



2023

Quarterly Report

January 1, 2023 - March 31, 2023



Photo Credit: Austin Wilson

*Candidate Conservation Agreements for the
Lesser Prairie-Chicken and the
Dunes Sagebrush Lizard in New Mexico*

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Candidate Conservation Agreements

This report describes the activities conducted in the first quarter of 2023 for the Candidate Conservation Agreement (CCA) and Candidate Conservation Agreement with Assurances (CCAA) for the Lesser Prairie-Chicken (LPC) (*Tympanuchus pallidicinctus*) and Dunes Sagebrush Lizard (DSL) (*Sceloporus arenicolus*). The Center of Excellence (CEHMM) administers a CCA for federal land and minerals and a CCAA for non-federal lands and minerals. The two agreements are referred to collectively as the CCA/A. CCA/As allow the U.S. Fish and Wildlife Service (FWS), the Bureau of Land Management (BLM), and CEHMM to work in cooperation and in consultation with landowners and industry to support conservation measures for the LPC and the DSL. Both species were warranted for listing under the Endangered Species Act of 1973, as amended (16 U.S.C. § 1531, et seq.). The purpose of the CCA/A is to:



Photo Credit: Mike Hill

The Dunes Sagebrush Lizard is Native to a Small Area of Southeastern New Mexico and West Texas.

- Develop, coordinate, and implement conservation actions to reduce and/or eliminate known threats to the LPC and the DSL in New Mexico on federal, state, and private surface and minerals;



Photo Credit: Nirmal Khandan

The Lesser Prairie-Chicken is Native to Parts of Colorado, Kansas, New Mexico, Oklahoma, and Texas.

- Support ongoing efforts to re-establish and to maintain viable populations of both species in currently occupied and suitable habitats;
- Encourage development and protection of suitable LPC and DSL habitats by giving incentives to Participating Cooperators to implement specific conservation measures.

Under the CCA, federal lessees, operators, or permittees, who join by voluntarily signing a Certificate of Participation (CP), receive a high degree of certainty that additional restrictions would not be placed on their otherwise legal activities if either species is listed. The companion CCAA

provides incentives for voluntary conservation of at-risk species on non-federal lands. By signing a Certificate of Inclusion (CI) under the CCAA, the lessee, owner, or permittee voluntarily commits to implement specific conservation measures for the species on non-federal lands. Under the CCAA, if either species is listed, private landowners receive assurances that additional restrictions would not be placed on their otherwise legal activities. Without regulatory assurances, landowners may be unwilling to initiate conservation measures for these species. In both cases, enrollment in the CCA or CCAA is voluntary.

CEHMM is the federal permit holder for these agreements and is responsible for implementing, monitoring, and reporting on projects completed with CCA/A funds. CEHMM is a 501(c)(3) not-for-profit corporation based in Carlsbad, New Mexico. CEHMM's participation allows for a federally approved, independently audited financial management system to provide for fund management and administration.

The following quarterly report details projects funded and completed with CCA/A funds. The report also details the daily implementation of the agreements including activities such as moving wells out of DSL habitat, monitoring the habitat characteristics of enrolled properties, and monitoring participant conservation commitment. For more details on the CCA/A programs, visit our website at www.cephmm.org.

Benefits of Candidate Conservation Agreement Programs

- Voluntary enrollment
- Measurable on-the-ground conservation
- Landscape-based approach
- Allow landowners and industry to continue work on the ground
- Aim to prevent listing



ESA Listing Proposal

Dunes Sagebrush Lizard

The FWS is currently in the process of a status review of the dunes sagebrush lizard. Their 12-month findings on whether the DSL listing under the Endangered Species Act (ESA) are expected to be released no later than June 9, 2023. Traditionally there are three outcomes that could come from the 12-month findings (Figure 1). First, the FWS could determine the species is not warranted for listing under the ESA. Second, the FWS could determine the species is warranted for listing under the ESA, which would lead to a proposed rule for listing under the ESA. Third, the FWS could determine the species is warranted but precluded. This means the species may qualify for the ESA however, there are other species of higher priority for listing.

Lesser Prairie-Chicken

The lesser prairie chicken has been listed as endangered in its southern distinct population segment (DPS) as of March 27, 2023. The northern DPS has been listed as threatened under the ESA. A map of the two DPS can be found in Appendix A.

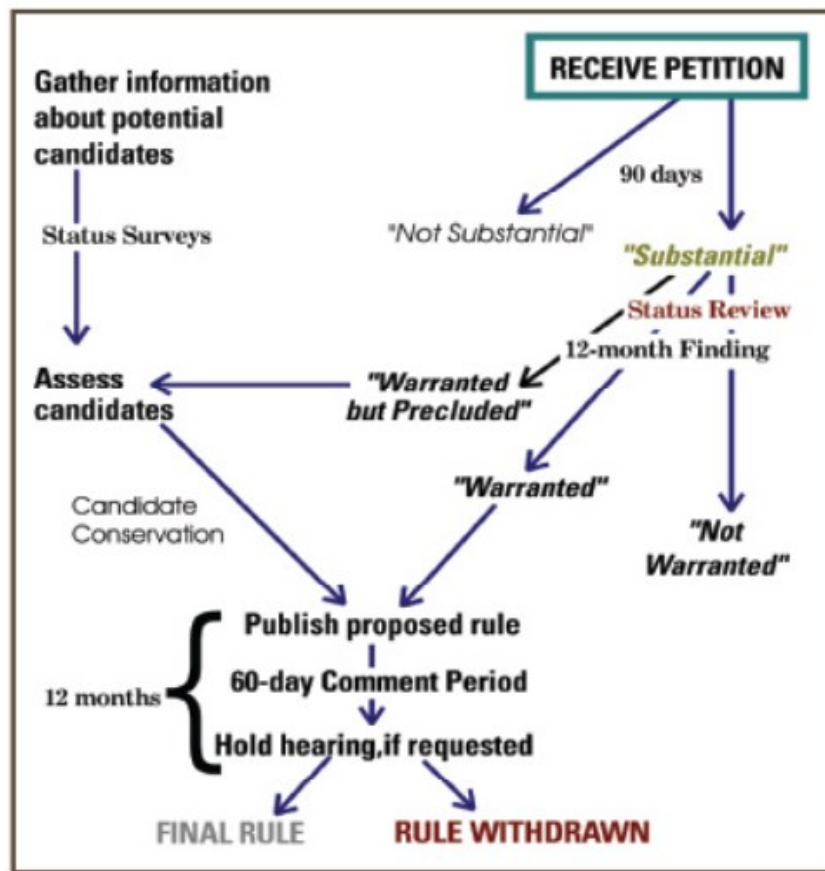


Photo Credit: U.S. Fish and Wildlife Service

Figure 1. Diagram depicting the process for listing a species under the ESA.

Enrollment Update

On March 27, 2023 CCA/A enrollment officially closed as a result of the LPC ESA listing. CEHMM staff worked diligently with current and prospective participants in the first quarter of 2023 to update enrollments and execute new enrollments into the program before the March 27 deadline. Tables 1 and 2 display the programs new and current enrollment numbers through the first quarter of 2023.

Table 1. New Enrollments During Jan-Mar 2023 by Enrollment Type

Enrollment Type	CCA Enrollments (Federal)	CCAA Enrollments (Non-Federal)
Ranching	7	32
Industry (Parcel-by-Parcel)	1	1
Industry (All-Activities)	47	50
Industry (Linear Development)	30	31

*Participants that transferred from Parcel-by-Parcel enrollment to All-Activities are tracked as new enrollments

Table 2. Program Enrollment Totals by Enrollment Type

Enrollment Type	CCA Enrollments (Federal)	CCAA Enrollments (Non-Federal)
Ranching	40	103
Industry (Parcel-by-Parcel)	13	11
Industry (All-Activities)	47	50
Industry (Linear Development)	30	31

Funding

Conservation Fees

CEHMM establishes a Habitat Conservation Fund (HCF) for each oil and gas operator that executes a CP or CI. The contribution amount is determined by the number of acres included in the Certificate of Participation (CP) or Inclusion (CI). Once land-disturbing activities are identified and permitted in the operator's certificate, conservation fees are debited from their HCF. Activities that occur off of enrolled acreage are also subject to a habitat conservation fee if disturbance caused from these activities is associated with an enrolled lease. The debited amount is determined by the habitat zone (as described in the Resource Management Plan Amendment [RMPA]) in which surface-disturbing activities occur. CEHMM manages each Participating Cooperator's HCF by tracking balances and debiting when appropriate.

Approximately 10 percent of the funds that are received through industry participation are allocated to overhead expenses such as building rentals, utilities, and insurance. The remaining balance is used solely and exclusively in support of the CCA/A programs which include, but are not limited to: planning and implementation; on-sites; grazing programs; projects authorized by the ranking team; research; enrollments and amendments; project monitoring; education and outreach; and support services, such as vehicles and equipment.

Table 3. Conservation Fees Assessed During Q1 2023

Fee Type	Fee Totals During Q1 2023
Habitat Conservation Fees	\$1,222,500.00
Enrollment Fees	\$5,000.00

Grants

In addition to the HCF contributions, CEHMM has sought grant funding from federal and private sources. Grant funding can facilitate new partnerships with agencies and granting institutions, as well as diversify funding sources for the future.

This quarter, the project scope change for the National Fish and Wildlife Foundation (NFWF) Southern Plains Grassland Program grant has been approved, and compliance review is ongoing at this time. The project was initially awarded for Dead Standing Mesquite (DSM) removal but has been changed to aerial mesquite treatment and fence removal.

Conservation Projects

Projects Completed During Q1 2023

Kinsolving Fence: This project was approved and funded in March 2022 and completed on 2/21/2023. Five miles of old, dilapidated fence were replaced with five-strand wildlife-friendly fencing (Figure 2). The project cost was \$153,359.01, and the landowner provided all t-posts as an in-kind contribution. The updated fencing provides further efficiency in the implementation of Kinsolving's rest/rotation management plan and reduces hazard potential for wildlife. This fence is located upon shared boundaries and provides a benefit to multiple CCAA enrollees. The majority of the project area is located within CHAT zone 1 and a small portion is located in CHAT 2.

G. Moore Water: This project was approved and funded in March 2022 and completed on 2/6/2023. Two windmills were removed, one solar pump was installed, and one new stock tank was added for this project. (Figure 3). Budgeted at \$43,784.40, this water improvement project is instrumental in enhancing the landowner's ability to follow their grazing management plan. Additionally, the landowner is reducing the landscape's vertical structures, which LPCs tend to avoid. Providing additional free sources of water assists the rancher, but it also helps area wildlife, particularly in times of drought.

Running N Kenna Fence: This project was approved and funded in March 2022 and completed on 3/7/2023. Budgeted at \$106,833.64, this fencing project included the removal and replacement of 4.5 miles of old, hazardous, interior fencing. The fencing greatly assists the Running N Kenna Ranch in its grazing management. With the completion of the fence, a more efficient rest/rotation grazing plan is being implemented. Overall hazards to wildlife have also been reduced. The fencing project is located within CHAT zones 3 and 4.



Figure 2. New wildlife friendly fence installed for on the Kinsolving Ranch.



Figure 3. A new stock tank installed for the Moore water project.

Projects Funded & Waiting Completion

K. James Wildlife Water Amendment: This project was funded in June 2018 for \$39,451.89. CEHMM will contract the installation of approximately 1.25 miles of water line and install a solar-powered submersible pump, a solar-powered booster pump, and a 200-300-gallon tire trough with a satellite water location. The Participating Cooperator will provide in-kind services consisting of plumbing the trough, removing a windmill, and providing a storage tank. These efforts will provide water for the LPC in times of drought and will allow grazing in an area that is underutilized due to remoteness from existing livestock water sources. By allowing this area to be utilized, livestock use in other areas will decrease, leaving more residual vegetation for LPC nesting and brood-rearing. CEHMM received the signed project agreement from the Participating Cooperator. The BLM has been contacted to proceed with the National Environmental Policy Act (NEPA) process. An onsite visit with BLM wildlife staff, archaeologists, range staff, and CEHMM was completed in November 2018 to determine a suitable route and to stake the line for archaeological clearance. BLM range staff prepared the NEPA documents. An archaeological (ARCH) survey was completed, and information has been submitted to the BLM in order to complete the NEPA process. The ranch was recently sold, and the new owner has elected to continue the property enrollment. A cooperative agreement was executed between the lessee, the BLM, and CEHMM.

DSL Habitat Reclamation: This project was approved and funded in August 2019 for \$42,784.30. Caliche will be removed from approximately 3.3 miles of an oilfield road that is no longer in use. In addition to the road, approximately 0.6 acres of caliche will be removed from one unused well pad. These are legacy wells with no responsible party. Since roads made from caliche cause habitat fragmentation, these removal efforts will improve habitat for the DSL. Seed was purchased with grant money received from the ConocoPhillips Lower 48 Grant. CEHMM met with the landowner in February 2020 to discuss logistics. The right of entry was filed with the New Mexico State Land Office, and it was approved in August 2021.

Jolley Ranch Fence Improvement: This project was approved and funded in October 2022 for \$120,215.80. The removal of dilapidated fence and installation of new wildlife-friendly fencing will protect approximately 10,895 acres of potential LPC and DSL habitat (in the Modeled Habitat and EOR+10) from being inadvertently overstocked and/or overgrazed by the neighboring ranch. CEHMM met with the landowner in October 2022 to discuss logistics.

Davis Mercantile Historical Plaque/Marker: This project was approved and funded in August 2019 for \$6,354.88. In 2018, CEHMM personnel began working with the New Mexico State Historical Preservation Division to list the Davis Mercantile as a historical building. It was approved and listed in early 2019 as a Historic District with both the state and national historical societies. A historical roadside marker and a historical plaque will be mounted at the store to show the significance and history of the Davis Mercantile, depicting life in the era when the area was being developed and how the store contributed to LPC conservation. The plaques have been delivered, and CEHMM plans to install them in the coming months.

Projects Funded & Waiting Completion Continued

CEHMM District 2 Water: Totaling \$20,281.67, this project was approved and funded in March 2022. A 20-foot fiberglass stock tank and 0.5 miles of 1.25-inch pipeline will be installed to allow for grazing management on the 300 acres behind the CEHMM District 2 Office in Milnesand. Currently, the pasture is not considered potential habitat as it has lost grass coverage and is now dominated by shrubs (e.g., yucca and sand sage). With proper grazing management and adequate water, the property may be transformed to suitable habitat bringing about a balance of grasses, forbs, and shrubs. This small acreage (entirely within CHAT 1) may also serve as a grazing research site for novel management tools.

G. Coombes Atlee-Lovejoy Boundary Fence: Through this project, 2.5 miles of old, hazardous boundary fence will be removed and replaced on a newly purchased property (equivalent to 4,309 acres) adjacent to the Atlee-Lovejoy property. The property (within CHAT zones 2 and 3) contains potential and suitable habitat for both the LPC and DSL. Additionally, this fence is shared with another enrollee and will combat trespass cattle issues as well as be elemental in a rest/rotation management plan for each landowner. The landowner will be providing H-braces, gates, and corner posts as an in-kind contribution. The fencing project was approved and funded in March 2022 and has a budget of \$66,701.06. The ARCH survey was completed in June 2022 and the project is expected to be completed during 2023.

G. Coombes Atlee-Lovejoy Mesquite: This aerial mesquite treatment (equivalent to 1,250 acres) will provide connectivity of treated mesquite areas on neighboring properties as well as with the 2,000 acres Coombes proposed through the CCAA, which was treated in 2021. Funded and approved in March 2022, this project is estimated to cost \$79,571.41 in total. The spray area is within CHAT 1 with many historic and active leks nearby. Mesquite encroachment can reduce canopy coverage of preferred grasses and forbs that the LPC requires throughout its life history, ultimately resulting in habitat fragmentation. Brush encroachment can also lead to soil health issues, such as degradation and moisture loss.

G. Coombes Atlee-Lovejoy Water: This water improvement project was funded and approved in March 2022. It includes 8.8 miles of pipeline running to three new stock tanks. The 1.25-inch Numex pipe will be split among 3 planned pipelines to vastly increase the water availability and connectivity on the ranch. Coombes will provide the stock tanks as an in-kind contribution; the remaining project cost is estimated at \$139,754.55. Water improvements, such as this one, provide better management opportunities for grazing and the implementation of rest/rotation plans. The northernmost pipeline is located in CHAT 1, the middle pipeline is split between CHAT zones 1 and 2, and the southernmost pipeline includes both CHAT zones 2 and 3. Required archaeological surveys were completed in August 2022. Project work is expected to be completed in 2023.

Projects Funded & Waiting Completion Continued

Malcolm Coombes 2022 Mesquite: This project includes an aerial mesquite treatment of 1,600 acres. The project is estimated at \$100,475.16 in total; it was funded and approved in March 2022. Once the mesquite has been treated and removed, the habitat will be suitable once again, providing greater connectivity. The entirety of the ranch is within CHAT zone 1, and numerous historic and active leks are nearby. Mesquite is problematic as it outcompetes native plant species that the LPC requires to thrive. Additionally, evidence suggests the LPC tend to avoid vertical structures, ultimately resulting in habitat fragmentation. The removal of mesquite reduces vertical structure on the landscape, as well as perches for predators.

Kinsolving Mesquite: This project was approved and funded in March 2022 for \$142,282.66. The project area (located entirely within CHAT 1) includes 2,300 acres of mesquite. This mesquite treatment (and subsequent removal) will improve connectivity of LPC habitat on the ranch. Mesquite, both as a live plant and skeleton, is problematic for the LPC. Evidence suggests the LPC tend to avoid areas of high mesquite density, ultimately resulting in fragmented habitat. The mesquite encroachment also results in reduced canopy coverage of native plants beneficial to the LPC throughout its life. Since this ranch is connected to multiple CCAA enrollees, this project is of great importance in working toward landscape level habitat efforts and will also benefit Kinsolving's neighbors.

Kinsolving Water: Approved and funded in March 2022, this water improvement project will include the installation of 3 miles of pipeline and two new stock tanks. Additionally, vertical structure will be significantly reduced across the ranch by removing eight windmills. Of those, four will be converted to solar pumps. The total project cost is expected to be \$152,889.63. The landowner will provide all caliche for stock tank installation as an in-kind contribution. . The water project area is located entirely within the CHAT 1 portion of the ranch. Water improvements, such as this, allow ranchers to more efficiently implement strategies that facilitate pasture rest through rotational grazing.

G. Moore Fence Removal: This project includes approximately four miles of interior fence removal. It was approved and funded in March 2022 with a total project cost estimated at \$15,000.00. Removing the old, dilapidated interior fence will reduce hazards to livestock and wildlife. The majority of the ranch is located in CHAT 2 with some acreage within CHAT 3. There are multiple active leks on the property.

Projects Funded & Waiting Completion Continued

Running N Kenna Mesquite: With an approximate project area of 4,619 acres, this mesquite treatment project will greatly improve the landscape on a majority of the Running N Kenna property. The aerial treatment was funded and approved in March 2022 and is expected to cost \$320,263.16. Since mesquite is a problematic brush species for the LPC, a project of this magnitude will be crucial to restoring the native species the LPC requires for nesting, lekking, and brood-rearing. Paired with proper grazing management and subsequent removal of the skeletons, we expect to reduce vertical structure on the landscape and see an increase in native canopy coverage of necessary grasses and forbs. The project area includes multiple leks (with additional nearby) and acreage within CHAT zones 1, 2, and 3.

Weaver/Grasslans Fencing: Budgeted at \$138,204.08, this project is planned for a newly purchased and enrolled property. Approved and funded in March 2022, this initiative is largely for interior fence removal (approximately 6.5 miles). An additional four miles of boundary fencing will be removed and replaced with new, wildlife-friendly, five-strand fencing. The fencing was damaged in a wildfire in 2018 and the new fencing (and removal of hazardous interior fencing) is required to properly establish this new property into their ranch-wide rest/rotation plan. The fencing project is located entirely within CHAT 1.

Weaver/Grasslans Mesquite: Encompassing 2,370 acres, this aerial mesquite treatment is located adjacent to previous brush control efforts on the ranch (through both aerial treatment and grubbing techniques). A total of \$145,704.48 has been budgeted for this brush control initiative, which was approved and funded in March 2022. Once completed, a stronghold of restored acreage will be available to the LPC. Eventually, the dead, standing skeletons will be removed to reduce vertical structure. The ranch has numerous active and historic leks; the project area is entirely within CHAT 1.

Monitoring

Grazing Monitoring

In the first quarter of 2023, CEHMM completed forage utilization monitoring on 148 sites on enrolled ranches. As a conservation measure, ranchers agree to a livestock forage utilization rate of 45 percent. This ensures the LPCs have adequate cover remaining for the upcoming nesting season. If overutilization deems the habitat unsuitable, CEHMM range conservation staff work with the ranchers to apply management practices and continue to monitor progress to determine if other avenues are necessary.

CEHMM staff also prepared grazing monitoring sites by zero clipping sites for the upcoming growing year. An additional 16 grazing cages were moved, and 4 grazing cages were added throughout many of the ranches that will be monitored in the upcoming grazing season. These cages were added or moved to provide a more accurate representation of the ranch, by allowing additional data to be collected on all soil types. Due to an influx of new ranching participants, throughout this year CEHMM will work internally to determine grazing management plans and monitoring rotations for all ranches.

LPC Monitoring



The LPC lek season runs from March to May. CEHMM began LPC surveys on enrolled ranches starting in Mid-March. CEHMM plans to conduct LPC surveys on all the CCA/A enrolled ranches north of highway. Using the FWS's survey protocol for LPC (Appendix B), CEHMM has conducted 41 survey efforts and observed 230 LPC from approximately 26 leks in the first quarter of 2023. Surveys are planned to continue through early May.

Figure 4. Staff checking wind speeds for LPC survey during the first quarter of 2023.

Industry Measures

Operations Moved out of DSL Habitat

Construction of well pads and roads for oil and gas development poses a serious threat to the DSL because of its dependence on a very specialized, dynamic habitat. Due to the severe loss of DSL habitat from development, enrollees have agreed on conservation measures including no surface occupancy within 30 meters of suitable or occupied DSL habitat. CEHMM attends on-sites with enrolled companies to help properly site development in areas that are in near proximity to suitable or occupied habitat. During the onsite, CEHMM helps to determine habitat suitability and to ensure that the Participating Cooperators avoid the dunes by the required 30-meter buffer. If a disturbance is within the 30-meter buffer, then the Participating Cooperators must relocate the disturbance to occur outside of the buffer to comply with their agreements. The number of wells and rights-of-way (ROW) moved out of DSL habitat is illustrated in Table 4, and it shows the importance of everyday implementation of the CCA/As to the conservation of the species.

Table 4. On-sites and development relocations due to DSL habitat conflicts Q1 2023.

On-sites Completed	Well Pads Relocated Outside DSL Habitat	ROWs Relocated Outside DSL Habitat
20	8	0



Figure 5. Map depicting original and new locations of a well pad that has been moved out of DSL habitat during Q1 2023.

Education & Outreach

CEHMM staff participated in education and outreach throughout the first quarter of 2023. Not only did staff attend multiple workshops, symposia, and field days, they also presented to local students. CEHMM recognizes the unique role that education and outreach can have in the public's perception toward natural resource management and conservation. Since the inception of the CCA/A program, CEHMM has provided and assisted with programs directed at all ages and backgrounds. CEHMM will continue to prioritize educational and outreach efforts for the foreseeable future.

56th Joint Annual Meeting of the Arizona-New Mexico Chapter of the American Fisheries Society and the Arizona and New Mexico Chapters of The Wildlife Society

In February 2023, CEHMM staff members from the LPC and DSL program attended the Joint Annual Meeting in Farmington, NM. They represented CEHMM by setting up a CCA/A informational display where they talked about who CEHMM is and the work that is done for the LPC and DSL. During this meeting they were given the opportunity to network with a variety of local professionals and students.

Society for Rangeland Management Annual Meeting

In mid-February, CEHMM staff attended the 2023 annual meeting of the Society for Range Management (SRM) in Boise, ID. At the "trade show," an informative display was set up to represent CEHMM and the CCA/CCAA programs. CEHMM staff were also present at the display, which received ample foot traffic from other SRM attendees interested in the work being done through the CCA/A programs. In addition, CEHMM staff attended many lectures, workshops and symposia about rangeland and grassland management, wildlife management, and livestock grazing.



Figure 6. CEHMM staff members giving a presentation to Lovington Middle School students.

Lovington Middle School Presentation

In March 2023, CEHMM staff members gave a presentation to Lovington Middle School students (Figure 6). The students were taught about food webs and population dynamics, including the different trophic levels. The presentation also included information on the LPC and the DSL. Students were taught identifiable characteristics

of each species as well as what affects each species' population. To conclude the presentation survey protocols were taught, and the students were shown a video of the LPC booming.

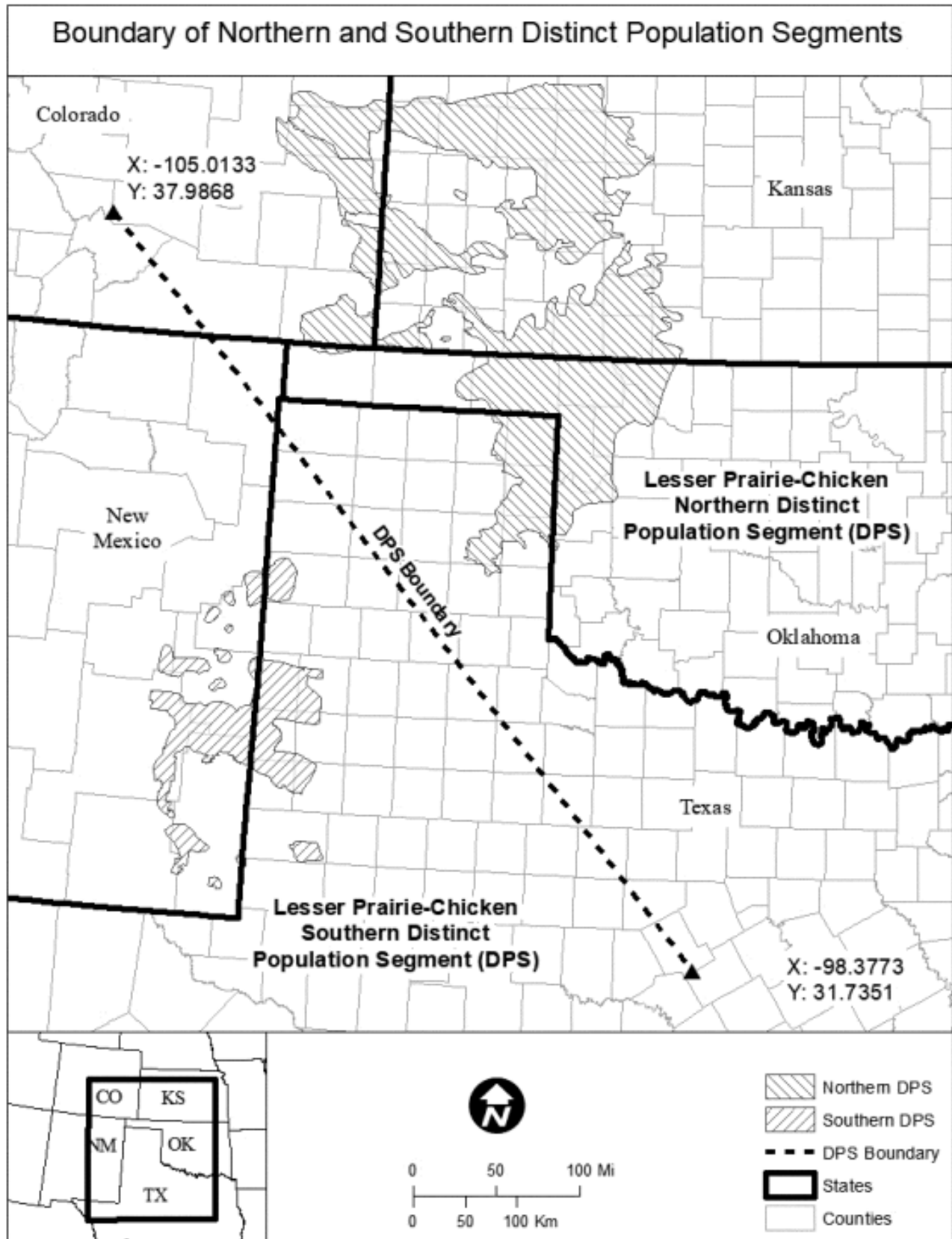
Signature

If you have any questions, please call Ryan Schmidt at (575) 885-3700 or Kyle Dillard at (575) 675-2324.

Signed: Emily K. Wirth
Emily K. Wirth, Executive Director

Date: 4/11/2023

Appendix A: LPC Distinct Population Segments



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Document Id:FWS-R2-ES-2021-0015-0418

Appendix B: FWS LPC Survey Protocol

United States Fish and Wildlife Service Survey Protocol for the Lesser Prairie-Chicken Updated – March 2023

This document identifies survey methods that will produce sound scientific information upon which to inform (along with other relevant information) decisions and actions for the conservation of the lesser prairie-chicken (*Tympanuchus pallidicinctus*, LEPC). Using consistent survey methodology will also allow for greater comparison and analysis of results, and thereby increase our understanding of this species and its habitat requirements.

The survey protocols for the LPC are not designed to determine absence, but rather provide information regarding species presence when there is a positive detection and potentially information related to a relative index of abundance. This information can be used with other data (e.g., habitat quality and quantity) to assess actions for the species. Please note that this document supersedes any previous guidance from the U.S. Fish and Wildlife Service (Service) on conducting surveys for the LPC. Additional information that relates to the effectiveness of these survey guidelines in conserving the LPC is welcome. We will consider modifications of, or alternatives to, these methods and qualifications on a case-by-case basis. This document will be managed adaptively, and the most current version can be found at the following website: <https://www.fws.gov/lpc>. Please refer to this website after September 1st of each year and before initiating any LPC surveys, as this document may be updated annually and as needed.

When a Section 10(a)(1)(A) Scientific Permit is Needed for Surveys

Upon effective listing, March 27, 2023, “take” of the LEPC will become prohibited across both the Southern and the Northern Distinct Population Segments. Individuals engaged in activities that have the potential to “take” listed species are responsible for determining whether the likelihood of “take” is great enough to need a section 10(a)(1)(A) permit.

For information on how to apply for a section 10(a)(1)(A) permit please visit <https://fwsepermits.servicenow.services.com/fws>.

Requirements for Conducting Surveys for the LPC

Protocols

Ground Based Surveys

- Surveys should be designed to provide complete coverage of the area of interest and the surrounding areas of potentially suitable habitat within 3 miles of the

project boundary (a saturation survey). Additionally, surveys should be designed to incorporate areas of non-habitat where LEPC may opportunistically gather for lekking activities such as cropland.

- With the assumption that LPC vocalizations can be heard up to 1 mile, search points should be established at up to 1 mile intervals to result in complete coverage of the area of interest. (Note: Assumption is based on limited information on full detection rates, which can be influenced by a variety of factors including, but not limited to, ability of surveyor, wind, ambient noise, etc. It is recommended that the surveyor use 1 mile as the maximum distance between listening points and surveys should be adjusted as appropriate).
- At each search point, the observer(s) should shut off vehicle, move at least 10 meters from the vehicle, listen, and complete visual scans using binoculars for 5 minutes.
- Surveys should begin no earlier than one-half hour before sunrise and should conclude no later than 90 minutes post sunrise.
- Surveys should be completed between March 15 – May 7, with a minimum of one survey occurring during the month of April.
- Each area should be surveyed at a minimum of two times with surveys being at least 1 week apart. (Note: Specifics about detection probabilities over time are not known but detection probabilities are expected to increase as the number of surveys increase).
- Surveys will not be conducted if, at any point during the survey, relative sustained wind speed exceeds a 3 on the Beaufort Scale (12 mph).
- Surveys will not be conducted if rain or snow is falling during listening stops or lek counts.
- Wind speed and temperature should be recorded at each search point.
- The observer will rate the noise present at each stop (i.e., traffic, pump-jacks, cattle, transmission lines) as none, low, moderate, or high.
- Leks may be detected visually and/or audibly.
- If a lek is located on property where the observer has permission to access or lek is visible from a public road, the total number of birds on the lek should be recorded. When approaching leks to document the number of birds on a lek, approach in a manner to prevent flushing birds. To minimize the potential for flushing birds do not attempt to get any closer than 75 meters of the lek. Record if birds are flushed, how many birds were flushed, and the distance from the lek when the birds flushed. Observers should stay a minimum of 2 minutes but no longer than 5 minutes when counting LPC on detected leks. If a lek is visible from an established road observers will not exit the vehicle when attempting to count individual LPC. (Note: this should be completed during the 120 minute survey window)

- Vehicles should be operated only on established roads at all times.
- GPS location, compass bearing, and distance to the lek should be reported. If a lek is visually located, do not flush the birds to get a GPS location. A GPS location should be taken from a remote point and a laser range finder should be used to get the distance to the lek. When the location of a lek is not visually available, the lek location should be recorded using two compass bearings that are 70-110 degrees apart to minimize triangulation error. GPS locations of the origin of each compass bearing should be provided as well as the location of the search point.
- Record and report any incidental observation of individuals while in the field, in route to or from survey locations, and while in between any search points

Aerial Surveys

- Aerial surveys should be completed using a helicopter.
- A minimum of two observers is required.
- Surveys should be conducted at an approximate air speed of 60 kilometers per hour (37 miles per hour).
- Surveys should be conducted at an altitude of 25 meters (82 feet) above ground level.
- Surveys should not be conducted over housing, livestock, or large water bodies.
- Surveys should be conducted from sunrise until 90 minutes post sunrise.
- Surveys should be completed between March 15 – May 7. With a minimum of one survey occurring during the month of April.
- Transects should be oriented north-south with 400 meter spacing between transects. Transects should cover the entire area of interest as well as potentially suitable habitat within 3 miles of the project boundary.
- Each area should be surveyed two times with surveys being at least 1 week apart. After completion of the first survey, transects for the second survey should be shifted by 200 meters either east or west.
- The observer should have a GPS unit to record a track log of each flight path to provide documentation of actual transects surveyed. Track logs should record points at least every 2 seconds.
- All detections should be communicated between observers to ensure accurate data recording.
- Surveys should not be conducted if rain or snow is falling.
- Surveys should not be conducted if, at any point during the survey, the relative sustained wind speed exceeds a 3 on the Beaufort Scale (12 mph).
- The GPS location of any individual LPC or lek detections should be recorded.

- The number of individuals detected should be recorded.

Qualifications required

All permit applications should specifically state how each applicant meets the appropriate requirements. All permit applicants for ground surveys shall have a biology background with audible grassland bird survey experience. Additionally, surveyors shall also have the ability to detect and identify (both audibly and visually) the LPC. Audible detection would require the ability to detect LPC booming and mating calls associated with lekking activities. Visual detection would require the ability to visually distinguish the LPC in the field.

All permit applicants for aerial surveys should have a biology background with experience in aerial survey techniques and have experience with aerial surveys for prairie grouse.

Reporting

Annual reports are required by all section 10 (a)(1)(A) Permittees. For all activities conducted under the authority of a 10(a)(1)(A) permit in relation to the LPC, reports must be submitted electronically by July 1st to each respective Ecological Services Field Office in the state where the surveys occurred. Reports must include both positive and negative survey results. If no surveys are performed in a given year, a report stating such is required. Survey reports must include the following information for each search point or transect or lek count:

General

- Distinct Population Segment
- LEPC Ecoregion
- State
- County
- Dates of surveys (Completed and attempted. Indicate reason for abandoned survey efforts and rest of required reporting information, as available.)
- Time of day; Start and stop of entire survey, each listening stop and lek counting
- Weather conditions
- Known or Assumed Source(s) of Noise

Personnel

- Name of all persons involved in the surveys and a description of their duties
- Section 10(a)(1)(A) scientific report number under which work was conducted
- Person(s) directly responsible for writing the report

Location

- GIS layers including:
 - Property boundaries
 - Survey design (flight lines or search points)
 - Detections
 - References such as road names and political boundaries
 - Search points
 - Triangulation points
 - GPS track log for aerial surveys
- All GIS data should be provided in:
 - Projected Coordinate System:
USA_Contiguous_Albers_Equal_Area_Conic_USGS_version
- If GIS data is not an option, U.S. Geological Survey quadrangle map can be used.
- A general description of soils, vegetation, woody vegetation or anthropogenic features and land use of each area surveyed.

Methodology Used

- Aerial or ground based surveys
- Any other specific protocol details

Survey Results

- Both positive and negative results for each point or transect surveyed
- Detection locations in GPS coordinates in decimal degrees to at least 5 decimal places
- Geodetic datum of GPS coordinates
- GIS layer of detection locations
- The number of individuals detected (if detected visually)
- Other notable observations (including but not limited to habitat observations and behavior of detected individuals).