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To: Noe Gonzalez, AFM – Resources
From: Steve Belinda, Wildlife Biologist
Subject: 2003 Lesser Prairie Chicken Survey Report and Recommendations

Lesser Prairie Chicken (LPC) surveys were conducted from March 17, 2003 until May 3, 2003 by personnel from the Carlsbad Field Office (CFO) BLM, Auburn University (Auburn), and private individuals contracted by the BLM. Surveys completed by BLM and under contract, consisted of listening points spaced $\frac{1}{2}$ mile apart with each listening stop comprising of 3-5 minutes of listening for LPC. Surveys started at approximately 1 hour before sunrise and went until 2 hours after sunrise or 8 AM. Survey routes were determined by the presence of shinnery oak community and/or the location of previously identified lek-sites. If LPC were heard, efforts were made to confirm and document active lek locations through on-the-ground searching. Surveys completed by Auburn were consistent with previously identified survey routes with listening points spaced at 1 mile intervals (These surveys were completed as part of an on-going research project which is looking at the impacts to LPC and habitat from oil and gas development).

Survey routes were planned to eliminate the possibility of surveyors covering the same area on the same day. This was done by mapping the habitat and pre-determining routes the previous afternoon. Information was collected for each survey route including starting location, weather, noise, condition, etc. At each listening point, information was collected including the start time, stop time, and LPC observations. If a survey was near a known lek-site, a physical inspection was completed of the lek-site and any LPC observations were recorded on lek-site survey forms. All survey forms are on file with the wildlife program at CFO. If weather prohibited effective surveying for any particular day, surveys were not completed. Additionally, each listening point was recorded with GPS receivers to incorporate this information into the CFO Geographic Information System (GIS) databases.

Results from the LPC surveys can be broken down into three categories, results from CFO personnel, results from Auburn surveys, and results from contracted surveys.

CFO Personnel

A total of 42 surveys were completed consisting of 424 listening points. LPC were heard on a total of 4 routes (9.5%) consisting of 12 listening stations (3%). LPC were heard at five stops near an active lek near Eunice (EU-2) four stop near historic leks (Quercho Plains), and 3 stops in an area where no previous leks had been documented by BLM (Northern Lea County). When LPC were heard on a route, efforts were made to locate and document lek location and an attempt to count the number of LPC was made. Five leks were documented, 1 near Eunice (EU-2) and 4 in northern Lea County (no lek number assigned). No active leks were found where LPC were heard at the other 4 listening points.

All listening points were recorded with a GPS and other pertinent information collected. Points were geospatially corrected and incorporated into the wildlife GIS files. All points were then buffered to determine total area surveyed. Buffer distances were selected based on estimated effective listening distance (0.5 and 1.0 miles). These distances were based on literature review and experience. These distances give a range of area surveyed rather than an absolute number. A total of 129,150 (0.5) to 273,743 (1.0) acres were surveyed. This represents between 19% (0.5) and 40% (1.0) of LPC habitat surveyed in areas where BLM has ownership or fluid mineral jurisdiction (684,694 acres). This only represents approximately 10% (0.5) to 21% (1.0) of all LPC habitat, irregardless of ownership, found within CFO boundaries (1,298,271 acres of plains-mesa broadleaf shrub community which sand/shinnery oak is a main component).

Each of the 35 known leksites were surveyed and inspected at least twice. Inspection included physically locating the leksite post and examining the area looking for evidence of LPC activity (tracks, scat, feathers). One active lek was confirmed (EU-2) with 14 birds and 3 other leksites showed evidence of LPC (EU-1, QP-25, QP-26) although the evidence was not enough to make a determination that the lek had been active (no LPC were heard on or near these leksites).

Additionally, 2 LPC were confirmed by Steve Belinda (Wildlife Biologist) on a survey route near QP-22, but no LPC were heard or active lek located during subsequent searches of the area.

Auburn Personnel

Personnel from Auburn University surveyed 10 established routes, with listening points ranging from 35 to 40 each, for a research project examining the impacts from oil and gas activities on LPC. Each route was surveyed 3 times, 7 days apart for a total of 1128 listening points. LPC were heard on only 1 route (10%), 2 listening points near an active lek near Eunice (EU-2). LPC were heard at only 1 listening point (2 total) on only 2 of the 3 (<1%) occasions that this route was completed. Total acreage covered was not computed due to the difference in survey protocol and possible overlap of BLM survey efforts. Routes were located near 22 of the 35 known leksites within the CFO. This was the third consecutive year these routes were completed for the research project.

Contract Personnel

BLM contracted 2 private individuals for LPC surveys in northern Lea County in conjunction with a federal lease parcel sale and nominated parcels in that area. The area consists of mostly

private and state lands with scattered federal mineral estate, commonly referred to as "split-estate." Each individual was familiar with LPC surveys and LPC detection and have previously completed LPC surveys. BLM instructed contractors on location and protocol for surveys and provide each with proper forms and maps. Each listening point or route was located on maps and data forms filled out for each listening point. Forms and maps were returned to BLM and entered into the wildlife GIS for CFO. A total of 15 routes consisting of 347 listening points were completed. LPC were heard on 10 of 15 (67%) routes and 80 of 347 (23%) listening points. At each point where LPC was heard a compass bearing and distance was recorded. Listening points were spaced at 0.5 mile intervals, increasing the chance of hearing a lek from more than one listening point. Triangulation analysis was completed on LPC information to estimate the approximate number of leks heard. A total of 72, previously un-documented by BLM, leks were estimated to be found by this method.

Conclusions

Only 1 active lek was confirmed of the 35 known leksites (EU-2). LPC evidence was found on 3 leksites but the lek was not confirmed to be active. LPC were heard, evidence observed and birds sighted in scattered locations during survey efforts. LPC populations remain low and are sparse and scattered within the CFO. Although only 1 active lek was located, observations and evidence of LPC are still occurring.

Extensive survey efforts and rigorous protocol was followed in 2003. Survey efforts were well documented and from the analysis less than 50% of the potential LPC habitat was surveyed in 2003. Also, surveys were only completed one time increasing the chance of not locating LPC or active leks. LPC survey efforts are very time consuming requiring many man hours. It is imperative that surveys and lek monitoring be well documented, including recording information with GPS and field forms.

It is not known why the LPC populations within most of CFO (excluding N. Lea County) have declined to the levels they are now. Drought, livestock grazing, fragmentation, impacts from oil and gas development/exploration, OHV use, and natural factors are possibly all affecting LPC populations. But even though conditions are bleak, LPC continue to persist with CFO.

Recommendations

Existing Efforts

- LPC survey efforts should continue focusing on areas of past leks, suitable habitat, and areas of larger blocks of potential habitat. This should be coordinated with a more detailed LPC habitat mapping effort and suitability modeling.
- All known leksites should be monitored and to determine LPC activity
- Surveys should be well documented and follow a standard protocol throughout the field office.
- Field forms should be reviewed and changes made according to the information collected, including new disturbances and noise.
- Survey routes should be formalized with maps, photos, and GPS data recorded.

- Vegetative information should be collected on allotments and rangelands for residual cover (Robel method) and composition (pace/point) on a yearly or periodic basis.
- Research should continue to investigate to impacts to LPC or LPC habitat from all possible sources including oil and gas development/extraction, grazing, drought, disease, and others.

New Efforts

- Additional survey personnel should be hired (seasonals) or contracted to increase the likely of documenting LPC and determining active leks.
- Volunteers and other permanent BLM employees should be utilized to the fullest extent possible.
- Each route should be surveyed **at least twice** to increase the possibility of detecting LPC.
- All personnel who survey for LPC should have hearing tests completed to confirm adequate hearing skills for booming surveys and attend a training session to familiarize them with protocol, LPC habitat, and other imperative factors involving LPC surveys.
- Effective listening distances should be determined for different topography, different weather conditions, and different levels of oil and gas development.
- Lek detection probability and other factors that may influence LPC detection should be researched and evaluated.
- All known leksites should have photo points established according to protocol and re-visited on a regular basis.
- Other types of survey efforts should be utilized in detecting LPC activity including, but not limited to aerial surveys, infrared surveys, dog flush surveys, remote photo monitoring, etc.

Coordination

- Due to resource and budgetary constraints, efforts to maximize field surveys and data collection should be coordinated with the Roswell Field Office.
- Other efforts to coordinate with the NM Game and Fish Department, State Land Office, WIPP site, FWS, and private landowners should be made to determine the full extent of the LPC range in SE NM and to find as many active leks as possible.
- The area in N. Lea County should have a systematic survey completed to determine the extent of LPC occupancy in this area especially where federal mineral estate exists. Surveys should be coordinated with NM Game and Fish, NRCS, State Land Office, FWS, and private landowners.
- Information should be collected and incorporated into the management changes necessary for maintaining LPC populations and suitable habitats. Information should be shared as necessary with other agencies and groups interested in LPC management.
- CFO should continue to participate with the LPC Interstate Working Group and the SE NM LPC Working Group.