CEHMM

Conservation and Environmental Services

Lesser Prairie-Chicken and Dunes Sagebrush Lizard Candidate Conservation Agreement and Candidate Conservation Agreement with Assurances

Monthly Report
January 2018

A recently completed wildlife-friendly interior fence

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Candidate Conservation Agreements (CCAs) allow the US Fish and Wildlife Service (FWS), the Bureau of Land Management (BLM), and the Center of Excellence (CEHMM) to work in cooperation and consultation with private land owners and industry in support of conservation measures for the Lesser Prairie-Chicken (*Tympanuchus pallidicinctus*) (LPC) and the Dunes Sagebrush Lizard (*Sceloporus arenicolus*) (DSL), which were warranted for listing under the Endangered Species Act of 1973, as amended (16 U.S.C. § 1531, et seq.). CCAs:

The Dunes Sagebrush Lizard is native to a small area of southeastern New Mexico and West Texas.

- Develop, coordinate, and implement conservation actions, which reduce and/or eliminate known threats to the LPC and DSL in New Mexico on federal, state, and private surface and minerals;
- Support ongoing efforts to re-establish and maintain viable populations of both species in currently occupied and suitable habitats;
- Encourage development and protection of suitable LPC and DSL habitat by giving Participating Cooperators incentives to implement specific conservation measures.

Under the CCA, federal lessees, operators, or permittees that 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 Candidate Conservation Agreement with Assurances (CCAA) provides incentives for voluntary conservation of species-at-risk on non-federal lands. Under the CCAA, the lessee, owner or permittee voluntarily commits to implement specific conservation measures on non-federal lands for the species by signing a Certificate of Inclusion (CI). Under the CCAA, if either species is listed, private landowners receive assurances

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

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, signing up for 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 (Figure 1). 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 monthly report details projects funded and completed with CCA/A funds as well as every day implementation of the agreements including activities such as moving wells out of DSL habitat. For more details on the CCA programs, visit our website at www.cehmm.org.

Benefits of Candidate Conservation Agreement Programs

⇒ Voluntary

⇒ Provides on-the-ground conservation

⇒ Landscape based approach

Photo courtesy Grant Beauprez

⇒ Allows landowners and industry to continue work on the ground

⇒ Aims to prevent listing

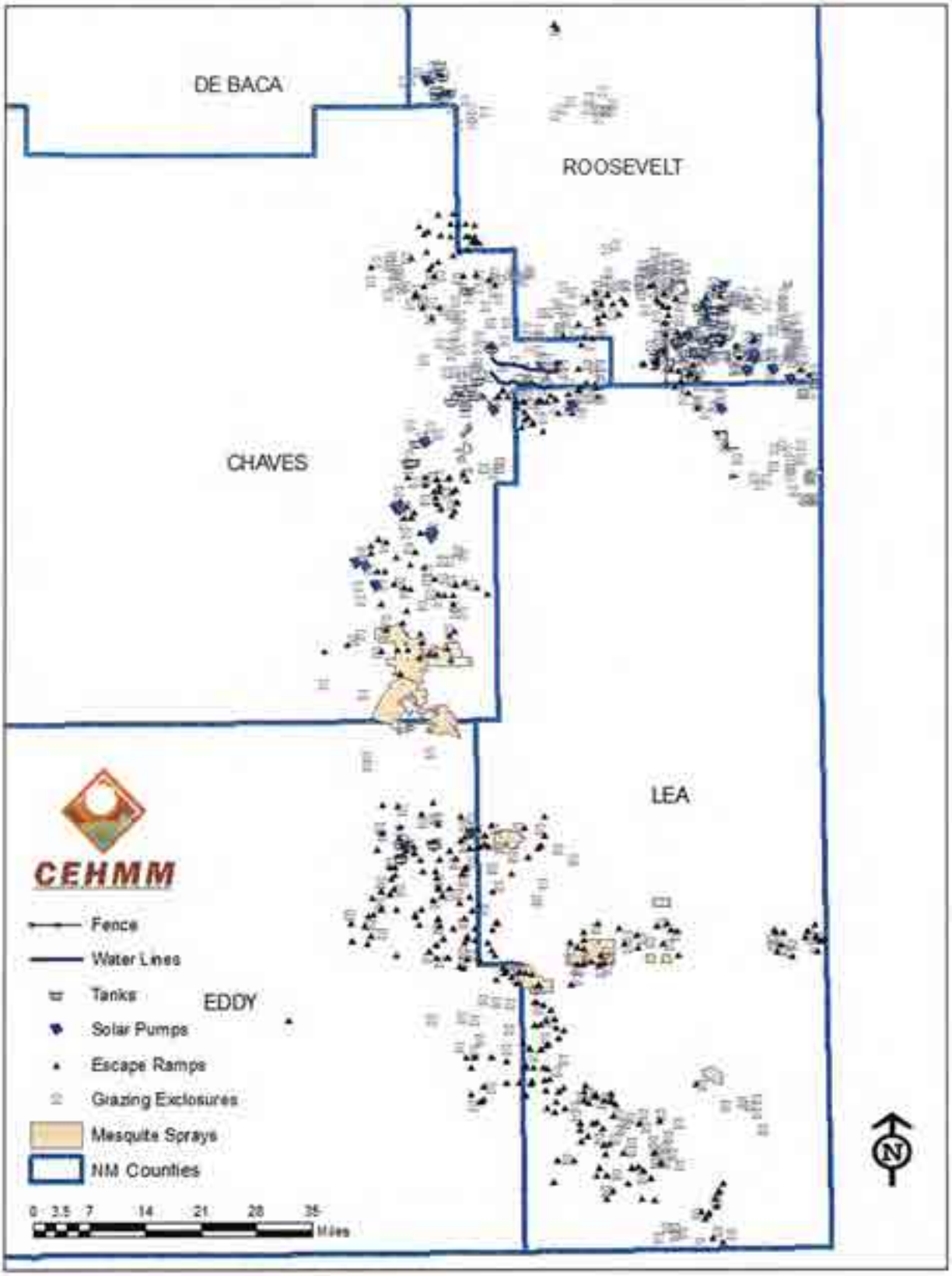


Figure 1: Map of all Completed Projects throughout Life of CCA/A Program

Conservation Activities and Monitoring

CCA/A – District 1 – South of Hwy 380

CEHMM conducted an onsite with enrolled companies and the BLM for two wells. The wells were located in the DSL polygon which indicates the potential for suitable DSL habitat. It was determined by the BLM and CEHMM that the wells would not impact DSL, therefore no wells were moved and the company was allowed to stake them where the wells were proposed.

CEHMM attended the SENMOGA working group meeting in Artesia, NM.

CEHMM attended the Lesser Prairie-Chicken Conservation Partners Forum in Edmond, OK to discuss accomplishments each partner has made, and determine a path forward for their program. Attendees at the meeting included LPC representatives from New Mexico, Colorado, Oklahoma, Kansas, and Texas.

CEHMM clipped 83 grazing monitoring sites on eight ranches. CEHMM determines percent utilization at each site to determine if conservation measures are being followed by the enrolled rancher. Two of the ranches that were monitored did not meet utilization goals listed in their respective CI's and CP's. Although overutilization was observed on the ranches overall, there were individual pastures that did meet the utilization goal. Livestock may not have been responsible for the heavy utilization on some of the monitoring sites. Utilization of forage and other vegetation by rabbits was also observed. In particular, sand sage, broom snakeweed, and giant dropseed showed signs of high utilization rates by rabbits both inside and outside of the grazing enclosures. Culms of grasses and branches of woody species were chewed at 45 degree angles which is not indicative of cattle grazing. Several rabbit droppings were also observed inside the cages. CEHMM met with the BLM to discuss the observations made at the monitoring sites, and will work with these enrollees to find practical solutions to utilization issues that were documented.

CCA/A – District 2 – North of Hwy 380

CEHMM personnel have completed zero clipping in 31 exclosures on six ranches. Zero clipping is pre-growing season clipping of the exclosures that CHEMM personnel will monitor for utilization this fall. Zero clipping ensures that exclosures to be clipped in the fall will only contain this year's growth. All zero clipping has been completed for 2018.

CEHMM personnel completed quarterly monitoring of completed projects in January. Everything was in good working order.

Conservation Activities and Monitoring

CCA/A – District 2 – North of Hwy 380

CEHMM personnel have been following up with enrollees on their grazing plans. As of January 2018, 31 grazing plans out of 40 are complete with nine yet to be received. All nine of these enrollees have been contacted and are working with CHEMM personnel to get their grazing plans submitted.

CEHMM is in the process of purchasing the Milnesand property, which includes CEHMM's District 2 office, the old Davis Mercantile which houses the Milnesand Post Office, and other outbuildings on 290 acres. CEHMM personnel are nearing completion of research on the history of the old Davis Mercantile store, built circa 1932 - 1935, which has also housed the local Post Office in Milnesand since 1942, and the requirements necessary for listing this building with the New Mexico State Historical Society. This building is included with the Milnesand Office Purchase. CEHMM personnel have been to the Roosevelt County Clerk's office, the Graham Title & Abstract Company, have received records on Milnesand from ENMU through a member of the community, and are perusing family history records from the Milnesand community that were compiled in two large ring binders by the previous postmaster, in a search for records on a missing timespan of the early 1930's to 1938. CEHMM personnel have discovered that RC "Tex" Marshall built the store. Mr. Marshall owned the Flying M Ranch in Milnesand and the store was originally called the Flying M Store. Mr. Marshall is in the Smithsonian's National Postal Museum as one of the pioneer Air Mail Pilots. Davis Mercantile was a place to pick up hunting permits for LPCs and other wildlife, and in more recent years has been a gathering place for the annual Prairie Chicken Festival. Milnesand is known as the Prairie Chicken Capital of New Mexico, and CEHMM intends for this building to serve as an eligible historic site, emphasizing the historic perspective regarding the legacy of the LPC.

Figure 2: Davis Mercantile and a young Ethel Davis, circa early 1940s. Ethel holds the record in NM for the longest serving Postmaster of over 50 years. When her husband Paul was called to war, Ethel was tasked to drive a truck to haul goods to various towns.

Conservation Activities and Monitoring

CCA/A – District 1 & District 2 Combined Efforts

CEHMM held two stakeholder selection meetings to determine members of the stakeholder committee. The meetings were held with both industry enrollees and ranching enrollees. Four members from each group were selected to be on the stakeholder committee. Other members of the stakeholder committee include representatives from the State Land Office and New Mexico Department of Game and Fish.

CEHMM personnel attended the Open Trench Wildlife Removal Workshop in Artesia, NM on January 25, 2018.

Completed Projects January 2018

CCA/A – District 1 – South of Hwy 380

No projects were completed this month.

CCA/A – District 2 – North of Hwy 380

Running N Interior Fence — This project was started and completed in January 2018 (Figure 1). 1.72 miles of interior fence were installed to separate one large pasture, improving grazing (Figure 3). This fence is on both federal and state trust lands. The project was cleared by NMSLO and BLM. CEHMM obtained the right of entry prior to commencing work. The Running N ranch manager has worked with CEHMM and the BLM in developing a rotational grazing program with deferred pastures, which allows native grasses and forbs time to recover while providing suitable habitat for nesting, brood-rearing, foraging, and cover for the LPC (Appendix A). There are both historic and active leks on this property. This project was funded in July 2016 for $26,716.

Figure 3: Running N Interior Fence – New Wildlife-Friendly Fence

Funded Projects Awaiting Completion

CCA/A – District 1 – South of Hwy 380

Pearce Water – This project was funded in August 2014 for $200,000. The Pearce water well (Figure 4) was drilled to a depth of 380 feet into a water bearing zone in a sandstone formation. A pump test was conducted, with the well maintaining a flow rate of one gallon per minute. Drilling mud was cleaned out of the well with no increase in the flowrate. CEHMM has contacted the drilling company contractor to discuss options for improving the quality of the well.

Smith Water – This project was funded in July 2016 for $19,657.63. CEHMM will develop a bid proposal for contractors. National Environmental Policy Act (NEPA) was completed in August 2017. Mr. Smith is completing the road bore. This project is on hold until CEHMM meets with Mr. Smith, as there is a conflict with a potential rail spur in the same area (Figure 4).

James Water – This project was funded in 2016 for $20,641.34. CEHMM has removed this project from funding, as the owner had planned to sell the ranch (Figure 4). The owner has since decided to keep the ranch, and will submit a new proposal for water development for consideration at the next ranking team meeting.

CCA/A – District 2 – North of Hwy 380

Riley Mesquite – This project was funded in February 2014 for $98,707. CEHMM personnel determined that the insect damage was too severe on the honey mesquite to adequately absorb the herbicide; therefore, the project has been postponed until 2018 (Figure 5).

Mesquite Hand Treatment of Active Leks #1 – Seven 502-acre plots will be hand treated for Honey Mesquite to total 3,514 acres (Figure 5). This project was funded in March 2017 for $897,876.85. Bids were received on this project; however, due to significant disparity in bids received (and in order to remain fiscally responsible to the CCA/A Program) CEHMM has determined that the discrepancy warrants a rebid. CEHMM will start the RFP process over to put the project back out for bid.

Mesquite Hand Treatment of Active Leks #2 – The ranking team has approved additional leks to be hand treated. This project was funded in August 2017 for $745,470. CEHMM and the ranking team are in the process of identifying leks to be treated.

Funded Projects Awaiting Completion

CCA/A – District 2 – North of Hwy 380

Bresenham Mesquite – It has been determined that the proposed aerial application of Sendero to control mesquite on Bresenham is too close to their home and trees and will not be allowed per the protocol. CEHMM staff will revise the budget and request a hand application. This 450 acre project (Figure 5) was funded in August 2014 for $11,750.

Mesquite Eradication – In August 2017, the CCA/A ranking team approved proposals for removal of dead standing mesquite (DSM). One of the remaining two projects will be started in July 2018 with the other being started immediately after completion of the first. Both will be completed in 2018, following two years post treatment. Eradication will be completed via skid steers for the purpose of removing vertical structure. Refer to attached "Conservation Benefit: Mesquite Removal" (Appendix B). All eradication efforts will be conducted on deeded lands.

- Peterson/Luman DSM Removal – 250 acres of DSM will be removed (Figure 5). This project was funded in August 2017 for $26,562. Work will commence in 2018.
- M. Williamson DSM Removal – 482 acres of DSM will be removed (Figure 5). This project was funded in August 2017 for $48,671. Work will commence in 2018.

Research

Blake Grisham submitted his final report for the CCA/A-funded research assessing the impact of land management practices and environmental variability on vegetation communities in shinnery oak grassland communities associated with LPC populations. The ranking team was provided the final report for review.

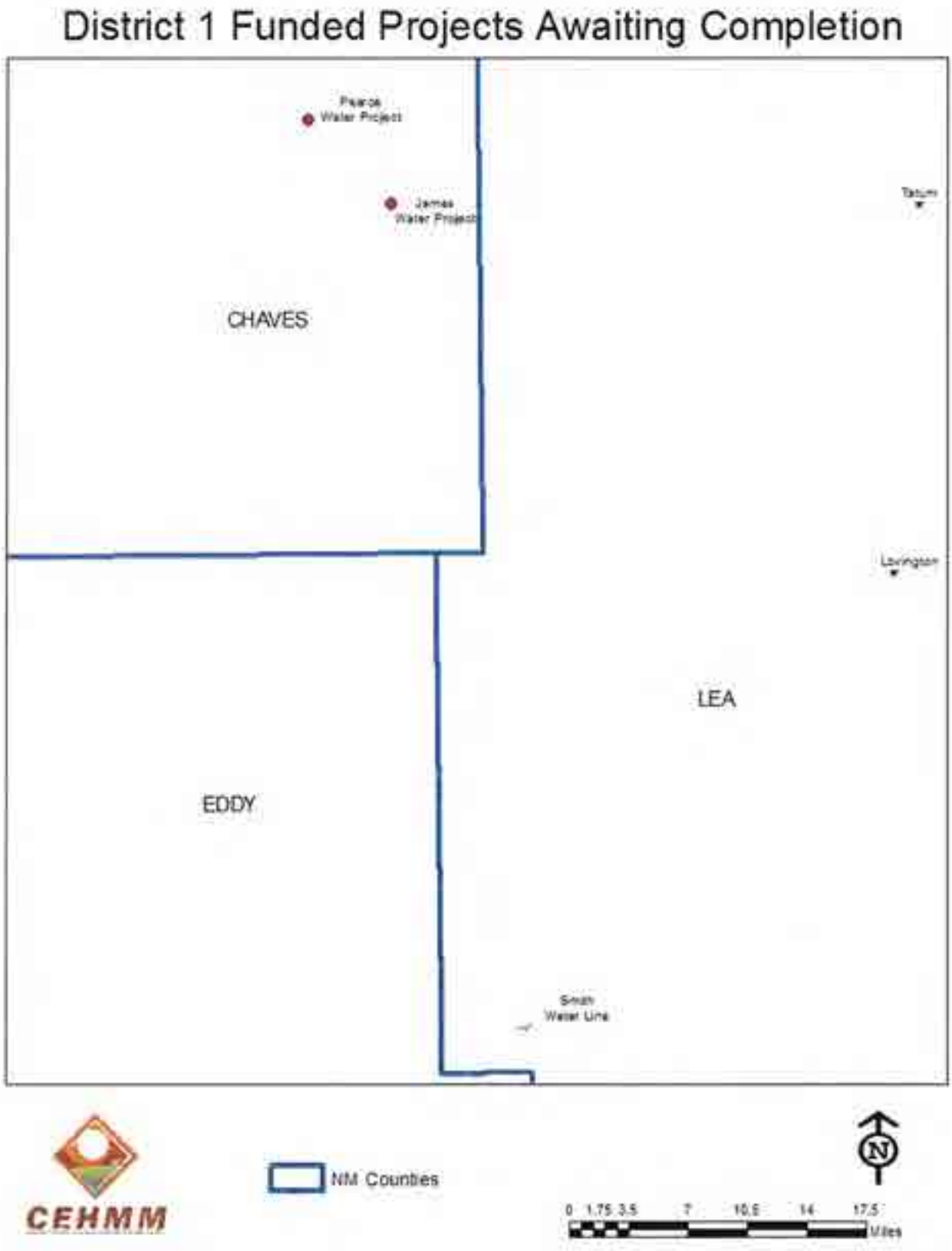


Figure 4: District 1 Funded Projects Awaiting Completion

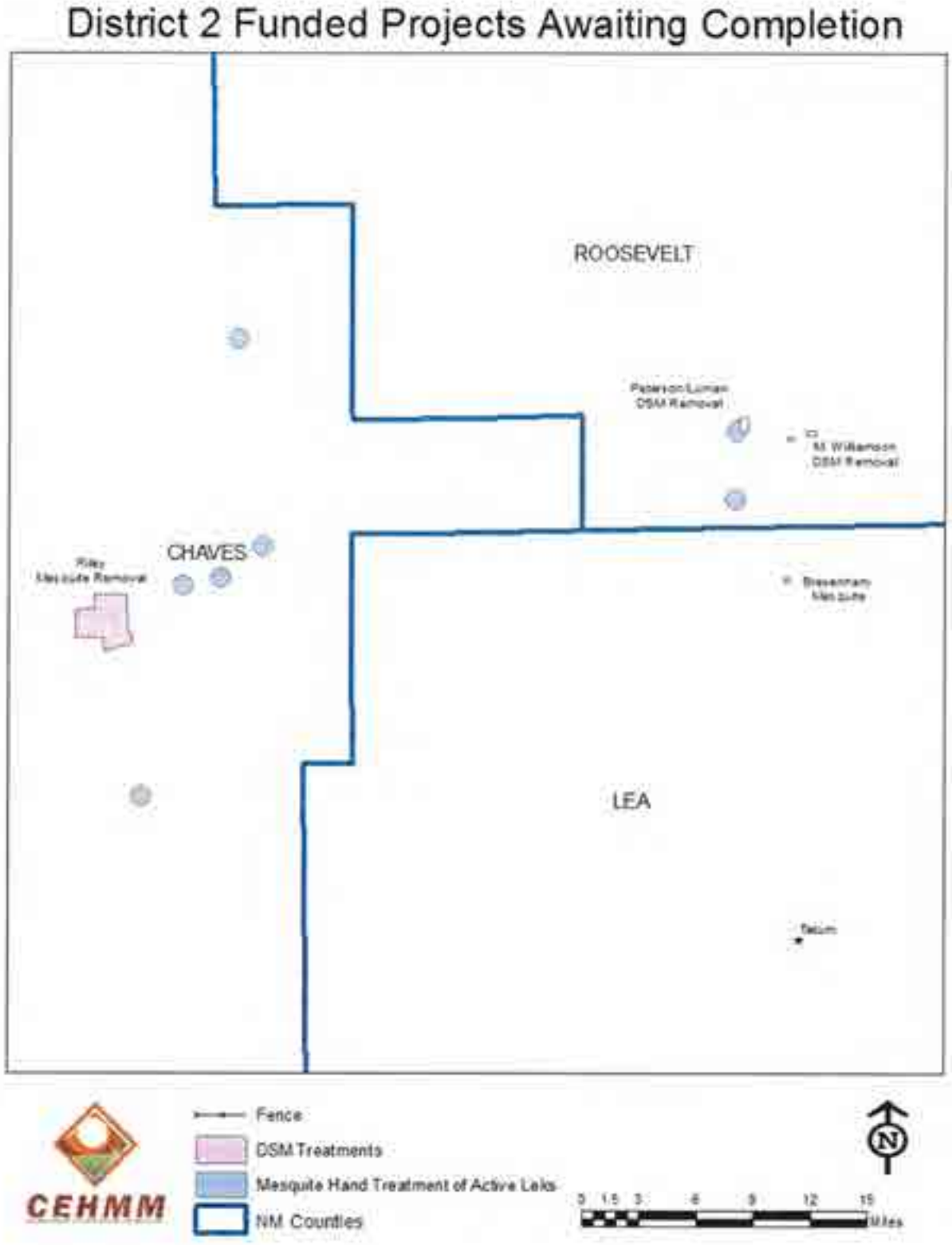


Figure 5: District 2 Funded Projects Awaiting Completion

Education

Audubon of New Mexico Education/Outreach Manager is initiating Audubon's plans for the CCA/A funded project "Engaging Community in Conservation Education". They are developing a high school environmental education program to be delivered to local students within historic and current Lesser Prairie-Chicken/Dunes Sagebrush Lizard habitat in New Mexico. This program will target the following New Mexico high schools: Dora, Floyd, Elida, Portales, and Carlsbad Early College High School with the intent to engage at least one class in each school by the end of the contract period. Audubon will provide a finished curriculum with lesson plans by June 2018.

Operations Moved out of DSL Habitat

Construction of well pads and roads for oil and gas development in DSL habitat poses a serious threat to a species which depends on a very specialized dynamic habitat. Due to the severity of the loss of DSL habitat from development, enrollees have agreed to conservation measures including no-surface occupancy within 30 meters of suitable or occupied DSL habitat. CEHMM attends onsites with enrolled companies to help site roads, pads, pipelines, and power lines in areas that are in near proximity to suitable and occupied habitat. During the onsite, CEHMM helps to determine suitability of the habitat and ensure that the companies avoid the dunes by the required 30-meter buffer. If the disturbance is within the 30-meter buffer, then the enrolled company, in order to comply with their agreements, must relocate the disturbance to occur outside of the 30-meter buffer. The number of wells and ROWs moved out of DSL habitat below shows the importance of every day implementation of the CCA/As to the conservation of the species.

Year	Federal Wells	State Wells	ROWs	Seismic Data Acquisition (Acres)
2009	0	0	0	2,900
2010	79	0	0	1,454
2011	83	0	15	0
2012	65	22	1	0
2013	73	3	7	0
2014	77	6	1	0
2015	36	37	68	0
2016	80	15	0	0
2017	5	0	0	0
2018	0	0	0	0
Total	**498**	**83**	**92**	**4,354**

Reclamation/Restoration

In areas of loose and sandy soil, oil and gas well pads and roads are constructed from caliche, which is a layer of calcium carbonate that is precipitated below the soil surface through evaporation in arid environments. Caliche makes an ideal substrate for roads; it becomes almost impenetrable when compacted with heavy equipment. When companies construct these roads and well pads in LPC and DSL habitat, this impenetrable layer fragments the habitat. Reclamation of these wells and pads removes the caliche from the surface using heavy equipment. By removing the caliche pads and roads, fragmentation in LPC and DSL habitat is reduced or eliminated. Once the caliche is removed, reseeding with native vegetation occurs which speeds up the process of rehabilitating the disturbed areas. The table below details the reclamation treated to date through the CCA/A agreements.

Total Acres Treated for Entire Project	
Roads and Pads Caliche Removal and Reseeding (Number)	154
Mesquite (Acres)	79,363
Dead Standing Mesquite Eradication (Acres)	1,922.7
Yucca (Acres)	120

Well/ROW/Frac Pond Deductions

Industry Participating Cooperators are assessed fees for surface disturbing activities, which CEHMM assesses on a monthly basis. New surface disturbances include, but are not limited to wells, Rights of Way (ROW), and frac ponds. The fees assessed are then deducted from the Participating Cooperator's CCA/A Habitat Conservation Fund at the end of each month. A copy of the deductions are sent to Participating Cooperators for verification. If a Participating Cooperator has a positive Habitat Conservation Fund balance, then the fees are deducted from that Participating Cooperator's Habitat Conservation Fund. If the company does not have a positive Habitat Conservation Fund balance, the company is issued an invoice for the amount of the remaining balance. The tables below show fees assessed for surface disturbing activities.

Total Deductions for January 2018
$217,250.00

Total Deductions for Entire Project
$18,594,831.96

Enrollment Numbers

**NMDGF acres are included in the rancher numbers*

TOTAL HABITAT ENROLLMENT	ACRES
Total LPC/DSL habitat acres enrolled by Industry	1,913,481.45
Total LPC/DSL habitat acres enrolled by Ranchers	1,868,425.68
Total LPC/DSL CCA habitat acres enrolled by Industry and Ranchers	1,115,834.82
Total LPC/DSL CCAA habitat acres enrolled by Industry and Ranchers	1,734,593.40
Total LPC/DSL CCAA habitat acres enrolled by the NMSLO	402,087.66
Total LPC/DSL CCA/A habitat acres enrolled by Industry, Ranchers (and NMDGF), and NMSLO	2,987,599.86

DSL	ACRES	% ACRES ENROLLED
Total DSL habitat acres in NM*	868,618	
DSL habitat acres enrolled by Ranchers CCA/A	583,422.11	67.17%
DSL habitat acres enrolled by Ranchers in BLM RMPA	522,712.05	60.18%
DSL habitat acres enrolled by Industry CCA/A	424,581.99	48.88%
DSL habitat acres enrolled by Industry in the BLM RMPA	379,040.07	43.64%
DSL habitat acres enrolled by NMSLO	159,066.37	18.31%
Total DSL CCA/A habitat acres enrolled by Industry, Ranchers (and NMDGF), and NMSLO	727,591.66	83.76%

LPC	ACRES	% ACRES ENROLLED
Total LPC habitat acres in estimated occupied range (EOR)	2,069,934	
LPC habitat acres enrolled by Industry in EOR	503,483.36	24.32%
LPC habitat acres enrolled by Ranchers in EOR	876,595.64	42.35%
LPC habitat acres enrolled by NMSLO in EOR	359,906.59	17.39%
Total LPC CCA/A habitat acres in EOR enrolled by Industry, Ranchers (and NMDGF), and NMSLO	1,178,219.10	56.92%

*This acreage is based on the Texas A&M DSL polygon utilized by the BLM, which includes a one-mile buffer around the polygon.

Enrollment Numbers

**NMDGF acres are included in the rancher numbers*

EOR + 10	ACRES	% ACRES ENROLLED
Total LPC habitat acres in estimated occupied range + 10 mile buffer (EOR10)	6,874,894	
LPC habitat acres enrolled by Industry in EOR10	1,614,900.62	23.49%
LPC habitat acres enrolled by Ranchers in EOR10	1,643,608.45	23.91%
LPC habitat acres enrolled by NMSLO in the EOR10	1,458,408.57	21.21%
Total LPC CCA/A habitat acres in EOR10 enrolled by Industry, Ranchers (and NMDGF), and NMSLO	3,264,820.39	47.49%

HISTORICAL	ACRES	% ACRES ENROLLED
Total LPC habitat acres in historic range	13,650,507	
LPC habitat acres enrolled by Industry in historic range	1,870,218.17	13.70%
LPC habitat acres enrolled by Ranchers in historic range	1,862,986.82	13.65%
Total LPC habitat acres enrolled by Industry in BLM RMPA	414,368.53	3.04%
Total LPC habitat acres enrolled by Ranchers in BLM RMPA	724,328.45	5.31%

CHAT 1	ACRES	% ACRES ENROLLED
Total acres in CHAT 1	782,129	
LPC habitat acres enrolled by Industry in CHAT 1	136,715.22	17.48%
LPC habitat acres enrolled by Ranchers in CHAT 1	345,845.82	44.22%
LPC habitat acres enrolled by NMSLO in CHAT 1	156,826.81	20.05%
Total LPC CCA/A habitat acres in CHAT 1 enrolled by Industry, Ranchers (and NMDGF), and NMSLO	462,032.36	59.07%
Total LPC CCA/A habitat acres in CHAT 1 enrolled by Industry and Ranchers (and NMDGF)	419,806.41	53.67%

Enrollment Numbers

**NMDGF acres are included in the rancher numbers*

CHAT 2	ACRES	% ACRES ENROLLED
Total acres in CHAT 2	704,494	
LPC habitat acres enrolled by Industry in CHAT 2	43,075.96	6.11%
LPC habitat acres enrolled by Ranchers in CHAT 2	70,163.58	9.96%
LPC habitat acres enrolled by NMSLO in CHAT 2	81,169.95	11.52%
Total LPC CCA/A habitat acres in CHAT 2 enrolled by Industry, Ranchers (and NMDGF), and NMSLO	164,196.67	23.31%
Total LPC CCA/A habitat acres in CHAT 2 enrolled by Industry and Ranchers (and NMDGF)	106,878.27	15.17%

CHAT 3	ACRES	% ACRES ENROLLED
Total acres in CHAT 3	3,712,299	
LPC habitat acres enrolled by Industry in CHAT 3	1,112,793.45	29.98%
LPC habitat acres enrolled by Ranchers in CHAT 3	1,073,265.66	28.91%
LPC habitat acres enrolled by NMSLO in CHAT 3	745,907.18	20.09%
Total LPC CCA/A habitat acres in CHAT 3 enrolled by Industry, Ranchers (and NMDGF), and NMSLO	1,899,995.40	51.18%
Total LPC CCA/A habitat acres in CHAT 3 enrolled by Industry and Ranchers (and NMDGF)	1,492,594.48	40.21%

CHAT 4	ACRES	% ACRES ENROLLED
Total acres in CHAT 4	1,494,397	
LPC habitat acres enrolled by Industry in CHAT 4	268,767.60	17.99%
LPC habitat acres enrolled by Ranchers in CHAT 4	133,730.25	8.95%
LPC habitat acres enrolled by NMSLO in CHAT 4	417,925.06	27.97%
Total LPC CCA/A habitat acres in CHAT 4 enrolled by Industry, Ranchers (and NMDGF), and NMSLO	662,843.43	44.36%
Total LPC CCA/A habitat acres in CHAT 4 enrolled by Industry and Ranchers (and NMDGF)	355,079.15	23.76%

Signature

If you have any questions, please call Matt Mathis or Emily Wirth at (575) 885-3700.

Signed: _____
Douglas C. Lynn, Executive Director

Date: 02-07-2018

Appendix A

Conservation Benefits

Grazing Management

CEHMM recognizes the mutual benefit between sustainable grazing and lesser prairie-chickens. Collaboration between enrollees and the efforts of the CCAA via technical and financial assistance leads to improved grassland health.

The lesser prairie-chicken (LPC) occupies four ecoregions in the Great Plains. In eastern New Mexico and west Texas, this region is known as "Sand Shinnery Oak Prairie" (SSOP) and is dominated by shinnery oak, sand/big-bluestem, little bluestem, sand drop seed and sand sagebrush. Ranching is the most common use of this large expanse of land. Grazing as a conservation tool for the LPC is an essential management component as this endemic species has evolved with large bovines for centuries. SSOP is the southernmost extension of the LPC range; the warmest and driest ecoregion of the four ecoregions. Sustainable grazing practices have been identified by Center of Excellence (CEHMM) and US Fish and Wildlife Service (FWS) as a top priority to insure adequate habitat for all life stages of the LPC.

Benefits of Sustainable Grazing

- Improved rangeland for wildlife and ranching operations.
- Improved quality and quantity of forage.
- Heterogenic landscapes for all grassland species.
- Drought resiliency.

CCAA

Conservation Benefits: Grazing Management

Range Conservationist Spotlight:

CEHMM District 2
Josh Ricklefs

Sustainable Grazing and the Lesser Prairie Chicken

"Grazing practices utilizing a rest/rotation pattern, paired with stocking rates that the land is capable of supporting, promote habitat for the lesser prairie-chicken, while also allowing ranchers to sustain and improve rangeland health. Sustainable grazing practices leave residual vegetation of sufficient height and density that the lesser prairie-chicken can utilize for nesting, brood-rearing, and concealment from potential threats. This also helps the rancher by acting as a drought contingency plan, as the rangeland will be in better condition when a drought event occurs. The vegetation will also be more resilient and will be able to respond better once drought conditions end. Through vegetation monitoring, CEHMM can analyze trends along with current rainfall data to assist ranchers in planning for these events. Improved and new infrastructure via projects through CCA funding also allows the rancher to implement sustainable grazing practices to the benefit of both the rancher and the lesser prairie-chicken."

The dunes sagebrush lizard, a species of concern, is a secondary beneficiary of sustainable grazing. Attention to the treatment of their very specialized habitat and ability to survey on private lands has increased survey numbers and knowledge in this species.

Photo courtesy of Mike Hill

Sustainable grazing practices are addressed in the Candidate Conservation Agreements and Agreements with Assurances (CCA/CCAA). The voluntary Certificate of Participation (CP) and Certificate of Inclusion (CI), which applies to enrolled ranches on federal, state and/or deeded lands, partially includes:

- ✓ Improving or maintaining conservation lands.
- ✓ Designing grazing plans to meet habitat specific goals for individual ranches that may include stocking rates, rotation patterns, grazing intensity and duration, and contingency plans for varying prolonged weather patterns including drought.
- ✓ Utilizing no more than 45% of current year's forage growth.
- ✓ Consultation with CEHMM prior to using herbicide treatments on shinnery oak due to impacts upon LPC and the dunes sagebrush lizard (DSL). Post-treatment grazing management is essential for success. Grazing by any livestock will be deferred during the growing season for at least the two consecutive years following treatment.

CEHMM works with enrollees on grazing plans, improving infrastructure and monitoring vegetation. CEHMM, with approval from the Candidate Conservation Ranking Team, offers assistance on such practices as brush management, water development, prescribed fire, fencing, and defragmentation through road and well pad reclamation.

CEHMM monitors vegetative components of LPC habitat on the enrolled livestock operations to determine habitat improvement, static levels, or decline in habitat by using standard protocol methods:

- ✓ Forage utilization cages.
- ✓ Determination of composition and cover of forbs, grasses and woody plants through established grazing monitoring methods.
- ✓ Establishing photo points to view trends.

To learn more about CCA/A assistance, contact your local CEHMM office:

District 1 – 575-885-3700
District 2 – 575-675-2324
Visit us at www.cehmm.org

CCA/A

Conservation Benefits: Grazing Management

Conservation Benefits

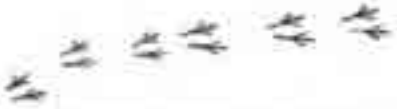
Mesquite Removal

CEHMM

Fragmentation and loss of habitat for the lesser prairie-chicken is considered a major cause for the decline in population of this grassland bird across their range.

Honey Mesquite (*Prosopis* spp.) is universally accepted as an invasive and highly competitive shrub that may readily encroach onto landscapes that did not historically support the species. This landscape has experienced intense disturbance or changes in natural ecological processes over a significant period of time. Through interspecific competition with other beneficial plant species, mesquite has increased in frequency, and subsequently led to a transition from grassland landscapes into shrub/grasslands which is less desirable for grassland birds, specifically lesser prairie-chickens (LPC). Research shows that LPC avoid areas with more than 1% mesquite canopy cover due to changes in vertical obstruction and conversion to shrub-dominated landscapes, which greatly limits desirable habitat for this species.

Mesquite outcompetes desirable grasses and forbs, thus reducing quality and quantity of nesting habitat for LPC. Removal or reduction of mesquite in lesser prairie-chicken habitat, followed with proper grazing management, can increase production and composition which will benefit grassland species.



Mesquite skeleton following a successful herbicide treatment.

CCAIA

Conservation Benefits: Mesquite Removal

LPC Biologist Highlight:

Blake Grisham, PhD, Texas Tech University

"Mesquite removal is most beneficial for lesser prairie-chickens in areas within 1–2 miles of existing, active leks. Contemporary evidence suggests mesquite encroachment in areas surrounding leks causes lesser prairie-chickens to constrain their space use to areas without mesquite. Also, and more importantly, mesquite dominated landscapes (>25% mesquite cover at any scale) are structurally different than grasslands, and research shows that lesser prairie-chickens select shrubs and grasses 15-25 inches tall for nesting and brood rearing activities. The benefits of mesquite removal for lesser prairie-chickens are maximized when the skeleton of treated plants are completely removed. Post-treatment care via managed grazing and prescribed fire is highly recommended to give beneficial grasses and forbs the competitive advantage over mesquite in treated areas over time. Beyond 1–2 miles of existing, active leks, targeting areas between active leks in sandy soils that contain mesquite is an excellent strategy to promote connectivity between active lek clusters across the sand shinnery oak ecoregion in New Mexico and Texas."

Conservation Benefits:

- ✓ Improved grasslands habitat for lesser prairie-chickens.
- ✓ Increase grasslands resiliency for drought conditions.
- ✓ Removes vertical obstruction.

CEHMM's Approach to Mesquite Control

- Aerial herbicide
- Hand application of herbicide

Aerial application is the least expensive method to control mesquite because large areas with high densities can be treated. The ability to perform aerial applications is limited by plant health, precipitation, temperature and wind speed. Certain thresholds within these limitations must be met to ensure that the treatment will be successful.

Hand application may be performed at any time of the year. This method produces a higher percent kill of individual plants due to the ability of directly applying the chemical to each plant. Cost per acre is appreciably higher than aerial applications and smaller areas with lower densities must be targeted.

CEHMM's Approach to Removal of Dead Standing Mesquite

- Shredding-Mowing

Once the mesquite plant is dead, the skeleton of the plant is still a vertical obstruction and must be removed to actually deliver a conservation benefit for the LPC. CEHMM returns to past herbicide treatments and removes the dead standing mesquite.

To learn more about CCAA assistance, contact your local CEHMM office:

District 1 – 575-885-3700
District 2 – 575-875-2324
Visit us at www.cehmm.org