companies are suspended for unpaid enrollment fees. Since 2014, five companies voluntarily terminated their WCA enrollments. All Certificates of Participation for this agreement have been scanned and made available to USFWS on a secure website.

**Table 4.** List of companies enrolled in the WCA and their current contract status for the 2016 reporting year.

<b>Company Name</b>	<b>*Contract Status</b>
American Electric Power Service Corporation	Active
Anadarko E&P Onshore LLC	Active
Bailey County Electric Cooperative	Active
Bloom Wind	Active
Bluestem Wind Energy, LLC	Active
BP America	Active
Central Valley Electric Cooperative, Inc.	Active
Chaparral Energy LLP	Active



Cimarex Energy Co.	Active
Cimarron Electric Cooperative	Active
Coral Coast Petroleum, LC	Active
Deaf Smith Electric Cooperative Inc.	Active
E R Operating Company	Active
Eagle Exploration	Active
Edison Operating Company, LLC	Active
Enterprise Products Operating	Active
Gore Oil Company, Inc.	Active
Grand Mesa Pipeline, LLC	Active
Greenbelt Electric Cooperative, Inc.	Active
Hess Oil Company	Active
Indian Exploration Company, LLC	Active
ITC Great Plains LLC	Active
John O. Farmer, Inc.	Active
Kaiser-Francis Oil Company	Active
Kiwash Electric Cooperative, Inc.	Active
Lyntegar Electric Cooperative, Inc.	Active
Magellan Midstream Partners, LP	Active
MarkWest OK Gas Company, LLC	Active
North Plains Electric Cooperative	Active
Northfork Electric Cooperative	Active
Northwestern Electric Cooperative	Active
OGE Energy Corp.	Active
Opal Resources	Active
P.O. & G. Operating LLC	Active
Peregrine Petroleum Partners, Ltd.	Active

Pioneer Resources, Inc.	Active
Prairie Wind Transmission	Active
Ramsey Property Management	Active
Raydon Exploration	Active
Raymond Oil Company, Inc.	Active
Red Oak Energy Inc.	Active
Roosevelt County Electric Cooperative	Active
Slawson Exploration Company	Active
Southern Star Central Gas Pipeline, Inc.	Active
Sunflower Electric Power Corporation	Active
Superior Pipeline Co.	Active
Texakoma Exploration & Production, LLC	Active
Toto Energy, LLC	Active
Tower Assets Newco IX, LLC	Active
Tri-County Electric Cooperative	Active
VAL Energy	Active
Vanguard Natural Resources	Active
Western Farmers Electric Cooperative	Active
Xcel Energy Inc.	Active
Alfalfa Electric Cooperative, Inc.	Self-Terminated
Broadview Energy LLC	Self-Terminated
Eagle Oil & Gas	Self-Terminated
Nadel and Gussman Operating LLC	Self-Terminated
Stratakan Exploration, LLC	Self-Terminated
Access Midstream Partners	Sold/Transferred
Eagle Rock Energy Services, LP	Sold/Transferred
Eagle Rock Field Services, LP	Sold/Transferred

Regency Energy Partners LP	Sold/Transferred
Dolomite Resources Corporation	Suspended
Forestar Petroleum Corporation	Suspended
Monarch Oil Pipeline	Suspended
T.H. McElvain Oil & Gas LLLP	Suspended
Apache Corporation	Transferred/Inactive
Centurion Pipeline L.P.	Transferred/Inactive
COG Operating, LLC	Transferred/Inactive
Conoco Phillips	Transferred/Inactive
Continental Resources, Inc.	Transferred/Inactive
DCP Midstream LP	Transferred/Inactive
Devon Energy Corporation – Kansas	Transferred/Inactive
Devon Energy Corporation - Oklahoma	Transferred/Inactive
Devon Energy Corporation - Panhandle	Transferred/Inactive
Devon Energy Corporation - Permian Basin	Transferred/Inactive
Devon Energy Corporation – Rockies	Transferred/Inactive
Enable Midstream Partners	Transferred/Inactive
Energy Transfer Partners	Transferred/Inactive
Enervest Operating LLC	Transferred/Inactive
Jayhawk Pipeline LLC	Transferred/Inactive
Jones Energy LLC	Transferred/Inactive
Kirkpatrick Oil Company Inc.	Transferred/Inactive
Landmark Resources, Inc.	Transferred/Inactive
Linn Operating, Inc.	Transferred/Inactive
Mewbourne Oil Company	Transferred/Inactive
Midcoast Operating	Transferred/Inactive
ONEOK Partners, LP	Transferred/Inactive

Plains All American Pipeline	Transferred/Inactive
Samson Resources	Transferred/Inactive
Samuel L. Gary Jr. & Associates, Inc.	Transferred/Inactive
SemGroup Corporation	Transferred/Inactive
Unit Petroleum Company	Transferred/Inactive
Versado Gas Processors	Transferred/Inactive

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

WCA enrollments represent oil and gas leases, wind developments, pipelines, gas plants electric lines and telecommunications towers. Oil and gas leases, wind developments and telecom sites are enrolled as parcels. Linear impacts such as pipelines and electric lines are buffered by 50 feet (15.25 meters) to define the enrolled acreage. The current active enrollment area totals for the WCA is 663,198 acres (Table 5 & 6). WCA enrollments are down 74% from the 2,550,605 acres reported in 2015. Since delisting, 1,777,452.5 acres have been transferred from the WCA to the CCAA because companies desired stronger legal assurances associated with a CCAA permit. Largely due to the downturn in the oil and gas industry, an additional 3223.8 acres are currently suspended for non-payment of enrollment fees. Companies have voluntarily terminated 31,308.5 acres from the WCA since 2014. And finally, additional acreage differences have resulted from the enrollment audit as described in the previous section of this report.

Figures 4 and 5 depict the distribution of the current active WCA enrollments across the extent of the EOR+10. The majority of the WCA enrollments (67%) are in the Mixed Grass Ecoregion, followed by the Shinnery Oak Prairie Ecoregion (20%), the Sand Sagebrush Ecoregion (9%), the Shortgrass Prairie Ecoregion (4%). The enrollment in this agreement represents a small percentage of the range of the species (1.7%) (Table 8 and 9). However, that enrollment has substantial biological importance because it is nearly the entire electric grid within the EOR+10 across New Mexico, Texas and Oklahoma, part of the electric grid in Kansas, and most of the pipelines across the entire EOR+10 (Figure 5).

Table 5. Summary of active WCA acreage by ecoregion, CHAT category, and industry type and the percentage of total area of the ecoregion and CHAT category that those enrollments represent as of December 31, 2016.

**Active Enrollment Acreage by Industry Type**

<b>Ecoregion/CHAT</b>	<b>Oil and Gas</b>	<b>Wind</b>	<b>Pipelines</b>	<b>Electric</b>	<b>Total</b>	<b>%Total Area</b>
<b>Mixed Grass</b>	<b>200,231.1</b>	<b>1,234.7</b>	<b>110,793.5</b>	<b>138,260.8</b>	<b>450,520.1</b>	<b>3.6%</b>
CHAT1	7,003.2	0.0	9,545.8	17,312.9	33,861.9	1.3%
CHAT2	13,254.3	8.8	8,517.7	12,944.8	34,725.6	3.1%
CHAT3	116,828.4	359.6	45,102.3	64,821.9	227,112.3	4.4%
CHAT4	63,145.2	866.2	47,627.7	43,181.2	154,820.3	4.1%
<b>Sand Sagebrush</b>	<b>7,043.4</b>	<b>0.0</b>	<b>39,193.8</b>	<b>16,207.9</b>	<b>62,445.0</b>	<b>0.8%</b>
CHAT1	3,947.5	0.0	15,217.0	1,524.3	20,688.8	1.3%
CHAT2	63.4	0.0	406.9	152.9	623.2	0.3%
CHAT3	1,734.6	0.0	7,853.5	5,254.6	14,842.7	0.8%
CHAT4	1,297.9	0.0	15,716.3	9,276.1	26,290.2	0.6%
<b>Shinnery Oak</b>	<b>1,445.2</b>	<b>0.0</b>	<b>10,912.4</b>	<b>120,528.2</b>	<b>132,885.8</b>	<b>1.2%</b>
CHAT1	2.0	0.0	661.1	6,299.8	6,963.0	0.7%
CHAT2	0.0	0.0	387.0	7,995.0	8,382.0	0.9%
CHAT3	1,443.2	0.0	5,506.9	51,715.5	58,665.6	1.0%
CHAT4	0.0	0.0	4,357.3	54,517.8	58,875.2	1.9%
<b>Shortgrass</b>	<b>2,438.5</b>	<b>0.0</b>	<b>9,307.1</b>	<b>5,602.3</b>	<b>17,347.8</b>	<b>0.2%</b>
CHAT1	1,185.7	0.0	1,724.8	737.9	3,648.5	0.2%
CHAT2	0.0	0.0	270.4	148.4	418.8	0.2%
CHAT3	976.8	0.0	1,173.6	925.5	3,075.9	0.2%
CHAT4	276.0	0.0	6,138.2	3,790.5	10,204.7	0.2%
<b>EOR+10 Total</b>	<b>211,158.2</b>	<b>1,234.7</b>	<b>170,206.7</b>	<b>280,599.2</b>	<b>663,198.7</b>	<b>1.6%</b>

Table 6. Summary of active and suspended WCA enrollment acreage by ecoregion and CHAT category and the percentage of the ecoregion and CHAT categories that those enrollments represent as of December 31, 2016.

<b>WCA Acreage by Agreement status</b>				
<b>Ecoregion/CHAT</b>	<b>Active</b>	<b>Suspended</b>	<b>Total Acres</b>	<b>% Total Area</b>
<b>Mixed Grass</b>	<b>450,520.1</b>	<b>1,217.0</b>	<b>451,737.1</b>	<b>3.6%</b>
CHAT1	33,861.9	727.5	34,589.4	1.3%
CHAT2	34,725.6	211.7	34,937.3	3.1%
CHAT3	227,112.3	268.8	227,381.2	4.4%
CHAT4	154,820.3	8.9	154,829.2	4.1%
<b>Sand Sagebrush</b>	<b>62,445.0</b>	<b>0.0</b>	<b>62,445.0</b>	<b>0.8%</b>
CHAT1	20,688.8	0.0	20,688.8	1.3%
CHAT2	623.2	0.0	623.2	0.3%
CHAT3	14,842.7	0.0	14,842.7	0.8%
CHAT4	26,290.2	0.0	26,290.2	0.6%
<b>Shinnery Oak</b>	<b>132,885.8</b>	<b>320.4</b>	<b>133,206.2</b>	<b>1.2%</b>
CHAT1	6,963.0	320.4	7,283.4	0.7%
CHAT2	8,382.0	0.0	8,382.0	0.9%
CHAT3	58,665.6	0.0	58,665.6	1.0%
CHAT4	58,875.2	0.0	58,875.2	1.9%
<b>Shortgrass</b>	<b>17,347.8</b>	<b>1,686.4</b>	<b>19,034.2</b>	<b>0.2%</b>
CHAT1	3,648.5	80.6	3,729.0	0.2%
CHAT2	418.8	0.0	418.8	0.2%
CHAT3	3,075.9	320.1	3,396.0	0.2%
CHAT4	10,204.7	1,285.7	11,490.4	0.2%
<b>EOR+10 Total</b>	<b>663,198.7</b>	<b>3,223.8</b>	<b>666,422.5</b>	<b>1.7%</b>

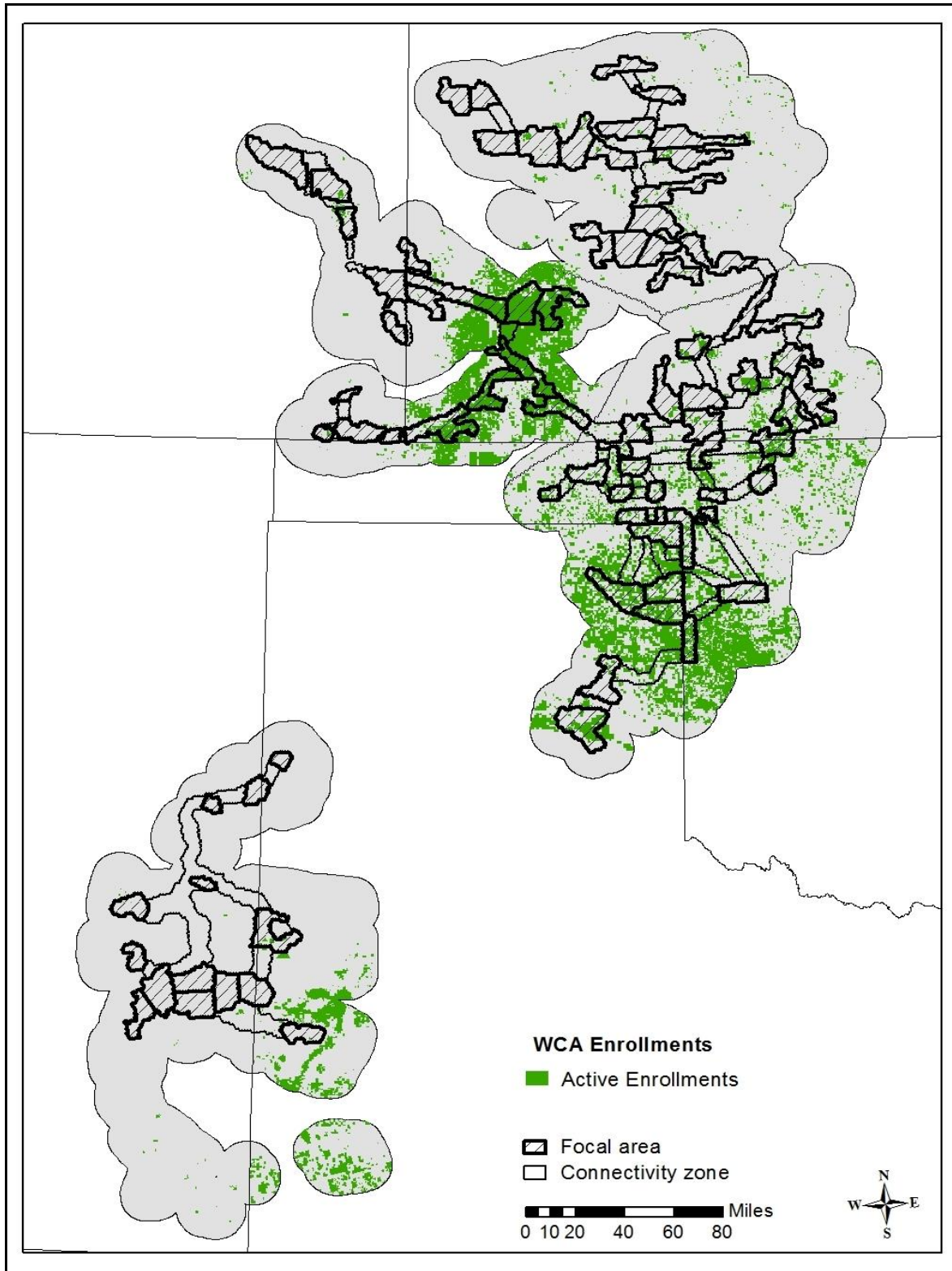


Figure 4. Oil and gas enrollments in the WAFWA Conservation Agreement as of December 31, 2016.

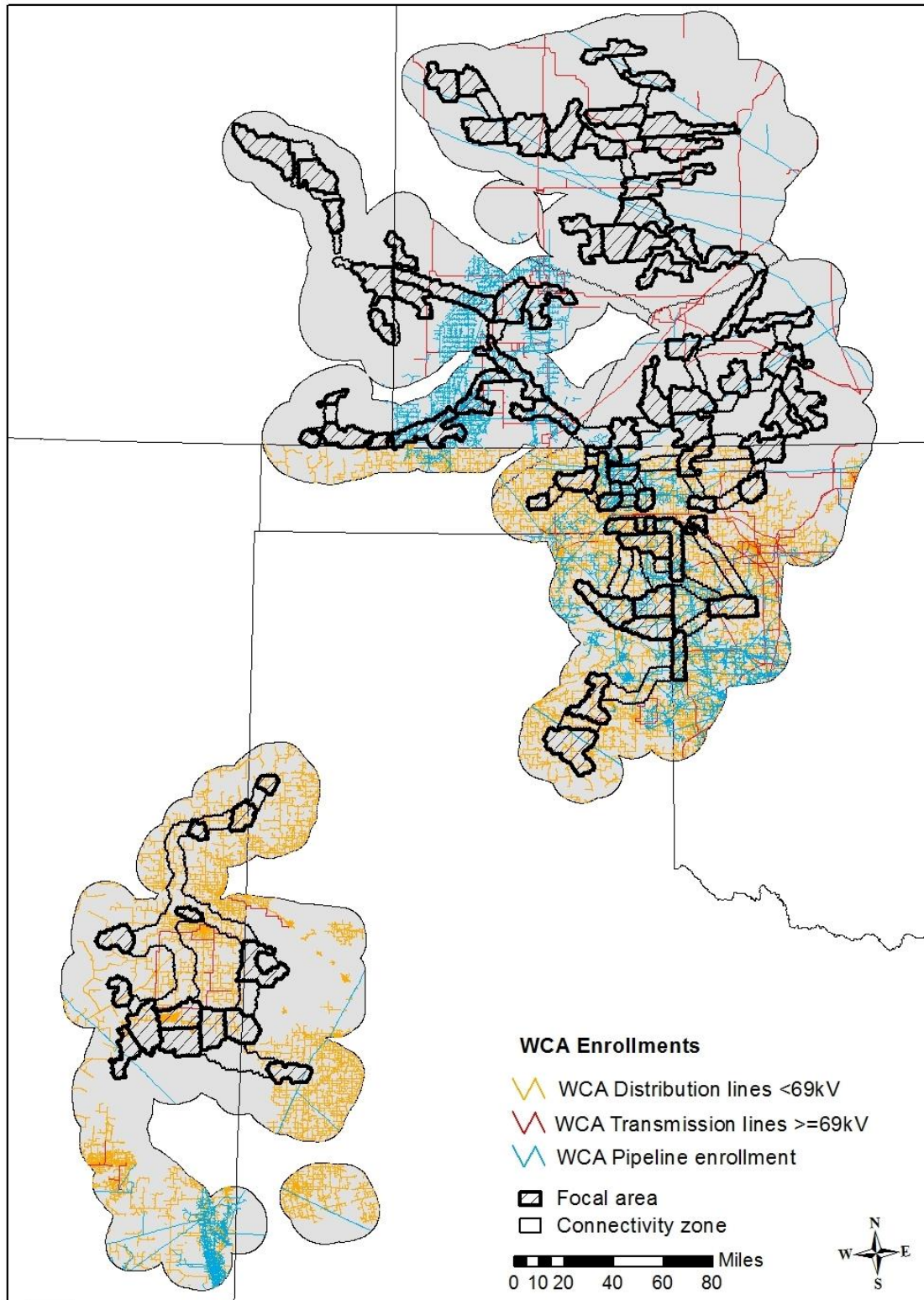


Figure 5. Electric and pipeline enrollments in the WAFWA Conservation Agreement as of December 31, 2016.



### WCA COMPLIANCE

Section XXIV of the WCA covers participant compliance focusing on payment of enrollment fees and compliance with the conservation measures in the agreement.

### WCA SUSPENSIONS FOR NON-PAYMENT OF ENROLLMENT FEES

The slowdown in the oil and gas industry that began in 2012 continues to impact that industry and other industries throughout the region. WAFWA recognizes the economic difficulty that many of these companies are experiencing and we have worked extensively with those companies to provide options to maintain their participation in the WCA. If a company fails to pay their enrollment fees for the WCA and is ten days late on that payment, WAFWA issues a Notice of Non-payment letter that gives the company 30 days to pay the past due amount. If payment is not received prior to the end of that period, WAFWA issues a Compliance and Suspension Notice, upon which the company's enrollment in the program is suspended. US Fish and Wildlife Service staff are notified of that suspension. Suspended companies are not allowed to finalize mitigation for new development projects until their suspension is rescinded. If the past due balance is not resolved within twenty business days, WAFWA issues a Delinquency Notice, which provides a second twenty business day timeline to resolve that outstanding balance. If payment is not received during that period, WAFWA issues a Notice of Noncompliance, which informs the company of its options to seek redress through the Advisory Committee, establishes a final twenty business day period to resolve the past-due balance, and informs them that the Initiative Council may consider termination of all or part of their enrollment if the outstanding balance is not paid prior to the deadline. Companies with past-due accounts and current accounts have multiple options to resolve enrollment fee balances. They can pay their enrollment fees upon the predefined 3-year timeline, they can negotiate an extended payment plan that includes an interest sufficient to cover the expected rate of return in the WAFWA conservation endowment and additional work by WAFWA to invoice and track that payment plan, or they can work with WAFWA to negotiate a partial or full termination.

In 2016, there were 15 instances where companies were late on payment of WCA enrollment fees. Ten of those were resolved with the company remaining in good standing following resolution. The remaining five companies are currently suspended with a total outstanding balance of \$14,513.03. All five companies received a Notice of Noncompliance in December 2016 or January 2017. WAFWA is currently evaluating additional options to try to get these five companies accounts current before considering termination.

### SUMMARY OF WCA COMPLIANCE MONITORING

WAFWA also randomly selects mitigated projects to monitor compliance with the conservation measures outlined in Section XIII of the WCA. That selection process draws a single sample of projects from both CCAA and WCA projects. Due to staffing limitations, WAFWA limits that sample to a maximum of 200 projects per year (50 from each of the four ecoregions). In an effort to spread this compliance monitoring across a wide sample of companies, WAFWA selected those projects at random in 2016, but established a maximum of 20 projects for compliance monitoring per company. In subsequent years, we will limit the number of random samples per company to 10 in an effort to sample more companies. If a project is evaluated for compliance, it is removed

from the pool for future random samples.

The sampling process selected a total of 158 projects to evaluate in 2016. Of that total, 21 projects were mitigated for under the WCA or 17.2% of the remaining pool of projects mitigated for under the WCA from 2014 to present. Those 21 projects represented 13 companies. The breakdown of projects by ecoregion was as follows: 5 in the Mixed Grass, 1 in the Sand Sagebrush, 12 in the Shinnery Oak, and 3 in the Shortgrass.

The compliance monitoring process evaluates mapping accuracy for the project to confirm it was mitigated for correctly, the possible presence of any structures on the site that the participant company is responsible for that were not mitigated for, compliance with noise, off road travel, and timing restrictions, the presence of escape ramps or rafts in man-made water sources, and herbicide use. Of the 21 WCA projects that were monitored, 2 were sold and the company no longer had access to the property, 5 were not constructed, 2 were unsuccessful oil and gas wells that were remediated, and 12 were constructed. No instances of noncompliance were detected on any of these projects.

#### WCA EMERGENCY AND NON-EMERGENCY OPERATIONS AND LPC MORTALITY REPORTING

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

No emergency or non-emergency operation or instances of LPC mortality were reported on WCA enrolled properties by participant companies during the 2016 calendar year.

#### CCAA INDUSTRY PARTICIPATION

The CCAA covers oil and gas and related activities such as wells, roads, pipelines, storage tank facilities, compressor and pumping stations, and electric service for oil and gas facilities. In 2016, participation in the CCAA remained generally stable. Several companies transferred enrollments from the WCA into the CCAA for its stronger legal assurances. Overall, the number of companies remained fairly consistent except for a few self-terminations. As of December 31, 2016, there were 119 active CCAA contracts by 115 companies, 12 contracts suspended for non-payment of enrollment fees, and two companies whose CCAA enrollment is partially suspended for non-payment of enrollment fees (Table 7). Since 2014, eight companies voluntarily terminated their CCAA enrollment, six companies were sold and their acreage was transferred to another enrolled company, and two additional sales/transfers are pending. No new companies were added to the

CCAA in 2016, but a substantial amount of acreage was transferred from the WCA agreement to the CCAA. Certificates of Inclusion for this agreement have been scanned and made available to FWS on a secure website.

Table 7. Companies enrolled in the CCAA and their current contract status for the 2016 reporting year.

<b>Company Name</b>	<b>Agreement Status</b>
Anadarko Minerals, Inc.	Active
Anadarko Petroleum Corporation	Active
Apache Corporation	Active
Apache Corporation - Permian Region	Active
Beren Corporation	Active
Berexco LLC	Active
BP America	Active
Casillas Petroleum	Active
Castelli Exploration, Inc.	Active
Centurion Pipeline L.P.	Active
Cimarex Energy Co.	Active
Cimarex Energy Co. - West Texas	Active
CMX, Inc.	Active
Coats Energy, Inc.	Active
COG Operating, LLC	Active
ConocoPhillips	Active
Continental Resources, Inc.	Active
Corlena Oil Company	Active
Crawley Petroleum Corporation	Active
Culbreath Oil & Gas Co., Inc.	Active
Cynosure Energy LLC	Active
DaMar Resources, Inc.	Active
Daystar Petroleum Inc.	Active

DCP Midstream LP	Active
Devon Energy Corporation – Kansas	Active
Devon Energy Corporation - Oklahoma	Active
Devon Energy Corporation - Panhandle	Active
Devon Energy Corporation - Permian Basin	Active
Devon Energy Corporation – Rockies	Active
Diehl Oil, Inc.	Active
Dorchester Minerals Operating LP - OK	Active
Duncan Oil Properties, Inc.	Active
Edison Operating Company, LLC	Active
Edmiston Oil Company, Inc.	Active
Elevation Resources LLC	Active
Empire Energy E&P LLC	Active
Enable Midstream Partners	Active
Encino Operating, LLC	Active
Energy Alliance Company, Inc.	Active
Energy Transfer Partners	Active
Enervest Operating LLC	Active
EOG Resources, Inc.	Active
Fasken Oil and Ranch	Active
Griffin Management LLC	Active
IA Operating, Inc.	Active
Jayhawk Pipeline LLC	Active
JMA Energy Company, LLC	Active
Jolen Operating Company	Active
Jones Energy LLC	Active
Kenneth W. Cory, Ltd.	Active

Kinder Morgan Inc.	Active
Kirkpatrick Oil Company Inc.	Active
Laddex Ltd.	Active
Landmark Resources, Inc.	Active
Larson Engineering	Active
Legacy Reserves Operating LP	Active
Lighthouse Oil & Gas LP	Active
Linn Operating, Inc.	Active
M&M Exploration, Inc.	Active
Magellan Midstream Partners, LP	Active
Marathon Oil Company	Active
MarkWest OK Gas Company, LLC	Active
Maverick Brothers Resources, LLC	Active
McGinness Oil Co. of Kansas, Inc.	Active
Merit Energy Company, LLC	Active
Mewbourne Oil Company	Active
MIDCO Exploration, Inc.	Active
Midcoast Operating	Active
MidCon Energy Operating LLC	Active
Midnight Hour, LLC	Active
Murfin Drilling Co., Inc.	Active
O'Benco IV LP	Active
ONE Gas Inc.	Active
ONEOK Partners, LP	Active
Oolite Energy Corporation	Active
Osage Investors I, LLC	Active
Paladin Energy Corp.	Active

Panhandle Topeka, LLC	Active
Pickrell Drilling Company, Inc.	Active
Pintail Petroleum, Ltd.	Active
Pioneer Natural Resources USA, Inc.	Active
Plains All American Pipeline	Active
QEP Energy Company	Active
Questa Energy Corporation	Active
Range Resources	Active
Red Oak Energy Inc.	Active
Redland Resources, LLC	Active
Rio Petroleum, Inc.	Active
Samson Resources	Active
Sandridge Expl. & Prod. LLC	Active
SemGroup Corporation	Active
Shakespeare Oil Company	Active
Stanolind Operating Inc.	Active
Strand Energy LLC	Active
Strat Land Exploration Co.	Active
Superior Pipeline	Active
Tabula Rasa Partners LLC	Active
Tandem Energy Corporation	Active
Tengasco Inc.	Active
Texakoma Exploration & Production, LLC	Active
Texland Petroleum	Active
Thomason Petroleum Inc.	Active
Toto Energy, LLC	Active
Triad Energy Inc.	Active

Unit Petroleum Company	Active
Vanguard Operating LLC	Active
Versado Gas Processors	Active
Viking Resources, Inc.	Active
Vincent Oil Company	Active
W.R. Williams, Inc.	Active
Ward Petroleum Corporation	Active
Western Gas Partners, LP	Active
Western Operating Company	Active
White Exploration, Inc.	Active
White Rock Oil and Gas	Active
Whiting Petroleum Corporation	Active
Williams Midstream Partners	Active
Younger Energy Company	Active
Zinszer Oil Company, Inc.	Active
Samuel L. Gary Jr. & Associates, Inc.	Partial Suspension
Tapstone Energy, LLC	Partial Suspension
Central Operating Inc.	Self-Terminated
Chisholm Partners II, LLC	Self-Terminated
Meridian Energy Inc.	Self-Terminated
Mikol Oil, LLC	Self-Terminated
Nadel and Gussman Operating LLC	Self-Terminated
Nadel and Gussman Permian LLC	Self-Terminated
Trey Resources Inc.	Self-Terminated
Williford Energy Company	Self-Terminated
Access Midstream Partners	Sold/Transferred
Eagle Rock Energy Services, LP	Sold/Transferred

Eagle Rock Field Services, LP	Sold/Transferred
Eagle Rock Mid-Continent Operating, LLC	Sold/Transferred
Eagle Rock Operating Company, LLC	Sold/Transferred
Regency Energy Partners LP	Sold/Transferred
Ares Energy Ltd.	Suspended
Cholla Production, LLC	Suspended
Energex LLC	Suspended
Eternity Exploration LLC	Suspended
Forestar Petroleum Corporation	Suspended
Joshi Technologies International, Inc.	Suspended
LB Exploration, Inc.	Suspended
Le Norman Operating LLC	Suspended
Ol' Miss, LLC	Suspended
Osage Oil, LLC	Suspended
Pioneer Oil Company, Inc.	Suspended
T.H. McElvain Oil & Gas LLLP	Suspended

As of December 31, 2016, the CCCA included an active total of 7,041,548.9 acres (Table 8 and 9), which is down from 7,876,547 acres in 2015 (10.6%). This change in enrolled acreage is the result of many factors. As discussed earlier in this report, the enrollment audit resulted in a significant difference in the CCAA enrollment, but only reflected correction of industry provided data as opposed to decreased industry participation. Since the LPC was listed in May 2014, companies have transferred 1,777,452.5 acres from the WCA into the CCAA for the stronger legal assurances that agreement provides. Those transfers offset much of the enrollment audit differences. Largely due to the oil and gas industry downturn, 227,198.8 acres are enrolled in the agreement but are suspended for non-payment of enrollment fees. Since implementation in 2014, companies have terminated a total of 22,625.5 acres from the CCAA.

The majority of the CCAA enrollment (54.3%) is in the Mixed Grass ecoregion, followed by the Sand Sagebrush ecoregion (32.7%), the Shinnery Oak Prairie ecoregion (10.4%), and the Shortgrass Prairie Ecoregion (2.6%) (Figures 6 & 7). The CCAA has significant biological importance because the enrollment encompasses nearly 20% of the EOR+10 and 30-50% of the CHAT 1 and 2 areas that have substantial potential for oil and gas development (Table 8 and 9). The exception to that pattern is the Shinnery Oak ecoregion. The low rate of enrollment in this



ecoregion is the result of industry participation in the New Mexico Oil and Gas CCAA for the Dunes Sagebrush Lizard and Lesser Prairie-Chicken that is administered by the Center of Excellence for Hazardous Materials Management which pre-dated the RWP. In addition, many of the areas of CHAT 1 and 2 in the Texas portion of the Shinnery Oak ecoregion were selected because they had low potential for oil and gas development.

Table 8. Summary of active CCAA enrollment acreage by ecoregion, CHAT category and industry and the percentage of ecoregion and CHAT categories that these enrollments represent as of December 31, 2016.

Active Enrollment Acreage by Industry Type						
Ecoregion/CHAT	Oil and Gas	Wind	Pipelines	Electric	Total Acres	%Total Area
<b>Mixed Grass</b>	<b>3,491,054.1</b>	<b>0.0</b>	<b>489,562.9</b>	<b>0.0</b>	<b>3,980,616.9</b>	<b>31.5%</b>
CHAT1	657,481.8	0.0	70,709.5	0.0	728,191.3	28.3%
CHAT2	351,568.2	0.0	47,509.6	0.0	399,077.9	35.8%
CHAT3	1,874,540.5	0.0	233,605.8	0.0	2,108,146.3	40.7%
CHAT4	607,463.6	0.0	137,737.9	0.0	745,201.5	19.8%
<b>Sand Sagebrush</b>	<b>2,165,490.9</b>	<b>0.0</b>	<b>143,793.9</b>	<b>0.0</b>	<b>2,309,284.8</b>	<b>28.7%</b>
CHAT1	733,971.9	0.0	39,652.0	0.0	773,623.9	48.9%
CHAT2	34,194.3	0.0	1,071.2	0.0	35,265.5	14.4%
CHAT3	304,121.0	0.0	24,961.1	0.0	329,082.1	17.5%
CHAT4	1,093,203.6	0.0	78,109.7	0.0	1,171,313.3	27.1%
<b>Shinnery Oak</b>	<b>557,053.7</b>	<b>0.0</b>	<b>172,974.7</b>	<b>0.0</b>	<b>730,028.4</b>	<b>6.6%</b>
CHAT1	2,146.3	0.0	12,765.3	0.0	14,911.7	1.4%
CHAT2	5,692.6	0.0	3,050.3	0.0	8,742.9	1.0%
CHAT3	247,538.2	0.0	93,062.0	0.0	340,600.2	5.8%
CHAT4	301,676.6	0.0	64,097.1	0.0	365,773.7	11.5%
<b>Shortgrass</b>	<b>156,398.9</b>	<b>0.0</b>	<b>37,958.4</b>	<b>0.0</b>	<b>194,357.3</b>	<b>2.2%</b>
CHAT1	38,830.0	0.0	4,499.8	0.0	43,329.8	2.3%
CHAT2	2,036.4	0.0	1,069.7	0.0	3,106.1	1.7%
CHAT3	32,603.6	0.0	5,935.6	0.0	38,539.2	2.2%
CHAT4	82,928.8	0.0	26,453.3	0.0	109,382.1	2.3%
<b>EOR+10 Total</b>	<b>6,369,997.6</b>	<b>0.0</b>	<b>844,289.9</b>	<b>0.0</b>	<b>7,214,287.4</b>	<b>17.9%</b>

Table 9. Summary of the active and suspended enrolled CCAA acreage by ecoregion and CHAT category and the percentage of the ecoregion and CHAT categories that those enrollments represent as of December 31, 2016.

<b>CCAA Acreage Agreement Status</b>				
<b>Ecoregion/CHAT</b>	<b>Active</b>	<b>Suspended</b>	<b>Total</b>	<b>% Total Area</b>
Mixed Grass	<b>3,980,617.0</b>	<b>130,757.5</b>	<b>4,111,374.5</b>	<b>32.5%</b>
CHAT1	728,190.3	25,105.6	753,295.9	29.2%
CHAT2	399,077.9	14,840.8	413,918.7	37.1%
CHAT3	2,108,146.3	65,327.6	2,173,473.9	41.9%
CHAT4	745,202.5	25,483.4	770,685.9	20.5%
Sand Sagebrush	<b>2,309,284.8</b>	<b>132.7</b>	<b>2,309,417.5</b>	<b>28.7%</b>
CHAT1	773,623.9	0.0	773,623.9	48.9%
CHAT2	35,265.5	0.0	35,265.5	14.4%
CHAT3	329,082.1	10.6	329,092.6	17.5%
CHAT4	1,171,313.3	122.1	1,171,435.5	27.1%
Shinnery Oak	<b>730,028.4</b>	<b>11,815.8</b>	<b>741,844.2</b>	<b>6.7%</b>
CHAT1	14,911.7	625.5	15,537.1	1.5%
CHAT2	8,742.9	0.0	8,742.9	1.0%
CHAT3	340,600.2	7,806.6	348,406.7	5.9%
CHAT4	365,773.7	3,383.8	369,157.4	11.6%
Shortgrass	<b>194,357.3</b>	<b>66,256.1</b>	<b>260,613.4</b>	<b>3.0%</b>
CHAT1	43,329.8	8,644.2	51,974.0	2.8%
CHAT2	3,106.1	4,005.1	7,111.3	3.9%
CHAT3	38,539.2	26,544.1	65,083.3	3.7%
CHAT4	109,382.1	27,062.8	136,444.8	2.8%
<b>EOR+10 Total</b>	<b>7,214,287.4</b>	<b>208,962.1</b>	<b>7,423,249.6</b>	<b>18.4%</b>

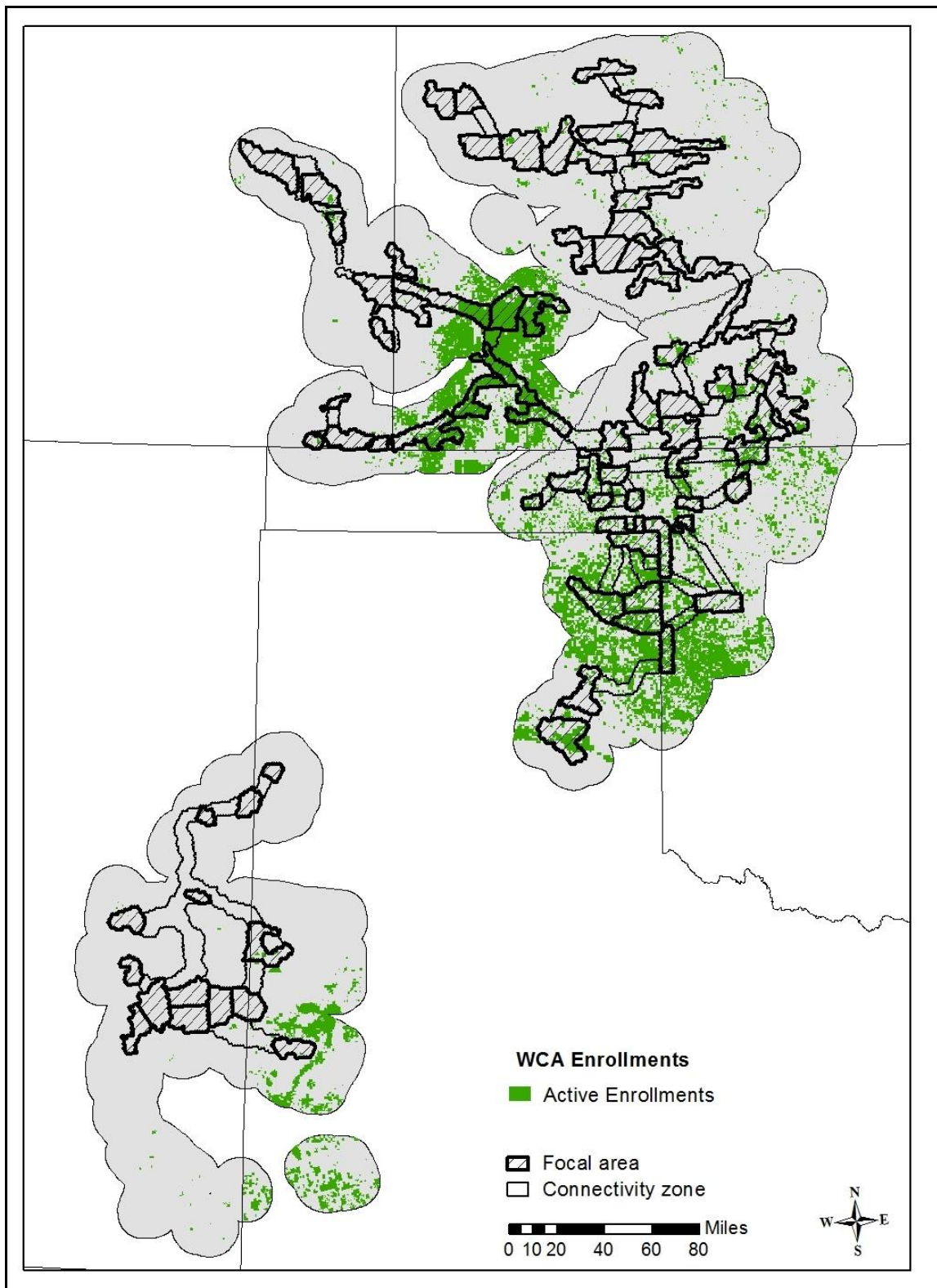


Figure 6. Oil and gas enrollments in the Range-wide Oil and Gas Candidate Conservation Agreement with Assurances as of December 31, 2016

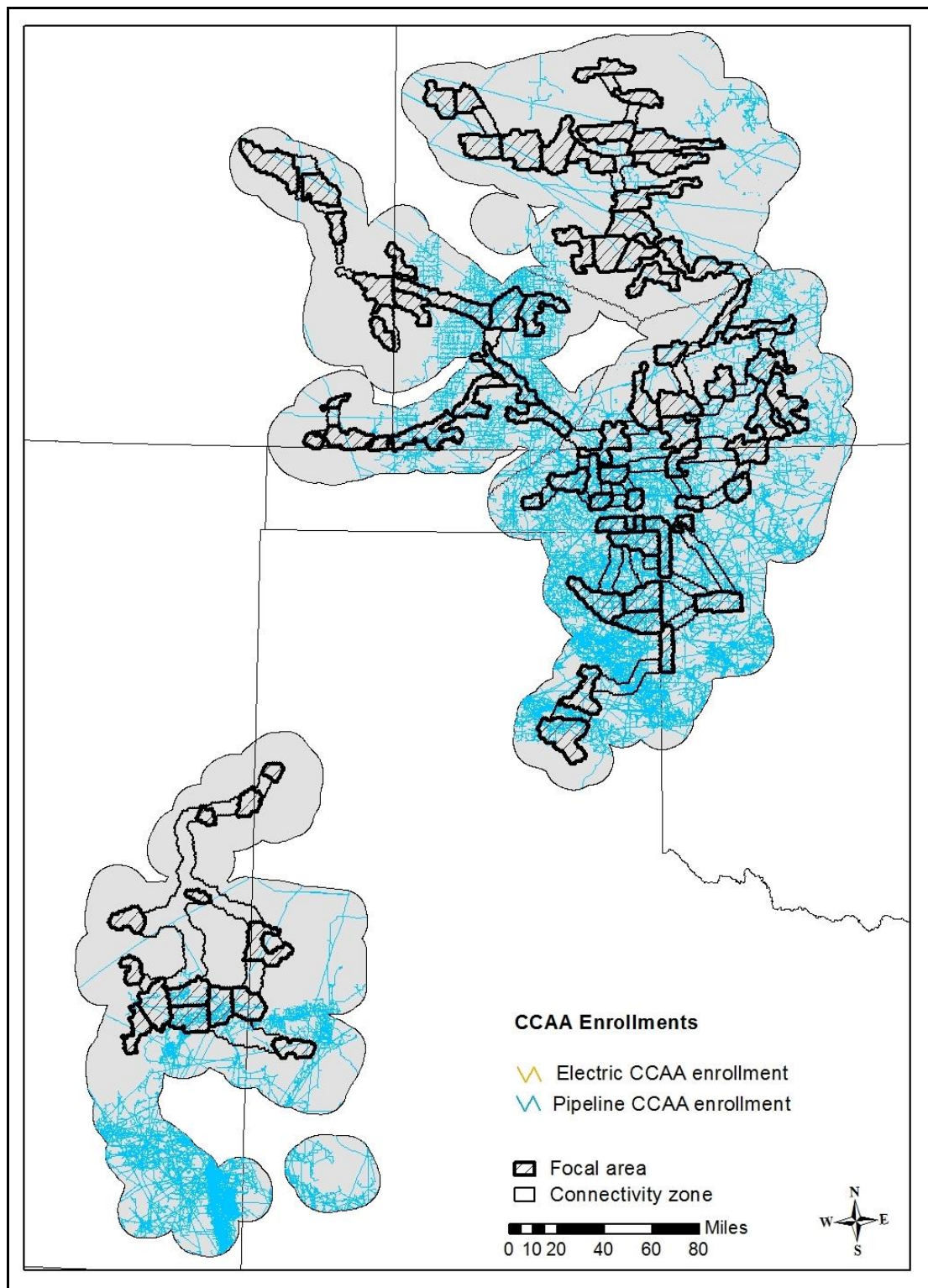


Figure 7. Map of pipeline enrollments in the Range-wide Oil and Gas Candidate Conservation Agreement with Assurances as of December 31, 2016

### CCAA COMPLIANCE

Section XXIX of the CCAA covers participant compliance focusing on payment of enrollment fees and compliance with the conservation measures in the agreement.

### CCAA SUSPENSIONS FOR NON-PAYMENT OF ENROLLMENT FEES

The slowdown in the oil and gas industry that began in 2012 continues to impact that industry and other industries throughout the region. WAFWA recognizes the economic difficulty that many of these companies are experiencing and we have worked extensively with those companies to provide options to maintain their participation in the CCAA. If a company fails to pay their enrollment fees for the CCAA and is ten days late on that payment, WAFWA issues a Notice of Non-payment letter that gives the company 30 days to pay the past due amount. If payment is not received prior to the end of that period, WAFWA issues a Compliance and Suspension Notice, upon which the company's enrollment in the program is suspended. US Fish and wildlife Service staff are notified of that suspension. Suspended companies are not allowed to finalize mitigation for new development projects until their suspension is rescinded. If the past due balance is not resolved within twenty business days, WAFWA issues a Delinquency Notice, which provides a second twenty business day timeline to resolve that outstanding balance. If payment is not received during that period, WAFWA issues a Notice of Noncompliance, which informs the company of its options to seek redress through the Advisory Committee, establishes a final twenty business day period to resolve the past-due balance, and informs them that the Initiative Council may consider termination of all or part of their enrollment if the outstanding balance is not paid prior to the deadline. Companies with past-due accounts and current accounts have multiple options to resolve enrollment fee balances. They can pay their enrollment fees upon the predefined 3-year timeline, they can negotiate an extended payment plan that includes an interest sufficient to cover the expected rate of return in the WAFWA conservation endowment and additional work by WAFWA to invoice and track that payment plan, or they can work with WAFWA to negotiate a partial or full termination.

In 2016, there were 77 instances in which companies were late on payment of CCAA enrollment fees. Sixty-two of those were resolved with the company remaining in good standing following resolution. The remaining 15 occasions represent 14 companies that are currently suspended with a total outstanding balance of \$688,829.98. All 14 companies received a Notice of Noncompliance in December 2016 or January 2017. Of those the suspended companies, 3 are currently negotiating a termination or partial termination. Three additional companies are making payments on their past due balance, but remain suspended because they have not signed an official payment plan. WAFWA is currently evaluating additional options for 9 suspended companies to try to bring their accounts up to date prior to considering to termination.

### SUMMARY OF CCAA COMPLIANCE MONITORING

WAFWA also randomly selects mitigated projects to monitor compliance with the conservation measures outlined in Section XII of the CCAA. That selection process draws a single sample of projects from both CCAA and WCA projects. Due to staffing limitations, WAFWA limits that sample to a maximum of 200 projects per year (50 from each of the four ecoregions). To spread this compliance monitoring across a wide sample of companies, WAFWA selected those projects

at random in 2016, but established a maximum of 20 projects for compliance monitoring per company. In subsequent years, the number of random samples per company will be limited to 10 in an effort to sample more companies. If a project is evaluated for compliance, it is removed from the pool for future random samples.

The sampling process selected a total of 158 projects to evaluate in 2016. Of that total, 137 projects were mitigated for under the CCAA. This constitutes 16.1% of the remaining pool of CCAA projects mitigated from 2014 to present, but not previously sampled for compliance. Those 137 projects represented 36 companies. The breakout of projects by ecoregion is as follows: 44 in the Mixed Grass, 21 in the Sand Sagebrush, 35 in the Shinnery Oak, and 37 in the Shortgrass.

The compliance monitoring process evaluates mapping accuracy for the project to confirm it was mitigated for correctly, the possible presence of any structures on the site that the participant company is responsible for that were not mitigated for, compliance with noise, off road travel, and timing restrictions, the presence of escape ramps or rafts in man-made water sources, and herbicide use. Of the 137 CCAA projects that were monitored, 8 projects were sold and the company no longer had access to the site, 17 projects were unsuccessful oil and gas wells that were remediated, 21 projects were not constructed, 91 projects were constructed. Eight projects had instances of noncompliance (5.8%) and received Noncompliance Notices. Those projects included 3 instances of mapping errors, 2 instances of failure to mark fences, and four instances of failure to include escape ramps or rafts in an open man-made water source. An additional two sites were initially issued Noncompliance Notices for failure to include escape ramps or rafts in secondary containment units. After further review WAFWA rescinded the Noncompliance Notices for the secondary containment because they did not meet the definition of a man-made water source and did not significantly pose a threat to LPCs.

In the case of Compliance Notices for conservation measure violations, companies are given time to remedy the situation. All 8 cases were remedied within the allotted time and none of them required a Deficiency Notice.

#### CCAA EMERGENCY AND NON-EMERGENCY OPERATIONS AND LPC MORTALITY REPORTING

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

During the 2016 calendar year, 3 emergency operations events and 17 non-emergency operations

events were reported on CCAA enrolled properties by participant companies. Those events are summarized in Table 10. No instances of LPC mortality were reported.

Table 10. Summary of 2016 emergency and non-emergency operations reported for the CCAA.

Operation Type	Ecoregion	CHAT	Surveyed for Leks	Known Lek Within 1.25 miles	Date	Start Time	End Time	Safety Issue Identified
Emergency	Mixed Grass	1	Partial	No	3/11/2016	3:35 AM	4:00 AM	Yes
Emergency	Mixed Grass	1	Partial	No	3/11/2016	7:05 AM	7:30 AM	Yes
Emergency	Mixed Grass	1	Partial	No	3/19/2016	3:10 AM	4:00 AM	Yes
Non-Emergency	Mixed Grass	3	Partial	No	3/2/2016	9:10 AM	5:15 PM	No
Non-Emergency	Mixed Grass	3	Partial	No	3/3/2016	9:02 AM	5:08 PM	No
Non-Emergency	Mixed Grass	3	Partial	No	3/10/2016	10:03 AM	12:52 PM	No
Non-Emergency	Mixed Grass	3	Partial	No	4/7/2016	9:00 AM	4:00 PM	No
Non-Emergency	Mixed Grass	3	Partial	No	4/8/2016	9:00 AM	1:30 PM	No
Non-Emergency	Mixed Grass	3	Partial	No	4/11/2016	9:00 AM	5:00 PM	No
Non-Emergency	Mixed Grass	3	Partial	No	4/12/2016	9:00 AM	4:30 PM	No
Non-Emergency	Mixed Grass	3	Partial	No	4/13/2016	9:00 AM	5:00 PM	No
Non-Emergency	Mixed Grass	3	Partial	No	4/14/2016	9:00 AM	5:00 PM	No
Non-Emergency	Mixed Grass	3	Partial	No	4/15/2016	9:00 AM	6:00 PM	No
Non-Emergency	Mixed Grass	3	Partial	No	4/18/2016	9:00 AM	1:00 PM	No
Non-Emergency	Mixed Grass	3	Partial	No	4/19/2016	9:00 AM	5:00 PM	No

Non-Emergency	Mixed Grass	3	No	No	6/1/2016	10:45 AM	11:15 AM	No
Non-Emergency	Mixed Grass	4	No	No	6/1/2016	12:00 PM	1:30 PM	No
Non-Emergency	Mixed Grass	4	No	No	6/29/2016	11:00 AM	4:30 PM	No
Non-Emergency	Mixed Grass	4	No	No	6/30/2016	9:30 AM	5:00 PM	No
Non-Emergency	Mixed Grass	4	No	No	7/1/2016	10:00 AM	4:00 PM	No

### **RWP CONSERVATION PROGRAM**

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

The non-offset generating agreements provided participants with exemptions from the take prohibitions of the ESA for the conservation practices that were being applied as prescribed when the LPC was federally protected. Those take exemptions were eliminated after the September 1, 2015 court decision overturned the USFWS ruling that listed the species as threatened under the ESA. WAFWA will advocate for these take exemptions to be reinstated by the USFWS if the LPC regains federal protection in the future. WAFWA accepts landowner requests for non-offset agreements continuously and processes them as quickly as possible. Any property that falls within a WAFWA ecoregion is eligible to enroll in a non-offset generating conservation agreement. WAFWA does not monitor compliance on these sites because the participants do not receive any payments and the sites do not generate mitigation offset units.

The offset generating agreements offered by WAFWA provided the same take exemptions as the non-offset agreement when the LPC was federally protected under the ESA. However, these agreements also provide various types of payments to landowners for implementing conservation practices that are beneficial to LPC. Enrolled properties produce mitigation credits to offset industry impacts elsewhere in the same ecoregion. Basic eligibility requirements dictate that a property must fall within a WAFWA ecoregion and contain at least 160 acres in one contiguous block. Landowners can offer eligible acreage for 5 or 10-year term agreements or ask that it be considered for a permanent conservation site. Sites that require restoration work such as range planting or brush management must be enrolled for at least a 10-year term. WAFWA continuously



accepts landowner offers of eligible property for all the offset generating agreement options. However, enrollment is competitive and depends on availability of mitigation funds and other competing offers. Properties that do get enrolled in an offset generating agreement must be managed in compliance with a WAFWA-approved conservation plan. Rangeland conservation plans must include prescribed grazing. Planted grass management plans must include at least 1 disturbance practice during the term of the agreement. Both types of conservation plans must also include all the additional conservation practices necessary to address each of the identified threats to the LPC that exist on the property. WAFWA assesses compliance with conservation plans using landowner self-reporting forms and annual vegetation sampling.

When WAFWA biologists make their initial visit to a property, a checklist is completed to identify which LPC threats currently exist on the site. The biologists evaluate such things as the presence of invasive vegetation, harmful infrastructure, grazing pressure, and presence of LPC non-habitat. The biologists must attempt to address each of the LPC threats identified on the checklist when they prepare a conservation plan for the property. WAFWA biologists can address those threats using of 28 different conservation practices that must be prescribed to the standards described in the range-wide plan. The practices and their standards mimic those approved in the USFWS's biological opinion of the NRCS' Lesser Prairie-Chicken Initiative with three exceptions. The grazing applied through the RWP will be prescribed at 33% total utilization rather than 50%, all trees will be felled when brush management is prescribed, and there will be no chemical treatment of sand sagebrush.

#### WAFWA NON-OFFSET AGREEMENTS

During 2016, WAFWA did not receive any landowner requests for non-offset agreements. WAFWA did execute one non-offset agreement in 2014 which is still being implemented by the landowner. The associated conservation plan includes prescribed grazing and prescribed fire on 8,912 acres in the mixed grass ecoregion.

#### WAFWA CONSERVATION FUNDING STRATEGY

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

The 75/25 split was chosen as the ratio for two primary reasons. First, WAFWA will be able to affect a far greater number of acres with the most funding being targeted toward term contracts. Applying beneficial conservation practices on the maximum possible acreage provides the best opportunity to stabilize or increase the LPC population. This approach has proven to be successful at recovering the LPC as demonstrated by the range expansion and population growth observed in Kansas shortly after the implementation of the Conservation Reserve Program (Rodgers and

Hoffman 2005). Secondly, a dynamic approach provides WAFWA with some flexibility to adapt to changing environmental conditions that may influence the ability of a specific site to support LPCs. The 75/25 ratio will be evaluated periodically through the adaptive management process described in the LPC range-wide plan.

### WAFWA TERM CONTRACTS

WAFWA maintains all term contract applications on file for future funding consideration unless the landowner asks to be removed. At the start of 2016, many of the applications that were on file had been received more than 2 years prior and the landowners had not been contacted recently. So, WAFWA biologists contacted all previous applicants to determine if they were still interested and eligible for our program. The WAFWA database was updated accordingly based on those contacts. A total of 22 applications have been removed from consideration since the initial application period, which started in the fall of 2013. Those 22 applicants had offered 70,421 acres in the Mixed Grass ecoregion, 7,424 in the Sand Sagebrush ecoregion, 11,031 in the Shinnery Oak ecoregion, and 14,416 in the Shortgrass ecoregion (84,664 total acres). Their applications were withdrawn for a variety of reasons but many of them were because the acreage had been enrolled in federal conservation program making it no longer eligible for the WAFWA program. WAFWA did receive one new application for a term contract during 2016 that encompassed 1,000 acres in the shortgrass ecoregion (Table 11). At the end of this reporting period, WAFWA had 51 active term applications on file that encompassed 278,480 acres. WAFWA did not extensively advertise the program during this reporting period because there were more than enough suitable active applications already on file to meet industry demands. WAFWA will do targeted promotion of the program when industry demand dictates that it is necessary.

When contracts are needed to offset industry impacts, all applications are ranked using an established set of criteria. Those ranking criteria were developed by the Lesser Prairie- Chicken Interstate Working Group (IWG) and can be viewed on the WAFWA website ([http://www.wafwa.org/initiatives/grasslands/lesser\\_prairie\\_chicken/](http://www.wafwa.org/initiatives/grasslands/lesser_prairie_chicken/)). Offers are made to landowners based on their ranking score and the availability of funds. During this reporting period, there were 2 new contracts offered to landowners across the LPC range. Those offered contracts contained 13,522 acres all of which was in the mixed grass ecoregion (Table 11).

Table 11. Summary of term applications received and offered contracts for the WAFWA offset unit generation program. Data are summarized through the end of the current reporting period (December 31, 2016).

Ecoregion	New Applications <sup>a</sup>	New Application Acres	Open Applications on File	Open Application Acres	Contracts Offered During Reporting Period	Acreage Contained in Offered Contracts
Sand Sagebrush	0	0	7	29,883	0	0
Shortgrass	1	1,000	5	7,099	0	0
Mixed Grass	0	0	30	220,877	2	13,522
Shinnery Oak	0	0	9	20,620	0	0
<b>Range-Wide</b>	<b>1</b>	<b>1,000</b>	<b>51</b>	<b>278,480</b>	<b>2</b>	<b>13,522</b>

<sup>a</sup>Applications that have been received from landowners during the reporting period.

<sup>b</sup>Open applications are those still being considered for funding and includes new applications received during the reporting period as well as those previously received.

Both term contracts offered during this reporting period were rangeland conservation plans. One of the contracts was executed and the other was still pending approval from the landowner at the time of this report. The executed contract is a 10-year term agreement that encompasses 1,222 acres in the Mixed Grass ecoregion (Table 12). There were also two more 10-year term contracts executed in early 2016 that encompass an additional 4,380 acres. Those 2 contracts were offered to landowners during the previous reporting period but were not executed until 2016. One of those contracts was a planted grass plan and the other was a rangeland conservation plan. In total, there were 3 new term contracts executed during this reporting period that encompassed 5,602 acres. There were no term contract offers declined by landowners during 2016 but there has been a total of 6 declined offers since the inception of the WAFWA program totaling 22,334 acres. Those declined offers consisted of 3,706 acres in the Mixed Grass ecoregion, 7,424 acres in the Sand Sagebrush ecoregion, 0 acres in the Shinnery Oak ecoregion, and 11,204 acres in the Shortgrass ecoregion. The landowners who have declined offers to enroll in the WAFWA program have indicated several reasons for their decisions including: insufficient payment rates, more lucrative offers to enroll in other conservation programs, and conflicts of interest. At the end of this reporting period, WAFWA was administering 13 term contracts that are all 10 years in duration. Those contracts include 10 rangeland conservation plans and three planted grass conservation plans that encompass 100,861 acres of which 82,502 are currently un-impacted by development (Table 12, Appendices A-D).

Table 12. Acreage summary of WAFWA term contract offers declined and executed during 2016. The total contracts and associated acres that were generating mitigation offset units on December 31, 2016 are also reported.

Ecoregion	Contracts	Raw Acres <sup>a</sup>	Un-impacted Acres <sup>b</sup>	CHAT 1 Raw Acres	CHAT 2 Raw Acres	CHAT 3 Raw Acres	CHAT 4 Raw Acres
<b>Sand Sagebrush</b>							
declined	0	0	0	0	0	0	0
executed	0	0	0	0	0	0	0
total contracted	1	12,683	8,954	12,683	0	0	0
<b>Shortgrass</b>							
declined	0	0	0	0	0	0	0
executed	2	4,380	3,974	4,281	0	99	0
total contracted	4	9,513	8,847	5,389	4,024	99	0
<b>Mixed Grass</b>							
declined	0	0	0	0	0	0	0
executed	1	1,222	1,169	1,217	0	0	5
total contracted	5	62,621	51,934	43,554	538	817	17,713
<b>Shinnery Oak</b>							
declined	0	0	0	0	0	0	0
executed	0	0	0	0	0	0	0
total contracted	3	16,044	12,767	14,061	0	1,984	0
<b>Range-Wide</b>							
declined	0	0	0	0	0	0	0
executed	3	5,602	5,143	5,497	0	99	5
total contracted	13	100,650	82,314	75,476	4,562	2,900	17,713

<sup>a</sup>Includes acreage impacted by development

<sup>b</sup>Excludes acreage impacted by development utilizing the impact buffers established in the RWP

### WAFWA PERMANENT CONSERVATION ACQUISITIONS

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

During this reporting period, WAFWA secured one permanent conservation site in the Mixed Grass ecoregion. This site consists of 1,781 acres of privately owned native rangeland of which 1,670 acres are in CHAT 1 (Table 13, Appendix A). WAFWA purchased a perpetual conservation easement on the property which is held by Pheasants Forever. The easement preserves the conservation values of the site which includes both the LPC habitat and the ranching heritage. WAFWA also developed a dynamic management agreement that will be implemented in perpetuity by the landowner. Finally, endowments were established to provide adequate funding for future management actions and administration of the agreements. The property began generating mitigation offset units in late 2016 following compliance with the USFWS Conservation Banking Policy (2003).

WAFWA also acquired the title to a 29,718-acre ranch in the Sand Sagebrush ecoregion (Table 13, Appendix A). This ranch was acquired by WAFWA from a willing seller during June 2016. The entirety of the property consists of native sand sagebrush prairie and all but 124 acres occurs in CHAT 1. Despite minimal survey effort, there have been 5 different LPC lek sites documented on the property and within 3 miles of its perimeter within the last 5 years. WAFWA will continue to manage the property as a working cattle ranch and the grazing rights are currently leased to a private producer. A management agreement has been developed by WAFWA for the property and it is currently being implemented by the lessee. However, the ranch has not yet generated mitigation offset units because a perpetual conservation easement has not yet been recorded. It is anticipated that will be done by the end of March 2017 along with all the other requirements for the property to comply with the USFWS Conservation Banking Policy

(2003). When the final conservation easement is in place, the property will immediately begin generating mitigation units that can be used to offset industry impacts to LPC habitat.

Table 13. Permanently conserved sites secured by WAFWA through the lesser prairie-chicken range-wide conservation plan, 2016.

WAFWA Site ID	Ecoregion	Acquisition Type	Raw Acres	Unimpacted Acres	Easement Holder	First Year of Mitigation Offset Unit Generation
CZ026	Shinnery Oak	Fee Title	1,554	1,208	The Nature Conservancy	2015
CZ063	Mixed Grass	Conservation Easement	1,781	1,759	Pheasants Forever	2016
CZ024	Sand Sagebrush	Fee Title	29,718	28,915	Not Completed	2017 <sup>a</sup>
<b>Total</b>	<b>Range-Wide</b>	<b>NA</b>	<b>33,053</b>	<b>31,882</b>	<b>NA</b>	<b>NA</b>

<sup>a</sup> It is anticipated that all the pieces will be in place by the end of March 2017 to be able to generate mitigation offset units from this property.

NA = not applicable

In total, WAFWA has now secured 3 permanent conservation sites totaling 33,053 acres across 3 different ecoregions (Table 13). Prior to the end of this reporting period, all the necessary requirements were in place to comply with the USFWS Conservation Banking Policy (2003) on 2 of the 3 sites (3,335 acres). Thus, both of those sites produced mitigation offset units during this reporting period. It is anticipated that the remaining work will be completed on the Sand Sagebrush property early in the next reporting period. WAFWA is also actively pursuing additional new permanent conservation opportunities and it is anticipated that some of them will also be finalized during the next reporting period.

#### WAFWA HABITAT RESTORATION EFFORTS

The WAFWA conservation agreements are not only maintaining existing LPC habitat but they are facilitating the restoration of areas that are not likely currently occupied by the species. WAFWA prescribes restoration practices when they are necessary to address an identified threat to the species on contracted acreage. WAFWA can prescribe 3 different levels of mechanical brush management which are all used to remove invasive woody vegetation (e.g. eastern red cedar and mesquite). Chemical brush management can also be prescribed but only for the reduction of dense stands of Shinnery Oak on tight soils. The objective of chemical treatments is to reduce the dominance of the Shinnery Oak to encourage an increase in native grass distribution and abundance. WAFWA also prescribes range planting which is used to convert non-native grasslands or cropland to native vegetation which provides more suitable LPC habitat. WAFWA also encourages prescribed burning on all contracted acreages to help maintain suitable vegetation and prevent future encroachment of woody plants. Participants are not required to implement a prescribed burn plan but it is encouraged and WAFWA biologists facilitate the development of professional burn plans for all willing landowners.

Since inception of the WAFWA program, restoration practices have been completed on 12,476 acres of which 4,123 acres were completed during the 2016 calendar year (Table 14). Most of the

completed restoration to this point has been brush management in the Shinnery Oak and Mixed Grass ecoregions. However, some range planting was also completed in the Shortgrass ecoregion during the last reporting period. An additional 5,078 acres are prescribed for subsequent years through the existing conservation agreements. Over the next few years, the existing 15 agreements will have facilitated restoration on 16.9% of all the acreage contained within them (17,554 of 103,985 acres).

Table 14. Acreage of restoration completed and prescribed under WAFWA conservation agreements through the end of the 2016 reporting period.

<b>Ecoregion</b>	<b>Brush Management (Heavy)</b>	<b>Brush Management (Moderate)</b>	<b>Brush Management (Light)</b>	<b>Brush Management (Chemical)<sup>a</sup></b>	<b>Range Planting</b>	<b>Total</b>
<b><u>Sand Sagebrush</u></b>						
Completed During Reporting Period	0	0	0	0	0	0
Completed Since Inception of RWP	0	0	0	0	0	0
Total Prescribed	0	0	0	0	0	0
<b><u>Shortgrass</u></b>						
Completed During Reporting Period	0	0	0	0	242	242
Completed Since Inception of RWP	0	0	0	0	242	242
Total Prescribed	0	0	0	0	620	620
<b><u>Mixed Grass</u></b>						
Completed During Reporting Period	1,011	311	0	0	0	1,322
Completed Since Inception of RWP	1,011	710	377	0	0	2,098
Total Prescribed	1,011	768	1,145	0	0	2,924
<b><u>Shinnery Oak</u></b>						
Completed During Reporting Period	0	1,687	1	551	320	2,559
Completed Since Inception of RWP	0	1,687	1	8,128	320	10,136
Total Prescribed	1,148	4,094	1	8,128	640	14,011
<b><u>Range-Wide</u></b>						
Completed During Reporting Period	1,011	1,998	1	551	562	4,123
Completed Since Inception of RWP	1,011	2,397	378	8,128	562	12,476
Total Prescribed	2,159	4,861	1,146	8,128	1,260	17,554

<sup>a</sup>This practice is only applied for the specific purpose of suppressing dense stands of Shinnery Oak on tight soils.

### QUALITY OF WAFWA CONTRACTED PROPERTIES

The properties that produced mitigation offset units during 2016 ranged in size from 310 acres to 27,629 acres (Tables 15). Three of those agreements totaling 1,246 acres include planted grass conservation plans which prescribe restoration of cropland to native grasses and maintenance of restored or existing planted grass stands through regular disturbance activities. Twelve of the agreements include rangeland conservation plans that prescribe domestic livestock grazing as the core conservation practice. Most of the acreage (75.2%) being managed through the existing agreements occurs in the highest priority areas (CHAT 1). There have also been 44 LPC lek observations recorded on these properties or within three miles of their boundary during the last five years. That is a high number considering that there has not been any known survey effort associated with 5 of the properties and only 39% of the total affected area is known to have been surveyed within the last 5 years. To increase that coverage, WAFWA will establish permanent LPC lek survey locations on and around all enrolled conservation properties. WAFWA biologists will attempt to survey each location at least once every 5 years and their efforts will begin during spring 2017.

The habitat quality was also generally high across 15 sites that produced mitigation offset units in 2016 (Table 15). The average habitat quality score was 0.63 across all those sites in 2016. The site-specific values were derived by scoring the HEG criteria using on-site vegetation sampling data and spatial land cover information. The HEG includes four components consisting of foliar cover, plant species composition, presence of tall woody vegetation, and availability of potentially suitable habitat within 1-mile radius of the site (Van Pelt et al. 2013). Prescribed restoration efforts had not yet been fully completed on several of the properties prior to the 2016 vegetation sampling which is why a few sites scored low. The HEG scores associated with those properties should improve greatly in the coming years as more of the restoration work gets completed. Graphs depicting trends in the HEG scores will be provided in next year's report when we have  $\geq 3$  years of data for many of our enrolled properties.



Table 15. Property-specific information for each of the 15 WAFWA-contracted sites that produced mitigation offset units during the 2016 reporting period.

WAFWA Site ID	Ecoregion	Conservation Plan Type	Expiration Year	Primary CHAT	Total Acres	Active Lek Observations within 3 mi. (2012-2016) <sup>b</sup>	2016 Habitat Evaluation Guide Score (0-1) <sup>c</sup>
CZ016	Sand Sagebrush	Rangeland	2024	1	12,683	0	0.75
CZ061	Shortgrass	Rangeland	2025	1	3,760	3	0.46
CZ062 <sup>d</sup>	Shortgrass	Planted Grass	2025	1	620	3	0.02
CZ035	Shortgrass	Rangeland	2024	1	1,109	6	0.51
CZ033	Shortgrass	Rangeland	2024	2	4,024	0	0.32
CZ008	Mixed Grass	Rangeland	2024	1	2,048	5	0.44
CZ038	Mixed Grass	Rangeland	2024	1	21,256	0	0.60
CZ037	Mixed Grass	Rangeland	2024	4	10,255	0	0.68
CZ036	Mixed Grass	Rangeland	2024	1	27,629	0	0.80
CZ040 <sup>e</sup>	Mixed Grass	Rangeland	2026	1	1,222	3	ND
CZ063	Mixed Grass	Rangeland	Perpetual	1	1,781	2	0.73
CZ014	Shinnery Oak	Planted Grass	2024	1	310	3	0.68
CZ003	Shinnery Oak	Rangeland	2024	1	15,418	2	0.39
CZ026	Shinnery Oak	Rangeland	Perpetual	1	1,554	0	0.85
CZ013	Shinnery Oak	Planted Grass	2024	1	316	20	0.85
<b>Total</b>	<b>Range-Wide</b>	<b>NA</b>	<b>NA</b>	<b>NA</b>	<b>103,986</b>	<b>44<sup>e</sup></b>	<b>0.63</b>

<sup>a</sup> Habitat quality was poor because the site was newly enrolled cropland and native grasses had not yet established.

<sup>b</sup> The WAFWA database indicates that only 39% of the affected area has been surveyed within the last 5 years.

<sup>c</sup> Values are averaged across the evaluation units and weighted by the unimpacted acreage within each one.

<sup>d</sup> Property was enrolled in 2016 and generated half of its expected year 1 offset units but implementation of the management agreement won't begin until spring 2017. Vegetation monitoring and the associated HEG scoring is not required prior to implementation.

<sup>e</sup> The total is less than the sum of the column because some lek sites occur within 3 miles of multiple enrolled properties.

ND = no data

NA = not applicable

## WAFWA CONSERVATION AGREEMENT SUMMARY

Through this reporting period, WAFWA has enrolled 112,898 acres across the LPC range under some type of conservation agreement (Table 14, Table 15). Most of that acreage is generating conservation offset units (103,986 acres) with the majority occurring in the highest priority areas (CHAT 1; Table 15). Only 3.2% of those acres are permanently conserved but that percentage will jump to ~25% when the 29,718-acre WAFWA ranch begins generating conservation offset

units this spring. Through existing WAFWA conservation agreements there has already been 12,476 acres restored to more suitable LPC habitat with another 5,078 prescribed. The 15 term and permanent conservation sites are distributed across the four ecoregions proportional to the distribution of industry impacts. This is required because the conservation properties must mitigate industry impacts at that scale. Thus, the majority of the acreage contracted for mitigation purposes falls within the Mixed Grass ecoregion where the majority of the RWP industry impacts have occurred (Table 15, Appendix A).

#### NON-WAFWA CONSERVATION PROGRAMS ADMINISTERED WITHIN LPC RANGE

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

#### LESSER PRAIRIE-CHICKEN CONSERVATION INITIATIVE AND OTHER NRCS PROGRAMS

In 2010, NRCS launched the Lesser Prairie-Chicken Conservation Initiative (LPCI). The objective of this initiative is “to increase the abundance and distribution of the LPC and its habitat while promoting the overall health of grazing lands and the long-term sustainability of ranching operations.” The USFWS completed a biological opinion of the LPCI on August 13, 2014. The NRCS continues to apply conservation practices within the standards laid out in the biological opinion even though the LPC is not currently receiving federal protections under the ESA. The opinion provides a description of 28 conservation practices that could be implemented through the program that the USFWS deemed to be benign or beneficial to LPCs.

Two of the 28 approved practices are considered core conservation practices. The primary core conservation practice is upland wildlife habitat management (645). Prescribed grazing (528) is considered a secondary core management practice when livestock are present. Implementation of core practices is required to develop a landowner’s conservation plan that focuses on improving habitat and reducing threats to LPC. This is important because implementing LPCI under 645 ensures all other LPCI practices are implemented specifically to benefit LPCs.

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

WAFWA was unable to acquire a summary of the 2016 LPCI accomplishments. A new memorandum of understanding (MOU) is being developed for data sharing and it was not yet completed at the time this report was finalized. It is anticipated that the new MOU will be completed during Spring 2017 so future WAFWA annual reports should once again contain the most up-to-date information about LPCI. In the interim, the LPCI data from 2015 are reported to provide perspective about the amount of annual work typically accomplished by NRCS through their LPCI. In 2015, a total of 179,805 acres of prescribed grazing (528) were applied through LPCI (Table 19, Appendices A-B). Additionally, a total of 9,438 acres were treated with brush management (314) and range planting (550) was applied to 47 acres. Many of those acres were previously unusable by LPC and all the acres were at least in a degraded condition prior to treatment. In addition to the applied practices that occurred in 2015, there were 114,438 additional acres added to the program upon which practices were scheduled to occur during subsequent years.

Producers participating in other NRCS programs are also using conservation practices as described in the biological opinion if it is determined that their property has habitat or potential habitat for LPC. Producers in this situation are not required to implement these practices under a management plan developed in accordance with the core practice of upland wildlife habitat management (645) but the practices they implement generally still provide benefit to LPC. The acres from those other NRCS programs (e.g. EQIP) were not available at the time of this report but it should be noted that NRCS is applying beneficial conservation on a far greater number of acres than reported or LPCI.

#### CONSERVATION RESERVE PROGRAM (CRP)

The CRP is a voluntary program for agricultural landowners administered by the Farm Service Agency (FSA) that incentivizes landowners to take cropland out of production and maintain it in permanent vegetation (e.g. native grasses and forbs). The conversion of these lands back to permanent vegetation promotes habitat connectivity, which helps address LPC threats like climate change and extreme weather events. The program also addresses the threat of excessive grazing utilization of grassland habitat by providing millions of acres of grass that isn't regularly grazed by domestic livestock. Participants in the program are required to maintain the prescribed vegetation conditions which include regular control of noxious weeds. They are also required to implement some type of periodic management to promote wildlife habitat. The various management practices that can be implemented include shallow disking, prescribed burning, herbicide usage, inter-seeding with legumes and forbs, and periodic managed grazing. The USFWS completed a biological opinion of the CRP on April 14, 2014 which states that effective implementation of the program is anticipated to result in a positive LPC population response by

reducing or eliminating adverse effects. The FSA continues to apply conservation practices within the standards laid out in the biological opinion even though the LPC is not currently receiving federal protections under the ESA.

There is fluidity in CRP enrollment as individual contracts expire at the end of a 10 or 15-year term and new contracts get enrolled in other locations. These acres provide important habitat for LPC and support a large proportion of the range-wide population; especially in the shortgrass ecoregion (Fields 2004, Rodgers and Hoffman 2005, McDonald et al. 2014, Spencer et al. 2017). The most recent data available to WAFWA (August 2016) indicates that 3,230,432 acres are enrolled within the range of the LPC (Table 19; Appendices A-B). Of those acres, there are 786,869 that lie within the boundaries of CHAT 1 and CHAT 2 which equates to 8.3% of that total area. The total CRP enrollment in LPC range differs by only 582 acres from what was reported in the last WAFWA annual report. However, there were likely substantial changes to the enrolled acreage between August and the end of the calendar year due to scheduled expirations and a few new enrollments. Those acreage changes will appear in the next data update that WAFWA receives from FSA and they will be reported in our next annual report.

#### PARTNERS FOR FISH AND WILDLIFE PROGRAM

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

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

The USFWS provided data from their PFW program in all 5 states occupied by LPC. During this reporting period, the USFWS implemented restoration and improvement practices on 10,782 acres within the LPC action (Table 19). Those acres were distributed between the Shinnery Oak (630 acres) and Mixed Grass ecoregions (10,152 acres; Table 19, Appendices A-B). Mechanical removal of eastern red cedar and prescribed fire were the two primary practices that were implemented.

## CANDIDATE CONSERVATION AGREEMENTS

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

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

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

There is a CCA available to landowners operating on public land in New Mexico and CCAAs available to all other landowners in New Mexico, Texas, and Oklahoma. The New Mexico CCA and CCAA are administered by the Center of Excellence for Hazardous Materials Management (CEHMM). The Oklahoma and Texas CCAAs are administered by ODWC and TPWD,

respectively. Enrollment is currently open for the CCAA in Texas and the CCA/CCAA in New Mexico. The ODWC is not currently taking new enrollments into their CCAA because they have reached their acreage cap of 400,000. Currently, implementation is occurring on 890,909 acres enrolled in the landowner CCA in New Mexico and 2,923,552 acres enrolled in all three CCAAs within the WAFWA EOR+10 (Table 16, Appendices A-B).

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

Most of the state wildlife agencies operating within the range of the LPC deliver non-CCAA private land conservation programs. Those programs are funded from a variety of sources including license fee funds from the wildlife agency constituents. The available conservation programs generally allow the agencies to cost-share with private landowners for conservation practices such as brush management, range planting, prescribed fire, fence marking and removal, prescribed grazing, livestock deferment, etc. WAFWA acquired data from 4 of the 5 state wildlife agencies operating within LPC range including the Texas Parks and Wildlife Department (TPWD), Oklahoma Department of Wildlife Conservation (ODWC), Kansas Department of Wildlife, Parks, & Tourism (KDWPT) and Colorado Parks and Wildlife (CPW). The available data indicated that the state wildlife agencies applied conservation practices to at least 40,960 acres within the LPC EOR+10 within the 4 states from which data were provided (Table 16, Appendices A-B).

#### NON-WAFWA PROPERTIES IDENTIFIED AS POTENTIAL STRONGHOLDS

Several land trusts, government agencies, and for-profit businesses are managing land for the benefit of LPC or delivering conservation easements within the range of the species. Some of these sites were identified as potential stronghold sites in the RWP (Van Pelt et al. 2013). Subsequently, there have been 3 USFWS-approved conservation banks created in LPC range that also fall into this category. The total acreage encompassed by all the properties in this category is 466,474 (Table 16, Appendices A-B). Those sites include properties under private ownership as well as those owned and managed by state and federal agencies. It is believed that a fair number of those acres are already permanently conserved sufficiently to qualify as a stronghold (USFWS 2012). However, the exact spatial extent of all the qualifying acreage has not yet been identified by WAFWA. WAFWA will continue to try and identify the exact location of all qualifying stronghold acreage so that we can more accurately track progress towards the stronghold goals established in the RWP. WAFWA is committed to getting at least one stronghold established within each of the four ecoregions through the collective efforts of all entities who have secured qualifying acreage.

#### OTHER PUBLIC LANDS AND NON-GOVERNMENT ORGANIZATION LAND OWNERSHIP

There are an additional 3,161,200 acres of land within the LPC EOR+10 owned by public entities or non-government conservation organizations excluding those sites that have already been identified as potential strongholds in the RWP (Table 16, Appendices A-B). These acreages are owned by Department of Defense; Non-Government Organizations; State Land Boards; State Parks, Recreation, and Wildlife Agencies; Fish & Wildlife Service; Bureau of Land Management; Forest Service; Privately Owned Parks; National Park Service; Agricultural Research Service;

Bureau of Reclamation; and City or County Government. This acreage is managed for a multitude of purposes and some of the properties currently provide benefits to LPC. There is potential to improve LPC habitat on some of these properties through partnerships with the landowners. WAFWA and its state wildlife agency members readily pursue those opportunities when they arise.

#### SUMMARY OF ALL CONSERVATION EFFORTS BEING DELIVERED IN LPC RANGE

It is evident that an enormous amount of effort continues to be placed on conserving the LPC across its range (Table 16, Appendices A-B). There are numerous voluntary conservation programs being delivered on private lands by multiple government agencies and non-government organizations. However, some of the reported non-mitigation acreages overlap so it is not possible to identify the total number of unique acres enrolled in private land conservation programs across the range. Additionally, WAFWA was not able to acquire the most current enrollment data for some of the programs. Despite those imprecisions, it is likely that during 2016 there was at least 6.4 million acres of private land enrolled in voluntary conservation programs across the LPC range. This amount equates to approximately 16% of the 40 million acre LPC range that is in CHAT 1 – CHAT 4. It is also apparent the private land programs are being targeted towards the higher priority LPC areas as evidenced by a higher percentage of CHAT 1 and CHAT 2 acreages being enrolled in some type of voluntary conservation program (Table 16; Appendices A - B). The approximate range-wide percentage of each CHAT priority area enrolled in a private land conservation program is as follows: CHAT 1 (17.0%), CHAT 2 (13.9%), CHAT 3 (12.6%), and CHAT 4 (7.0%). The good conservation practices being implemented by landowners outside of voluntary conservation programs should not be overlooked. Private landowners are managing thousands of additional acres across the LPC range in a way that is beneficial to the species without participating in any of the available programs. Their efforts should not be discounted just because they can't be easily quantified.

Table 16. Public land and conservation program acreage within each LPC ecoregion by CHAT category, 2016.

Ecoregion Location	Total Area	WAFWA Term Contracts	WAFWA Permanent Conservation Agreements <sup>a</sup>	WAFWA Non-Offset Agreements	Conservation Reserve Program	NRCS Lesser prairie-chicken initiative <sup>b</sup>	USFWS Partners for Fish & Wildlife	State Wildlife Agency Private Land Programs <sup>c</sup>	New Mexico Ranching CCA	New Mexico Ranching CCAA	Texas Ranching CCAA <sup>d</sup>	Oklahoma Ranching CCAA <sup>e</sup>	Potential Stronghold Acreage <sup>f</sup>	Other Public and Conservation Properties <sup>g</sup>	Total Public and Conservation Acreage <sup>h</sup>
<b>Shinnery Oak</b>															
CHAT 1	1,046,405	14,088	1,057	0	109,303	60,015	630	ND	ND	ND	48,262	NA	363,402	60,052	656,809
CHAT 2	892,804	0	396	0	131,763	9,008	0	ND	ND	ND	17,433	NA	0	91,836	250,436
CHAT 3	5,917,159	2,001	110	0	676,183	21,344	0	ND	ND	ND	109,537	NA	12,525	1,565,979	2,387,679
CHAT 4	3,177,658	16	0	0	201,460	2,013	0	ND	ND	ND	20,579	NA	0	530,575	754,643
<b>Total</b>	<b>11,034,026</b>	<b>16,105</b>	<b>1,563</b>	<b>0</b>	<b>1,118,710</b>	<b>92,381</b>	<b>630</b>	<b>3,175</b>	<b>890,909</b>	<b>1,597,529</b>	<b>195,811</b>	<b>NA</b>	<b>375,927</b>	<b>2,248,442</b>	<b>6,341,782</b>
<b>Mixed Grass</b>															
CHAT 1	2,576,012	43,331	1,670	1,071	124,481	43,999	4,865	65	NA	NA	241,985	145,943	49,693	46,293	703,396
CHAT 2	1,116,165	536	0	0	65,464	5,366	0	ND	NA	NA	33,055	40,616	71	18,279	163,387
CHAT 3	5,185,506	823	0	965	285,731	16,115	5,287	ND	NA	NA	81,093	158,134	1,735	160,373	710,257
CHAT 4	3,768,280	17,726	111	6,875	134,287	2,420	0	ND	NA	NA	56,598	23,409	0	31,477	272,936
<b>Total</b>	<b>12,645,963</b>	<b>62,475</b>	<b>1,782</b>	<b>8,912</b>	<b>609,963</b>	<b>67,900</b>	<b>10,152</b>	<b>3,468</b>	<b>NA</b>	<b>NA</b>	<b>412,731</b>	<b>368,102</b>	<b>51,499</b>	<b>256,422</b>	<b>1,881,424</b>
<b>Sand Sagebrush</b>															
CHAT 1	1,583,367	12,682	0	0	154,889	9,738	0	3,939	NA	NA	NA	NA	33,884	195,977	411,130
CHAT 2	245,121	0	0	0	19,915	0	0	0	NA	NA	NA	NA	0	13,679	33,594
CHAT 3	1,883,282	0	0	0	339,557	136	0	111	NA	NA	NA	NA	24,430	170,347	534,581
CHAT 4	4,322,390	0	0	0	414,937	396	0	1,102	NA	NA	NA	NA	16,152	255,026	687,613
<b>Total</b>	<b>8,034,160</b>	<b>12,682</b>	<b>0</b>	<b>0</b>	<b>929,297</b>	<b>10,230</b>	<b>0</b>	<b>5,152</b>	<b>NA</b>	<b>NA</b>	<b>NA</b>	<b>NA</b>	<b>74,466</b>	<b>635,028</b>	<b>1,666,945</b>
<b>Shortgrass</b>															
CHAT 1	1,872,099	5,394	0	0	169,747	8,082	0	353	NA	NA	NA	NA	17,940	15,183	216,699
CHAT 2	183,681	4,029	0	0	11,308	0	0	80	NA	NA	NA	NA	0	0	15,417
CHAT 3	1,769,583	99	0	0	155,228	975	0	56	NA	NA	NA	NA	17,280	0	173,638
CHAT 4	4,820,373	0	0	0	236,330	178	0	656	NA	NA	NA	NA	0	6,126	243,190
<b>Total</b>	<b>8,645,645</b>	<b>9,522</b>	<b>0</b>	<b>0</b>	<b>572,512</b>	<b>9,235</b>	<b>0</b>	<b>1,145</b>	<b>NA</b>	<b>NA</b>	<b>NA</b>	<b>NA</b>	<b>35,220</b>	<b>21,308</b>	<b>648,942</b>
<b>Range-wide</b>															
CHAT 1	7,077,792.5	75,495	2,727	1,071	558,419	121,854	5,495	4,357	ND	ND	290,248	145,943	464,919	317,504	1,988,032
CHAT 2	2,437,771.2	4,565	507	0	228,450	14,375	0	80	ND	ND	50,489	40,616	71	123,794	462,947
CHAT 3	14,755,529.9	2,923	110	966	1,456,699	38,570	5,287	167	ND	ND	190,630	158,134	55,970	1,896,699	3,806,155
CHAT 4	16,088,701.0	17,743	111	6,908	986,914	5,006	0	1,758	ND	ND	77,177	23,409	16,152	823,304	1,958,382
<b>Grand Total</b>	<b>40,359,794.6</b>	<b>100,782</b>	<b>3,344</b>	<b>8,912</b>	<b>3,236,482</b>	<b>179,805</b>	<b>10,762</b>	<b>40,969</b>	<b>890,909</b>	<b>1,055,999</b>	<b>608,542</b>	<b>368,102</b>	<b>537,112</b>	<b>3,161,200</b>	<b>10,738,463</b>

ND = no data provided; NA = not applicable  
<sup>a</sup>The WAFWA acquired 1,604 acres but the existing perimeter fence does not currently encompass the entire property. The fence will be moved to the correct boundary in the near future so that a WAFWA management plan can be implemented across the entire property.  
<sup>b</sup>These figures represent the acres of prescribed grazing (528) that were implemented in 2015. This practice is a core conservation practice that is supposed to occur on every contracted LPCI acre. The acreage contained within other NRCS programs was not available for this report but those efforts also provide benefit to the LPC.  
<sup>c</sup>The acreages are not unique because they are summed across numerous conservation practices that could have overlapped.  
<sup>d</sup>An additional 42,085 acres are enrolled outside the CHAT areas because the eligibility area for the program is larger than the CHAT boundary.  
<sup>e</sup>An additional 26,942 acres are enrolled outside the CHAT areas because the eligibility area for the program is larger than the CHAT boundary.  
<sup>f</sup>Includes acreages from properties identified as potential strongholds in the WAFWA range-wide plan (Van Pelt et al. 2013) and properties contained within USFWS conservation banking agreements. These figures do not include the acres that have been permanently conserved through the WAFWA program.  
<sup>g</sup>This category includes other protected or publicly owned properties not identified as potential strongholds in the range-wide plan. These acreages are owned by U.S. Department of Defense, Non-Government Organizations, State Land Boards, State Parks, Recreation, and Wildlife Agencies, U.S. Fish & Wildlife Service, U.S. Bureau of Land Management, U.S. Forest Service, Privately Owned Parks, U.S. National Park Service, Agricultural Research Service, U.S. Bureau of Reclamation, and City or County Government. The acreages also include privately owned sites contained within conservation easements.  
<sup>h</sup>Some of the acreages overlap the same areas and no data were available for some of the listed programs or the EQIP which also provides benefit to LPC.  
<sup>i</sup>The total is greater than the sum of the CHAT-specific acreages because some of the figures were not reported at the finer scale.



There are also millions of acres of publicly owned land and conservation easements within the range of the LPC. Many of those tracts are being managed in a way that is beneficial to LPC and some of them even meet all the criteria to be counted towards a stronghold as defined by the USFWS (USFWS 2012). WAFWA has not yet been able to identify exactly how many of those acres fall into each of those categories. However, there are roughly 466,000 acres across the LPC range that meet at least some of the qualifying stronghold criteria (Van Pelt et al. 2013; Table 16; Appendices A-B). WAFWA will likely be able to count some of that acreage towards strongholds along with the 3,344 acres of permanent conservation that has been acquired by WAFWA and the 29,717-acre acquisition once the conservation easement is in place. In addition to those areas there are nearly 3.2 million more acres of land within the LPC range owned by a government entity or encumbered by some type of easement. These acreages were not identified in the RWP as potential strongholds because they are not generally owned by entities that identify conservation as their primary mission or the site does not have much potential to provide LPC habitat. The acreage in this category with LPC habitat potential does provide some opportunity to benefit the species. Thus, WAFWA and our member state wildlife agencies will seek to work with the entities that own or operate those lands when opportunities arise to improve or maintain habitat for LPC.

#### WAFWA MITIGATION TRACKING

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

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

Conservation offset units are generated from WAFWA term and permanent conservation sites. One-half of the expected annual conservation offset units are immediately generated upon execution of a management agreement. The true number of annual units produced in year one of an agreement is calculated using vegetation data collected during the breeding season (March 15 – July 15). The difference between the calculated year one total and the initial release is then generated and available to offset industry projects. In subsequent contract years, all the annually

generated conservation offset units are released upon completion of the breeding season vegetation monitoring. The maximum rate that offset units may be generated is 1.25 units per acre per year where the habitat quality is perfect (HEG = 1.0) and the property falls within a focal area.

Remediation offset units are generated one-time upon removal of an existing impact's infrastructure and completion of native grass seeding activities. If the remediated impact was previously mitigated through the plan the resulting remediation offset units are calculated using the mitigation impact multipliers that are utilized for industry sites. So, the resulting remediation offset units will equal the impact units that were originally calculated for the site if the habitat quality has not changed. If the remediated site was not previously mitigated through the plan, the remediation offset units are calculated using the mitigation offset multipliers that are utilized for conservation sites. Using the offset multipliers results in half the remediation units that would be generated by using the impact multipliers (i.e. 2:1 mitigation ratio).

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

### INDUSTRY IMPACT UNIT GENERATION

In this portion of the report, impact generation at the scale of ecoregions, CHAT categories, and agreement types will be provided. Impact unit generation and mitigation fees are summarized at the reporting unit scale in Appendices E-F. For the 2016 reporting period, there were 114 projects that had 3,179 annual impact units and paid \$4,172,852 in mitigation fees. By ecoregion, the Shinnery Oak region had the most projects (73 or 64.6%), however, the Mixed grass region had the most impacts (3,069 or 96.5%) (Table 17). This difference was due to most of the impacts in the Shinnery Oak region being infield drilling with little new impact, and two wind power facilities being completed in the Mixed grass region.

The total number of projects processed and mitigated for was down to 114 from 409 projects in 2015. This decrease in mitigation projects can be attributed to the continued downturn in oil and gas markets which began in June 2014 and resulted in a 70% decline in oil prices. The number of

active drilling rigs has also declined by roughly 70% since June 2014. Overall, the CCAA has a much larger share of the total number of projects (85.8%), but it accounts for a much lower percentage of the annual impact units (4.1%) and the mitigation fees (2.5%). This is because the CCAA projects are primarily oil and gas wells which have smaller impact buffers than many of the WCA projects such as wind farms, and electric transmission lines. Table 18 provides a summary of all the mitigated projects since the plan began in 2014.

Table 17. Summary of projects mitigated for under the Lesser Prairie-Chicken Range-wide Conservation Plan during 2016 reporting period by ecoregion and agreement type with the potential (full impact buffer) and actual impact acres (new impact area), annual impact units and mitigation fees.

Ecoregion/Agreement Type	# of projects	Potential Acres	Impact Acres	Annual Units	Cost
<b>Mixed Grass</b>	<b>16</b>	<b>27,808.43</b>	<b>16,245.41</b>	<b>3,068.79</b>	<b>\$ 4,092,554.56</b>
CCAA	3	154.24	44.59	20.15	\$ 26,899.47
WCA	13	27,654.19	16,200.82	3,048.64	\$ 4,065,655.09
<b>Sand Sagebrush</b>	<b>21</b>	<b>651.64</b>	<b>307.73</b>	<b>44.5</b>	<b>\$ 23,944.24</b>
CCAA	21	651.64	307.73	44.5	\$ 23,944.24
WCA	0	0	0	0	0
<b>Shinnery Oak</b>	<b>73</b>	<b>2,158.08</b>	<b>188.19</b>	<b>65.41</b>	<b>\$ 56,158.38</b>
CCAA	69	2,141.08	182.09	65.09	\$ 55,872.86
WCA	4	17	6.1	0.32	\$ 285.52
<b>Shortgrass</b>	<b>4</b>	<b>124.14</b>	<b>65.04</b>	<b>0.24</b>	<b>\$ 195.43</b>
CCAA	4	124.14	65.04	0.24	\$ 195.43
WCA	0	0	0	0	0
<b>Grand Total</b>	<b>114</b>	<b>30,742.29</b>	<b>16,806.37</b>	<b>3,178.94</b>	<b>\$ 4,172,852.61</b>
CCAA	97	3071.1	599.45	129.98	\$ 106,912.00
WCA	17	27,671.19	16,206.92	3,048.96	\$ 4,065,940.61

Table 18. Summary of projects mitigated for under the Lesser Prairie-Chicken Range-wide Conservation Plan since inception (2014- 2016) by ecoregion and agreement type with the potential (full impact buffer) and actual impact acres (new impact area), annual impact units and mitigation fees.

<b>Ecoregion/Agreement Type</b>	<b># of projects</b>	<b>Potential Acres</b>	<b>Impact Acres</b>	<b>Annual Units</b>	<b>Cost</b>
<b>Mixed grass</b>	<b>550</b>	<b>72,003.5</b>	<b>30,985.4</b>	<b>14,994.1</b>	<b>\$ 19,815,639.39</b>
CCAA	441	13,818.5	8,150.0	6,526.9	\$ 8,495,256.31
WCA	98	57,838.6	22,643.9	8,426.7	\$ 11,266,435.76
Not on Enrollment	11	346.5	191.6	40.5	\$ 53,947.32
<b>Sand Sagebrush</b>	<b>136</b>	<b>4192.13</b>	<b>2332.67</b>	<b>740.77</b>	<b>\$ 382,977.52</b>
CCAA	131	4036.97	2245.04	702.94	\$ 364,742.52
WCA	1	31.0	31.0	37.2	\$ 17,792.00
Not on Enrollment	4	124.1	56.6	0.6	\$ 443.00
<b>Shinnery Oak</b>	<b>212</b>	<b>18542.32</b>	<b>7645.28</b>	<b>1174.86</b>	<b>\$ 1,037,646.31</b>
CCAA	194	6016.16	907.27	682.56	\$ 592,551.16
WCA	18	12526.16	6738.01	492.3	\$ 445,095.15
<b>Shortgrass</b>	<b>120</b>	<b>3526.52</b>	<b>2463.65</b>	<b>593.16</b>	<b>\$ 492,003.14</b>
CCAA	93	2667.19	1909.69	510.45	\$ 426,141.78
WCA	15	512.42	358.43	45.8	\$ 36,003.07
Not on Enrollment	12	346.91	195.53	36.91	\$ 29,858.29
<b>Grand Total</b>	<b>1018</b>	<b>98264.48</b>	<b>43427</b>	<b>17502.84</b>	<b>\$ 1,728,266.36</b>
CCAA	859	26,538.79	13,211.95	8,422.81	\$ 9,878,691.77
WCA	132	70,835.76	29,695.74	9,001.08	\$ 11,765,881.29
Not on Enrollment	27	889.93	519.31	78.95	\$ 83,693.30

While oil and gas wells are the most common type of impact, the larger impact buffers of wind turbines, compressor stations, communications towers, and electric transmission lines usually generate more annual impact units and mitigation fees per project. These projects are more common on WCA enrollments than CCAAs. The larger the impact buffer, the more important it is to site these projects to take advantage of pre-existing impact buffers and cropland to minimize impacts on LPC habitat and mitigation fees. Electric distribution lines are an example of a

smaller scale project that produces few annual impact units or mitigation fees. These projects have smaller impact buffers and are often sited within pre-existing impact buffers along roads. Table 19 and 20 break impact unit generation and mitigation fees down further to demonstrate the proportion of impact types mitigated for in 2016 and since the plan began.

Table 19. Summary of 2016 projects by impact type.

Ecoregions	Impact Type	Count	Full Acres	Impact Acres	Impact Units	Mitigation Cost
Mixed Grass	Compressor Station > 5 acres	1	92.18	0	0	\$0
	Electrical Distribution < 69 KV	6	58.33	23.94	32.34	\$38,514.94
	Electrical Transmission >= 69 KV	1	5,741.02	93.78	79.35	\$105,947.06
	Well	5	155.14	126.34	150.56	\$200,994.13
	Wind Turbines	3	21,761.76	16,001.35	2,806.54	\$3,747,098.43
	Total:	16	27,808.43	16,245.41	3,068.79	\$4,092,554.56
Sand Sagebrush	Well	21	651.64	307.73	44.50	\$23,944.24
	Total:	21	651.64	307.73	44.50	\$23,944.24
Shinnery Oak	Electrical Distribution < 69 KV	4	17.00	6.10	0.32	\$285.52
	Well	69	2,141.08	182.09	65.09	\$55,872.86
	Total:	73	2,158.08	188.19	65.41	\$56,158.38
Shortgrass	Well	4	124.14	65.04	0.24	\$195.43
	Total:	4	124.14	65.04	0.24	\$195.43
<b>Grand Total:</b>		<b>114</b>	<b>30,742.29</b>	<b>16,806.37</b>	<b>3,178.94</b>	<b>\$4,172,852.61</b>

Table 20. Summary of projects (2014-2016) by impact type.

Region/impact type	Count	Full Acres	Impact Acres	Units	Mitigation Cost
<b>Mixed Grass</b>	<b>550</b>	<b>72,003.51</b>	<b>30,985.40</b>	<b>14,994.05</b>	<b>\$ 19,815,639.39</b>
Compressor Station <= 5 acres	4	124.13	57.44	38.71	\$ 51,571.21
Compressor Station > 5 acres	1	92.18	-	-	-
Electrical Distribution Line < 69 KV	33	168.02	43.55	53.19	\$ 63,771.17
Electrical Transmission Line >= 69 KV	7	33,918.84	5,450.80	4,593.68	\$ 6,160,043.14
Private Road	1	3.28	2.87	2.22	\$ 2,639.00
Raised Pipeline	1	30.60	26.62	24.89	\$ 29,543.00
Well	500	15,904.70	9,402.77	7,474.82	\$ 9,760,973.44
Wind Turbine	3	21,761.76	16,001.35	2,806.54	\$ 3,747,098.43
<b>Sand Sagebrush Prairie</b>	<b>136</b>	<b>4,192.13</b>	<b>2,332.67</b>	<b>740.77</b>	<b>\$ 382,977.52</b>
Private Road	1	1.56	0.73	0.70	\$ 865.00
Well	135	4,190.57	2,331.94	740.07	\$ 382,112.52
<b>Shinnery Oak Prairie</b>	<b>212</b>	<b>18,542.32</b>	<b>7,645.28</b>	<b>1,174.86</b>	<b>\$ 1,037,646.31</b>
Cell / Radio Tower	1	345.30	32.41	14.58	\$ 19,471.67
Compressor Station > 5 acres	2	541.50	463.69	250.19	\$ 223,056.74
Electrical Distribution Line < 69 KV	13	56.53	14.11	5.47	\$ 4,585.73
Electrical Transmission Line >= 69 KV	1	11,551.80	6,209.57	216.32	\$ 192,861.26
Well	195	6,047.19	925.50	688.30	\$ 597,670.91
<b>Shortgrass Prairie</b>	<b>120</b>	<b>3,526.52</b>	<b>2,463.65</b>	<b>593.16</b>	<b>\$ 492,003.14</b>
Compressor Station <= 5 acres	3	93.10	24.22	1.25	\$ 1,008.31
Electrical Substation <= 5 acres	1	31.04	-	-	\$ -
Private Road	2	10.91	5.15	1.12	\$ 470.36
Tank Battery	12	125.00	26.84	1.73	\$ 2,063.48
Well	102	3,266.47	2,407.44	589.06	\$ 488,460.99
<b>Grand Total</b>	<b>1,018</b>	<b>98,264.48</b>	<b>43,427.00</b>	<b>17,502.84</b>	<b>\$ 21,728,266.36</b>

When comparing, projects completed by CHAT category in 2016 (Table 21), it can be demonstrated how industry is avoiding higher quality habitat. The overall number of projects is much lower in CHAT's 1-2 (9) compared to the number of projects in CHAT's 3-4 (104) indicating companies may be choosing these areas over focal areas and connectivity zones. Similarly, the total acreage of new impacts is lower in the CHAT 1-2 than CHAT 3-4 (141.9 vs 16,666.4 acres). In the 2016 reporting period, mitigation totaled \$234,658.75 in CHAT 1-2 compared to \$3,948,876.68 in CHAT 3-4. The impacts in CHAT 1-2 are described in more detail in Appendix E where they are summarized by reporting unit.

Table 21. Summary of the project's mitigated for in 2016 by CHAT category, including the number of projects, potential acres impacted, the actual impact acres, annual units and mitigation.

CHAT/impact type	Count	Potential acres	Actual acres	Habitat units	Mitigation
<b>CHAT 1</b>	<b>5</b>	<b>167.5</b>	<b>99.0</b>	<b>161.2</b>	<b>\$ 177,751.49</b>
Distribution Line < 69 KV	1	43.4	15.9	24.6	\$ 29,234.00
Well	4	124.1	83.1	136.6	\$ 148,517.49
<b>CHAT 2</b>	<b>4</b>	<b>138.3</b>	<b>42.9</b>	<b>43.5</b>	<b>\$ 56,907.26</b>
Compressor Station	1	92.2	-	-	\$ -
Distribution Line < 69 KV	2	15.1	13.3	7.2	\$ 8,474.52
Well	1	31.0	29.7	36.3	\$ 48,432.74
<b>CHAT 3</b>	<b>17</b>	<b>6,565.1</b>	<b>5,240.6</b>	<b>2,409.8</b>	<b>\$ 3,208,851.59</b>
Distribution Line < 69 KV	6	15.0	0.3	0.4	\$ 529.06
Well	10	310.3	179.8	38.4	\$ 42,728.72
Wind Turbine	1	6,239.8	5,060.5	2,371.0	\$ 3,165,593.81
<b>CHAT 4</b>	<b>88</b>	<b>23,871.4</b>	<b>11,423.9</b>	<b>564.4</b>	<b>\$ 729,342.3</b>
Distribution Line < 69 KV	1	1.9	0.6	0.4	\$ 562.9
Transmission Line >= 69 KV	1	5,741.0	93.8	79.4	\$ 105,947.1
Well	84	2,606.6	388.6	49.1	\$ 41,327.7
Wind Turbine	2	15,522.0	10,940.9	435.5	\$ 581,504.6
<b>Grand Total</b>	<b>114</b>	<b>30,742.3</b>	<b>16,806.4</b>	<b>3,179.0</b>	<b>\$ 4,172,852.6</b>

When impacts are examined by CHAT category over the life of the RWP, the pattern of projects being concentrated in CHAT 3-4 is even more pronounced (Table 22). Since the plan began, 76.7% of the projects, and 84% of the actual new impact acres have been in CHAT categories 3-4. Additionally, 42.4% of projects and 49.4% of the new impact area has been in CHAT 4. Care should be taken however when interpreting these project location proportions because there is significantly more CHAT 3-4 area (36.6% and 39.9%) within the EOR+10 then CHAT 1-2 area (17.5% and 6.0%), so it is probable that more projects are in CHAT 3-4 simply because there is more of it.

Table 22. Summary of mitigated projects by CHAT category since the RWP began (2014-2016)

CHAT Score	Count	Potential acres	Actual acres	Annual units	Mitigation
1	153	9,563.6	5,559.1	6,368.2	\$ 7,891,571.11
2	84	2,612.9	1,376.4	1,002.0	\$ 1,331,869.87
3	349	29,724.0	15,000.1	8,565.7	\$ 10,716,417.60
4	432	56,364.0	21,491.4	1,566.9	\$ 1,788,407.78
<b>Grand Total</b>	<b>1,018</b>	<b>98,264.5</b>	<b>43,427.0</b>	<b>17,502.8</b>	<b>\$ 21,728,266.36</b>

Companies are adapting their development strategies to incorporate the RWP habitat metrics in an effort to reduce higher mitigation costs by co-locating new projects with pre-existing development. WAFWA quantifies co-location from the percent overlap between new impact acres and acres within impact buffers of existing infrastructure. Prior to the implementation of the RWP, the average project co-location was only 12% for all impact types and 42% for oil and gas developments (Van Pelt et al. 2013:136-137). For all projects mitigated for in 2016, the co-location was 45.3% across all project types, and it was 77.8% for wells specifically. This is up 33% since implementation for all impact types and up 36% for oil and gas wells (Table 23).

Table 23. Area of potential impact acres, the actual impact acres as a result of co-siting projects, and the proportion the impact area was reduced due to co-siting.

Impact type	Count	potential acres	actual acres	% overlap
Compressor Station > 5 acres	1	92.2	-	-100.00%
Electrical Distribution Line < 69	10	75.3	30.0	-60.12%
Electrical Transmission Line >=	1	5,741.0	93.8	-98.37%
Well	99	3,072.0	681.2	-77.83%
Wind Turbine	3	21,761.8	16,001.4	-26.47%
Total	11	30,742.3	16,806.4	-45.33%



The degree of co-location in 2016 varied widely between ecoregions, but was most effective in the Shinnery Oak, where wells had a combined overlap of 91% with existing impacts. (Table 24, Table 25).

Table 24. Overall percentage that new impact areas (all project types) in 2016 were reduced by co-locating the project so that it overlapped with existing impact areas.

Ecoregion	count	potential acres	actual new acres	% overlap
Mixed Grass Prairie	16	27,808.4	16,245.4	-41.58%
Sand Sagebrush Prairie	21	651.6	307.7	-52.78%
Shinnery Oak Prairie	73	2,158.1	188.2	-91.28%
Shortgrass Prairie	4	124.1	65.0	-47.61%
Total	114	30,742.3	16,806.4	-45.33%

Table 25. Overall percentage that new impact areas (all project types) in 2014-2016 were reduced by co-locating the project so that it overlapped with existing impact areas.

Ecoregion	count	potential acres	actual new acres	% overlap
Mixed Grass Prairie	550	72,003.5	30,985.4	-56.97%
Sand Sagebrush Prairie	136	4,192.1	2,332.7	-44.36%
Shinnery Oak Prairie	212	18,542.3	7,645.3	-58.77%
Shortgrass Prairie	120	3,526.5	2,463.7	-30.14%
Total	1,018	98,264.5	43,427.0	-55.81%

Table 26. Summary of the potential impact vs the new impact acres and their combined ability to co-locate (reduce impact area) for projects done in 2014-2016.

	Count	potential impact acres	new impact acres	% Reduction
Cell / Radio Tower	1	345.3	32.4	-90.61%
Compressor Station <= 5 acres	7	217.2	81.7	-62.41%
Compressor Station > 5 acres	3	633.7	463.7	-26.83%
Electrical Distribution Line < 69 KV	46	224.6	57.7	-74.32%
Electrical Substation <= 5 acres	1	31.0	-	-100.00%
Electrical Transmission Line >= 69 KV	8	45,470.6	11,660.4	-74.36%
Private Road	4	15.8	8.8	-44.44%
Raised Pipeline	1	30.6	26.6	-13.01%
Tank Battery	12	125.0	26.8	-78.53%
Well	932	29,408.9	15,067.7	-48.77%
Wind Turbine	3	21,761.8	16,001.4	-26.47%
<b>Grand Total</b>	<b>1,018</b>	<b>98,264.5</b>	<b>43,427.0</b>	<b>-55.81%</b>

Oil and gas wells are the most frequent impacts mitigated for through the RWP (932) and they also had the largest potential impact area (29,409 acres) of projects submitted through the RWP. This makes wells a good indicator for how the RWP can influence projects siting behavior. When the rate of co-location of wells through time is examined, it provides clear evidence the economic disincentives in the RWP are working as intended, as the percent overlap has increased from 37.4% in 2014 to 77.7% in 2016 (Table 37). In the RWP, a new well initially has a 31-acre impact area (200-meter buffer), but it can be reduced by co-locating it so its impact area overlaps with areas already impacted. Figure 8 shows the trend to site new wells as both a percentage of overlap and as new acres impacted. As one might expect, when the area of new impact is a driving component of mitigation fees, companies are adjusting their well siting behaviors to both minimize impacts and save money. This level of avoidance by RWP participants occurring across millions of acres within the LPC range is a significant benefit to LPC which is often overlooked by those following the RWP mitigation component.

Table 27. Trend in co-locating wells with other existing infrastructure to minimize new impact area (and corresponding mitigation costs) is evident here as the rate of co-location has increased since the plan began.

Year	Count	Potential Impact Acres	New Impact Acres	% reduction
2014	485	15,362.83	9,611.79	-37.43%
2015	348	10,974.1	4,774.66	-56.49%
2016	99	3,072	683.19	-77.76%
total	932	29,408.93	15,069.64	-48.76%

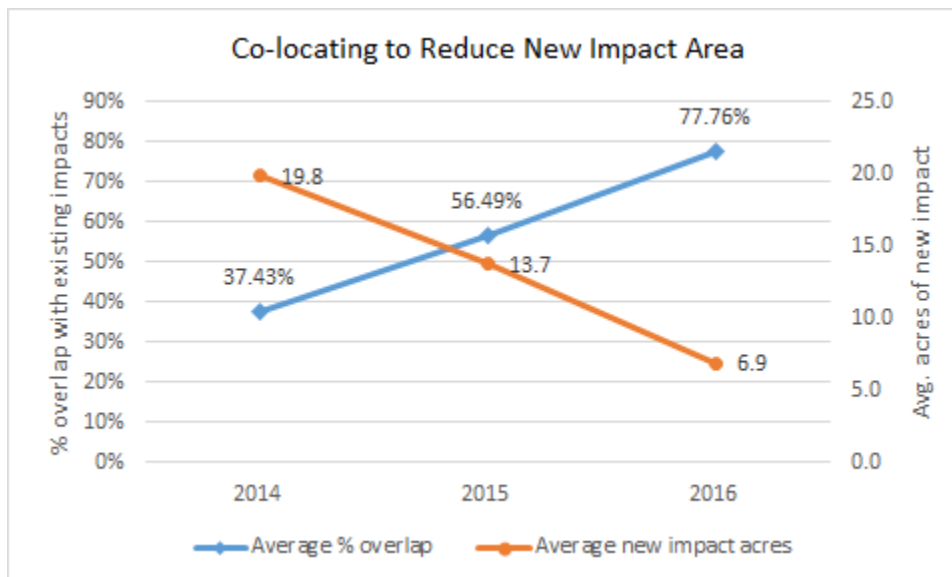


Figure 8. Plot showing the increasing trend by companies to co-locate wells to reduce new impact area on new well projects with existing infrastructure, thereby lowering the total impact area.

### RECLAMATION OF IMPACTS TO GENERATE OFFSET UNITS

Offset units can also be generated by remediation of existing impacts as described in the RWP. Those remediation units are reserved for the company which generates them and can be banked for their use for future developments. In some instances, remediation offset units are required before development can occur. The RWP establishes impact goals of 30% for CHAT 1 reporting units and 60% for CHAT 2 reporting units. Five focal area reporting units already exceed those goals which means that remediation must occur to offset any new impacts by participants in these units (Appendix E & F, Van Pelt et.al 2013). Within the RWP there are two primary impact credit processes, one for projects initially mitigated through the RWP and a second process for the remediation of projects not mitigated through the RWP (existing infrastructure).

For projects initiated within the RWP, it is required that mitigation and habitat offsets units be paid and allocated before construction begins. Companies often plan and pay mitigation months before a project starts. When this is done, WAFWA assesses the habitat impact and then calculates the

habitat units and the mitigation fee that will offset this development. The mitigation fee is deducted from the companies' mitigation account with WAFWA and the habitat units are deducted from an appropriate conservation offset site. Once the mitigation of new impacts is completed, one of the following things will occur:

- 1) The project gets cancelled after the mitigation was paid, but before any ground disturbances or infrastructure are installed.
  - a. As development plans change for whatever reason, projects may be cancelled before any habitat impacts occurred. In these instances, the company should notify WAFWA that the project was cancelled before any impacts occurred and WAFWA will credit the company back its full mitigation payment (minus the administrative fee) to its account and the habitat credits will be added back to the conservation offset site they were deducted from. The net result is no mitigation fees and no habitat units used.
  
- 2) The project is initiated, completed, and remains on the landscape (i.e. viable well). Each year on the anniversary of the project's completion, the annual impact units will be associated with a conservation offset site and units deducted from that site.
  
- 3) The project was started (ground disturbed or infrastructure installed) after mitigation payments were made, but the project was not completed and subsequently removed (i.e. dry well). These projects may be credited back in full (minus the administrative fee) after the site is verified to be reclaimed. To reclaim the site back to its original state and be credited as doing so, the company should follow the below process.
  - a. The company should remove any/all infrastructure they installed, refill and level any pits, and grade the ground back to a slope and condition approximating the condition before impacts were made.
  - b. The company should contact WAFWA regional biologists for a recommended native seed mixture for that site and apply the seed mix per recommendations. If restoring back to active cropland, no seeding mixture is required.
  - c. Once the site is repaired and the seed is distributed, the company should notify WAFWA regional biologist to assess and verify the completed reclamation work.
  - d. Once verified, the regional biologist will notify WAFWA GIS that the work was done and then WAFWA GIS will refund all the habitat credits to the offset property they were initially deducted from and notify accounting to credit the companies account back for the full impact mitigation (less the 12.5% administration fee) paid towards the project.
  
- 4) If the project is completed and mitigated within the RWP, then at some future date the project is to be reclaimed, a process similar to scenario 2 (project started but not completed) would be utilized. After the site has been confirmed reclaimed, the company receives credit back on mitigation dollars paid (less the administration fee), the impact no longer generates annual debits in the impact ledger, and the impact units are no longer deducted from its associated conservation

site. Habitat units from the project and the conservation site are not credited, they just stop occurring annually as they were when the project was on the landscape.

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

Not all wells submitted into the RWP have been completed, and not all wells that were drilled were successful. During the 2016 reporting period, there were several projects cancelled and credited back. Specifically, there were 74 projects cancelled before impacts occurred and nine projects reclaimed after they failed to be successful (Table 28). Since the RWP began, 160 have been canceled prior to impacts, and 17 were unsuccessful and reclaimed (Table 29) Each of these projects were reclaimed per the specifications, verified by WAFWA staff, and then the mitigation was credited back to the company and the impacts were credited back to the conservation offset property.

Table 28. Details on the nine well projects that were reclaimed in 2016 after the project failed to be successful

Feature/ecoregion/CHAT	Count	potential acres	actual acres	annual units
Mixed grass Prairie	1	31.0	-	-
4	1	31.0	-	-
Shortgrass Prairie	8	248.3	176.4	91.1
1	4	124.1	96.2	72.0
4	4	124.1	80.2	19.0
Grand Total	9	279.3	176.4	91.1

Table 29. Projects that were reclaimed since the plan began (2014-2016) after the project failed to be successful

Feature/ecoregion/CHAT	Count	potential acres	actual acres	annual units
<b>Tank Battery</b>	<b>1</b>	<b>13.7</b>	<b>3.6</b>	<b>0.2</b>
Shortgrass	1	13.7	3.6	0.2
CHAT 4	1	13.7	3.6	0.2
<b>Wells</b>	<b>17</b>	<b>531.1</b>	<b>381.0</b>	<b>276.9</b>
Mixed grass	4	124.1	73.3	94.3
CHAT 1	2	62.1	55.1	93.7
CHAT 4	2	62.1	18.2	0.6
Sand Sagebrush	1	31.0	22.8	3.2
CHAT 1	1	31.0	22.8	3.2
Shortgrass	12	375.9	284.9	179.5
CHAT 1	7	220.7	188.2	158.3
CHAT 4	5	155.2	96.7	21.2
<b>Grand Total</b>	<b>18</b>	<b>544.8</b>	<b>384.5</b>	<b>277.1</b>

### OFFSET UNIT GENERATION

The 15 conservation sites currently enrolled in the RWP produced 59,292 conservation offset units during this reporting period from 96,750 acres. This does not include the new WAFWA purchased property in the Sand Sagebrush region of 29,717 acres since the conservation easement was not completed before close of this reporting period. The total number of offset units generated since inception of the RWP is 114,172.4 and 89.3% of them have been produced by properties located primarily in CHAT 1. Assuming habitat quality and credits generated during 2016 remains constant (though it should increase due to improved management) the conservation sites under contract at the end of the reporting period are expected to produce at least approximately 593,000 conservation offset units over the next 10 years. WAFWA maintains a surplus of offset units in each region by appropriating all available funds in the conservation endowment and targeting conservation agreements in proportion to the distribution of industry impacts. The individual industry impacts have a total annual impact of -17,502 habitat units, and cumulatively since the plan began these projects have netted a total impact of -42,527 habitat units. When the 42,527 total impacts are subtracted from the 114,172 credits, the result is a credit surplus of 71,645 habitat units across the range. This surplus varies by region, ranging from a low of 4,374 in the shortgrass to 37,284 in the mixed grass. Maintaining a constant and adequate surplus minimizes the risk of

any industry delays.

Habitat units to offset industry impacts are generated through land management contracts, conservation easements, and reclamation of previously impacted habitat. The RWP tracks credits generated on enrolled conservation parcels through annual field assessments. The annual credits generated are summarized by Ecoregion and CHAT in Table 30, and listed individually by property in Table 31. Getting information on the restoration of habitat removal of the existing infrastructure being removed has proven difficult and currently WAFWA has not recorded any reclamation projects outside of the RWP. Oil and gas wells are routinely plugged and restored, but a way to access and quantify that data has not been available through our IHS well database subscription service. WAFWA is exploring other data options for accessing data that would show the wells plugged and restored to state environmental requirements.

Table 30. Conservation offset units generated each reporting period and cumulatively since the inception of the RWP. Data are reported for the primary CHAT category within which the site occurs.

Year/Region/CHAT	Credits			
	2014	2015	2016	2014-2016
Mixed Grass Prairie	<b>6,119.4</b>	<b>27,267.8</b>	<b>40,041.8</b>	73,429.0
CHAT 1	4,541.9	24,511.8	3,4892.4	63,946.2
CHAT 4	1,577.5	2,756.0	5,149.4	9,482.8
Sand Sagebrush Prairie	<b>4,173.9</b>	<b>4,021.2</b>	<b>8,385.4</b>	<b>16,580.5</b>
CHAT 1	4,173.9	4,021.2	8,385.4	16,580.5
Shinnery Oak Prairie	<b>4,654.9</b>	<b>5,772.7</b>	<b>7,649.2</b>	<b>18,076.7</b>
CHAT 1	4,654.9	5,772.7	7,649.2	18,076.7
Shortgrass Prairie	<b>1,187.8</b>	<b>952.7</b>	<b>3,945.7</b>	<b>6,086.2</b>
CHAT 1	146.5	511.1	2,671.8	3,329.4
CHAT 2	1,041.3	441.6	1,273.9	2,756.8
<b>Annual total</b>	<b>16,135.9</b>	<b>38,014.4</b>	<b>60,022.0</b>	<b>114,172.4</b>

Table 31. Habitat unit credits earned by each enrolled property by year and as a cumulative total since they were enrolled.

Conservation site	2014	2015	2016	2014-2016
CZ003	4,379.4	4,291.0	5,903.9	<b>14,574.3</b>
CZ008	520.9	200.8	744.0	<b>1,465.7</b>
CZ013	151.5	205.2	298.0	<b>654.7</b>
CZ014	124.0	136.5	229.0	<b>489.5</b>
CZ016	4,173.9	4,021.2	8,385.4	<b>16,580.5</b>
CZ026		1,140.0	1,218.3	<b>2,358.3</b>
CZ033	1,041.3	441.6	1,273.9	<b>2,756.8</b>
CZ035	146.5	511.1	677.0	<b>1,334.5</b>
CZ036		15,933.3	20,580.1	<b>36,513.4</b>
CZ037	1,577.5	2,756.0	5,149.4	<b>9,482.8</b>
CZ038	4,021.0	8,377.7	12,353.3	<b>24,752.0</b>
CZ040			485.1	<b>485.1</b>
CZ061			1,964.3	<b>1,964.3</b>
CZ062			30.5	<b>30.5</b>
CZ063			730.0	<b>730.0</b>
<b>Total</b>	<b>16,135.9</b>	<b>38,014.4</b>	<b>60,022.0</b>	<b>114,172.4</b>

#### HABITAT QUALITY AT IMPACT SITES VERSUS CONSERVATION SITES

A principal concept behind the RWP is that the habitat metrics and mitigation incentivize industry to avoid important habitat areas and minimize impacts to LPC habitat. Those metrics consider both the acreage, impacted and conserved and the habitat quality of those acres. In this report, we describe how companies are minimizing acreage impacts of new development by co-locating projects with pre-existing infrastructure. What about the habitat that is still impacted? Has industry been avoiding good habitat areas and concentrating development in poorer habitat areas? To answer these questions, we compared the habitat quality of sites impacted by new development throughout the history of the RWP (2014-2016) with the habitat quality at sites that were conserved, and confirmed that impacts were happening in poorer quality habitat.



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

Of the 4036 habitat evaluations conducted at proposed industry impacts sites (stages 5,6,7) across the EOR+10 for wells, tank batteries, wind turbines, and electrical lines, the mean HEG habitat quality score was 0.23 with a median of 0.13 (Table 32, Figure 9). These impacts to low quality habitat are mitigated for and generate funds used to secure and improve moderate to high quality habitat on targeted private conservation properties.

Table 32. Habitat Evaluation Guide (HEG) scores relating habitat quality across all evaluation units associated with industry impact areas.

<b>Industry impact</b>	Shortgrass	Mixed Grass	Sand sagebrush	Shinnery Oak	EO+10
Mean	0.18	0.29	0.18	0.12	0.23
Median	0.10	0.23	0.05	0.00	0.13
Min - max	0.0 - 1.0	0.0 - 1.0	0.0 - 1.0	0.0 - 1.0	0.0 - 1.0
Variance	0.05	0.08	0.06	0.06	0.08
Count	325	2447	627	637	4036

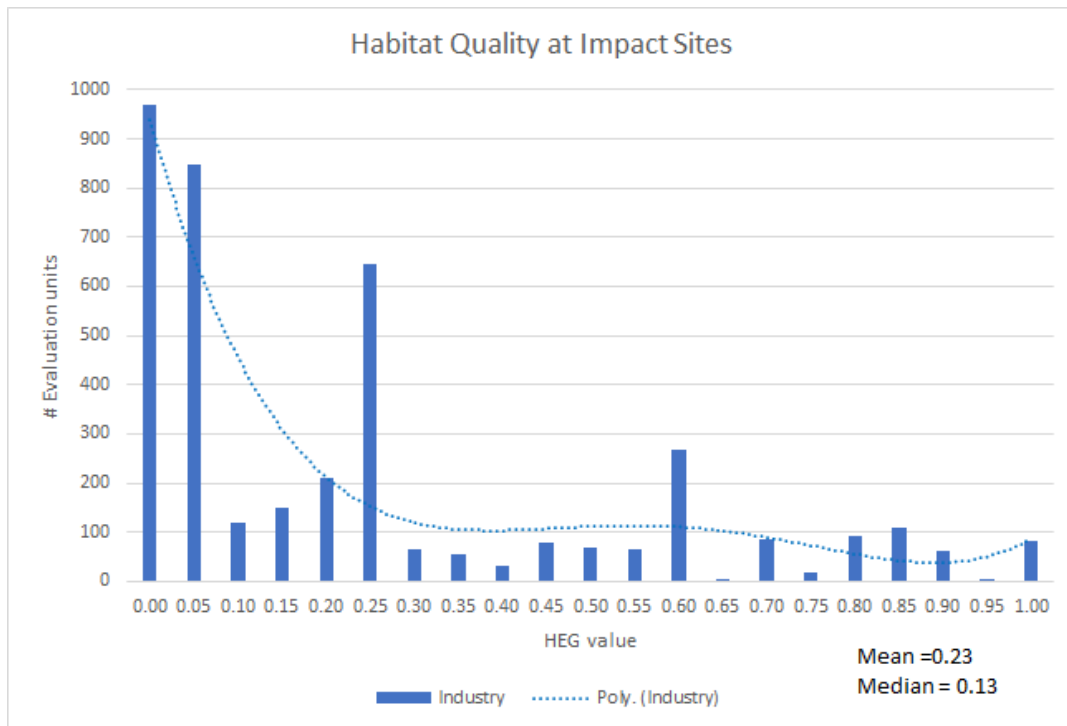


Figure 9. Habitat quality scores from evaluation units showing that most of the areas impacted were of lower quality habitat.

At the end of the 2016 reporting period, WAFAW had 15 conservation properties across the EOR+10 generating conservation offset credits. Vegetation transects done across the properties during the 2016 spring monitoring season showed these properties to have a mean habitat score of 0.61 and a median of 0.68 (Table 33, Figure 10). This difference between the quality of the habitat being impacted and the habitat being conserved is evidence industry is minimizing their impacts by selecting low quality sites to develop and the mitigation funds from those developments is being spent to maintain and improve high quality habitat.

Table 33. Habitat Evaluation Guide (HEG) scores from the 2016 monitoring season relating habitat quality across all evaluation units associated with conservation offset properties.

Conservation	Shortgrass	Mixed Grass	Sand sagebrush	Shinnery Oak	EOR+10
Mean	0.35	0.65	0.74	0.52	0.61
Median	0.22	0.76	0.80	0.60	0.68
Min - max	0.015 - .9	0.05 - 1.0	0.015 - 1.0	0.2 - 0.85	0.015 - 1.0
Variance	0.06	0.08	0.06	0.09	0.09
Count	28	77	46	21	172

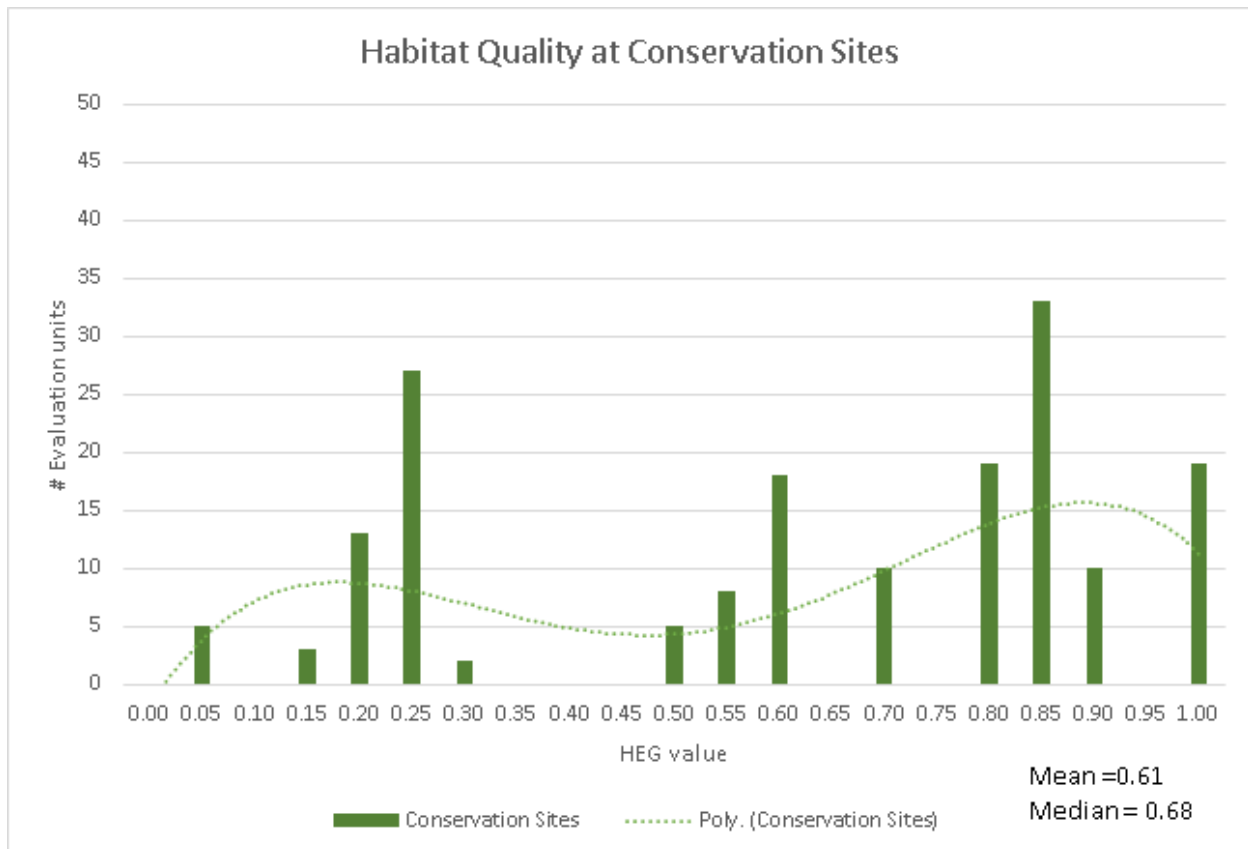


Figure 10. Habitat quality scores collected in 2016 from evaluation units in conservation properties showing that most of the areas conserved are of higher quality habitat.

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

After three years of implementation, a review of projects completed under the plan shows that the mean cost of all the projects (excluding wind farms and Transmission lines) varies by ecoregion from \$2,732 in the Sand Sagebrush to \$18,179 in the Mixed Grass for an EOR+10 mean of \$11,361 (Table 34). A histogram plot of all the mitigation fees (except wind facilities and transmission lines) (Figure 11), indicates a bimodal distribution where most of the fees are relatively low, with 428 of the 1016 projects (42%) of the projects less than \$500. This trend of low mitigation fees is a reflection of companies avoiding good habitat and minimizing impact area.

Large projects such as transmission lines and wind farms have also been successfully mitigated in the RWP. Wind farms and transmission lines were excluded from the general project summary because they are of a frequency and scale that would distort the results. There has been a total of

5 transmission lines completed under the RWP ranging from 2,000 - 11,000 potential acres of impact that resulted in costs between \$0 - \$1.3 million (avg. = \$794,000). The average fee of a transmission line (>69kV) was \$39,248 per mile. The RWP also enrolled and is offsetting impacts from two wind power facilities in the mixed grass region. The two wind farms have total project costs that averages out to \$31,577 per turbine. Both facilities are about 11,000 acres and have around 60 turbines. The average fee for these wind facilities is about \$1.2 million, yet individually the two facilities are quite different. One project had an average HEG habitat quality score of 0.213 (2,426 habitat units) and cost over \$3 million, and the other was sited largely in cropland in CHAT 4 with an average habitat quality score of 0.069 (380 habitat units) and had a final cost of less than \$600,000. This difference in final impacts and mitigation costs for two windfarms of similar size in the same ecoregion show that project siting and configuration can have a huge impact.

Table 34. Summary statistics of the mitigation fees associated with all projects mitigated for within the Range Wide Plan since implementation (2014-2016). The Mean and Sum row exclude transmission and wind facilities, while the Sum (all) row includes all feature types.

	Shortgrass	Mixed Grass	Sand sagebrush	Shinnery Oak	EOR+10
Mean	\$4,100.03	\$18,349.07	\$2,816.018	\$4,003.72	\$11,547.43
Sum	492,003.14	9,908,497.82	382,977.52	844,785.05	11,628,263.53
Sum (all)	\$492,003.14	\$19,815,639.39	\$382,977.52	\$1,037,646.31	\$21,728,266.36

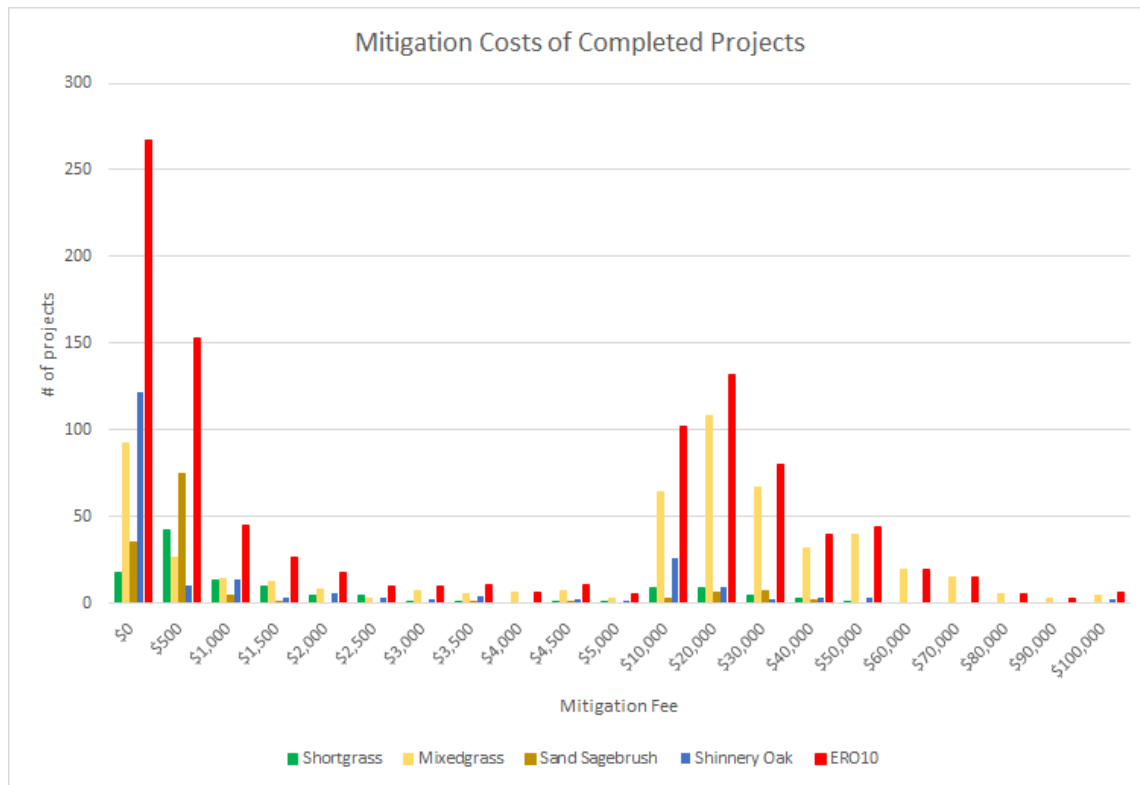


Figure 11. Distribution of mitigation fees for projects assessed within the Range-wide Plan (2014-2016), excluding wind power facilities and transmission lines.

Looking just at 2016 impact mitigation fees, a couple things can be seen. While there were far fewer projects completed in 2016 because of generally low oil prices, the development that did take place was done with minimal impact to LPC habitat. The mean mitigation cost across all ecoregions was \$36,603.97, ranging from \$48 in shortgrass to \$255,784 in mixed grass (Table 35). The mean is skewed by a couple large projects, so the median values may be more informative, and show that three ecoregions plus the EOR+10 had median mitigation costs of \$0.00. This shows that for the majority of projects done, there was zero new impact to LPC habitat.

Table 35. Summary of mitigation by ecoregion for 114 projects in 2016.

	Shortgrass	Mixed Grass	Sand sagebrush	Shinnery Oak	EOR+10
Count	4	16	21	73	114
Mean	\$48.86	\$255,784.66	\$1,140.20	\$769.29	\$36,603.97
Median	\$27.19	\$25,994.81	\$0.00	\$0.00	\$1,595.03
Sum	\$195.43	\$4,092,554.56	\$23,944.24	\$56,158.38	\$4,172,852.61

### PROJECT LOGS AND LEDGERS

The tracking of information about a project and its implementation status within the RWP workflow is an important component. During the first year of the RWP, a tracking log was created in a shared online spreadsheet. Each new project was entered as a new record row and attribute columns regarding the project stage, date it was evaluated, impact costs, impact units, and dates the project was approved and sent to accounting for completion were manually entered every time new information was collected. The tracking log and ledgers could be accessed via a secure website (USFWS had access) and a summary of projects status and important project details (region, CHAT score, habitat impact units, mitigation cost) could be obtained. This process worked well, but it was a manual process and it was not directly linked to the GIS data. In 2015, great effort was expended getting all the tracking information into a comprehensive GIS geodatabase and a relational geodatabase was created that had automatic daily updates of project information pulled from the GIS data. This new tracking log and ledgers were not available via a web interface, but they were part of the geodatabase shared with the USFWS. With the new SQL database, improvements to sorting, querying, and linking to GIS data were achieved.

In 2016, WAFWA launched new web interface and mobile tablet interface tools (collectively referred to as the Western Conservation Toolkit - WCT) to access project data and submit field data. The WCT was created to help provide several important improvements to implementing and accessing data in the Range Wide Plan (Figure 12).

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

The web interface for the WCT provides secure, role based access to authorized data sets. Company representatives will only have access to information for the company they are connected to, while users from WAFWA and USFWS can access information for all companies, conservation enrollments, as well as access the summary logs, and the impact balance ledgers. Figure 13 shows an example of a page that lists and maps projects that are under review, but not yet finalized. The information displayed in the WCT web site is from a direct link to the relational ArcSDE SQL geodatabase, so it is always synchronized with displaying current data.

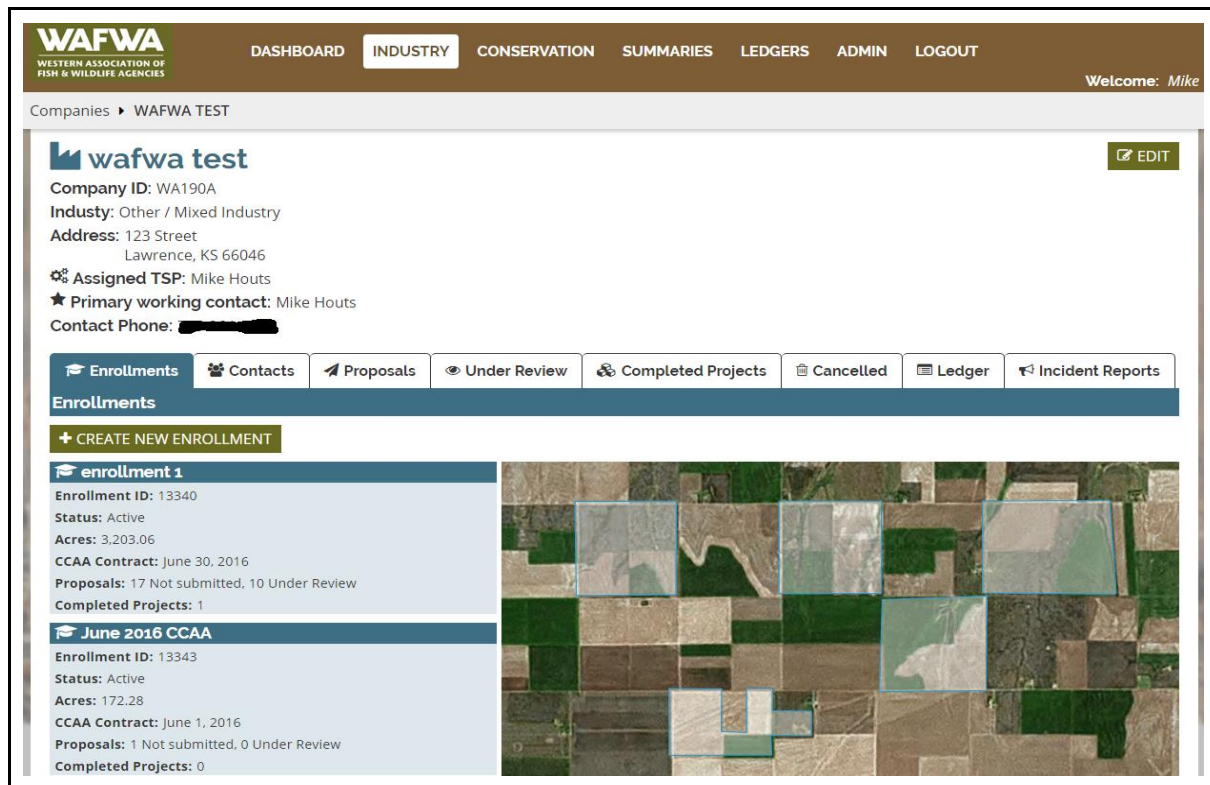


Figure 12. View of the WCT web interface showing enrollment parcels for a hypothetical “WAFWA Test” company. Tabs within the view provide access to unique sets of data and tools.

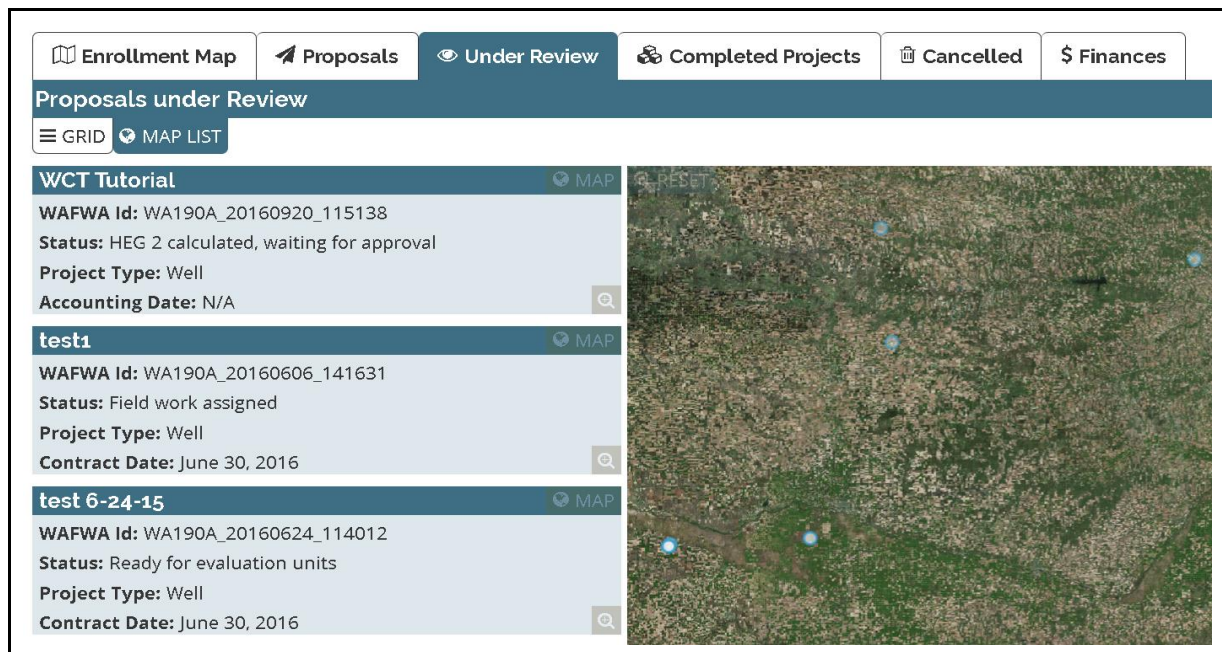


Figure 13. View of projects listed in “Under Review” tab for the hypothetical WAFWA Test company. Projects are listed and mapped, with the list functioning as a link to specific project details.

The RWP requires WAFWA to always have enough conservation credits in a region to cover new impacts occurring in the region. To track the balance of conservation offset credits and impact debits, a series of ecoregion specific ledgers was created. Within each ecoregion ledger, conservation offsets from enrolled properties create a balance of available credits. As projects are mitigated for through WAFWA, the projects are associated with a specific conservation offset property and the impact units for that project are then deducted from that properties' available credits. If a mitigated project is cancelled or the well is a dry hole, then the company can receive financial credit for the site by repairing the impacts and the habitat units are credited back to the conservation site they were deducted from in the ledger.

The ledgers, ledger summaries, and project log are created daily with a SQL script triggered to run at 5:00 am Central Time. Inputs and outputs are fully contained within the geodatabase. Within the ledger creation script, each new debit entry is assigned a conservation offset within the specific ecoregion given the following selection criteria, ranking order, and restraints (Table 36).

Table 36. Order of priorities used when the model assigns impact units to a conservation offset property.

#	Factor	Equation	Sort Order	Constraints
1	Ecoregion	Impact ecoregion = Conservation ecoregion		
2	CHAT	(Project CHAT – Conservation CHAT)	Ascending	$\geq 0$
3	Contract Term	(CZ Site Exp. Date – CZ Site Start Date)	Ascending	<i>None</i>
4	Days Available	(Line Entry Date – CZ Site Start Date)	Descending	$\geq 0$ and $<$ Contract Term
5	Percent Balance	(Running Balance + Impact Effect)/Site Total	Ascending	<i>None</i>
6	Running Balance	(Running Balance + Impact Effect)	Ascending	$\geq 0$
7	Site ID	<i>None</i>	Ascending	<i>None</i>

Once the conservation properties in the same ecoregion as the impact are identified, factor preferences start with the CHAT score requiring the offset CHAT to be less than or equal to the project CHAT score. The contract term factor assures that conservation sites with 5-year term contracts are used before 10-year terms and then permanent sites. Subsequently, the numbers of days the contract has been available order sets the preference to use the oldest contract limiting that the number of days cannot exceed the term. The potential impact on the available conservation site balance is factored into the selection process twice, first using the percent remaining if the impact is assigned to the site (preference given to the site that would have the lower proportion of its total units impacted) and then the cumulative balance (preference give to the site that has the least credits available that will cover the impact units needed). If all variables are between two or more sites, the decisive factor then becomes the minimum conservation site ID. By automating



this process, we have removed the possibility of transcription errors and ensured each impact can be fully accounted moving forward.

The line-by-line ecoregion ledgers that track every credit and debit, show which projects are associated with which conservation sites, and provide a running balance of that conservation sites available credit are available by ecoregion in the WCT app through the Ledger tab. A subset of this ledger is shown in Figure 14. Within the ledgers, the entry date references the date the action was taken, the WAFWA ID is the unique project identification code, project name is the name of the project and the ecoregion and CHAT columns identify where the project occurred. The Charge Type column identifies the type of action taken. Entries with a date range charge type (i.e. 2014-2016) signify these impacts were made in 2014, and this is the latest annual re-application of that impact. A Final Impact entry indicates the debits of units for a new project. Since the estimator tool was discontinued in September 2015, there are no entries with a charge type of Impact Estimate in this, but they do occur as debits in 2014-2015. On November 2, 2015, there are many entries for Estimates Reconciled and Final Impacts as November 1 was set as the deadline for any field work to finalize estimates. Any estimates not validated by that date were converted to Final Impacts. The other Charge Type not visible in this December subset is Conservation Credit, which indicates the addition of conservation credits added to a conservation offset property. The Conservation offset properties have WAFWA IDs that begin with CZ (for Conservation Zone) and then a unique number associated with each property. For each ledger transaction line, the debits or credits for that project are associated with a specific conservation property as indicated in the Offset Site column of the table. The last column in the table is the Site Balance, which is a running balance of that conservation site's available credits. The balances from these ledgers are also available as a summary report (Figure 15), or the credits, debits, and balances can be viewed per each individual conservation site. (Figure 16).

Entry Date	WAFWA ID	ProjectName	Ecoregion	CHAT	ChargeType	DebitUnits	Credit	OffsetSite	SiteBalance
12/22/2016	OX131A_20141215_094406	Willard 135X - Revised	Shinnery Oak Prairie	4	2014-2016 Impact	-0.64	0	CZ003	13009.01
12/22/2016	OX131A_20141215_094405	Willard 133AL	Shinnery Oak Prairie	4	2014-2016 Impact	-0.64	0	CZ003	13009.65
12/22/2016	OX131A_20141215_094404	Willard 116D - Revised	Shinnery Oak Prairie	4	2014-2016 Impact	-0.64	0	CZ003	13010.29
12/22/2016	OX131A_20141215_094403	Willard 116CL	Shinnery Oak Prairie	4	2014-2016 Impact	-0.64	0	CZ003	13010.93
12/22/2016	OX131A_20141215_094402	Willard 114D	Shinnery Oak Prairie	4	2014-2016 Impact	-0.64	0	CZ003	13011.57
12/22/2016	OX131A_20141215_094401	Willard 113E	Shinnery Oak Prairie	4	2014-2016 Impact	-0.64	0	CZ003	13012.21
12/22/2016	OX131A_20141215_094400	Willard 112E	Shinnery Oak Prairie	4	2014-2016 Impact	-0.64	0	CZ003	13012.85
12/12/2016	RO154A_20161212_123714	Fleming Distribution Line Route 3	Shinnery Oak Prairie	2	Final Impact	-0.32	0	CZ014	0.13
12/7/2016	OX131A_20161129_081112	EC 19	Shinnery Oak Prairie	4	Final Impact	-1.64	0	CZ013	0.59
12/7/2016	OX131A_20161129_081018	EC 18	Shinnery Oak Prairie	4	Final Impact	-0.88	0	CZ013	2.23
12/7/2016	OX131A_20161129_080923	EC 17	Shinnery Oak Prairie	4	Final Impact	-6.79	0	CZ013	3.11
12/7/2016	OX131A_20161129_080802	EC 16	Shinnery Oak Prairie	4	Final Impact	-4.6	0	CZ013	9.9
11/29/2016	OX131A_20161129_071107	CLLU 93R	Shinnery Oak Prairie	4	Final Impact	0	0	CZ014	0.45
11/23/2016	TE175A_20151014_100030	Moriah 3	Shinnery Oak Prairie	3	2015-2016 Impact	-0.82	0	CZ013	14.5
11/23/2016	TE175A_20151014_100010	Moriah 2	Shinnery Oak Prairie	3	2015-2016 Impact	-3.75	0	CZ013	15.32
11/10/2016	TE175A_20141105_100600	Moriah 1	Shinnery Oak Prairie	3	2014-2016 Impact	-0.79	0	CZ014	0.45
11/5/2016	OX131A_00001176_001176	WODC 806	Shinnery Oak Prairie	4	2014-2016 Impact	0	0	CZ014	1.24
11/5/2016	OX131A_00001175_001175	WODC 807	Shinnery Oak Prairie	4	2014-2016 Impact	0	0	CZ014	1.24
11/5/2016	OX131A_00001174_001174	WODC 808	Shinnery Oak Prairie	4	2014-2016 Impact	0	0	CZ014	1.24

Figure 14. Subset of the line-item ledger for the Shinnery Oak ecoregion where the habitat unit credits and debits for each project and conservation site are tracked. For each impact, the region, CHAT category, impact units, and offset site associated with it are shown.

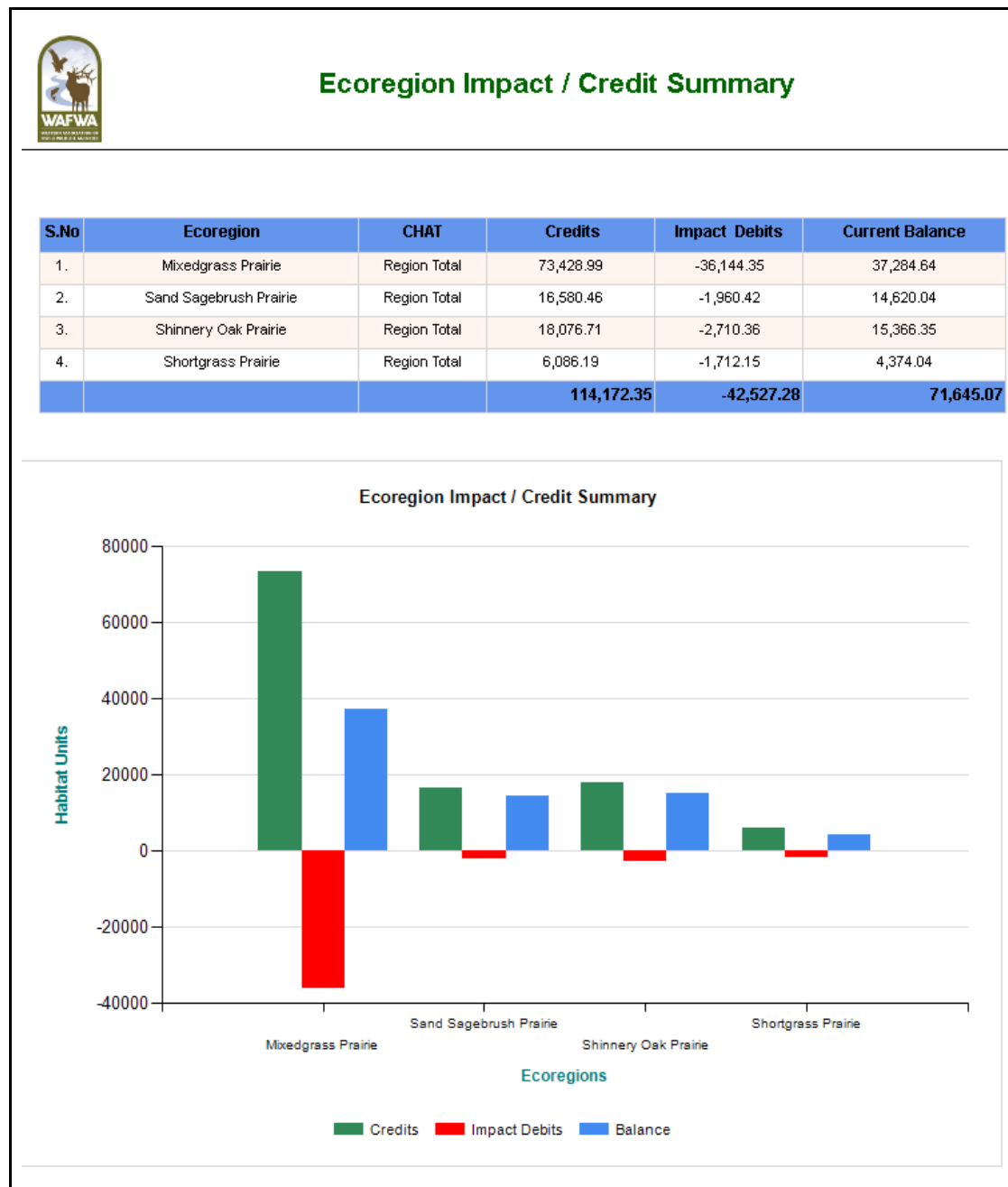


Figure 15. Summary of the total credits, debits, and balance of habitat units remaining in each ecoregion. The mixed grass region has had many more impact units debited, but all ecoregions maintain a positive balance of habitat units.

<b>Site Summary</b>						
#	Region	WAFWA ID	CHAT	Credits	Net Debits	Balance
1	Mixedgrass Prairie	CZ008	1	1,465.72	0.00	1,465.72
2	Mixedgrass Prairie	CZ036	1	36,513.35	-24,498.60	12,014.75
3	Mixedgrass Prairie	CZ037	4	9,482.84	-2,040.31	7,442.53
4	Mixedgrass Prairie	CZ038	1	24,751.98	-9,611.03	15,140.95
5	Mixedgrass Prairie	CZ040	1	485.10	0.00	485.10
6	Mixedgrass Prairie	CZ063	1	730.00	0.00	730.00
7	Mixedgrass Prairie	Region Total	---	73,428.99	-36,149.94	37,279.05
8	Sand Sagebrush Prairie	CZ016	1	16,580.46	-1,960.42	14,620.04
9	Sand Sagebrush Prairie	Region Total	---	16,580.46	-1,960.42	14,620.04
10	Shinnery Oak Prairie	CZ003	1	14,574.30	-1,566.67	13,007.63
11	Shinnery Oak Prairie	CZ013	1	654.66	-654.32	0.34
12	Shinnery Oak Prairie	CZ014	1	489.45	-489.37	0.08
13	Shinnery Oak Prairie	CZ026	1	2,358.30	0.00	2,358.30
14	Shinnery Oak Prairie	Region Total	---	18,076.71	-2,710.36	15,366.35
15	Shortgrass Prairie	CZ033	2	2,756.84	-836.43	1,920.41
16	Shortgrass Prairie	CZ035	1	1,334.54	-478.13	856.41
17	Shortgrass Prairie	CZ061	1	1,964.31	-371.97	1,592.34
18	Shortgrass Prairie	CZ062	1	30.50	-25.62	4.88
19	Shortgrass Prairie	Region Total	---	6,086.19	-1,712.15	4,374.04
20	Rangewide Summary	Region Total	---	114,172.35	-42,532.87	71,639.48

Figure 16. Conservation properties in the RWP with details of the ecoregion and CHAT it is associated with, the total credits it has generated, total impact debits being offset by the property and remaining credit balance of the property. Ledger balance of 71,639 is slightly lower than other reported numbers because this ledger graphic was generated after some 2017 projects had been debited.

Within this summary table, the Conservation Site is the unique ID give to each property, the CHAT category represents the CHAT that the majority of the site is located in, Credits relates the total amount of offset units generated and available to be applied towards impacts, while Net Debits represent the total impact units debited against that site and the Balance column is the amount of remaining habitat credits for a given conservation site.

Another way to summarize the ledgers, are totaling the conservation credits and impact debits to the ecoregion and CHAT level, but not at the conservation property level. For this CHAT level summary, it should be remembered impacts from one CHAT level can be offset by credits in a higher level CHAT, and create negatives in CHAT levels 2-4 that are accounted for by the surplus credit balance in CHAT 1. Figure 17 summarizes these credits and debits to the ecoregion level and shows that each ecoregion has a positive balance.

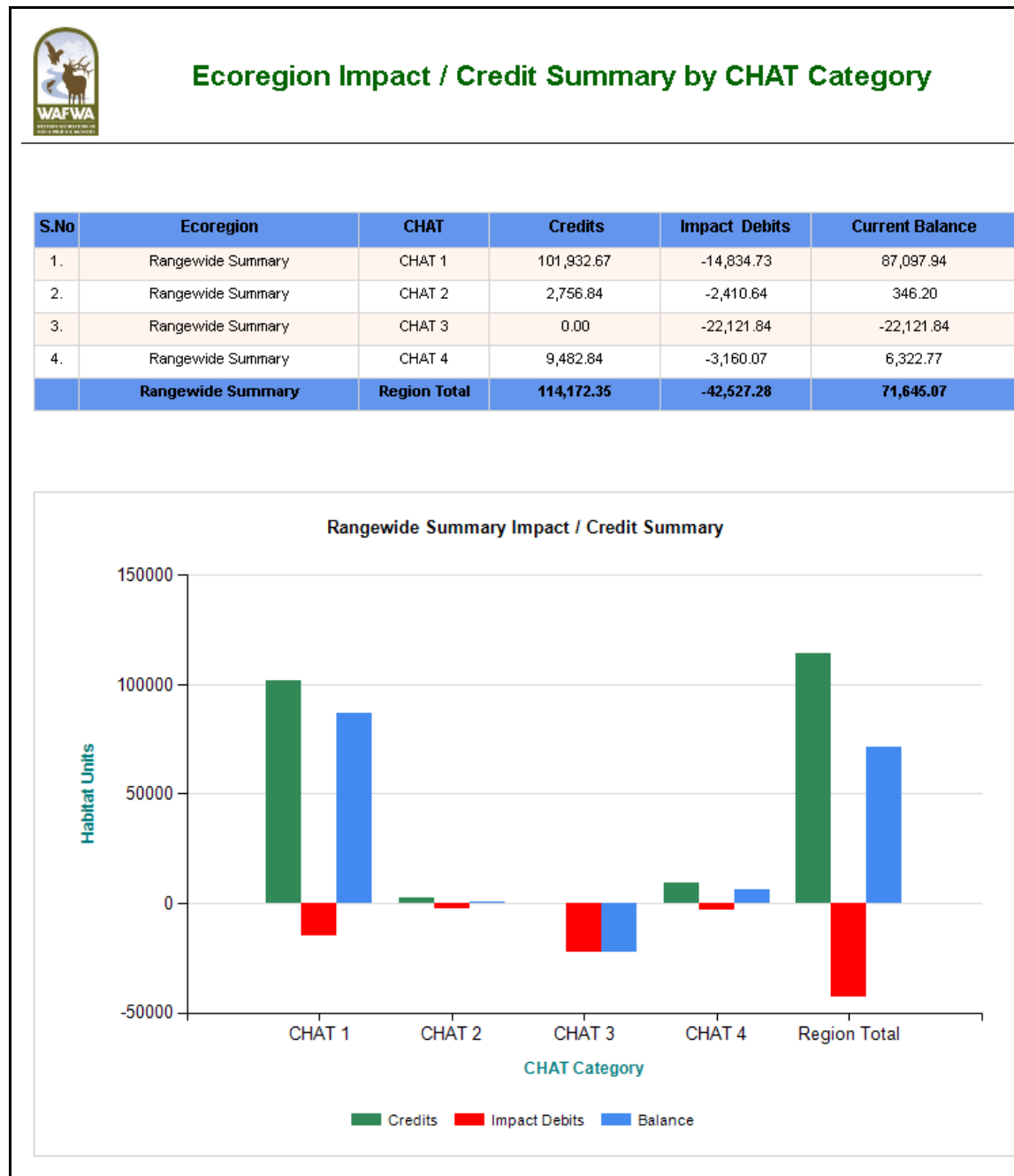


Figure 17. Ecoregion and CHAT level summary of credits and impact debits shows there is a large enough credit balance in CHAT1 to offset the negative balance in lower CHAT levels, resulting in positive ecoregion level balances throughout the range as of December 31, 2016.

### REPORTING UNITS AND DEVELOPMENT LEVEL THRESHOLDS

Within the RWP, the maximum recommended development level within reporting units was established to define acceptable limits of development related impacts within focal area and connectivity zones. A development proportion threshold of 30% was established for focal areas, and a threshold of 60% was established for connectivity zones. These thresholds are defined as a percentage of the total reporting unit area that is covered by existing infrastructures impact buffers. This area of impact is calculated twice a year (July and January) and includes impact buffers around the latest download of vertical structure data, the latest IHS active well data, new RWP wells, tank batteries, and all known roads and electrical distribution/transmission lines as updated and represented within the SGP CHAT website. The totals of these impact buffers are then divided by the reporting unit area to identify the percentage of impact.

Each reporting unit has a unique ID number associated with it (Figures 18 and 19) so that they can be related back to tables conveying the percent of impact within each unit. Appendix E and F show the percentages of impact within each reporting unit in focal areas and the reporting units of connectivity zones respectively. The percentages of impact based on the January 2017 assessment are presented graphically in Figures 20 and 21 to help illustrate the areas that are either above, below, or approaching the threshold. There are currently five focal areas reporting units over the 30% threshold, three in the sand sagebrush and two in the mixed grass. The highest impacted focal area is calculated at 39.5% (unit 14) followed by one unit with 33.7% impact (31C). Unit 14 is an anomaly in that it is only nine square miles after it was separated from its larger unit when the units were being delineated. Due to its small size, the primary road running through it and the existing wells, it has been over the 30% threshold since it was created. For all focal areas over the threshold, remediation of existing infrastructure must occur to balance any new impact areas before a project can be approved. There are five focal areas that are near the threshold with between 28% 30% impact. There are no connectivity zones over the 60% threshold, with the highest impact to a connectivity zone calculated at 53.3%.

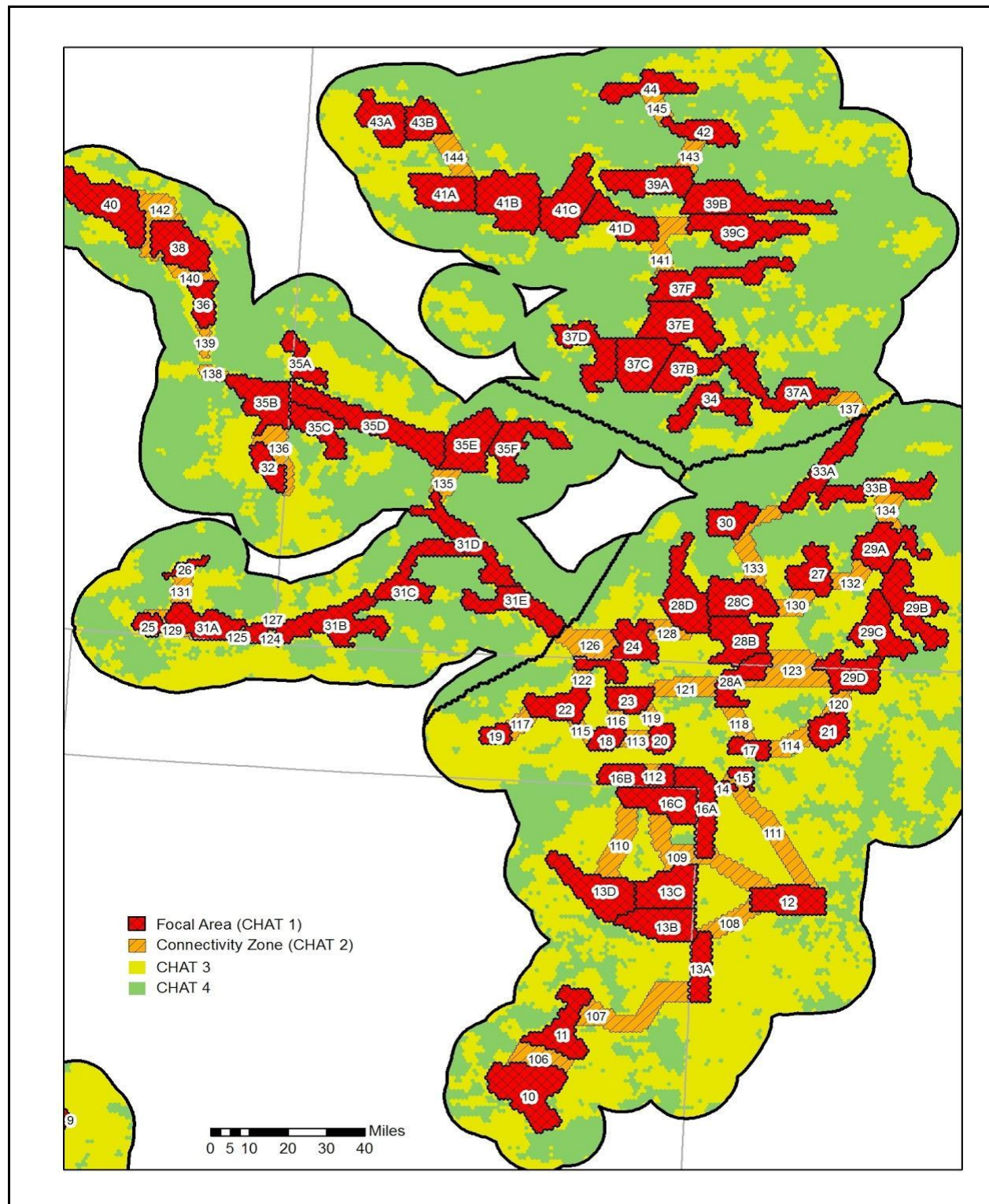


Figure 18. Reporting unit numbers for focal area and connectivity zones in the shortgrass, sand sagebrush, and mixed grass regions of the range.

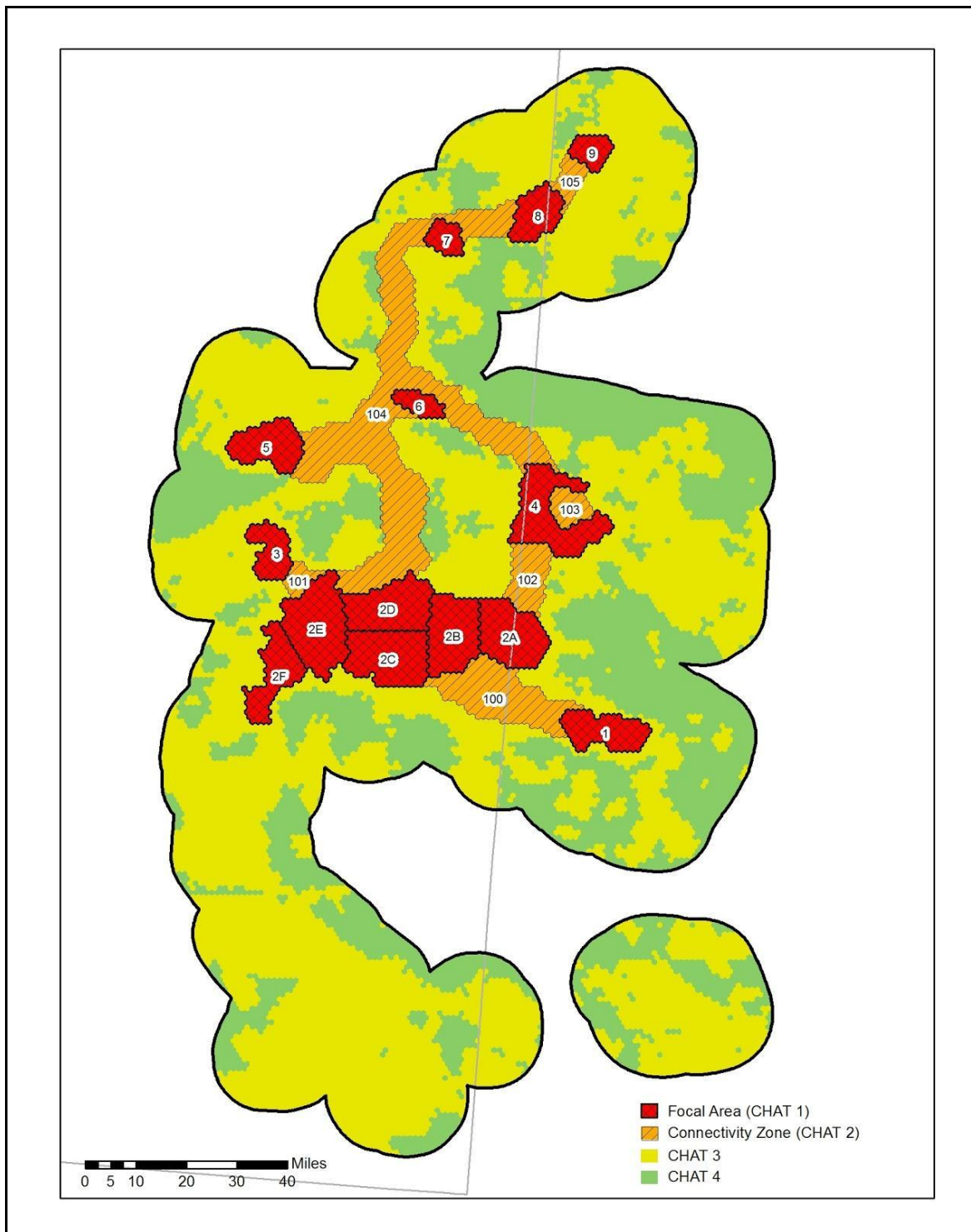


Figure 19. Reporting unit numbers for focal area and connectivity zones in the shinnery oak portion of the range.

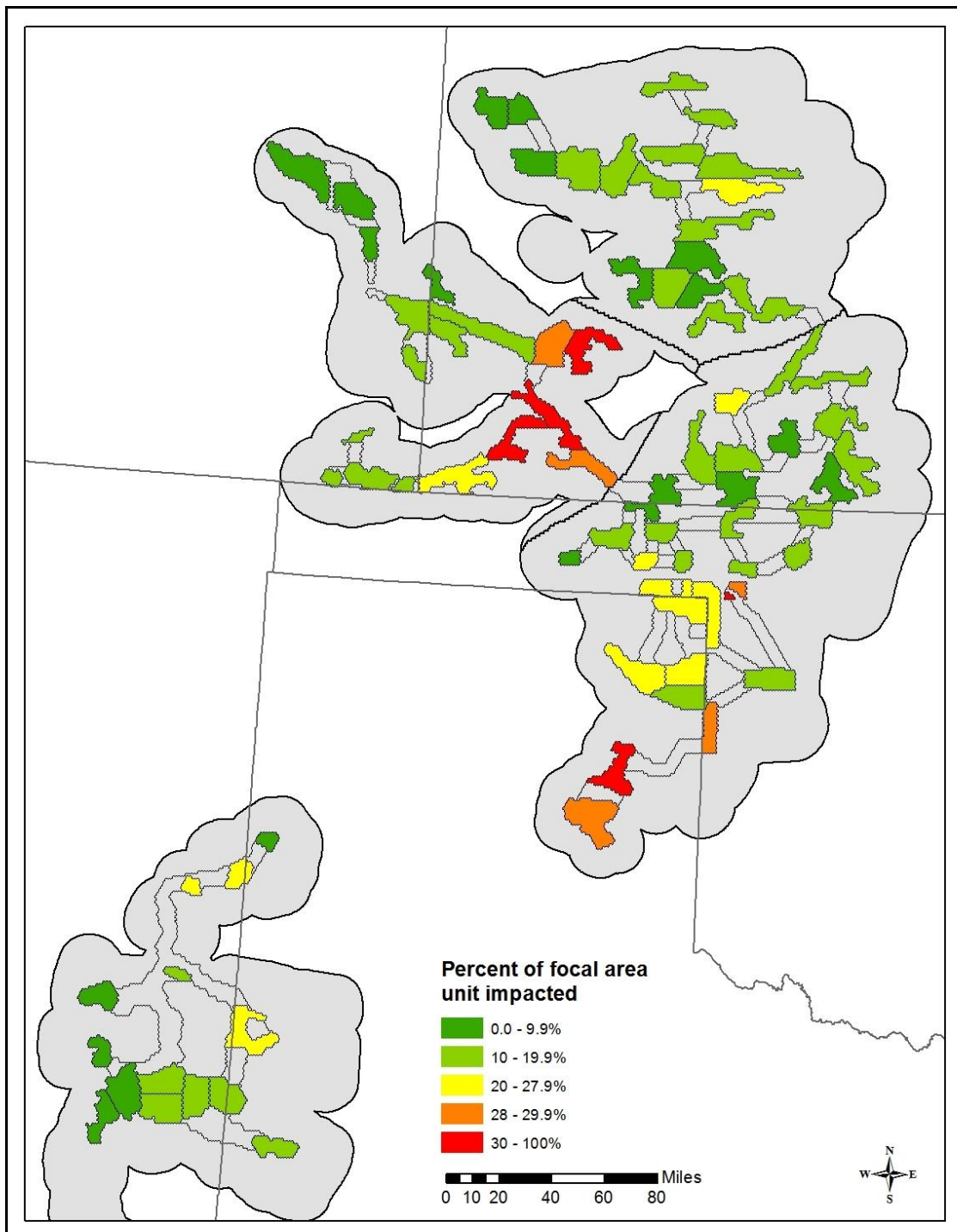


Figure 20. Focal area reporting units color coded to show the proportion of impact within each unit. Focal areas have a 30% threshold, after which remediation of existing impacts must occur before new impacts can be developed.



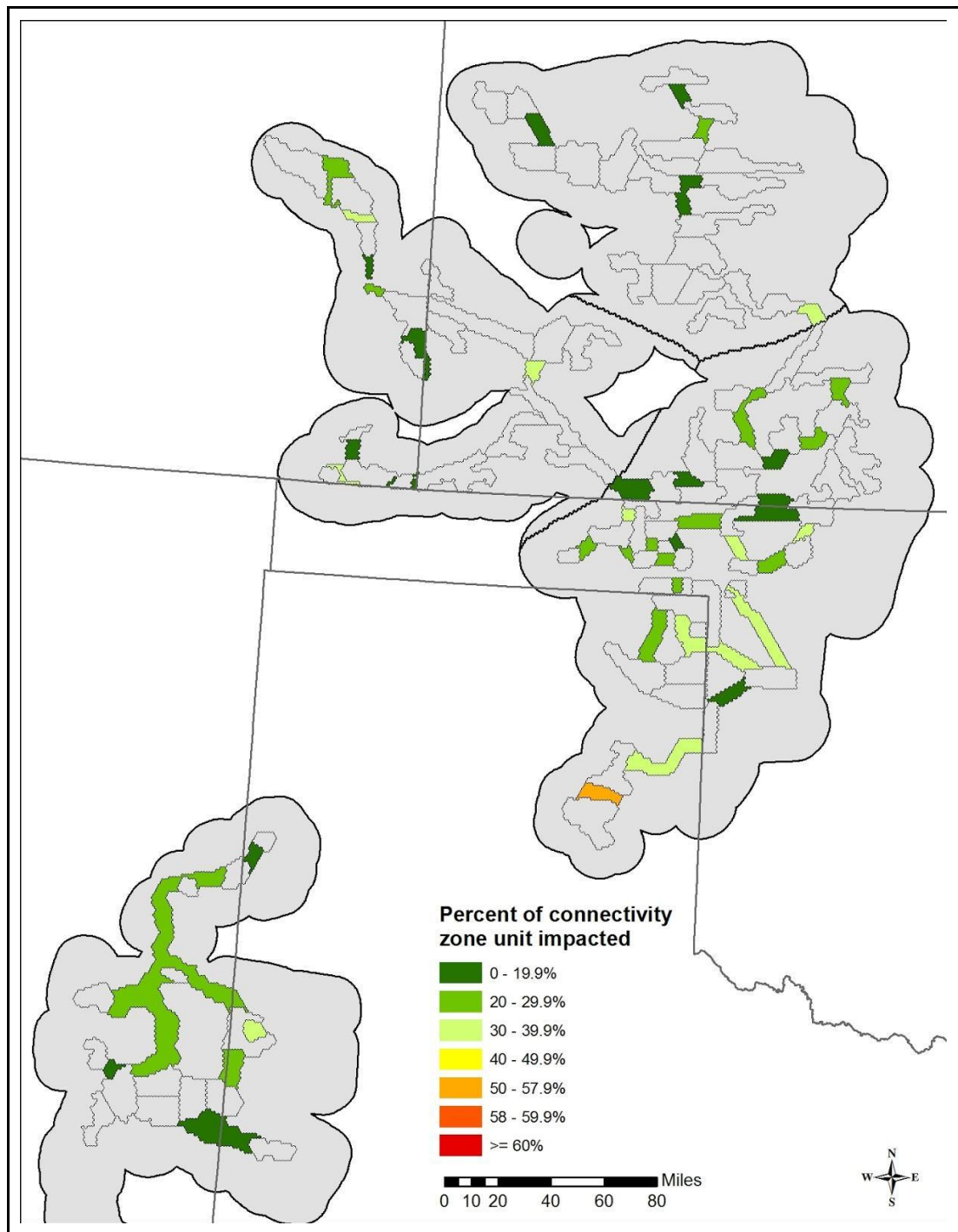


Figure 21. Connectivity zone reporting units color coded to show the proportion of impact within each unit. Connectivity zones have a 60% threshold, after which remediation of existing impacts must occur before new impacts can be developed.

## TRACKING PROGRESS TOWARDS RWP CONSERVATION GOALS

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

## POPULATION GOALS

A committee consisting of academics and the LPC interstate working group developed the RWP population goals for each ecoregion and range-wide (Figure 22). Those goals will be assessed in full after the 10<sup>th</sup> year of RWP implementation using the average estimated population size over the previous 10-year period. Moving averages better represent the number of birds that can be supported by existing habitat because they smooth variations that are associated solely with environmental conditions. If the 10-year population goals are not achieved the LPC Initiative Council could take corrective actions by making adaptive management changes. Action may include reallocation of conservation dollars, shifting of priority area locations, and adjustment of offset ratios.

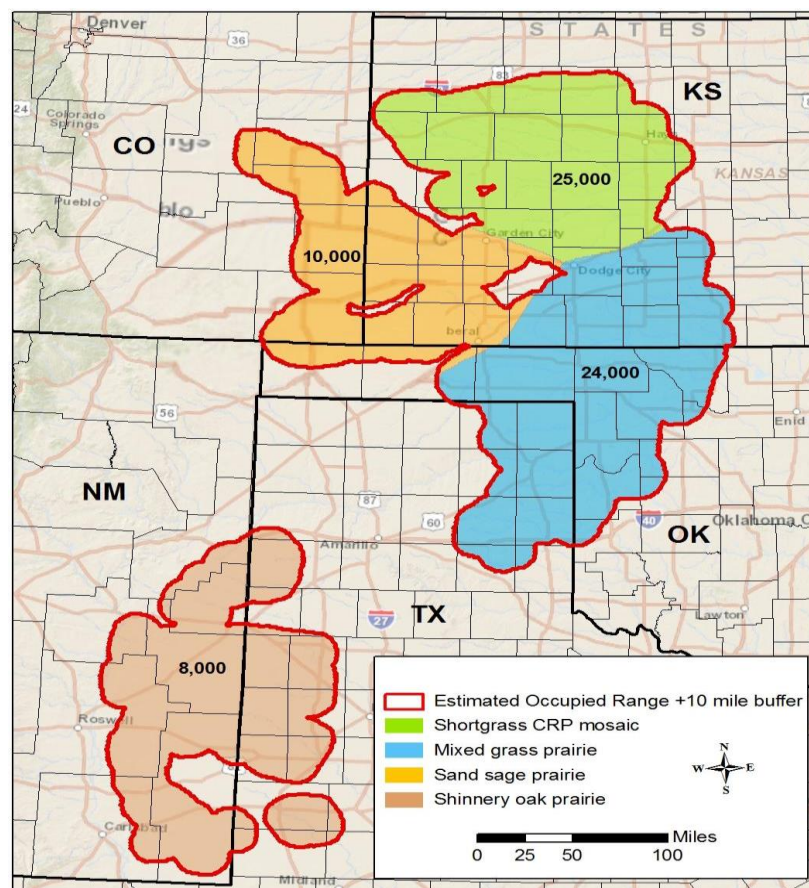


Figure 22. Lesser prairie-chicken population goals established by the WAFWA range-wide plan. The goals will be assessed using population estimates averaged over the previous 10-year period.

The adaptive management section of the RWP also calls for annual evaluations of population size starting after the 2016 breeding season survey. The annual evaluations will assess whether a 3-year moving average of the estimated population size is >50% of the goal at the ecoregion and range-wide scales. If the 3-year average population size falls below that level in any ecoregion, or range-wide, it will trigger a discussion with the WAFWA Science Sub-committee. The sub-committee will attempt to identify causes of the low population size and will have the opportunity to make recommendations for corrective actions that include such changes as reprioritization of conservation actions and adjustment of mitigation multipliers and ratios.

The LPC population estimates are derived from the annual range-wide aerial survey that was initiated by WAFWA in 2012 (McDonald et al. 2012). The survey utilizes helicopters flying two standard transects within 15 X 15 km grid cells distributed across the four WAFWA ecoregions. The same transects within 283 grid cells are now being surveyed annually during the LPC breeding season. The survey field methodology and analyses are described in detail in McDonald et al (2012, 2016). The data from the 2016 aerial survey produced an estimated range-wide population of 25,651 breeding birds which was a decrease of 14.5% from the previous year (Table 37). However, that difference was not statistically significant at  $P = 0.1$ .

Table 37. Lesser prairie-chicken breeding population estimates for 2016 and 3 and 10-year moving averages for each of WAFWA ecoregions and range-wide (McDonald et al. 2016).

Ecoregion	2016 Population Estimate (90% CIs)	Percent Annual Change	3-Yr Ave. Pop. Size (% of goal)	10-Yr Ave. Pop. Size (% of goal)
Shinnery Oak	3,255 (2,035 – 6,198)	+263.3% <sup>a</sup>	1,875 (23.4%)	3,747 (46.8%)
Sand Sagebrush	1,479 (762 – 2,310)	+64.9%	963 (9.6%)	2,222 (22.2%)
Mixed Grass	6,891 (4,579 – 9,793)	-31.3%	8,201 (34.2%)	12,021 (50.1%)
Shortgrass	14,025 (8,354 – 20,055)	-22.8%	15,493 (62.0%)	20,983 (83.8%)
Total	25,651 (18,692 – 34,991)	-14.5%	26,533 (39.7%)	38,929 (58.1%)

<sup>a</sup> $P < 0.1$

At the ecoregion scale, the only statistically significant annual population change occurred in the Shinnery Oak ecoregion where the population was estimated to have increased from 2015 (Table 38). Data from the 2016 aerial survey generally indicate that the population remained stable from the previous year except for the Shinnery Oak where a significant increase was observed. That increase was likely due to good production because of suitable habitat conditions during the previous summer.

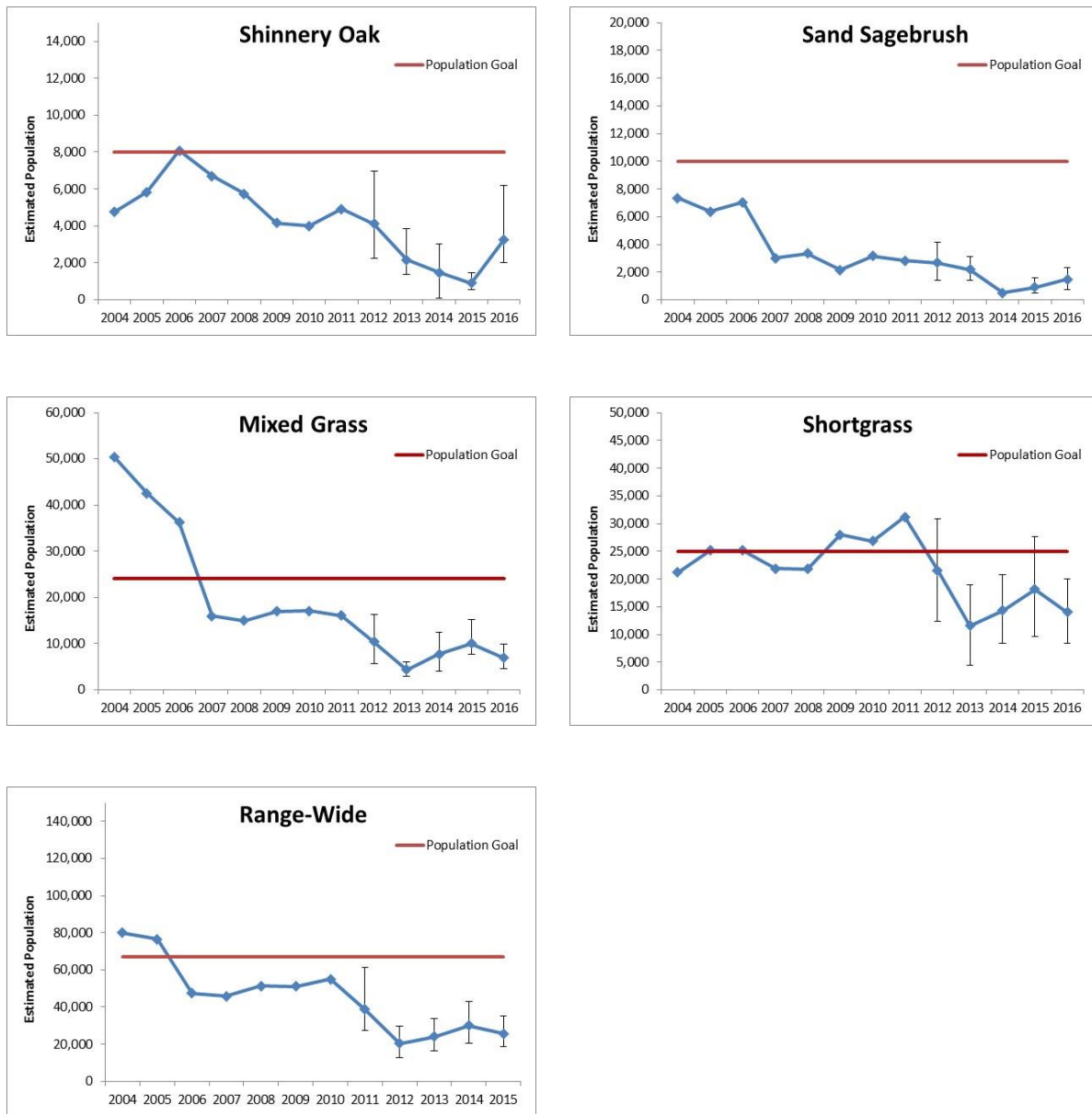


Figure 23. Lesser prairie-chicken population goals established in the RWP and 10-year trends for each ecoregion and range-wide (Garton 2012, McDonald et al. 2016). Confidence intervals (90%) are depicted around the population estimates that were derived from the aerial survey (2012-present).

Despite the general population stability, the 3-year and 10-year moving averages are still below the population goals in every ecoregion and range-wide (Figure 23, Table 38). The 3-year moving averages are <50% of the population goal for 3 of 4 ecoregions and range-wide. That fact will trigger a discussion with the Science Sub-committee at their next face-to-face meeting which should occur sometime during early 2017. After that discussion, the sub-committee could make recommendations for corrective actions to the LPC Advisory Committee.

## HABITAT RESTORATION GOALS

The RWP establishes long-term and annual reporting unit-specific acreage goals for cropland restoration and remediation of existing impacts (Van Pelt et al. 2013, (Appendices C-D)). Those goals are intended to be assessed using the collective efforts of all the conservation agencies and organizations who are delivering those practices in LPC range. The long-term range-wide acreage goals for cropland restoration and remediation are 953,693 and 27,820, respectively. Those figures represent the minimum amount of restoration needed to achieve 70% and 40% suitable habitat in focal areas and connectivity zones, respectively. The annual restoration goals assume a 10-year timeline to achieve the long-term acreage goals and call for >93,000 acres of cropland restoration and >2,700 acres of remediation annually.

WAFWA, USFWS, and state wildlife agencies completed 2,781 acres of range planting during this reporting period (Appendices C-D). However, the amount of range planting completed by USDA through their programs was not reported to WAFWA. The vast majority of cropland restoration is completed through their programs so it was not possible at the time of this report to accurately assess progress toward the annual acreages goals in the RWP. WAFWA will continue trying to acquire range planting data from our conservation partners so those goals can be more accurately assessed in future reports.

The amount of remediation that occurred during 2016 in high priority LPC areas was estimated by comparing spatial data from January 2016 to January 2017. The identified developments were classified into the categories defined in the RWP and buffered by the associated impact radii to identify the impacted acreage associated with each feature. The impacted acreages were tabulated for each reporting unit and the difference between 2016 and 2017 was the estimated annual change that occurred. The data sources used for these comparisons are as follows: IHS well data, RWP project data, Tiger roads data augmented with the roads layer from ArcGIS, ITC electric line data, distribution line data from WAFWA enrollments, FAA vertical structures >150 ft., and WAFWA tank battery and building layers. The IHS well data and the FAA vertical structures data are updated monthly and bi-monthly, respectively. The other layers are updated manually by WAFWA staff when inaccuracies are identified on aerial imagery or through field observations. While the listed data sources represent the best available information, there are still several known issues that make it difficult to accurately assess the impacted acreage that has been added or remediated. Those issues include changes associated only with geospatial data clean-up as opposed to real activities that occurred on-the-ground. Additionally, the IHS database only includes the locations of wells that have actively produced within the last 3 months. A well is removed from the IHS database when it sits idle for >3 months with no production. Thus, it is impossible to differentiate from the IHS database whether a well has been remediated or just simply not produced in >3 months.

Despite the listed issues, the process followed by WAFWA to estimate annual impact changes used the best data available at the time of this report. Those data indicate that up to 38,384 acres of impact were removed during 2016 in CHAT 1 and CHAT 2 (Appendices C-D). The bulk of the estimated impact reduction occurred in CHAT 1 (37,618 acres) indicating that industry might be targeting the highest priority LPC areas for their remediation activities or at least prioritizing

those wells for closure when they cut production. The accuracy of these impact estimates is highly questionable but the figures clearly do not indicate any kind of annual increase in the amount of impact in the high priority LPC areas. WAFWA is currently working to develop our own spatial oil and gas well layer using state permitting data that are updated monthly. The state oil and gas data include spud and plug dates and wells are not removed merely based on production. This upcoming change will greatly increase our ability to detect annual impact changes because oil and gas wells account for a large proportion of all development throughout LPC range.

The RWP did not specify acreage goals for brush management because at the time it was written there were no spatial data available that could be used to accurately assess the extent of woody invasion across the LPC range. However, WAFWA recognizes that woody invasion is a major threat to the species and utilizes brush management practices to restore habitat. WAFWA has facilitated the completion of 11,914 acres of brush management since inception of the plan. There are now spatial data available from NRCS that are being used to identify the extent of the tree encroachment problem and target conservation efforts. Those data will likely be used to establish brush management acreage goals during the 5-year review of the RWP.

#### HABITAT AVAILABILITY GOALS

The RWP established goals of 70% and 40% LPC occupancy for focal area and connectivity zone reporting units, respectively (Van Pelt et al. 2013). The adaptive management section of the RWP specifies that those goals will be assessed after the 5<sup>th</sup> year of implementation using results from an occupancy model and progress towards the stated habitat restoration goals. WAFWA has already helped to support development of an initial occupancy model in hopes of having the process more refined by the time of the 5-year assessment (McDonald et al. 2013). Shortly after the 5<sup>th</sup> year of implementation (2019), WAFWA will support the development of a new occupancy model with the most current spatial data. The result from that effort will be presented to the Science Sub-committee which will determine whether to recommend any adaptive management changes. If the established occupancy goals have not been achieved or maintained, the LPCIC could adopt adaptive management changes such as shifting reporting unit boundaries, adjusting mitigation multipliers, and reprioritizing WAFWA-delivery of conservation practices.

#### PROGRESS TOWARD PERMANENT CONSERVATION GOALS

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

A landscape must meet all the criteria identify by the USFWS to be considered a stronghold (USFWS 2012). A stronghold must be at least 25,000 acres in size but could be as much as 50,000 acres, if lower quality habitat is interspersed. The acreage counted toward the stronghold must

also meet all the additional criteria listed in the RWP. Some of those criteria include the presence of at least six LPC leks containing 6 males each, verifiable long-term development protection, addressed surface and subsurface development threats, full range of LPC habitat needs, and long-term management certainty. All acreage meeting the full list of criteria will be counted toward the stronghold goals; not just those sites secured through the WAFWA program.

At the end of 2016, WAFWA had secured 3,344 qualifying acres in the Shinnery Oak (1,563) and Mixed Grass (1,782) ecoregions (Table 38). Within the LPC range, there are currently 537,112 potential stronghold acres that have been identified by WAFWA. This figure includes all the tracts identified as potential strongholds in the RWP (Van Pelt et al. 2013) and 3 USFWS-approved conservation bank sites. Additionally, there are also 3,161,200 mutually exclusive acres within LPC range that are under public ownership or encumbered by some type of easement. Some of these non-WAFWA acres meet all the criteria to be considered as permanently conserved and could be counted towards a stronghold. However, the exact spatial footprint of all the qualifying acreage has not yet been identified. WAFWA staff will continue to try and delineate the qualifying tracts so that progress towards the 10-year stronghold goals can be adequately assessed after the 5<sup>th</sup> year of RWP implementation.

In a letter to the USFWS Director dated March 31, 2015, WAFWA also expressed its intention to pursue two additional permanent conservation goals in addition to the 10-year stronghold goals. That letter committed WAFWA to offsetting 10% of the RWP industry impacts with permanent conservation within 90 days. The letter also stated WAFWA's intention to offset 25% of industry impacts in each ecoregion by the end of the 3<sup>rd</sup> full year of RWP implementation (March 31, 2017). WAFWA achieved the first commitment satisfactorily on June 29, 2015 when it acquired 1,604 acres of permanent conservation in the Shinnery Oak ecoregion in Texas. That property immediately generated 1,140 conservation offset units which was 10.2% of the 11,123 impact units that were in the mitigation ledger at that time. The next annual report will assess whether WAFWA fulfilled its intention to offset 25% of the impacts in each ecoregion with permanent conservation by the end of the 3<sup>rd</sup> full year of RWP implementation (March 31, 2017).

WAFWA has already made good progress towards achieving its 3-year permanent conservation commitment. At the end of this reporting period, WAFWA permanent conservation sites had generated enough mitigation units to offset 7.8% of the impacts range-wide. The available offset units were also sufficient to offset 2.2% of the impacts in the Mixed Grass ecoregion, 87.1% of the impacts in the Shinnery Oak ecoregion, and 0% of the impacts in the Sand Sagebrush and Shortgrass ecoregions. Of course, WAFWA also purchased a large ranch in the Sand Sagebrush ecoregion during this reporting period. That property is not yet producing mitigation units but it is anticipated to do so before the end of March, 2017. That one property will be sufficient to offset more than 25% of the impacts in the Sand Sagebrush ecoregion and range-wide when it begins generating mitigation units. Additionally, WAFWA also anticipates securing some more permanent conservation in the Mixed Grass and Shortgrass ecoregion during early 2017.

Table 38. Acreage summary of WAFWA permanent conservation agreements, identified potential stronghold properties, and other publicly owned lands, 2016. A property must be located primarily in CHAT 1-3 to qualify as stronghold.

<b>Ecoregion – Location</b>	<b>WAFWA Permanent Conservation Agreements<sup>a</sup></b>	<b>Potential Stronghold Acreage<sup>b</sup></b>	<b>Other Public and Conservation Properties<sup>c</sup></b>	<b>Total</b>
<b>Shinnery Oak</b>				
CHAT 1	1,057	363,402	60,052	424,511
CHAT 2	396	0	91,836	92,232
CHAT 3	110	12,525	1,565,979	1,578,614
CHAT 4	0	0	530,575	530,575
<i>Total</i>	<i>1,563</i>	<i>375,927</i>	<i>2,248,442</i>	<i>2,625,932</i>
<b>Mixed Grass</b>				
CHAT 1	1,670	49,693	46,293	97,656
CHAT 2	0	71	18,279	18,350
CHAT 3	0	1,735	160,373	162,108
CHAT 4	111	0	31,477	31,588
<i>Total</i>	<i>1,782</i>	<i>51,499</i>	<i>256,422</i>	<i>309,703</i>
<b>Sand Sagebrush</b>				
CHAT 1	0	33,884	195,977	229,861
CHAT 2	0	0	13,679	13,679
CHAT 3	0	24,430	170,347	194,777
CHAT 4	0	16,152	255,026	271,178
<i>Total</i>	<i>0</i>	<i>74,466</i>	<i>635,028</i>	<i>709,494</i>
<b>Shortgrass</b>				
CHAT 1	0	17,940	15,183	33,123
CHAT 2	0	0	0	0
CHAT 3	0	17,280	0	17,280
CHAT 4	0	0	6,126	6,126
<i>Total</i>	<i>0</i>	<i>35,220</i>	<i>21,308</i>	<i>56,528</i>
<b>Range-wide</b>				
CHAT 1	2,727	464,919	317,504	785,150
CHAT 2	507	71	123,794	124,372
CHAT 3	110	55,970	1,896,699	1,952,779
CHAT 4	111	16,152	823,204	839,467
<b>Grand Total</b>	<b>3,344</b>	<b>537,112</b>	<b>3,161,200</b>	<b>3,701,656</b>

<sup>a</sup> WAFWA acquired 1,604 acres but the existing perimeter fence does not currently encompass the entire property. The fence will be moved to the correct boundary in the future so that a WAFWA management plan can be implemented across the entire property.

<sup>b</sup> Includes acreages from properties identified as potential strongholds in the RWP (Van Pelt et al. 2013) and properties contained within USFWS conservation banking agreements. These figures do not include the acres that have been permanently conserved through the WAFWA program.

<sup>c</sup> This category includes other protected or publicly owned properties not identified as potential strongholds in the range-wide plan. These acreages are owned by U.S. Department of Defense, Non-Government Organizations, State Land Boards, State Parks, Recreation, and Wildlife Agencies, U.S. Fish & Wildlife Service, U.S. Bureau of Land Management, U.S. Forest Service, Privately Owned Parks, U.S. National Park Service, Agricultural Research Service, U.S. Bureau of Reclamation, and City or County Government. The acreages also include privately owned sites contained within conservation easements.



## FINANCIAL SUMMARY

The Range Wide Business Plan utilizes a defined investment strategy that is expected to achieve or exceed the conservative investment earnings, projecting a 'real' rate of return over the long term of 4%. The investment asset allocation targets 50% Equities, 10% Alternatives/ Real Assets, and 40% Fixed Income. Two separate investment trusts are used to distribute enrollment and impact fees. When companies are invoiced, revenue is recognized by WAFWA. Upon receipt, fee revenues are split accordingly; 87.5% are allocated to a conservation trust for conservation offsets and 12.5% are deposited into an administration trust for operation related expenses, such as salaries, aerial surveys GIS support and other program needs. When permanent easements are purchased, individual endowments are established and individual investment strategies are defined and monitored to achieve conservation management perpetuity payments. WAFWA has an outside audit firm conduct a consolidated audit annually and posts three years of 990s on its website.

The annual real rate of return is calculated by taking the rate of return and subtracting the inflation average rate. The rate represents the rate of return one would achieve if they were to sell the investments now. The conservation endowment average annual rate of return for the 12-month reporting period (January 1-December 31, 2016) was 7.41% and an average annual real rate of return of 7.11%. The conservation endowment was implemented in February 2015 and since inception has yielded an average rate of return of 2.37%.

The TPWD Permanent Trust has a December 31, 2016 balance of \$338,739 and a real rate of return of 4.71%. WAFWA Ranch's Trust was effective August 18, 2016 and represents a four and one half month reporting period. The trust is partially funded and reflects a balance of \$2,397,611; rate of return of 5.76% and a real rate of return of 5.46%. As mentioned above, the expected 'real' rate of return over the long term is 4% and due to market conditions there will be years of up markets and down market trends. The investment assets are closely monitored and investment adjustment decisions are made to take advantage of up market years and limit negative impacts during down market years.

Since the inception of the RWP, WAFWA has invoiced \$64.8 million in enrollment and impact fees and collected \$62.3million of which 87.5% or \$54.6 million is restricted for conservation efforts. As of December 31, 2016, and not included in the \$62.3 million, \$1,477,418 are in account receivables and \$902,676 has been written off to bad debt.

During the current enrollment period, conservation income has resulted in \$13 million of enrollment and impact fees. (Table 39) Landowner contracts, permanent easements, land purchase and associated costs, outstanding account receivables and investment gain/loss make up the conservation related expenses. These expenses total \$15.7 million for the reporting period and \$23.4 million since inception of the RWP. A net position of approximately \$35 million is restricted for future conservation endeavors. During this reporting period, WAFWA added three new 10-year landowner contracts. Also during this reporting period, WAFWA purchased one permanent easement in the Mixed Grass ecoregion consisting of approximately 1,781 acres and a acquired a 29,718-acre ranch fee simple in the Sand Sagebrush ecoregion.

Table 39. Conservation Trust Account Activity

	Current Reporting Period	Since Inception to start of reporting period	
	01/01/2016 - 12/31/2016	03/1/2014 - 12/31/2015	TOTAL
Enrollment Fees	\$ 9,910,553	\$ 32,385,788	\$ 42,296,340
Impact Fees	\$ 3,111,840	\$ 11,235,795	\$ 14,347,635
Investment Income / Loss	\$ 1,146,966	\$ 947,647	\$ 2,094,613
Total Revenue	\$ 14,169,358	\$ 44,569,230	\$ 58,738,588
Landowner Short Term Contracts	\$ 1,866,748	\$ 1,806,886	\$ 3,673,634
Permanent Easements	\$ 154,493	\$ 14,851	\$ 169,344
Land purchase costs, Account Receivables and Investment Gain/Loss	\$ 13,700,582	\$ 5,838,526	\$ 19,539,109
Total Deductions	\$ 15,721,823	\$ 7,660,263	\$ 23,382,086
Net Position			\$ 35,356,502

As stated earlier, WAFWA secured three additional landowner contracts bringing the total number of term contracts to thirteen. The three contracts are located within the Shortgrass and Mixed Grass ecoregions. In addition to the term contracts, each representing ten year terms, WAFWA 's permanent conservation habitats total three, including an easement in the Shinnery Oak, an easement in the Mixed Grass and the 29,718 acre ranch purchased by WAFWA in the Sand Sagebrush ecoregion. The landowner contracts and permanent easement reflect conservation efforts within the four designated LPC ecoregions. (Table 40) Average annual habitat replacement costs per acre are utilized in calculating the mitigation fees charged to industry and in the payments to secure offset habitats. The calculation is based on total expenditures to landowners in the current reporting period including the actual cost of acquiring permanent conservation and spread over twenty-five years, even though the actual payment to the landowner is made during year one. This is done to align with the way the industry fees are calculated and therefore a more stabilized value of what is paid to landowners for offsets in comparison to what is charged to industry for impacts. Even though some of the payments for offsets are higher than what is currently charged to industry, as WAFWA acquires more permanent conservation, you will see the future cost of the landowner offsets decrease.

Table 40. Mitigation per unit cost by ecoregion 1/1-12/31, 2016

	Industry Impacts	Landowner / Offsets
Mixed Grass	48.47	29.58
Short Grass	29.56	20.13
Shinnery Oak	32.12	66.03
Sand Sagebrush	19.69	25.66

The decision regarding ecoregion fund allocation is based upon current conservation habitats that are experiencing impacts. When contracts and permanent easements are acquired, payments are issued for a one-time incentive payment; an annual rangeland management payment each October; and if applicable, habitat restoration upon completion. The incentive and rangeland management payments within term contracts and permanent easements reflect \$1.3 million in fee revenues (Table 41 and 42) that were used for conservation offsets in this reporting period and \$3.9 million since the plan's inception (Table 43).

Table 41. Term Contract Payments by Ecoregion: 1/1/2016 - 12/31/2016

	Mixed Grass	Short Grass	Shinnery Oak	Sand Sagebrush	TOTAL
Incentive Payments	\$ 5,859	\$ 19,478	\$ -	\$ -	\$ 25,337
Rangeland Management Plan	\$ 848,388	\$ 59,934	\$ 65,448	\$ 120,405	\$1,094,175
Habitat Restoration Payments	\$ 307,874	\$ -	\$ 439,362	\$ -	\$ 747,236
TOTAL	\$ 1,162,121	\$ 79,412	\$ 504,810	\$ 120,405	\$1,866,748

Table 42. Permanent Easement Payments by Ecoregion: 1/1/2016 - 12/31/2016

	Mixed Grass	Short Grass	Shinnery Oak	Sand Sagebrush	TOTAL
Incentive Payments	\$ -	\$ -		\$ 148,735	\$ 148,735
Rangeland Management Plan	\$ -	\$ -	\$ 9,627	\$ -	\$ 9,627
Habitat Restoration Payments	\$ -	\$ -	\$ 15,646	\$ -	\$ 15,646
TOTAL	\$ -	\$ -	\$ 25,273	\$ 148,735	\$ 174,008

Current ecoregion impacts (Table 43) reflect \$3.9 million in fee revenues that were used for conservation offsets for both landowner contracts and permanent conservation since the inception of the RWP in 2014. Table 43 summarizes the percentage of dollars spent in each payment category by ecoregion to the total dollars within that payment category. For instance, of the \$507,408 in landowner incentive payments issued, 40% of the funds were allocated to Mixed Grass whereas 7% of the funds were allocated to the Shortgrass ecoregion. Overall, 33% of the total \$3.9 million in payments are going toward habitat restoration.

Table 43. Contract and Permanent Easement payments by Ecoregion and % to total since plan inception

	<b>Mixed Grass</b>	% of Total	<b>Short Grass</b>	% of Total	<b>Shinnery Oak</b>	% of Total	<b>Sand Sage</b>	% of Total	<b>TOTAL</b>
Landowner Incentive Payments <i>*includes contract and permanent</i>	\$ 204,943	40%	\$37,102	7%	\$ 66,640	13%	\$ 198,723	39%	<b>\$ 507,408</b>
Landowner Contract Restoration Payments	\$ 373,309	30%	\$ -	0%	\$ 872,436	70%	\$ -	0%	<b>\$ 1,245,745</b>
Landowner Management Plan/Maint Payments	\$1,586,087	76%	\$ 92,262	4%	\$ 155,287	7%	\$ 241,426	12%	<b>\$ 2,075,062</b>
Landowner Permanent Maint Exp	\$ -	0%	\$ -	0%	\$ 18,634	100%	\$ -	0%	<b>\$ 18,634</b>
Landowner Long Term Restoration Exp	\$ -	0%	\$ -	0%	\$ 15,646	0%	\$ -	0%	<b>\$ 15,646</b>
<b>TOTAL CONSERVATION EXPENSES</b>	<b>\$ 2,164,339</b>		<b>\$ 129,364</b>		<b>\$ 1,128,643</b>		<b>\$ 440,149</b>		<b>\$ 3,862,494</b>

### **RESPONSIBLE PARTIES FOR RWP ADMINISTRATION**

WAFWA was founded in 1922. It currently consists of 23 member states and provinces that have primary responsibility and authority for protecting and managing fish and wildlife in the western United States and Canada. The 19 member states encompass over 2.5 million square miles. The chief executive officer of each fish and wildlife agency is on the Board of Directors of three non-profit business entities, the Western Association of Fish and Wildlife Agencies, its fund-raising arm, the Foundation for Western Fish and Wildlife (FWFW) and the Western Conservation Foundation (WCF).

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

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

### COMMITTEE COMPOSITION

#### *Interstate Working Group*

- One representative from each of the five state fish and wildlife agencies
- The WAFWA Grassland Coordinator as an ex officio member

#### *Advisory Committee*

- The WAFWA LPC Program Manager will coordinate and facilitate the Advisory Committee as an ex officio member
- An additional 17 representatives will compose the committee
  - One representative from three of the five state fish and wildlife agencies, to serve on a rotating schedule
  - One representative from each of the 2 primary federal agencies closely involved with LPC conservation (USFWS and NRCS)
  - Three representatives from industry organizations (e.g. oil & gas, wind, transmission, etc.)
  - Three representatives from agricultural and landowner organizations (e.g. Cattlemen's Association, Corn Grower's Farm Bureau etc.)
  - Three representatives from conservation organizations (e.g. The Nature Conservancy, North American Grouse Partnership, National Audubon Society, etc.)
  - Three representatives from local government or municipalities

#### *Fee Structure Sub-committee*

- The WAFWA LPC Program Manager will coordinate and facilitate the Fee Structure Sub-committee as an ex officio member.
- An additional 13-15 representatives will compose the Sub-committee
  - One representative from three of the five state fish and wildlife agencies
  - One representative from each of the five LPC states from NRCS
  - One representative from each of the five LPC states from FSA
  - One representative from FWS Regions 2 and 6 from the Partners for Fish and Wildlife Program, if desired

#### *Science Sub-committee*

- The WAFWA LPC Program Manager will coordinate and facilitate the Science Sub-committee as an ex officio member.

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

### COMMITTEE RESPONSIBILITIES

Committees will have the following responsibilities and will make recommendations to the LPCIC for final decisions:

#### *Interstate Working Group*

The Interstate working group will:

- Update and revise the LPC RWP
- Update and revise the CHAT
- Review and update, as necessary, ecoregions, focal areas, and connectivity zones
- Make nominations to the Science Sub-committee
- Annually provide a report to the LPCIC

#### *Advisory Committee*

The Advisory Committee will:

- Review annual reports from Ecoregion Implementation Teams and Technical Service Providers concerning enrollment, monitoring and conservation delivery related to the RWP
- Review overall progress toward meeting conservation goals through the mitigation framework and, as necessary, make recommendations for changes to the mitigation framework
- Review and recommend applications for Technical Service Providers to the LPCIC and review compliance and reporting by Technical Service Providers
- Review non-compliance issues by participants and terminate agreements if necessary
- Review research needs and, if needed, recommend a portion of annual Habitat Conservation Fees as noncash (e.g. in-kind) match for research
- Review reports and evaluate recommendations from the Fee Structure and Science Sub-committee and the Interstate Working Group
- Annually provide a report to the LPCIC

#### *Fee Structure Sub-committee*

The Fee Structure Sub-committee will:

- Annually review and update mitigation costs and landowner enrollments in specific practices
- Annually review adaptive management triggers and evaluated actions related to the fee structure for the mitigation framework

- Annually provide a report to the Advisory Committee

#### *Science Sub-committee*

The Science Sub-committee will:

- Review annual reports related to population estimates and trends, including aerial and ground-based surveys
- Evaluate emerging science related to LPC, including habitat selection, responses to conservation practices, responses to impacts, etc.
- Annually review adaptive management triggers and evaluated actions related to LPC population trends and emerging science
- Review and update research needs for LPC
- Annually provide a report to the Advisory Committee

### COMMITTEE MEETINGS

The committees, working groups and sub-committees will meet, at minimum, annually. Additional meetings of these committees may be scheduled as requested by members of the committees, LPC Program Manager or the LCPIC. The general timeframe for the meetings will be from mid-fall through mid-winter. This allows time for the population survey and vegetation monitoring data to be summarized and available for discussion at the meetings. The order of the meetings will be as follows: 1.) Science Sub-committee; 2.) Fee Structure Sub-committee; 3.) IWG; 4.) Advisory Committee; and 5.) LCPIC.

### REPORTING PERIOD

The reporting period for this annual report is January 1, 2016 through December 31, 2016. Reporting periods have varied during the first two annual reports but the reporting period has been formalized to be the calendar year, starting in 2016.

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

#### *Interstate Working Group*

During the reporting period the interstate working group conducted one conference call.

#### *Advisory Committee*

The Advisory Committee met three times during this reporting period via conference call. During these meetings, the Advisory Committee received updates from WAFWA LPC staff on RWP implementation and progress towards goals as well as species listing updates.

#### *Fee Structure Sub-Committee*

During the reporting year this committee did not meet. There was correspondence from the LPC Program Manager about by-law establishment and updates but no formal meetings.

### *Science Sub-Committee*

The Science Sub-Committee met four times (once in person in Edmund, Oklahoma and three conference calls). The SSC developed by-laws to formalize the process for proposal submittal and action. The Science Sub-Committee by-laws are posted on the LPC webpage ([http://www.wafwa.org/initiatives/grasslands/lesser\\_prairie\\_chicken/](http://www.wafwa.org/initiatives/grasslands/lesser_prairie_chicken/)). A chair and vice-chair were also elected.

### STAFFING

There is flexibility built into the RWP as to the location of personnel associated with this effort. Field personnel will need to be located within the five-state range of the LPC (Kansas, Texas, Oklahoma, Colorado, and New Mexico), but administrative services can occur from remote locations.

- LPC Program Manager. There was turnover in the LPC Program Manager position in 2016. The new LPC Program Manager assumed duties in July, 2016. This person directs operations, supervises staff, is responsible for annual reports to USFWS, and reports to the WAFWA Grassland Coordinator. The LPC Program Manager is responsible for ensuring thorough communication and coordination among affected state, federal, and local agencies for the RWP. This position staffs the various committees and sub-committees as described in the RWP and is responsible for annual monitoring and reporting related to the RWP. To the extent consistent with applicable state law, information in annual reports includes, but not be limited to, the following:
  1. Number of participants enrolled under the WCA over the past year, including copies of the completed WCP, excluding any identifying information related to participants
  2. 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
  3. Effectiveness of habitat management activities implemented in previous years at meeting the intended conservation benefits
  4. Population surveys and studies conducted over the past year with any identifying information related to participants removed
  5. Any mortality or injury of the species that was observed over the previous year
  6. A discussion of the funds used for habitat conservation within the states
- Four Regional Biologists. They are responsible for working with industry and private landowners to enroll and monitor leases, working with landowners to direct conservation funding, and coordinating with local state fish and wildlife, NRCS, and USFWS Partners for Fish and Wildlife Program staff. In addition, WAFWA partnered with Pheasants Forever to provide cost share partner for biologists that will be working in the LPC range delivering conservation. These biologists will have range planning expertise to assist with range management components associated with the RWP.
- A LPC Conservation Delivery Director and Industry Service Director supervise the four biologist positions and are responsible for interacting with participants and potential partners in the RWP.



WCF administrative staff report through the CFO/Treasurer. They consist of:

- Supervisor of Business Operations, who prepares, analyzes, and/or audits financial records and documents, accounting systems, financial statements, work papers, budgets, tax and payroll records, and other related documents.
- One Business Operation technician, who analyzes, researches, and reconciles financial documents, ensure compliance with laws, rules, and policies, and prepares invoices for payment.
- One contract/grant administrator, who maintains records on incoming funds, expenditures for conservation, travel costs, and salary.
- Business Administrative Assistant, who is the main receptionist, assists with general accounting functions and special projects.
- One GIS coordinator, who ensures field staff is producing data in a consistent fashion and maintains a central database of all enrolled leases and conservation efforts, and coordinates with Software Service suppliers. This is contracted to the University of Kansas.

In addition to the staffing structure above, the RWP affords the LPCIC flexibility to contract out work to qualified 3<sup>rd</sup> party, technical service providers and other entities to perform certain elements of the work detailed in this plan.

### RESEARCH PRIORITIES

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

#### Current Research Projects:

Relationship between remotely-sensed vegetation phenology and lesser prairie-chicken population dynamics.

Lesser prairie-chicken ecology in CRP lands in Texas.

Brood survival of lesser prairie chickens in the Sand Shinnery Oak Ecoregion of Texas and New Mexico.

Assessing wildlife use of artificial water sources in west Texas. (Not directly related to LPC, but may provide some info)

The Economic Impact of Lesser Prairie Chicken Protection in Oklahoma which will construct a database of county employment and related economic conditions for the areas in and around designated-LPC habitat in Colorado, Kansas, New Mexico, Oklahoma and Texas, and link this data to county-scale LPC habitat quality data contained in the RWP's Crucial Habitat Assessment Tool (CHAT), model the impact of the LPC listing decision and CHAT habitat levels on employment in the five-state LPC habitat region; break down the total impact at the individual CHAT level, and model the decision of firms in Oklahoma to enroll in the RWP and either proceed with the development project as originally planned or alter the project in response to LPC habitat mitigation conditions. ODWC has received a 1 year grant progress report September 30, 2016.

Impacts of Fragmentation and Heterogeneity on Resource Selection, Survival, and Recruitment of Lesser Prairie-Chickens in Oklahoma which had objectives to evaluate population demography including survival, nest success, and recruitment of LPC, and evaluate seasonal habitat selection of LPC with emphasis on nesting and brood site selection; evaluate weekly, monthly, and seasonal movements and home ranges of adult LPC; evaluate the impacts of energy development and other anthropogenic features on habitat use, movements, and survival of LPC; evaluate the impacts of management actions on habitat use, movements, and survival of LPC; compare vital rates among LPC populations in Oklahoma and Kansas and model future population change based on demographic data; determine the effect of landscape metrics (e.g., patch size, habitat fragmentation, and level of connectivity) on vital rates of LPC; evaluate potential radio-mark handicap between 2 radio transmitter types; and evaluate microclimate (temperature) characteristics, variability across the landscape, and LPC selection at nest, brood, winter, and summer locations. ODWC has received the final grant report but are awaiting the dissertation presentation at the end of the spring 2017 semester.

Lesser prairie-chicken translocation proposal for the Sand Sagebrush Ecoregion: population recovery on the Cimarron and Comanche National Grasslands (FY 2017)

Recently Published Research:

Earl, J. E., S. D. Fuhlendorf, D. Haukos, A. M. Tanner, D. Elmore, and S. A. Carleton. 2016. Characteristics of lesser prairie-chicken (*Tympanuchus pallidicinctus*) long-distance movements across their distribution. *Ecosphere* 7(8): doi:10.1002/(ISSN)2150-8925.

Early, J. E. and S. D. Fuhlendorf. 2016. Relative importance of climate variables to population vital rates: A quantitative synthesis for the lesser prairie-chicken. *PLOS ONE* 11(9): e0163585. doi: 10.1371/journal.pone.0163585.

Fritts, S. R. B. A. Grisham, D. A. Haukos, C. W. Boal, M. Patten, D. H. Wolfe, C. Dixon, R. D. Cox, and W. R. Heck. 2016. Long-term prairie-chicken nest ecology in response to grassland management. *Journal of Wildlife Management* 80: 527-539.

Godar, A. J. Influence of climate change and land use on lesser prairie-chicken (*Tympanuchus pallidicinctus*) population persistence in the sand sagebrush and short-grass prairies. 2016. Lubbock, Texas, USA, Texas Tech University.

Griffin, C. The influence of environmental and landscape variables on lesser prairie-chickens in the Sand Shinnery Oak Prairie Ecoregion of Texas and New Mexico and the Mixed-Grass Prairie Ecoregion of Oklahoma and Kansas. 2016. Lubbock, Texas, USA, Texas Tech University.

Hagen, C.A., Jr. D. C. Pavlacky, K. Adachi, F. E. Hornsby, T. J. Rintz, and L. L. McDonald. 2016. Multiscale occupancy modeling provides insights into range-wide conservation needs of lesser prairie-chicken (*Tympanuchus pallidicinctus*). *Condor* 118: 597-612.

Haukos, D.A. and C. Boal (eds). Ecology and conservation of lesser prairie-chickens. CRC Press, Boca Raton, Florida, USA.

Jarnevich, C.S., R. T. Holcombe, J.T. B. A. Grisham, C. W. Boal, M. J. Butler, J. Pitman, S. C. Kyle, D. Klute, G. M. Beauprez, A. Janus, and W. E. VanPelt. 2016. Assessing range-wide habitat suitability of the lesser prairie-chicken. *Avian Conservation and Ecology* 11: Article 2.

Kraft, J. D. Vegetation characteristics and lesser prairie chicken responses to land cover types and grazing management in western Kansas. 2016. Manhattan, Kansas, USA, Kansas State University.

Lipp, T. W. Geospatial analysis of how oil and gas energy development influences lesser prairie-chicken spatial ecology in Kansas. 2016. Bowling Green, Ohio, USA, Bowling Green State University.

Lusk, D. Non-breeding season ecology of lesser prairie-chickens (*Tympanuchus pallidicinctus*) assessing survival and resource selection within southeastern New Mexico. 2016. Las Cruces, New Mexico, USA, New Mexico State University.

Oyler-McCance, S.J., R. W. DeYoung, J. A. Fike, C. A. Hagen, J. A. Johnson, L. C. Larsson, and M. A. Patten. 2016. Rangewide genetic analysis of lesser prairie-chicken reveals population structure, range expansion, and possible introgression. *Conservation Genetics* DOI: 10.1007/s10592-016-0812-y.

Robinson, S.G., D. A. Haukos, R. T. Plumb, C. A. Hagen, J. C. Pitman, J. M. Lautenbach, D. S. Sullins, J. D. Kraft, and J. D. Lautenbach. 2016. Lesser prairie-chicken fence collision risk across its northern distribution. *Journal of Wildlife Management* 80: 906-915.

Ross, B.E., D. A. Haukos, C. A. Hagen, and J. C. Pitman. 2016. Landscape composition creates a threshold influencing lesser prairie-chicken population resilience to extreme drought. *Global Ecology and Conservation* 6: 179-188.

Ross, B.E., D. Haukos, C. Hagen, and J. Pitman. 2016. The relative contribution of variation in climate to changes in lesser prairie-chicken abundance. *Ecosphere* 7(6):e01323.

Robinson, S. G., D. A. Haukos, D. S. Sullins, R. T. Plumb. 2016. Use of free-water by nesting lesser prairie-chickens. *Southwestern Naturalist* 61: 187-193.

Sadoti, G., T. P. Albright, and K. Johnson. 2016. Applying dynamic species distribution modelling to lek-mating species. *Journal of Biogeography* doi: 10.1111/jbi.12886: 1-13.

Spencer, D, D. Haukos, C. Hagen, M. Daniels, and D. Goodin. 2016. Conservation reserve program mitigates grassland loss in the lesser prairie-chicken range of Kansas. *Global Ecology and Conservation* 9: 21-38.

Strong, C. Investigating lesser prairie-chicken (*Tympanuchus pallidicinctus*) breeding season survival, habitat use, and space use to understand patterns of declining lek attendance. 2016. Las Cruces, New Mexico, USA, New Mexico State University.

Zavaleta, J. C., D. A. Haukos, B. Grisham, C. Boal, and C. Dixon. 2016. Restoring sand shinnery oak prairies with herbicide and grazing in New Mexico. *Southwestern Naturalist* 61: 225-232.

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McDonald, L., K. Adachi, T. Rintz, G. Gardner, and F. Hornsby. 2014. Range-wide population size of the lesser prairie-chicken: 2012, 2013, and 2014. Technical report prepared for the Western Association of Fish & Wildlife Agencies. Laramie, Wyoming, USA.

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Technical white paper.

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**APPENDIX A. PUBLIC LAND AND CONSERVATION PROGRAM ACREAGE WITHIN EACH LPC CHAT 1 (FOCAL AREA) REPORTING UNIT, 2016.**

Ecoregion – reporting unit	Total Area	WAFWA Term Contracts	WAFWA Permanent Conservation Agreements	WAFWA Non-Offset Agreements	Conservation Reserve Program	NRCS Lesser prairie-chicken initiative <sup>a</sup>	USFWS Partners for Fish & Wildlife	State Wildlife Agency Private Land Programs <sup>b</sup>	New Mexico Ranching CCA	New Mexico Ranching CCAA	Texas Ranching CCAA	Oklahoma Ranching CCAA	Potential Stronghold Acres <sup>c</sup>	Other Public and Conservation Properties <sup>d</sup>	Total Public & Conservation Acreage <sup>e</sup>
<b>Shinnery Oak</b>															
1	69,760	13,435	1,058	0	1,591	6,377	0	0	ND	ND	43,055	NA	15,936	0	68,017
2A	96,000	0	0	0	19,042	10,653	630	0	ND	ND	26,666	NA	1,880	1,880	58,871
2B	95,360	316	0	0	5,971	4,585	0	0	ND	ND	0	NA	11,484	11,816	33,856
2C	106,880	0	0	0	38	15,710	0	0	ND	ND	0	NA	26,897	19,898	62,543
2D	100,480	0	0	0	1,342	17,707	0	0	ND	ND	0	NA	63,943	1,699	84,691
2E	123,521	0	0	0	0	0	0	0	ND	ND	0	NA	99,068	90	99,158
2F	74,240	0	0	0	0	0	0	0	ND	ND	0	NA	74,238	0	74,238
3	48,000	0	0	0	0	2,898	0	0	ND	ND	0	NA	45,170	103	48,171
4	122,241	310	0	0	50,293	0	0	0	ND	ND	1,323	NA	0	6,475	58,091
5	72,320	0	0	0	0	551	0	0	ND	ND	0	NA	0	12,596	13,147
6	25,600	0	0	0	245	0	0	0	ND	ND	0	NA	0	1,565	1,810
7	26,880	0	0	0	5,182	0	0	0	ND	ND	0	NA	0	1,889	7,071
8	55,680	0	0	0	13,034	1,534	0	0	ND	ND	0	NA	0	2,039	16,607
9	29,440	0	0	0	12,567	0	0	0	ND	ND	3,883	NA	0	0	16,450
Total	1,046,405	14,061	1,058	0	109,303	60,015	630	0	ND	ND	48,262	NA	353,402	60,052	574,405 <sup>f</sup>
<b>Mixed Grass</b>															
10	160,001	26,247	0	0	451	527	1,482	0	NA	NA	45,739	0	0	0	48,199
11	104,960	0	0	0	1,396	1,139	0	0	NA	NA	9,153	0	0	0	11,688
12	92,440	0	0	0	1,720	14,235	0	0	NA	NA	46,612	0	0	6,485	69,052
13A	64,000	0	0	0	2,744	0	0	0	NA	NA	208	999	0	6,680	10,631
13B	100,480	0	0	0	366	0	0	0	NA	NA	65,643	0	0	2,376	68,385
13C	102,400	0	0	0	1,205	938	0	0	NA	NA	53,554	0	0	3	55,700
13D	129,921	0	0	0	5,411	951	0	0	NA	NA	64,704	0	0	0	71,066
14	5,760	0	0	0	1,456	0	0	0	NA	NA	0	0	0	793	2,249
15	13,920	0	0	0	2,050	0	0	0	NA	NA	0	0	0	1,541	3,591
16A	96,000	0	0	0	8,280	0	0	0	NA	NA	232	7,376	0	4,053	19,931
16B	64,640	0	0	0	6,784	451	0	0	NA	NA	39	12,350	0	510	20,134
16C	100,480	0	0	0	7,774	0	0	0	NA	NA	2,722	0	0	0	10,496
17	33,280	0	0	0	823	0	0	0	NA	NA	0	240	0	277	1,340
18	34,560	0	0	0	2,167	0	0	0	NA	NA	0	458	0	619	3,244
19	26,240	0	0	0	836	0	0	0	NA	NA	12,279	0	563	13,678	
20	32,640	0	0	0	542	1,777	0	0	NA	NA	136	0	1,380	0	3,899
21	56,320	2,048	0	0	1,789	1,580	0	0	NA	NA	11,309	3,008	4,013	21,699	
22	73,600	0	0	0	6,799	0	0	0	NA	NA	1,292	25,440	1,411	34,942	
23	51,200	0	0	0	1,695	7,789	0	0	NA	NA	0	23,499	0	170	33,153
24	104,960	1,217	0	0	5,305	0	0	0	NA	NA	0	803	0	1,222	7,330
27	74,880	0	0	0	4,308	147	0	0	NA	NA	0	0	0	0	4,455
28A	70,400	0	0	0	7,770	0	0	0	NA	NA	0	3,009	0	4,864	15,643
28B	103,040	0	0	0	8,909	1,686	0	0	NA	NA	136	0	0	17,775	28,506
28C	104,320	0	0	0	3,352	5,605	0	0	NA	NA	0	0	0	1,733	10,690
28D	120,961	0	0	0	10,749	1,648	0	0	NA	NA	0	0	0	94	12,491
29A	97,920	0	0	0	8,709	0	0	0	NA	NA	0	0	3,470	-3,470	8,709
29B	129,281	13,455	0	1,071	243	127	3,383	0	NA	NA	0	0	17,775	0	36,054
29C	96,000	376	0	0	2,745	4,106	0	0	NA	NA	0	0	0	0	6,894
29D	87,680	0	0	0	2,666	1,293	0	0	NA	NA	24,201	0	4,910	33,090	
30	60,800	0	0	0	6,247	0	0	65	NA	NA	0	0	0	6,312	
33A	92,800	0	1,670	0	3,280	0	0	0	NA	NA	0	0	0	0	4,950
33B	85,120	0	0	0	5,889	0	0	0	NA	NA	0	0	0	5,466	11,355
Total	2,576,012	43,343	1,670	1,071	124,481	43,999	4,865	65	NA	NA	241,986	145,943	49,693	46,293	691,336
<b>Sand Sagebrush</b>															
25	25,600	0	0	0	429	0	0	0	NA	NA	NA	NA	0	989	1,418
26	20,480	0	0	0	3,370	0	0	0	NA	NA	NA	NA	0	0	3,370
31A	111,361	0	0	0	7,954	0	0	0	NA	NA	NA	NA	0	2,584	10,538
31B	141,441	0	0	0	16,849	0	0	0	NA	NA	NA	NA	0	0	16,849
31C	96,640	0	0	0	12,812	0	0	0	NA	NA	NA	NA	0	0	12,812
31D	110,721	0	0	0	17,187	0	0	0	NA	NA	NA	NA	5,284	4,634	27,105
31E	97,920	0	0	0	4,672	0	0	0	NA	NA	NA	NA	0	1,621	6,293
32	46,720	0	0	0	10,693	0	0	0	NA	NA	188	28,209	0	39,090	
35A	51,200	0	0	0	16,591	0	0	0	NA	NA	NA	NA	0	0	16,591
35B	107,520	0	0	0	11,840	0	0	0	NA	NA	NA	NA	0	2,800	14,640
35C	78,080	0	0	0	25,128	0	0	0	NA	NA	NA	NA	0	2,197	27,325
35D	165,761	8,515	0	0	4,064	409	0	0	NA	NA	NA	NA	0	12,739	17,212
35E	115,841	4,167	0	0	10,538	0	0	50	NA	NA	NA	NA	28,412	48,032	
35F	108,160	0	0	0	1,178	0	0	0	NA	NA	NA	NA	0	989	2,167
36	45,440	0	0	0	3,065	0	0	0	NA	NA	NA	NA	0	3,065	
38	101,120	0	0	0	5,605	0	0	0	NA	NA	NA	NA	0	2,584	8,189
40	159,361	0	0	0	2,913	9,349	0	0	NA	NA	NA	NA	0	0	12,262
Total	1,583,367	12,682	0	0	154,889	9,758	0	3,939	NA	NA	NA	NA	33,884	195,977	411,130
<b>Shortgrass</b>															
34	86,400	0	0	0	8,741	103	0	332	NA	NA	NA	NA	0	117	9,293
37A	129,921	0	0	0	18,131	52	0	0	NA	NA	NA	NA	0	0	18,183
37B	82,560	0	0	0	10,700	154	0	0	NA	NA	NA	NA	0	0	10,854
37C	112,001	0	0	0	15,989	0	0	0	NA	NA	NA	NA	0	858	16,847
37D	100,480	0	0	0	10,845	0	0	0	NA	NA	NA	NA	0	549	11,394
37E	126,721	0	0	0	28,056	0	0	5	NA	NA	NA	NA	0	28,061	
37F	129,281	0	0	0	12,075	0	0	0	NA	NA	NA	NA	0	12,075	
39A	101,120	0	0	0	2,633	869	0	0	NA	NA	NA	NA	0	0	3,502
39B	139,521	0	0	0	8,561	697	0	0	NA	NA	NA	NA	0	1,006	10,264
39C	121,601	0	0	0	8,753	0	0	0	NA	NA	NA	NA	0	2,920	11,673
41A	96,640	0	0	0	4,790	0	0	0	NA	NA	NA	NA	0	0	4,790
41B	149,761	0	0	0	7,560	700	0	0	NA	NA	NA	NA	8,901	7,798	24,959
41C	127,361	4,281	0	0	8,954	5,507	0	0	NA	NA	NA	NA	3,242	0	17,703
41D	86,400	0	0	0	8,639	0	0	0	NA	NA	NA	NA	5,797	0	14,436
42	62,720	0	0	0	2,841	0	0	0	NA	NA	NA	NA	0	455	3,296
43A	84,480	1,109	0	0	9,153	0	0	0	NA	NA	NA	NA	0	1,480	10,633
43B	62,720	0	0	0	2,151	0	0	0	NA	NA	NA	NA	0	0	2,151
44	72,														

& Wildlife Service, U.S. Bureau of Land Management, U.S. Forest Service, Privately Owned Parks, U.S. National Park Service, Agricultural Research Service, U.S. Bureau of Reclamation, and City or County Government. The acreages also include privately owned sites contained within conservation easements.

<sup>e</sup> The total does not equal the sum of the CHAT-specific acreages because some data were not reported at the finer scale. The total is also an underrepresentation because the 1,946,908 acres enrolled in the New Mexico CCA/CCAA were not reported to WAFWA at this scale.

<sup>f</sup> There were an additional 36,374 acres reported for Texas and Oklahoma but not attributed to a specific CHAT category or reporting unit.

<sup>g</sup> Some of the acreages overlap the same areas and no data were available for the EQIP or the New Mexico Ranching CCA/CCAA at this scale.

**APPENDIX B. PUBLIC LAND AND CONSERVATION PROGRAM ACREAGE WITHIN EACH LPC CHAT 2 (CONNECTIVITY ZONE) REPORTING UNIT, 2016.**

Ecoregion – reporting unit	Total Area	WAFWA Term Contracts	WAFWA Permanent Conservation Agreements	WAFWA Non-Offset Agreements	Conservation Reserve Program	NRCS Lesser prairie-chicken initiative <sup>a</sup>	USFWS Partners for Fish & Wildlife	State Wildlife Agency Private Land Programs <sup>b</sup>	New Mexico Ranching CCA	New Mexico Ranching CCAA	Texas Ranching CCAA	Oklahoma Ranching CCAA	Potential Stronghold Acres <sup>c</sup>	Other Public and Conservation Properties <sup>d</sup>	Total Public & Conservation Acreage <sup>e</sup>
<b>Shimery Oak</b>															
100	148,481	0	391	0	15,225	0	0	ND	ND	ND	1,440	NA	0	26,183	43,239
101	20,480	0	0	0	0	0	0	ND	ND	ND	0	NA	0	8,152	8,152
102	64,000	0	0	0	18,239	1,146	0	ND	ND	ND	2,371	NA	0	840	22,596
103	33,280	0	0	0	10,172	0	0	ND	ND	ND	2,857	NA	0	0	13,029
104	599,043	0	0	0	74,801	7,862	0	ND	ND	ND	10,761	NA	0	56,681	150,105
105	27,520	0	0	0	13,328	0	0	ND	ND	ND	4	NA	0	0	13,332
Total	892,804	0	391	0	131,763	9,008	0	ND	ND	ND	17,433	NA	0	91,836	250,433 <sup>f</sup>
<b>Mixed Grass</b>															
106	49,920	538	0	0	0	0	0	ND	NA	NA	9,770	0	0	0	10,308
107	112,641	0	0	0	2,592	0	0	ND	NA	NA	1,287	0	0	0	3,879
108	42,240	0	0	0	1,374	81	0	ND	NA	NA	0	3,571	0	405	5,431
109	119,681	0	0	0	6,836	3,356	0	ND	NA	NA	10,013	4,984	0	809	25,998
110	72,320	0	0	0	3,527	11	0	ND	NA	NA	11,986	0	0	0	15,524
111	99,840	0	0	0	8,152	137	0	ND	NA	NA	0	17,734	0	2,916	28,939
112	13,440	0	0	0	1,003	0	0	ND	NA	NA	0	477	0	0	1,480
113	19,840	0	0	0	957	0	0	ND	NA	NA	0	0	0	40	997
114	37,760	0	0	0	715	0	0	ND	NA	NA	0	0	0	2,101	2,816
115	12,160	0	0	0	734	0	0	ND	NA	NA	0	544	0	526	1,804
116	12,800	0	0	0	511	0	0	ND	NA	NA	0	0	0	225	736
117	22,400	0	0	0	2,229	0	0	ND	NA	NA	0	242	0	2,104	4,575
118	29,440	0	0	0	2,808	0	0	ND	NA	NA	0	0	0	2,121	4,929
119	12,800	0	0	0	0	1,076	0	ND	NA	NA	0	8,017	0	531	9,624
120	18,560	0	0	0	484	0	0	ND	NA	NA	0	2,780	71	1,062	3,897
121	55,680	0	0	0	4,517	92	0	ND	NA	NA	0	2,171	0	1,710	8,490
122	14,720	0	0	0	2,780	0	0	ND	NA	NA	0	0	0	1,967	4,747
123	99,200	0	0	0	7,986	453	0	ND	NA	NA	0	596	0	492	9,527
126	69,120	0	0	0	1,884	0	0	ND	NA	NA	0	0	0	0	1,884
128	30,080	0	0	0	3,587	160	0	ND	NA	NA	0	0	0	0	3,747
130	34,560	0	0	0	2,421	0	0	ND	NA	NA	0	0	0	0	2,421
132	35,200	0	0	0	4,399	0	0	ND	NA	NA	0	0	0	0	4,399
133	64,640	0	0	0	1,212	0	0	ND	NA	NA	0	0	0	1,269	2,481
134	37,120	0	0	0	4,756	0	0	ND	NA	NA	0	0	0	0	4,756
Total	1,116,165	538	0	0	65,464	5,366	0	ND	NA	NA	33,055	40,616	0	18,279	163,318
<b>Sand Sagebrush</b>															
124	5,120	0	0	0	0	0	0	ND	NA	NA	0	NA	0	456	456
125	3,200	0	0	0	0	0	0	ND	NA	NA	0	NA	0	113	113
127	1,920	0	0	0	0	0	0	ND	NA	NA	0	NA	0	552	552
129	14,720	0	0	0	1,943	0	0	ND	NA	NA	0	NA	0	6,728	8,671
131	23,680	0	0	0	5,010	0	0	ND	NA	NA	0	NA	0	206	5,216
135	29,440	0	0	0	2,695	0	0	ND	NA	NA	0	NA	0	0	2,695
136	53,120	0	0	0	6,096	0	0	ND	NA	NA	0	NA	0	0	6,096
138	14,080	0	0	0	88	0	0	ND	NA	NA	0	NA	0	1,219	1,317
139	15,360	0	0	0	276	0	0	ND	NA	NA	0	NA	0	642	918
140	23,040	0	0	0	620	0	0	ND	NA	NA	0	NA	0	639	1,259
142	61,440	0	0	0	3,176	0	0	ND	NA	NA	0	NA	0	3,125	6,301
Total	245,121	0	0	0	19,915	0	0	ND	NA	NA	0	NA	0	13,679	33,594
<b>Shortgrass</b>															
137	32,640	0	0	0	2,373	0	0	ND	NA	NA	0	NA	0	0	2,373
141	52,480	0	0	0	6,153	0	0	ND	NA	NA	0	NA	0	0	6,153
143	26,240	0	0	0	317	0	0	ND	NA	NA	0	NA	0	0	317
144	46,720	4,024	0	0	1,557	0	0	ND	NA	NA	0	NA	0	0	5,581
145	25,600	0	0	0	908	0	0	80	NA	NA	0	NA	0	0	988
Total	183,681	4,024	0	0	11,308	0	0	80	NA	NA	0	NA	0	0	15,412
<b>Grand Total</b>	<b>2,437,771</b>	<b>4,562</b>	<b>391</b>	<b>0</b>	<b>228,450</b>	<b>14,375</b>	<b>0</b>	<b>80<sup>g</sup></b>	<b>ND</b>	<b>ND</b>	<b>50,489</b>	<b>40,616</b>	<b>71</b>	<b>123,794</b>	<b>462,757<sup>h</sup></b>

ND = no data provided; NA = not applicable

<sup>a</sup> These figures represent the acres of prescribed grazing (528) that were implemented in 2015. This practice is a core conservation practice that is supposed to occur on every contracted acre. The acreage figures do not include anything enrolled in the Environmental Quality Incentive Program (EQIP) which also provides benefit to LPC on thousands of acres.

<sup>b</sup> The acreages were summed across numerous conservation practices which could have overlapped on some of the same acreage.

<sup>c</sup> Includes acreages from properties identified as potential strongholds in the RWP (Van Pelt et al. 2013) and properties contained with USFWS conservation banking agreements. These figures do not include the acres that have been permanently conserved through the WAFWA program.

<sup>d</sup> This category includes other protected or publicly owned properties not identified as potential strongholds in the range-wide plan. These acreages are owned by U.S. Department of Defense, Non-Government Organizations, State Land Boards, State Parks, Recreation, and Wildlife Agencies, U.S. Fish & Wildlife Service, U.S. Bureau of Land Management, U.S. Forest Service, Privately Owned Parks, U.S. National Park Service, Agricultural Research Service, U.S. Bureau of Reclamation, and City or County Government. The acreages also include privately owned sites contained within conservation easements.

<sup>e</sup> The total does not equal the sum of the CHAT-specific acreages because some data were not reported at the finer scale. The total is also an underrepresentation because the 1,946,908 acres enrolled in the New Mexico CCA/CCAA were not reported to WAFWA at this scale.

<sup>f</sup> There were an additional 36,374 acres reported for Texas and Oklahoma but not attributed to a specific CHAT category or reporting unit.

<sup>g</sup> Some of the acreages overlap the same areas and no data were available for the EQIP or the New Mexico Ranching CCA/CCAA at this scale.



**APPENDIX C. ANNUAL CROPLAND RESTORATION AND REMEDIATION  
ACREAGE ACCOMPLISHMENTS AND LONG-TERM GOALS WITHIN EACH LPC  
CHAT 1 (FOCAL AREA) REPORTING UNIT, 2016.**

Ecoregion-reporting unit	Total Area	WAFWA Cropland Restoration	FSA Cropland Restoration	NRCS Cropland Restoration <sup>a</sup>	USFWS Cropland Restoration	State Wildlife Agency Cropland Restoration	Total Annual Cropland Restoration	Annual Cropland Restoration Goal	Total Annual Impact Remediation <sup>b</sup>	Annual Impact Remediation Goal
<b>Shinnery Oak</b>										
1	69,760	0	ND	ND	0	0	0	0	696	0
2A	96,000	0	ND	ND	0	0	0	97	-86	0
2B	95,360	0	ND	ND	0	0	0	0	-21	0
2C	106,880	0	ND	ND	0	0	0	0	235	0
2D	100,480	0	ND	ND	0	0	0	0	1,796	0
2E	123,521	0	ND	ND	0	0	0	0	7,269	0
2F	74,240	0	ND	ND	0	0	0	0	114	0
3	48,000	0	ND	ND	0	0	0	0	122	0
4	122,241	310	ND	ND	0	0	310	2,639	-11	0
5	72,320	0	ND	ND	0	0	0	0	-70	0
6	25,600	0	ND	ND	0	0	0	4	217	0
7	26,880	0	ND	ND	0	0	0	216	-32	0
8	55,680	0	ND	ND	0	0	0	589	-256	0
9	29,440	0	ND	ND	0	0	0	0	-90	0
Total	1,046,405	310	ND	ND	0	0	310	3,545	9,883	0
<b>Mixed Grass</b>										
10	160,001	0	ND	ND	0	0	0	703	665	382
11	104,960	0	ND	ND	0	0	0	0	1,413	0
12	93,440	0	ND	ND	0	0	0	0	176	0
13A	64,000	0	ND	ND	0	0	0	282	233	0
13B	100,480	0	ND	ND	0	0	0	0	154	0
13C	102,400	0	ND	ND	0	0	0	0	-167	0
13D	129,921	0	ND	ND	0	0	0	0	116	0
14	5,760	0	ND	ND	0	0	0	69	-2	58
15	17,920	0	ND	ND	0	0	0	287	-14	0
16A	96,000	0	ND	ND	0	0	0	482	332.9	0
16B	64,640	0	ND	ND	0	0	0	228	333.2	0
16C	100,480	0	ND	ND	0	0	0	1,343	260.1	8
17	33,280	0	ND	ND	0	0	0	0	1,911	0
18	34,560	0	ND	ND	0	0	0	0	155	0
19	26,240	0	ND	ND	0	0	0	0	60	0
20	32,640	0	ND	ND	0	0	0	0	23	0
21	56,320	0	ND	ND	0	0	0	0	760	0
22	73,600	0	ND	ND	0	0	0	0	-415	0
23	51,200	0	ND	ND	0	0	0	0	186	0
24	104,960	0	ND	ND	0	0	0	0	247	0
27	74,880	0	ND	ND	0	0	0	0	75	0
28A	70,400	0	ND	ND	0	0	0	1,219	453	0
28B	103,040	0	ND	ND	0	0	0	0	115	0
28C	104,320	0	ND	ND	0	0	0	0	-1,783	0
28D	120,961	0	ND	ND	0	0	0	0	721	0
29A	97,920	0	ND	ND	0	0	0	0	949	0
29B	129,281	0	ND	ND	0	0	0	0	1,341	0
29C	96,000	0	ND	ND	0	0	0	0	370	0
29D	87,680	0	ND	ND	0	0	0	0	50	0
30	60,800	0	ND	ND	0	0	0	2,341	-264	0
33A	92,800	0	ND	ND	0	0	0	472	325	0
33B	85,120	0	ND	ND	0	0	0	1,403	894	0
Total	2,576,012	0	ND	ND	0	0	0	8,830	9,889	447
<b>Sand Sagebrush</b>										
25	25,600	0	ND	ND	0	0	0	0	-82	0
26	20,480	0	ND	ND	0	0	0	326	0	0
31A	111,361	0	ND	ND	0	0	0	0	-116	0
31B	141,441	0	ND	ND	0	0	0	1,757	574	0
31C	96,640	0	ND	ND	0	0	0	3,245	887	478
31D	110,721	0	ND	ND	0	0	0	2,941	2,063	558
31E	97,920	0	ND	ND	0	0	0	2,576	1,314	160
32	46,720	0	ND	ND	0	0	0	3,209	-57	0
35A	51,200	0	ND	ND	0	0	0	147	1,907	0
35B	107,520	0	ND	ND	0	0	0	2,321	4,127	0
35C	78,080	0	ND	ND	0	0	0	2,456	-38	0
35D	165,761	0	ND	ND	0	0	0	0	823	0
35E	115,841	0	ND	ND	0	50	50	5,758	2,705	280
35F	108,160	0	ND	ND	0	0	0	4,619	2,244	279
36	45,440	0	ND	ND	0	0	0	0	-87	0
38	101,120	0	ND	ND	0	0	0	0	-278	0
40	159,361	0	ND	ND	0	0	0	0	-30	0
Total	1,583,367	0	ND	ND	0	2,319 <sup>a</sup>	2,319 <sup>a</sup>	43,617	15,955	2,202
<b>Shortgrass</b>										
34	86,400	0	ND	ND	0	0	0	1,734	1,326	0
37A	129,921	0	ND	ND	0	0	0	3,278	937	0
37B	82,560	0	ND	ND	0	0	0	827	-25	0
37C	112,001	0	ND	ND	0	0	0	1,325	0	0
37D	100,480	0	ND	ND	0	0	0	4,756	0	0
37E	126,721	0	ND	ND	0	0	0	3,409	69	0
37F	129,281	0	ND	ND	0	0	0	1,990	779	0
39A	101,120	0	ND	ND	0	0	0	2,518	105	0
39B	139,521	0	ND	ND	0	0	0	3,944	-1,238	0
39C	121,601	0	ND	ND	0	0	0	2,111	203	0
41A	96,640	0	ND	ND	0	0	0	511	0	0
41B	149,761	0	ND	ND	0	0	0	1,432	-690	0
41C	127,361	242	ND	ND	0	0	242	739	-99	0

41D	86,400	0	ND	ND	0	0	0	677	189	0
42	62,720	0	ND	ND	0	0	0	1,571	29	0
43A	84,480	0	ND	ND	0	0	0	0	56	0
43B	62,720	0	ND	ND	0	0	0	0	0	0
44	72,320	0	ND	ND	0	0	0	1,201	251	0
<b>Total</b>	<b>1,872,009</b>	<b>242</b>	<b>ND</b>	<b>ND</b>	<b>0</b>	<b>0</b>	<b>242</b>	<b>32,022</b>	<b>1,890</b>	<b>0</b>
<b>Grand Total</b>	<b>7,077,792</b>	<b>552</b>	<b>ND</b>	<b>ND</b>	<b>0</b>	<b>2,319<sup>a</sup></b>	<b>2,871<sup>d</sup></b>	<b>88,014</b>	<b>37,618</b>	<b>2,649</b>

ND = no data provided; NA = not available

<sup>a</sup> Summarizes acres of the range planting practice (550) applied through the Lesser Prairie-Chicken Initiative. The acreage figures do not include any range planting applied through the Environmental Quality Incentives Program (EQIP).

<sup>b</sup> These figures are the estimated annual change in impact acres estimated by WAFWA using numerous spatial layers. The methods are further explain in the text along with some known issues that affect the accuracy of these estimates.

<sup>c</sup> The total does not equal the sum of the unit-specific acreages because some data were not reported at the finer scale.

<sup>d</sup> The total is an underrepresentation of the annual range planting that occurred. Most of the cropland that is converted to grass is accomplished through the CRP and those data were not provided by FSA.

**APPENDIX D. ANNUAL CROPLAND RESTORATION AND REMEDIATION  
ACREAGE ACCOMPLISHMENTS AND LONG-TERM GOALS WITHIN EACH LPC  
CHAT 2 (CONNECTIVITY ZONE) REPORTING UNIT, 2016.**

Ecoregion – reporting unit	Total Area	WAFWA Cropland Restoration	FSA Cropland Restoration	NRCS Cropland Restoration <sup>a</sup>	USFWS Cropland Restoration	State Wildlife Agency Cropland Restoration	Total Annual Cropland Restoration	Annual Cropland Restoration Goal	Total Annual Impact Remediation	Annual Impact Remediation Goal
<b>Shinnery Oak</b>										
100	148,481	0	ND	ND	0	0	0	0	-8	0
101	20,480	0	ND	ND	0	0	0	0	176	0
102	64,000	0	ND	ND	0	0	0	74	-1	0
103	33,280	0	ND	ND	0	0	0	205	-0.5	0
104	599,043	0	ND	ND	0	0	0	0	-2,455	0
105	27,520	0	ND	ND	0	0	0	0	-32	0
<b>Total</b>	<b>892,804</b>	<b>0</b>	<b>ND</b>	<b>ND</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>279</b>	<b>-2,319</b>	<b>0</b>
<b>Mixed Grass</b>										
106	49,920	0	ND	ND	0	0	0	135	27	133
107	112,641	0	ND	ND	0	0	0	0	367	0
108	42,240	0	ND	ND	0	0	0	0	103	0
109	119,681	0	ND	ND	0	0	0	0	-851	0
110	72,320	0	ND	ND	0	0	0	0	564	0
111	99,840	0	ND	ND	0	0	0	0	-2,882	0
112	13,440	0	ND	ND	0	0	0	0	109	0
113	19,840	0	ND	ND	0	0	0	0	54	0
114	37,780	0	ND	ND	0	0	0	0	299	0
115	12,160	0	ND	ND	0	0	0	0	1,366	0
116	12,800	0	ND	ND	0	0	0	0	85	0
117	22,400	0	ND	ND	0	0	0	0	265	0
118	29,440	0	ND	ND	0	0	0	0	336	0
119	12,800	0	ND	ND	0	0	0	0	27	0
120	18,560	0	ND	ND	0	0	0	0	153	0
121	55,680	0	ND	ND	0	0	0	0	448	0
122	14,720	0	ND	ND	0	0	0	0	112	0
123	99,200	0	ND	ND	0	0	0	0	302	0
126	69,120	0	ND	ND	0	0	0	0	141	0
128	30,080	0	ND	ND	0	0	0	0	25	0
130	34,560	0	ND	ND	0	0	0	0	111	0
132	35,200	0	ND	ND	0	0	0	62	187	0
133	64,640	0	ND	ND	0	0	0	0	-858	0
134	37,120	0	ND	ND	0	0	0	709	98	0
<b>Total</b>	<b>1,116,165</b>	<b>0</b>	<b>ND</b>	<b>ND</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>906</b>	<b>587</b>	<b>133</b>
<b>Sand Sagebrush</b>										
124	5,120	0	ND	ND	0	0	0	25	-4	0
125	3,200	0	ND	ND	0	0	0	0	0	0
127	1,920	0	ND	ND	0	0	0	0	-28	0
129	14,720	0	ND	ND	0	0	0	0	-165	0
131	23,680	0	ND	ND	0	0	0	120	0	0
135	29,440	0	ND	ND	0	0	0	1,071	1,511	0
136	53,120	0	ND	ND	0	0	0	1,775	0	0
138	14,080	0	ND	ND	0	0	0	0	1,071	0
139	15,360	0	ND	ND	0	0	0	0	161	0
140	23,040	0	ND	ND	0	0	0	0	-83	0
142	61,440	0	ND	ND	0	0	0	0	0	0
<b>Total</b>	<b>245,121</b>	<b>0</b>	<b>ND</b>	<b>ND</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>2,991</b>	<b>2,463</b>	<b>0</b>
<b>Shortgrass</b>										
137	32,640	0	ND	ND	0	0	0	614	68	0
141	52,480	0	ND	ND	0	0	0	0	-31	0
143	26,240	0	ND	ND	0	0	0	495	61	0
144	46,720	0	ND	ND	0	0	0	0	-14	0
145	25,600	0	ND	ND	0	0	0	393	-49	0
<b>Total</b>	<b>183,681</b>	<b>0</b>	<b>ND</b>	<b>ND</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>1,502</b>	<b>36</b>	<b>0</b>
<b>Grand Total</b>	<b>2,437,771</b>	<b>0</b>	<b>ND</b>	<b>ND</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>5,678</b>	<b>766</b>	<b>133</b>

ND = no data provided; NA = not available

<sup>a</sup> Summarizes acres of the range planting practice (550) applied through the Lesser Prairie-Chicken Initiative. The acreage figures do not include any range planting applied through the Environmental Quality Incentives Program (EQIP).

<sup>b</sup> These figures are the estimated annual change in impact acres estimated by WAFWA using numerous spatial layers. The methods are further explain in the text along with some known issues that affect the accuracy of these estimates.

<sup>c</sup> The total is an underrepresentation of the range planting that occurred. Most of the cropland that is converted to grass is accomplished through the CRP and those data were not provided by FSA.

**APPENDIX E. FOCAL AREA REPORTING UNITS SORTED BY PERCENT IMPACT AS OF JAN. 1, 2016.**

<b>FACZ</b>	<b>Unit Acres</b>	<b>FACZ Class</b>	<b>Ecoregions</b>	<b>2015 %</b>	<b>2016 %</b>	<b>2017 %</b>
14	5760.03	Focal Area	Mixed grass Prairie	39.45%	39.08%	39.12%
31C	96640.44	Focal Area	Sand Sagebrush Prairie	34.65%	34.18%	33.27%
35F	108160.50	Focal Area	Sand Sagebrush Prairie	32.00%	34.36%	32.28%
11	104960.48	Focal Area	Mixed grass Prairie	30.71%	33.38%	32.03%
31D	110720.51	Focal Area	Sand Sagebrush Prairie	33.51%	33.21%	31.34%
35E	115840.53	Focal Area	Sand Sagebrush Prairie	31.78%	32.02%	29.68%
31E	97920.45	Focal Area	Sand Sagebrush Prairie	30.74%	30.74%	29.40%
10	160000.73	Focal Area	Mixed grass Prairie	29.24%	29.02%	28.61%
15	17920.08	Focal Area	Mixed grass Prairie	28.84%	28.01%	28.09%
13A	64000.29	Focal Area	Mixed grass Prairie	27.73%	28.32%	27.96%
13D	129920.60	Focal Area	Mixed grass Prairie	24.10%	25.20%	25.11%
4	122240.56	Focal Area	Shinnery Oak Prairie	24.79%	24.76%	24.77%
18	34560.16	Focal Area	Mixed grass Prairie	25.50%	25.00%	24.55%
13C	102400.47	Focal Area	Mixed grass Prairie	23.27%	23.77%	23.94%
30	60800.28	Focal Area	Mixed grass Prairie	23.19%	23.19%	23.62%
8	55680.26	Focal Area	Shinnery Oak Prairie	22.98%	22.96%	23.42%
31B	141440.65	Focal Area	Sand Sagebrush Prairie	22.83%	22.66%	22.25%
16C	100480.46	Focal Area	Mixed grass Prairie	22.40%	22.32%	22.06%
16A	96000.44	Focal Area	Mixed grass Prairie	21.51%	21.28%	20.93%
7	26880.12	Focal Area	Shinnery Oak Prairie	20.54%	20.34%	20.46%
16B	64640.30	Focal Area	Mixed grass Prairie	20.85%	20.81%	20.29%
39C	121600.56	Focal Area	Shortgrass Prairie	20.52%	20.42%	20.25%
37A	129920.60	Focal Area	Shortgrass Prairie	19.43%	20.39%	19.67%
2D	100480.46	Focal Area	Shinnery Oak Prairie	19.75%	21.42%	19.63%
35B	107520.49	Focal Area	Sand Sagebrush Prairie	23.42%	23.43%	19.59%
32	46720.21	Focal Area	Sand Sagebrush Prairie	18.58%	18.58%	18.70%
13B	100480.46	Focal Area	Mixed grass Prairie	18.49%	18.80%	18.64%
20	32640.15	Focal Area	Mixed grass Prairie	19.14%	18.96%	18.23%
37F	129280.59	Focal Area	Shortgrass Prairie	18.33%	18.71%	18.11%
17	33280.15	Focal Area	Mixed grass Prairie	23.50%	23.56%	17.82%
23	51200.24	Focal Area	Mixed grass Prairie	19.96%	17.81%	17.44%
22	73600.34	Focal Area	Mixed grass Prairie	16.41%	16.59%	17.15%
2A	96000.44	Focal Area	Shinnery Oak Prairie	15.90%	15.91%	16.00%
28A	70400.32	Focal Area	Mixed grass Prairie	16.20%	16.35%	15.71%
2B	95360.44	Focal Area	Shinnery Oak Prairie	15.72%	15.65%	15.68%
1	69760.32	Focal Area	Shinnery Oak Prairie	16.77%	16.65%	15.66%
42	62720.29	Focal Area	Shortgrass Prairie	15.68%	15.69%	15.64%

34	86400.40	Focal Area	Shortgrass Prairie	15.45%	17.04%	15.51%
39B	139520.64	Focal Area	Shortgrass Prairie	13.38%	13.35%	14.24%
21	56320.26	Focal Area	Mixed grass Prairie	15.54%	15.55%	14.20%
31A	111360.51	Focal Area	Sand Sagebrush Prairie	14.06%	14.06%	14.16%
35D	165760.76	Focal Area	Sand Sagebrush Prairie	13.57%	13.91%	13.41%
6	25600.12	Focal Area	Shinnery Oak Prairie	14.16%	14.16%	13.31%
39A	101120.46	Focal Area	Shortgrass Prairie	13.29%	13.27%	13.16%
44	72320.33	Focal Area	Shortgrass Prairie	13.29%	13.27%	12.92%
26	20480.09	Focal Area	Sand Sagebrush Prairie	12.71%	12.67%	12.67%
28D	120960.55	Focal Area	Mixed grass Prairie	12.68%	13.18%	12.58%
33A	92800.43	Focal Area	Mixed grass Prairie	12.80%	12.75%	12.40%
12	93440.43	Focal Area	Mixed grass Prairie	12.41%	12.37%	12.18%
29A	97920.45	Focal Area	Mixed grass Prairie	13.21%	13.08%	12.11%
2C	106880.49	Focal Area	Shinnery Oak Prairie	12.35%	12.24%	12.02%
33B	85120.39	Focal Area	Mixed grass Prairie	12.32%	12.92%	11.87%
35C	78080.36	Focal Area	Sand Sagebrush Prairie	11.27%	11.25%	11.30%
41D	86400.40	Focal Area	Shortgrass Prairie	11.17%	11.24%	11.02%
29B	129280.59	Focal Area	Mixed grass Prairie	11.18%	11.70%	10.67%
41C	127360.58	Focal Area	Shortgrass Prairie	10.45%	10.52%	10.60%
28C	104320.48	Focal Area	Mixed grass Prairie	9.05%	8.86%	10.57%
37C	112000.51	Focal Area	Shortgrass Prairie	10.43%	10.43%	10.43%
41B	150400.69	Focal Area	Shortgrass Prairie	9.83%	9.79%	10.25%
25	25600.12	Focal Area	Sand Sagebrush Prairie	9.89%	9.85%	10.17%
29D	87680.40	Focal Area	Mixed grass Prairie	10.01%	10.12%	10.07%
28B	103040.47	Focal Area	Mixed grass Prairie	10.24%	10.02%	9.91%
24	104960.48	Focal Area	Mixed grass Prairie	10.22%	10.08%	9.85%
43A	84480.39	Focal Area	Shortgrass Prairie	10.10%	9.89%	9.82%
35A	51200.24	Focal Area	Sand Sagebrush Prairie	13.61%	13.49%	9.76%
29C	96000.44	Focal Area	Mixed grass Prairie	9.49%	9.73%	9.34%
40	159360.73	Focal Area	Sand Sagebrush Prairie	9.32%	9.32%	9.34%
36	45440.21	Focal Area	Sand Sagebrush Prairie	8.55%	8.55%	8.74%
37E	126720.58	Focal Area	Shortgrass Prairie	8.66%	8.65%	8.60%
19	26240.12	Focal Area	Mixed grass Prairie	8.11%	8.10%	7.87%
3	48000.22	Focal Area	Shinnery Oak Prairie	8.08%	8.08%	7.82%
38	101120.46	Focal Area	Sand Sagebrush Prairie	7.36%	7.36%	7.63%
2E	123520.57	Focal Area	Shinnery Oak Prairie	11.27%	13.47%	7.59%
41A	96640.44	Focal Area	Shortgrass Prairie	7.57%	7.55%	7.55%
27	74880.34	Focal Area	Mixed grass Prairie	7.76%	7.55%	7.45%
37B	82560.38	Focal Area	Shortgrass Prairie	7.33%	7.25%	7.28%
37D	100480.46	Focal Area	Shortgrass Prairie	6.99%	6.76%	6.76%
9	29440.14	Focal Area	Shinnery Oak Prairie	5.25%	5.22%	5.52%

2F	74240.34	Focal Area	Shinnery Oak Prairie	5.37%	5.32%	5.17%
43B	62720.29	Focal Area	Shortgrass Prairie	4.41%	4.40%	4.40%
5	72320.33	Focal Area	Shinnery Oak Prairie	3.63%	3.63%	3.72%

**APPENDIX F. CONNECTIVITY ZONE REPORTING UNITS SORTED BY PERCENT IMPACT AS OF JANUARY 1, 2016.**

106	49920.23	Connectivity Zone	Mixed grass Prairie	52.43%	53.18%	53.13%
135	29440.14	Connectivity Zone	Sand Sagebrush Prairie	43.20%	43.00%	37.87%
118	29440.14	Connectivity Zone	Mixed grass Prairie	37.12%	37.01%	35.87%
137	32640.15	Connectivity Zone	Shortgrass Prairie	36.08%	35.85%	35.64%
103	33280.15	Connectivity Zone	Shinnery Oak Prairie	34.84%	34.84%	34.84%
120	18560.09	Connectivity Zone	Mixed grass Prairie	34.42%	35.31%	34.48%
140	23040.11	Connectivity Zone	Sand Sagebrush Prairie	34.04%	34.04%	34.40%
111	99840.46	Connectivity Zone	Mixed grass Prairie	30.92%	31.23%	34.11%
109	119680.55	Connectivity Zone	Mixed grass Prairie	31.19%	31.84%	32.55%
129	14720.07	Connectivity Zone	Sand Sagebrush Prairie	31.41%	30.87%	31.99%
122	14720.07	Connectivity Zone	Mixed grass Prairie	32.40%	32.37%	31.61%
107	112640.52	Connectivity Zone	Mixed grass Prairie	31.26%	30.95%	30.62%
116	12800.06	Connectivity Zone	Mixed grass Prairie	28.14%	27.83%	27.16%
117	22400.10	Connectivity Zone	Mixed grass Prairie	27.48%	28.20%	27.01%
115	12160.06	Connectivity Zone	Mixed grass Prairie	34.99%	37.23%	26.00%
138	14080.06	Connectivity Zone	Sand Sagebrush Prairie	32.76%	31.81%	24.20%
114	37760.17	Connectivity Zone	Mixed grass Prairie	24.69%	24.89%	24.10%
121	55680.26	Connectivity Zone	Mixed grass Prairie	24.93%	24.87%	24.06%
110	72320.33	Connectivity Zone	Mixed grass Prairie	24.28%	24.63%	23.85%
104	599042.75	Connectivity Zone	Shinnery Oak Prairie	21.20%	21.98%	22.39%
113	19840.09	Connectivity Zone	Mixed grass Prairie	22.45%	22.44%	22.17%
112	13440.06	Connectivity Zone	Mixed grass Prairie	22.34%	22.12%	21.30%
142	61440.28	Connectivity Zone	Sand Sagebrush Prairie	21.43%	21.29%	21.29%
132	35200.16	Connectivity Zone	Mixed grass Prairie	21.45%	21.66%	21.13%
143	26240.12	Connectivity Zone	Shortgrass Prairie	20.94%	20.90%	20.66%
102	64000.29	Connectivity Zone	Shinnery Oak Prairie	20.27%	20.20%	20.20%
133	64640.30	Connectivity Zone	Mixed grass Prairie	18.72%	18.75%	20.08%
134	37120.17	Connectivity Zone	Mixed grass Prairie	20.21%	20.20%	19.94%
130	34560.16	Connectivity Zone	Mixed grass Prairie	19.70%	19.63%	19.31%
108	42240.19	Connectivity Zone	Mixed grass Prairie	18.73%	18.73%	18.49%
141	52480.24	Connectivity Zone	Shortgrass Prairie	18.18%	18.07%	18.13%
139	15360.07	Connectivity Zone	Sand Sagebrush Prairie	18.70%	18.70%	17.65%
144	46720.21	Connectivity Zone	Shortgrass Prairie	16.07%	16.01%	16.04%
136	53120.24	Connectivity Zone	Sand Sagebrush Prairie	15.76%	15.70%	15.70%
145	25600.12	Connectivity Zone	Shortgrass Prairie	14.99%	15.44%	15.25%
100	148480.68	Connectivity Zone	Shinnery Oak Prairie	15.13%	15.15%	15.16%
119	12800.06	Connectivity Zone	Mixed grass Prairie	15.27%	15.08%	14.87%
131	23680.11	Connectivity Zone	Sand Sagebrush Prairie	14.86%	14.86%	14.86%
124	5120.02	Connectivity Zone	Sand Sagebrush Prairie	14.53%	14.51%	14.59%

126	69120.32	Connectivity Zone	Mixed grass Prairie	14.50%	14.38%	14.17%
123	99200.46	Connectivity Zone	Mixed grass Prairie	14.40%	14.27%	13.97%
128	30080.14	Connectivity Zone	Mixed grass Prairie	8.93%	8.93%	8.85%
125	3200.01	Connectivity Zone	Sand Sagebrush Prairie	7.14%	7.14%	7.14%
105	27520.13	Connectivity Zone	Shinnery Oak Prairie	5.87%	5.87%	5.98%
101	20480.09	Connectivity Zone	Shinnery Oak Prairie	3.68%	4.54%	3.68%
127	1920.01	Connectivity Zone	Sand Sagebrush Prairie	1.63%	1.62%	3.08%



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

Date: March 31, 2017

To: Western Association of Fish and Wildlife Agencies – Lesser Prairie Chicken Initiative Council

From: The Lesser Prairie Chicken Advisory Council

**Subject: 2016 LPCAC Annual Report**

**Summary**

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

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

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

With this report, the annual reporting period for the LPCAC is changing from April 1 to March 31 to a calendar year basis. Consequently, certain items reported in the LPCAC 2015-2016 annual report may reappear in this report. In addition, first quarter 2017 meetings will now be reported in the 2017 annual report. During the period January 2016 to December 2016, the LPCAC convened by telephone on three occasions. This report summarizes the activities of the LPCAC over the calendar-year reporting period.

**Lesser Prairie Chicken Advisory Council Composition**

The LPCAC is composed of 17 representatives, including:

- One representative from three of the five state wildlife agencies, serving on a rotating schedule;
- One representative from each of the two primary federal agencies closely involved with LPC conservation (FWS and the Natural Resources Conservation Service, “NRCS”);
- Three representatives from industry organizations (e.g., oil and gas, wind, transmission, etc.);
- Three representatives from agricultural and landowner organizations (e.g., Cattleman’s Association, Corn Growers Farm Bureau, etc.);
- Three representatives from conservation organizations (e.g., the Nature Conservancy, North American Grouse Partnership, National Audubon Society, etc.); and,
- Three representatives from local government or municipalities.

During the period January 2016 through December 2016, the membership of the LPCAC comprised the following individuals:

### **State Fish & Wildlife Agencies**

Mr. Russ Horton, Lands and Wildlife Diversity Supervisor, Oklahoma Dept. Wildlife Conservation

Mr. Jake George, Wildlife Section Chief, KS Dept. Wildlife/Parks/Tourism

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

### **Federal Agencies**

Mr. Jon Ungerer, LPC Initiative Coordinator, Natural Resources Conservation Service\*

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

### **Industry Organizations**

Mr. Myles Culhane (Chairman), Managing Counsel, Occidental Oil & Gas Corp

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

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

### **Agricultural and Landowner Association**

Mr. Bill Barby, B bar B Ranch

Mr. Jay Evans, Ranch Manager and President

Mr. Alan Jett, Owner/Operator, Jett Ranch, LLC

### **Conservation Organizations**

Mr. Steve Riley, Director-South Region Pheasants Forever\*

Ms. Gillian Bee, Stewardship Director, Rocky Mountain Bird Observatory \*

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

### **Local Government, Municipalities, Co-ops**

Mr. Robert J. LeForce, Environmental Specialist, Western Farmers Electric Co-op\*

Mr. Steven Hausler, Sunflower Electric Power Corp. \*

Mr. Bill Carson, Manager of Member Services, North Plains Electric Co-op

\* Representation on the LPCAC completed and replacements nominated and either selected or pending selection and acceptance.

### **LPCAC Meetings**

LPCAC convened via conference calls on March 8, 2016, July 15, 2016, September 16, 2016. At each meeting the LPCAC reviewed reports from the LPCIC, progress toward meeting conservation goals through the mitigation framework, made recommendations regarding the qualifications and use of technical service providers, reviewed research needs, and made recommendations to the FSSC, SSC and LPCIC. The meetings generated the following recommendations that were communicated to appropriate committee for further consideration and action.

#### 1. Electric Distribution Proposal

The Electric Distribution Proposal is a carry-over from the 2014-2015 implementation year (please refer to the 2014-2015 LPCAC Annual Report). Electric distribution cooperatives had expressed significant concerns over RWP requirements for burial of electric distribution lines in areas that are within 1.25 miles of leks or in areas that are not surveyed for leks because:

- Electric coops are member-owned entities and have very limited resources;

- The cost of implementing conservation measures such as the burial of electric distribution lines is significantly greater than mitigation - these costs are passed on to users, often rural residents;
- Rural residents consider electrical service to be a basic human right; and,
- Lek surveys have proven impractical because coops have large service areas (up to 12 counties) and distribution projects have a rapid timeline (generally two weeks or less).

Consequently, many coops report that they experience significant difficulties remaining compliant with the RWP while meeting their member's service needs. In addition, the burial requirements for electric distribution lines hold the coops to a higher standard than other energy industries covered under the RWP. With the exception of pipelines, no other activities require burial under the RWP.

On October 12, 2015, the LPCAC was provided a proposal developed by an ad hoc committee that contained a series of guidelines designed to identify areas that already have a level of development such that they are unlikely to be suitable habitat for LPCs. Pursuant to the proposal guidelines, electric cooperatives and other participant companies may be permitted to erect overhead electric distribution lines under the CCAA and WCA agreements subject to fewer restrictions. Spatial analysis performed in support of the proposal found that the following seven elements were expected to impact less than 2% of all known active and historic leks identified over the last 10 years.

- 1) Construction of above ground electric distribution lines without lek surveys within a 2-mile buffer of incorporated areas as defined in 2015.
- 2) Construction of above ground electric distribution lines that follow primary roads and electric transmission lines.
- 3) Construction of above ground electric distribution lines in un-surveyed areas of CHAT 2-4 along secondary roads with less than 50% potential suitable habitat within 1 mile as long as the road is bounded by cropland on one or both sides.
- 4) Construction of above ground electric distribution lines within a 400 m buffer of identified electric meter clusters.
- 5) Outside of defined meter clusters, above ground tap lines or terminal spurs may be constructed from existing primary and secondary roads where they extend to another impact buffer such that no new nesting habitat is impacted.
- 6) Implementation of a retirement program that incentivizes the removal of existing distribution lines by giving cooperatives credit to build new lines in un-surveyed areas as long as it results in a net reduction in the miles of distribution line under their control within CHAT 1-3.
- 7) Construction of above ground distribution lines within some agricultural and industrial sites.

After review and discussion at its October 12, 2015 meeting, the LPCAC recommended sending the proposal to the SSC for review and development of questions and/or revisions. The SSC reviewed, revised and returned the proposal to the LPCAC on February 19, 2016. The LPCAC discussed the proposal during its February 23, 2016 call. The LPCAC reviewed and requested that members of the SSC provide prompt feedback on the proposal so that a final recommendation might be developed for submittal to the LPCIC. The LPCAC received feedback on March 3, 2016. The LPCAC again convened via conference call on March 8, 2016 and reviewed the proposal and developed a recommendation for the LPCIC.

A final recommendation for proposal adoption was forwarded to the LPCIC on March 8, 2016. The LPCIC reviewed and discussed the Advisory Committee recommendation and the comments from the Science Sub-committee on March 14, 2016. The council discussed the concerns raised by the Science Sub-committee and agreed that regular reviews are the best approach to addressing that uncertainty. Two members of the Advisory Committee representing the electric cooperatives attended the meeting. They stated that the cooperatives were committed to that review process and were open to research efforts to further define relationships between lesser prairie-chicken habitat use and electric lines. The cooperatives also noted the importance of this guidance for the enrollment of other electric cooperatives across the range. Director Hatcher then moved to accept the recommendation from the Advisory Committee. Director Sandoval, the chair, called for a vote, and the motion was passed unanimously.

## 2. Landowner Fee Increase for Certain Practices

On February 19, 2016, WAFWA staff and the FSSC provided the LPCAC a proposal changing some base payment rates under the LPC conservation agreements. The proposed changes would take effect for active and new contracts on January 1, 2017. The LPCAC discussed the proposal on February 23, 2016. The LPCAC Chair requested that WAFWA staff finalize the proposal for action on its next call.

A final recommendation for proposal adoption was forwarded to the LPCIC on March 8, 2016. The LPCIC reviewed and discussed the Advisory Committee recommendation on March 14, 2016. A member of the FSSC provided the LPCIC with an overview of the recommendation including the rate of increase in each ecoregion, the fact that these increases are within the limits allowed by the Range-wide Plan and its associated agreements, and that the effective date for these changes would be January 1, 2017. No concerns were raised, and a motion was put forth to approve the recommendation as written. Director Sandoval, the chair, called for a vote, and the motion was approved unanimously.

### **Fee Structure Sub-committee**

The Lesser Prairie Chicken FSSC serves to inform and support the RWP, promote effective communication, resolve disputes, revise cost structures and make adaptive management

and policy recommendations for the consideration and/or approval by the LPCIC through the LPCAC.

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

- Annually review and update mitigation costs and landowner enrollments in specific practices.
- Annually review adaptive management triggers and evaluated actions related to the fee structure for the mitigation framework.
- Annually provide a report to the LPC Advisory Committee

The Fee Structure Sub-committee met on December 14, 2015 via conference call to discuss the proposed increases in conservation payments that was shared with them by email on December 7, 2015. Six members of the sub-committee participated in the initial discussion of the proposal. Those members asked some questions about WAFWA conservation practice standards and the process that was used to develop the proposed rates which were answered on the call by WAFWA staff. The call participants did not voice any concerns about the preliminary proposal and asked WAFWA staff to prepare a full proposal and distribute it to them for further review. The full proposal was prepared and distributed back to the committee on February 4, 2016. Seven committee members had responded prior to development of this recommendation and they were all in favor of moving the proposal forward as the committee's recommendation. Four of those committee members did provide some suggestions about how to standardize the process for developing proposed fee/payment changes in future years. The committee will be discussing that topic during their next meeting in hopes of developing a more standardized method for WAFWA staff to utilize when preparing proposals in future years.

### **Science Sub-committee**

The Science Sub-committee met once in person and met via conference call five times from January 2016 to December 2016.

January 14, 2016—The SSC met via conference call to discuss the proposal review process, SSC roles and responsibilities and the electric distribution proposal. No decision was made on this proposal.

February 11-12, 2016—The SSC met in Edmund, OK to discuss science priorities for the LPC and the Electric distribution proposal.

March 1, 2016—The SSC met via conference call to discuss the electric distribution proposal and the proposal review process. The members elected to provide individual responses to the proposal for the LPCAC and decided to suspend the review of additional proposals until the new members of the committee were seated and a more defined review process was established.

September 15, 2016—The SSC met via conference call to discuss the need for by-laws and historic issues associated with project submittal and committee processes. The need for a chair was also discussed. LPC Program Manager sent the SSC draft by-laws to review and asked for nominations for chair.

October 21, 2016—The SSC met via conference call and discussed latest version of by-laws. A chair was elected (Kent Fricke, Small Game Coordinator with KDWPT). There was a call for final drafts to the by-laws and the chair submitted them via email for final vote of approval. Final approval of by-laws was completed November 14, 2016. Election of vice-chair (Brett Cooper) was also approved on the email vote.

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

Respectfully submitted on behalf of the LPCAC,

Myles Culhane  
Chair, Lesser Prairie Chicken Advisory Council