2011
IOWA AUGUST
ROADSIDE SURVEY

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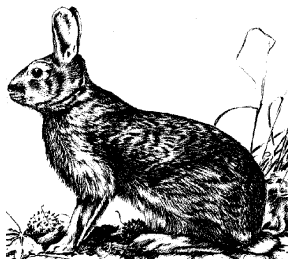

Iowa Department of Natural Resources
Roger Lande, Director
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2011 IOWA UPLAND WILDLIFE POPULATIONS

This report is a summary of the 2011 Iowa August roadside survey. The survey is conducted each year by IDNR 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.

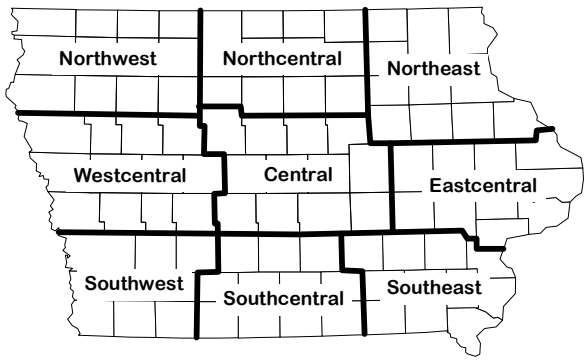


Figure 1. August Roadside Survey Regions

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 2010 and 2011 are based on routes that are directly comparable between years (routes with no alterations and routes started with good dew). Long-term trends are based on all routes run (Table 3, Figures 4 & 5).

UPLAND HABITAT TRENDS IN IOWA

Two factors determine the abundance and distribution of upland game populations in Iowa - **weather** and **habitat**. Past versions of the August Roadside Survey have only included weather trends as they have the most impact on the upland game populations from year to year. 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 USDA shows that between 1990 and 2005 Iowa has lost 2,496 mi^2 of potential pheasant habitat. This habitat was a mix of small grains, hay land, and Conservation Reserve Program (CRP) acres. To put this loss in perspective 2,496 mi^2 is a strip of habitat over **8 miles wide** that would stretch from Omaha to Davenport! The CRP has become critical for Iowa pheasant populations with the lost of small grains and hay lands to corn and soybean production. Unfortunately Iowa continues to lose CRP with another 485 mi^2 converted back to row crop production since 2007. USDA information shows contracts on 231,000 acres (360 mi^2) of Iowa CRP expire September, 30 2012. It is vital USDA offer a CRP general signup in 2012, to retain some of these critical pheasant habitat acres.

2010-11 IOWA WEATHER SUMMARY

Iowa pheasant numbers increase with mild winters and warm, dry springs and decline with snowy winters and cool, wet springs. Iowans hoping for a mild winter and a rebound in pheasant numbers were sorely disappointed as winter 2010-11 was the fifth consecutive winter with above normal snowfall. Statewide for the entire winter (1 Dec thru 31 March) snowfall for Iowa was 50% (+12.6") above normal (Table 1). March saw an early thaw and above normal temperatures, however hen mortality was already significant before this thaw arrived. The NE region reported the greatest departure from normal snowfall (+23") followed by EC, NC, SC, and NW regions (Table 1). Snowfall totals for NW and WC do not include a November snowstorm that dropped 10-12" across those regions. This was very heavy wet snows that severely flatten even robust switchgrass, thus leaving little winter cover for the remainder of the winter. This marks the 5th consecutive winter in a row Iowa has received ~ 30 inches or more of snowfall. In the 50 yrs of standardized roadside counts Iowa has never seen 5 consecutive winters of this severity.

Table 1. Iowa 2010-11 weather summary.

Weather Variables	Survey Regions NW	NC	NE	WC	C	EC	SW	SC	SE	STATE
Winter Weather*										
Total Snowfall (inch)	38.6	43.0	52.3	32.1	31.4	43.2	33.3	34.9	31.6	**37.8**
*Departure***	*12.0*	*14.1*	*23.0*	*5.0*	*6.2*	*18.9*	*11.9*	*13.2*	*8.8*	*12.6*
Spring Weather										
Total Rainfall (inch)	8.5	8.6	7.7	8.0	8.8	8.2	9.1	11.1	9.4	**8.8**
Departure	*2.5*	*1.7*	*0.6*	*1.0*	*1.6*	*1.0*	*1.6*	*3.5*	*1.8*	*1.6*
Mean Temperature (F)	51.7	52.0	52.3	54.2	54.7	53.9	57.0	56.5	56.0	**54.1**
Departure	*-1.9*	*-1.6*	*-1.1*	*-1.7*	*-0.1*	*-1.8*	*-0.3*	*-0.3*	*-1.5*	*-1.3*

* Winter weather period (1Dec.-31Mar.) and spring period (1April-31May).
** Departures calculated from 1961-1990 norm.

The spring of 2011 did not offer any reprieve from the past 4 years with April and May both seeing above normal rainfall and below normal temperatures (Table 1). The SC, NW, and SE regions reported the greatest rainfall (40-45% above normal) during the April-May nesting period (Figure 2). Western Iowa was hit particularly hard with flooding of the entire Missouri River valley - with flood crests above those reported in 1993. This weather pattern pretty much ensured Iowa would not have a good pheasant hatch in 2011.

Figure 2. Flooding NW Iowa May 2011.

2011 ROADSIDE 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. Staff reported only 85% of routes were started with heavy dew in 2011, compared to 91% in 2010. Routes were also more overcast and temperatures cooler when compared to 2010. The NW and NC regions reported much less favorable conditions at the start of surveys this year than last year.

RING-NECKED PHEASANT

Statewide. This year the statewide index is 6.8 birds/route and sets a new all time low count for Iowa, besting the previous low (10.8 birds/route) set following the severe winter of 2010 (Table 3). Counts declined significantly in 4 of the 9 survey regions; however the C, EC, SW, and SC regions reported no change or small increases in counts (Table 2). This year's index is 72% below Iowa's 10-year average and 84% below the historic average (Table 3). This decline was expected given another winter of almost 40 inches of snowfall (Table 1).

Iowa research indicates over winter hen survival, brood survival, and nest success are the major factors influencing annual changes in pheasant numbers. In 50 years of monitoring, Iowa's pheasant population has *never increased* following winters with greater than 31 inches of snowfall. Snowfall totals for Iowa over the last 5 winters are 30" (2006-07), 42" (2007-08), 32" (2008-09), 47" (2009-10), and 38" (2010-11) respectively. Iowa's pheasant population is at an all time low because of this recent string of consecutively bad winters. This also marks the first time since pheasant counts were standardized in 1961 that Iowa has had 5 consecutive winters with 30+ inches of snowfall (Figure 4). This **IS NOT** normal for Iowa. The only time in the last fifty years Iowa's had consecutive 30+ inch

snowfall winters was 1982,83,84 and this also coincided with Iowa's lowest pheasant count prior to 2008 (Figure 4). Mother Nature only added insult to injury with almost 9" of rainfall this spring. This nesting season was more or less another repeat of the flooding during nesting in the spring and summers of 2008, and 2010, and record cool during 2009.

Statewide the total hens counted on routes this year was significantly lower (-40%) than last year, a reflection of the hens lost to the winters severity (Table 2 – statewide numbers). It was virtually impossible for Iowa pheasant numbers to increase unless nesting and brood survival was well above normal. Statewide data on chicks/brood (measure of chick survival) and age ratio's (chicks per adult hen – measure of overall hen success) showed no change from last years poor hen success (Table 2). Both expected given the wet spring and summer Iowa experienced (Table 1).

Based on this year's statewide index of 6.8 birds/route, Iowa pheasant hunters should harvest approximately 150,000-200,000 roosters this fall (Figure 4). If this harvest forecast holds true it will mark the first time in history Iowa has seen 8 consecutive harvests of less than 1 million roosters and set a new low harvest figure for Iowa (Figure 4). While pheasant counts this year are well below what the wildlife bureau and most hunters would like to see in Iowa – rest assured as long as Iowa has well managed CRP habitat the populations will bounce back. Iowa currently has 1.6 M acres of CRP and this level of habitat should support a 600,000-800,000 rooster harvest – **IF** climate returns to normal. Iowa had low counts in 1984 and 2001 (Table 3, Figure 4) and the population rebounded in 2-3yrs, with mild winters and dry springs. The key was good weather and good habitat, unfortunately Iowa continues to lose CRP habitat, as noted on page 2 of this report. Figure 3 below shows schedule of CRP expirations in Iowa over the next 3years. It will be very hard to recover Iowa pheasant numbers if habitat loses of this magnitude continue in Iowa. If hunters are concerned about the loss of CRP they need to share their concerns with their US Congressman how important CRP is to their sport. Demand for ethanol and more crop acreage has put pressure on Congress to reduce the CRP.

Figure 3. Schedule of CRP expirations in Iowa.

	2010	2011	2012	3-yr Totals
CRP Acres Expiring	114,737	72,282	232,022	419,041
Square Miles Expiring	179	113	363	655

Northern Regions. Routes across the northern third of Iowa showed the largest declines in bird numbers of any regions in 2011 (Table 2, Figure 6). Looking at data in Table 2, numbers of adults (cocks and hens), declined significantly in all 3 regions which is indicative of severe winterkill. Chick survival (chicks/brood) and young per hen (age ratio) were unchanged from last year suggesting nesting was not worse than last year in NW and NC regions and perhaps better in the NE region (Tables 1 & 2). Across the northern third of Iowa the NW region had the highest bird densities in 2011. Excellent habitat and abundant public lands should offer fair hunting this fall in the NW and parts of the NC regions (Figure 7).

Central Regions. Counts across the 3 central regions of Iowa where quite variable with WC region showing a significant decline in total pheasants, while the C and EC regions showed no significant change in numbers (Table 2, Figure 6). Total hen numbers suggest better winter survival in the C and EC regions compared to WC region (Table 2). The November snowstorm hit WC region particularly hard, while the C and EC regions received no snow during this storm. Better bird numbers will be found around core public lands and larger private CRP lands with well managed habitat in the C and EC regions (Figure 7).

Southern Regions. Total pheasants counted in SW and SC regions showed small non-significant increases over 2010, while the SE region reported significantly fewer pheasants (Table 2, Figure 6). Data on chicks, chicks/brood, and young per hen (age ratio) suggest nesting was not worse than 2010 in the SC and SW regions despite wet conditions.

While this region of Iowa has an abundance of habitat in the form of CRP, most is located on private land and it has been enrolled in the program for 20+yrs with little active management reducing its value for pheasants and quail. However, lack of management it only part of the problem in this region. Nesting season weather patterns also have shifted in the region. The table at the right shows the amount of April/May rainfall has increased significantly during the last 2 decades over the NOAA computed normal (1961-90) value (Table 1b). Since pheasant reproduce best during dry – warm springs this trend toward wetter conditions is likely reducing the reproductive potential of the population. Good counts in all 3 regions in the 1980's reflect the drier weather pattern experienced during that decade and lower counts with wetter weather prevail in the 1990's thru 2011 (Table 3).

Table 1b. Nesting season (Apr/May) rainfall (inches) by decade in southern Iowa roadside survey regions. Over the last half century pheasant counts have always declined with April/May rainfall greater than 8". Since 1992 April/May rainfall has been mostly over 8" every year.

	SW	SC	SE
Normal (1960-90)	*7.46*	*7.63*	*7.53*
1940	7.18	7.18	7.66
1950	7.05	7.21	7.03
1960	7.34	7.73	7.54
1970	7.69	8.15	8.40
1980	7.40	7.00	6.82
1990	9.09	9.61	9.14
2000	9.15	8.57	8.39

BOBWHITE QUAIL

Statewide bobwhite quail numbers declined -36% over 2010 counts (Table 2, Figure 6). This represents a new record low quail count for Iowa. However, it was not unexpected given the severity of the winter (Table 1). Overall, this year's count was -63% below the 10-year average and -84% below the long-term average (Table 3, Figure 5). Changing land-use, mainly intensified agriculture, loss of small grains, and maturing forests are the leading factors in the decline. Unfortunately, this trend is likely to continue in the future, unless programs like CRP can be modified to provide for the habitat needs of quail. Only pockets of quail will likely be found in the best coverts across the south eastern half of their Iowa range (Fig 7).

GRAY PARTRIDGE

The 2011 gray partridge count was 1.2 birds per 30 miles, up slightly from 2010 counts, but the change was not significant – indicating variability across routes statewide. (Table 2, Figure 5). This year's statewide estimate is -35% below the 10-year mean and -70% below the long-mean (Table 3, Figure 5). Gray partridge prefer the wide open agricultural lands of the northern two-thirds of the state. The NW and NC regions reported strong partridge numbers in 2011, while counts in the NE, WC, and C regions showed declining trends. Typically partridge recruitment is highest in Iowa when spring/summer precipitation is well below normal. Years with average to above average rainfall, like 2011, generally are not conducive to good partridge reproduction. Small pockets of birds can be found across the northern two-thirds of the state (Figure 7).

COTTONTAIL RABBIT

Staff only reported an average of 2 rabbits per route in 2011, down significantly from last year's estimate of 3 rabbits per route (Table 2). This marks the fourth consecutive year of decline in rabbit numbers (Table 2, Figure 5). Similar to pheasant and quail record winter snowfall resulted in high winter mortality of adult rabbits. This year's count is 60-65% below the 10-year and long-term averages respectively and represents a new all time low for Iowa (Table 3). Regionally rabbit numbers decreased significantly in 6 of the 9 survey regions (Table 2). As a general rule cottontails reproduce well in years with abundant spring/summer rains, but the severe winter equaled fewer breeding females - so much so that reproduction could not make up for winter losses. Cottontail hunters should focus their efforts in counties along the Missouri border in southern Iowa (Figure 7).

WHITE-TAILED JACKRABBIT

Several jackrabbits were counted on this year's survey in the NW and C regions (Table 2). It is likely the species will become extinct in Iowa within the next 10-15 years. The jackrabbit trend (Table 3, Figure 5) reflects the continued loss of their preferred habitats (i.e., small grains, pasture, hay fields) in the NW, NC, WC and C regions. Because of habitat loss and the resultant low numbers the 2011-12 jackrabbit hunting season was closed by the DNR.

Table 2. Mean numbers of wildlife observed per 30-mile route on the August roadside survey in 2010 and 2011. Only routes run under heavy to moderate dew conditions are used for statistical comparisons.

		RINGNECKED PHEASANTS								BOBWHITE QUAIL		GRAY PARTRIDGE		RABBITS	
REGION	n	TOTAL PHEASANT	COCKS	HENS W/O BROODS	HENS W/ BROODS	HENS	CHICKS	CHICKS/ BROODS	AGE RATIO	TOTAL BIRDS	COVEYS	TOTAL BIRDS	COVEYS	EASTERN COTTONTAIL	WHITETAILED JACKRABBIT
Northwest	25														
2011		10.88	2.08	0.72	1.04	2.40	7.04	4.13	3.35			2.56	0.28	1.04	0.12
2010		29.20	3.00	2.32	3.68	7.20	20.20	4.04	3.02			1.04	0.16	2.92	0.00
% CHG		**-62.7%**	-30.7%	**-69.0%**	**-71.7%**	**-66.7%**	**-65.1%**	2.2%	10.9%			146.2%	75.0%	**-64.4%**	
Northcentral	24														
2011		8.08	1.13	0.33	1.00	1.75	5.63	4.23	3.42			4.71	0.46	1.08	
2010		17.26	1.91	0.52	1.43	3.35	13.39	4.63	3.73			1.35	0.17	0.91	
% CHG		**-53.2%**	**-40.8%**	-36.5%	-30.1%	**-47.8%**	**-58.0%**	-8.6%	-8.3%			**248.9%**	**170.6%**	18.7%	
Northeast	17														
2011		2.35	0.29	0.06	0.12	0.47	1.88	4.80	4.10	0.00	0.00	0.47	0.06	2.82	
2010		4.20	0.47	0.13	0.47	1.20	3.13	3.21	2.95	0.67	0.07	2.20	0.20	2.80	
% CHG		-44.0%	-38.3%	-53.8%	-74.5%	-60.8%	-39.9%	49.5%	39.0%	-100.0%	-100.0%	**-78.6%**	**-70.0%**	0.7%	
West Central	20														
2011		5.75	0.75	0.30	0.50	1.20	4.20	4.28	3.27	0.00	0.00	0.25	0.00	2.50	
2010		9.70	1.20	0.35	1.00	2.20	7.15	3.94	3.42	0.35	0.05	0.95	0.10	2.55	
% CHG		**-40.7%**	-37.5%	-14.3%	-50.0%	**-45.5%**	**-41.3%**	8.6%	-4.4%	-100.0%	-100.0%	-73.7%	-100.0%	-2.0%	
Central	32														
2011		10.22	0.72	0.44	1.22	2.25	7.84	4.04	3.32			1.16	0.13	2.38	0.03
2010		11.61	1.68	0.54	1.07	2.57	8.32	4.02	3.01			1.50	0.14	1.46	0.00
% CHG		-12.0%	**-57.1%**	-18.5%	14.0%	-12.5%	-5.8%	0.5%	**10.3%**			-22.7%	-7.1%	63.0%	
Eastcentral	23														
2011		5.87	0.48	0.09	0.43	1.13	4.87	4.21	3.34	0.35		0.61	0.04	1.96	
2010		5.32	0.74	0.21	0.53	1.05	3.84	5.00	4.72	0.05		1.26	0.11	2.68	
% CHG		10.3%	-35.1%	-57.1%	-18.9%	7.6%	26.8%	-15.8%	-29.2%	600.0%				-26.9%	
Southwest	14														
2011		6.64	0.79	0.29	0.64	1.43	4.93	4.98	4.64	0.07	0.00			2.00	
2010		6.29	0.86	0.64	0.71	1.64	4.07	4.40	3.14	0.57	0.07			5.50	
% CHG		5.6%	-8.1%	-54.7%	-9.9%	-12.8%	21.1%	13.2%	47.8%	-87.7%	-100.0%			**-63.6%**	
Southcentral	24														
2011		3.00	0.42	0.13	0.33	0.58	2.13	4.69	3.52	1.33	0.04			4.04	
2010		1.83	0.46	0.08	0.13	0.54	1.17	2.55	2.15	0.50	0.04			5.08	
% CHG		63.9%	-8.7%	62.5%	153.8%	7.4%	82.1%	**83.9%**	**63.7%**	**166.0%**	0.0%			-20.5%	
Southeast	22														
2011		4.91	0.86	0.23	0.64	1.00	3.18	4.39	3.31	0.23	0.00			1.73	
2010		7.63	0.95	0.26	0.68	1.68	5.74	4.24	3.26	1.53	0.11			6.05	
% CHG		**-35.6%**	-9.5%	-11.5%	-5.9%	**-40.5%**	**-44.6%**	3.5%	1.5%	**-85.0%**	-100.0%			**-71.4%**	
Statewide	201														
2011		6.75	0.86	0.30	0.71	1.43	4.88	4.32	3.49	0.23	0.00	1.20	0.12	2.16	0.02
2010		11.16	1.35	0.61	1.17	2.56	8.04	4.01	3.21	0.36	0.03	0.94	0.10	3.17	0.00
% CHG		**-39.5%**	**-36.3%**	**-50.8%**	**-39.3%**	**-44.1%**	**-39.3%**	7.7%	8.7%	-36.1%	**-100.0%**	27.7%	20.0%	**-31.9%**	

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

Table 3. Historical upland wildlife numbers from the August Roadside Survey. Numbers represent the average number of animals counted on 30-mile routes[a].

	PHEASANTS													
YEAR[b]	NORTH WEST	NORTH CENTRAL	NORTH EAST	WEST CENTRAL	CENTRAL	EAST CENTRAL	SOUTH WEST	SOUTH CENTRAL	SOUTH EAST	STATE WIDE	BOBWHITE QUAIL STATEWIDE	GRAY PARTRIDGE STATEWIDE	EASTERN COTTONTAIL STATEWIDE	WHITETAILED JACKRABBIT 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
1970	39.2	53.0	59.6	56.1	87.8	91.7	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	101.6	49.7	48.4	62.0	2.64	1.44	5.4	0.35
1972	37.9	44.6	61.0	61.4	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	61.4	41.1	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	21.4	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	10.9	8.1	2.4	5.8	10.2	5.9	6.6	3.0	4.9	6.8	0.23	1.20	2.2	0.02
Statistics:														
10 Year Avg.	46.1	32.4	13.6	23.0	32.9	19.1	16.0	9.4	16.5	24.5	0.6	1.8	5.6	0.0
Long-term Avg	39.8	47.5	41.3	47.6	45.4	44.5	56.8	35.3	26.7	42.1	1.41	3.96	6.0	0.15
Percent Change from:														
10 Year Avg.	-76.4%	-75.1%	-82.7%	-75.0%	-69.0%	-69.3%	-58.6%	-68.2%	-70.3%	-72.4%	-63.2%	-35.0%	-61.1%	-7.0%
Long-term Avg	-72.7%	-83.0%	-94.3%	-87.9%	-77.5%	-86.8%	-88.3%	-91.5%	-81.6%	-84.0%	-83.7%	-69.7%	-64.2%	-86.9%

a 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.

b All data is used to compute long-term averages, but first 5 years of historical data is not show in table because of limited space.

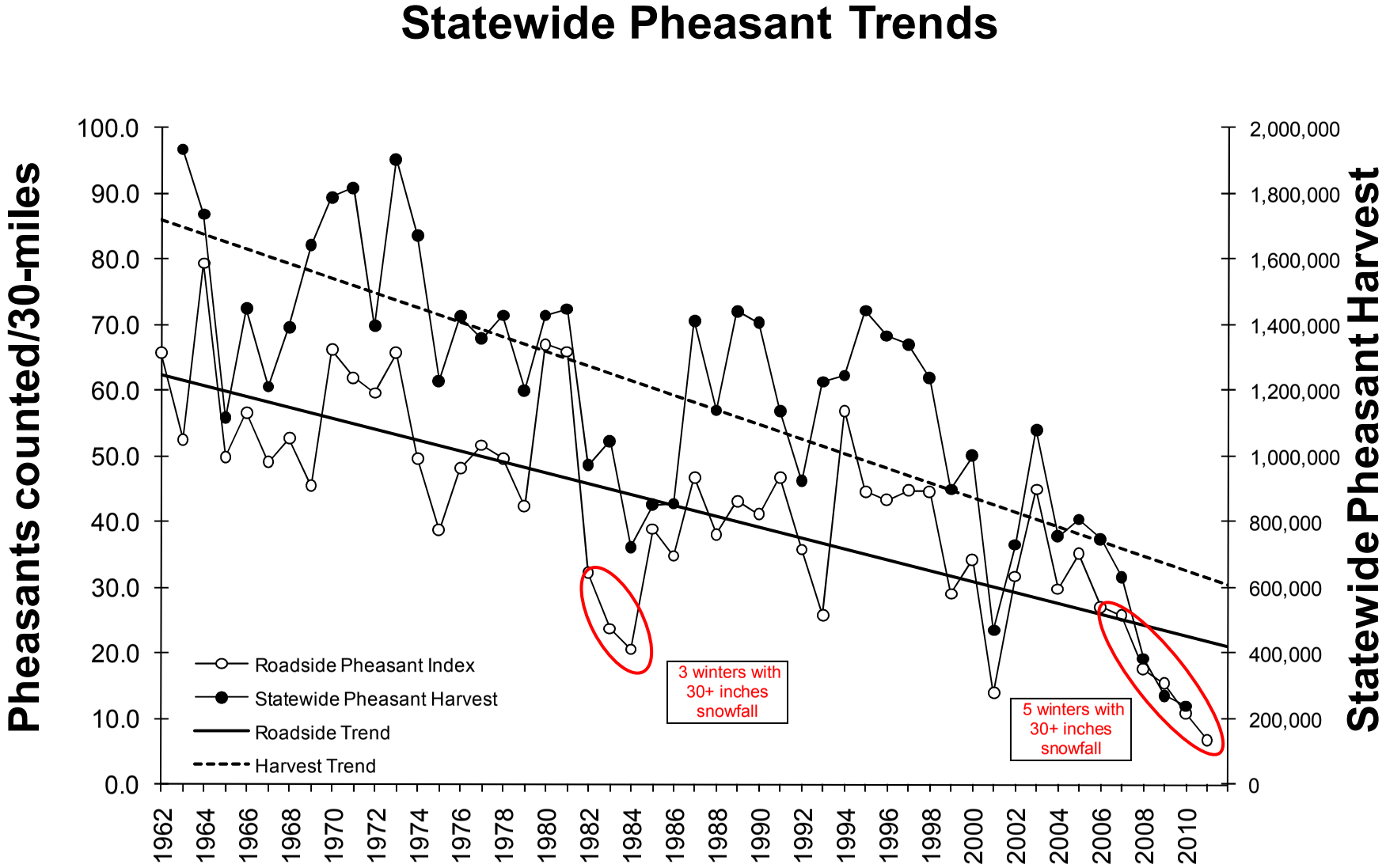


Figure 4. Mean number of pheasants counted on 30-mile August roadside survey routes, statewide, 1962-present compared to total statewide pheasant harvest.

Statewide Upland Game Trends

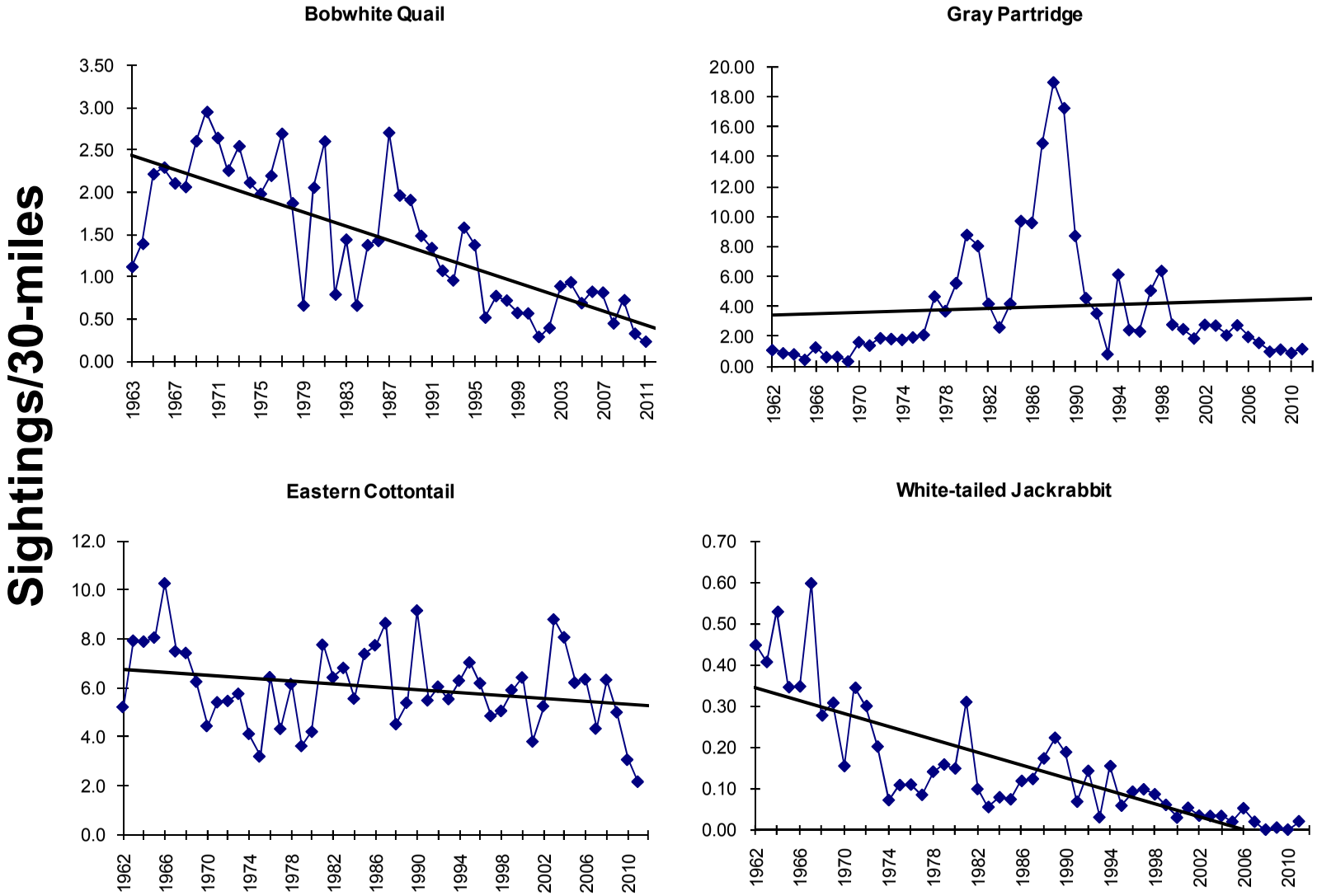
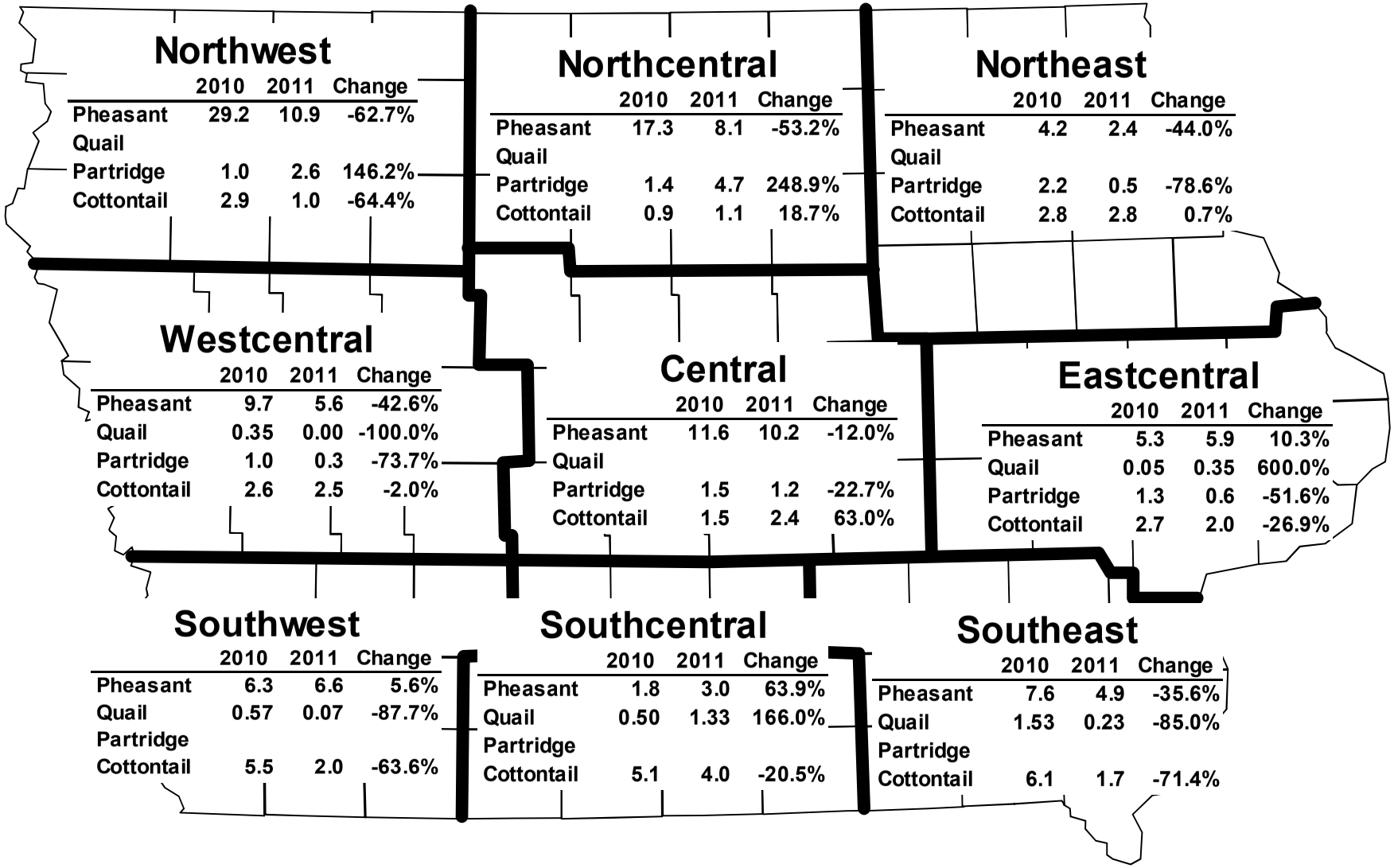


Figure 5. Mean number of quail, partridge, cottontails, and jackrabbits sighted per 30 mile route on the August roadside survey, statewide, 1962 to the present.

2011 August Roadside Survey

Statewide

	2010	2011	Change
Pheasant	11.2	6.8	-39.5%
Quail	0.36	0.23	-36.1%
Partridge	0.9	1.2	27.7%
Cottontail	3.2	2.2	-31.9%



Northwest

	2010	2011	Change
Pheasant	29.2	10.9	-62.7%
Quail			
Partridge	1.0	2.6	146.2%
Cottontail	2.9	1.0	-64.4%

Northcentral

	2010	2011	Change
Pheasant	17.3	8.1	-53.2%
Quail			
Partridge	1.4	4.7	248.9%
Cottontail	0.9	1.1	18.7%

Northeast

	2010	2011	Change
Pheasant	4.2	2.4	-44.0%
Quail			
Partridge	2.2	0.5	-78.6%
Cottontail	2.8	2.8	0.7%

Westcentral

	2010	2011	Change
Pheasant	9.7	5.6	-42.6%
Quail	0.35	0.00	-100.0%
Partridge	1.0	0.3	-73.7%
Cottontail	2.6	2.5	-2.0%

Central

	2010	2011	Change
Pheasant	11.6	10.2	-12.0%
Quail			
Partridge	1.5	1.2	-22.7%
Cottontail	1.5	2.4	63.0%

Eastcentral

	2010	2011	Change
Pheasant	5.3	5.9	10.3%
Quail	0.05	0.35	600.0%
Partridge	1.3	0.6	-51.6%
Cottontail	2.7	2.0	-26.9%

Southwest

	2010	2011	Change
Pheasant	6.3	6.6	5.6%
Quail	0.57	0.07	-87.7%
Partridge			
Cottontail	5.5	2.0	-63.6%

Southcentral

	2010	2011	Change
Pheasant	1.8	3.0	63.9%
Quail	0.50	1.33	166.0%
Partridge			
Cottontail	5.1	4.0	-20.5%

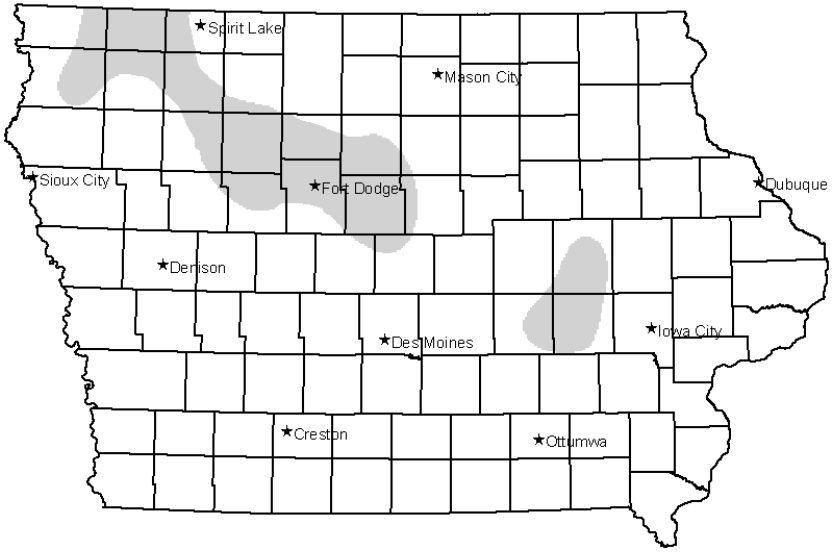
Southeast

	2010	2011	Change
Pheasant	7.6	4.9	-35.6%
Quail	1.53	0.23	-85.0%
Partridge			
Cottontail	6.1	1.7	-71.4%

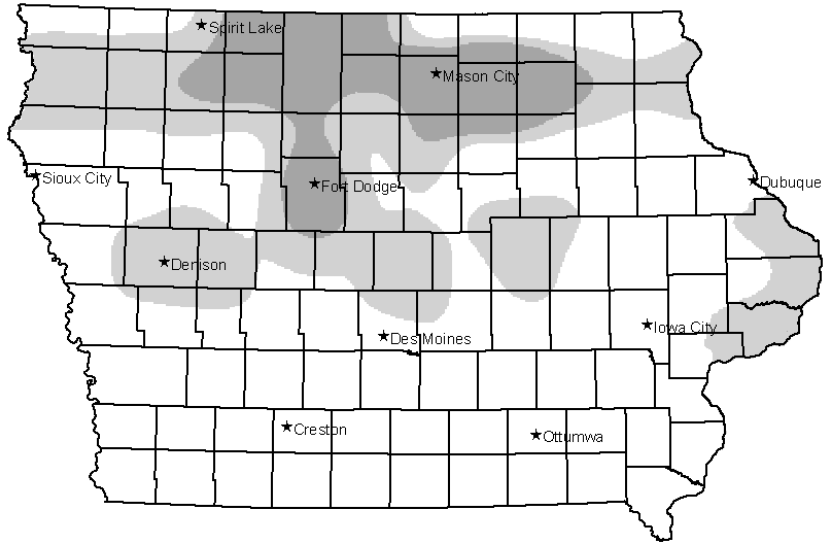
Figure 6. Numbers indicate the average number of animals counted on 30 mile routes in each region (e.g., the northwest region counted an average of 10.9 pheasants on 30-mile survey routes in 2011). Data from 201 of 215 total routes.

2011 GAME DISTRIBUTION

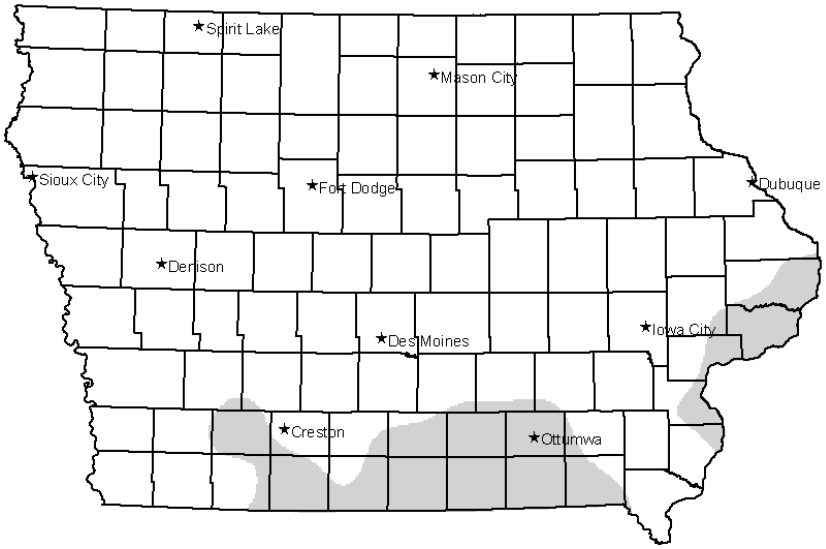
PHEASANT



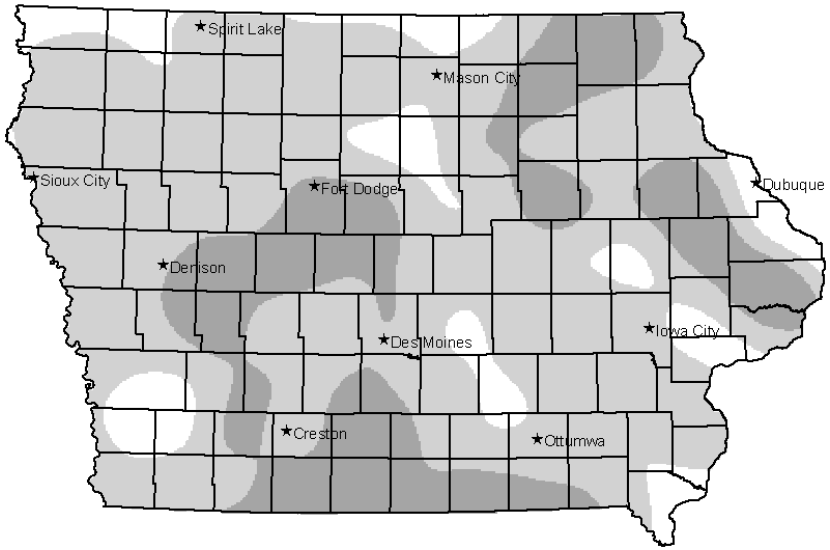
GRAY PARTRIDGE



QUAIL



COTTONTAIL



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

Figure 7. Iowa 2011 small game distribution maps represent generalized game abundance. There can be areas of low game abundance in regions with "high" counts and vice versa.