

PHEASANT POPULATION AND HARVEST SUMMARY

for the years

2005 and 2006

STATEWIDE WILDLIFE RESEARCH AND SURVEYS

**A Contribution of Pittman-Robertson Funds
Federal Aid in Wildlife Restoration**

Grants W-39-R-11, W-39-R-12, and W-39-R-13

Kansas Department of Wildlife and Parks

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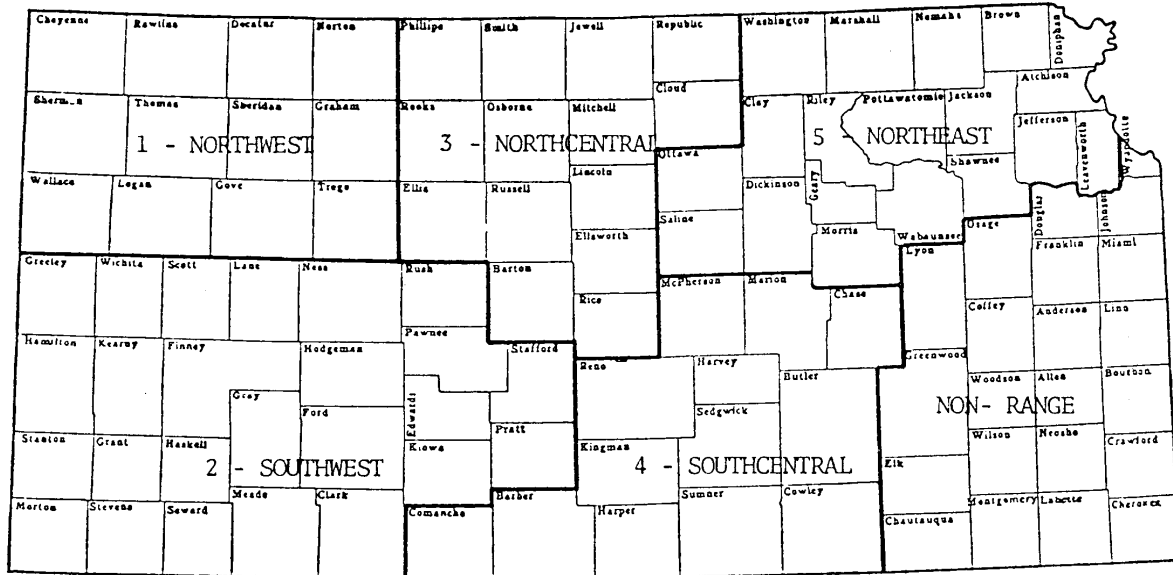
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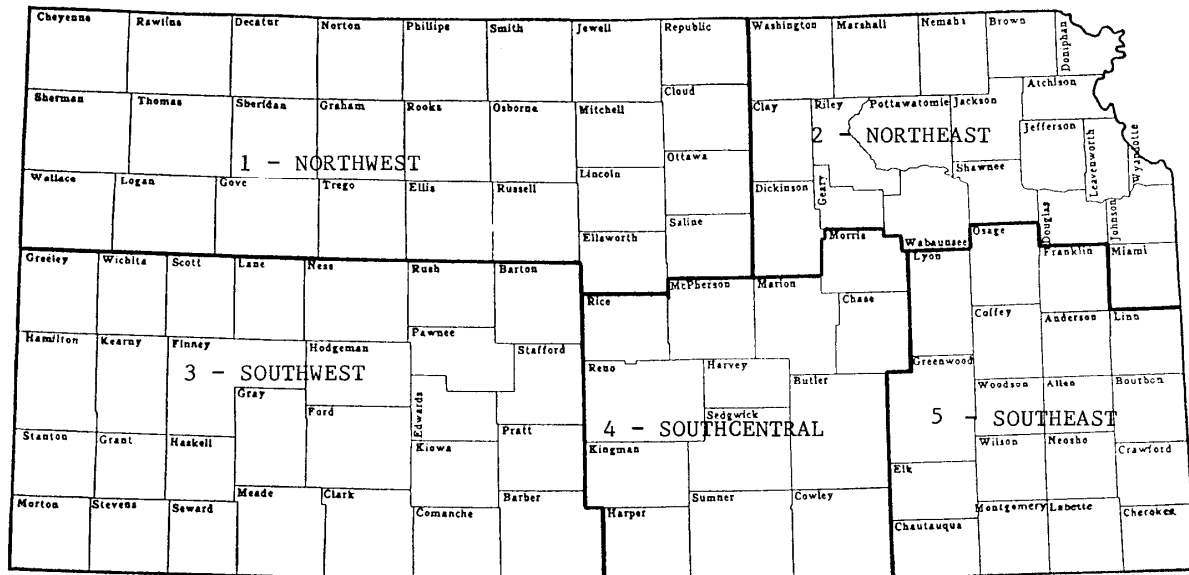
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Kansas PHEASANT Survey Regions.



Kansas Department of Wildlife and Parks ADMINISTRATIVE Regions.

Introduction

This report is a compilation of ring-necked pheasant survey data collected by the Kansas Department of Wildlife and Parks (KDWP). It contains pheasant-related segments from Kansas population survey and harvest reports for the years 2005 and 2006 as well as long-term population and harvest trends for Kansas pheasants. Data were derived primarily from (1) Rural Mail Carriers Surveys, (2) the Pheasant Crowing Survey, (3) the Summer Brood Survey, and (4) the Small Game Harvest Survey. These surveys provide three important benefits. They monitor long-term pheasant population trends. Annual surveys also permit reasonable prediction of pheasant population conditions relative to the subsequent hunting season. Such information is widely requested by the media and the public. These ongoing surveys also provide a scientific basis for the development of management recommendations.

The Rural Mail Carriers Survey (RMCS) was established in 1962 and is used to estimate long-term changes in population density and distribution and, to a lesser degree, in estimating annual production success. Carriers cooperate by making wildlife counts during the third or fourth week of January, April, and July and during the second week of October. About 400 carriers in Kansas participate in any one survey by counting small game species observed while traveling their normal delivery routes. About 280 of these report information from within Kansas' pheasant range while traveling between 125,000 and 150,000 miles during each survey period.

The Pheasant Crowing Survey (PCS) was first established in 1962 and used 29 survey routes. This survey was discontinued after 1972. The PCS was re-established in 1997 to provide additional long-term population monitoring and uses 63 permanent survey routes scattered throughout the Kansas pheasant range. It is conducted entirely by KDWP personnel in the Fish and Wildlife (FW) and Law Enforcement (LE) divisions. Each route is run once, under good weather conditions, and consists of 11 listening stations placed every 2-miles over the 20-mile course. Between April 25 and May 15, observers count the number of 2-note pheasant crows they hear during a 2-minute interval at each station, beginning 45 minutes before sunrise.

The Summer Brood Survey (SBS), begun in 1963, has been conducted to monitor changes in annual production success and hatching chronology. This survey provides one of the state's best source of information for predicting hunter success in the upcoming season. The survey is conducted by KDWP personnel in the LE and FW divisions. Observations of pheasant, quail, and turkey broods made incidental to normal field duties are recorded during a 6-week period beginning in the third full week of July and ending with the fourth week of August. Traditional indices derived from this survey were ratios of one cohort to another. Most of these ratios eventually proved inadequate as indicators of population productivity or change. In 1986, observers began reporting days in the field for each of the 6 weeks of the survey to permit computation of new indices based on observations per unit effort.

The Small Game Harvest Survey (SGHS) was established in 1957 and is used to estimate statewide harvest and hunter activity for a variety of small game species. It has been conducted by mailing a pre-season notification and post-season questionnaires to 5–10 percent of the Kansas residents who held hunting licenses in the previous license year and to non-residents who purchase licenses through a web-based licensing site (INK) contracted by the KDWP. Beginning with the 2006 calendar year, the entire sample was obtained from the Kansas Outdoors Automated Licensing System (KOALS) database which permitted sampling same-year resident and non-resident license buyers. Also, a web-based survey format was initiated, replacing the paper questionnaire (still offered to sample hunters without web access). Typically, 25 to 30 percent of the hunters contacted have returned usable data indicating they hunted small game. This has provided data from between 2,000 and 3,000 small game hunters, representing about 2 to 3 percent of the license holders.

Other surveys have been experimentally conducted in the past, but were discontinued for various reasons including: (1) duplication of effort, (2) poor reliability, (3) production of non-essential data, (4) insufficient potential variability, and (5) high cost relative to the value of the information provided. Surveys falling into this category included: (1) Random Hunter Bag Checks, 1961-65; (2) Voluntary Hunter Check Stations, 1963-67; (3) Brood Route Counts, 1961-65; (4) Wing-Leg Envelope Collections, 1962-65; (5) February Sex-Ratio Counts, 1963-68. These data are not addressed in this report.

Summaries of research, management projects, or literature reviews relevant to Kansas pheasant populations and performed by the small game staff may also occasionally appear in this report.

2005

Kansas Pheasant Summary

Weather conditions during the winter of 2004–2005 did not produce any unusual level of stress or mortality, apparently leaving Kansas' pheasant breeding populations in good shape. For the entire Kansas pheasant range, the April Rural Mail Carriers Survey (RMCS) index increased 14% and the Pheasant Crowing Survey index increased 13% indicating a modest improvement over what was considered a relatively good breeding population in 2004.

Good establishment of winter wheat in the fall of 2004 coupled with its early greenup and rapid growth created excellent nesting potential in the spring of 2005. Most green wheat in Kansas was well in excess of the height needed (> 10 in.) by mid-April to provide good nesting cover. May proved to be unusually dry in much of the state, allowing nesting hens to complete incubation uninterrupted by inclement weather. Although wheat grain yields were seriously reduced when the crop ran out of soil moisture, the vegetative height that the crop had already attained was more than adequate for good nesting concealment. In western Kansas, overall nesting success was probably enhanced by the fact that the wheat stubble remaining from the poor 2004 crop was unusually short. This combination of poor stubble and good green wheat usually results in excellent overall nest success since stubble is often unsafe for nesting due to agricultural operations, whereas green wheat is mostly undisturbed yielding good nest success.

Unfortunately, persistent heavy rains in southcentral, part of northcentral, and northeast Kansas prevailed during the first two weeks of June, at the peak of pheasant hatching. Downy chicks are highly vulnerable to chilling during their first two weeks of life and these rains likely produced significant chick mortalities in the affected areas. The negative effect of these poorly-timed rains became clear with results from both the July RMCS and the Summer Brood Survey (SBS). The primary July RMCS indices increased 110% and 82% in the northwest and southwest regions where the early-June rains were moderate, but were little changed or modestly down where the heavy rains occurred. Indices from the SBS also showed strong increases in the northwest (42%) and southwest (47%), but were down further east. This created an unusually sharp contrast in production and fall populations from west to east.

A period of extremely hot, windy, and dry conditions took hold in mid-July and probably reduced chick survival throughout the range, as indicated by the small brood sizes recorded throughout the Kansas pheasant range. Fortunately, this period only last 2 weeks and gave way to relatively mild conditions for the remainder of the summer. Habitat conditions were generally good going into the fall, although some areas of below-average cover were present.

The 2005–2006 rangewide harvest estimate was 764,000 roosters, a 12% increase over the 2004–2005 season. This increase was primarily driven by strong increases in the northwest (31%) and northcentral (26%) regions, with a more-modest increase (14%) in the southwest. This occurred despite a blizzard that occurred just after Thanksgiving in northwest Kansas during which modest pheasant losses occurred.

Wheat establishment conditions in western Kansas were again good in the fall of 2005, but subsequent dry conditions substantially diminished nesting prospects for 2006.

KANSAS PHEASANT CROWING SURVEY – 2005

Federal Aid in Wildlife Restoration Grant W-39-R-11

Prepared by: Randy Rodgers, Wildlife Research Biologist

The survey period was from April 25 through May 20. The survey was extended 5 days later than the normal May 15 cutoff due to windy weather conditions. Table 1 indicates the results of the 2005 survey and compares them to 2004. Sixty-one of the 63 established routes were assigned for 2005 (routes in Osage and Coffee counties are run only in even-numbered years) and 57 were successfully run. Forty-eight of the routes were completed in both 2004 and 2005 by the same observers. Personnel assigned these surveys are noted in Table 2.

The **Rangewide** PCS index was 16.6 crows per station, 13.3% greater than in 2004. This was a statistically significant change ($P = 0.013$). Overall, 32 of the 48 comparable routes increased this year and 16 decreased. In the **Northwest**, 10 of the 12 routes were run and all of those were run by the same observers as in 2004. The overall Northwest PCS index was 23.9 and the 10 routes comparable to 2004 increased by an average of 4.2%, a non-significant change ($P = 0.222$). Five of these 10 routes increased and 5 decreased. All of the 12 routes in the **Northcentral** region were run, yielding a PCS index of 19.2. Ten of these routes were run by last year's observers. The average of those 10 routes increased by 29.0%, which was statistically significant ($P = 0.011$). Nine of the 10 comparable routes increased over 2004 and 1 decreased. Nine of the 10 routes in the **Northeast** survey region were successfully run, but only 5 were run by the 2004 observers. The overall PCS index was 7.9. The mean PCS index for the 5 comparable routes did not change from last year ($P = 0.446$). Of the 5 comparable routes, 2 increased and 3 decreased. In the **Southwest**, 17 of the 18 routes were successfully run and all of these were run by last year's observers. The overall PCS index was 19.0 and the 17 comparable routes increased by an average of 10.0%. This change was not statistically significant ($P = 0.267$). Ten of the 17 comparable routes increased and 7 decreased. All of the 9 routes in the **Southcentral** survey region were successfully run this spring and, of those, 6 were run by the 2004 observers. This yielded an overall PCS index of 9.4. The PCS index for the 6 comparable routes increased 34.4%, which was statistically significant ($P = 0.014$). All of the 6 comparable Southcentral routes increased.

Overall, the state's pheasant breeding population continued to improve and was 74% higher than the low levels experienced in the drought years of 2001 to 2003. Significant increases in the PCS indices of the Northcentral and Southcentral region likely reflect the relatively good production that occurred in those areas. The wheat crop, with its strong influence on nesting success, in the central portions of the state was relatively good in 2004 and a mild summer created good brood rearing conditions. While the wheat crop was poor in the west last year, exceptionally mild summer conditions appear to have allowed the Northwest and Southwest regions to, at least, remain stable or to slightly increase. Weather conditions during the winter of 2004-05 did not appear to produce any unusual level of stress or mortality, leaving this spring's breeding population in good shape. This good breeding population, coupled with the good vegetative stature of the 2005 wheat crop suggest good pheasant production potential this year. However, excessive rains that occurred in southcentral Kansas in the first half of June may have reduced production potential in parts of that region.

Table 1. Kansas Pheasant Crowing Survey Results – 2005.

Route	2004 Crows Per Station	2005 Crows Per Station	1-Year Change (%)
Gove NE	13.0	19.5	50
Gove SW	15.6	10.5	-33
N Gove-Logan	19.6	18.1	-7
O Graham	42.4	40.5	-5
R Logan	23.4	37.3	60
T Logan SE	6.8	10.6	55
H Norton	37.1	30.5	-18
W Rawlins-Thomas	15.9	17.6	10
E Sheridan	18.0	25.3	40
S Sherman	20.6		
T Thomas			
Trego	38.1	29.7	-22
Region Mean*	22.8	23.9	(+4)

Route	2004 Crows Per Station	2005 Crows Per Station	1-Year Change (%)
N Barton	12.3	15.6	~
O Cloud	8.6	12.5	44
R Ellis	5.0	7.5	49
T Lincoln	23.0	32.1	40
H Mitchell	27.8	35.4	27
C Osborne	28.4	43.0	52
E Phillips		6.5	
N Republic	23.4	29.8	27
T Rice	5.7	7.4	28
R Rooks	14.2	18.4	29
A Russell	8.0	8.8	10
L Smith	17.2	13.2	-23
Region Mean *	15.8	19.2	(+29) **

Route	2004 Crows Per Station	2005 Crows Per Station	1-Year Change (%)
N Brown-Nemaha	3.1	3.5	12
O Dickinson-Clay	15.2	14.8	-2
R Jackson-Jeffers.	3.5	3.4	-3
T Marshall	8.9	9.2	3
H Morris			
E Ottawa	6.5	17.0	~
A Riley	6.4	6.2	-3
S Shawnee	1.5	2.6	~
T Wabaunsee	0.8	0.9	~
Washington	7.6	13.9	~
Region Mean *	5.9	7.9	(0)

Routes consist of 11 stations at approx. 2-mile intervals.
The listening interval at each station is exactly 2 minutes.

* Means are derived from all completed survey routes in the respective year. Annual change and statistical Significance are computed only from survey routes 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).

~ Indicates a different observer from previous year.

Route	2004 Crows Per Station	2005 Crows Per Station	1-Year Change (%)
Clark	16.1	17.0	6
Edwards	6.6	8.6	32
Finney	15.6	23.0	48
Ford	45.1	37.4	-17
S Gray	40.6	35.8	-12
O Hodgeman	12.2	14.9	22
U Kearny-Hamilton	13.2	15.1	15
T Morton-Stanton	8.4	10.0	20
H Ness-Lane	9.1	7.3	-20
W Pawnee	26.6	29.6	11
E Pawnee (Irrig.)	12.3	10.8	-12
S Pratt	16.5	11.4	-31
T Rush	12.4		
Scott	14.7	29.8	102
Seward-Haskell	10.1	30.3	200
Stafford-Barton	19.1	11.0	-42
Stevens	16.8	27.1	61
Wichita-Greeley	10.8	4.1	-62
Region Mean *	17.0	19.0	(+10)

Route	2004 Crows Per Station	2005 Crows Per Station	1-Year Change (%)
S			
O			
U			
T Butler-Marion	2.9	3.6	24
H Comanche	16.4	22.4	37
C Cowley-Sumner	2.5	4.5	~
E Harper	5.1	6.6	30
N Kingman-Reno	6.4	8.2	29
T McPherson	13.4	15.5	~
R McPhers.-Marion		0.6	
A Reno	13.3	18.6	40
L Sedgwick-Harv.	3.3	4.3	32
Region Mean *	7.9	9.4	(+34) **

Route	2004 Crows Per Station	2005 Crows Per Station	2-Year Change (%)
S			
O			
U			
T			
H Coffee	0.0		0
E Osage	0.0		
A			
S Region Mean *	0.0		
T (SE routes run only in even years)			

Route	2004 Crows Per Station	2005 Crows Per Station	1-Year Change (%)
R			
A			
N			
G Range Mean*	14.9	16.6	(+13) **
E (Excludes SE)			

Kansas Pheasant Crowing Survey Routes and Survey Regions

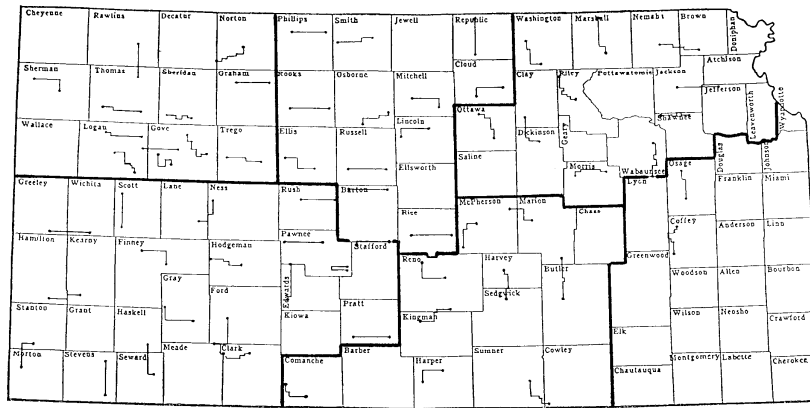


Table 2. Kansas Department of Wildlife and Parks personnel assigned pheasant crowing survey routes – 2005.

Region	Route	Observer	Region	Route	Observer
NW	Gove NE	Steve Price	SW	Clark	Jon Zuercher
	Gove SW	Randy Rodgers		Edwards	Matt Stucker
	Gove-Logan	Randy Rodgers		Finney	Daryl Fisher
	Graham	Marc Gray		Ford	Scotty Baugh
	Logan	Matt Bain		Gray	Lowell Aberson
	Logan SE	Randy Rodgers		Hodgeman	Craig Curtis
	Norton	Cris Mulder		Kearny-Hamilton	Mark Sexson
	Rawlins-Thomas	Matt Bain		Morton-Stanton	B.J. Thurman
	Sheridan	Randy Rodgers		Ness-Lane	Troy Schroeder
	Sherman *	Mike Hopper		Pawnee	Charlie Swank
	Thomas *	Benny Young		Pawnee (Irrig.)	Helen Hands
	Trego	Kent Hensley		Pratt	Brad Simpson
	NC	Barton		Gene Scheweis	Rush *
Cloud		Ron Ruthstrom	Scott	Manuel Torres	
Ellis		Bruce Taggart	Seward-Haskell	Tim Urban	
Lincoln		Aaron Deters	Stafford-Barton	Charlie Swank	
Mitchell		Mike Nyhoff	Stevens	Kraig Schultz	
Osborne		Toby Marlier	Wichita-Greeley	Daryl Fisher	
Phillips		Marc Gray	SC	Butler-Marion	Charlie Cope
Republic		Rob Unruh		Comanche	Craig Curtis
Rice		Steve Adams		Cowley-Sumner	Kurt Grimm
Rooks		Mike Zajic		Harper	Brad Odle
Russell		Matt Smith		Kingman-Reno	Troy Smith
Smith	Ron Ruthstrom	McPherson		Brent Theede	
NE	Brown-Nemaha	Randy Whiteaker	McPhers.-Marion	Cliff Peterson	
	Dickinson-Clay	Tom Bowman	Reno	Jeff Rue	
	Jackson-Jeffers.	Randy Whiteaker	Sedgwick-Harv.	Charlie Cope	
	Marshall	Keith Salmans	SE	Coffee **	Bob Culbertson
	Morris *	Roger Applegate		Osage **	Matt Peek
	Ottawa	Eli Makings		~	~ New Observer
	Riley	Corey Alderson		*	* Route not completed
	Shawnee	Clint Thornton	~	**	** Southeast routes run only in even years.
	Wabaunsee	Clint Thornton	~		
	Washington	Tom Bowman	~		

PHEASANT BROOD SURVEY RESULTS – 2005

Prepared by Randy Rodgers, Wildlife Biologist

Dates for the 2005 Summer Brood Survey were from July 17 through August 27. Tables 3 and 4, and Figure 2 summarize the pheasant information collected by Kansas Department of Wildlife and Parks personnel.

Temperatures during the first half of the survey period were exceptionally hot, often well exceeding 100° F, with generally dry and windy conditions. Conditions moderated substantially for the second half of the survey period with much cooler temperatures and more frequent precipitation. Exceptionally heavy rains occurred during the last week of the survey period in parts of southcentral Kansas and the southern Flint Hills.

PHEASANT

KDWP personnel reported 5,289 pheasants this year, including 3,965 young in 825 broods. In 2004, 4,815 pheasants were reported with 3,609 young in 669 broods. Fifty-seven broods were not classified by age. Adult pheasant observations this year included 544 cocks and 775 hens, compared to 516 cocks and 690 hens in 2004. A weekly average of 78.5 observers spent 1,537 observer-days in the field this year compared to 70.0 and 1,434, respectively, in 2004.

The statewide pheasants-per-observer-day index (3.44) increased 2% compared to 2004 which was not statistically significant ($P = 0.380$). The 2005 index exceeded both the 2000–2004 5-year mean (2.58) and the 1995–2004 10-year mean (2.67). There were, however, very sharp contrasts in this index on a regional basis. Pheasants made very strong gains in western Kansas, but these gains were countered by lower indices in the central and eastern regions. The northwest and southwest survey regions increased significantly, by 42% ($P = 0.023$) and 47% ($P = 0.014$), respectively. Nesting conditions in green wheat were particularly good in western Kansas this year. The wheat greened early and attained good height and density by mid-April. A relatively dry May, while negatively affecting wheat grain yields, may actually have helped with pheasant nesting success in the west. In contrast to gains in the west, the northcentral regional index was down 29% ($P = 0.014$) and the northeast was down 44% ($P = 0.023$). Both decreases were statistically significant. The southcentral region also trended downward (-13%), but this was not statistically significant ($P = 0.232$). It was particularly disheartening to see such substantial declines in the northeast, which has seen unusually low, but slowly recovering, pheasant populations for several years.

Pheasant production appears to have been best in the northwest survey region where observations of young birds jumped ($P = 0.014$) by 66% over 2004. This is particularly impressive relative to observations of adult hens which were unchanged from 2004. The 51% increase in young observed ($P = 0.014$) in the southwest region appeared to be driven more by a substantially improved breeding population, as indicated by a 46% increase ($P = 0.014$) in the adult hen index over last year. Indices of young birds in the northcentral, southcentral, and northeast survey regions were all lower than adult indices, indicating below-average production. Frequent heavy rains in early June in the central and eastern portions of Kansas' pheasant range probably account for much of the decline that occurred in these regions. These rains were concurrent with the peak of hatching and likely caused heavy losses among recently-hatched chicks.

The pheasant hatching histogram indicated a normal peak of hatch during the first ten days of June and a relatively normal distribution of hatching. Brood size was, however, unusually small (4.81). Extremely hot and dry conditions that prevailed in mid-July may have reduced survival of young chicks causing partial losses of many broods.

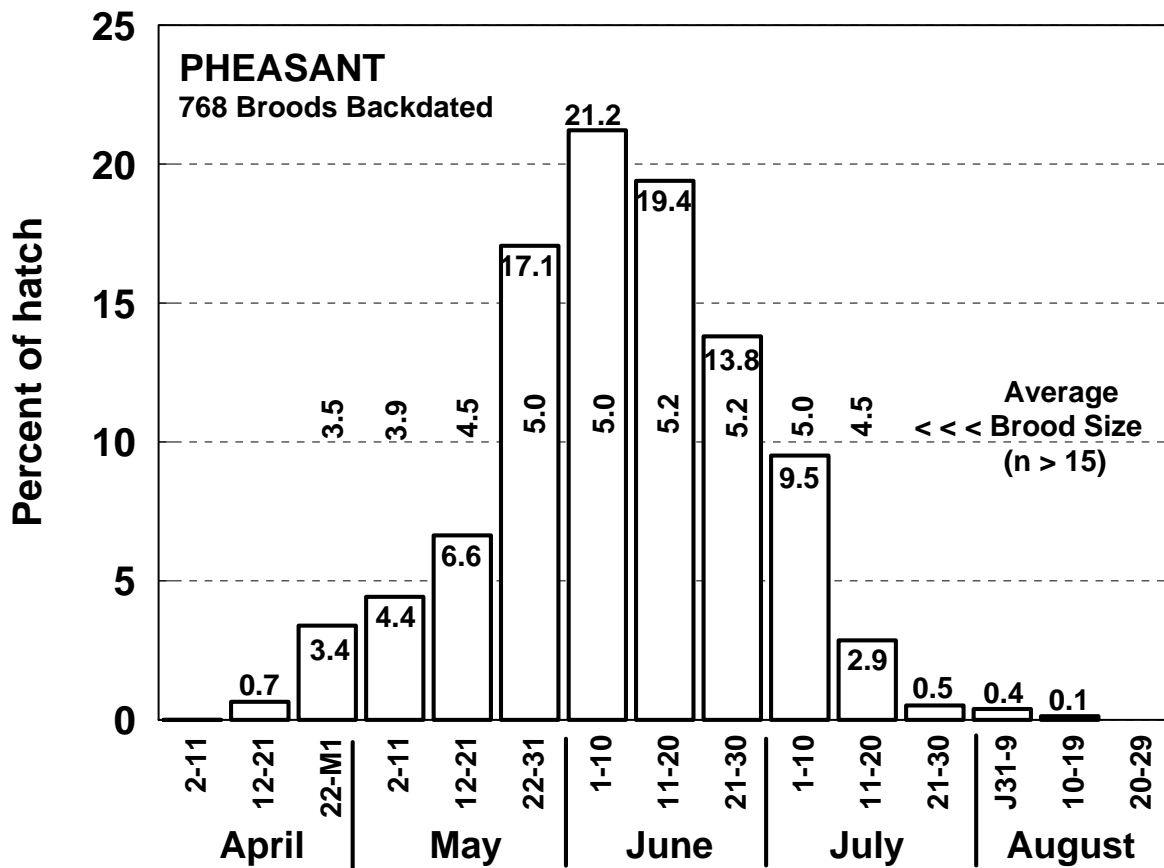


Figure 2. Rangewide pheasant hatching dates --2005.

Table 3. Distribution of PHEASANT observations by survey region – 2005.

Survey Region	Observers Per Week	Observer Days	Uncl. Pheasants	Cocks	Hens	Hens With Young	Young	Broods
1-NW	6.83	118		70	109	81	856	160
2-SW	14.17	302	1	184	305	191	1431	309
3-NC	18.67	341	4	180	248	163	1327	271
4-SC	18.67	375		73	82	36	258	64
5-NE	20.17	401		37	31	16	93	21
STWD	78.50	1,537	5	544	775	487	3,965	825

Table 4. Change in PHEASANT production indices - 2004 to 2005.

Index	Year	Survey Regions					STWD
		1-NW	2-SW	3-NC	4-SC	5-NE	
Pheas. Per Observer Day	2004	6.17	4.33	7.26	1.27	0.72	3.36
	2005	8.77	6.36	5.16	1.10	0.40	3.44
	% Change	42	47	-29	-13	-44	2
Cocks Per Observer Day	2004	0.88	0.50	0.52	0.17	0.07	0.36
	2005	0.59	0.61	0.53	0.19	0.09	0.35
	% Change	-33	22	2	15	32	-2
Hens Per Observer Day	2004	0.92	0.69	0.84	0.23	0.12	0.48
	2005	0.92	1.01	0.73	0.22	0.08	0.50
	% Change	0	46	-13	-5	-36	5
Young Per Observer Day	2004	4.38	3.14	5.90	0.87	0.53	2.52
	2005	7.25	4.74	3.89	0.69	0.23	2.58
	% Change	66	51	-34	-21	-56	2
Broods Per Observer Day	2004	0.86	0.61	1.03	0.16	0.10	0.47
	2005	1.36	1.02	0.79	0.17	0.05	0.54
	% Change	58	68	-23	7	-48	14
Brood Size	2004	5.11	5.12	5.75	5.39	5.53	5.39
	2005	5.35	4.63	4.90	4.03	4.43	4.81
	% Change	5	-10	-15	-25	-20	-11

Changes in **bold italics** denote a significant change ($P < 0.10$) between years.

ALL hunter activity for PHEASANTS, 2005-2006 season ^a.

Region	Sample Size	Est. Total Hunters	Est. Total Days	Est. Total Harvest	Season Days Per Hunter	Season Bag Per Hunter	Avg. Bag Per Day
STATE	1,242	124,700	673,000	764,000	5.40	6.12	1.20
A1-NW	431	43,300	233,700	269,100	5.40	6.22	1.24
A2-NE	184	18,500	93,500	60,900	5.06	3.30	0.73
A3-SW	311	31,200	188,500	265,400	6.04	8.50	1.53
A4-SC	203	20,400	109,600	108,300	5.38	5.31	0.98
A5-SE	10	1,000	2,700	4,200	2.67	4.22	1.97
A0-NS ^b	103	10,300	38,900	51,200	3.77	4.95	1.28
M1-NW	103	10,300	63,100	74,600	6.10	7.22	1.22
M2-SW	276	27,700	170,600	237,600	6.16	8.57	1.51
M3-NC	324	32,500	166,600	209,000	5.12	6.43	1.35
M4-SC	193	19,400	104,100	98,200	5.37	5.06	0.96
M5-NE	226	22,700	118,700	82,900	5.23	3.65	0.78
M6-SE	17	1,700	4,900	5,400	2.88	3.19	1.41

^a The sum of regional values may not precisely equal state total due to computation method.

^b County hunted not specified. Non-specified management region equals non-specified administrative region.

NON-RESIDENT hunter activity for PHEASANTS, 2005-2006 season ^a.

Region	Sample Size	Est. Total Hunters	Est. Total Days	Est. Total Harvest	Season Days Per Hunter	Season Bag Per Hunter	Avg. Bag Per Day
STATE	1,032	48,400	202,000	348,000	4.17	7.19	1.70
A1-NW	412	19,300	84,600	139,000	4.38	7.20	1.62
A2-NE	54	2,500	9,400	9,900	3.71	3.93	1.19
A3-SW	336	15,800	66,500	136,000	4.22	8.63	2.02
A4-SC	45	2,100	7,200	10,300	3.40	4.89	1.14
A5-SE	4	200	600	1,100	3.00	6.00	2.27
A0-NS ^b	181	8,500	32,200	47,600	3.79	5.61	1.55
M1-NW	141	6,600	29,300	52,500	4.43	7.94	1.67
M2-SW	316	14,800	62,800	129,300	4.24	8.73	2.03
M3-NC	267	12,500	55,600	88,500	4.44	7.07	1.62
M4-SC	50	2,300	8,000	11,900	3.43	5.06	1.23
M5-NE	71	3,300	11,700	12,700	3.51	3.80	1.16
M6-SE	6	300	800	1,700	2.80	6.20	2.36

^a The sum of regional values may not precisely equal state total due to computation method.

^b County hunted not specified. Non-specified management region equals non-specified administrative region.

2006

Kansas Pheasant Summary

Weather conditions during the winter of 2005–2006 were mild with very little precipitation, leaving western Kansas' pheasant breeding populations at their highest levels since the onset of drought in 2000. Averaged over the entire Kansas pheasant range, the April Rural Mail Carriers Survey (RMCS) index increased 27%, but this increase was accounted for by large increases in the Northwest (61%) and Southwest (158%) regions, with other regions declining modestly. Excellent 2005 production and good winter survival in western Kansas were also reflected in the Pheasant Crowing Survey (PCS) with 35% and 61% increases recorded in the Northwest and Southwest, respectively. The rangewide PCS index was the highest in 10 years.

Unusually dry conditions overwinter persisted through spring and into early August for most of the state. Nesting conditions in green wheat were poor. The wheat greened early but quickly ran out of moisture, resulting in short, thin stands that matured well ahead of normal. This situation was particularly severe in western Kansas where many wheat stands were abandoned. The poor condition of the wheat crop reduced its concealment quality, probably leading to higher nest predation, and likely caused a shift to wheat stubble as many hens' initial choice for nest placement. Wheat stubble is a dangerous nesting habitat as it is mechanically disturbed during the nesting period, either by tillage or row-crop planting. Early wheat maturity also resulted in wheat harvest occurring 10 to 14 days ahead of normal, sharply reducing the time available for nesting and early brood rearing to safely occur. Unusual numbers of reports of hen or chick destruction were received this year as harvesters lowered their headers and increased combine ground speed to harvest the short, thin stands of wheat. The rangewide Summer Brood Survey (SBS) index decreased 23% compared to 2005 and was down most sharply (-42%) in the southwest, where drought conditions were most severe.

One area along the Nebraska border received significant rains in late June, much earlier than most of the state, and experienced relatively good pheasant reproduction. This area, roughly extended from Norton and northern Graham counties eastward through Phillips, northern Rooks, Smith, northern Osborne, and Jewell counties, roughly north of Highway 24. Significant, often heavy rains, occurred statewide in August. These rains substantially improved habitat quality through the remainder of the growing season. This improved habitat set the stage for good overwinter survival. The widespread August rains also provided excellent soil moisture for seeding and early development of the state's winter wheat crop, creating conditions for potential good recruitment in 2007.

The 2006–2007 rangewide harvest estimate was 774,000 roosters. Although this value was slightly greater than the 2005–2006 harvest, this increase was probably due to an improvement in how harvest estimates were obtained. For the first time, we were able to randomly sample non-resident hunters. This improvement was made possible by the new Kansas Automated Outdoors Licensing System (KOALS). In reality, Kansas pheasant hunting proved more difficult in 2006 than in 2005, with the exception of the area in northern Kansas (noted above) where hunting success remained very good.

The most severe blizzard and persistent deep-snow conditions in decades hit far western Kansas in the final days of 2006. Snow cover exceeded 2 feet in many areas and persisted through February roughly west of a line from Stevens County in the southwest to Decatur County in northwest Kansas, creating difficult survival conditions for pheasants.

KANSAS PHEASANT CROWING SURVEY – 2006 Federal Aid in Wildlife Restoration Grant W-39-R-12

Prepared by: Randy Rodgers, Wildlife Research Biologist

The survey period was from April 25 through May 20 and was extended 5 days later than the normal May 15 ending due to unfavorable weather conditions that prevailed throughout much of the survey period. Table 1 indicates the results of the 2006 survey and compares them to 2005. All of the 63 established routes were assigned for 2006 and 62 were successfully run. Forty-six of the routes were completed in both 2005 and 2006 by the same observers. Personnel assigned these surveys are noted in Table 2.

The **Rangewide** PCS index (excluding the Coffee and Osage routes in the southeast) was 20.5 crows per station, 28% greater than in 2005. This was a statistically significant increase ($P < 0.001$). Overall, 28 of the 46 comparable routes increased this year and 18 decreased. In the **Northwest**, 9 of the 12 routes were run by the same observers as in 2005. The regional Northwest PCS index was 30.3 and the mean of the 9 comparable routes increased by 35%, a significant change ($P = 0.008$). Eight of the 9 routes run by the same observer in both years increased. All of the 12 routes in the **Northcentral** survey region were run, yielding a PCS index of 16.6. Nine of the 12 routes were run by last year's observers. One route increased, eight decreased and the average of those 9 routes decreased 18% which was statistically significant ($P = 0.033$). All of the 10 routes in the **Northeast** were successfully run, but only 5 were completed by the 2005 observers. The regional PCS index was 7.5. The mean PCS index for the 5 comparable routes decreased 1% which was not significant ($P = 0.446$). Two of the 5 comparable survey routes increased and 3 decreased. In the **Southwest**, all 18 routes were successfully completed and 15 of the 18 routes were run by the same observer as last year. The regional PCS index was 28.1 and the 15 comparable routes all increased by an average of 61%, a highly-significant change ($P < 0.001$). Eight of the 9 survey routes in the **Southcentral** survey region were successfully run this spring by the same observers as in 2005. This yielded a regional PCS index of 10.9. The PCS index for the 8 comparable routes increased 5%, but this was not significant ($P = 0.289$). Two comparable routes increased and 6 decreased.

Overall, the state's pheasant breeding population improved for the third consecutive year with the rangewide PCS index double that recorded only 3 years ago. The overall PCS index for 2006 was also the highest recorded since this survey was begun in 1997. Pheasant production in 2005 in the western third of the state was exceptional and carryover through the comparably mild winter was apparently good. Although prospects initially looked good for western Kansas to have continued good pheasant production in 2006, with good establishment of the winter wheat crop last fall, an exceedingly dry winter and spring has severely damaged the wheat this year. This has already resulted in swathing of many fields and will likely result in an unusually early wheat harvest with only very short stubble remaining. These factors will probably result in diminished pheasant production in the west this year. The significant decrease in the 2006 PCS index for the northcentral region probably reflects the diminished production experienced in that region in 2005 when frequent heavy rains concurrent with the peak of hatching caused heavy losses among recently-hatched chicks. Wheat condition in the northcentral region this spring is reasonably good, however, and this could foster good productivity this year, if the summer weather is moderate.

Table 1. Kansas Pheasant Crowing Survey Results -- 2006.

Route	2005 Crows Per Station	2006 Crows Per Station	1-Year Change (%)
Gove NE	19.5	28.9	49
Gove SW	10.5	20.8	98
N Gove-Logan	18.1	32.8	81
O Graham	40.5	50.5	25
R Logan	37.3	42.6	14
T Logan SE	10.6	16.4	55
H Norton	30.5	41.9	38
W Rawlins-Thomas	17.6	31.6	80
E Sheridan	25.3	20.8	~
S Sherman		18.2	
T Thomas		34.4	~
Trego	29.7	24.3	-18
Region Mean*	23.9	30.3	(+35) **

Route	2005 Crows Per Station	2006 Crows Per Station	1-Year Change (%)
N Barton	15.6	12.6	-19
O Cloud	12.5	7.5	~
R Ellis	7.5	5.0	-33
T Lincoln	32.1	28.3	~
H Mitchell	35.4	33.6	-5
C Osborne	43.0	31.2	-27
E Phillips	6.5	10.5	62
N Republic	29.8	18.6	-37
T Rice	7.4	6.6	-10
R Rooks	18.4	16.7	-9
A Russell	8.8	7.0	-21
L Smith	13.2	22.1	~
Region Mean *	19.2	16.6	(-18) **

Route	2005 Crows Per Station	2006 Crows Per Station	1-Year Change (%)
N Brown-Nemaha	3.5	3.0	-13
O Dickinson-Clay	14.8	18.7	~
R Jackson-Jeffers.	3.4	2.6	-21
T Marshall	9.2	10.0	9
H Morris		0.8	~
E Ottawa	17.0	14.6	-14
A Riley	6.2	8.6	38
S Shawnee	2.6	1.0	~
T Wabaunsee	0.9	0.3	~
Washington	13.9	15.8	~
Region Mean *	7.9	7.5	(-1)

Routes consist of 11 stations at approx. 2-mile intervals.
The listening interval at each station is exactly 2 minutes.

* **Means** are derived from **all completed** survey routes in the respective year. **Annual change** and **statistical significance** are computed **only** from survey routes **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).

~ Indicates a different observer from previous year.

Route	2005 Crows Per Station	2006 Crows Per Station	1-Year Change (%)
Clark	17.0	20.3	19
Edwards	8.6	9.8	14
Finney	23.0	27.7	21
Ford	37.4	53.9	44
S Gray	35.8	60.2	68
O Hodgeman	14.9	32.8	120
U Kearny-Hamilton	15.1	33.3	120
T Morton-Stanton	10.0	35.4	254
H Ness-Lane	7.3	21.2	~
W Pawnee	29.6	37.5	27
E Pawnee (Irrig.)	10.8	17.4	60
S Pratt	11.4	14.0	23
T Rush		10.1	
Scott	29.8	39.9	34
Seward-Haskell	30.3	14.0	~
Stafford-Barton	11.0	14.5	31
Stevens	27.1	47.6	76
Wichita-Greeley	4.1	16.2	296
Region Mean *	19.0	28.1	(+61) **

Route	2005 Crows Per Station	2006 Crows Per Station	1-Year Change (%)
S Butler-Marion	3.6	3.3	-9
H Comanche	22.4	22.2	-1
C Cowley-Sumner	4.5	11.2	151
E Harper	6.6	6.3	-6
N Kingman-Reno	8.2	7.7	-6
T McPherson	15.5	11.0	-29
R McPhers.-Marion	0.6		
A Reno	18.6	22.8	23
L Sedgwick-Harv.	4.3	3.1	-29
Region Mean *	9.4	10.9	(+5)

Route	2004 Crows Per Station	2006 Crows Per Station	2-Year Change (%)
H Coffee	0.0	0.0	
E Osage	0.0	0.2	
A Region Mean *	0.0	0.1	
T (SE routes run only in even years)			

Route	2005 Crows Per Station	2006 Crows Per Station	1-Year Change (%)
R Range Mean*	16.6	20.5	(+28) **
A (Excludes SE)			
N			
G			
E			

Kansas Pheasant Crowing Survey Routes and Survey Regions

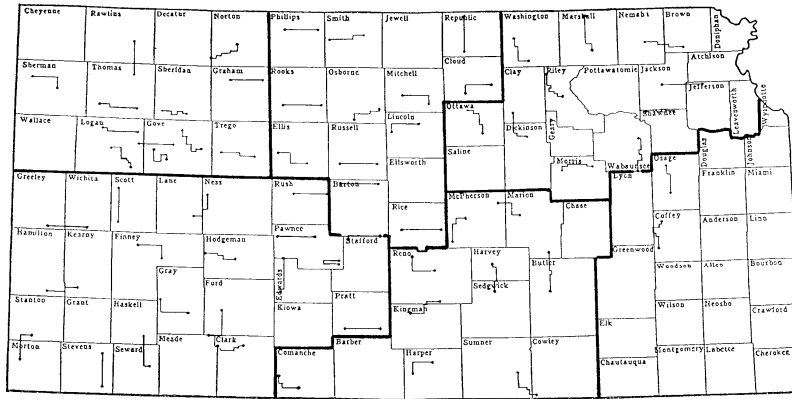


Table 2. Kansas Department of Wildlife and Parks personnel assigned pheasant crowing survey routes -- 2006.

Region	Route	Observer	Region	Route	Observer
NW	Gove NE	Steve Price	SW	Clark	Jon Zuercher
	Gove SW	Randy Rodgers		Edwards	Matt Stucker
	Gove-Logan	Randy Rodgers		Finney	Daryl Fisher
	Graham	Marc Gray		Ford	Scotty Baugh
	Logan	Matt Bain		Gray	Lowell Aberson
	Logan SE	Randy Rodgers		Hodgeman	Craig Curtis
	Norton	Cris Mulder		Kearny-Hamilton	Mark Sexson
	Rawlins-Thomas	Matt Bain		Morton-Stanton	B.J. Thurman
	Sheridan	Chris Berens		Ness-Lane	Randy Rodgers
	Sherman	Mike Hopper		Pawnee	Charlie Swank
Thomas	Chris Berens	Pawnee (Irrig.)	Helen Hands		
Trego	Kent Hensley	Pratt	Brad Simpson		
NC	Barton	Gene Scheweis	Rush	Brian Hanzlick	
	Cloud	Aaron Deters	Scott	Manuel Torres	
	Ellis	Bruce Taggart	Seward-Haskell	Aaron Baugh	
	Lincoln	Shane Hesting	Stafford-Barton	Charlie Swank	
	Mitchell	Mike Nyhoff	Stevens	Kraig Schultz	
	Osborne	Toby Marlier	Wichita-Greeley	Daryl Fisher	
	Phillips	Marc Gray	SC	Butler-Marion	Charlie Cope
	Republic	Rob Unruh		Comanche	Craig Curtis
	Rice	Steve Adams		Cowley-Sumner	Kurt Grimm
	Rooks	Mike Zajic		Harper	Brad Odle
Russell	Matt Smith	Kingman-Reno		Troy Smith	
Smith	Aaron Deters	McPherson		Brent Theede	
NE	Brown-Nemaha	Randy Whiteaker	McPhers.-Marion *	Cliff Peterson	
	Dickinson-Clay	Clint Thornton	Reno	Jeff Rue	
	Jackson-Jeffers.	Randy Whiteaker	Sedgwick-Harv.	Charlie Cope	
	Marshall	Keith Salmans	SE	Coffee **	Bob Culbertson
	Morris	Brent Konen		Osage **	Matt Peek
	Ottawa	Eli Makings			
	Riley	Corey Alderson			
	Shawnee	Mike McFadden			
	Wabaunsee	Mike McFadden			
	Washington	Clint Thornton			

~ New Observer
 * Route not completed
 ** Southeast routes run only in even years.

PHEASANT BROOD SURVEY RESULTS – 2006

Prepared by Randy Rodgers, Wildlife Biologist

Dates for the 2006 Summer Brood Survey were from July 16 through August 26. Tables 3 & 4, and Figures 2 & 4 summarize the pheasant data collected by Kansas Department of Wildlife and Parks personnel.

Temperatures during the first half of the survey period were exceptionally hot, sometimes exceeding 110° F, with unusually dry conditions. Conditions moderated substantially for the second half of the survey period with much cooler temperatures and more frequent precipitation. Localized but exceptionally-heavy rains occurred during the latter half of the survey period across the state, but many areas remained relatively dry.

PHEASANT

KDWP personnel reported 4,239 pheasants this year, including 3,022 young in 616 broods. In 2005, 5,289 pheasants were reported with 3,965 young in 825 broods. Only 3 broods were not classified by age. Adult pheasant observations this year included 559 cocks and 658 hens, compared to 544 cocks and 775 hens in 2005. A weekly average of 76.2 observers spent 1,595 observer-days in the field this year compared to 78.5 and 1,537, respectively, in 2005.

The statewide pheasants-per-observer-day index (2.66) decreased 23% compared to 2005 which was statistically significant ($P = 0.037$). The 2006 index was 3.3% less than the 2001–2005 5-year mean (2.75) and 5.7% less than the 1996–2005 10-year mean (2.82). Statistically significant decreases in the pheasant index occurred in the Southwest region (3.69, -42%, $P = 0.014$) and in the Southcentral region (0.88, -20%, $P = 0.014$). Other regional changes were not statistically significant although changes in the Northwest (7.18, -18%, $P = 0.173$) and the Northeast (0.52, +31%, $P = 0.458$) were likely driven by dry conditions. Drought in already semi-arid western Kansas is typically harmful for pheasants, but below-normal precipitation can benefit pheasant production in more-mesic northeastern Kansas. Nesting conditions in green wheat were poor in much of Kansas this year. Wheat greened early but quickly ran out of moisture resulting in short, thin stands that matured well ahead of normal. This situation was particularly severe in western Kansas where many wheat stands were abandoned. The poor condition of the wheat crop reduced its concealment quality, probably leading to higher nest predation, and likely caused a shift to wheat stubble as many hens' initial choice for nest placement. Wheat stubble is, however, a very dangerous place for hens to nest as this habitat is mechanically disturbed during the nesting period, either by tillage or row-crop planting. Early wheat maturity also resulted in wheat harvest occurring 10 to 14 days ahead of normal, sharply reducing the time available for nesting and early brood rearing to safely occur. Unusual numbers of reports of hen or chick destruction were received this year as harvesters lowered their headers and increased combine ground speed to harvest the short, thin stands of wheat.

Indices for young birds were down sharply in the Southwest (3.69, -42%, $P = 0.014$), although the adult breeding population was much higher this spring (see pheasant crowing survey). A very unusual disparity between the changes in cocks (+41%) and hens (-33%) was observed in the Southwest. While speculative, it is possible that hens experienced very high mortality during nesting in western Kansas due to the circumstances noted above. One area along the Nebraska border received significant rains much earlier than most of the state and appears to have experienced relatively good pheasant reproduction. This area, roughly extends from Norton and

northern Graham counties eastward through Phillips, northern Rooks, Smith, northern Osborne, and Jewell counties. This had the effect of moderating a decline in indices from the Northcentral region, but production to the south of U.S Highway 24 appears to have been poorer than Northcentral indices suggest.

The pheasant hatching histogram indicated a normal peak of hatch during the first ten days of June and a relatively normal hatching distribution. Brood size was, however, below average. An unusual pattern in brood size occurred with early-hatched broods being smaller than later-hatched broods. This may reflect poor chick survival during the exceptionally dry and poor-cover conditions that prevailed early, with somewhat better survival occurring as precipitation and cover increased in the latter half of the summer.

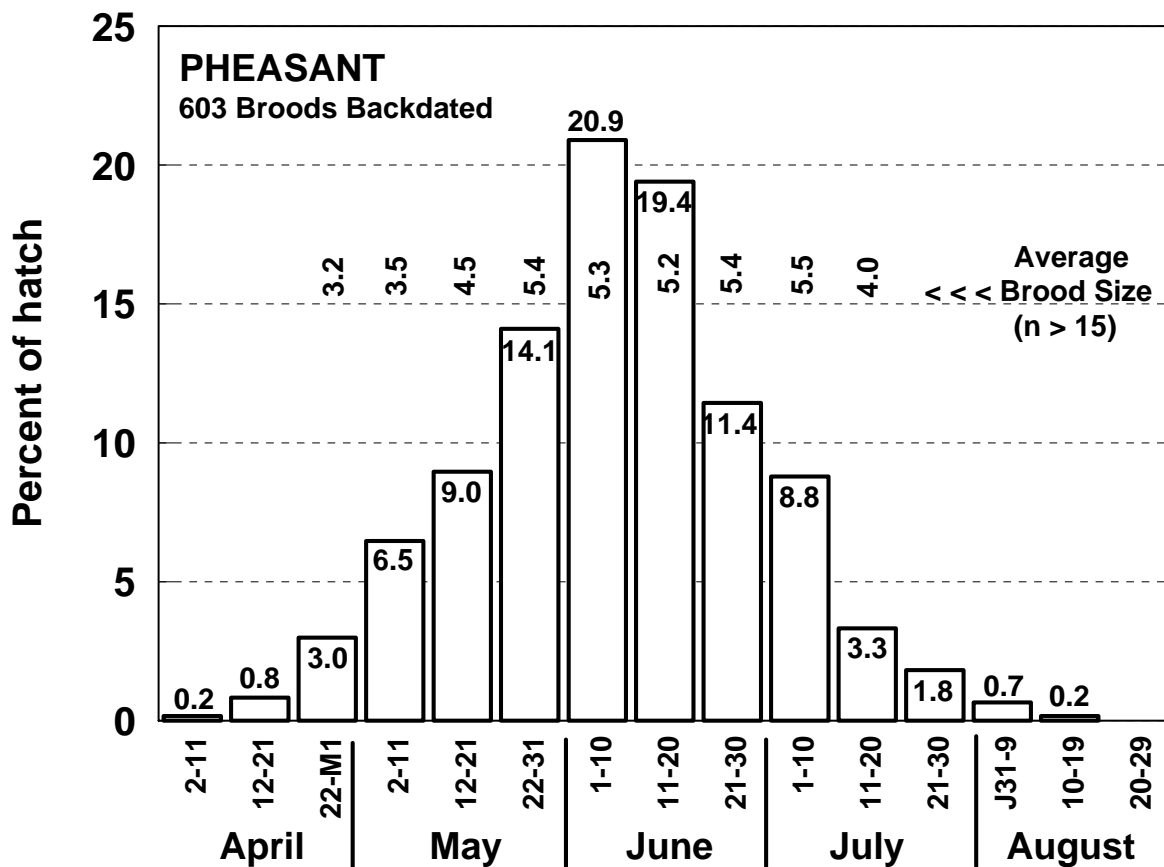


Figure 2. Rangewide pheasant hatching dates --2006.

Table 3. Distribution of PHEASANT observations by survey region – 2006.

Survey Region	Observers Per Week	Observer Days	Uncl. Pheasants	Cocks	Total Hens	Hens With Young	Young	Broods
1-NW	6.17	114		68	94	71	656	125
2-SW	15.17	331		285	225	127	710	177
3-NC	17.67	346		124	228	154	1299	243
4-SC	17.17	366		48	64	26	209	45
5-NE	20.00	438		34	47	22	148	26
STWD	76.17	1,595	0	559	658	400	3,022	616

Table 4. Change in PHEASANT production indices - 2005 to 2006.

Index	Year	Survey Regions					STWD
		1-NW	2-SW	3-NC	4-SC	5-NE	
Pheas. Per Observer Day	2005	8.77	6.36	5.16	1.10	0.40	3.44
	2006	7.18	3.69	4.77	0.88	0.52	2.66
	% Change	-18	-42	-8	-20	31	-23
Cocks Per Observer Day	2005	0.59	0.61	0.53	0.19	0.09	0.35
	2006	0.60	0.86	0.36	0.13	0.08	0.35
	% Change	1	41	-32	-31	-14	0
Hens Per Observer Day	2005	0.92	1.01	0.73	0.22	0.08	0.50
	2006	0.82	0.68	0.66	0.17	0.11	0.41
	% Change	-10	-33	-10	-21	34	-17
Young Per Observer Day	2005	7.25	4.74	3.89	0.69	0.23	2.58
	2006	5.75	2.15	3.75	0.57	0.34	1.89
	% Change	-21	-55	-3	-17	47	-27
Broods Per Observer Day	2005	1.36	1.02	0.79	0.17	0.05	0.54
	2006	1.10	0.53	0.70	0.12	0.06	0.39
	% Change	-19	-48	-11	-28	19	-28
Brood Size	2005	5.35	4.63	4.90	4.03	4.43	4.81
	2006	5.25	4.01	5.35	4.64	5.69	4.91
	% Change	-2	-13	9	15	28	2

Changes in **bold italics** denote a significant change ($P < 0.10$) between years.

Table 10a. **All** hunter activity for **PHEASANTS**, 2006-2007 season ^a.

Region	Sample Size	Est. Total Hunters	Est. Total Days	Est. Total Harvest	Season Days Per Hunter	Season Bag Per Hunter	Avg. Bag Per Day
STATE	1,842	120,900	659,000	774,000	5.44	6.39	1.26
A1-NW	607	39,700	222,300	268,300	5.59	6.74	1.25
A2-NE	195	14,100	65,400	56,300	4.62	3.97	0.86
A3-SW	509	34,100	216,100	276,600	6.33	8.11	1.47
A4-SC	195	14,900	90,700	81,100	6.06	5.41	0.90
A5-SE	9	600	1,500	2,300	2.28	3.61	1.99
A0-NS ^b	327	17,300	60,700	84,900	3.51	4.91	1.50
M1-NW	193	12,200	76,000	97,200	6.24	7.98	1.27
M2-SW	454	30,400	200,400	255,400	6.60	8.40	1.48
M3-NC	428	28,600	155,700	191,900	5.44	6.71	1.27
M4-SC	187	14,000	80,400	68,900	5.75	4.92	0.93
M5-NE	237	17,400	81,200	67,700	4.65	3.88	0.86
M6-SE	16	1,100	2,400	3,600	2.15	3.25	1.63

^a The sum of regional values may not precisely equal state total due to computation method.

^b County hunted not specified. Non-specified management region equals non-specified administrative region.

Table 10b. **Resident** hunter activity for **PHEASANTS**, 2006-2007 season ^a.

Region	Sample Size	Est. Total Hunters	Est. Total Days	Est. Total Harvest	Season Days Per Hunter	Season Bag Per Hunter	Avg. Bag Per Day
STATE	960	81,400	493,000	525,000	6.05	6.44	1.13
A1-NW	314	26,600	161,400	178,400	6.06	6.70	1.13
A2-NE	136	11,500	55,300	46,600	4.79	4.04	0.82
A3-SW	282	23,900	170,100	201,100	7.11	8.41	1.40
A4-SC	156	13,200	84,300	70,200	6.37	5.30	0.82
A5-SE	6	500	1,100	1,700	2.20	3.40	2.00
A0-NS ^b	66	5,600	19,000	23,300	3.39	4.17	1.33
M1-NW	88	7,500	53,800	60,100	7.20	8.05	1.12
M2-SW	251	21,300	157,500	184,500	7.40	8.66	1.41
M3-NC	235	19,900	116,300	137,300	5.83	6.89	1.17
M4-SC	140	11,900	73,300	57,400	6.17	4.83	0.84
M5-NE	170	14,400	69,700	56,200	4.83	3.89	0.83
M6-SE	10	800	1,600	2,400	1.89	2.78	1.61

^a The sum of regional values may not precisely equal state total due to computation method.

^b County hunted not specified. Non-specified management region equals non-specified administrative region.

Table 10c. **Non-Resident** hunter activity for **PHEASANTS**, 2006-2007 season ^a.

Region	Sample Size	Est. Total Hunters	Est. Total Days	Est. Total Harvest	Season Days Per Hunter	Season Bag Per Hunter	Avg. Bag Per Day
STATE	882	39,500	166,000	249,000	4.19	6.29	1.53
A1-NW	293	13,100	60,900	89,900	4.64	6.84	1.49
A2-NE	59	2,600	10,100	9,700	3.83	3.68	1.02
A3-SW	227	10,200	46,000	75,500	4.52	7.42	1.64
A4-SC	39	1,700	6,400	10,900	3.67	6.26	1.50
A5-SE	3	100	400	600	2.67	4.67	1.93
A0-NS ^b	261	11,700	41,700	61,600	3.56	5.26	1.58
M1-NW	105	4,700	22,200	37,100	4.71	7.88	1.52
M2-SW	203	9,100	42,900	70,900	4.72	7.79	1.65
M3-NC	193	8,700	39,400	54,600	4.56	6.31	1.52
M4-SC	47	2,100	7,100	11,500	3.35	5.45	1.47
M5-NE	67	3,000	11,500	11,500	3.81	3.81	1.02
M6-SE	6	300	800	1,200	2.83	4.50	1.68

^a The sum of regional values may not precisely equal state total due to computation method.

^b County hunted not specified. Non-specified management region equals non-specified administrative region.

Long-Term Trends

Ring-necked pheasants were first introduced into Kansas with the distribution of 3,000 birds in 84 counties during April of 1906 under the direction of State Fish and Game Warden D. W. Travis. An additional 2,366 pheasants were released between 1907 and 1909. Little record of the species' early expansion in the state is available except as indicated by the structure of Kansas' early pheasant seasons. The first season opened in 1917 and lasted 15 days. These earliest seasons continued through 1920. From 1921 through 1931, no pheasant season was held. Pheasant hunting was reopened in 1932 and season length varied from 2 to 7 days in 9 to 21 counties through 1943. The 1940s were apparently a period of substantial growth in Kansas' pheasant population as hunting was expanded to 47 counties by 1945. Casual accounts indicate Kansas' pheasant numbers peaked in the 1950s due to favorable cropping systems, but also partially as a result of the Soil Bank program of that time. As Soil Bank acres were gradually returned to crop production in the late 1950s and early 1960s, pheasant numbers began to decline. Kansas initiated its Small Game Harvest Survey in 1957. Population surveys, including the Rural Mail Carriers Survey and the Summer Brood Survey, were begun in 1962 and 1963, respectively, and the Pheasant Crowing Survey, conducted from 1962 to 1972, was re-established in 1997.

After the decline associated with the end of the Soil Bank program, Kansas pheasant populations were relatively stable through the early 1970s. This was a time of gradual liberalization in the pheasant season culminating in 1973 when the season structure became essentially the same as that currently used. This gradual increase in pheasant-hunting opportunity fostered a period of slow growth in hunter days and harvest. The early 1970s, however, were a period of all-out crop production in response to an anticipated boom in grain export markets and maximum-production policies of the U.S. Department of Agriculture. Associated with that "fencerow-to-fencerow" crop production, pheasant numbers declined precipitously in western Kansas and, to a smaller degree, in the remainder of Kansas' range. This decline persisted through 1976.

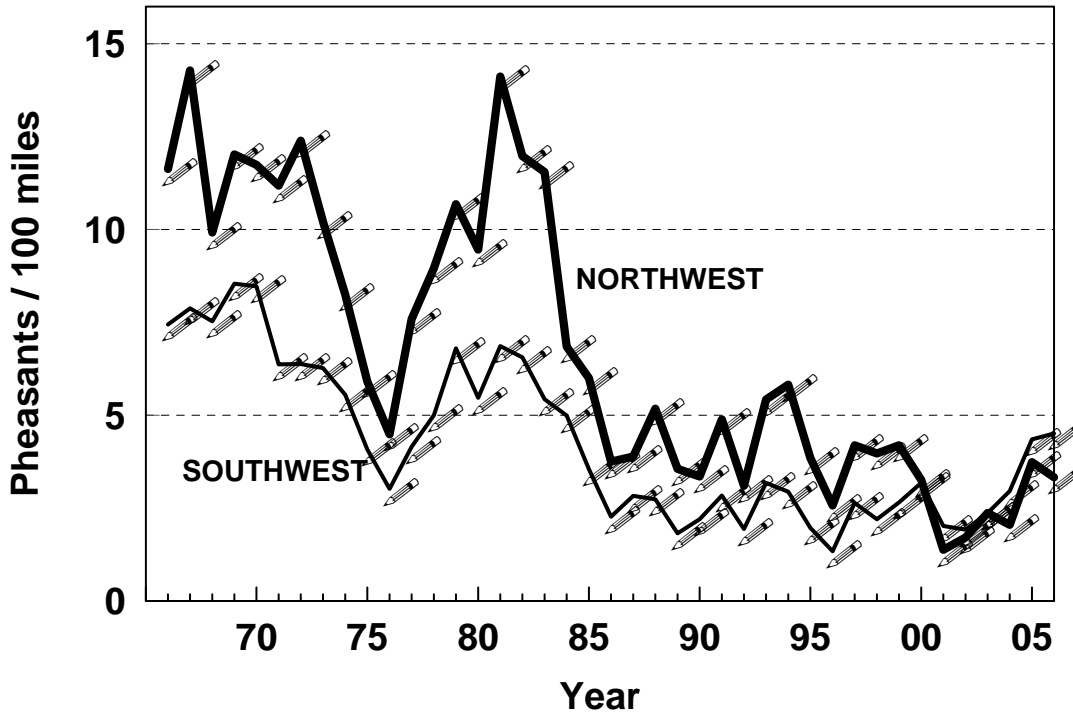
Two events probably played key roles in reversing the pheasant trend for the remainder of the 1970s into the early 1980s. The Arab oil embargo increased the price of fuel that, in turn, reduced the amount of tillage and other weed-control operations in crop fields. Foreign grain markets also diminished, partially as a result of the 1976 embargo on U.S. grain going to the Soviet Union. In combination, these events resulted in a substantial improvement in the quantity and quality of pheasant habitat on Kansas farm lands. During this time, pheasant populations, harvest, and hunter use boomed. An estimated harvest of 1.25 million roosters was taken in 1979, a Kansas record, but even this was eclipsed by the estimated 1.57 million taken in 1982. On the strength of experience and solid scientific evidence that season length and structure with rooster-only hunting had no effect on subsequent breeding success, Kansas stabilized its pheasant-hunting regulations in 1982 (the season opening was advanced 1 week in 2006). The summer of 1983 was exceptionally dry in Kansas and habitat conditions were poor going into what proved to be one of the most severe winters in the state's history. The pheasant harvest for the 1983-84 season remained a respectable 1.14 million, based on the strength of carryover from the previous year, but a severe decline was underway, particularly in the main pheasant range of western and northcentral Kansas.

Since this rapid decline, Kansas' pheasant populations have fluctuated around a level below the previous low point reached in 1976. Research in Kansas and elsewhere has tied this inability of pheasant populations to recover directly to the high intensity of weed control and declining height of grain stubbles, particularly in western Kansas. Herbicide use in Kansas crop rotations increased dramatically in both intensity and coverage in the 1980s and this trend accelerated in the 1990s. This, along with certain tillage practices, rendered many parts of Kansas much less hospitable to pheasants through the actions of limiting available brood habitat and degrading the amount and quality of winter habitat. Conservation Reserve Program (CRP) grassland, mostly without broadleaved brood habitat, have provided a modest, but critical, buffer against overwhelming pheasant habitat losses in western and central Kansas croplands. Early efforts to improve the diversity and management of Kansas CRP, begun in 1998, have met with significant success and currently offer modest prospects for gradual pheasant population improvement.

The severe drought that struck major portions of Kansas' best pheasant range in 2000 seriously reduced pheasant populations and set back habitat improvement efforts in western Kansas. Drought conditions persisted and became even more intense through 2002, particularly in western Kansas. The state recorded its lowest-ever pheasant harvest in 2001 and the 5th lowest in 2002. Except for portions of far western Kansas, much of the pheasant range received some respite from the drought in 2003 and pheasant numbers recovered well for both the 2003 and 2004 seasons. Recovery continued in 2005, but intense drought in 2006 again set pheasant numbers back.

WESTERN KANSAS PHEASANT POPULATIONS

Combined January, April, July, and October RMCS



CENTRAL & NORTHEAST KANSAS PHEASANT POPULATIONS

Combined January, April, July, & October RMCS

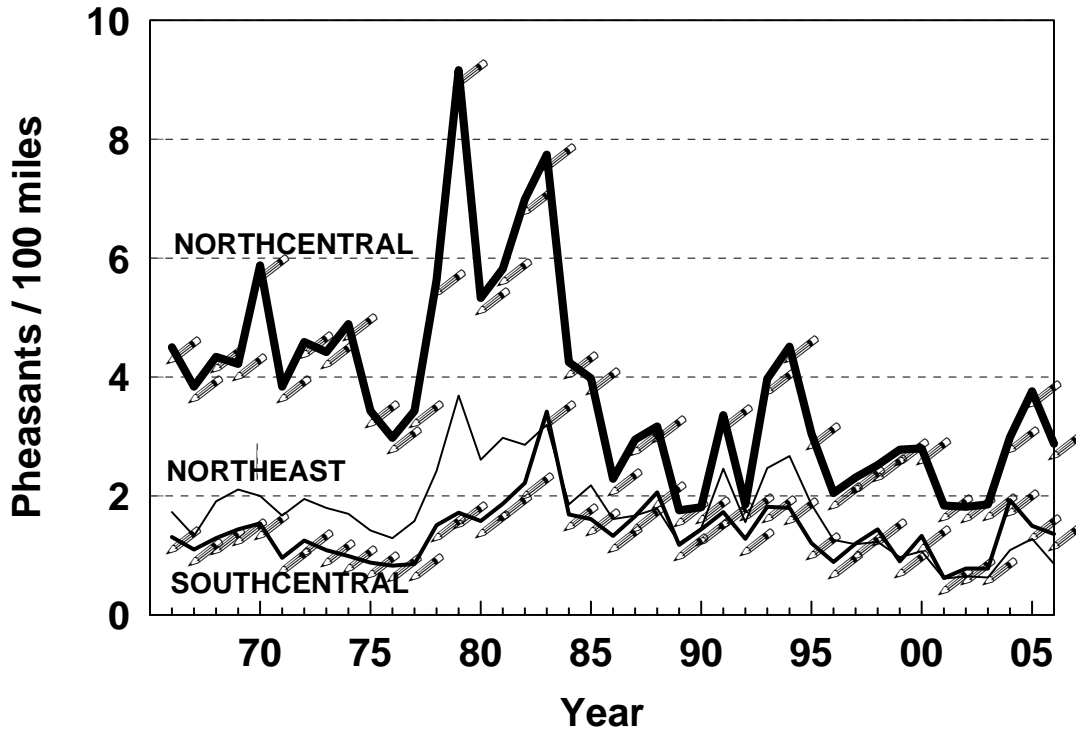


Table 1. Pheasants Observed Per 100 Miles: **COMBINED** Rural Mail Carriers Survey

Year	Pheasant Management Regions					RANGE
	1-NW	2-SW	3-NC	4-SC	5-NE	
1962						
1963	17.47	8.59	5.04	1.36	1.21	5.49
1964	13.89	6.89	5.53	1.27	1.09	4.74
1965	10.39	6.42	3.65	1.02	1.02	3.82
1966	11.63	7.44	4.50	1.31	1.73	4.59
1967	14.28	7.88	3.84	1.10	1.33	4.72
1968	9.92	7.53	4.34	1.29	1.91	4.43
1969	12.02	8.54	4.22	1.44	2.11	4.92
1970	11.74	8.47	5.88	1.54	2.00	5.18
1971	11.18	6.37	3.84	0.96	1.67	4.14
1972	12.39	6.38	4.59	1.25	1.95	4.55
1973	10.21	6.27	4.42	1.09	1.80	4.12
1974	8.25	5.55	4.89	0.99	1.70	3.74
1975	5.91	4.08	3.43	0.88	1.42	2.78
1976	4.49	3.02	2.98	0.83	1.29	2.25
1977	7.59	4.15	3.43	0.86	1.58	2.97
1978	8.96	5.00	5.63	1.51	2.42	4.08
1979	10.68	6.80	9.16	1.72	3.69	5.78
1980	9.46	5.47	5.33	1.58	2.61	4.16
1981	14.12	6.86	5.82	1.87	2.98	5.11
1982	11.98	6.56	6.99	2.22	2.86	5.00
1983	11.55	5.43	7.74	3.42	3.20	5.32
1984	6.85	4.99	4.25	1.69	1.86	3.38
1985	6.00	3.55	3.98	1.61	2.18	3.03
1986	3.75	2.27	2.29	1.33	1.61	2.00
1987	3.89	2.83	2.95	1.66	1.67	2.34
1988	5.18	2.74	3.17	2.06	1.79	2.60
1989	3.56	1.82	1.76	1.18	1.21	1.65
1990	3.35	2.20	1.81	1.44	1.46	1.86
1991	4.89	2.84	3.36	1.73	2.46	2.81
1992	3.10	1.94	1.86	1.28	1.56	1.81
1993	5.42	3.18	3.97	1.82	2.47	3.10
1994	5.82	2.94	4.51	1.80	2.67	3.25
1995	3.85	1.97	3.05	1.21	1.86	2.21
1996	2.57	1.34	2.05	0.89	1.26	1.50
1997	4.19	2.64	2.31	1.20	1.19	2.06
1998	3.97	2.20	2.52	1.44	1.23	2.04
1999	4.19	2.65	2.78	0.90	0.97	2.05
2000	3.26	3.18	2.80	1.33	1.07	2.15
2001	1.38	2.02	1.84	0.62	0.61	1.23
2002	1.71	1.92	1.82	0.78	0.65	1.33
2003	2.37	2.37	1.86	0.78	0.63	1.49
2004 ^a	2.05	2.96	2.99	1.93	1.09	2.16
2005	3.74	4.35	3.76	1.50	1.28	2.82
2006	3.33	4.51	2.88	1.36	0.86	2.45
60's Mean	12.80	7.61	4.45	1.26	1.49	4.67
70's Mean	9.14	5.61	4.82	1.16	1.95	3.96
80's Mean	7.63	4.25	4.43	1.86	2.20	3.46
90's Mean	4.14	2.39	2.82	1.37	1.71	2.27
00's Mean	2.55	3.04	2.57	1.18	0.88	1.95

^a No October RMCS was conducted in 2004 due to a Postal Service mailing error. The 2004 combined index was estimated by multiplying the 3-survey mean by 1.07, based on historic contribution of the October index.

Table 2. Pheasants Observed Per 100 Miles: **JANUARY** Rural Mail Carriers Survey

Year	Pheasant Management Regions					RANGE
	1-NW	2-SW	3-NC	4-SC	5-NE	
1962						
1963	14.34	4.30	3.40	0.85	0.78	3.61
1964	9.66	4.01	3.48	1.05	0.58	3.02
1965	11.08	6.24	2.80	0.53	0.59	3.48
1966	11.84	5.88	3.17	1.08	1.18	3.86
1967	5.81	3.54	1.88	0.71	0.98	2.22
1968	5.73	4.31	1.83	0.43	0.80	2.24
1969	6.30	5.33	2.51	0.63	1.23	2.82
1970	6.01	3.69	2.49	0.78	0.91	2.35
1971	4.32	2.47	2.29	0.39	0.99	1.87
1972	3.84	2.20	1.00	0.27	0.39	1.30
1973	4.66	2.71	1.61	0.67	0.86	1.85
1974	3.40	2.60	1.56	0.45	0.56	1.50
1975	1.74	1.29	1.54	0.39	0.70	1.04
1976	1.88	1.57	1.31	0.41	0.62	1.05
1977	1.91	0.77	1.14	0.28	0.90	0.90
1978	5.01	3.94	2.95	0.93	1.65	2.54
1979	5.98	8.44	13.69	1.84	5.54	7.25
1980	5.02	1.80	1.98	0.64	1.06	1.64
1981	3.95	1.69	2.46	0.63	1.25	1.72
1982	4.71	2.20	3.09	0.89	1.64	2.15
1983	8.36	3.18	8.87	3.21	3.36	4.74
1984	12.15	9.62	7.78	1.54	2.79	5.73
1985	3.11	2.80	5.29	1.15	3.10	3.06
1986	1.01	0.86	0.61	0.55	0.77	0.73
1987	1.45	1.50	0.81	1.01	0.75	1.03
1988	5.60	1.54	1.56	1.19	0.90	1.63
1989	2.07	1.03	1.23	0.70	0.72	1.00
1990	2.78	1.67	0.71	0.74	0.73	1.11
1991	1.84	1.45	2.49	1.45	2.48	2.01
1992	1.20	0.76	1.23	0.51	0.88	0.88
1993	3.80	3.59	4.44	2.40	2.60	3.28
1994	5.14	1.79	3.64	1.23	1.90	2.41
1995	1.50	1.18	1.78	0.59	1.12	1.21
1996	1.60	0.86	1.68	0.57	1.08	1.10
1997	1.40	1.02	1.29	0.44	0.67	0.90
1998	2.02	1.55	1.76	1.04	1.06	1.39
1999	2.08	1.30	1.79	0.57	0.83	1.22
2000	1.86	3.20	2.19	0.90	0.87	1.72
2001	2.08	4.03	1.61	0.52	0.53	1.65
2002	0.60	1.26	0.60	0.29	0.29	0.60
2003	0.95	1.02	0.91	0.57	0.64	0.80
2004	1.03	1.98	1.88	1.12	0.87	1.38
2005	1.24	3.20	5.51	0.89	2.52	2.91
2006	2.58	2.78	1.47	1.36	0.75	1.64
60's Mean	9.25	4.80	2.72	0.75	0.87	3.04
70's Mean	3.88	2.97	2.96	0.64	1.31	2.16
80's Mean	4.74	2.62	3.37	1.15	1.63	2.34
90's Mean	2.34	1.52	2.08	0.95	1.33	1.55
00's Mean	1.48	2.50	2.02	0.81	0.92	1.53

Table 3. Pheasants Observed Per 100 Miles: APRIL Rural Mail Carriers Survey

Year	Pheasant Management Regions					RANGE
	1-NW	2-SW	3-NC	4-SC	5-NE	
1962						
1963	28.87	16.71	6.44	1.50	1.19	8.88
1964	25.58	11.70	8.97	1.29	1.54	7.99
1965	14.10	6.88	4.98	1.19	1.01	4.73
1966	12.37	8.11	6.81	1.37	2.04	5.41
1967	13.78	7.81	4.69	1.09	1.48	4.91
1968	11.79	8.65	4.44	1.14	1.36	4.77
1969	10.07	6.63	3.59	1.37	2.01	4.22
1970	11.03	7.76	4.72	1.34	1.72	4.68
1971	9.68	9.73	3.97	1.03	1.39	4.68
1972	7.23	4.66	3.14	0.94	1.60	3.13
1973	9.15	7.21	4.80	1.27	1.79	4.31
1974	6.35	4.90	3.55	0.93	1.79	3.17
1975	6.52	4.29	3.82	0.71	1.77	3.06
1976	4.01	3.06	2.66	0.78	1.35	2.18
1977	7.03	3.76	2.84	0.56	1.24	2.54
1978	7.31	3.76	3.89	0.87	2.05	3.07
1979	7.04	3.94	4.03	1.01	1.88	3.08
1980	9.18	6.08	4.22	1.03	1.98	3.74
1981	11.18	5.12	3.52	0.96	1.54	3.35
1982	11.87	4.44	4.80	1.38	2.07	3.66
1983	11.11	7.07	6.98	3.09	3.38	5.54
1984	7.15	2.99	3.26	1.28	1.29	2.55
1985	5.95	2.61	2.11	1.21	1.33	2.11
1986	5.10	2.08	1.95	1.10	1.87	2.03
1987	3.89	2.24	2.87	1.55	1.69	2.16
1988	3.41	3.50	3.82	1.88	2.02	2.80
1989	5.09	1.82	2.57	1.40	1.43	2.03
1990	2.94	2.08	2.04	1.43	2.15	2.04
1991	4.75	3.41	3.62	1.75	1.90	2.81
1992	4.23	1.84	2.12	1.23	1.65	1.99
1993	3.65	2.21	2.46	1.65	1.69	2.14
1994	5.39	3.17	5.47	2.16	2.92	3.59
1995	4.44	2.64	3.39	1.72	2.46	2.74
1996	3.03	1.59	2.64	1.07	1.49	1.85
1997	5.14	2.65	2.82	1.07	1.60	2.37
1998	4.25	2.65	2.30	1.75	1.30	2.21
1999	5.24	3.99	2.70	1.22	1.51	2.70
2000	4.38	2.56	2.55	1.28	1.21	2.13
2001	1.55	1.27	2.84	1.27	0.92	1.47
2002	2.06	2.28	2.69	1.37	1.08	1.91
2003	1.48	1.25	1.74	0.79	0.66	1.16
2004	1.80	3.06	2.83	2.79	1.18	2.40
2005	2.59	2.88	3.32	2.30	1.06	2.32
2006	4.18	7.43	3.26	1.69	0.80	3.27
60's Mean	16.65	9.50	5.70	1.28	1.52	5.85
70's Mean	7.54	5.31	3.74	0.94	1.66	3.39
80's Mean	7.39	3.80	3.61	1.49	1.86	3.00
90's Mean	4.31	2.62	2.96	1.50	1.87	2.44
00's Mean	2.58	2.96	2.75	1.64	0.99	2.09

Table 4. Pheasants Observed Per 100 Miles: JULY Rural Mail Carriers Survey

Year	Pheasant Management Regions					RANGE
	1-NW	2-SW	3-NC	4-SC	5-NE	
1962	15.97	11.58	4.81	1.50	0.92	5.72
1963	9.20	4.77	5.29	1.72	1.66	3.99
1964	6.43	4.94	4.16	1.46	1.14	3.21
1965	5.99	6.15	3.17	1.35	1.46	3.25
1966	10.88	6.66	4.38	1.51	2.00	4.32
1967	15.06	8.56	4.31	1.33	1.30	5.01
1968	9.44	7.58	5.38	1.84	3.10	5.00
1969	14.11	9.91	5.01	2.02	2.94	6.00
1970	13.55	9.85	6.37	2.18	2.25	5.77
1971	14.60	5.77	4.79	1.53	2.67	4.91
1972	19.76	8.81	7.92	2.32	3.50	7.13
1973	14.91	7.19	5.53	1.42	3.11	5.48
1974	11.83	6.85	7.11	1.26	2.34	5.06
1975	7.67	4.92	3.69	0.99	1.62	3.27
1976	6.28	4.13	4.03	1.04	1.88	3.07
1977	11.66	6.41	5.97	1.57	2.39	4.79
1978	10.74	6.05	7.26	2.31	3.12	5.16
1979	14.90	6.83	9.06	1.66	3.62	6.00
1980	12.64	7.24	7.93	2.18	3.92	5.86
1981	21.13	5.74	7.02	2.54	5.01	6.34
1982	20.86	9.92	10.85	3.35	4.32	7.88
1983	13.72	5.70	8.55	3.84	3.36	5.88
1984	5.12	4.00	3.69	2.41	2.09	3.14
1985	8.33	3.74	4.35	1.61	2.16	3.34
1986	4.75	2.77	3.69	2.24	2.38	2.90
1987	4.57	2.87	3.49	1.97	2.32	2.80
1988	7.05	3.45	5.01	3.62	2.92	3.91
1989	4.18	2.27	1.73	1.70	1.73	2.07
1990	3.83	2.77	2.36	2.07	1.82	2.34
1991	5.47	3.18	3.63	1.96	2.96	3.15
1992	3.62	2.79	2.38	2.11	2.60	2.60
1993	6.57	2.87	4.50	1.09	3.26	3.32
1994	6.59	3.39	4.88	2.45	3.80	3.96
1995	6.39	2.15	4.12	1.60	2.83	3.08
1996	3.05	1.42	2.14	1.24	1.38	1.69
1997	5.31	3.32	2.44	1.48	1.28	2.42
1998	6.54	2.64	4.00	1.96	1.62	2.93
1999	5.26	2.62	4.12	0.87	0.71	2.35
2000	4.93	3.34	4.00	1.64	1.39	2.73
2001	0.72	1.17	1.47	0.25	0.32	0.77
2002	2.16	2.31	2.40	0.79	0.46	1.49
2003	3.75	2.94	2.77	0.77	0.59	1.94
2004	2.90	3.27	3.67	1.49	1.00	2.30
2005	6.45	6.19	3.92	1.18	0.94	3.42
2006	3.93	3.91	3.65	1.19	1.42	2.74
60's Mean	10.88	7.52	4.56	1.59	1.81	4.56
70's Mean	12.59	6.68	6.17	1.63	2.65	5.06
80's Mean	10.24	4.77	5.63	2.55	3.02	4.41
90's Mean	5.26	2.71	3.46	1.68	2.23	2.78
00's Mean	3.55	3.30	3.12	1.04	0.87	2.20

Table 5. Pheasants Observed Per 100 Miles: **OCTOBER** Rural Mail Carriers Survey

Year	Pheasant Management Regions					RANGE
	1-NW	2-SW	3-NC	4-SC	5-NE	
1962						
1963						
1964						
1965						
1966	11.45	9.09	3.64	1.30	1.72	4.78
1967	22.45	11.61	4.48	1.29	1.57	6.72
1968	12.70	9.58	5.71	1.78	2.39	5.72
1969	17.58	12.29	5.79	1.72	2.25	6.64
1970	16.36	12.57	9.94	1.87	3.13	7.92
1971	16.11	7.52	4.32	0.92	1.63	5.10
1972	18.73	9.88	6.32	1.44	2.29	6.66
1973	12.11	7.97	5.72	0.99	1.43	4.84
1974	11.42	7.84	7.34	1.34	2.11	5.23
1975	7.70	5.82	4.70	1.42	1.58	3.77
1976	5.78	3.33	3.94	1.08	1.31	2.72
1977	9.76	5.68	3.78	1.01	1.79	3.65
1978	12.75	6.24	8.41	1.93	2.88	5.57
1979	14.80	8.01	9.84	2.39	3.73	6.80
1980	11.01	6.74	7.17	2.48	3.47	5.41
1981	20.20	14.89	10.27	3.35	4.11	9.05
1982	10.50	9.70	9.20	3.28	3.42	6.31
1983	13.00	5.77	6.56	3.53	2.70	5.13
1984	2.99	3.34	2.29	1.55	1.25	2.09
1985	6.61	5.05	4.16	2.47	2.13	3.62
1986	4.16	3.36	2.90	1.45	1.44	2.34
1987	5.66	4.71	4.63	2.10	1.94	3.39
1988	4.67	2.47	2.30	1.54	1.30	2.08
1989	2.90	2.15	1.51	0.94	0.97	1.49
1990	3.87	2.29	2.14	1.53	1.14	1.94
1991	7.49	3.32	3.70	1.76	2.47	3.25
1992	3.34	2.39	1.69	1.29	1.11	1.79
1993	7.68	4.05	4.47	2.15	2.33	3.65
1994	6.17	3.41	4.06	1.35	2.06	3.06
1995	3.06	1.90	2.94	0.91	1.05	1.82
1996	2.61	1.47	1.75	0.67	1.08	1.37
1997	4.92	3.57	2.68	1.80	1.19	2.57
1998	3.07	1.97	2.01	1.03	0.93	1.64
1999	4.20	2.68	2.51	0.94	0.83	1.96
2000	1.89	3.61	2.47	1.48	0.81	2.01
2001	1.18	1.63	1.45	0.43	0.68	1.04
2002	2.02	1.84	1.59	0.67	0.78	1.31
2003	3.30	4.26	2.02	0.97	0.61	2.05
2004 ^a						
2005	4.70	5.11	2.30	1.66	0.61	2.65
2006	2.64	3.93	3.15	1.22	0.46	2.14
60's Mean	16.05	10.64	4.90	1.52	1.98	5.97
70's Mean	12.55	7.49	6.43	1.44	2.19	5.22
80's Mean	8.17	5.82	5.10	2.27	2.27	4.09
90's Mean	4.64	2.71	2.79	1.34	1.42	2.30
00's Mean	2.62	3.40	2.16	1.07	0.66	1.87

^a No October RMCS was conducted in 2004 due to a U.S. Postal Service mailing error.

Kansas Pheasant Crowing Survey Routes and Survey Regions

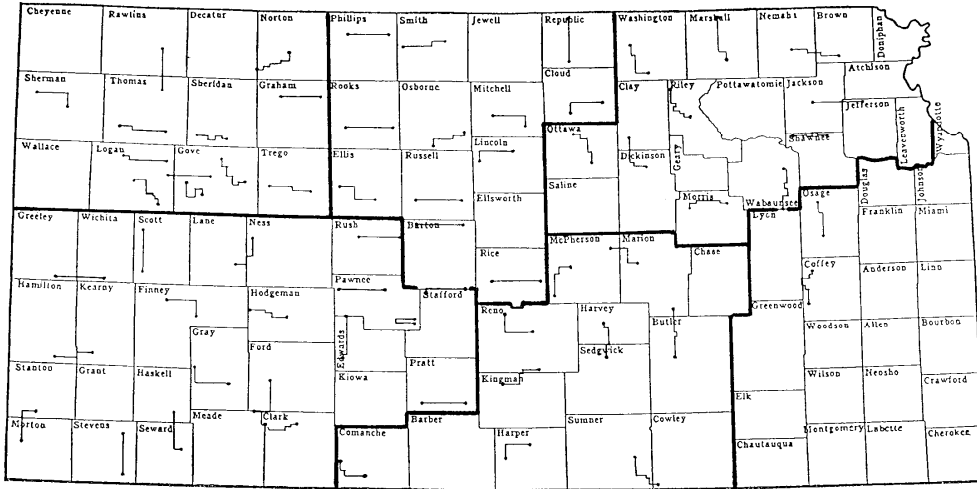


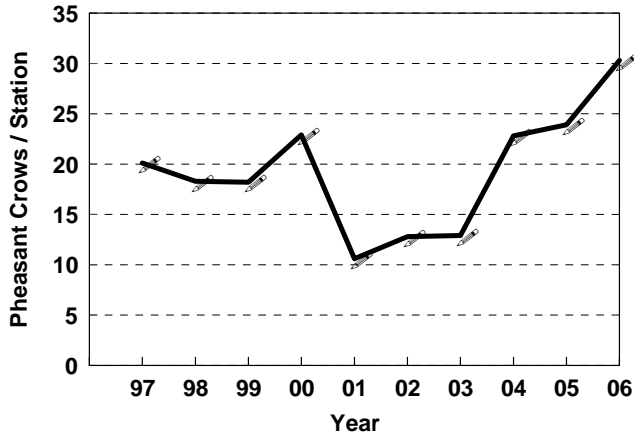
Table 6. Pheasant Crows Heard Per Station (2 minutes): PHEASANT CROWING SURVEY.

Pheasant Management Regions						
Year	1-NW	2-SW	3-NC	4-SC	5-NE	RANGE
1997	20.1	11.1	12.7	4.9	9.7	11.2
1998	18.3	18.0	15.3	8.5	5.4	13.9
1999	18.2	15.6	12.2	7.0	6.8	12.4
2000	22.9	20.1	14.3	7.0	5.3	15.4
2001	10.6	12.9	7.5	7.5	3.5	9.1
2002	12.8	10.5	9.8	5.7	4.8	9.2
2003	12.9	12.2	12.4	5.6	5.1	10.3
2004	22.8	17.0	15.8	7.9	5.9	14.9
2005	23.9	19.0	19.2	9.4	7.9	16.6
2006	30.3	28.1	16.6	10.9	7.5	20.5
90's Mean	18.9	14.9	13.4	6.8	7.3	12.5
00's Mean	19.5	17.1	13.7	7.7	5.7	13.7

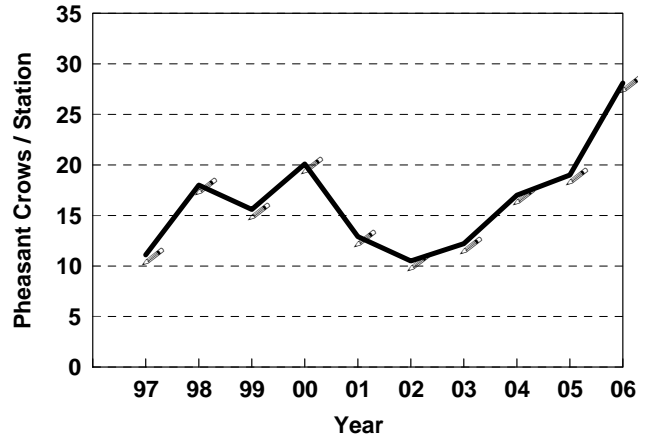
Kansas Pheasant Crowing Survey Trends

(Note: Scales Differ)

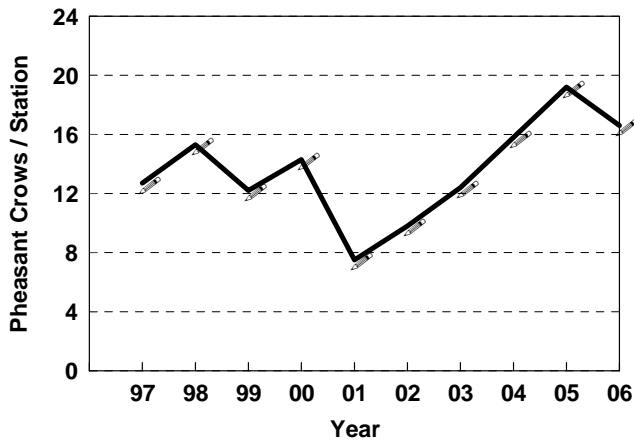
PCS Index - Northwest Region



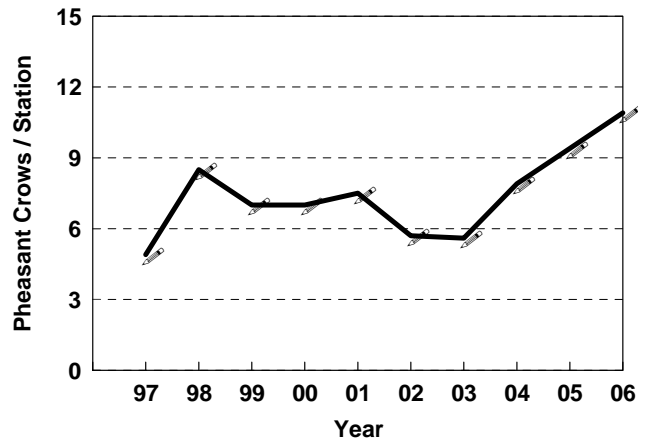
PCS Index - Southwest Region



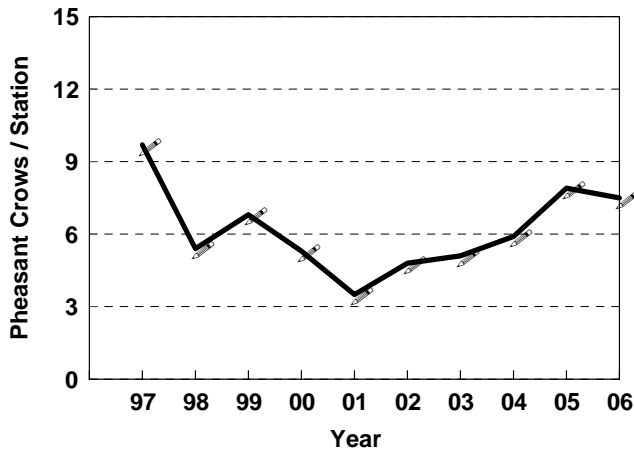
PCS Index - Northcentral Region



PCS Index - Southcentral Region



PCS Index - Northeast Region



PCS Index - Rangewide

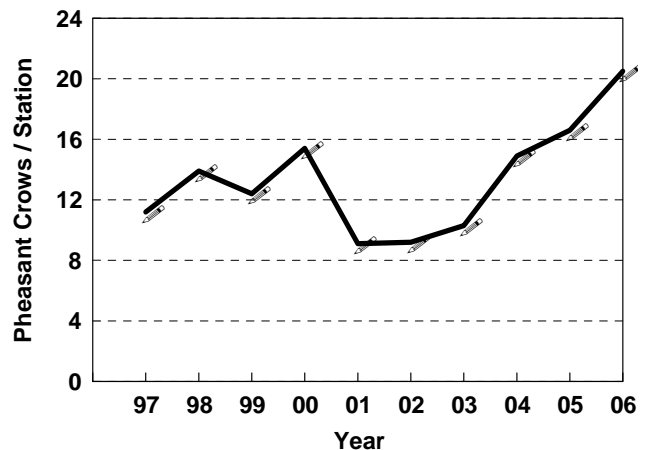


Table 7. Percent of Pheasant Hens With Young: SUMMER BROOD SURVEY.

Year	Pheasant Management Regions					RANGE
	1-NW	2-SW	3-NC	4-SC	5-NE	
1962						
1963	49	41	66	71	75	50
1964	58	48	58	48	71	54
1965	55	57	73	65	77	63
1966	61	55	68	71	80	62
1967	67	57	71	41	36	61
1968	66	56	64	45	66	61
1969	66	70	84	67	69	71
1970	63	55	83	79	73	67
1971	72	59	62	61	52	64
1972	76	60	74	72	71	70
1973	73	58	65	79	76	68
1974	72	72	75	82	75	73
1975	64	71	59	72	70	66
1976	83	62	76	91	61	74
1977	77	69	82	71	56	75
1978	85	72	83	73	76	80
1979	80	83	79	60	65	77
1980	74	76	75	67	66	73
1981	69	65	79	71	68	72
1982	72	69	85	68	63	72
1983	74	58	77	83	74	74
1984	42	53	76	69	69	62
1985	74	61	76	75	63	71
1986	62	64	65	72	61	65
1987	87	57	84	58	75	75
1988	66	56	84	51	58	69
1989	68	30	65	39	49	54
1990	63	27	72	46	59	62
1991	68	42	71	33	76	65
1992	56	45	64	86	37	56
1993	78	65	69	45	36	64
1994	66	48	70	48	61	59
1995	47	55	65	52	57	58
1996	56	36	60	62	44	52
1997	77	57	75	54	62	66
1998	60	35	70	65	41	57
1999	77	58	64	56	59	63
2000	64	39	63	56	46	54
2001	58	44	66	45	50	54
2002	75	38	62	49	33	51
2003	70	52	73	61	49	62
2004	49	60	75	42	61	60
2005	74	63	66	44	52	63
2006	76	56	68	41	47	47
60's Mean	60	55	69	58	68	60
70's Mean	75	66	74	74	68	71
80's Mean	69	59	77	65	65	69
90's Mean	65	47	68	55	53	60
00's Mean	67	50	68	48	48	56

Table 8. Young Per Adult Pheasant Hen: SUMMER BROOD SURVEY.

Year	Pheasant Management Regions					RANGE
	1-NW	2-SW	3-NC	4-SC	5-NE	
1962						
1963	2.77	2.03	6.07	6.45	7.57	3.29
1964	3.05	2.43	3.96	4.69	7.04	3.18
1965	3.11	3.68	6.57	7.04	8.84	4.95
1966	3.81	4.15	5.22	5.27	6.75	4.50
1967	4.21	4.26	6.13	6.41	3.79	4.49
1968	3.16	4.59	4.54	5.97	8.90	4.42
1969	4.12	5.33	7.08	5.03	7.00	5.49
1970	4.10	3.38	5.95	9.43	7.11	4.96
1971	4.16	3.15	4.30	7.87	4.94	4.30
1972	5.73	5.33	7.08	8.93	7.87	6.73
1973	3.86	3.58	5.68	9.14	8.28	5.00
1974	5.16	4.48	8.72	7.27	7.95	6.16
1975	6.15	4.52	6.87	9.95	8.08	6.36
1976	6.93	4.60	6.85	9.44	7.39	6.84
1977	10.01	6.57	10.76	11.00	10.31	9.96
1978	9.90	5.72	8.45	14.59	8.46	9.55
1979	6.60	6.89	7.85	9.69	11.43	7.80
1980	9.02	6.29	9.18	16.04	8.17	9.42
1981	7.13	6.95	6.18	15.33	8.44	7.74
1982	6.29	6.64	7.73	9.28	7.45	7.26
1983	4.43	4.65	5.59	5.81	5.20	5.14
1984	4.54	3.60	6.79	7.16	7.21	5.45
1985	13.03	5.44	7.93	13.19	11.95	9.19
1986	4.95	5.80	6.13	8.02	5.66	6.12
1987	7.52	4.25	7.44	6.08	8.39	6.84
1988	5.30	3.63	7.03	6.54	5.46	5.87
1989	3.97	3.50	4.03	5.34	5.51	4.33
1990	5.80	2.71	6.67	6.56	6.86	6.06
1991	6.06	2.84	7.55	5.57	8.11	5.50
1992	4.95	4.25	5.01	10.55	3.45	5.00
1993	8.87	6.49	6.35	4.47	5.82	6.56
1994	5.95	5.45	5.19	6.78	4.45	5.43
1995	4.56	4.70	4.68	4.17	3.76	4.46
1996	4.76	2.12	3.83	5.94	3.19	3.74
1997	7.76	6.65	6.83	6.33	6.54	6.86
1998	5.16	4.26	7.50	5.19	4.28	5.74
1999	6.52	4.15	6.22	3.89	5.18	5.30
2000	4.78	2.99	6.24	7.42	4.56	5.09
2001	4.52	2.98	6.42	3.53	4.00	4.41
2002	9.50	2.52	5.08	4.94	2.30	4.33
2003	7.58	4.34	9.73	5.46	3.88	6.54
2004	4.78	4.54	7.02	3.83	4.58	5.23
2005	7.85	4.69	5.35	3.15	3.00	5.12
2006	6.98	3.16	5.70	3.27	3.15	4.59
60's Mean	3.46	3.78	5.65	5.84	7.13	4.33
70's Mean	6.26	4.82	7.25	9.73	8.18	6.77
80's Mean	6.62	5.08	6.80	9.28	7.34	6.74
90's Mean	6.04	4.36	5.98	5.95	5.16	5.47
00's Mean	6.57	3.60	6.51	4.51	3.64	5.04

Table 9. Pheasant Brood Size: SUMMER BROOD SURVEY.

Year	Pheasant Management Regions					RANGE
	1-NW	2-SW	3-NC	4-SC	5-NE	
1962						
1963	4.68	4.42	6.07	5.88	7.29	5.21
1964	4.62	4.36	4.98	5.88	6.15	4.81
1965	4.51	4.84	5.74	7.32	6.61	5.43
1966	4.56	6.78	5.25	6.63	6.17	5.77
1967	5.23	5.46	4.66	5.31	5.93	5.24
1968	4.27	5.63	5.55	4.32	6.79	5.23
1969	4.71	5.45	6.43	4.58	6.34	5.52
1970	5.00	5.42	5.82	7.14	5.67	5.59
1971	4.88	4.45	4.75	5.48	6.65	4.99
1972	4.81	5.92	6.14	6.02	6.24	5.81
1973	4.70	4.96	6.30	8.00	5.85	5.57
1974	4.66	5.01	5.68	5.33	5.64	5.17
1975	5.22	5.19	5.53	4.61	5.24	5.19
1976	5.87	5.08	5.34	4.51	5.77	5.28
1977	5.66	5.14	6.64	4.70	6.26	5.98
1978	6.49	5.89	6.34	5.38	6.97	6.30
1979	5.66	6.52	5.93	4.45	5.25	5.66
1980	5.67	6.60	6.48	6.92	5.40	6.22
1981	5.29	5.87	5.26	5.93	5.39	5.48
1982	5.76	5.84	5.85	5.28	5.82	5.73
1983	4.58	4.74	5.07	5.18	4.73	4.87
1984	5.00	4.56	5.64	4.56	4.32	4.83
1985	5.01	5.18	5.64	5.55	5.04	5.33
1986	4.88	6.90	4.46	6.31	5.13	5.21
1987	5.71	4.40	5.70	6.27	6.09	5.68
1988	5.12	4.93	5.84	5.57	4.99	5.46
1989	4.58	4.48	4.65	5.16	5.62	4.85
1990	4.70	4.31	6.07	5.38	7.65	5.75
1991	5.85	4.70	5.71	5.45	5.73	5.64
1992	4.51	4.40	5.42	6.27	5.28	5.16
1993	5.89	6.98	6.32	4.16	5.02	5.99
1994	5.22	6.56	4.86	4.71	5.45	5.41
1995	4.90	4.44	4.68	3.92	4.74	4.56
1996	5.56	3.27	5.00	4.57	4.57	4.68
1997	5.27	5.38	6.09	5.20	5.76	5.55
1998	4.81	4.22	5.92	5.30	5.90	5.27
1999	4.76	4.66	5.54	4.63	5.80	5.14
2000	4.20	3.43	5.07	5.21	5.23	4.61
2001	4.52	4.32	5.33	3.29	4.36	4.62
2002	4.84	3.81	5.46	4.01	4.18	4.61
2003	5.67	4.25	5.94	4.43	4.77	5.15
2004	5.11	5.12	5.75	5.39	5.53	5.39
2005	5.35	4.63	4.90	4.03	4.43	4.81
2006	5.25	4.01	5.35	4.64	5.69	4.91
60's Mean	4.65	5.28	5.53	5.70	6.47	5.32
70's Mean	5.30	5.36	5.85	5.56	5.95	5.55
80's Mean	5.16	5.35	5.46	5.67	5.25	5.37
90's Mean	5.15	4.89	5.56	4.96	5.59	5.32
00's Mean	4.99	4.22	5.40	4.43	4.88	4.87

Table 10. Percent of Pheasant Broods With Hens: SUMMER BROOD SURVEY.

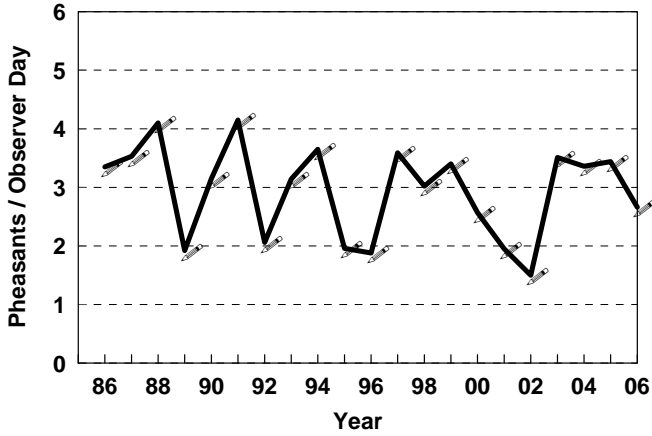
Year	Pheasant Management Regions					RANGE
	1-NW	2-SW	3-NC	4-SC	5-NE	
1962						
1963	80	89	64	80	89	79
1964	88	89	59	69	77	82
1965	79	82	57	61	74	69
1966	73	92	68	81	72	79
1967	83	73	54	34	57	83
1968	89	69	79	33	50	72
1969	76	72	76	61	63	72
1970	77	87	81	59	58	75
1971	85	83	69	42	70	74
1972	63	67	64	49	56	60
1973	88	81	72	69	54	76
1974	65	80	49	60	53	62
1975	54	81	47	34	46	54
1976	71	69	59	43	48	58
1977	43	54	51	30	34	45
1978	56	74	63	27	43	53
1979	69	79	60	28	30	56
1980	46	80	53	29	43	48
1981	51	55	67	28	43	51
1982	66	61	64	39	49	57
1983	77	59	69	74	67	70
1984	47	67	63	44	41	55
1985	29	58	54	32	27	41
1986	61	76	47	56	56	55
1987	66	59	64	60	55	62
1988	64	76	70	43	53	65
1989	79	38	75	38	50	60
1990	51	44	65	38	65	58
1991	66	70	76	32	53	66
1992	51	47	70	51	56	58
1993	52	70	68	42	31	58
1994	58	57	66	33	75	59
1995	50	52	65	49	72	59
1996	65	56	79	48	63	65
1997	52	46	67	44	54	53
1998	56	34	55	66	57	53
1999	56	65	57	66	66	61
2000	56	45	51	39	53	49
2001	58	64	55	42	55	54
2002	38	58	66	40	59	54
2003	53	51	44	49	60	49
2004	52	68	61	59	74	61
2005	51	62	60	56	76	59
2006	57	72	63	58	85	65
60's Mean	81	81	65	60	69	77
70's Mean	67	76	62	44	49	61
80's Mean	59	63	63	44	48	56
90's Mean	56	54	67	47	59	59
00's Mean	52	60	57	49	66	56

Table 11. TOTAL Pheasants Per Observer Day: SUMMER BROOD SURVEY.

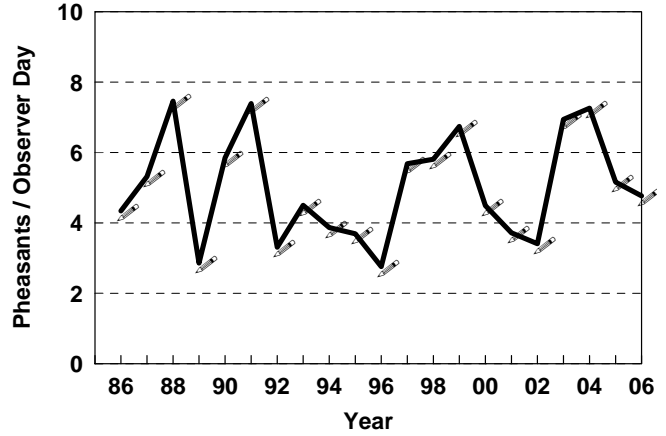
Year	Pheasant Management Regions					RANGE
	1-NW	2-SW	3-NC	4-SC	5-NE	
1986	3.48	5.11	4.34	2.77	1.81	3.35
1987	5.46	2.53	5.32	2.81	2.10	3.53
1988	7.12	3.16	7.46	1.93	1.79	4.10
1989	2.06	1.68	2.86	1.92	1.14	1.92
1990	3.42	1.32	5.85	2.01	1.19	3.15
1991	5.23	2.25	7.39	1.89	2.60	4.15
1992	2.45	1.75	3.31	2.84	0.86	2.06
1993	5.54	4.71	4.50	1.26	1.07	3.14
1994	5.54	5.81	3.87	2.42	1.84	3.65
1995	2.56	2.32	3.69	0.91	1.05	1.96
1996	3.93	1.46	2.76	1.12	1.51	1.88
1997	7.54	4.82	5.68	1.63	1.41	3.59
1998	5.03	3.26	5.81	1.98	0.61	3.02
1999	5.03	4.93	6.74	1.29	1.25	3.40
2000	3.68	2.60	4.49	2.05	1.02	2.57
2001	2.97	2.74	3.72	0.85	0.20	1.95
2002	2.23	1.50	3.41	1.24	0.34	1.50
2003	7.85	3.53	6.94	2.52	0.61	3.51
2004	6.17	4.33	7.26	1.27	0.72	3.36
2005	8.77	6.36	5.16	1.10	0.40	3.44
2006	7.18	3.69	4.77	0.88	0.52	2.66
80's Mean	4.53	3.12	5.00	2.36	1.71	3.23
90's Mean	4.63	3.26	4.96	1.74	1.34	3.00
00's Mean	5.55	3.54	5.11	1.42	0.54	2.71

Kansas PHEASANT brood survey indices. Note that scales differ.

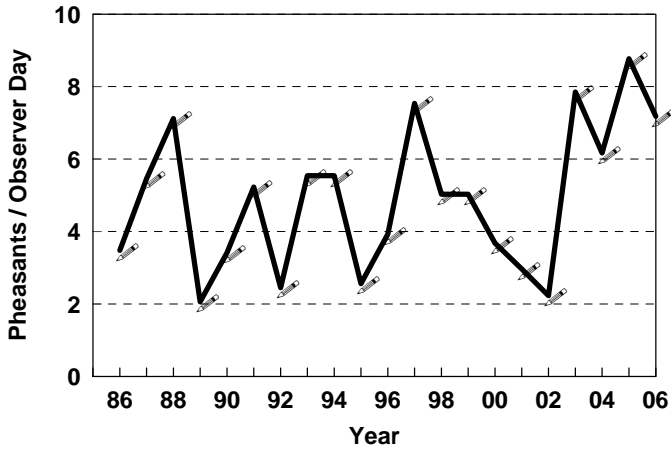
Pheasant Brood Index - Rangewide



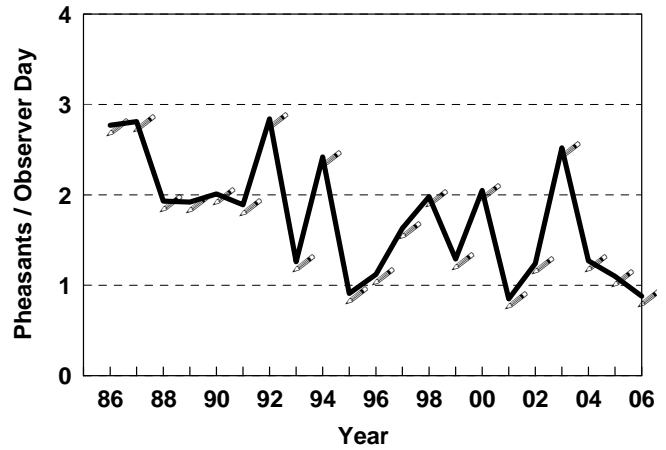
Pheasant Brood Index - Northcentral



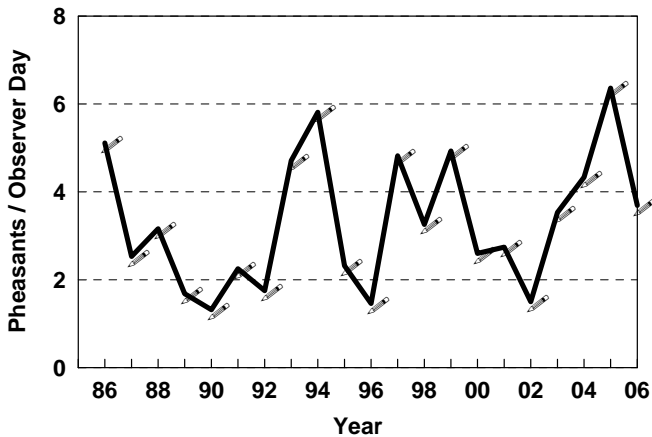
Pheasant Brood Index - Northwest



Pheasant Brood Index - Southcentral



Pheasant Brood Index - Southwest



Pheasant Brood Index - Northeast

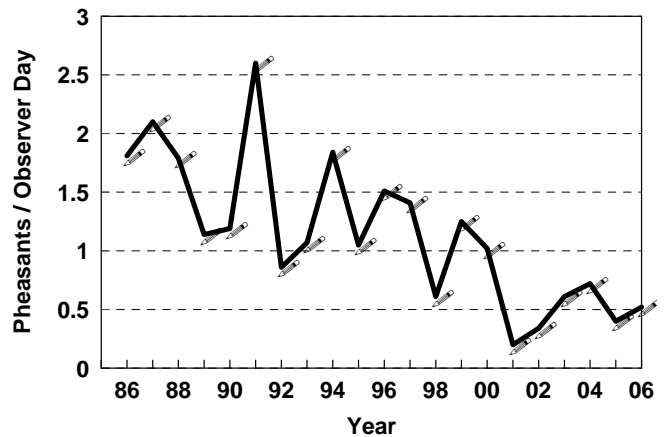


Table 12. Pheasant COCKS Per Observer Day: SUMMER BROOD SURVEY.

Year	Pheasant Management Regions					RANGE
	1-NW	2-SW	3-NC	4-SC	5-NE	
1986	0.31	0.53	0.38	0.20	0.13	0.29
1987	0.18	0.20	0.29	0.24	0.08	0.20
1988	0.50	0.42	0.52	0.18	0.13	0.33
1989	0.16	0.17	0.33	0.16	0.11	0.19
1990	0.24	0.17	0.39	0.15	0.12	0.24
1991	0.31	0.40	0.66	0.21	0.13	0.36
1992	0.24	0.31	0.40	0.13	0.11	0.24
1993	0.29	0.42	0.28	0.13	0.10	0.23
1994	0.45	0.51	0.44	0.25	0.14	0.34
1995	0.35	0.26	0.40	0.13	0.12	0.23
1996	0.41	0.26	0.25	0.10	0.16	0.20
1997	0.54	0.35	0.36	0.19	0.08	0.27
1998	0.48	0.54	0.42	0.19	0.12	0.31
1999	0.25	0.40	0.63	0.21	0.12	0.31
2000	0.45	0.45	0.38	0.22	0.08	0.29
2001	0.27	0.38	0.30	0.09	0.01	0.20
2002	0.27	0.25	0.32	0.16	0.04	0.18
2003	0.35	0.39	0.35	0.34	0.06	0.28
2004	0.88	0.50	0.52	0.17	0.07	0.36
2005	0.59	0.61	0.53	0.19	0.09	0.35
2006	0.60	0.86	0.36	0.13	0.08	0.35
80's Mean	0.29	0.33	0.38	0.20	0.11	0.25
90's Mean	0.36	0.36	0.42	0.17	0.12	0.27
00's Mean	0.49	0.49	0.39	0.19	0.06	0.29

Table 13. Pheasant HENS Per Observer Day: SUMMER BROOD SURVEY.

Year	Pheasant Management Regions					RANGE
	1-NW	2-SW	3-NC	4-SC	5-NE	
1986	0.53	0.67	0.56	0.28	0.25	0.43
1987	0.62	0.44	0.60	0.36	0.21	0.43
1988	1.05	0.59	0.87	0.23	0.26	0.55
1989	0.38	0.34	0.50	0.28	0.16	0.32
1990	0.46	0.31	0.71	0.25	0.14	0.41
1991	0.70	0.48	1.07	0.26	0.27	0.58
1992	0.37	0.27	0.49	0.23	0.17	0.30
1993	0.53	0.57	0.57	0.20	0.14	0.38
1994	0.73	0.82	0.56	0.28	0.31	0.52
1995	0.40	0.36	0.58	0.15	0.20	0.32
1996	0.61	0.39	0.52	0.15	0.32	0.36
1997	0.80	0.58	0.68	0.20	0.18	0.42
1998	0.74	0.52	0.63	0.29	0.09	0.40
1999	0.63	0.88	0.85	0.22	0.18	0.49
2000	0.56	0.54	0.57	0.22	0.17	0.38
2001	0.49	0.59	0.46	0.17	0.04	0.32
2002	0.19	0.35	0.51	0.18	0.09	0.25
2003	0.87	0.59	0.62	0.34	0.11	0.43
2004	0.92	0.69	0.84	0.23	0.12	0.48
2005	0.92	1.01	0.73	0.22	0.08	0.50
2006	0.82	0.68	0.66	0.17	0.11	0.41
80's Mean	0.65	0.51	0.63	0.29	0.22	0.43
90's Mean	0.60	0.52	0.67	0.22	0.20	0.42
00's Mean	0.68	0.64	0.63	0.22	0.10	0.40

Table 14. Pheasant YOUNG Per Observer Day: SUMMER BROOD SURVEY.

Year	Pheasant Management Regions					RANGE
	1-NW	2-SW	3-NC	4-SC	5-NE	
1986	2.63	3.91	3.40	2.28	1.42	2.63
1987	4.67	1.89	4.43	2.21	1.80	2.91
1988	5.57	2.15	6.08	1.51	1.41	3.22
1989	1.52	1.17	2.03	1.48	0.87	1.41
1990	2.69	0.84	4.73	1.61	0.93	2.49
1991	4.22	1.37	5.67	1.42	2.19	3.21
1992	1.85	1.16	2.43	2.47	0.58	1.51
1993	4.72	3.72	3.65	0.92	0.83	2.52
1994	4.36	4.47	2.88	1.89	1.39	2.80
1995	1.81	1.70	2.71	0.63	0.74	1.42
1996	2.91	1.46	2.76	1.12	1.51	1.88
1997	6.21	3.88	4.64	1.24	1.15	2.90
1998	3.81	2.20	4.76	1.50	0.40	2.30
1999	4.14	3.64	5.27	0.86	0.95	2.60
2000	2.67	1.61	3.54	1.61	0.76	1.91
2001	2.21	1.76	2.96	0.59	0.15	1.43
2002	1.77	0.89	2.58	0.89	0.21	1.07
2003	6.58	2.54	5.98	1.85	0.44	2.79
2004	4.38	3.14	5.90	0.87	0.53	2.52
2005	7.25	4.74	3.89	0.69	0.23	2.58
2006	5.75	2.15	3.75	0.57	0.34	1.89
80's Mean	3.60	2.28	3.99	1.87	1.38	2.54
90's Mean	3.67	2.44	3.95	1.37	1.07	2.36
00's Mean	4.37	2.40	4.09	1.01	0.38	2.03

Table 15. Pheasant BROODS Per Observer Day: SUMMER BROOD SURVEY.

Year	Pheasant Management Regions					RANGE
	1-NW	2-SW	3-NC	4-SC	5-NE	
1986	0.54	0.57	0.76	0.36	0.28	0.50
1987	0.82	0.43	0.78	0.35	0.30	0.51
1988	1.09	0.44	1.04	0.27	0.28	0.59
1989	0.33	0.26	0.44	0.29	0.15	0.29
1990	0.57	0.20	0.78	0.30	0.12	0.43
1991	0.72	0.29	0.99	0.26	0.38	0.57
1992	0.41	0.26	0.45	0.39	0.11	0.29
1993	0.80	0.53	0.58	0.22	0.16	0.42
1994	0.84	0.68	0.59	0.40	0.25	0.53
1995	0.37	0.38	0.58	0.16	0.16	0.31
1996	0.52	0.25	0.40	0.19	0.22	0.28
1997	1.18	0.72	0.76	0.24	0.20	0.52
1998	0.79	0.53	0.80	0.28	0.07	0.44
1999	0.87	0.78	0.95	0.19	0.16	0.51
2000	0.64	0.47	0.70	0.31	0.15	0.41
2001	0.49	0.41	0.56	0.18	0.04	0.31
2002	0.37	0.23	0.47	0.22	0.05	0.23
2003	1.16	0.60	1.01	0.42	0.09	0.54
2004	0.86	0.61	1.03	0.16	0.10	0.47
2005	1.36	1.02	0.79	0.17	0.05	0.54
2006	1.10	0.53	0.70	0.12	0.06	0.39
80's Mean	0.70	0.43	0.76	0.32	0.25	0.47
90's Mean	0.71	0.46	0.69	0.26	0.18	0.43
00's Mean	0.85	0.55	0.75	0.23	0.08	0.41

KANSAS PHEASANT HARVEST

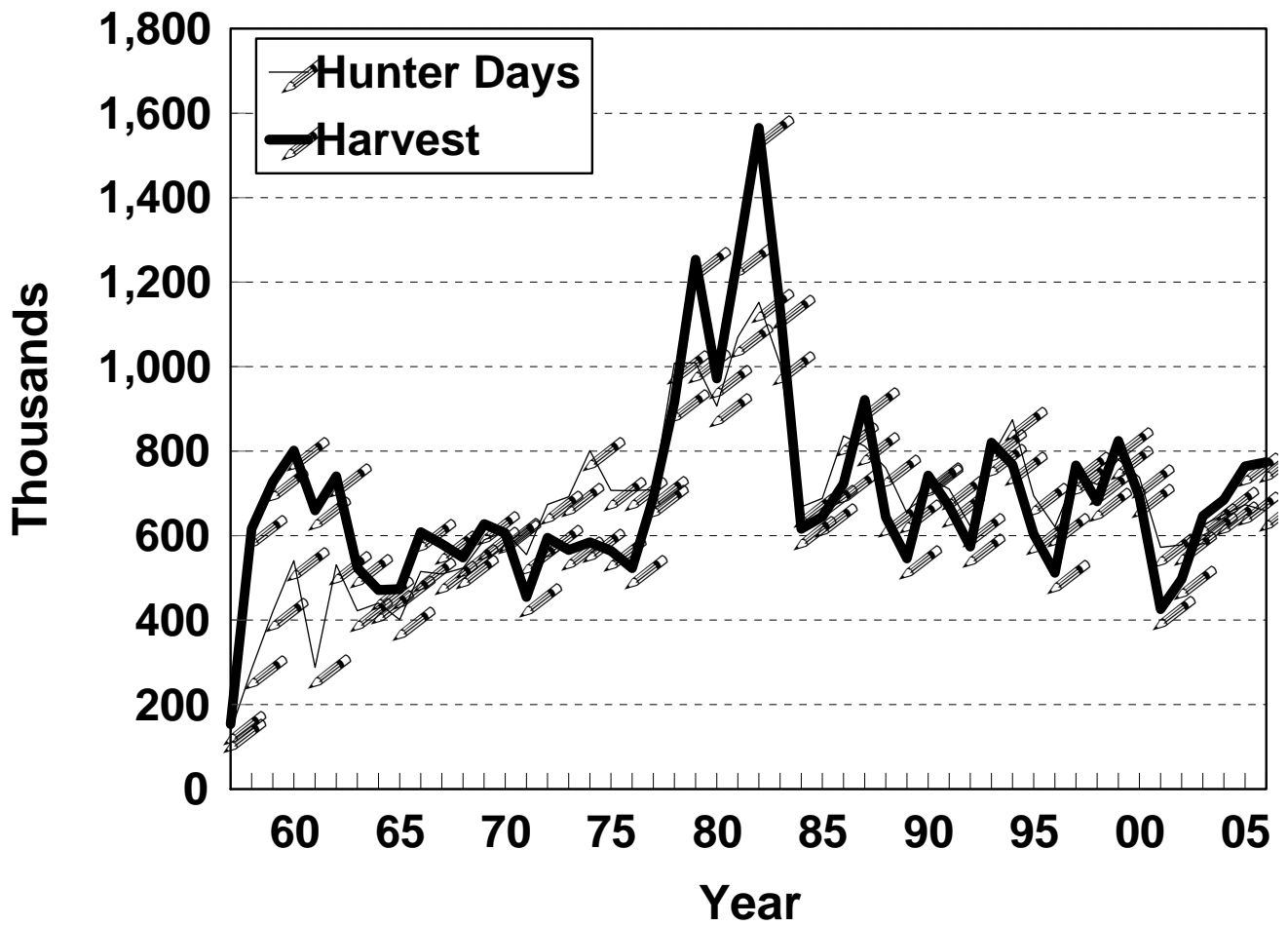


Table 16. Estimated annual **PHEASANT** hunting activity in Kansas.

Year	Percent Hunting Species	Est. Total Hunters	Est. Total Days	Est. ^a Total Harvest	Season Days Per Hunter	Season ^a Bag Per Hunter	Average ^a Bag Per Day
1957	40.00	75,700	136,000	154,000	1.80	2.03	1.13
1958	56.83	130,500	284,000	616,000	2.18	4.72	2.16
1959	63.56	146,300	420,000	727,000	2.87	4.97	1.73
1960	75.42	168,600	541,000	801,000	3.21	4.75	1.48
1961	69.99	144,000	288,000	660,000	2.00	4.59	2.29
1962	77.70	149,500 ^b	531,000	740,000	3.55	4.95	1.39
1963	72.38	130,600	422,000	524,000	3.23	4.01	1.24
1964	67.73	118,300	440,000	471,000	3.72	3.98	1.07
1965	69.02	122,000	401,000	473,000	3.29	3.88	1.18
1966	68.09	134,500	515,000	608,000	3.83	4.52	1.18
1967	68.44	139,000	509,000	580,000	3.66	4.17	1.14
1968	68.70	136,100	523,000	548,000	3.84	4.03	0.84 ^c
1969	69.69	145,200	590,000	627,000	4.06	4.32	1.06
1970	71.20	150,700	610,000	606,000	4.05	4.02	0.99
1971	68.40	141,700	555,000	455,000	3.92	3.21	0.96
1972	67.44	142,800	674,000	595,000	4.72	4.17	1.03
1973	64.97	139,700	692,000	566,000	4.95	4.05	0.96
1974	70.75	150,200	801,000	584,000	5.33	3.89	0.85
1975	70.69	141,100	707,000	564,000	5.01	3.97	0.92
1976	71.50	145,200	706,000	523,000	4.86	3.60	0.90
1977	72.21	148,400	709,000	690,000	4.78	4.65	1.09
1978	78.17	168,000	1,008,000	916,000	6.00	5.46	1.11
1979	78.17 ^d	177,900	1,009,000	1,253,000	5.67	7.05	1.41
1980	76.69	176,200	907,000	972,000	5.15	5.52	1.19
1981	78.45	183,200	1,070,000	1,260,000	5.84	6.88	1.36
1982	78.73	195,600	1,152,000	1,565,000	5.89	8.00	1.51
1983	76.27	183,600	1,006,000	1,138,000	5.48	6.20	1.28
1984	71.59	135,700	668,000	616,000	4.92	4.54	1.07
1985	73.64	136,600	688,000	645,000	5.03	4.72	1.02
1986	73.90	143,100	836,000	723,000	5.84	5.06	1.01
1987	76.44	149,600	812,000	921,000	5.43	6.16	1.21
1988	74.50	144,400	760,000	644,000	5.26	4.46	1.00
1989	70.49	124,900	653,000	546,000	5.23	4.37	0.96
1990	74.44	133,000	738,000	742,000	5.55	5.58	1.14
1991	74.80	138,400	710,000	669,000	5.13	4.83	1.08
1992	73.42	126,100	622,000	574,000	4.93	4.55	0.99
1993	76.81	134,400	785,000	820,000	5.84	6.10	1.18
1994	76.10	145,300	874,000	768,000	6.02	5.28	1.07
1995	74.14	133,500	694,000	603,000	5.20	4.52	0.96
1996	70.02	111,700	621,000	512,000	5.56	4.59	0.94
1997	75.26	124,800	742,000	766,000	5.94	6.13	1.15
1998	72.63	125,800	721,000	681,000	5.73	5.41	1.01
1999	74.43	133,700	780,000	824,000	5.83	6.16	1.18
2000	71.64	133,400	738,000	692,000	5.53	5.19	1.00
2001	70.27	116,600	572,000	426,000	4.91	3.66	0.82
2002	67.09	106,800	578,000	497,000	5.41	4.65	0.93
2003	69.87	117,000	625,000	646,000	5.34	5.52	1.13
2004	71.22	123,800	650,000	685,000	5.25	5.53	1.11
2005	71.26	124,700	673,000	764,000	5.40	6.12	1.20
2006 ^e	75.10	120,900	659,000	774,000	5.44	6.39	1.26

^a Values are for cocks only. Hen harvest estimates are based on check station data showing 28.6% (264,000) hens in 1961 and 19.4% (178,000) hens in 1962.

^b Hunter estimates prior to 1962 were not adjusted for inactive license buyers.

^c Average Bag Per Day through 1967 expresses overall mean season bag divided by overall mean season days.

ABPD after 1967 is the mean of individual hunter ratios of season bag to season days.

^d Percent of active hunters hunting species unobtainable due to 1979 questionnaire error. Value is 1974-1978 mean.

^e Electronic licensing permitted random sampling of non-residents for the 1st time, improving how estimates were calculated.

Table 17a. Estimated annual PHEASANT hunting indices by management region -- NW and SW.

Mgmt. Region	Year	Est. Total Hunters	Est. Total Days	Est. Total Harvest	Season Days Per Hunter	Season Bag Per Hunter	Average Bag Per Day
1-NW	1982	16,900	110,900	177,800	6.57	10.54	1.69
	1983	19,700	111,900	140,900	5.84	8.11	1.59
	1984	11,800	70,600	77,400	5.99	6.57	1.24
	1985	12,700	76,000	82,300	6.00	6.50	1.14
	1986	11,000	69,000	74,400	6.31	6.74	1.36
	1987	14,600	82,600	112,200	5.66	7.69	1.44
	1988	14,500	74,000	81,200	5.11	5.61	1.25
	1989	13,400	64,000	65,100	4.79	4.87	1.18
	1990	13,000	69,600	92,100	5.36	7.09	1.43
	1991	12,600	67,600	78,000	5.35	6.17	1.28
	1992	10,900	52,000	49,900	4.80	4.60	1.07
	1993	12,100	69,400	89,600	5.76	7.43	1.41
	1994	11,500	70,400	82,400	6.14	6.59	1.29
	1995	11,400	61,800	56,100	5.43	4.93	1.08
	1996	10,000	58,700	75,300	5.85	7.50	1.43
	1997	12,600	69,100	98,400	5.51	7.84	1.41
	1998	11,600	75,300	87,500	6.48	7.53	1.30
	1999	11,900	73,500	97,100	6.16	8.13	1.53
	2000	11,500	60,600	52,800	5.28	4.60	0.91
	2001	9,500	47,300	43,900	4.99	4.63	0.99
2002	8,800	53,800	53,600	6.10	5.97	1.05	
2003	10,000	55,800	59,600	5.59	5.96	1.12	
2004	9,600	58,500	57,100	6.09	5.94	1.11	
2005	10,300	63,100	74,600	6.10	7.22	1.22	
2006	12,200	76,000	97,200	6.24	7.98	1.27	
2-SW	1982	38,600	238,300	394,500	6.18	10.23	1.78
	1983	36,300	212,000	294,000	5.84	8.11	1.59
	1984	26,500	149,200	178,700	5.62	6.73	1.36
	1985	29,400	139,000	145,100	4.73	4.94	1.14
	1986	28,200	158,600	157,700	5.62	5.59	1.17
	1987	29,200	167,200	213,000	5.73	7.30	1.37
	1988	24,000	119,500	111,100	4.97	4.62	1.07
	1989	20,700	111,200	135,300	5.36	6.52	1.35
	1990	22,100	114,200	128,000	5.16	5.79	1.29
	1991	20,900	105,300	101,800	5.04	4.87	1.17
	1992	20,600	91,600	116,400	4.44	5.65	1.41
	1993	23,400	120,000	137,200	5.13	5.87	1.17
	1994	25,300	154,900	141,100	6.12	5.57	1.10
	1995	22,200	124,400	125,500	5.62	5.66	1.06
	1996	16,500	90,900	94,700	5.51	5.74	1.05
	1997	23,300	157,200	213,900	6.74	9.17	1.48
	1998	22,400	141,300	165,500	6.32	7.41	1.25
	1999	21,300	144,500	192,100	6.79	9.03	1.60
	2000	27,000	153,400	183,500	5.69	6.80	1.21
	2001	22,900	124,200	133,800	5.42	5.84	1.22
2002	20,400	129,100	120,400	6.32	5.90	1.13	
2003	22,900	144,500	183,200	6.31	8.00	1.40	
2004	27,200	156,900	208,600	5.77	7.67	1.43	
2005	27,700	170,600	237,600	6.16	8.57	1.51	
2006	30,400	200,400	255,400	6.60	8.40	1.48	

Table 17b. Estimated annual PHEASANT hunting indices by management region -- NC and SC.

Mgmt. Region	Year	Est. Total Hunters	Est. Total Days	Est. Total Harvest	Season Days Per Hunter	Season Bag Per Hunter	Average Bag Per Day
3-NC	1982	45,200	274,000	395,200	6.07	8.75	1.69
	1983	43,300	239,700	293,200	5.54	6.77	1.36
	1984	29,700	124,700	122,000	4.19	4.10	1.17
	1985	28,500	132,500	130,200	4.64	4.56	1.12
	1986	31,100	175,800	181,100	5.65	5.82	1.17
	1987	30,900	163,900	223,700	5.30	7.24	1.45
	1988	30,900	171,200	146,500	5.55	4.74	1.02
	1989	25,600	118,900	111,800	4.64	4.36	0.91
	1990	29,600	161,900	217,000	5.47	7.33	1.45
	1991	30,100	151,200	168,200	5.03	5.60	1.24
	1992	26,500	124,400	125,300	4.69	4.72	1.05
	1993	26,900	168,100	212,600	6.25	7.91	1.43
	1994	33,900	195,600	204,500	5.77	6.03	1.24
	1995	29,200	136,200	135,300	4.67	4.64	1.13
	1996	24,400	125,700	121,000	5.14	4.95	1.09
	1997	28,700	154,900	173,900	5.39	6.05	1.26
	1998	27,900	147,100	152,700	5.27	5.47	1.11
	1999	28,600	160,800	183,500	5.62	6.42	1.29
	2000	28,500	146,700	150,700	5.15	5.29	1.12
	2001	24,700	110,400	77,700	4.47	3.14	0.81
2002	27,900	144,200	150,200	5.18	5.39	1.11	
2003	29,100	155,000	181,000	5.32	6.21	1.29	
2004	29,100	139,400	166,100	4.80	5.71	1.24	
2005	32,500	166,600	209,000	5.12	6.43	1.35	
2006	28,600	155,700	191,900	5.44	6.71	1.27	
4-SC	1982	31,500	194,500	201,200	6.18	6.39	1.13
	1983	29,400	159,500	133,000	5.43	4.53	0.93
	1984	24,700	117,700	73,700	4.76	2.98	0.77
	1985	24,600	130,500	91,500	5.31	3.72	0.76
	1986	28,400	173,600	126,600	6.12	4.46	0.81
	1987	27,400	159,100	129,900	5.80	4.73	1.02
	1988	29,200	151,300	119,200	5.18	4.08	0.89
	1989	24,500	128,000	94,900	5.22	3.87	0.82
	1990	23,900	138,500	109,500	5.78	4.58	0.88
	1991	29,100	142,800	110,900	4.90	3.81	0.87
	1992	29,200	162,400	129,900	5.56	4.45	0.80
	1993	23,200	148,400	109,000	6.39	4.70	0.81
	1994	26,000	156,000	84,300	6.00	3.24	0.72
	1995	22,100	120,300	75,500	5.45	3.42	0.74
	1996	19,000	103,900	41,400	5.46	2.18	0.53
	1997	19,100	102,900	78,200	5.39	4.09	0.91
	1998	21,500	117,800	78,500	5.49	3.66	0.77
	1999	17,700	116,000	85,000	6.55	4.80	0.79
	2000	22,300	129,500	97,300	5.80	4.35	0.82
	2001	19,400	93,100	46,500	4.79	2.39	0.56
2002	15,400	73,400	56,400	4.78	3.67	0.77	
2003	20,400	102,900	79,700	5.05	3.91	0.91	
2004	21,400	96,300	93,400	4.51	4.37	0.91	
2005	19,400	104,100	98,200	5.37	5.06	0.96	
2006	14,000	80,400	68,900	5.75	4.92	0.93	

Table 17c. Estimated annual PHEASANT hunting indices by management region -- NE and NS.

Mgmt. Region	Year	Est. Total Hunters	Est. Total Days	Est. Total Harvest	Season Days Per Hunter	Season Bag Per Hunter	Average Bag Per Day
5-NE	1982	49,200	280,500	313,600	5.71	6.38	1.27
	1983	42,500	229,600	213,600	5.40	5.03	1.07
	1984	33,200	172,600	131,800	5.19	3.96	0.93
	1985	33,300	175,400	156,200	5.27	4.69	0.90
	1986	34,900	214,000	147,100	6.14	4.22	0.78
	1987	36,800	189,200	191,200	5.14	5.19	1.02
	1988	35,800	207,100	152,200	5.78	4.25	0.90
	1989	32,000	191,400	105,600	5.97	3.30	0.71
	1990	36,600	218,300	161,900	5.97	4.43	0.89
	1991	36,100	198,800	164,900	5.51	4.57	0.93
	1992	32,600	167,300	128,500	5.13	3.94	0.78
	1993	38,100	227,400	220,800	5.98	5.80	1.13
	1994	39,400	251,500	211,700	6.39	5.38	0.98
	1995	38,400	203,100	161,500	5.29	4.21	0.83
	1996	32,800	198,900	141,400	6.07	4.31	0.79
	1997	31,900	204,700	151,900	6.42	4.76	0.84
	1998	28,900	161,100	121,400	5.58	4.20	0.75
	1999	24,100	125,700	96,300	5.22	4.00	0.85
	2000	26,700	164,900	122,400	6.18	4.59	0.76
	2001	26,800	133,100	74,700	4.96	2.79	0.58
	2002	25,600	135,300	83,900	5.29	3.28	0.65
2003	24,300	119,600	93,800	4.92	3.86	0.82	
2004	23,700	137,500	103,000	5.79	4.34	0.76	
2005	22,700	118,700	82,900	5.23	3.65	0.78	
2006	17,400	81,200	67,700	4.65	3.88	0.86	
0-NS^a	1982	13,300	44,900	74,300	3.38	5.59	1.74
	1983	11,200	41,800	45,800	3.74	4.10	1.44
	1984	8,600	20,900	20,500	2.44	2.39	0.92
	1985	6,400	28,400	30,900	4.45	4.85	1.05
	1986	8,200	37,400	27,500	4.55	3.34	1.09
	1987	9,700	45,000	42,200	4.63	4.34	1.28
	1988	9,000	28,000	26,400	3.11	2.93	1.06
	1989	7,500	36,800	31,400	4.90	4.18	1.16
	1990	6,800	30,000	28,900	4.43	4.26	1.17
	1991	6,700	30,000	30,900	4.47	4.61	1.47
	1992	5,200	19,100	19,100	3.65	3.66	1.23
	1993	8,600	33,700	31,400	3.90	3.63	1.36
	1994	7,400	34,000	33,300	4.59	4.49	1.17
	1995	5,400	25,900	28,100	4.77	5.17	1.14
	1996	7,700	39,500	34,300	5.14	4.46	1.14
	1997	8,400	50,000	41,700	5.98	4.98	1.11
	1998	12,500	76,400	68,000	6.10	5.43	0.98
	1999	29,000	151,400	160,800	5.23	5.55	1.11
	2000	16,000	73,300	76,600	4.57	4.78	1.01
	2001	11,800	58,500	43,900	4.97	3.73	0.80
	2002	7,700	36,700	27,300	4.78	3.56	0.84
2003	9,300	40,000	40,700	4.30	4.37	1.23	
2004	12,200	56,100	49,200	4.61	4.05	1.10	
2005	1,700	4,900	5,400	2.88	3.19	1.41	
2006	17,300	60,700	84,900	3.51	4.91	1.50	

^a County most hunted not specified by hunters returning survey.

Table 18a. Summary of past PHEASANT hunting seasons in Kansas ^a.

Year	No. Season Days	Daily Bag Limit	Possess. Limit	Season Dates	Special ^s Shooting Hours	Area Open
1917	16	NA	NA	Dec. 1 - 15		Statewide
1918	16	NA	NA	"		"
1919	11	NA	NA	Dec. 1 - 10		"
1920	11	NA	NA	"		"
1921	0					
1922	0					
1923	0					
1924	0					
1925	0					
1926	0			CLOSED		
1927	0					
1928	0					
1929	0					
1930	0					
1931	0					
1932	2	2	4	Oct. 20 - 21		12 Counties
1933	2	2	4	"		"
1934	2	2	4	Oct. 16 - 17		15 Counties
1935	2	2	4	Oct. 22 - 23		"
1936	2	2	4	"		"
1937	3	3 ^h	6	Oct. 18 - 20		9 Counties
1938	3	3 ^h	6	"		"
1939	3	3 ^h	6	Nov. 1 - 3		21 Counties
1940	3	3 ^h	6	"		"
1941	3	3 ^h	6	Oct. 27 - 29		"
1942	4	3	6	Nov. 8 - 11	Noon to Sunset	"
1943	7	3	6	Nov. 8 - 14	"	"
1944	4	3	6	Oct. 26 - 29	"	38 Counties
1945	5	3 ^h	6	Nov. 1 - 5	"	"
1946	5	3	6	Nov. 7 - 11	"	47 Counties
1947	5	3	6	Oct. 30 - Nov. 3	"	"
1948	3	3	6	Nov. 5 - 7	9 AM to Sunset	"
1949	3	3	6	Oct. 29 - 31	"	44 Counties
1950	4	3	6	Nov. 9, 11 - 13	"	48 Counties
1951	4	3	6	Nov. 14, 16 - 18	"	51 Counties
1952	10	3	6	Oct. 24 - Nov. 2	"	60 Counties
1953	10	3	6	Nov. 7 - 16	Noon to Sunset	62 Counties
1954	10	3	6	Nov. 6 - 15	"	"
1955	11	3	6	Oct. 21 - 31		59 Counties
1956	3	3	6	Nov. 3 - 5		55 Counties
1957	4	3	6	Nov. 9 - 12		58 Counties
1958	5	4	8	Nov. 7 - 11		"
1959	20	4	8	Nov. 7 - 26		62 Counties
1960	26	4	8	Nov. 5 - 30		63 Counties
1961	37	5 ^h	10	Nov. 11 - Dec. 17		64 Counties
1962	40	5 ^h	10	Nov. 10 - 25, Dec. 8 - 13		81 Counties ^z
1963	30	3	6	Nov. 9 - Dec. 8		84 Counties ^z
1964	44	3	6	Nov. 14 - Dec. 27		" ^z
1965	30	3	6	Nov. 13 - 28, Dec. 18 - 31		85 Counties ^z

^a Pheasants were first released in Kansas in 1906.

^s Normal shooting hours were from 30 minutes before sunrise to sunset.

^h One hen was allowed in the daily bag limit.

^z More restrictive regulations applied in certain zones.

Table 18b. Summary of past PHEASANT hunting seasons in Kansas.

Year	No. Season Days	Daily Bag Limit	Possess. Limit	Season Dates	Special ^s Shooting Hours	Area Open
1966	39	3	6	Nov. 12 - 27, Dec. 17 - Jan. 8		85 Counties ^z
1967	32	3	12	Nov. 11 - 26, Dec. 16 - 31		" ^z
1968	39	3	12	Nov. 9 - Dec. 8, Dec. 21 - 29 . . .		" ^z
1969	54	3	12	Nov. 8 - Dec. 31		Statewide ^z
1970	48	3	12	Nov. 14 - Dec. 31		" ^z
1971	62	3	12	Nov. 13 - Jan. 13		"
1972	65	3	12	Nov. 11 - Jan. 14		"
1973	83	4	12	Nov. 10 - Jan. 31		"
1974	75	4	12	Nov. 9 - Dec. 6, Dec 16 - Jan 31		"
1975	65	3	9	Nov. 8 - Jan. 11		"
1976	80	4	12	Nov. 13 - Jan. 31		"
1977	65	3	9	Nov. 5 - Jan. 8		All but SE
1978	79	3	9	Nov. 11 - Jan. 28		"
1979	79	4	16	Nov. 10 - Jan. 27		Statewide
1980	79	4	16	Nov. 8 - Jan. 25		"
1981	94	4	16	Nov. 14 - Feb. 15		"
1982	80	4	16	Nov. 13 - Jan. 31		"
1983	81	4	16	Nov. 12 - Jan. 31		"
1984	83	4	16	Nov. 10 - Jan. 31		"
1985	84	4	16	Nov. 9 - Jan. 31		"
1986	85	4	16	Nov. 8 - Jan. 31		"
1987	79	4	16	Nov. 14 - Jan. 31		"
1988	81	4	16	Nov. 12 - Jan. 31		"
1989	82	4	16	Nov. 11 - Jan. 31		"
1990	83	4	16	Nov. 10 - Jan. 31		"
1991	84	4	16	Nov. 9 - Jan. 31		"
1992	79	4	16	Nov. 14 - Jan. 31		"
1993	80	4	16	Nov. 13 - Jan. 31		"
1994	81	4	16	Nov. 12 - Jan. 31		"
1995	82	4	16	Nov. 11 - Jan. 31		"
1996	84	4	16	Nov. 9 - Jan. 31		"
1997	85	4	16	Nov. 8 - Jan. 31		"
1998	79	4	16	Nov. 14 - Jan. 31		"
1999	80	4	16	Nov. 13 - Jan. 31		"
2000	82	4	16	Nov. 11 - Jan. 31		"
2001	83	4	16	Nov. 10 - Jan. 31		"
2002	84	4	16	Nov. 9 - Jan. 31		"
2003	85	4	16	Nov. 8 - Jan. 31		"
2004	80	4	16	Nov. 13 - Jan. 31		"
2005	81	4	16	Nov. 12 - Jan. 31		"
2006	89	4	16	Nov. 4 - Jan. 31		"

^s Normal shooting hours were from 30 minutes before sunrise to sunset.

^z More restrictive regulations applied in certain zones.