

2010 BOBWHITE WHISTLE COUNT

Performance Report

**A Contribution in Part of Pittman-Robertson
Federal Aid in Wildlife Restoration
Grant W-39-R-16**

KANSAS DEPARTMENT OF WILDLIFE AND PARKS

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July 2010



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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 2010, 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. Due to poor weather or road conditions a few routes were not surveyed during the standard time period but rather one week later.

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 2009 and 2010 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 linear regression of the historical whistle count data was used to determine if bobwhite abundance had changed significantly from 1998 to 2010. All indices and analyses were calculated for each of the 6 bobwhite survey regions (Figure 1).

RESULTS

Observers surveyed all 71 assigned routes during 2010. The 2010 statewide index to the breeding bobwhite population was relatively unchanged from spring 2009 (Table 2). The only statistically significant ($P < 0.05$) change was observed in the northeast region where the index

declined 44.2% from the previous year. Apparent changes observed in the other regions could have all be due solely due to variability associated with the sampling scheme.

Since 1998, bobwhite abundance has declined significantly in every region except the southcentral and west regions (Table 2, Figure 2). Bobwhite populations in the southcentral and west regions have remained reasonably constant over the last decade. The statewide index has declined significantly ($P < 0.05$) over that time span (Table 2, Figure 3).

DISCUSSION

Production was near average in 2009 in every region of the state and winter conditions were relatively mild in all but northeastern Kansas. A winter storm around Christmas 2009 dropped >10" of snow on most of eastern Kansas. That storm and subsequent events kept deep snow cover on the ground for upwards of a month in the northeastern part of the state. At times, the snow depth was nearly 20" which undoubtedly lead to elevated winter mortality in those areas. The deep snow cover persisted much longer in northeastern Kansas than further south and is likely why the breeding index declined markedly in that region but not the southeastern region.

It is important to understand that annual changes to the breeding population do not necessary reflect hunt quality for the upcoming season. 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. A bobwhite population can increase nearly 300% from spring to fall when habitat and weather conditions are suitable for productivity.

At the time of this report, the hunting outlook for this fall is favorable in most areas of the state. Vegetative conditions were good for nesting across the state this summer and weather was favorable in most areas with a couple of exceptions. Toward the end of June a portion of north-

central Kansas received excessive rainfall and large hail. Additionally, an early July storm that moved from south-central Kansas to east-central Kansas dropped >8" of rain in some areas resulting in excessive flooding. It is likely that production will be depressed in both of these areas due to weather-induced mortality of nests and young. Productivity across the remainder of the state is expected to be good. However, more accurate predictions about the upcoming hunting season will be available after the August brood count data have been collected.

Table 1. Northern bobwhite survey routes and observers in Kansas, 2010.

Route	County(s)	Observer	Route	County(s)	Observer
1	Allen	Amy Zavala	37	Meade ^a	Jon Zuercher
2	Doniphan	Randy Whiteaker	38	Miami	Andy Friesen
3	Barber	Chris Berens	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	Brian Sorensen
7	Chase	Jim Pitman	43	Morton	Kraig Schultz
8	Chautauqua	Darin Porter	44	Morton	Kraig Schultz
9	Cherokee	Rob Riffin	45	Nemaha	Darren Brown
10	Clark	Jon Zuercher	46	Neosho	J.R. Glenn
11	Clay	Clint Thornton	47	Osage	Don Patton
12	Cloud	Pat Riese	48	Osborne	Luke Kramer
13	Coffey	Bob Culbertson	49	Ottawa	Pat Riese
14	Cowley	Kurt Grimm	50	Pawnee	Charlie Swank
15	Crawford	David Jenkins ^a	51	Pawnee	Randy Rodgers
16	Douglas	Brad Rueschhoff	52	Phillips ^a	Marc Gray
17	Elk	Rick Tush	53	Pottawatomie	Blake Klema ^a
18	Ellis	Randy Rodgers	54	Pratt	Todd Gatton
19	Ellsworth	Matt Smith	55	Rawlins	Josh Williams
20	Finney/Gray	Darryl Fisher	56	Reno	Steve Adams
21	Ford	Aaron Baugh	57	Rice	Steve Adams
22	Greenwood	Rick Tush	58	Riley	Corey Alderson
23	Harvey	Charlie Cope	59	Rush	Jeremy Salter
24	Hodgeman	Justin Hamilton ^a	60	Russell	Matt Smith
25	Hodgeman	Aaron Baugh	61	Saline	Pat Riese
26	Jefferson/Jackson	Randy Whiteaker	62	Shawnee	Brad Rueschhoff
27	Jewel	Aaron Deters	63	Sheridan	Matt Bain
28	Kearny ^b	NA	64	Smith	Aaron Deters ^a
29	Kingman	Troy Smith	65	Stafford	Karl Grover ^a
30	Kiowa	Charlie Swank	66	Stanton	Kraig Schultz
31	Leavenworth	Andy Friesen	67	Sumner	Jeff Rue
32	Lincoln	Luke Kramer	68	Trego	Jason Hawman (LE)
33	Linn	Karl Karrow	69	Wabaunsee	Brad Rueschhoff
34	Lyon	Clint Bowman	70	Washington	Clint Thornton
35	Marshall	James Svaty ^a	71	Woodson	Amy Zavala
36	McPherson	Brent Theede	72	Hamilton ^c	Daryl Fisher ^a

^a New observer

^b Route discontinued after 2009 survey due to inaccessible road

^c Route was established in 2010 to replace route 28.

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

Region	n^a	2009	2010	Apparent 1-year Change (%)	P^b	Trend (1998-2010)
Flint Hills	10	2.25	2.40	+6.7%	0.79	Declining**
Northcentral	12	1.67	1.47	-12.0%	0.61	Declining**
Northeast	9	2.15	1.20	-44.2%	0.02	Declining**
Southcentral	12	2.79	2.95	+5.7%	0.84	Stable
Southeast	11	1.27	1.42	+11.8%	0.44	Declining**
West	17	1.80	1.82	+1.1%	0.97	Stable
Statewide	71	1.96	1.89	-3.6%	0.77	Declining**

^a Number of routes within the region.

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

* $P < 0.10$

** $P < 0.05$

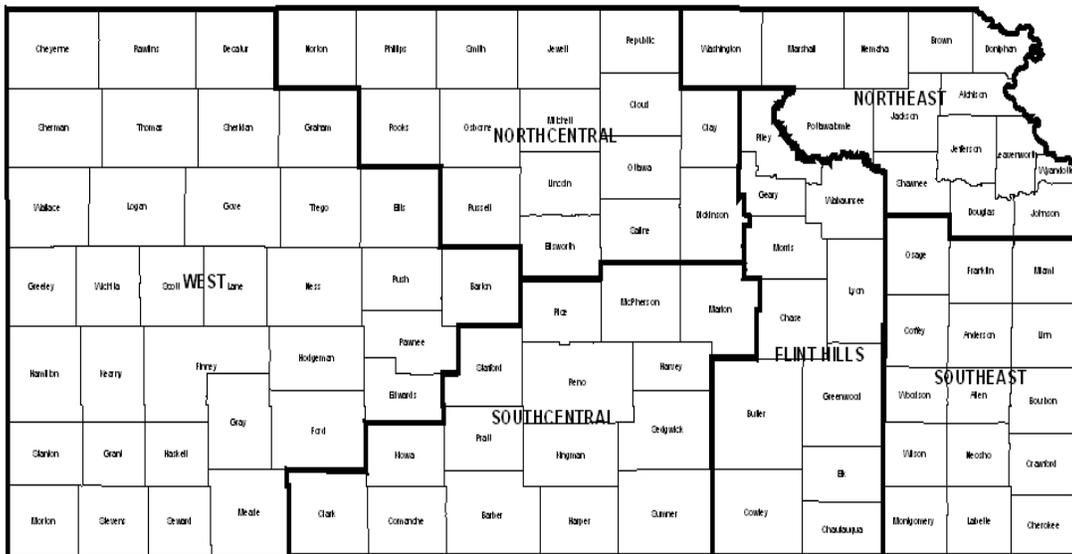


Figure 1. Northern bobwhite survey regions in Kansas.

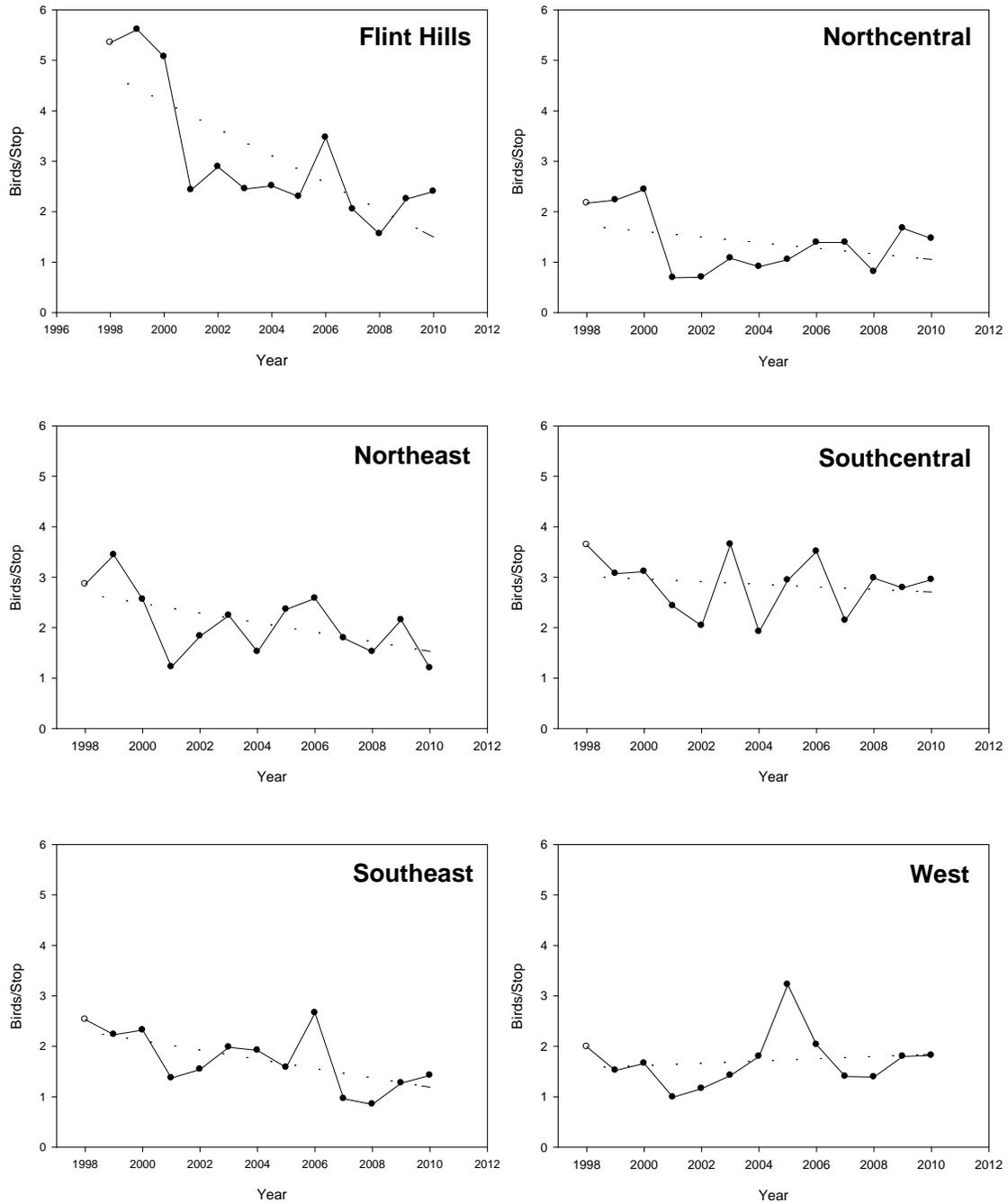


Figure 2. Mean number of northern bobwhites heard per survey stop within Kansas' 6 management regions, 1998-2009. These data can only be used to approximate long-term trends because the same set of routes was not surveyed in every year.

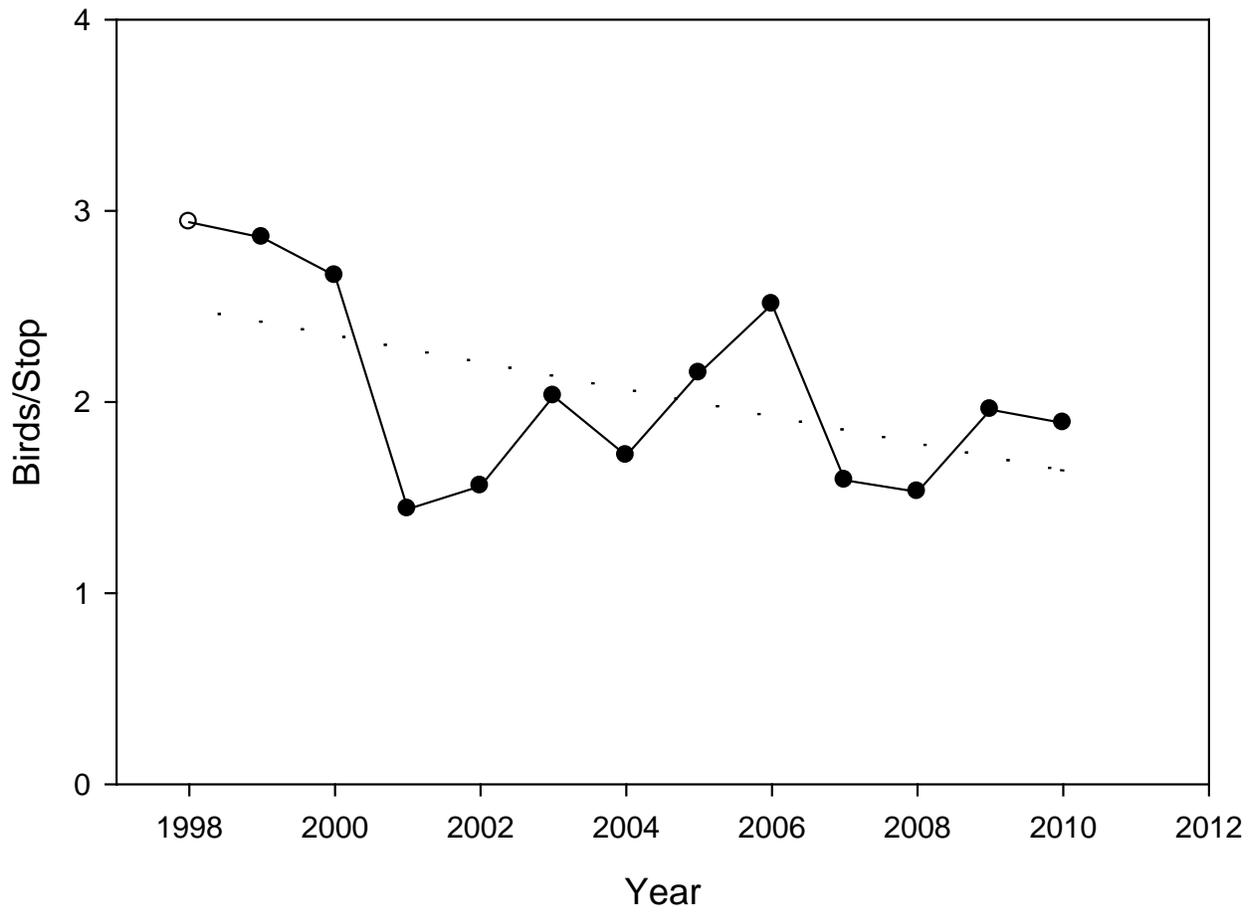


Figure 3. Mean number of northern bobwhites heard per stop calculated across all Kansas' survey routes, 1998-2009. These data can only be used to approximate long-term trends because the same set of routes was not surveyed in every year.