

PERFORMANCE REPORT

State of Oklahoma

Grant Number W-82-R-46
Project Number 001

Grant Title: Upland Game Investigations
Grant Period: July 1, 2006 - June 30, 2007
Project Title: Monitoring Greater and Lesser Prairie Chickens.
Project Objective: To monitor annual prairie chicken population trends.

Abstract: Booming ground surveys and lek detection routes were conducted during the last week of March and the month of April 2007 in Beaver, Ellis, Harper, Texas, Woods and Woodward counties to census populations of lesser prairie chickens (LPCH), and in Craig, Kay, Nowata, and Osage counties to census populations of greater prairie chickens (GPCH). Nine LPCH lek sites surveyed yielded a total of 19 birds on 4 active sites. Lek densities increased from 0.05 leks/mi² in 2006 to 0.09 leks/mi² in 2007. Mean number of LPCH / lek increased from 5.6 in 2006 to 8.3 in 2007, and the number of active leks located increased from 7 in 2006 to 8 in 2007. Seven GPCH lek sites surveyed yielded a total of 36 birds on 4 active sites. Mean number of GPCH / lek decreased from 6.5 in 2006 to 4.2 in 2007. Lek densities (0.19 leks/mi²), however, increased 5% from 2006 findings (0.18 leks /mi²).

PROCEDURES

Literature pertaining to census methods used to evaluate populations of the family *Tetraonidae* was reviewed as it became available.

Booming ground counts were conducted in Beaver, Ellis, Harper, Texas, Woods and Woodward counties for the lesser prairie chicken, and Craig, Kay, Nowata and Osage, counties for the greater prairie chicken. Booming ground counts were initiated 30 minutes before sunrise on fair weather days (when possible) during the last week of March and the month of April. Routes to estimate density of leks were driven in all counties listed above.

RESULTS

Lek Census

Lesser Prairie Chicken

Ten historical lesser prairie chicken lek sites were surveyed in 2007. Counts were conducted 30 minutes before sunrise on fair weather days. Each active lek was flushed, and all birds present were counted. Of the nine lek sites surveyed, only 4 had chickens present. These 4 active leks yielded a total of 19 birds (Table 1). This represents a 27% decrease from the 26 birds flushed from 4 active leks in 2006. The mean number of birds/active lek increased

from 5.6 birds/active lek in 2006 to 8.3 birds/active lek in 2007, and the number of active display grounds located increased from 7 in 2006 to 8 in 2007 (Table 2).

Survey routes to estimate the density of leks were run in Beaver, Ellis, Harper, Texas, Woods, and Woodward counties. The 9 leks found (0.09/square mile) represents a 55% increase when compared with 2006 findings (Table 3).

In addition, birds were flushed one time from every lek located during the lek density survey routes and historic ground surveys. Birds were counted with no differentiation between sexes (Table 2). The flush count has replaced the count of males present at historic lek sites.

Greater Prairie Chicken

Seven historical lek sites in 4 counties were surveyed to determine the number of GPCH present. Counts were conducted 30 minutes before sunrise on fair weather days when possible. All birds present were counted.

The 7 lek sites surveyed yielded a total of 36 birds (Table 4). This represents a 28% increase from the 26 birds flushed in 2006. The mean number of birds/lek decreased 35%, from 6.5 in 2006 to 4.2 in 2007 (Table 5). The overall number of active leks located and used in this analysis, however, increased from 4 leks in 2006 to 6 leks in 2007 (Table 5). It should be noted, however, that the Noble County route was not run, but has not had heard GPCH since 2004.

Lek detection routes were completed in all 4 counties surveyed. A total of 19 leks were found in the 100 square miles surveyed (Table 6). The estimate of 0.19 leks/square mile represents a 5% increase from the 2006 data.

In addition, birds were flushed one time from every lek located during the lek density survey routes. Birds were counted with no differentiation between sexes (Table 5). This flush count has replaced the count of males present at historic lek sites.

Harvest Survey

Prairie chicken harvest will continue to be monitored during years when hunting season is open for prairie chickens utilizing the telephone game harvest survey.

SIGNIFICANT DEVIATIONS

The LPCH lek detection route was not run in Texas county during the 2006 reporting period. As noted in this report, this likely resulted in an exaggerated estimate of the increase in both the lek density index and the mean number of LPCH / lek for this reporting period. Since the numbers from 2005 are about the same as in 2007.

In addition, the GPCH survey was not conducted in Noble county this spring and is was ran in Kay county that was not done in 2006. It is not known how this omission and addition affected the estimate of mean GPCH / lek.

RECOMMENDATIONS

Survey routes should continue in all counties currently being surveyed. Additional care should be taken to insure that all counties are surveyed each year, even if different survey personnel have to be used.

SUMMARY

As part of this project, the survey of breeding populations of prairie chickens, both lesser and greater, has provided data relative to prairie chickens for a virtually uninterrupted period spanning almost 40 years. Utilizing data obtained from these surveys, population trends can be determined, and management strategies formulated therefrom.

A summary of data collected to date illustrates an alarming long term downward trend in population indices in all counties. These data suggest not only the necessity of continuing to monitor prairie chicken populations, but also suggest a need to refine prairie chicken management objectives on a range-wide basis. Continuation of both the lek density survey and survey of all birds present on booming grounds will further expand a significant and valuable database, which will provide information necessary for efficient, effective, and appropriate prairie chicken management.

A thorough status review of populations of both the lesser and greater prairie chickens in Oklahoma, indicated that hunting season should be closed for both species, until populations recover to levels at which hunting is justified. An adaptive harvest management strategy has been approved and implemented to reopen prairie-chicken season(s) by various means of take when populations of either or both species recover to levels at which hunting is warranted.

At current population levels, the restricted falconry-only season for greater prairie chickens is permitted by the approved Adaptive Harvest Management Strategy and will be opened during the 2007-08 hunting season. Hunter participation and harvest will be monitored under PR Project W-32-R, Project 004, Falconry and Captive Raptor Activity Study.

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TABLE 1. NUMBER OF MALE LESSER PRAIRIE CHICKENS/BOOMING GROUND, BY COUNTY, APRIL 1986-2007.

COUNTY	(Leak#)	1986	1987	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002**	2003**	2004**	2005**	2006**	2007**	
BEAVER	(1)	0	10	4	7	6	3	3	0	0	0	#	#	#	#	#	-	5	6	5	18	5	7	
BEAVER	(2)	14	12	12	10	11	9	7	6	-	#	#	#	#	#	#	#	#	#	#	#	#	#	#
ELLIS	(1)	18	16	19	15	8	19	16	2	1	2	#	9	10	14	16	8	7	10	51	5	5	2	
ELLIS	(2)	4	3	0	3	0	4	0	0	0	#	#	#	#	#	#	#	#	#	51	#	#	#	
HARPER	(1)	7	9	15	9	0	8	4	5	4	2	5	3	6	15	5	9	2	#	10	5	5	5	
HARPER	(2)	0	7	12	10	10	11	7	0	0	0	7	5	9	8	7	7	10	6	11	4	#	#	
R. MILLS	(1)	5a	-	0	0	0	0	0	0	0	-	-	-	-	-	-	-	-	-	-	-	-	-	
R. MILLS	(2)	0	-	0	0	0	0	0	0	0	-	-	-	-	-	-	-	-	-	-	-	-	-	
WOODS	(1)	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	1	#	11	4
WOODWARD	(1)	16	15	19	12	16	6	15	0	0	#	#	#	#	#	#	#	#	#	#	#	#	#	
WOODWARD	(2)	0	0	0	0	0	0	0	11	12	9	6	9	6	4	10	7	4	2	2	-	-	-	
WOODWARD	(3)	7*	17	17	17	17	19	17	6	5	2	#	#	#	#	#	#	#	#	#	#	#	#	
TEXAS	(1)	*	*	*	*	28	27	23	10	11	7	8	9	8	24	24	14	24	41	26	12	12	6	
TOTALS		66	72	98	111	95	102	79	41	29	23	27	34	58	67	46	58	72	52	51	46	26	19	

* GROUNDS NOT IN CENSUS.
a LEAK MOVED ABOUT 1/2 MILE FROM HISTORICAL SITE.
- NOT SURVEYED
1 NEW SURVEY PERSONNEL
HISTORICAL SITE SURVEYED, NO CHICKENS PRESENT
** Flush count only. Includes all birds present with no gender differentiation.

Table 2. Mean Number of Male Lesser Prairie Chickens/Lek,
April 1968-2007

Year	Number of Males	
1968	12.3	
1969	12.3	
1970	10.0	
1971	11.1	
1972	8.1	
1973	11.6	
1974	14.0	
1975	16.5	
1976	14.9	
1977	15.3	
1978	11.0	
1979	7.8	
1980	7.0	
1981	9.7	
1982	9.4	
1983	8.3	
1984	6.6	
1985	8.8	
1986	6.5	
1987	11.2	
1988	9.4	
1989	9.3	
1990	8.1	
1991	8.5	
1992	6.6 (9.8*)	(n=8**)
1993	3.4 (6.8*)	(n=6**)
1994	2.6 (5.8*)	(n=5**)
1995	2.3 (4.6*)	(n=5**)
1996	2.7 (6.8*)	(n=4**)
1997	3.4 (6.8*)	(n=5**)
1998	5.8 (9.6*)	(n=9**)
1999	6.7 (9.9***)	(n=12**)
2000	4.6 (9.4***)	(n=13**)
2001	6.4 (9.7***)	(n=16**)
2002	N/A (10.1***)	(n=11**)
2003	N/A (8.5***)	(n=13**)
2004	N/A (7.7***)	(n=16**)
2005	N/A (7.5***)	(n=11**)
2006	N/A (5.6***)	(n=7**)
2007	N/A (8.3***)	(n=8**)

* Average number of booming males present only on active grounds

** Number of active booming grounds included in analysis

*** Flush count. Reflects total number of birds flushed.

No differentiation between sexes.

TABLE 3. ESTIMATED DENSITY OF LESSER PRAIRIE CHICKEN LEKS, BY COUNTY, APRIL 1996-2007***

COUNTY	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007
BEAVER	3/20=0.15	2/20=0.10	1/20=0.05	2/20=0.10	3/20=0.15	2/20=0.10	1/20=0.05	1/20=0.05	3/20=0.15	3/20=0.15	3/20=0.15	3/20=0.15
ELLIS	0/20=0.00	0/20=0.00	0/20=0.00	0/20=0.00	1/20=0.05	0/20=0.00	0/20=0.00	0/20=0.00	0/20=0.00	*	0/20=0.00	1/20=0.05
HARPER	6/20=0.30	1/20=0.05	1/20=0.05	2/20=0.10	1/20=0.05	1/20=0.05	3/20=0.15	1/20=0.05	1/20=0.05	1/20=0.05	1/20=0.05	0/20=0.00
R. MILLS	*	*	*	*	*	*	*	*	*	*	*	*
TEXAS	3/20=0.15	2/20=0.10**	2/20=0.10	2/20=0.10	2/20=0.10	2/20=0.10	3/20=0.15	3/20=0.15	0/20=0.00	4/20=0.2	*	4/20=0.2
WOODS	-	-	-	-	-	3/20=0.15	1/20=0.05	1/20=0.05	1/20=0.05	1/20=0.05	1/20=0.05	1/20=0.05
WOODWARD	2/20=0.10	1/20=0.05	2/20=0.10	2/20=0.10	1/20=0.05	1/20=0.05	1/20=0.05	2/20=0.10	1/20=0.05	0/20=0.00	0/20=0.00	*
TOTAL	13/100=0.13	6/100=0.06	6/100=0.06	8/100=0.08	8/100=0.08	9/120=0.075	9/120=0.075	8/120=0.067	6/120=0.050	9/100=0.090	5/100=0.050	9/100=0.09

* NOT SURVEYED
 ** NEW SURVEY PERSONNEL
 *** # LEKS DETECTED / # SQ. MILES SURVEYED = LEK DENSITY (# LEKS/SQ. MILE)
 - NOT IN SURVEY