

# COLORADO LESSER PRAIRIE CHICKEN BREEDING SURVEY 2011

Trent Verquer and Mike Smith- Colorado Division of Wildlife

Between late March and May 2011, surveys were conducted to monitor breeding abundance of lesser prairie chickens (*Tympanuchus pallidicinctus*) in Colorado. An attempt was made to visit every known lek that has been active at least once in the past 10 years, and as many historic leks as time allowed. In addition, opportunistic searches were conducted as time permitted, usually based on reports from the public on lesser prairie chicken (LPCH) sightings, or in Conservation Reserve Program (CRP) grasslands. The Colorado Division of Wildlife (DOW) hired two seasonal employees to assist with this effort. The district wildlife managers from DOW and agency personnel from Natural Resources Conservation Service (NRCS), and United States Forest Service (USFS) Comanche National Grasslands conducted survey efforts in Baca and Cheyenne counties in 2011.

## Methods

We used three different methods to survey LPCH in Colorado, which include counts at historically active leks (known lek counts), ad hoc routes and walking routes. For both known lek counts, surveyors were instructed to park approximately .5 mile from known lek locations, shut off the engine, exit their vehicle, and listen for 5 minutes to audibly detect prairie chicken leks. If birds were detected, an attempt was made to count and classify all birds to gender. If an accurate count could not be made, surveyors were expected to perform a flush count. If birds were not heard during the listening period, surveyors should approach the known lek location to look for LPCH or signs of activity. All lek counts were conducted beginning 30 minutes prior to local sunrise and no later than 2 hours after sunrise. An attempt was made to visit the known leks at least twice between late March and mid-May 2011.

For ad hoc searches and routes, areas were chosen to include areas of likely habitat or where DOW received reports of LPCH. The survey protocol was similar to lek counts, with the survey starting 30 minutes before sunrise. Surveyors used 5 minute listening stations spaced one mile apart in likely habitat and were instructed to exit the vehicle, shut off the engine, and move a distance away to avoid engine cool down noise. Lastly, Ad hoc walking routes were used to survey areas away from roads and trails to reduce the potential for avoidance of vehicle noise. Surveyors were allowed to set their own routes based on their knowledge of the area and their knowledge of suitable prairie chicken habitat.

In addition to ground surveys, we also made an attempt in 2011 to use aerial surveys to identify new leks in Cheyenne County. The survey area included an area where ground surveys have been difficult to conduct in Cheyenne County due to lack of roads or landowner permission. In early April 2011, the DOW contracted with Quicksilver Air, Fairbanks, AK to conduct aerial surveys of historic LPCH range in Cheyenne and Kiowa counties using a Robinson R-44 II helicopter.

## Results

Survey efforts in 2011 detected a total high count of 161 birds (Table 1; Figure 1). The high-count totals were 104 males, 15 females, and 42 un-classified LPCH (Table 1). Birds not classified to gender were added into the high-count total, but were not used to calculate means for high male and female counts. The number of active leks found in

2011 was 17, and was similar to 2010 (Table 1). A total of 6 active leks were in Baca County (Table 2), 9 in Prowers County (Table 3) and 2 in Cheyenne County (Table 4). No active leks were found in Kiowa County in 2011 (Table 5).

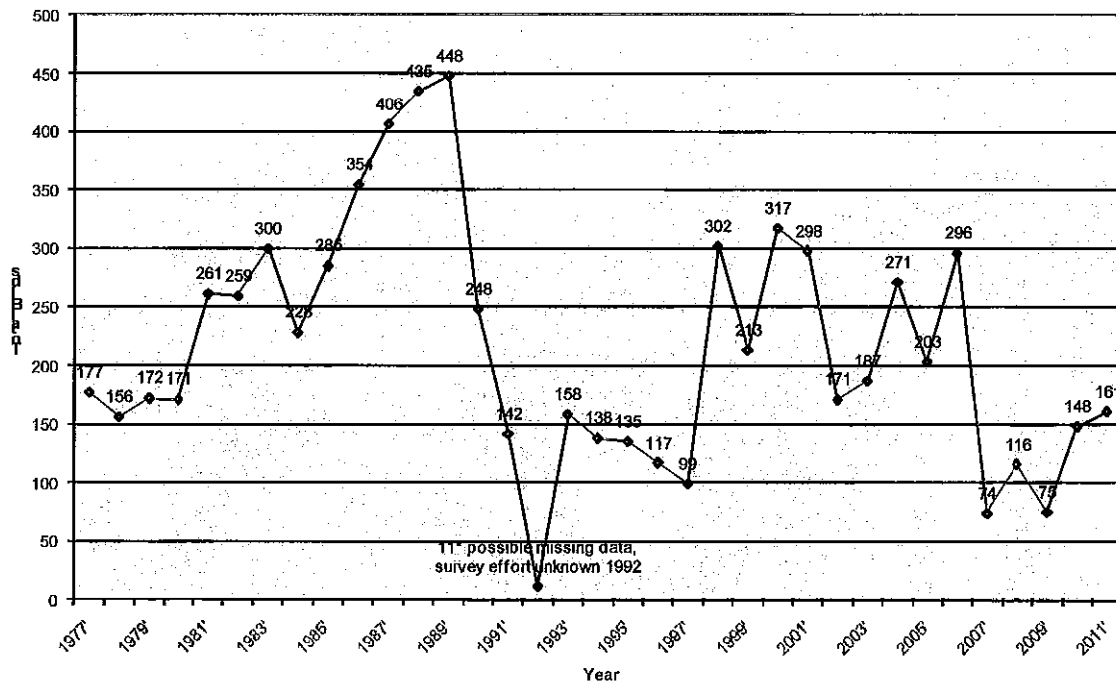
A total of 5 leks, accounting for 33 birds, were in Baca County on USFS Comanche National Grasslands, with the remaining birds in Baca County on private property. Habitat provided by CRP continues to be very important to LPCH in Prowers County. Of the 109 birds LPCH detected in Prowers County, 60 LPCH appear to be closely associated with, or located, within CRP.

An aerial survey program to identify new leks in Cheyenne County was conducted over 7 days for a total of 22 hours of flight time and covered 980.7 miles. No new leks were discovered.

**Table 1.** Number of male, female, unknown, and total lesser prairie chicken observed (combined high counts) and total number of leks in southeast Colorado in 2010 and 2011.

YEAR	MALES	FEMALES	UNKNOWN	TOTAL	ACTIVE LEKS
2010	69	6	73	148	17
2011	104	15	46	161	17

**Figure 1.** Total number of LPCH observed in SE Colorado from 1977 to 2011. Survey efforts were minimal in 1992 with no data recorded.



**Table 2.** Baca County. No. of active leks, lek ID, dates leks were checked, no. of checks, high count of males, females, unknowns, and total.

No. Active Leks	Lek ID	Dates Checked	No. Checks	High count			Total	
				Male	Female	Unk.		
1	BA-01	4/11,4/18,5/3	3	0	0	0	0	
	BA-02	4/6, 4/11, 4/20	3	2	0	0	2	
	BA-03	4/7, 4/12, 4/20	3	0	0	0	0	
	BA-04	4/7,4/12,4/20	3	0	0	0	0	
	BA-05	3/30,4/11,4/18	3	0	0	0	0	
	BA-06	4/6,4/12,4/28	3	0	0	0	0	
2	BA-07/74	4/12,4/14,4/18	3	4	1	0	5	
	BA-08	4/5,4/8,4/20	3	0	0	0	0	
	BA-10	4/12,4/19,4/20	3	0	0	0	0	
	BA-12	4/1,4/13,4/25	3	0	0	0	0	
	BA-13	4/1,4/5,4/25	3	0	0	0	0	
	BA-14	4/5,4/8,4/20	3	0	0	0	0	
	BA-17	4/1,4/8,4/12,4/14	4	0	0	0	0	
	BA-18	3/31,4/19,5/3	3	0	0	0	0	
	BA-19	4/5,4/8,4/20	3	0	0	0	0	
	BA-23	0	0	0	0	0	0	
	BA-25	4/1,4/8,4/13	3	0	0	0	0	
	BA-26	4/1,4/8	2	0	0	0	0	
	3	BA-27	4/6,4/11,4/20	3	2	1	0	3
	4	BA-28	4/6,4/7,4/28	3	5	0	8	13
BA-29		4/12,4/19,4/20	3	0	0	0	0	
BA-30		0	0	0	0	0	0	
BA-31		0	0	0	0	0	0	
BA-32		4/5,4/8,4/20	3	0	0	0	0	
BA-35		0	0	0	0	0	0	
BA-36		4/1,4/8,4/12,4/14	4	0	0	0	0	
5		BA-37	4/12,4/29	2	3	2	0	5
		BA-38	4/5,4/8,4/20,	3	0	0	0	0
		BA-39/33/73	4/6,4/12,4/19,4/19	4	0	0	0	0
6	BA-40/70/75	4/8,4/10,4/20	3	7	3	0	10	
	BA-41	4/6,4/12	2	0	0	0	0	
	BA-42	0	0	0	0	0	0	
	BA-43	4/1,4/13,4/25	3	0	0	0	0	
	BA-44	3/30,4/12,4/20	3	0	0	0	0	
	BA-45	4/6,4/11	2	0	0	0	0	
	BA-47	3/30,4/18	2	0	0	0	0	
	BA-48	4/6,4/11	2	0	0	0	0	
	BA-49	4/6,4/12	2	0	0	0	0	
	BA-50	3/29,4/19,4/20	3	0	0	0	0	
	BA-53	3/30,4/12,4/20	3	0	0	0	0	
	BA-54	4/12,4/14	2	0	0	0	0	
	BA-55	4/7,4/11,4/20	3	0	0	0	0	
	BA-56	3/30,4/12,4/20	3	0	0	0	0	
BA-57	4/5,4/8,4/20	3	0	0	0	0		
	BA-60	4/7,4/12,4/20	3	0	0	0	0	

**Table 2.** cont. Baca County. No. of active leks, lek ID, dates leks were checked, no. of checks, high count of males, females, unknowns, and total.

No. Active Leks	Lek ID	Dates Checked	No. Checks	High count			Total
				Male	Female	Unk.	
	BA-61	4/6,4/12,4/20	3	0	0	0	0
	BA-62	4/12,4/14	2	0	0	0	0
	BA-64	0	0	0	0	0	0
	BA-67	4/1,4/8	2	0	0	0	0
	BA-68	4/8,4/12,4/14	3	0	0	0	0
	BA-71	4/14,4/15,	2	0	0	0	0
	BA-72	4/5,4/8,4/20	3	0	0	0	0
	BA-76	4/6,4/11,4/20	3	0	0	0	0
	BA-77	4/5,4/8,4/20	3	0	0	0	0
	BA-78	3/30,4/11,4/18	3	0	0	0	0
	BA-79	3/30,4/11,4/18	3	0	0	0	0
	BA-80	0	0	0	0	0	0
	BA-81	3/29,4/12,4/20	3	0	0	0	0
	BA-82	4/1,4/8,4/12	3	0	0	0	0
	<b>Totals</b>		148	23	7	8	38

**Table 3.** Prowers County. No. of active leks, lek ID, dates leks were checked, no. of checks, high count of males, females, unknowns, and total.

No. Active Leks	Lek ID	Dates Checked	No. Checks	High count			Total
				Male	Female	Unk.	
1	PR-01	4/26,	1	0	0	0	0
	PR-02	4/9,	1	0	0	0	0
	PR-03	4/26,	1	0	0	0	0
	PR-04	4/26,	1	0	0	0	0
	PR-05	4/11,4/22,5/3	3	0	0	0	0
	PR-06	4/9,	1	0	0	0	0
	PR-07	4/9,	1	0	0	0	0
	PR-08	4/26,	1	0	0	0	0
	PR-09	4/26,5/4	2	5	0	0	5
	PR-10	4/9,	1	0	0	0	0
	PR-11	4/22,5/3	2	0	0	0	0
	PR-12	4/22,	1	0	0	0	0
	PR-13	4/22,	1	0	0	0	0
	PR-14	5/3,	1	0	0	0	0
	PR-15	4/19,	1	0	0	0	0
	PR-16	4/11,	1	0	0	0	0
	PR-17	4/26,	1	0	0	0	0
	PR-18	4/9,	1	0	0	0	0
	PR-19	4/14,	1	0	0	0	0
	PR-20	4/14,	1	0	0	0	0
2	PR-21	4/5,4/23,5/1	3	0	0	0	0
	PR-22	4/2,4/10,4/14	3	0	0	0	0
	PR-23	4/23,	1	4	0	1	5
	PR-24	4/9,	1	0	0	0	0
	PR-25	4/20,4/22,5/23	3	0	0	0	0
	PR-26	4/2,4/14	2	0	0	0	0
	PR-27	4/23,	1	0	0	0	0
3	PR-28	4/19,4/20	2	0	0	0	0
	PR-29	4/2,4/11,4/24	3	17	4	0	21
	PR-30	4/28,5/4	2	0	0	0	0
	PR-31	4/20,4/22	2	0	0	0	0
	PR-32	4/11,4/20,4/22,5/2	4	0	0	0	0
	PR-33	4/20,4/22,5/3	3	0	0	0	0
4	PR-34	4/11,4/22	2	0	0	0	0
	PR-35	4/11,4/20,4/22	3	0	0	0	0
	PR-36	4/2,4/24	2	6	1	1	8
5	PR-37	3/29,4/6,4/11,4/21	4	6	1	0	7
6	PR-38	4/10,4/21,5/4	3	9	0	1	10
	PR-39	4/24,	1	0	0	0	0
7	PR-40*	4/9,4/20,4/28	3	17	3	0	20
8	PR-41	4/19,4/28,4/29,5/1	4	10	0	15	25
9	PR-42	4/5,4/20	2	7	1	0	8
<b>Totals</b>			<b>72</b>	<b>81</b>	<b>10</b>	<b>18</b>	<b>109</b>

**Table 4.** Cheyenne County. No. of active leks, lek ID, dates leks were checked, no. of checks, high count of males, females, unknowns, and total.

No. Active		High count					
Leks	Lek ID	Dates Checked	No. Checks	Male	Female	Unk.	Total
1	CH-1	0	0	0	0	0	0
	CH-2	0	0	0	0	0	0
	CH-3	4/26/2011	1	0	0	5	5
	CH-4		2	0	0	0	0
2	CH-5	4/9,5/17	2	0	0	9	9
	CH-6	0	0	0	0	0	0
	CH-7	0	0	0	0	0	0
<b>Totals</b>			5	0	0	14	14

**Table 5.** Kiowa County. No. of active leks, lek ID, dates leks were checked, no. of checks, high count of males, females, unknowns, and total.

No. Active		High count					
Leks	Lek ID	Dates Checked	No. Checks	Male	Female	Unk.	Total
	KI-1	4/7,5/5	2	0	0	0	0
	KI-2	4/7,5/5	2	0	0	0	0
	KI-3	4/7,5/5	2	0	0	0	0
	KI-4	4/7,5/5	2	0	0	0	0
	KI-5	5/8,	1	0	0	0	0
	KI-6	4/5,4/8,4/21	3	0	0	0	0
	KI-7	4/1,4/5	2	0	0	0	0
	KI-8	4/5,4/8,4/21	3	0	0	0	0
	KI-9	4/5,4/8	2	0	0	0	0
	KI-10	5/6,	1	0	0	0	0
	KI-11	4/5,4/8,4/21	3	0	0	0	0
	KI-12	4/5,4/8,4/21	3	0	0	0	0
<b>Totals</b>			26	0	0	0	0

## **Discussion**

The total number of birds detected in 2011 was up approximately 12.7% from 2010. However, without a significant increase in regional precipitation in the coming months, nesting and brood rearing conditions are anticipated be stressed due to the prolonged winter and spring drought. If drought conditions persist, forbs and insect production could be reduced going into the brooding rearing season.

In 2010, a number of different programs were used to enhance LPCH habitat in SE Colorado. Approximately 9,100 acres have been enrolled in the lesser prairie-chicken SAFE continuous CRP sign-up. All of these acres were recently expired CRP, with older grass stands in less than optimal habitat condition. One-third of these acres received a forb/legume inter-seeding consisting of dryland alfalfa and several other species to improve habitat quality in late winter 2010 or early spring 2011. A variety of site preparation treatments were used. It is too early to determine the success of these efforts, but hopefully this effort will result in the establishment of alfalfa and additional forbs, resulting in improved habitat to benefit both nesting and brood rearing of LPCH. Currently, there are an additional 800 acres remaining of the 9,900 acres allocated for SAFE. Early indications are landowner interest has been high, and it is likely the additional acres will be fully enrolled.

In a cooperative project between DOW and the USFS, several temporary grazing exclosures were implemented adjacent to LPCH leks on public land in an attempt to improve nesting habitat. The efficacy of these treatments is undetermined and further monitoring is anticipated.

The DOW recently initiated a habitat improvement program with a variety of cost share and incentive programs to improve habitat on private lands. This program requires prior consultation and approval from a DOW biologist and is limited to LPCH habitat in SE Colorado. To date (May 2011), approximately 5,560 acres have been signed up in this program.

## **Summary**

Similar to the past several years, Prowers County has had the highest number of LPCH observed in Colorado. We have not detected birds in Kiowa County since the 2006/07 blizzard which is somewhat troubling. Though Baca County was consistent in the overall number of active leks, there was a 12% decrease in birds sighted this spring. Cheyenne County saw a 26% decrease among the two active leks surveyed in 2011.

The lesser prairie-chicken SAFE program and the upcoming general CRP sign-up, offer significant opportunities to improve habitat for LPCH in southeast Colorado on a landscape scale. These programs provide an opportunity for the DOW to work cooperatively with local landowners and land managers, along with other partners, to expand LPCH conservation in southeastern CO.

DOW greatly appreciates all the hard work put forth during this survey effort and the habitat improvement efforts thus far. The greatest need for the birds in the immediate future is to take advantage of the current and upcoming opportunities and habitat programs to make a positive impact on the habitat for these birds.

This effort would not be possible without the help and support of the many private landowners who allowed access for the surveys this spring. We extend our thanks and appreciation to each of them. We would also like to thank the Baca County Conservation District personnel, Comanche National Grasslands personnel, Fred Dorenkamp, Bryant Will, Todd Marriott, and all the CDOW folks who contributed to this year's survey. Thank You!