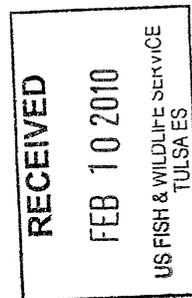


COLORADO LESSER PRAIRIE CHICKEN BREEDING SURVEY 2009

Trent Verquer - Colorado Division of Wildlife



Starting on April 1, 2009 and continuing through May 2009 surveys were conducted to determine breeding abundance of Lesser Prairie Chickens (*Tympanuchus pallidicinctus*) in Colorado. A dual-frame sampling design was employed, consisting of a list frame and an area frame. The list frame consisted of known lek locations that have been active at least once within the past 10 years. The area frame consisted of areas of unknown occupancy within the potential range of lesser prairie chickens (LPC) in southeast Colorado. Opportunistic searches were conducted as time permitted, usually based on reports from the public on LPC sightings, or in Conservation Reserve Program (CRP) grasslands outside the area frame. The Colorado Division of Wildlife hired three seasonal employees to assist with this effort. Volunteers and agency personnel from CDOW, NRCS and the USFS Comanche National Grasslands assisted with efforts in Baca County.

Methods

The sampling unit used in the dual-frame sampling process this year was a quarter section block (160 acres, .5 mile by .5 mile). The list frame consisted of all known LPC leks that have been active at least once within the past ten years. This was a total of 92 leks (83 quarter sections, some quarter sections had greater than one known lek). All surveys were completed beginning 30 minutes prior to local sunrise and no later than 2 hours after sunrise. An attempt was made to visit the quarter section containing a lek at least twice during the sampling period. A surveyor listened from at least two points on different sides of the quarter section block for five minutes. If chickens were detected, a lek count of total males, total females, and total unknown was completed.

The area frame consisted of all quarter sections in the potential range without a known lek. The area frame was determined by a Generalized Random Tessellation Stratified (GRTS) sample of 50 clusters of 4 quarter sections located 1 mile apart for efficiency. A surveyor would listen from 2 points on different sides of the quarter section. The surveyor would listen for five minutes at each point and record if birds were detected from every point. If detected, the surveyor would attempt to locate the lek and complete a count. An attempt was made to visit each quarter section at least twice.

Results

The statewide summary of total high count per lek detected for 2009 was 75 birds. These high-count totals were 42 males, 9 females, and 24 un-classified LPC. Birds whose gender was unknown were added into the high-count total, but were not used to calculate means for high male and female counts. It is assumed that the majority of these unclassified birds were males, but they were not added to the total male high counts. These were not classified due to the birds flushing prior to personnel being able to use optics to classify to gender. Total number of active leks found in 2009 was 13, with 6 in Baca County, 1 in Cheyenne County, and 6 in Prowers County. No active leks were counted in Kiowa County this year. Access could not be gained to every known lek in Kiowa County, and it is possible that there could be an active lek in Kiowa County. The majority of the locations on the list frame were checked in 2009. The vast majority of the area frame quarter sections were visited. We had limited access issues and access was

denied to a few quarter sections. No new leks were located with the area frame sampling. However, birds were detected on known leks in the list frame from adjacent area frame surveys.

The estimated number of leks statewide from the occupancy analysis was XX (SE=X, 95% confidence interval=(XX-XX)). There were X plots on which lesser prairie chickens were detected at least once, and the detection probability was 0.XX. The probability that an active lek had birds on it when sampled was 0.XX.

YEAR	MALES	FEMALES	UNKNOWN	TOTAL	ACTIVE LEKS
2008	67	12	37	116	17
2009	42	9	24	75	13

Comparison Table, lek counts

Colorado LPC Lek Survey

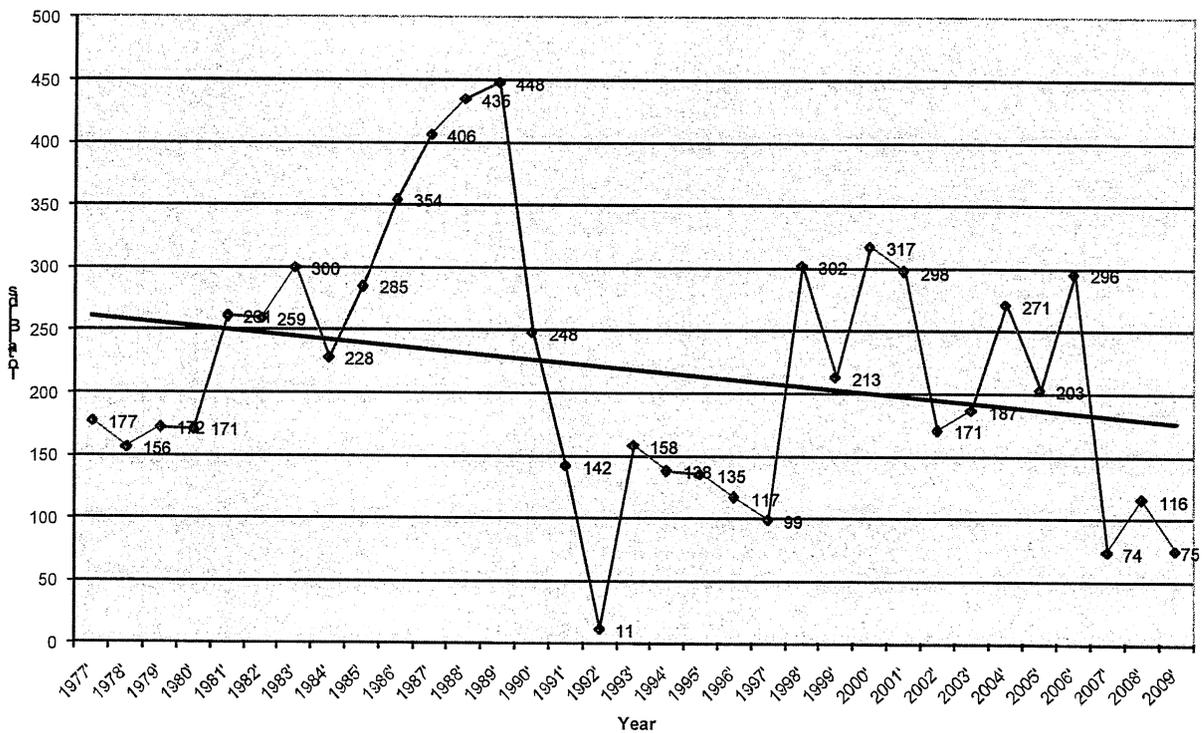


Table 2. Lesser prairie chicken count data-Prowers County, 2009

n Active leks	Lek ID	dates checked	n checked	High Count			Total
				Male	Female	Unknown	
	PR-01	4/25,4/30,	2	0	0	0	0
	PR-02	4/25,4/30,	2	0	0	0	0
	PR-03	4/25,4/30,	2	0	0	0	0
	PR-04	4/25,4/30,	2	0	0	0	0
	PR-05	4/8,	1	0	0	0	0
	PR-06	4/6,4/16,	2	0	0	0	0
	PR-07	4/6,4/30,4/27,	3	0	0	0	0
	PR-08	4/25,4/30,	2	0	0	0	0
	PR-09	4/25,4/30,4/8,	3	0	0	0	0
	PR-10	4/6,	1	0	0	0	0
	PR-11	4/8,4/27,4/13,	3	0	0	0	0
	PR-12	4/8,	1	0	0	0	0
	PR-13	4/8,4/30	2	0	0	0	0
	PR-14	4/27,	1	0	0	0	0
	PR-15	4/8, 4/29,	2	0	0	0	0
	PR-16		0	0	0	0	0
	PR-17	4/25,4/30,	2	0	0	0	0
	PR-18	4/6,	1	0	0	0	0
	PR-19	4/7,4/13,	2	0	0	0	0
	PR-20	4/7,	1	0	0	0	0
	PR-21	4/29,4/2,4/20,	3	0	0	0	0
1	PR-22	4/6,4/29,4/30,4/27,4/8,	5	4	1	0	5
2	PR-23	4/7,3/31,4/4,	3	0	0	5	5
	PR-24	4/6,4/16,4/27,	3	0	0	0	0
	PR-25	4/8,4/20,	2	0	0	0	0
	PR-26	4/6,4/27,4/27,4/8,	4	0	0	0	0
	PR-27	4/7,4/28,4/13,4/2,	4	0	0	0	0
	PR-28	4/27,4/28,	2	0	0	0	0
3	PR-29	4/14,4/28,3/31,4/4,	4	0	0	7	7
	PR-30	4/29,4/8,	2	0	0	0	0
	PR-31	4/8,4/13,	2	0	0	0	0
	PR-32	5/3,4/15,	2	0	0	0	0
	PR-33	4/8,4/20,4/13,	3	0	0	0	0
	PR-34	4/15,	1	0	0	0	0
	PR-35	5/3,4/2,	2	0	0	0	0
4	PR-36	4/14,4/16,4/28,4/6,	4	9	3	0	12
5	PR-37*	5/4,	1	8	1	0	9
6	PR-38*	5/4,4/13,4/1,	3	0	0	0	0
	PR-39	4/16,4/28,3/31,4/6,	4	0	0	0	0
6	Totals		89	21	5	12	
	Means/active		2.3	3.5	0.8	2.0	
						County total birds	38

*Same number of birds using both locations on different days, perhaps should only be 1 lek

Table 3. Lesser prairie chicken count data-Cheyenne County, 2009

n Active leks	Lek ID	dates checked	n checked	High Count			Total
				Male	Female	Unknown	
1	CH-1	not checked		0	0	0	0
	CH-2	not checked		0	0	0	0
	CH-3	not checked		0	0	0	0
	CH-4	4/22,4/21	2	0	0	0	0
	CH-5	4/21,4/23,4/22	3	0	0	10	10
	CH-6	4/21,	1	0	0	0	0
	CH-7	4/21,	1	0	0	0	0
1	Totals		7	0	0	10	
	Means/active		1.8	0.0	0.0	10.0	
County total birds							10

Table 4. Lesser prairie chicken count data-Kiowa County, 2009

n Active leks	Lek ID	dates checked	n checked	High Count			Total
				Male	Female	Unknown	
0	KI-1*	not checked		0	0	0	0
	KI-2*	not checked		0	0	0	0
	KI-3*	not checked		0	0	0	0
	KI-4*	not checked		0	0	0	0
	KI-5*	not checked		0	0	0	0
	KI-6	4/1,4/9,	2	0	0	0	0
	KI-7	4/1,4/9,	2	0	0	0	0
	KI-8	4/1,4/9,	2	0	0	0	0
	KI-9	4/1,4/9,	2	0	0	0	0
	KI-10	4/30,	1	0	0	0	0
	KI-11	4/1,4/9,	2	0	0	0	0
	KI-12	4/1,4/9,	2	0	0	0	0
	Totals		13	0	0	0	
	Means/active		1.9	0	0	0	
County total birds							0

* not checked as these have been inactive for >10 years and are no longer on list frame.

Discussion

Total number of LPC and leks detected in 2009 was down from 2008. Nesting and brood rearing conditions in 2008 were very poor due to an extremely dry spring and early summer. Outlook for production in 2009 is mixed. Habitat and moisture conditions are excellent for production, but there are several CRP fields in Prowers County occupied by LPC that are expiring. A few of these fields have been plowed out in preparation for farming, others are still in grass pending acceptance into the CP-38 LPC SAFE continuous CRP sign-up.

Summary

Similar to the past several years, Prowers County has had the highest number of LPC observed in Colorado but the number of leks in this county is down. Baca and Prowers had equal numbers of active leks. We have not detected birds in Kiowa County since the 2006/07 blizzard in the area east of the town of Eads. It appears CRP continues to be important to LPC in Prowers County as all active leks in the county were located in

CRP in 2009.

This effort would not be possible without the help and support of the many private landowners who allowed access for the surveys this spring. I would like to sincerely thank each and every one of you. Your contributions are greatly appreciated. I would also like to thank the numerous volunteers, Baca County Conservation District personnel, Comanche National Grasslands personnel, Fred Dorenkamp, Katie Kinney, Bryant Will, and all the CDOW folks who contributed to this year's survey. Thank You!