



No.	Author	Date
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	Title: Breeding Population Index of Northern Bobwhite – Summer 2006	

Abstract: Spring whistle counts have been conducted annually throughout Indiana since 1947 (except 1958-1976) to assess changes in bobwhite abundance. The number of whistling quail was counted along 79 routes in 2006. Data were only included in the analysis if routes were surveyed in 2005 and 2006 and if at least 1 bird was counted on the route during consecutive survey years. Considering only these routes ($n = 64$), the statewide mean number of bobwhites heard per survey stop in 2006 ($\bar{x} = 0.86 \pm 0.09$) was similar ($t_{64} = 0.39$, $P = 0.70$) to the number heard in 2005 ($\bar{x} = 0.88 \pm 0.09$). Likewise, regional indices generally did not differ between years ($P > 0.10$) except for the southcentral region that declined 17.6% ($P = 0.08$).

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The Indiana Division of Fish and Wildlife conducts road-side counts of whistling bobwhites each spring to monitor changes in population abundance. These counts have been conducted annually since 1947 (except 1958-1976). Results from the annual surveys are used to formulate management priorities, set harvest regulations, and evaluate habitat improvement programs. In 2006, a total of 79 routes were surveyed between 12 to 29 June. Observers recorded the number of quail heard whistling during 3 minute periods at 15 different stops along each route. The routes were 15 miles in length and listening stops were spaced at approximately 1-mile intervals along each route. Counts started at sunrise and were not conducted during precipitation events or when winds exceeded 18 mph. A paired t-test was used to compare indices of abundance between 2005 and 2006 within each of Indiana's 4 bobwhite management regions (Figure 1).

A total of 79 routes were surveyed in 2006. During 2005 and 2006, bobwhites were heard on 64 of these routes and data from only these routes were used to draw statistical comparisons between indices of bobwhite abundance. The statewide number of bobwhites heard per stop in 2006 ($\bar{x} = 0.86 \pm 0.09$) was less than the number heard per stop in 2005 ($\bar{x} = 0.88 \pm 0.09$) but this difference was not significant (Table 1). Additionally, the number of bobwhites heard per stop in 2006 did not differ ($P > 0.10$) from the number heard in 2005 within 3 of the 4 physiographic regions of the state (Table 1). The southcentral region declined 17.6% ($P = 0.08$). Long-term trend data continues to show that the northern bobwhite population remains near historic lows in all 4 of Indiana's physiographic regions (Figure 2).

The abundance of bobwhites appears to be similar to the previous year. Despite the similarities between the 2005 and 2006 statewide breeding populations, it is still quite obvious that Indiana's population is well below numbers observed in past decades (Figure 2). The severe winter storms of the late 1970's certainly took a toll on Indiana's bobwhite population, but if suitable habitat had been available following the storms the population would certainly have recovered. Changes in federal farm programs along with changes in farming practices are the primary reasons that the population did not recover fully after those severe winters. In fact, Indiana's



bobwhite population had already begun to decline prior to the winter storms of 1978 and 1979 due to these same reasons (Figure 2).

Literature Cited

Hansen, H. M., and F. S. Guthery. 2001. Calling behavior of bobwhite males and the call-count index. *Wildlife Society Bulletin* 29:145-152.

Robel, R. J., D. J. Dick, and G. F. Krause. 1969. Regression coefficients used to adjust bobwhite quail whistle count data. *Journal of Wildlife Management* 33:662-668.

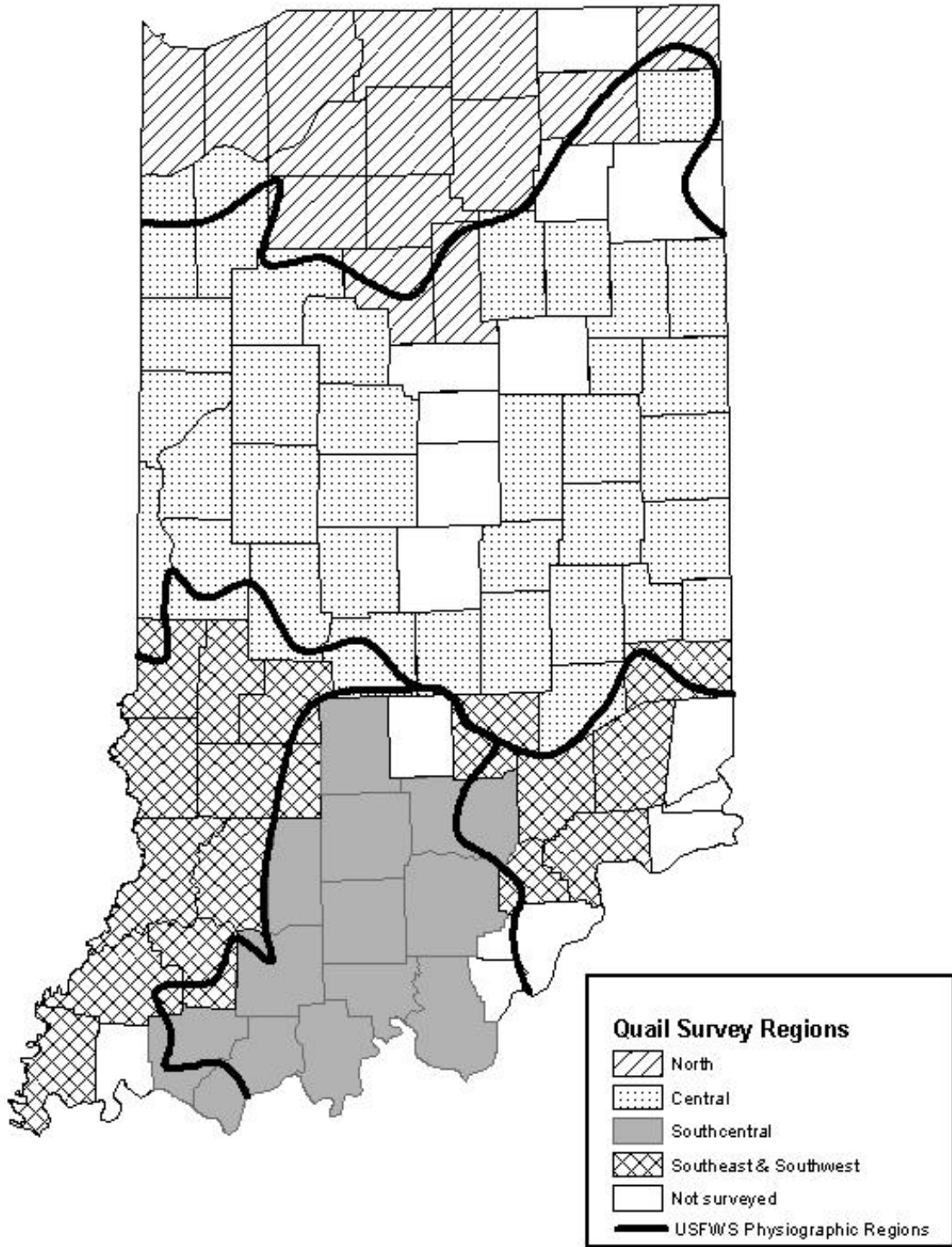
Table 1. Number of northern bobwhites heard per stop ($\bar{x} \pm SE$) along 64 paired survey routes within Indiana’s 4 bobwhite management regions, 2005-2006.

Region	Mean Bobwhites Heard Per Survey Stop			Apparent Change (%)	<i>t</i>	<i>P</i>
	<i>n</i> ^a	2005	2006			
Statewide	64	0.88 ± 0.09	0.86 ± 0.09	-2.4%	0.39	0.70
North	10	0.64 ± 0.22	0.69 ± 0.23	8.3%	-0.92	0.38
Central	25	0.62 ± 0.09	0.66 ± 0.10	+6.9%	-0.50	0.62
Southcentral	12	0.98 ± 0.19	0.81 ± 0.16	-17.6%	1.92	0.08
Southeast & -west	11	1.41 ± 0.22	1.39 ± 0.27	-1.3%	0.09	0.93

^a Includes only those routes surveyed in 2005 and 2006 along which at least 1 bird was heard (paired non-zero routes).



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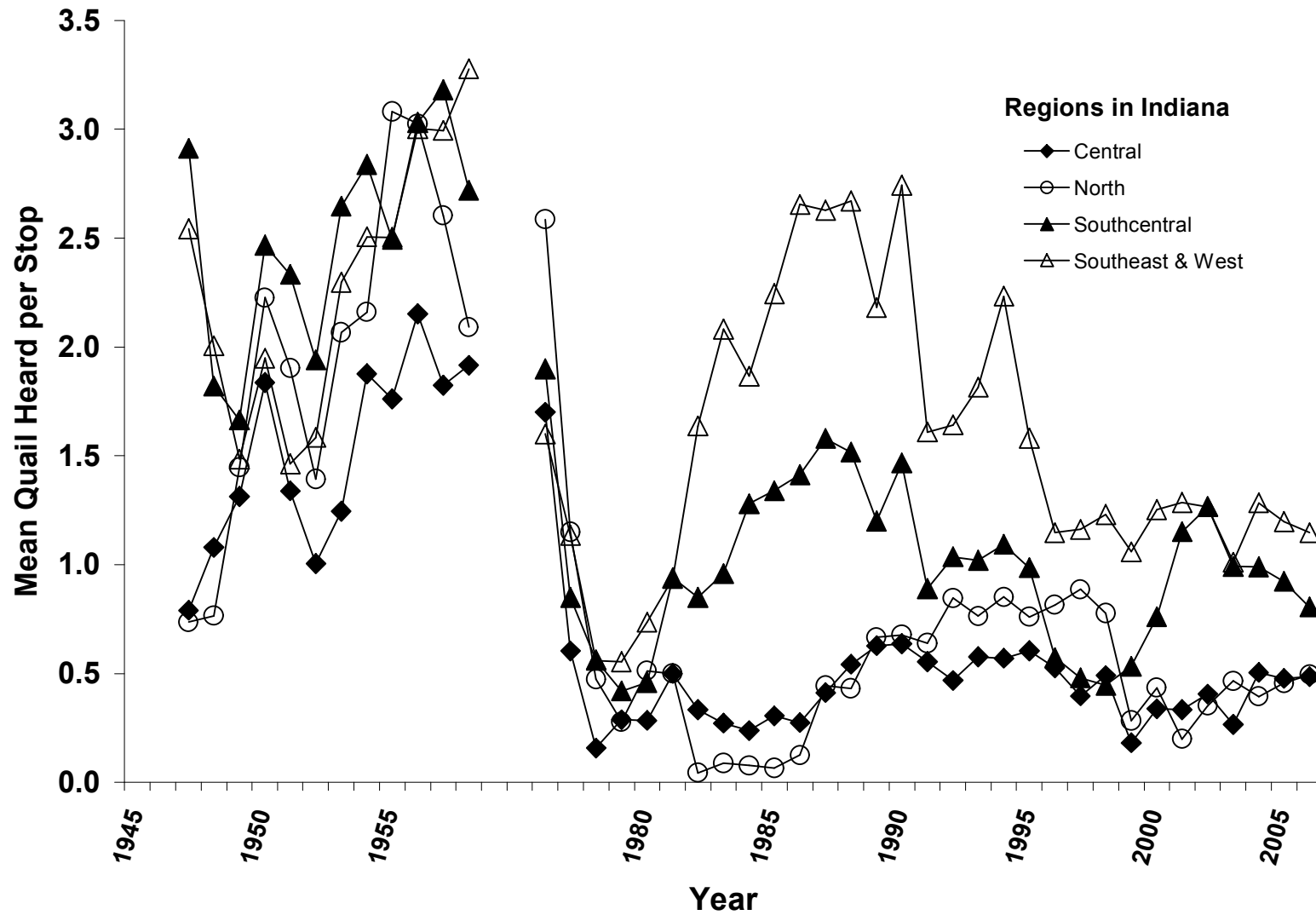


Figure 2. Mean number of northern bobwhite heard at each survey stop within Indiana's 4 bobwhite management regions, 1947-2006. No surveys were conducted from 1958-1976.