

2007 BOBWHITE WHISTLE COUNT

Performance Report

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KANSAS DEPARTMENT OF WILDLIFE AND PARKS

**Mike Hayden
Secretary**

**Keith Sexson
Assistant Secretary
Operations**

**Prepared by:
Jim Pitman
Small Game Coordinator**

**Joe Kramer, Director
Fisheries & Wildlife Division**

**Mike Mitchener, Chief
Wildlife Section**

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INTRODUCTION AND METHODS

To monitor changes in northern bobwhite abundance the spring whistle count was initiated in 1998. A total of 65 established routes were surveyed annually through 2005. Prior to the 2006 survey, the distribution of routes was adjusted to provide better coverage of the entire state. This was accomplished by adding 16 new routes in areas not surveyed previously and eliminating 10 routes from areas where effort was clustered. In 2007, observers were asked to survey 71 established routes during the 1-16 June survey period, starting at sunrise (Table 1). Each route consisted of 11 stops spaced at approximately 1 mile intervals. Observers listened for 5 minutes at each stop and recorded the total number of different bobwhites heard calling.

The index to bobwhite abundance was calculated as the mean number of different bobwhites heard per listening stop. A folded F-test was used to determine if the variance differed between the 2006 and 2007 indices. If unequal variance existed ($P < 0.05$) then a Satterthwaite's adjustment was used to adjust the degrees of freedom prior to conducting a two sample t-test. If variance did not differ across years then a standard two sample t-test was used to draw comparisons. Additionally, a simple linear regression of all the historical whistle count data was used to determine if bobwhite abundance had changed significantly from 1998 to 2007. All indices and analyses were calculated for each of the 6 northern bobwhite survey regions in Kansas (Figure 1).

RESULTS

Observers surveyed 70 of 71 Kansas bobwhite routes during 2007. The only route not surveyed was route 67 in Sumner County. Poor road conditions due to wet weather prevented the observer from traveling that route this spring. The statewide index to the breeding bobwhite population declined 36.7% from 2006 which was a statistically significant change ($P < 0.01$; Table 2). Apparent declines were observed in every bobwhite management region except the

northcentral region where the 2007 index was unchanged from the previous year. The most severe declines were observed in the southeast and Flint Hills regions at 63.9% and 40.9%, respectively. Apparent declines were between 30-40% in the northeast, southcentral, and west regions with most changes being statistically significant or approaching significance (Table 2).

Bobwhite abundance in the Flint Hills and Northcentral regions has declined significantly since the whistle count survey was initiated in 1998 (Table 2, Figure 2). Over the last 9 years, abundance in the Northeast, Southcentral, and Northeast regions has declined but none of these trends were statistically significant ($P > 0.10$). Bobwhite abundance has increased significantly ($P < 0.10$) in only the west region over that same time period. Overall, the statewide index has declined significantly ($P < 0.05$) over the last 9 years (Table 2, Figure 3).

DISCUSSION

Most management regions experienced below average production in 2006 along with freezing rain and deep snow during the winter of 2006-2007. The severe winter conditions persisted for several weeks in some areas and certainly took a toll on our bobwhite populations. Bobwhites are easily susceptible to starvation and hypothermia when snow and ice remain on the ground for extended periods of time. Prior to the 2007 whistle count the statewide bobwhite index had increased the previous 2 springs due to mild winters and above average production in several regions during 2004 and 2005. The conditions over the last year have stopped that ascent and reduced our statewide bobwhite population to the level observed in 2002.

The fall bobwhite population depends not only on the size of the spring breeding population but to a greater extent on the level of productivity. At the time of this report, bobwhite productivity for 2007 had not yet been estimated. However, heavy rain and flooding occurred across much of eastern Kansas during the last week of June 2007. This time period corresponds to the peak of bobwhite hatching and heavy rain is known to have a profound

negative effect on chick survival. Thus, at the current time, I speculate that bobwhite numbers in eastern Kansas will be substantially lower in 2007 than the previous year. Nesting and brood rearing conditions in the western part of the state appeared to be better due to more timely rains. However, it will take good to great production in 2007 to offset the losses observed across much of central and western Kansas. There are some areas in southcentral and southwest Kansas where winter conditions weren't as severe and the spring rains came at timely intervals resulting in good nesting conditions. I expect bobwhite numbers in these areas to be good again this fall but a more accurate forecast won't be available until results from the August brood survey are tabulated.

Table 1. Northern bobwhite survey routes and observers in Kansas, 2007.

Route	County(s)	Observer	Route	County(s)	Observer
1	Allen	Amy Zavalla	37	Meade ^a	Jon Zuercher
2	Doniphan	Kirk Tjelmeland	38	Miami	Andy Friesen
3	Barber	Charlie Swank	39	Mitchell	Aaron Deters
4	Barton	Curran Salter	40	Montgomery	Ed Miller
5	Bourbon	Justin Harbit	41	Morris	Brent Konen
6	Butler	Jeff Rue	42	McPherson/Marion	Matt Farmer
7	Chase	Jim Pitman	43	Morton	Kraig Schultz
8	Chautauqua	Darin Porter	44	Morton	Kraig Schultz
9	Cherokee	James Svaty	45	Nemaha ^a	Darren Brown
10	Clark	Jon Zuercher	46	Neosho	Dustin Cannon
11	Clay	Clint Thornton	47	Osage	Don Patton
12	Cloud	Aaron Deters	48	Osborne	Brad Odle
13	Coffey	Bob Culbertson	49	Ottawa	Aaron Deters
14	Cowley	Kurt Grimm	50	Pawnee	Charlie Swank
15	Crawford	Dustin Cannon	51	Pawnee	Randy Rodgers
16	Douglas	Mike McFadden	52	Philips	Brad Odle
17	Elk	Rick Tush	53	Pottawatomie	Rick Campbell
18	Ellis	Randy Rodgers	54	Pratt	Todd Gatton
19	Ellsworth	Matt Smith	55	Rawlins	Matt Bain
20	Finney/Gray	Daryl Fisher	56	Reno	Steve Adams
21	Ford	Scotty Baugh	57	Rice	Steve Adams
22	Greenwood	Rick Tush	58	Riley	Corey Alderson
23	Harvey	Charlie Cope	59	Rush	Jeremy Salter
24	Hodgeman	Craig Curtis	60	Russell	Matt Smith
25	Hodgeman	Aaron Baugh	61	Saline	Matt Smith
26	Jefferson/Jackson	Scott Thomasson	62	Shawnee	Scott Thomasson
27	Jewel	Ron Ruthstrom	63	Sheridan	Marc Gray
28	Kearny	Daryl Fisher	64	Smith	Ron Ruthstrom
29	Kingman	Troy Smith	65	Stafford	Helen Hands
30	Kiowa	Charlie Swank	66	Stanton	Kraig Schultz
31	Leavenworth	Andy Friesen	67	Sumner	Not Conducted
32	Lincoln	Shane Hesting	68	Trego	Jason Hawman
33	Linn	Karl Karrow	69	Wabaunsee	Scott Thomasson
34	Lyon	Clint Bowman	70	Washington	Clint Thornton
35	Marshall	Keith Salmans	71	Woodson	Amy Zavala
36	McPherson	Brent Theede			

Table 2. Mean number of different bobwhites heard whistling at each stop within the 6 Kansas bobwhite management regions.

Region	n^a	2006	2007	Apparent 1-year Change (%)	P^b	Trend (1998-2007)
Flint Hills	10	3.47	2.05	-40.9%	0.07	Decreasing**
Northcentral	12	1.39	1.39	0.0%	1.0	Decreasing**
Northeast	9	2.58	1.79	-30.6%	0.08	Decreasing
Southcentral	12	3.51	2.14	-39.0%	0.16	Decreasing
Southeast	11	2.66	0.96	-63.9%	<0.01	Decreasing**
West	17	2.03	1.40	-31.0%	0.13	Increasing
Statewide	71	2.51	1.59	-36.7%	<0.01	Decreasing**

^a Number of routes within the region.

^b Bobwhite abundance was considered to be significantly different than the previous year when $P < 0.10$.

* $P < 0.10$

** $P < 0.05$

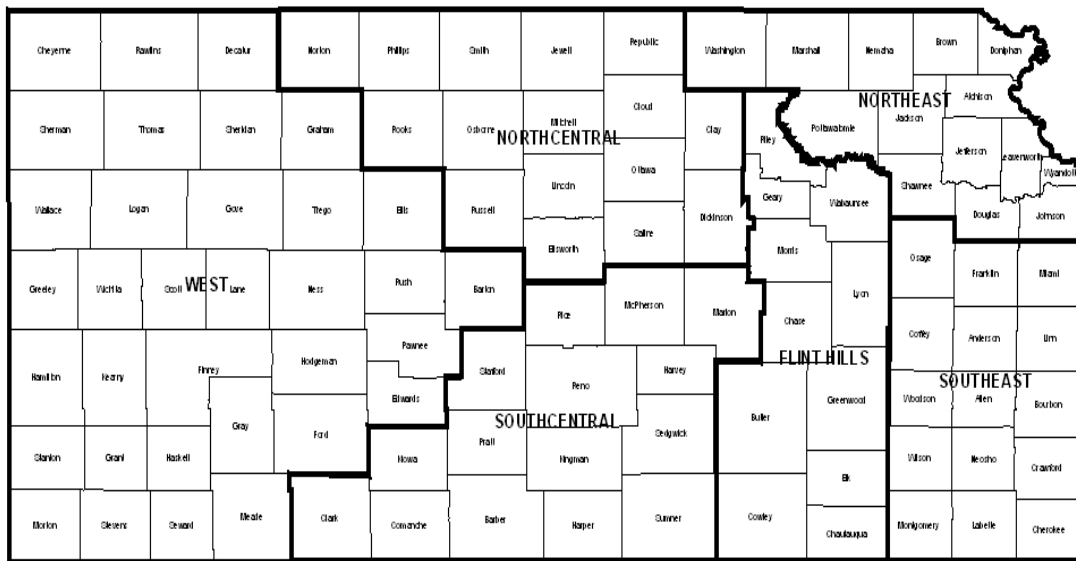


Figure 1. Northern bobwhite survey regions in Kansas.

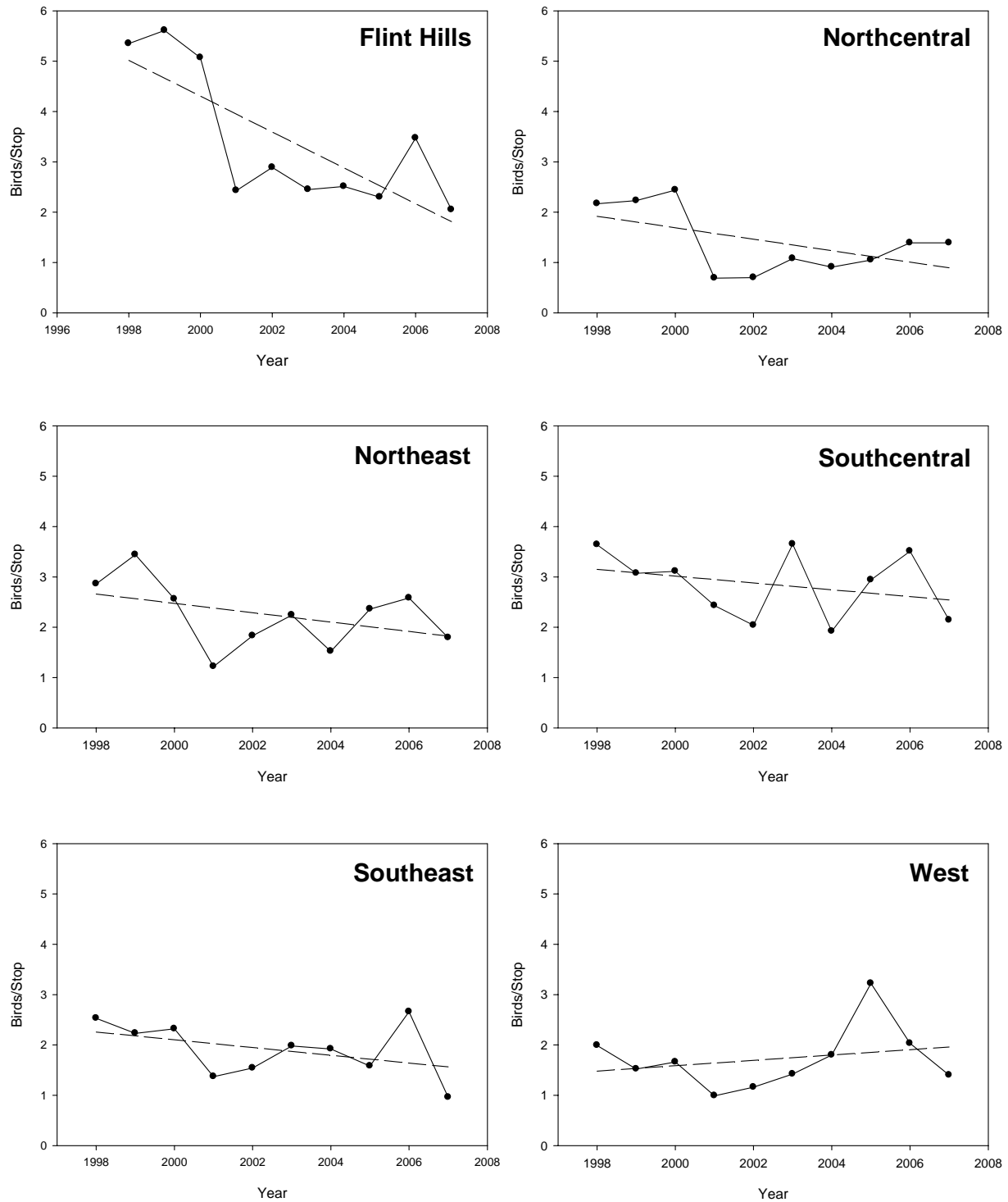


Figure 2. Mean number of northern bobwhites heard per survey stop within Kansas' 6 management regions, 1998-2007. These data can only be used to approximate long-term trends because the same set of routes was not surveyed in every year.

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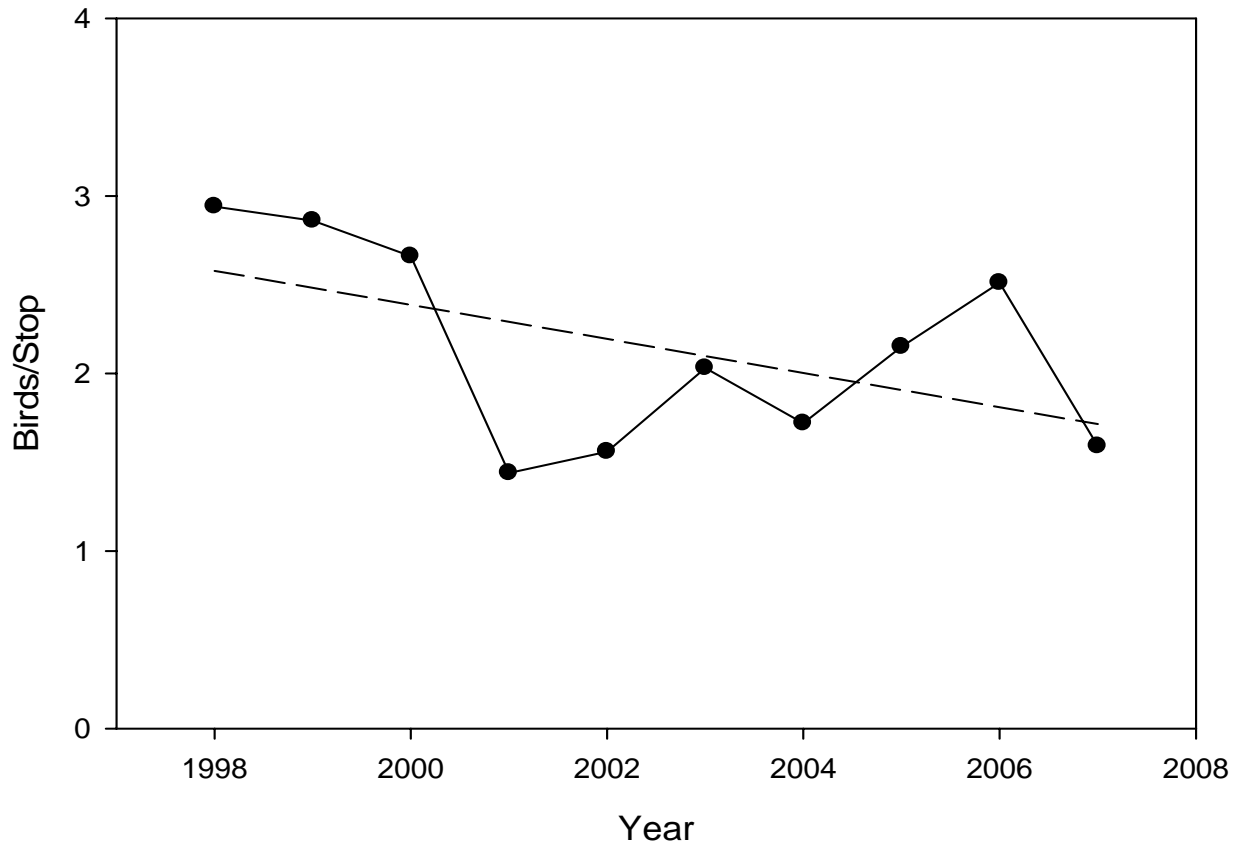


Figure 3. Mean number of northern bobwhites heard per stop calculated across all Kansas' survey routes, 1998-2007. These data can only be used to approximate long-term trends because the same set of routes was not surveyed in every year.