

PRAIRIE CHICKEN LEK SURVEY - 2007

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KANSAS PRAIRIE CHICKEN LEK SURVEY – 2007

Federal Aid in Wildlife Restoration Project W-39-R-13

Prepared by: Randy Rodgers, Wildlife Research Biologist

Observers satisfactorily surveyed all of the 15 lesser prairie chicken routes and all of the 29 greater prairie chicken routes during the March 20 to April 27 survey period. The survey period was extended 1 week beyond the normal April 20 ending date due to muddy roads in some areas. Approximate locations of the survey routes are shown in Figure 1. Greater prairie chicken and lesser prairie chicken data are shown in Tables 1 and 2, respectively. Route indices are calculated by multiplying the flush count x 2 and dividing by the number of square miles surveyed. This takes into account that (1) most birds flushed from leks are males, (2) some males are not present on leks, and (3) that some hens may be present on leks.

GREATER PRAIRIE CHICKEN: The rangewide index (4.3 birds/mi²) decreased 14% compared to 2006, and this change was statistically significant ($P = 0.025$). Of the 26 routes run by the same observer in both years, 7 increased, 15 declined, and 4 remained at zero. Three new observers surveyed the routes in Clay (Clint Thornton), Cowley (Kurt Grimm), and Geary (Jesse Gehrt) counties. The prairie chicken index (2.1 birds/mi²) in the Blackjack / Eastern Cropland region was virtually unchanged (-2%) from last year. However, no birds were detected on the Woodson County route for the first time. Of the 7 routes in the Flint Hills run in both years by the same observer, 1 increased, 5 decreased, and 1 (Elk County) remained at zero. The Flint Hills regional index (5.1 birds/mi²) decreased 18% from 2006 and this was statistically significant ($P = 0.037$). This is the second consecutive year of significant decline in the Flint Hills index. Ten of the 11 routes in the Western Cropland region were run by the same observers as in 2006. Of these, 3 increased and 7 decreased with the regional index down by 14% at 5.4 birds/mi². This was statistically significant ($P = 0.057$). Extreme drought that occurred through the spring and most of the summer of 2006 probably resulted in unusually poor production of greater prairie chickens through most of their Kansas range.

LESSER PRAIRIE CHICKEN: The rangewide index (3.9 birds/mi²) decreased 38% from 2006, and this was a highly significant change ($P = 0.005$). All of the 15 routes were surveyed by the same observers as in 2006. Of these, 1 increased, 12 decreased, and 2 remained at zero (Pratt Sandhills, Kearny County). Indices for the Gove and Ness survey routes and the overall annual index include some greater prairie chickens. The single lek present on the Sandsage Bison range in 2006 was occupied by 1 male this spring, however, survey protocol does not count observations of fewer than 3 birds as a lek, so this route technically declined to zero this spring. Severe drought in the spring and summer of 2006 appears to have sharply curtailed production. Survey areas with the greatest declines (Hamilton, Morton) were also covered by deep snow for virtually all of January and February 2007, probably further contributing to declines in those areas.

Mark Sexson began long-term monitoring of a 20-mi² route in an irrigated region of western Finney and eastern Kearny counties. This route is a subset of the approximately 50-mi² area purchased by Wheatland Electric for water rights to supply the new power plants proposed to be constructed at the site of Sunflower Electric Power Corporation's Holcomb power facility. The area to be restored to grasslands also includes parts of the existing Finney and Kearny survey routes. Mark detected 1 small lek with 3 birds on the new survey area. Under current conditions, a low breeding population was expected.

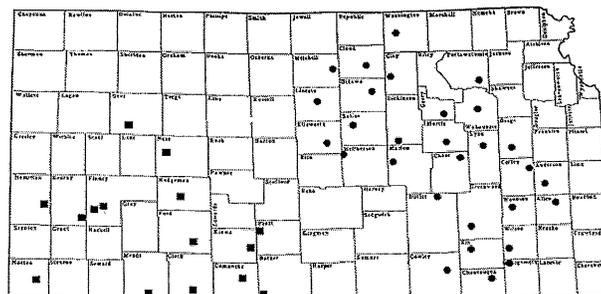


Fig. 1. Locations of greater (●) and lesser (■) prairie chicken survey routes in Kansas.

Table 1. Greater prairie chicken lek counts -- 2007.

Region	Route	No. Sq. Miles	No. Leks Found	No. Leks Flushed	Total Flush Count	Birds Per Lek	Birds Per Route	Birds Per Sq. Mi.	1-Yr % Pop. Change
B									
L J	Allen	20	2	2	18	9.0	36	1.8	-38
A A	Chautauqua	20	0	0	0		0	0.0	
C C	Montgomery	20	0	0	0		0	0.0	
K K	Wilson	20	0	0	0		0	0.0	
	Woodson	20	0	0	0		0	0.0	-100
E C	Anderson	20	4	4	38	9.5	76	3.8	90
A R	Coffee	20	2	2	21	10.5	42	2.1	-22
S O	Osage	20	2	2	23	11.5	46	2.3	44
T P	Pottawatomie	20	6	6	86	14.3	172	8.6	21
E L									
R A	2007 Mean *					11.6	41	2.1	(-2)
N N	2006 Mean *					9.5	42	2.1	
D									
	Butler	20	12	12	156	13.0	312	15.6	-9
F	Chase	20	2	2	20	10.0	40	2.0	-44
L	Cowley	20	5	5	58	11.6	116	5.8	
I	Elk	20	0	0	0		0	0.0	
N	Geary	20	3	3	42	14.0	84	4.2	
T	Greenwood	20	3	3	27	9.0	54	2.7	50
H	Lyon	20	4	4	74	18.5	148	7.4	-6
I	Morris	20	2	2	22	11.0	44	2.2	-31
L	Wabaunsee	20	5	5	58	11.6	116	5.8	-41
L									
S	2007 Mean *					12.7	102	5.1	(-18) **
	2006 Mean *					14.1	126	6.3	
W									
W	Clay	20	4	4	49	12.3	98	4.9	
E	Cloud	20	3	3	67	22.3	134	6.7	-18
S	Dickinson	20	3	3	44	14.7	88	4.4	13
T	Ellsworth	20	3	3	40	13.3	80	4.0	25
E C	Lincoln	20	3	3	55	18.3	110	5.5	-2
R R	Marion	20	4	4	59	14.8	118	5.9	-26
N O	McPherson	20	6	6	41	6.8	82	4.1	-35
P	Mitchell	20	4	4	64	16.0	128	6.4	-4
L	Ottawa	20	5	5	76	15.2	152	7.6	-15
A	Saline	20	3	3	44	14.7	88	4.4	-42
N	Washington	20	5	5	55	11.0	110	5.5	12
D									
	2007 Mean *					13.8	108	5.4	(-14) **
	2006 Mean *					16.0	122	6.1	
ALL									
	2007 Grand Mean *					13.0	85	4.3	(-14) **
	2006 Grand Mean *					14.0	98	4.9	

* Means are derived from all completed survey routes in the respective year. Annual change and statistical Significance are computed only from surveys completed in both years by the same observer.

** Denotes a significant change ($P < 0.10$) from previous year (1-tailed P , Wilcoxon Signed Rank Sums Test).

Table 2. Lesser prairie chicken lek counts -- 2007.

Region	Route	No. Sq. Miles	No. Leks Found	No. Leks Flushed	Total Flush Count	Birds Per Lek	Birds Per Route	Birds Per Sq. Mi.	1-Yr % Pop. Change
	Barber	20	1	1	7	7.0	14	0.7	-36
	Clark	20	4	4	87	21.8	174	8.7	-52
S	Comanche	20	2	2	28	14.0	56	2.8	-20
O	Finney	20	2	2	11	5.5	22	1.1	-58
U	Ford	20	4	4	37	9.3	74	3.7	-5
T	Gove ***	20	8	8	84	10.5	168	8.4	-16
H	Hamilton	20	4	4	33	8.3	66	3.3	-69
W	Hodgeman	20	8	8	98	12.3	196	9.8	9
E	Kearny	20	0	0	0		0	0.0	
S	Kiowa	20	2	2	15	7.5	30	1.5	-40
T	Meade	20	6	6	60	10.0	120	6.0	-45
	Morton	20	2	2	25	12.5	50	2.5	-64
	Ness ***	20	6	6	58	9.7	116	5.8	-27
	Sandsage BR	5	0	0	0		0	0.0	-100
	Pratt Sandhills	14	0	0	0		0	0.0	
	2007 Mean *					11.1	72	3.9	(-38) **
	2006 Mean *					15.4	117	6.3	

* Means are derived from all completed survey routes in the respective year. Annual change and statistical Significance are computed only from surveys completed in both years by the same observer.

** Denotes a significant change ($P < 0.10$) from previous year (1-tailed P , Wilcoxon Rank Sums Test).

*** Both PC species are found on these survey areas. Flush counts (2007) were as follows: Gove -- 66 LPC, 20 GPC, and 1 LPC/GPC hybrid; Ness -- 1 GPC detected.

Table 3. Personnel assigned prairie chicken survey routes -- 2007.

<i>Greater Prairie Chicken Routes</i>		<i>Greater Prairie Chicken Routes</i>	
Allen	Jason Deal	Saline	Greg Salisbury
Anderson	Lance Hedges	Wabaunsee	Rick Campbell
Butler	Charlie Cope	Washington	Ben Jedlicka
Chase	Randy Benteman	Wilson	Robert Funke
Chautauqua	Darin Porter	Woodson	Scott Barlow
Clay	Clint Thornton ~		
Cloud	Brian Marks		
Coffee	Bob Culbertson		
Cowley	Kurt Grimm ~		
Dickinson	Lance Hockett		
Elk	Dan Melson		
Ellsworth	Matt Smith		
Geary	Jesse Gehrt ~		
Greenwood	Rick Tush		
Lincoln	Shane Hesting		
Lyon	Jim Pitman		
Marion	Marvin Peterson		
McPherson	Jeff Rue		
Mitchell	Aaron Deters		
Montgomery	Dennis Knuth		
Morris	Lloyd Fox		
Osage	Matt Peek		
Ottawa	Eli Makings		
Pottawatomie	Corey Alderson		

~ Indicates a new observer for this route.

