

Rural Mail Carrier Survey Report

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INTRODUCTION AND METHODS

The rural mail carrier survey (RMCS) was initiated in Kansas in 1962. In that first year, mail carriers were asked to record their observations of wildlife along their normal daily routes for 5 consecutive days during the third week of July (Summer). The following year the mail carriers were also asked to record observations during the 3rd weeks of January (Winter) and April (Spring). In 1966, a fourth survey period was added during the 2nd week of October (Fall). Since 1966, volunteer mail carriers from across the state have made observations during each of those 4 survey periods. In addition to recording wildlife observations the mail carriers also report their total mileage during each survey period and the primary county they traveled. The list of recorded wildlife species differs during each survey period. The species recorded during the summer RMCS includes ring-necked pheasants (cocks, hens, young, and uncertain), northern bobwhites (adults, young, and uncertain), wild turkeys (adult and young), prairie chickens, and eastern cottontails. The species recorded during the spring and winter surveys include: ring-necked pheasants (cocks, hens, and uncertain), northern bobwhites, prairie chickens, eastern cottontails, jack rabbits, and wild turkeys. During the fall survey period, mail carriers record the total number of ring-necked pheasants, northern bobwhites, prairie chickens, eastern cottontails, jack rabbits, wild turkeys, and tree squirrels (fox and gray squirrels).

The collected information is used to develop standardized statewide and regional indices for each species. The index for each species is calculated as the average number of individuals observed for each 100 miles traveled. Data from the spring, summer, and winter surveys are used to develop sex ratios (Male:Female) for ring-necked pheasants. Additionally, the information collected during the summer survey period is used to develop production indices for ring-necked pheasants (Young:Hen), northern bobwhites (Young:Adult), and wild turkeys (Young:Adult). These indices are also calculated within each of our wild turkey and small game management regions (Figure 1). A t-test is used to draw statistical comparisons between indices. Simple linear regression is used to determine if there is a statistically significant trend for each species-season combination over the previous 10-year period.

RESULTS AND DISCUSSION

The vast majority of the seasonal statewide indices declined from the previous year (Table 1). The declines were likely due to deep snow cover that persisted for a couple of weeks last winter in the eastern 1/3 of the state and the severe drought that affected much of western Kansas this past summer. The statewide indices to production were below average for wild turkeys and ring-necked pheasants while production was above average for northern bobwhites (Figure 2). Bobwhites fared better than the other two species on a statewide scale because they nest later in the summer and the bulk of their range occurs outside the area in southwestern Kansas that was most severely impacted by the drought. Thus, the later nesting period meant that the bobwhite production index was not as greatly affected by the heavy rain and hail that fell upon much of northcentral Kansas during early June. On a statewide scale, the RMCS

survey indicates that small game populations in Kansas have generally been stable over the last decade (Table 1). However, it is necessary to analyze additional data from other departmental surveys to better understand changes in abundance of these species over time.

Ring-necked pheasants – The spring RMCS indices to the 2011 pheasant breeding population were not significantly different from the previous year within any region of the state (Table 2). Production was generally very good during summer of 2010 but winter moisture was far below average throughout the bulk of Kansas' pheasant range. That lack of moisture could have hampered adult survival somewhat during the early spring and could be the reason why increases in the spring breeding population were not observed. Carriers again reported seeing more cocks than hens during the winter and spring survey periods (Figure 3). This indicates that plenty of roosters were available to copulate with hens following the fall hunting season. The summer ratio of cocks:hens was less than the other two seasonal indices and is likely due to the fact that many hens were not easily observable during the summer survey period because they were incubating nests or tending to young. The RMCS production indices for 2011 indicated that production was below the long-term average in all management regions (Figure 4). Poor production was undoubtedly due to severe drought throughout central and southwestern Kansas and excessive rain and hail that fell up on much of northcentral Kansas during the peak of breeding. Conditions were only good for production in a portion of the Northern High Plains region this past summer. The pheasant population appears to be fairly stable in most regions of the state over the last 10-year period (Table 2).

Northern bobwhites – The spring indices showed no significant differences in the number of breeding bobwhites in any management region (Table 3). The RMCS production indices for 2011 indicated that bobwhite productivity was near or above average in all regions except the Southern High Plains where drought was most severe and prolonged this past summer (Figure 5). Bobwhites breed later into the summer than do pheasants or prairie chickens and they are also much more prolific which makes it easier for them to take advantage of improved weather conditions if they occur after the normal peak of their reproductive season. Conditions were generally good for productivity in the eastern 1/3 of the state throughout the summer of 2011 and they improved somewhat in central Kansas as precipitation fell in more average amounts during the later part of the summer. Over the last 10-year period bobwhite populations have been relatively stable in every management region except for the Osage Cuestas where 2 of the 4 seasonal indices indicate that a decline has occurred. If trends were developed for a longer period (e.g. 25 years) the indices would undoubtedly show significant declines in all the eastern management regions.

Prairie chickens – The mail carriers generally see few prairie chickens during the 4 observation periods. Thus, the reliability of this survey for detecting annual or long-term changes in prairie chicken abundance on a regional scale is probably poor. However, the 10-year season-specific indices show generally stable populations within most of the prairie chicken management regions (Table 4). The exceptions are the Northern High

Plains and the Smoky Hills regions where 1 of 4 season indices indicates an increasing population. Additionally, 1 of the 4 seasonal indices in the Osage Cuestas region indicates a declining population over the last 10 years. However, to better understand changes in prairie chicken abundance it is necessary to use results from this survey along with results from other annual departmental surveys (e.g. annual prairie chicken lek survey).

Wild turkeys – The spring breeding populations were not significantly different from 2010 within any region of the state (Table 5). Wild turkey productivity in 2011 was below the long-term average in all but the south-central management region (Figure 6). However, productivity was near average in the southeast region and better than what had been recorded in any of the past 5 years. Conditions during 2011 in the southeast region were better for productivity than during any of the past 5 years when excessive rain and flooding regularly occurred during the peak turkey reproductive period. Below average productivity in the other regions was most likely due to the severe drought in central and southwestern Kansas and the untimely precipitation events that occurred in the northern portions of the state. Over the last 10-year period the RMCS generally shows stable or declining populations in the eastern management regions and stable or increasing numbers in the central and western regions (Table 5).

Rabbits – Both eastern cottontail and black-tailed jackrabbit populations appear to be fairly stable over the last 10-year period on a statewide scale and within almost all of the small game management regions (Tables 1, 6, & 7). The exception would be for cottontails in the Osage Cuestas region where 2 of the 4 seasonal indices indicate a declining population over the last 10-years. The KDWPT does not conduct a survey to gauge rabbit production but it is likely that production was poor across most of central and western Kansas due to severe drought in the southern 2/3 of those regions and untimely rainfall further to the north. Productivity was likely good in the eastern 1/3 of the state due to fairly normal precipitation.

Squirrels – The mail carriers only count squirrels during the fall survey period. There were no significant annual changes from the previous year (Table 8). Over the last 10-year period squirrel abundance has been stable in every management region.

Table 1. Statewide seasonal indices (birds/100 mi. traveled) to small game and wild turkey abundance in Kansas from the rural mail carrier survey, 2010-2011.

Species-Season ^a	n ^b	2010	n	2011	Annual Change (%)	10-year trend ^c
Ring-necked pheasant						
Winter	98	1.69	101	2.28	+34.9	Stable
Spring	101	1.76	96	1.32	-25.0*	Stable
Summer	98	1.73	97	0.90	-48.0*	Stable
Fall	97	1.46	97	0.41	-71.9*	Stable
Northern bobwhite						
Winter	98	0.76	101	0.48	-36.8*	Stable
Spring	101	0.22	96	0.14	-36.4	Stable
Summer	98	0.85	97	0.45	-47.1*	Stable
Fall	97	0.50	97	0.32	-36.0*	Declining
Prairie chicken^d						
Winter	98	0.50	101	0.51	+2.0	Stable
Spring	101	0.47	96	0.20	-57.4	Stable
Summer	98	0.05	97	0.03	-40.0	Stable
Fall	97	0.08	97	0.06	-25.0	Stable
Wild turkey						
Winter	98	7.84	101	6.95	-11.4	Stable
Spring	101	4.02	96	4.43	+10.2	Stable
Summer	98	2.00	97	1.04	-48.0*	Stable
Fall	97	2.83	97	3.72	+31.4	Stable
Eastern cottontail						
Winter	98	0.74	101	0.35	-52.7*	Stable
Spring	101	0.57	96	0.52	-8.8	Stable
Summer	98	0.86	97	0.52	-39.5*	Stable
Fall	97	0.47	97	0.25	-46.8*	Stable
Black-tailed jackrabbit						
Winter	98	0.38	101	0.04	-89.5	Stable
Spring	101	0.07	96	0.06	-14.3	Stable
Fall	97	0.09	97	0.04	-55.6*	Stable
Tree squirrels^e						
Fall	97	1.66	97	1.68	+1.2	Stable

^a Not all species are counted during all 4 seasons.

^b The number of counties from which data were collected.

^c Stable indicates that a statistically significant trend was not detectable ($P > 0.05$).

^d Includes both greater and lesser prairie chickens.

^e Includes both gray and fox squirrels.

* Index is significantly different than previous year; $P < 0.05$.

Table 2. Regional and seasonal indices (birds/100 mi. traveled) to ring-necked pheasant abundance in Kansas derived from the rural mail carrier survey, 2010-2011.

Region-Season	n ^a	2010	n	2011	Annual Change (%)	10-year trend ^b
Flint Hills						
Winter	15	0.63	15	0.40	-36.5	Stable
Spring	14	0.57	15	0.40	-29.8	Stable
Summer	15	0.47	14	0.19	-59.6	Stable
Fall	14	0.17	15	0.24	+41.2	Declining
Glaciated Plains						
Winter	12	1.65	12	0.16	-90.3	Stable
Spring	12	0.44	11	0.20	-54.5	Stable
Summer	12	0.18	12	0.06	-66.7	Stable
Fall	11	0.23	11	0.11	-52.2	Stable
Northern High Plains						
Winter	12	4.42	14	6.31	+42.8	Stable
Spring	14	5.39	12	3.79	-29.7	Increasing
Summer	13	5.31	13	3.36	-36.7	Stable
Fall	13	4.04	12	1.72	-57.4	Stable
Osage Cuestas						
Winter	14	0.01	15	0.10	+900.0	Stable
Spring	15	0.02	15	0.44	+2,100.0	Stable
Summer	15	0.00	15	0.01	NA ^c	Stable
Fall	15	0.01	15	0.03	+200.0	Stable
Smoky Hills						
Winter	21	3.63	21	5.05	+39.1	Stable
Spring	22	2.84	21	2.09	-26.4	Stable
Summer	20	3.16	21	1.49	-52.8	Stable
Fall	21	1.95	21	0.51	-73.8*	Stable
South Central Prairies						
Winter	14	1.19	13	2.17	+82.4	Stable
Spring	13	1.60	13	1.48	-7.5	Stable
Summer	13	1.17	12	0.84	-28.2	Stable
Fall	13	1.06	13	0.42	-60.4*	Stable
Southern High Plains						
Winter	10	1.85	11	3.26	+76.2	Stable
Spring	11	4.52	9	2.17	-52.0	Stable
Summer	10	5.38	10	1.39	-74.2	Stable
Fall	10	6.98	10	0.42	-94.0*	Stable

^a The number of counties from which data were collected.

^b Stable indicates that a statistically significant trend was not detectable ($P > 0.05$).

^c NA = not applicable

* Index is significantly different than previous year; $P < 0.05$.

Table 3. Regional and seasonal indices (birds/100 mi. traveled) to northern bobwhite abundance in Kansas derived from the rural mail carrier survey, 2010-2011.

Region-Season	n ^a	2010	n	2011	Annual Change (%)	10-year trend ^b
Flint Hills						
Winter	15	1.46	15	0.75	-48.6	Stable
Spring	14	0.45	15	0.18	-60.0	Stable
Summer	15	1.19	14	0.76	-36.1*	Stable
Fall	14	0.84	15	0.79	-6.0	Declining
Glaciated Plains						
Winter	12	0.22	12	0.08	-63.6	Stable
Spring	12	0.04	11	0.08	+100.0	Stable
Summer	12	1.00	12	0.31	-69.0*	Stable
Fall	11	0.41	11	0.18	-56.1	Stable
Northern High Plains						
Winter	12	0.47	14	0.03	-93.6	Stable
Spring	14	0.10	12	0.06	-40.0	Stable
Summer	13	0.32	13	0.23	-28.1	Stable
Fall	12	0.18	12	0.00	-100.0	Stable
Osage Cuestas						
Winter	14	1.22	15	0.40	-67.2*	Stable
Spring	15	0.17	15	0.14	-17.6	Decreasing
Summer	15	0.76	15	0.55	-27.6	Stable
Fall	15	0.35	15	0.47	+34.3	Declining
Smoky Hills						
Winter	21	0.55	21	0.67	+21.8	Increasing
Spring	22	0.24	21	0.20	-16.7	Stable
Summer	20	1.18	21	0.64	-45.8	Stable
Fall	21	0.58	21	0.15	-74.1	Stable
South Central Prairies						
Winter	14	0.42	13	0.70	+66.7	Stable
Spring	13	0.26	13	0.13	-50.0	Stable
Summer	13	0.46	12	0.28	-39.1	Stable
Fall	12	0.72	13	0.17	-76.4*	Stable
Southern High Plains						
Winter	10	0.12	11	0.14	+16.7	Stable
Spring	11	0.07	9	0.07	+0.0	Stable
Summer	10	0.48	10	0.04	-91.7	Stable
Fall	10	0.22	10	0.04	-81.8	Stable

^a The number of counties from which data were collected.

^b Stable indicates that a statistically significant trend was not detectable ($P > 0.05$).

* Index is significantly different than previous year; $P < 0.05$.

Table 4. Regional and seasonal indices (birds/100 mi. traveled) to prairie chicken abundance in Kansas derived from the rural mail carrier survey, 2010-2011.

Region-Season	n ^a	2010	n	2011	Annual Change (%)	10-year trend ^b
Flint Hills (GPCH)						
Winter	15	1.52	15	1.19	-21.7	Stable
Spring	14	1.64	15	0.26	-84.1	Stable
Summer	15	0.07	14	0.05	-28.6	Stable
Fall	10	0.04	15	0.28	600.0	Stable
Glaciated Plains (GPCH)						
Winter	12	0.19	12	0.00	-100.0	Stable
Spring	12	0.01	11	0.01	0.0	Stable
Summer	12	0.01	12	0.05	400.0	Stable
Fall	11	0.04	11	0.01	-75.0	Stable
Northern High Plains (GPCH & LPCH)						
Winter	12	0.87	14	0.33	-62.1	Stable
Spring	14	0.14	12	0.23	64.3	Increasing
Summer	13	0.07	13	0.08	14.3	Stable
Fall	13	0.03	12	0.02	-33.3	Stable
Osage Cuestas (GPCH)						
Winter	14	0.03	15	0.00	-100.0	Stable
Spring	15	0.00	15	0.00	NA ^c	Decreasing
Summer	15	0.00	15	0.00	NA	Stable
Fall	15	0.02	15	0.00	-100.0	Stable
Smoky Hills (GPCH)						
Winter	21	0.57	21	1.34	135.1	Stable
Spring	22	0.76	21	0.61	-19.7	Increasing
Summer	20	0.12	21	0.06	-50.0	Stable
Fall	21	0.30	21	0.05	-83.3	Stable
South Central Prairies (GPCH & LPCH)						
Winter	14	0.00	13	0.00	NA	Stable
Spring	13	0.01	13	0.00	-100.0	Stable
Summer	13	0.00	12	0.00	NA	Stable
Fall	13	0.00	13	0.00	NA	Stable
Southern High Plains (LPCH)						
Winter	10	0.00	11	0.00	NA	Stable
Spring	13	0.01	13	0.00	-100.0	Stable
Summer	10	0.00	10	0.00	NA	Stable
Fall	10	0.00	10	0.00	NA	Stable

^a The number of counties from which data were collected.

^b Stable indicates that a statistically significant trend was not detectable ($P > 0.05$).

^c NA = not applicable.

GPCH = greater prairie-chicken, LPCH = lesser prairie-chicken

* Index is significantly different than previous year; $P < 0.05$.

Table 5. Regional and seasonal indices (birds/100 mi. traveled) to wild turkey abundance in Kansas derived from the rural mail carrier survey, 2010-2011.

Region-Season	n^a	2010	n	2011	Annual Change (%)	10-year trend^b
Northcentral						
Winter	15	13.24	15	11.07	-16.4	Increasing
Spring	15	7.93	15	8.33	+5.0	Increasing
Summer	14	4.36	15	1.94	-55.5	Stable
Fall	14	4.99	15	5.96	+19.4	Stable
Northeast						
Winter	16	15.39	16	12.31	-20.0	Increasing
Spring	16	4.48	15	4.78	+6.7	Decreasing
Summer	16	2.56	16	1.19	-53.5	Stable
Fall	15	3.63	15	7.55	+108.0	Stable
Northwest						
Winter	16	6.10	18	8.42	+38.0	Increasing
Spring	18	6.10	16	6.93	+13.6	Increasing
Summer	17	2.42	17	1.32	-45.5	Increasing
Fall	17	3.65	16	3.49	-4.4	Stable
Southcentral						
Winter	16	7.06	16	5.58	-21.0	Increasing
Spring	16	3.33	16	2.90	-12.9	Stable
Summer	16	1.51	15	0.93	-38.4	Stable
Fall	16	2.45	16	2.46	+0.4	Stable
Southeast						
Winter	13	5.48	14	3.96	-27.7	Increasing
Spring	14	1.96	14	2.91	+48.5	Decreasing
Summer	14	1.28	14	0.84	-34.4	Stable
Fall	14	1.81	14	3.58	+97.8*	Declining
Southwest						
Winter	22	1.10	22	1.73	+57.3	Increasing
Spring	22	1.68	20	2.04	+21.4	Increasing
Summer	21	0.41	20	0.43	+4.9	Stable
Fall	21	1.57	21	1.17	-25.5	Stable

^a The number of counties from which data were collected.

^b Stable indicates that a statistically significant trend was not detectable ($P > 0.05$).

* Index is significantly different than previous year; $P < 0.05$.

Table 6. Regional and seasonal indices (animals/100 mi. traveled) to eastern cottontail abundance in Kansas derived from the rural mail carrier survey, 2010-2011.

Region-Season	n ^a	2010	n	2011	Annual Change (%)	10-year trend ^b
Flint Hills						
Winter	15	1.28	15	0.48	-62.5*	Stable
Spring	14	0.64	15	0.69	+7.8	Stable
Summer	15	1.05	14	0.58	-44.8*	Stable
Fall	14	0.47	15	0.31	-34.0	Stable
Glaciated Plains						
Winter	12	0.61	12	0.16	-73.8*	Stable
Spring	12	0.48	11	0.49	+2.1	Stable
Summer	12	1.11	12	0.45	-59.5	Stable
Fall	11	0.61	11	0.26	-57.4	Stable
Northern High Plains						
Winter	12	0.57	14	0.35	-38.6	Stable
Spring	14	1.06	12	0.43	-59.4	Stable
Summer	13	1.20	13	0.47	-60.8*	Stable
Fall	13	0.43	12	0.15	-65.1	Stable
Osage Cuestas						
Winter	14	0.82	15	0.27	-67.1*	Stable
Spring	15	0.33	15	0.55	+66.7	Declining
Summer	15	0.60	15	0.59	-1.7	Stable
Fall	15	0.41	15	0.29	-29.3	Declining
Smoky Hills						
Winter	21	0.68	21	0.40	-41.2	Stable
Spring	22	0.75	21	0.47	-37.3	Stable
Summer	20	1.03	21	0.73	-29.1	Stable
Fall	21	0.52	21	0.25	-51.9*	Stable
South Central Prairies						
Winter	14	0.50	13	0.40	-20.0	Stable
Spring	13	0.47	13	0.54	+14.9	Stable
Summer	13	0.54	12	0.35	-35.2	Stable
Fall	13	0.40	13	0.24	-40.0	Stable
Southern High Plains						
Winter	10	0.22	11	0.28	+27.3	Stable
Spring	11	0.27	9	0.25	-7.4	Stable
Summer	10	0.52	10	0.27	-48.1	Stable
Fall	10	0.47	10	0.11	-76.6	Stable

^a The number of counties from which data were collected.

^b Stable indicates that a statistically significant trend was not detectable ($P > 0.05$).

* Index is significantly different than previous year; $P < 0.05$.

Table 7. Regional and seasonal indices (animals/100 mi. traveled) to black-tailed jackrabbit abundance in Kansas derived from the rural mail carrier survey, 2010-2011. Jackrabbits are not counted during the summer survey period.

Region-Season	n^a	2010	n	2011	Annual Change (%)	10-year trend^b
Flint Hills						
Winter	15	0.22	15	0.01	-95.5	Stable
Spring	14	0.01	15	0.02	+100.0	Stable
Fall	14	0.00	15	0.07	NA ^c	Stable
Glaciated Plains						
Winter	12	0.13	12	0.00	-100.0	Stable
Spring	12	0.06	11	0.03	-50.0	Stable
Fall	11	0.02	11	0.01	-50.0	Stable
Northern High Plains						
Winter	12	0.45	14	0.15	-66.7	Stable
Spring	14	0.22	12	0.10	-54.5	Stable
Fall	13	0.40	12	0.08	-80.0	Stable
Osage Cuestas						
Winter	14	0.03	15	0.00	-100.0	Stable
Spring	15	0.00	15	0.01	NA	Stable
Fall	15	0.02	15	0.02	0.0	Stable
Smoky Hills						
Winter	21	1.43	21	0.06	-95.8	Stable
Spring	22	0.09	21	0.07	-22.2	Stable
Fall	21	0.09	21	0.03	-66.7	Stable
South Central Prairies						
Winter	14	0.03	13	0.03	0.0	Stable
Spring	13	0.06	13	0.09	+50.0	Stable
Fall	13	0.03	13	0.01	-66.7	Stable
Southern High Plains						
Winter	10	0.17	11	0.07	-58.8	Stable
Spring	11	0.17	9	0.23	+35.3	Stable
Fall	10	0.41	10	0.07	-82.9	Stable

^a The number of counties from which data were collected.

^b Stable indicates that a statistically significant trend was not detectable ($P > 0.05$).

^c NA = not applicable.

* Index is significantly different than previous year; $P < 0.05$.

Table 8. Regional and seasonal indices (animals/100 mi. traveled) to tree squirrel (gray and fox squirrel) abundance in Kansas derived from the rural mail carrier survey, 2010-2011. Squirrels are only counted during the fall survey period.

Region-Season	n^a	2010	n	2011	Annual Change (%)	10-year trend^b
Flint Hills						
Fall	14	1.89	15	1.94	+2.6	Stable
Glaciated Plains						
Fall	11	3.15	11	3.53	+12.1	Stable
Northern High Plains						
Fall	13	0.36	12	0.13	-63.9	Stable
Osage Cuestas						
Fall	15	3.19	15	3.77	+18.2	Stable
Smoky Hills						
Fall	21	0.66	21	0.55	-16.7	Stable
South Central Prairies						
Fall	13	0.99	13	0.68	-31.3	Stable
Southern High Plains						
Fall	10	0.01	10	0.07	+600.0	Stable

^aThe number of counties from which data were collected.

^bStable indicates that a statistically significant trend was not detectable ($P > 0.05$).

* Index is significantly different than previous year; $P < 0.05$.

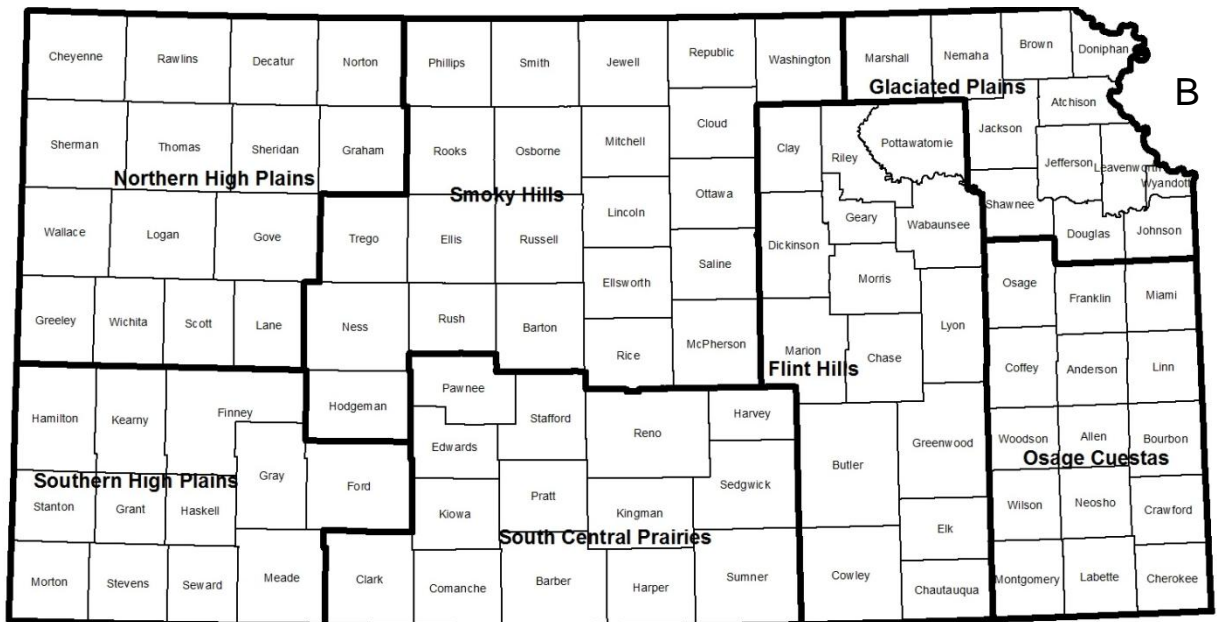
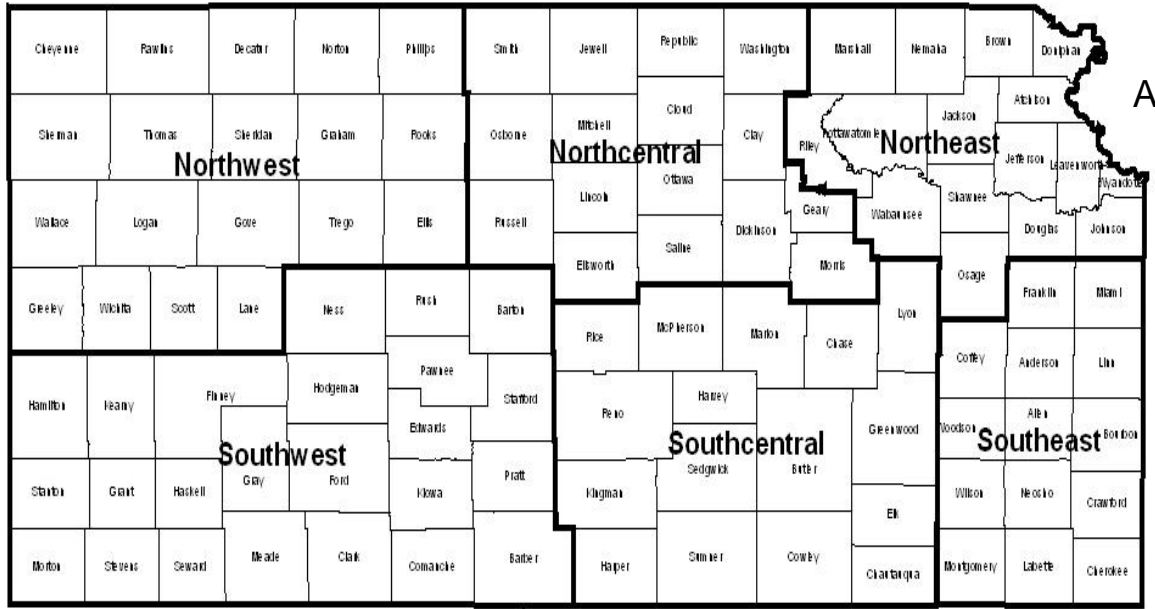


Figure 1. Kansas Department of Wildlife and Parks management regions for (A) wild turkeys and (B) all other small game.

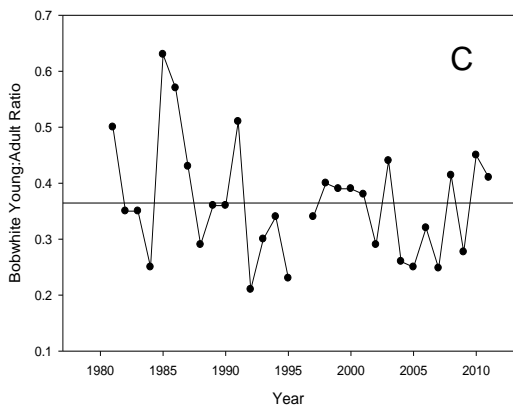
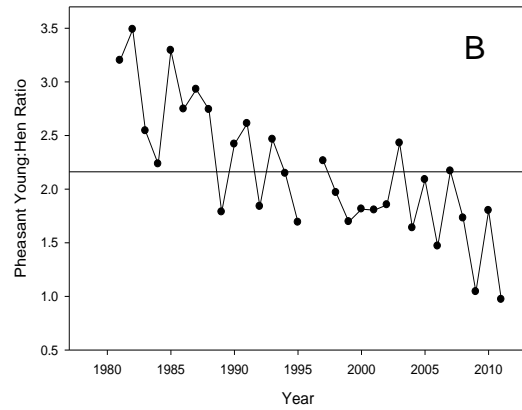
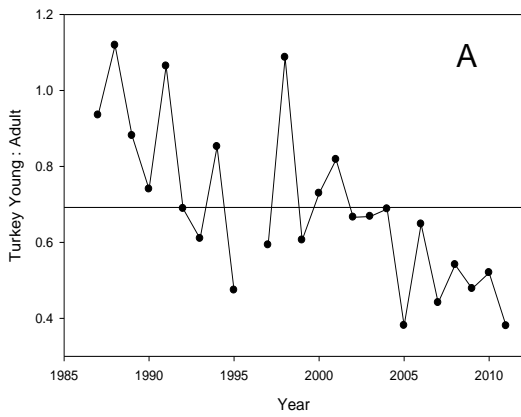


Figure 2. Statewide production indices for wild turkey (A), ring-necked pheasant (B), and northern bobwhite (C) for Kansas derived from July rural mail carrier survey data. The horizontal line is the long-term average production index.

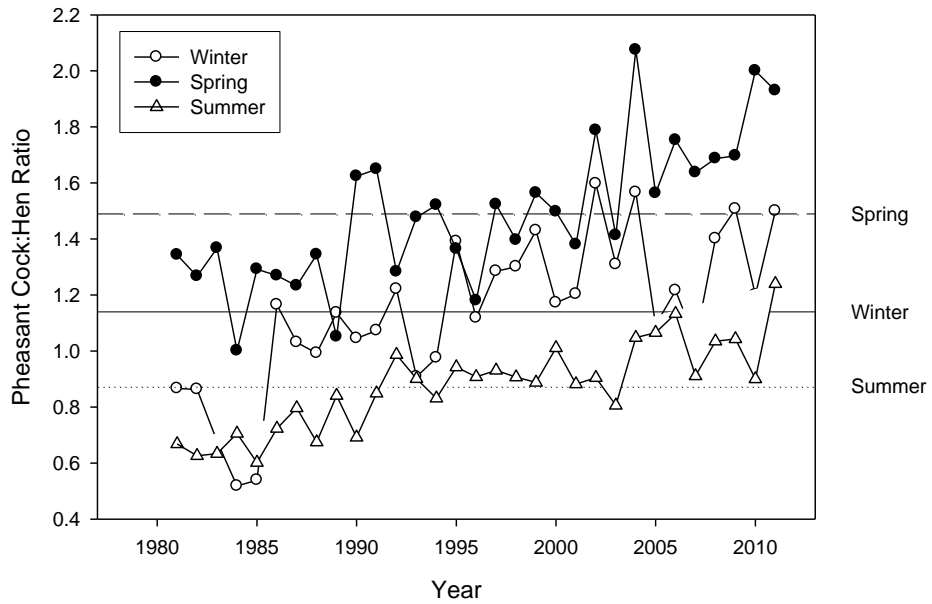


Figure 3. Statewide index to the sex ratio (Cocks:Hens) of Kansas' ring-necked pheasant population derived from rural mail carrier survey data. The horizontal lines represent the long-term average cock:hen ratios for the winter, spring, and summer survey periods.

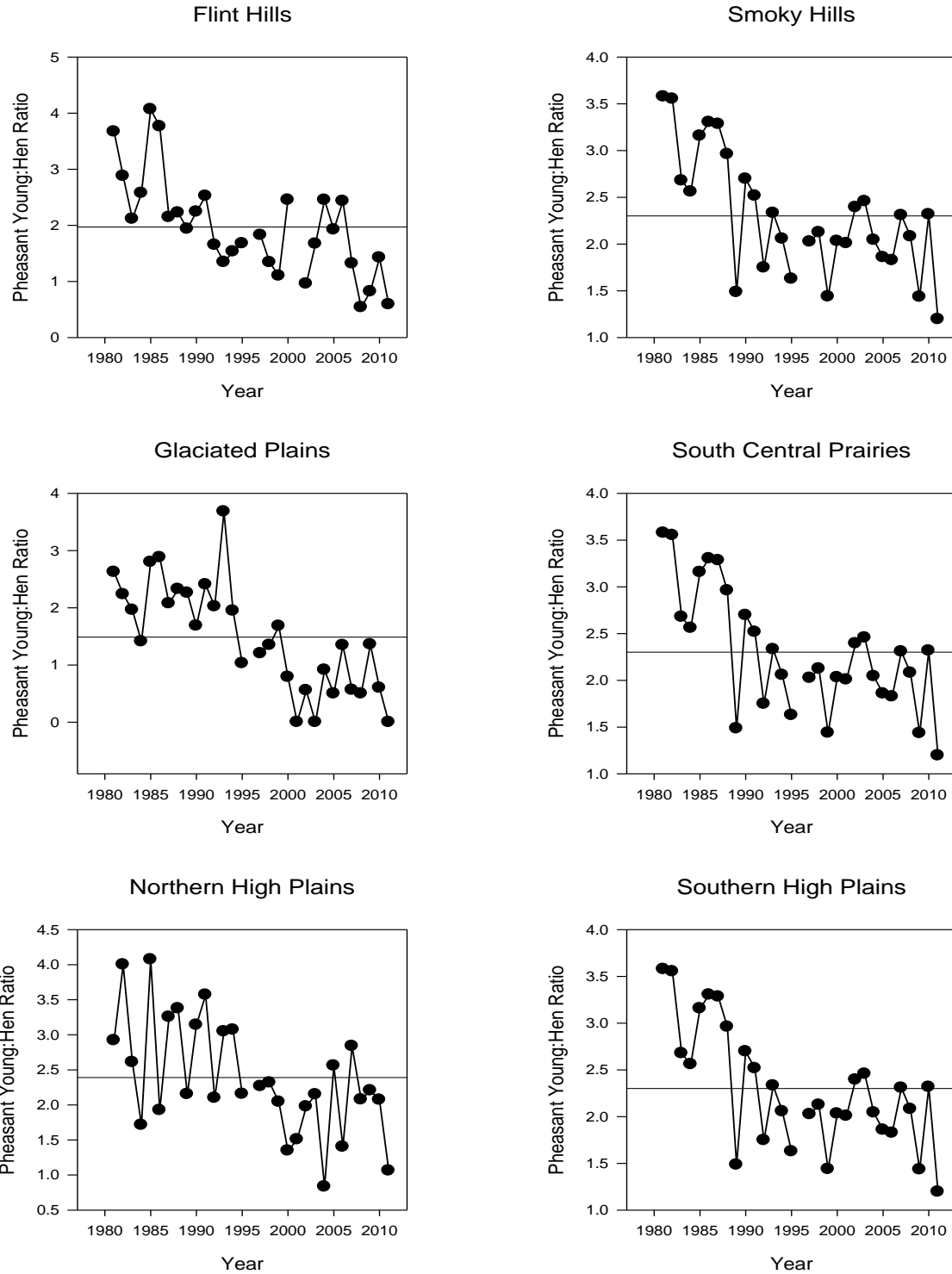


Figure 4. Regional ring-necked pheasant production indices (young:hen ratios) in Kansas derived from July rural mail carrier survey data. The horizontal lines are the long-term average production indices. Osage Cuestas region excluded because it is primarily non-range.

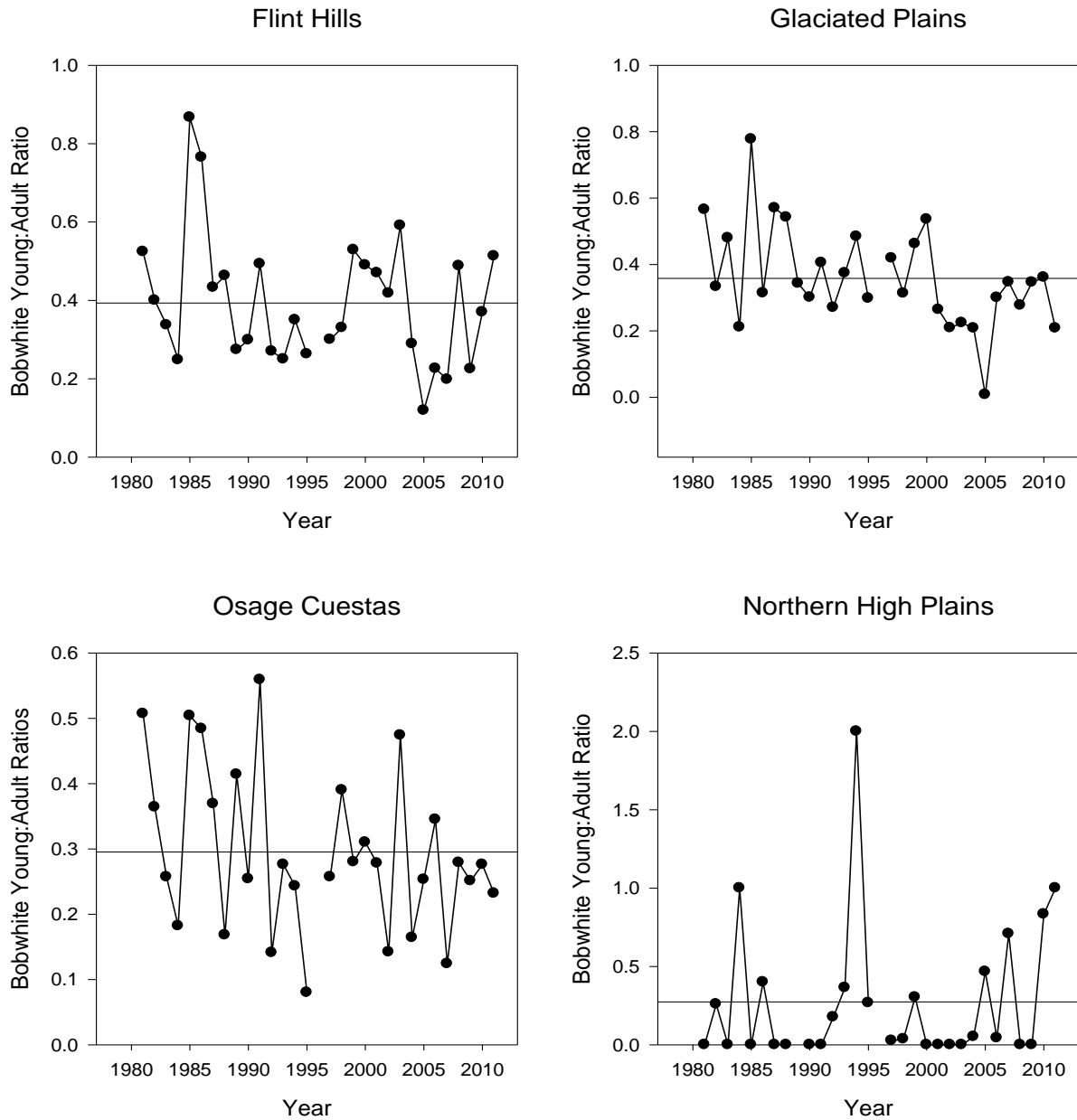


Figure 5. Regional northern bobwhite production indices (young:adult ratios) in Kansas derived from July rural mail carrier survey data. The horizontal lines are the long-term average production indices. Sample sizes are small in the Southern High Plains and the Northern High Plains due to limited suitable habitat for the species.

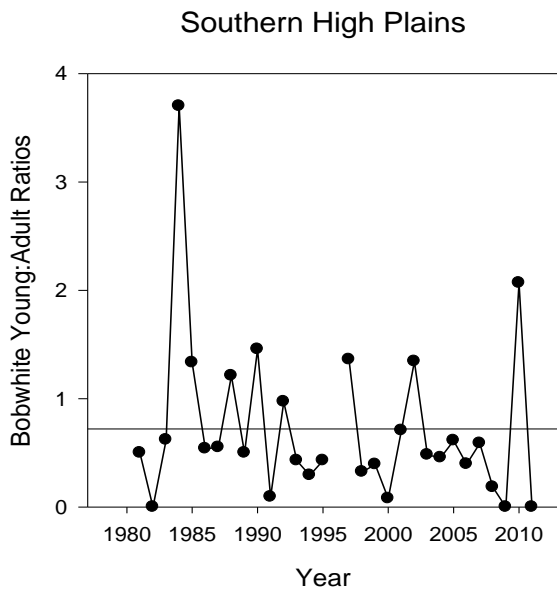
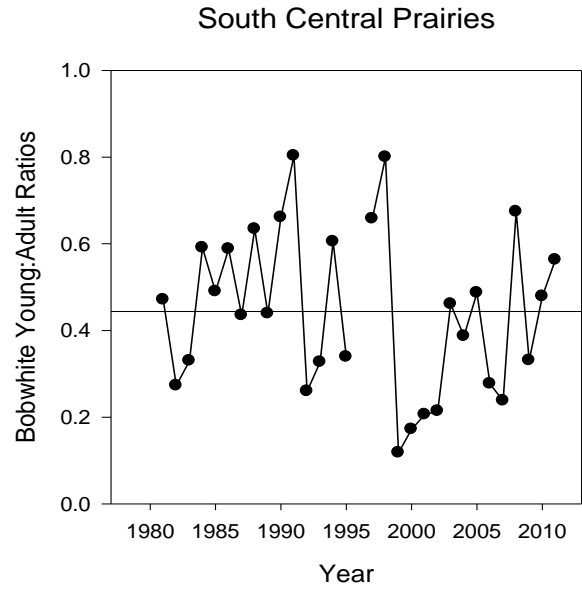
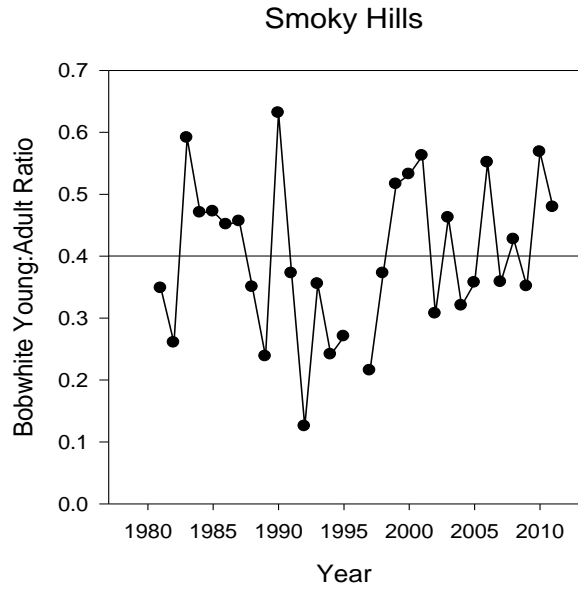


Figure 5. continued...

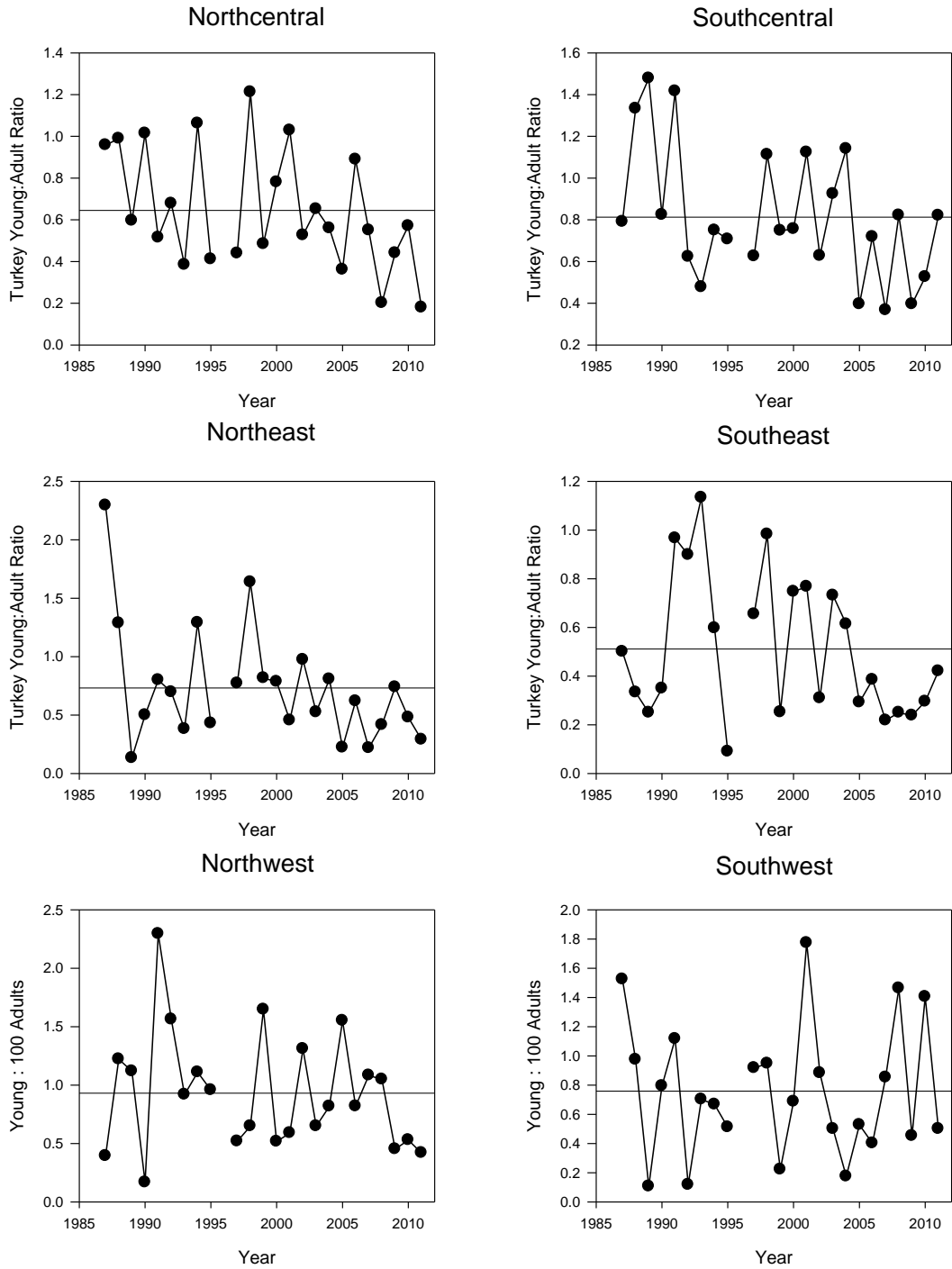


Figure 6. Regional wild turkey production indices (young:adult ratios) in Kansas derived from July rural mail carrier survey data. The horizontal line are the long-term average production indices.