

# **2016 IOWA AUGUST ROADSIDE SURVEY**

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## 2016 IOWA UPLAND WILDLIFE POPULATIONS

This report is a summary of the 2016 Iowa August roadside survey. The survey is conducted each year by Iowa DNR Enforcement and Wildlife Bureau personnel throughout the state of Iowa during the first half of August. Individuals involved in this survey should be credited for their efforts to collect these data during the early-morning hours. This survey is partially funded by the Pittman-Robertson Act, Federal Aid in Wildlife Restoration Program, Project Number W-115-R.

The August roadside survey generates data from approximately 215, 30-mile routes on ring-necked pheasants, bobwhite quail, gray partridge, cottontail rabbits, and white-tailed jackrabbits. Counts conducted on cool mornings when the sun is shining, with heavy dew, and no wind yield the most consistent results. Comparisons between 2015 and 2016 are based on routes that are directly comparable between years (routes with no alterations and routes started with good dew), however long-term trends are based on all routes completed. The two factors that determine the abundance and distribution of upland game populations in Iowa are **weather** and **habitat**.

### ROADSIDE SUMMARY

Statewide, Iowa saw average winter and spring weather conditions in 2016. In past years with “average” weather Iowa’s pheasant counts have remained essentially stable, small increases in some years and small decreases in other years. This year’s survey reports pheasant numbers are unchanged from last year (21 birds/route versus 24 birds/route), falling in line with other years with “average” weather. Pheasant hunters reported very good success last year and with similar bird numbers hunters should enjoy good success this coming fall. Bobwhite quail and Hungarian partridge trends were also unchanged compared to last year, with quail showing a slight upward trend and partridge a slight downward trend. This fall could be the best quail hunting Iowa hunters have seen in almost 30 years. Cottontail rabbits remain abundant across most of Iowa.

### 2015-16 IOWA WEATHER SUMMARY

Iowa pheasant numbers increase with mild winters (less than 19 inches snowfall) and warm, dry springs (less than 6 inches rainfall) and decline with snowy winters (30+ inches snowfall) and cold, wet springs (8+ inches rainfall) and remain generally stable with average weather conditions, winters with 20–30 inches of snow and springs with 6–8 inches of rainfall. Iowa experienced 5 catastrophic weather years from 2007 to 2011 with severe winters, 30+ inches of snow, and springs with over 8 inches of rainfall. In the 50+ years of standardized roadside counts, Iowa has never seen five consecutive years of this severity (Figure 3). Iowa upland game populations have slowly been recovering from this catastrophic pattern since 2013.

Table 1. Iowa 2015-16 weather summary.

Weather Variables	Survey Regions									STATE
	NW	NC	NE	WC	C	EC	SW	SC	SE	
<b>Winter Weather*</b>										
Total Snowfall (inch)	47	37	29	32	25	12	16	15	12	<b>25.0</b>
Departure**	20.3	8.0	0.0	5.3	-0.5	-12.2	-5.3	-6.4	-11.2	-0.2
<b>Spring Weather</b>										
Total Rainfall (inch)	10.0	6.3	5.8	9.9	6.4	6.3	11.9	6.9	6.2	<b>7.7</b>
Departure	4.0	-0.6	-1.3	2.9	-0.9	-0.9	4.4	-0.7	-1.3	0.6
Mean Temperature (F)	54	53	53	54	55	55	56	56	57	<b>54.8</b>
Departure	0.4	-0.4	0.0	-1.4	0.0	-0.7	-0.9	-1.2	-0.8	-0.6

\* Winter weather period (1Dec.-31Mar.) and spring period (1April-31May).

\*\* Departures calculated using thirty year NOAA average from 1961-1990.

Regions with above normal winter snowfall or spring rainfall.

The 2015–16 winter statewide snowfall was 25 inches, right at the long term average (Table 1). However, this was a story of two different winters, with NW Iowa close to historic totals 40–60 inches and SE Iowa with well below normal snowfall (Table 1 & Figure 2). The town of Sheldon, in NW Iowa, had near record level with 72 inches of snow this past winter. Hen survival was likely below normal in NW, NC, WC, regions and part of Central region, while hen survival should have been average to above average in the SE part of Iowa (Figure 2).

In mid-January Iowa experienced a wet heavy snow with rain which collapsed most native grass habitats across NW, WC, C, and parts of NC Iowa (Figure 1). This was followed by subzero temperatures which created a snow/ice layer inches thick across the northwestern half of Iowa. Iowa had one blizzard event in early February that brought up to a foot of snow to parts of western and northern Iowa. While not a particularly bad storm this in combination with the frozen snow layer may have reduced hen survival across this region.



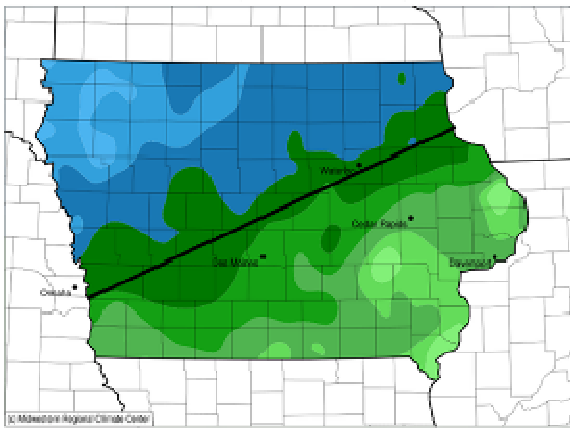
Figure 1. Native grass habitat in central Iowa before and after wet snow/ice event in mid–January 2016.

The spring of 2016 started on a good note with March temperatures warmer than normal. First report of pheasant broods in 2016 were 15 May about ten days earlier than normal. The warm March may have led to earlier nesting this year. Statewide April and May weather was close to “normal” trending a bit cooler and a bit wetter than the long term averages (Table 1). However, regionally the western regions and parts of the central regions saw above normal rainfall (Table 1 and Figure 2). Frequent rains in late May could of have impacted early nests. May rainfall in southwest Iowa (Atlantic) was the second highest in 130 years of state records for the location. In summary the weather of 2015–16 was a mixed bag. Conditions were much less favorable in western and central regions of Iowa and looked more normal across the eastern third of the state. Based on these data Iowa’s weather forecast model suggested a stable to perhaps small increase in bird populations this fall.

Figure 2. Iowa 2015–16 snowfall and rainfall summary. Normal winter snowfall is 25 inches, while normal nesting season rainfall is 7 inches (black lines). Values above normal tend to reduce upland bird populations.

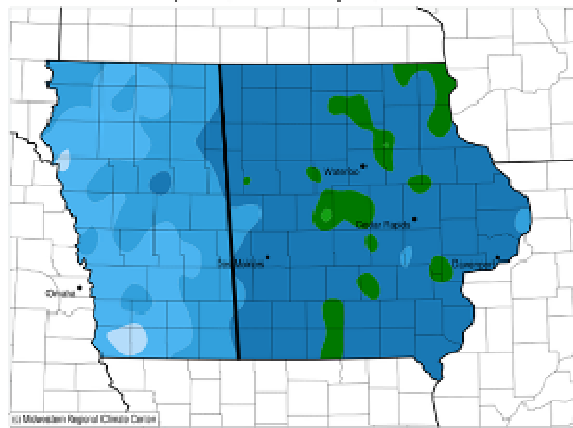
**Winter 2015-16**

Accumulated Snowfall (in)  
December 01, 2015 to March 31, 2016



**Nesting 2016**

Accumulated Precipitation (in)  
April 01, 2016 to May 31, 2016



0.01 1 2.5 5 7.5 10 15 20 30 40 50 60 80

0.01 0.1 0.5 1 1.5 2 3 4 5 7.5 10 12.5 15

**UPLAND HABITAT TRENDS IN IOWA**

Changes in habitat are more gradual and the influence of habitat changes on upland populations are only evident after looking at several years of surveys. Information from the USDA shows that between 1990 and 2015 Iowa has lost 2,984 mi<sup>2</sup> of potential pheasant habitat (Table 2). This habitat was a mix of small grains, hay land, and Conservation Reserve Program (CRP) acres. To put this loss in perspective, 2,984 mi<sup>2</sup> is a strip of habitat **10 miles wide\*\*** that would stretch from Omaha to Davenport. CRP has become critical for Iowa pheasant populations with the lost of small grains and hay lands to corn and soybean production.

Table 2. Trends in Iowa habitat and total habitat loss from 1990 to 2015, data from USDA.

Year	Hay Acres	Small Grains Acres	CRP Acres	Total All Habitat Acres
1990	2,000,000	675,000	1,951,061	4,626,061
1995	1,700,000	260,000	2,199,360	4,159,360
2000	1,700,000	198,000	1,598,662	3,496,662
2005	1,600,000	140,000	1,917,574	3,657,574
2010	1,200,000	80,000	1,637,130	2,917,130
2015	1,160,000	72,000	1,484,593	2,716,593
Acres of Habitat Lost 1990 vs 2015				-1,909,468
Square Miles of Habitat Lost 1990 vs 2015**				-2,984

The 2014 Farm Bill reduced the

CRP program from a 32 million acre program to a 24 million acre program. Nationally USDA reports 23.9 million acres enrolled in CRP, as of June 2016, leaving only 100,000 available acres under the 24 million acre national cap. The USDA’s June report on CRP shows Iowa has 1,689,015 acres enrolled, with 214,997 acres expiring in September 2017. Opportunities to enroll additional land into CRP in Iowa seem very limited at the moment. Congress will begin discussion of the 2018 Farmbill early next year and hopefully the cap on CRP acreage can be raised. The CRP is a federal USDA program, thus folks wishing to see more CRP available in Iowa should visit with their elected congressional representatives. Iowa has two special continuous CRP practices which are very beneficial to pheasants, Iowa Pheasant Recovery and Gaining Ground, SAFE (CP38) practices, that are fully enrolled with over 178,000 acres. Iowa has requests for additional CRP acres in both practices but because of the CRP cap no acres are available. Interested landowners can visit [www.iowadnr.gov/habitat](http://www.iowadnr.gov/habitat) to find more information about CP38. The Iowa DNR was awarded a \$3 million grant from USDA to expand the states walk in hunting program, Iowa Habitat and Access Program (IHAP). IHAP sites are typically CRP on private lands where the DNR has provided incentives to manage habitat for landowners in exchange for public hunting access. Iowa DNR has enrolled over 25,000 acres in this program, for a list of IHAP sites or information on enrolling visit <http://www.iowadnr.gov/ihap>

**SURVEY CONDITIONS**

The August Roadside Survey yields the most consistent results when surveys are completed on mornings with heavy dew, no wind, and sunny skies. Research at Iowa State University in the 1950s showed the number of pheasants counted on mornings with medium dew averaged 43% less than when the route was run on a morning with heavy dew. Heavy dew conditions require good soil moisture in late July and early August. With abundant rainfall in July and August this year, mornings with heavy dew were common during the survey period. Staff reports about 90% of routes were started with heavy dew. However, staff reported more fog and overcast conditions during this year’s survey, especially in the eastern regions. Only 55% and 59% of routes respectively in the SE and EC regions reported clear skies at the start of routes compared to 70–77% in 2015. This may have reduced bird observations along routes in these regions.

**RING-NECKED PHEASANT**

Statewide: This year the statewide index is 20.7 birds/route, and is statistically unchanged from the 2015 estimate of 23.9 birds/route (Table 3). This year’s pheasant population index, although down slightly from 2015, is 37% above the 10 year average (Table 4, Figure 3). The NC and NE regions reported slight upward trends,

while all other regions reported stable to slightly downward trends. No region reported a statistically significant trend, indicating some routes increased, while others decreased in every region.

Iowa research indicates overwinter hen survival, brood survival, and nest success are the major factors influencing annual changes in pheasant numbers. Statewide, the total hens (-12%) and roosters (-1%) counted on routes this year were similar to last year with hens down more than roosters suggesting somewhat lower overwinter survival rates compared to 2015 (Table 3). Statewide data on chicks/brood (measure of chick survival) and age ratios (chicks per adult hen – measure of overall hen success) were unchanged from last year (Table 3), suggesting, from a statewide perspective, nest success and chick survival were similar to 2015. Overall, the slight decline in bird numbers this year seems mostly related to lower hen numbers (lower hen survival during winter or nesting or both) rather than reproductive effort.

Over the past 53 years of standardized roadside counts, there have been 8 years with similar weather patterns (average winter snowfall followed by average spring rainfall). In those 8 similar years, roadside counts were down slightly in 5 years of those years and up slightly in 3 years. So this year's count falls right in line with other years with similar weather; when Iowa has average winter and spring weather conditions counts basically remain stable. Based on this year's statewide index of 21 birds/route Iowa pheasant hunters should harvest approximately 300,000– 400,000 roosters this fall (Figure 3). In 2015 Iowa had 2.72 million acres of potential pheasant habitat, (Table 2). This is the lowest recorded level of habitat in Iowa since reliable record keeping began in 1900. It will be very hard to recover Iowa pheasant numbers any further if significant CRP or other habitat losses continue (Table 2).

Northern Regions: Counts in the NW were the highest in the state at 33 birds/route, counts in the NC were unchanged, while counts in the NE increased to 11.2 birds/rte (Table 3, Figure 5). Counts in the NW are 10% above the 10 year average, while counts in the NE region are 73% above the 10 year average and the highest the region has seen since 2007 (Table 4). Only the NC region reported any significant trends; an increase in hens, indicative of good hen survival thru nesting, but a poorer nesting season with reduced chicks/brood and age ratio numbers (Table 3). The trends were generally similar in the NE region, but none were significant. Fewer hens and chicks in NW region suggest lower winter survival and nest success in that region compared to 2015. Parts of NW and NC Iowa should offer excellent pheasant hunting, particularly around public and private lands with good winter habitat. Better counts in NW came from Clay, Dickinson, Emmet, Lyon, Osceola, Palo Alto and Pocahontas counties, while Cerro Gordo, Hancock, Kossuth and Winnebago reported better numbers in the NC region (Figure 6).

Central Regions: The Central region had the second highest counts of any region in the state in 2016 with 31 birds/rte (Figure 5). Total pheasant numbers in each region were similar to 2015 (Table 3) and counts in all three regions remain 40–50% above the 10 year average (Table 4). Reproductive parameters were similar or higher than 2015, especially in C region (Table 3), thus fewer overall hens drove the trends in these regions this year. More overcast conditions, especially in the EC region may have impacted counts there. The WC region reported better counts in Calhoun, Ida, and Sac. The Central region reported good bird numbers in Boone, Hamilton, Poweshiek, Story and Webster, while the EC region had fair counts in Cedar, Iowa & Johnson counties (Figure 6).

Southern Regions: Similar to the central region bird numbers were essentially unchanged from 2015 (Table 3). Counts in the SC region remain 50% above the 10 year average, while counts in the SE remain close to the long term average for that region (Table 4). Staff reported fewer hens compared to 2015, but similar brood sizes and age ratio data, suggesting lower hen survival thru nesting compared to 2015. More overcast conditions, especially in the SE region may have impacted counts there. Some of the better counts in SW came from Adair and Mills counties, while SC reported fair numbers in Lucas and Wayne. The SE region reported good bird numbers in Henry, Jefferson, Keokuk, Louisa, and Washington counties (Figure 6).

## **BOBWHITE QUAIL**

The last time Iowa's statewide bobwhite quail index was above this year's value of 1.61 birds/route was 1989 or 27 years ago (Table 4, Figure 4). Given modern agricultural practices and land use it is doubtful Iowa's

quail index could get much higher. This is likely the best opportunity we've had to hunt quail in 27 years. Anyone who has ever had an interest in quail hunting or hasn't hunted quail recently – this would be the year to go!!

The index was slightly higher than last year's index of 1.32 birds/route (Table 3, Figure 5), but the trend was not statistically significant. Most regions reported more quail along routes this year with the exception of the SE region (Table 3). Landowners and staff reported numerous calling males this spring, indicative of very good winter survival. This year's index is above both the 10 year (126%) and long term (18%) averages (Table 4, Figure 4). Iowa has 10,000+ acres of CP33 remaining, a CRP practice that provides needed quail habitat around crop fields in southern Iowa, for more information on this practice visit [www.iowadnr.gov/habitat](http://www.iowadnr.gov/habitat) and click on the Conservation Reserve Program link under Wildlife Landowner Assistance on the left side of the page. The better quail counts in 2016 came from Adams, Appanoose, Davis, Fremont, Jefferson, Lee, Lucas, Mills, Montgomery, Page, Ringgold, Taylor, Warren, and Wayne counties (Figure 6).

### **GRAY PARTRIDGE**

The 2016 gray partridge count was 2.7 birds per 30 miles, was very similar to last year's 3.3 birds/route and the slight decrease was not statistically significant, meaning some routes increased while others decreased (Table 3, Figure 4). Counts trended up in the NW, NE, WC, and EC regions, but trended down in the NC and C regions (Figure 5). This year's statewide estimate is 64% above the 10-year mean and -30% below the long-mean (Table 4). Gray partridge prefer the wide open agricultural lands of the northern two-thirds of the state. The NW, NC, and NE regions reported the best densities in 2016 (Figure 5). Typically partridge recruitment is highest in Iowa when spring/summer precipitation is below normal. Better counts in 2016 came from Butler, Cherokee, Cerro Gordo, Chickasaw, Delaware, Emmet, Franklin, Grundy, Hancock, Hardin, Humboldt, O'Brien, Palo Alto, Sioux, and Wright counties.

### **COTTONTAIL RABBIT**

Staff reported an average of 5.0 rabbits per route in 2016, a statistically significant decline (-27%) from 2015 (Table 3, Figure 4). Although down from last year, the cottontail index remains at the 10-year mean and – 17% below the long-term average (Table 4). Cottontail populations remain abundant in Iowa. Regionally, rabbits numbers declined in every region, except the NE where counts were similar to 2015 (Figure 5). Cottontails tend to reproduce well in years with good moisture during spring and summer, but persistent moisture can reduce survival and increase disease. Cottontail hunters can expect very good hunting across much of state with the exception of the NC and NW regions which reported lower densities. The best cottontail numbers can be found in the SC region (Figure 5 and 6).

Table 3. Mean numbers of wildlife observed per 30-mile route on the August roadside survey in 2015 and 2016. Only routes run under heavy to moderate dew conditions are used for statistical comparisons.

REGION	n	RINGNECKED PHEASANTS								BOBWHITE QUAIL		GRAY PARTRIDGE		RABBITS	
		TOTAL PHEASANT	COCKS	HENS W/O BROODS	HENS W/ BROODS	HENS	CHICKS	BROODS	AGE RATIO	TOTAL BIRDS	COVEYS	TOTAL BIRDS	COVEYS	EASTERN COTTONTAIL	WHITETAILED JACKRABBIT
<b>Northwest</b>	25														
2016		33.28	2.84	1.72	4.44	7.76	24.28	4.57	3.47			4.48	0.40	2.92	0.00
2015		42.75	3.00	1.88	5.25	8.71	32.63	4.69	3.57			3.96	0.38	3.67	0.08
% CHG		-22%	-5%	-9%	-15%	-11%	-26%	-3%	-3%			13%	5%	-20%	-100%
<b>Northcentral</b>	26														
2016		24.73	2.73	1.35	3.08	5.88	17.58	3.89	2.92			7.04	0.73	2.31	
2015		24.12	2.20	0.80	2.76	4.68	18.36	4.62	3.99			12.12	1.44	3.80	
% CHG		3%	24%	<b>69%</b>	12%	<b>26%</b>	-4%	<b>-16%</b>	<b>-27%</b>			<b>-42%</b>	<b>-49%</b>	<b>-39%</b>	
<b>Northeast</b>	19														
2016		11.16	1.11	0.21	0.89	2.16	8.95	4.04	3.46			5.26	0.68	4.95	
2015		7.35	0.82	0.24	0.94	1.47	5.35	4.75	3.75			3.76	0.41	4.18	
% CHG		52%	35%	-13%	-5%	47%	67%	-15%	-8%			40%	66%	18%	
<b>West Central</b>	20														
2016		22.15	1.85	0.90	2.50	4.60	16.90	4.59	3.91	0.90	0.05	1.75	0.20	4.35	
2015		25.68	2.16	1.11	3.00	5.21	19.42	5.02	3.85	0.84	0.11	1.32	0.11	5.21	
% CHG		-14%	-14%	-19%	-17%	-12%	-13%	-9%	2%	7%	-55%	33%	82%	-17%	
<b>Central</b>	31														
2016		30.87	2.35	0.90	3.81	5.52	23.81	5.34	4.54	0.06	0.03	2.39	0.19	4.94	0.00
2015		36.30	2.90	1.30	4.50	7.87	27.60	3.91	3.19			4.17	0.40	6.87	0.07
% CHG		-15%	-19%	<b>-31%</b>	-15%	-30%	-14%	<b>37%</b>	<b>42%</b>			-43%	-53%	-28%	-100%
<b>Eastcentral</b>	22														
2016		15.36	2.05	0.50	1.91	3.05	10.91	4.38	3.76	0.41	0.05	1.55	0.27	5.45	
2015		16.68	1.89	0.84	1.74	3.42	12.21	3.81	3.19	0.32		1.05	0.11	7.11	
% CHG		-8%	8%	-40%	10%	-11%	-11%	15%	18%	28%		48%	145%	-23%	
<b>Southwest</b>	17														
2016		7.94	1.06	0.41	1.00	1.53	5.47	4.78	3.40	6.18	0.29			3.88	
2015		10.13	1.19	0.56	1.50	2.25	6.88	4.43	3.35	4.31	0.25			5.81	
% CHG		-22%	-11%	-27%	-33%	-32%	-20%	8%	1%	43%	16%			<b>-33%</b>	
<b>Southcentral</b>	22														
2016		8.09	1.64	0.50	0.86	1.73	5.09	4.24	3.08	5.82	0.32			11.59	0.05
2015		9.10	0.95	0.19	0.86	1.95	7.10	3.84	3.52	4.10	0.29			14.24	
% CHG		-11%	73%	163%	0%	-11%	-28%	10%	-13%	42%	10%			-19%	
<b>Southeast</b>	20														
2016		22.05	2.70	0.60	3.05	4.85	15.70	3.9	3.14	2.85	0.15			4.90	
2015		28.20	3.25	0.95	3.40	5.95	20.60	4.64	3.74	3.80	0.15			11.00	
% CHG		-22%	-17%	-37%	-10%	-18%	-24%	-16%	-16%	-25%	0%			<b>-55%</b>	
<b>Statewide</b>	202														
2016		20.69	2.11	0.84	2.55	4.35	15.19	4.45	3.56	1.61	0.09	2.66	0.29	4.98	0.00
2015		23.90	2.14	0.93	2.86	4.96	17.97	4.41	3.58	1.32	0.08	3.31	0.36	6.84	0.02
% CHG		-13%	-1%	-10%	-11%	-12%	-15%	1%	-1%	22%	13%	-20%	-19%	<b>-27%</b>	-100%

**BOLD** numbers indicate a mathematically significant change from the previous year ( $P < 0.10$ , Wilcoxon Signed Rank Test).

Table 4. Historical upland wildlife numbers from the August Roadside Survey. Numbers represent the average number of animals counted on 30-mile routes<sup>a</sup>.

YEAR	PHEASANTS										BOBWHITE	GRAY	EASTERN	WHITETAILED
	NW	NC	NE	WC	C	EC	SW	SC	SE	STATE	QUAIL	PARTRIDGE	COTTONTAIL	JACKRABBIT
											STATEWIDE	STATEWIDE	STATEWIDE	STATEWIDE
1962	84.7	95.5	85.3	85.0	74.6	32.3	44.4		12.8	65.9	0.62	1.13	5.2	0.45
1963		200.4	40.8		60.3		200.4		19.8	52.6	1.12	0.92	7.9	0.41
1964	99.9	138.0		1016	54.4	53.9	92.6	26.3	18.3	79.4	1.39	0.85	7.9	0.53
1965	46.0	67.5	47.8	64.7	36.2	43.9	97.6	44.6	22.8	49.9	2.21	0.48	8.1	0.35
1966	43.5	75.3	57.5	58.4	49.3	63.9	144.1	40.7	17.1	56.6	2.29	1.30	10.3	0.35
1967	31.0	56.8	57.2	42.4	53.2	58.6	108.3	38.8	21.1	49.1	2.10	0.66	7.5	0.60
1968	38.0	56.0	56.6	53.5	52.2	64.3	127.4	38.7	19.7	52.7	2.06	0.68	7.4	0.28
1969	18.8	44.7	62.5	42.2	57.6	57.2	77.9	44.2	25.2	45.5	2.60	0.38	6.3	0.31
1970	39.2	53.0	59.6	56.1	87.8	917	129.1	63.8	40.5	66.2	2.95	1.66	4.4	0.15
1971	34.6	45.2	49.0	66.2	82.6	104.3	1016	49.7	48.4	62.0	2.64	1.44	5.4	0.35
1972	37.9	44.6	61.0	614	73.2	88.6	112.3	54.3	25.8	59.6	2.26	1.92	5.5	0.30
1973	47.0	56.9	65.4	66.3	88.7	103.5	72.4	54.3	30.2	65.8	2.54	1.87	5.8	0.20
1974	46.6	53.2	52.5	60.5	40.0	55.9	90.1	49.6	16.8	49.7	2.11	1.82	4.1	0.07
1975	10.5	28.7	52.3	34.3	43.2	64.3	51.0	45.4	27.4	38.8	1.98	1.98	3.2	0.11
1976	14.8	42.2	68.1	44.8	54.9	75.4	61.7	49.2	28.7	48.2	2.19	2.14	6.4	0.11
1977	26.9	44.2	86.7	56.9	50.8	78.5	75.1	44.3	24.4	51.7	2.69	4.70	4.3	0.08
1978	36.3	26.1	68.8	67.8	50.5	63.2	76.7	45.5	30.5	49.7	1.87	3.73	6.2	0.14
1979	40.1	29.6	44.8	49.4	39.2	39.6	80.9	51.5	21.8	42.4	0.66	5.59	3.6	0.16
1980	51.2	61.7	81.2	98.7	72.2	63.5	82.1	68.9	37.2	67.0	2.05	8.81	4.2	0.15
1981	66.4	53.5	83.6	92.9	57.8	72.9	97.1	57.8	35.2	65.9	2.60	8.08	7.8	0.31
1982	26.7	27.9	38.9	55.5	23.1	20.9	41.6	47.7	19.3	32.3	0.79	4.21	6.4	0.10
1983	9.6	12.8	21.7	21.6	13.3	25.3	42.6	51.1	27.5	23.7	1.44	2.65	6.8	0.05
1984	8.8	11.1	19.2	22.1	14.4	24.5	23.8	38.5	26.4	20.6	0.66	4.22	5.6	0.08
1985	21.6	28.0	36.4	40.0	32.7	26.0	59.2	72.6	42.0	38.9	1.37	9.75	7.4	0.07
1986	27.5	20.4	48.2	31.2	24.8	29.0	49.7	65.2	27.2	34.8	1.42	9.62	7.7	0.12
1987	40.2	36.8	59.7	614	411	33.2	58.5	64.2	39.0	46.8	2.70	14.93	8.6	0.12
1988	33.6	35.0	45.1	60.8	29.6	26.0	45.7	49.8	29.8	38.1	1.96	19.00	4.5	0.17
1989	25.3	36.5	52.1	69.9	57.1	35.3	38.6	40.0	39.0	43.2	1.91	17.27	5.4	0.22
1990	34.3	49.4	63.9	57.9	44.3	24.7	44.5	31.7	27.3	41.2	1.48	8.75	9.2	0.19
1991	37.3	45.3	48.8	77.6	41.6	33.3	61.2	49.4	41.6	46.8	1.34	4.59	5.5	0.07
1992	24.4	50.5	30.5	44.0	42.1	37.8	29.4	23.6	34.2	35.8	1.07	3.58	6.0	0.14
1993	15.8	214	15.2	55.2	23.8	25.0	34.3	24.0	28.1	25.9	0.96	0.85	5.5	0.03
1994	45.0	74.1	33.3	83.3	55.6	67.8	47.3	46.0	56.7	56.9	1.58	6.17	6.3	0.15
1995	26.0	63.2	37.6	44.7	54.3	54.3	43.7	27.8	43.2	44.6	1.37	2.47	7.0	0.06
1996	54.7	61.8	29.5	45.2	49.8	59.4	29.8	19.5	28.2	43.4	0.51	2.37	6.2	0.09
1997	46.1	62.0	41.2	37.3	54.7	47.4	31.7	28.8	41.3	44.8	0.77	5.10	4.9	0.10
1998	74.2	56.7	43.1	33.9	49.6	53.9	18.1	15.7	41.7	44.6	0.72	6.42	5.1	0.09
1999	42.7	33.6	21.6	19.5	37.9	36.0	17.5	12.9	27.0	29.1	0.57	2.83	5.9	0.06
2000	60.6	33.3	14.9	29.0	50.3	37.0	25.5	19.3	22.0	34.3	0.57	2.53	6.4	0.03
2001	22.4	16.0	6.2	8.4	22.0	19.0	12.0	7.3	4.6	13.9	0.29	1.90	3.8	0.05
2002	47.0	42.9	13.6	32.0	49.9	32.0	15.7	11.7	22.6	31.7	0.39	2.82	5.3	0.03
2003	81.2	67.3	20.7	36.1	61.2	35.6	29.3	21.8	28.2	44.9	0.89	2.76	8.8	0.03
2004	54.4	34.4	19.0	21.5	35.6	24.4	24.9	19.6	24.4	29.7	0.93	2.12	8.1	0.03
2005	63.5	42.3	25.3	32.0	49.9	25.9	28.9	12.6	23.5	35.1	0.69	2.79	6.2	0.02
2006	48.3	36.1	18.4	23.7	36.8	20.4	20.3	9.0	20.0	27.0	0.82	2.01	6.4	0.05
2007	41.3	35.0	20.1	26.0	36.2	25.0	12.8	5.6	19.8	25.8	0.81	1.62	4.3	0.02
2008	49.4	25.4	9.1	21.2	18.6	7.4	5.7	4.4	5.3	17.5	0.45	1.03	6.3	0.00
2009	35.5	16.6	2.6	23.5	19.1	9.3	10.0	4.8	10.1	15.4	0.72	1.17	5.0	0.01
2010	29.6	16.2	4.7	8.8	11.7	5.3	6.1	1.8	6.6	10.8	0.33	0.93	3.1	0.00
2011	11.1	7.3	2.4	5.5	10.2	5.9	6.3	2.9	4.7	6.6	0.22	1.15	2.2	0.02
2012	16.3	10.9	1.3	3.5	12.3	6.3	4.4	4.0	5.4	7.8	0.36	1.47	2.0	0.01
2013	14.3	9.0	2.7	5.2	7.1	4.2	2.5	4.4	6.3	6.5	0.36	0.81	5.1	0.01
2014	29.3	18.1	2.6	20.8	19.9	13.0	6.5	9.8	19.8	16.3	0.86	2.13	7.8	0.03
2015	42.4	22.5	8.1	23.6	36.4	16.7	11.3	8.2	27.8	23.2	1.42	3.26	7.2	0.02
2016	33.3	24.7	11.2	22.2	30.9	15.4	7.9	8.1	22.1	20.7	1.61	2.66	5.0	0.00

**Statistics:**

10 Year Avg.	30.2	18.6	6.5	16.0	20.2	10.8	7.3	5.4	12.8	15.1	0.7	1.6	4.8	0.0
Long-term Avg.	38.6	44.7	38.0	44.6	43.2	41.4	52.2	32.7	25.8	39.6	1.37	3.78	6.0	0.14

**Percent Change from:**

10 Year Avg.	10%	33%	73%	38%	52%	42%	8%	50%	73%	37%	126%	64%	4%	-90%
Long-term Avg.	-14%	-45%	-71%	-50%	-29%	-63%	-85%	-75%	-14%	-48%	18%	-30%	-17%	-99%

<sup>a</sup> Values do not match those in Table 1 because historical data is based on ALL routes completed, whereas values in Table 1 are calculated only between directly comparable routes.



# Statewide Pheasant Trends

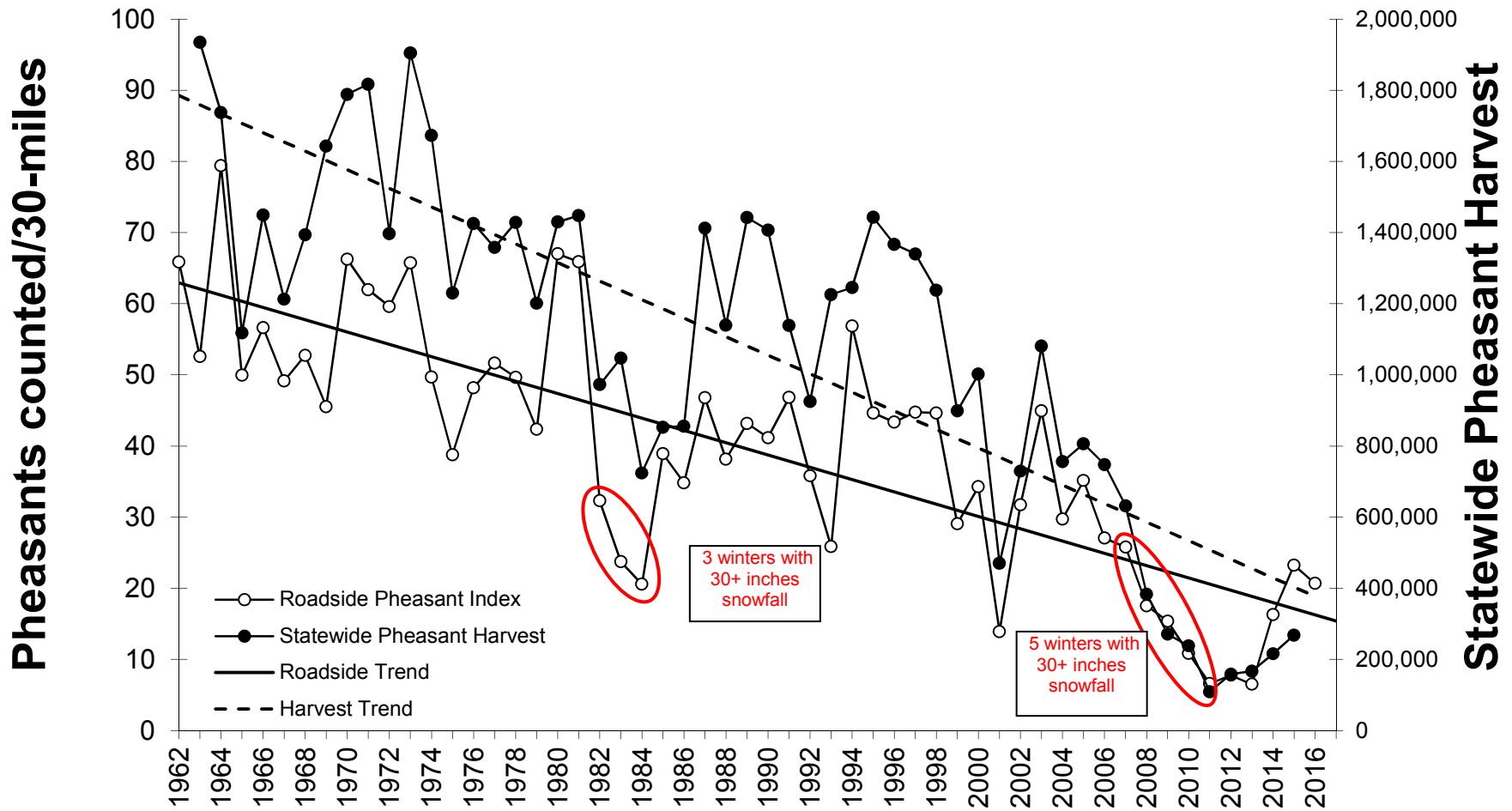


Figure 3. Mean number of pheasants counted on 30-mile August roadside survey routes, statewide, 1962-present compared to total statewide pheasant harvest.

# Statewide Upland Game Trends

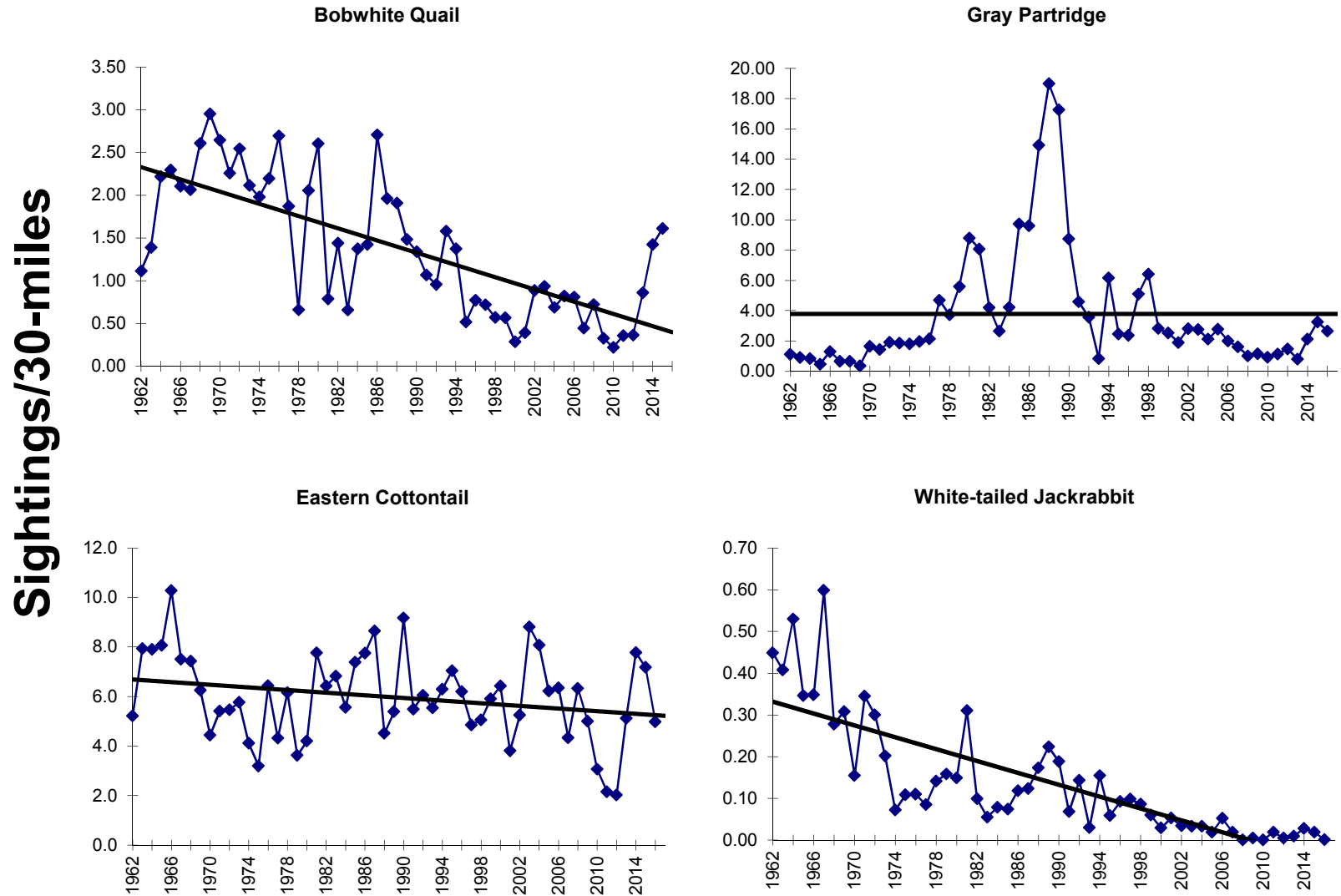


Figure 4. Mean number of quail, partridge, cottontails, and jackrabbits sighted per 30 mile route on the August roadside survey, statewide, 1962 to the present.

# 2016 August Roadside Survey

## Statewide

	2015	2016	Change
Pheasant	23.9	20.7	-13%
Quail	1.32	1.61	22%
Partridge	3.3	2.7	-20%
Cottontail	6.8	5.0	-27%

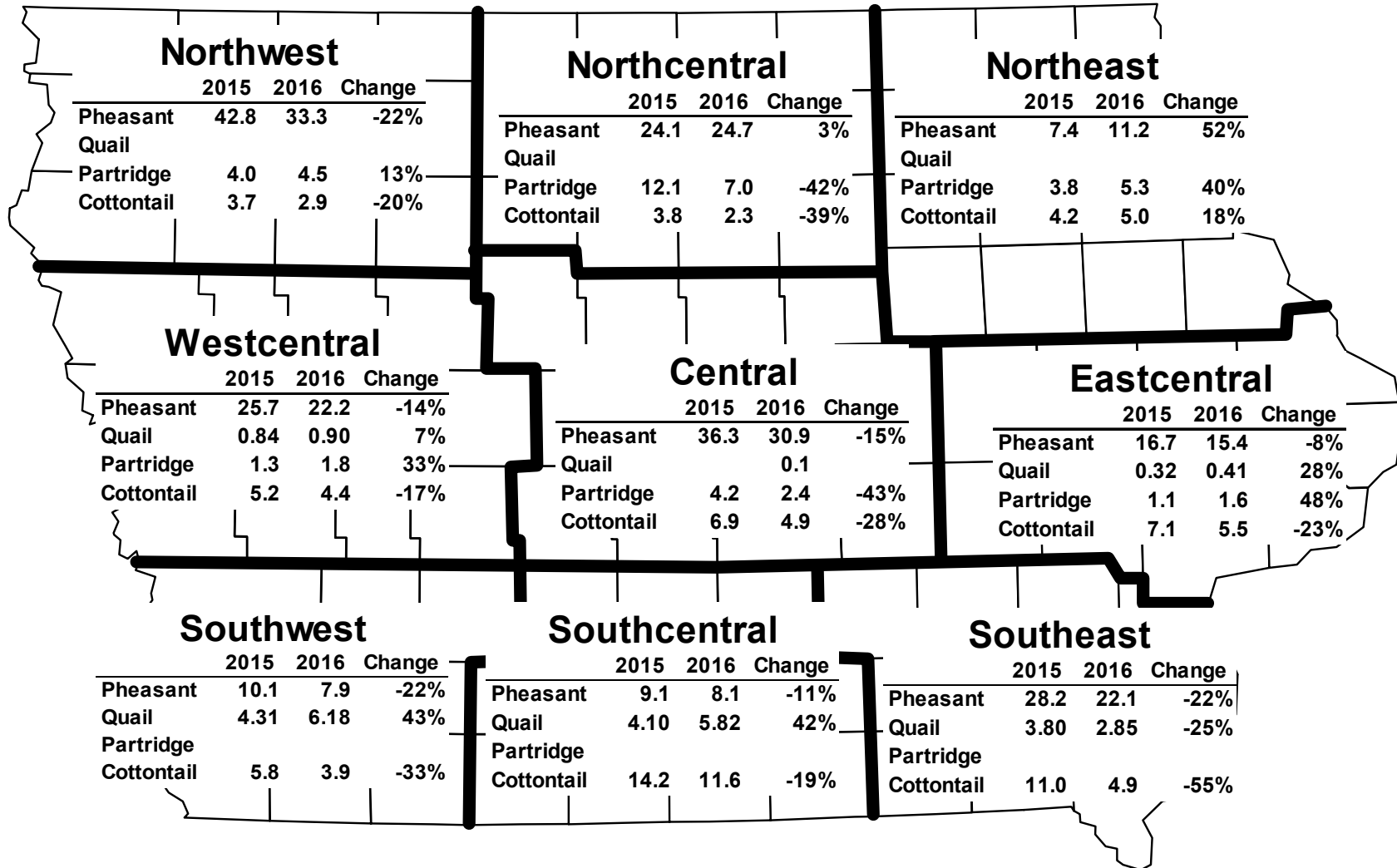
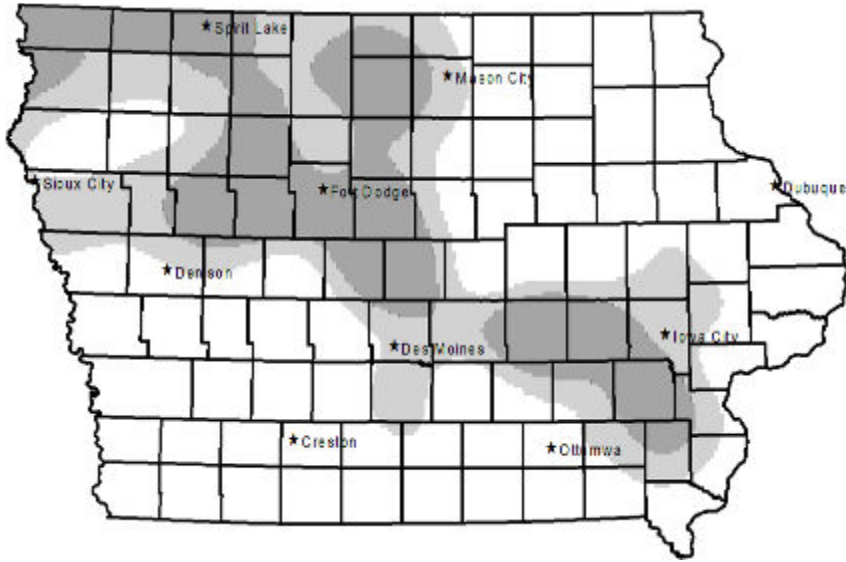


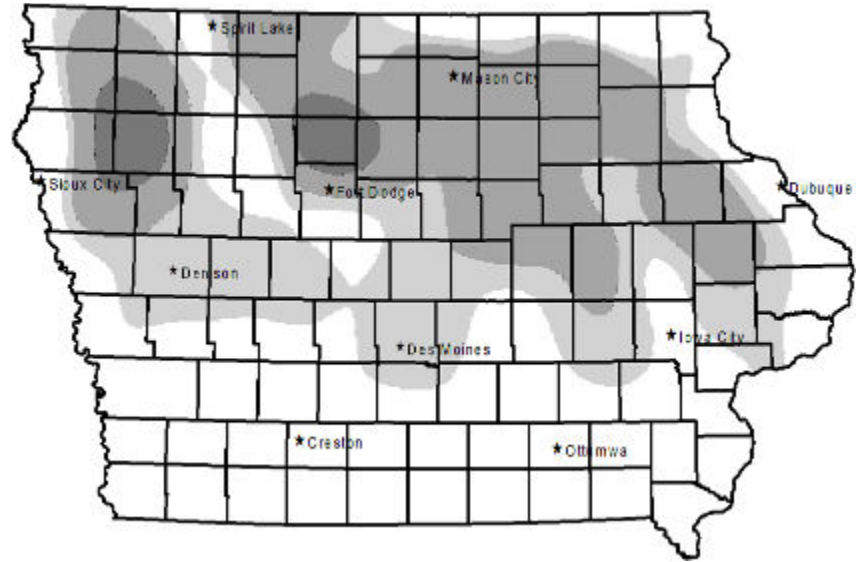
Figure 5. Numbers indicate the average number of animals counted on 30 mile routes in each region (e.g., the northwest region counted an average of 33.3 pheasants on 30-mile survey routes in 2016). Data from 202 of 210 returned routes.

# 2016 GAME DISTRIBUTION

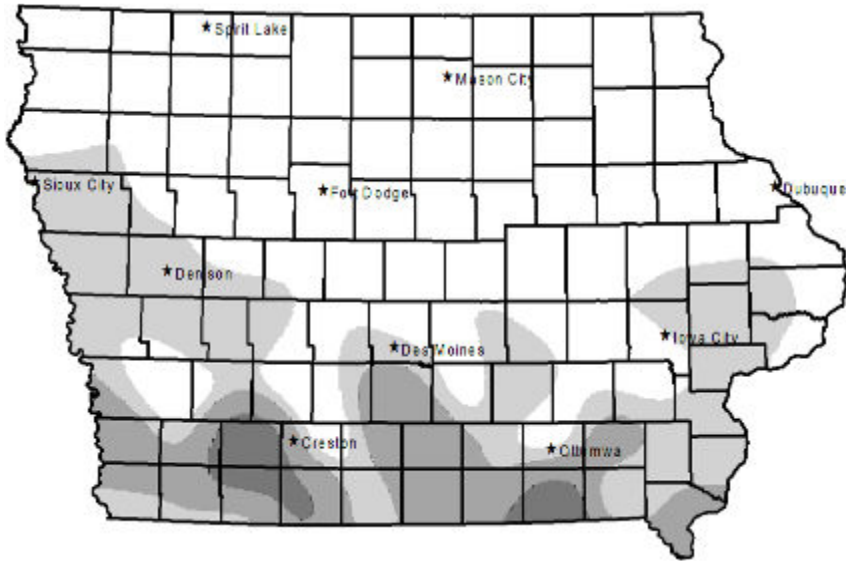
## PHEASANT



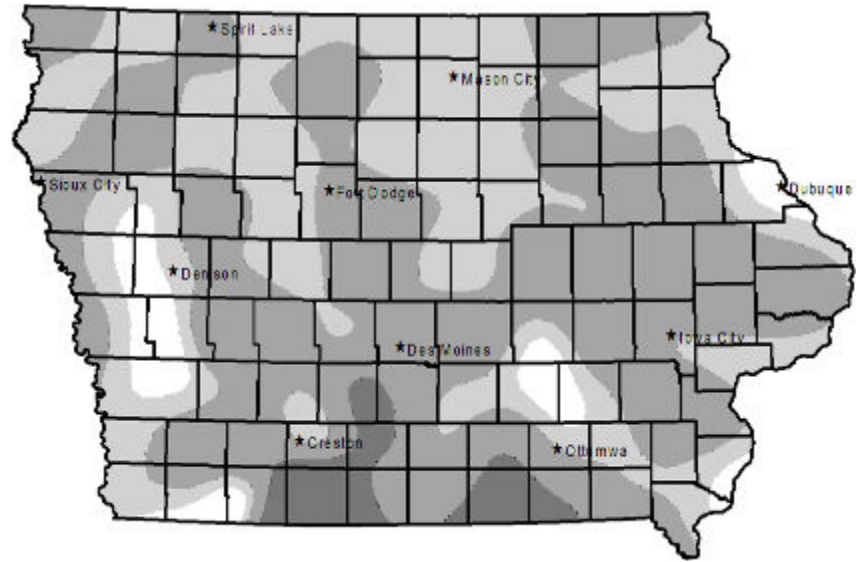
## GRAY PARTRIDGE



## QUAIL



## COTTONTAIL



**EXCELLENT**    
 
**GOOD**    
 
**FAIR**    
 
**POOR**

Figure 6. Iowa small game distribution maps represent generalized game abundance. There can be areas of low game abundance in regions with "high" counts and vice versa.