

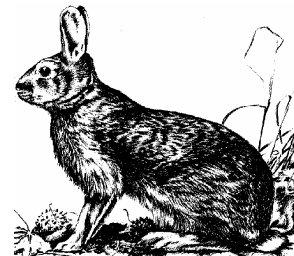
# 2007 IOWA AUGUST ROADSIDE SURVEY

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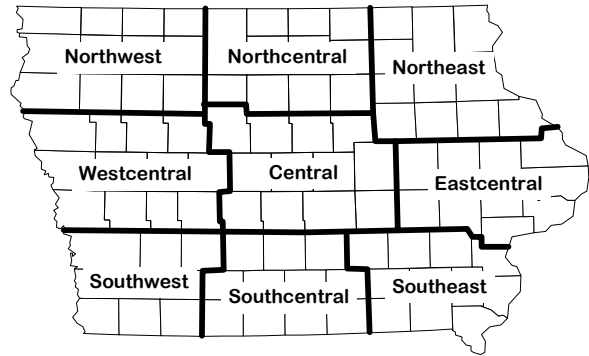
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## 2007 IOWA UPLAND WILDLIFE POPULATIONS

This report is a summary of the 2007 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 217, 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 2006 and 2007 are based on routes that are directly comparable between years (routes with no changes and routes started with good dew). Long-term trends are based on all routes run.

### UPLAND HABITAT TRENDS IN IOWA

Square miles of potential upland habitat <sup>a</sup> by region.			
Region	1990	2005	Change <sup>b</sup>
NW	705	283	-60%
NC	612	294	-52%
NE	1,395	973	-30%
WC	939	477	-49%
C	712	435	-39%
EC	963	637	-34%
SW	746	591	-21%
SC	1,317	1,284	-3%
SE	939	858	-9%
State	8,328	5,832	-30%

<sup>a</sup> Potential habitat includes hay, oats, wheat, and CRP acres.  
<sup>b</sup> Percent change between 2005 and 1990 values.

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. Habitat trends are a more gradual change and the influence of habitat changes on upland populations are only evident after looking at years of surveys. Information from USDA shows that between 1990 and 2005 Iowa has lost 2,496 mi<sup>2</sup> of pheasant

habitat. To put this loss of habitat in perspective 2,496 mi<sup>2</sup> is a strip of habitat over **8 miles wide** that would stretch from Omaha to Davenport! From an upland game perspective Iowa can not produce the numbers of upland birds she did only 15 years ago because of the loss of upland habitats.

### 2006-07 IOWA WEATHER SUMMARY

Iowa tends to see increases in pheasant numbers with mild winters and warm, dry springs and declines with snowy winters and cool, wet springs. This year was snowier and wetter than normal (Table 1). The winter of 2006-07 started mild, but ended with a bang in western Iowa (see photo). Statewide an average of 29.8 inches snow fell between 1 December and 31 March. Normal winter snowfall (1961-90) for Iowa is 25.3 inches. The NW, WC, and SW regions reported more snow than normal (likely reducing overwinter hen survival), while the EC and SE regions reported below normal snowfall (likely increased hen survival, see Table 1). Only 1 major winter storm hit Iowa, but it was a big one covering the western half of Iowa with deep



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Sunday, March 4, 2007

drifts and eastern Iowa with a sheet of ice in early March. Blowing and drifting snow likely killed some pheasant and quail in western Iowa, but hens in eastern Iowa likely fared very well. Fortunately warm weather followed after this blizzard and prevailed until the end of March.

**Table 1. Iowa 2006-07 weather summary.**

Weather Variables	Survey Regions									STATE
	NW	NC	NE	WC	C	EC	SW	SC	SE	
<b>Winter Weather*</b>										
Total Snowfall (")	38.9	37.8	33.5	38.7	27.4	20.1	28.7	21	16.6	29.8
Departure**	12.3	8.9	4.2	13.5	0.8	-4.2	7.3	-0.7	-6.2	4.5
<b>Spring Weather</b>										
Total Rainfall (")	6.9	8.0	8.2	12.6	11.4	7.3	13.9	11.6	9.3	9.9
Departure	0.9	1.1	1.1	5.7	4.2	0.0	6.5	4.0	1.8	2.7
Mean Temperature (F)	55.0	54.4	54.6	56.6	56.2	55.9	57.7	57.3	58.1	56.2
Departure	1.4	0.9	1.2	0.8	1.4	0.2	0.4	0.5	0.7	0.8

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

\*\* Departures calculated from 1961-1990 norm.

Spring weather conditions during the 2007 nesting period (April-May) were variable with some regions reporting normal rains and others reporting rains over half foot above normal (Table 1). Above normal temperatures overall were good for reproduction this spring, but heavy rains and flooding likely reduced recruitment in some regions.

## **2007 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. Weather conditions during the 2007 survey were not as favorable as those reported in 2006. Staff reported 83% of routes were started with heavy dew in 2007 compared to 88% in 2006, while only 56% of routes were started under sunny skies this year compared to 75% in 2006. Temperatures at the start of routes were also significantly warmer than last year. Regionally, dew conditions were good over the northern two-thirds of the state but poorer in southern regions.

## **RING-NECKED PHEASANT**

Statewide. This year the statewide average is 26.8 birds/route and represents no change from the 2006 population index (Table 2, Figure 6). This year's index is 16% below Iowa's 10-year average of 32 birds/route (Table 3). Statewide the average number of pheasants observed per route is 40% below the long-term average of 45 birds/route (Table 3, Figure 4). Counts were significantly lower in the NC, SW, and SC survey regions in 2007. Counts of total pheasants in the NC, NE, WC, C, EC, and SE regions were all similar to 2006 trending slightly up or down by small amounts (Table 2, Figure 6).

Iowa research shows over winter survival, brood survival, and nest success are the major factors influencing annual changes in pheasant numbers. Looking at the statewide numbers total hens counted was lower than last year as were age ratio's (chicks per adult hen) on the survey. Lower hen numbers suggests lower over winter survival, while lower age ratios suggest the nest/brood-rearing period was not as conducive to good reproduction as 2006. These trends agree well with the weather patterns seen in Iowa over the past year – snowier winter with a wetter than normal spring (Table 1).

Based on this year's statewide index of 26.8 birds/route, Iowa pheasant hunters should harvest between 700,000-780,000 roosters this fall. If this harvest forecast holds true it will mark the first time Iowa has seen 4 consecutive harvests of less than 1 million roosters (Figure 4). This trend is directly related to the loss of upland habitats in Iowa. Historically Iowa has always harvested 1 million roosters or more (Figure 4) with South Dakota as the only state capable of topping Iowa's harvest. Hunters can

expect to find some very good pheasant hunting in parts of Iowa this year, but unless future habitat trends change Iowa can probably no longer call herself the best pheasant hunting state in the nation.

Northern Regions. Routes in the NW region averaged 41 birds/route in 2007, significantly lower than 2006 (Table 2, Figure 6). Counts this year are 23% below the 10-year mean, but 2% above the long-term average (Table 3). Total hens decreased significantly, while young/adult female increased, suggesting reduced winter survival, but favorable conditions during the nesting season. The NW region had the highest bird densities of any region in 2007. Excellent habitat and abundant public lands should offer some excellent hunting this fall. Some of the better counts this year came from Clay, Dickinson, Emmet, and Lyon, counties (Figure 7).

Counts in the NC region were essentially unchanged -3.6% from 2006 (Table 2, Figure 6). This year's count is 9% below the 10-year average for the region and 28% below the long-term average (Table 3). Similar to the NW region, fewer total hens were counted, but age ratio's (chicks/hen) increased offsetting some of the over winter loss. Staff reported better bird numbers in Cerro Gordo, Hancock, Humboldt, Kossuth, and Winnebago counties (Figure 7).

Staff in the NE region reported an 8% increase in birds on routes in 2007 (Table 2, Figure 6). This year's count is 6% above the 10-year average and 52% below the historic average for the region (Table 3). Staff reported 26% more hens on routes this year, but fewer chicks per hen compared to 2006, suggesting the nesting period was not as good this year (Table 2). Staff reported better counts in Buchanan, Dubuque, and Howard, and counties in 2007.

Central Regions. Staff in the WC region reported an average of 27 birds/route in 2007, 4% higher than the 2006 estimate (Table 2, Figure 6). This year's count is 4% above the 10-year average and 46% below the historic average for the region (Table 3). The March blizzard reduced hen survival in the region as total hens counted declined by 12%, but overwinter losses were offset by favorable conditions during nesting as age ratios showed more chicks per hen (Table 2). Better bird numbers were reported in Audubon, Calhoun, Monona, and Sac counties (Figure 7).

The Central region of Iowa reported no change in bird numbers in 2007 (Table 2, Figure 6). Counts in this region averaged 39 birds/route, which is 11% below the 10-year average and 20% below the long-term average (Table 3). Winter survival appeared lower with fewer hens reported on routes in 2007, but nesting appeared favorable slightly more chicks per hen reported in 2007. Some of the better counts in 2007 came from Boone, Hamilton, Jasper, Poweshiek, Story, and Webster counties (Figure 7).

Counts in the EC region (25 birds/route) were 9% higher when compared to 2006, but the increase was not significant (Table 2 and Figure 6). Counts remain 20 and 48 % below the 10-year and long-term averages, respectively (Table 3). Staff reported more hens on routes in 2007 indicative of the mild winter in this region (Tables 1 and 2), however staff reported 29% fewer chicks per adult hen suggesting poor conditions during nesting, brood-rearing, or both. Better counts came from Iowa, Jones, and Johnson counties (Figure 7).

Southern Regions. Counts in the SW region declined significantly (-37%) for the second year in a row (Table 2, Figure 6). This year's count is 42% below the 10-year average and 81% below the long-term average (Table 3). The March blizzard hit this region hard as indicated by ~ 40% fewer hens counted on routes this summer (Tables 1 and 2). Lower age ratios also suggest a poor reproductive season. Better counts in 2005 came from Adair, Adams, and Cass counties (Figure 7).

Counts in the SC region averaged 5.5 birds per route, significantly lower (-35%) than last year (Table 2, Figure 6). Counts in this region are 60-86% below the 10-year and historic averages. This is the 4<sup>th</sup> consecutive year counts have declined in this region (Table 3). Winter snowfall was near normal (Table 1), but staff counted 40% fewer hens on routes in 2007 vs 2006, suggesting the March blizzard may have taken a toll on hens in the region. Staff also reported slightly fewer chicks/hen, suggesting poor weather persisted during nesting and brood-rearing. This particular region boasts the most "potential" upland habitat of any region in the state (Table 1). However, the region also has a lot of pasture, timber and unmanaged (old sod bound) CRP. A better mixture of cropland with habitat would likely improve counts in this region.

Observers in the SE region reported seeing bird numbers similar to 2006 counts (Table 2, Figure 6). This year's count is 15% and 30% below the 10-year and long-term averages for the region (Table 3). Higher hen numbers on 2007 routes was indicative of the mild winter in the region (Tables 1 and 2) However, staff also reported fewer chicks per hens suggesting lower recruitment this spring and summer compared to 2006. According to this year's survey better populations can be found in Henry, Keokuk, Wapello, and Washington counties (Figure 7).

### **BOBWHITE QUAIL**

Statewide bobwhite quail numbers increased (+9%) in 2007 but the increase was not statistically significant indicating that some regions were up while others were down (Table 2, Figure 6). This year's index is 28% above the 10 year average of 0.7 quail per route, but well below the historic figure of 1.5 quail per route (Table 3). In Iowa's primary quail range, SW, SC, and SE regions, populations showed increasing trends in the SE and SC regions, while numbers declined in the SW (Table 2). None of these trends were statistically significant, indicating no consistent trends on routes. Lower counts were expected in the SW region because it took the brunt of the March blizzard. Iowa's quail population remains in a long-term decline (Figure 5). Changing land-use, mainly intensified agriculture, is a leading factor in the decline. Unfortunately, this a trend that 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 across the southern 3 regions this fall (Figure 7). Better counts in 2007 came from Mills, Wayne, Davis, Van Buren, and Wapello counties.

### **GRAY PARTRIDGE**

The 2007 gray partridge count was 1.6 birds per 30 miles, 24% below the 2006 count, but counts were up in some regions and down in others, thus the statewide decline in numbers was not significant (Table 2, Figure 5). This year's statewide estimate is -42% below the 10-year mean and -62% below the long-mean (Table 3, Figure 5). Regionally only the NC region reported a significant downward trend. The NW and C regions reported numbers trending downward, but the NE, WC, and EC regions reported upward trending counts. (Table 2, Figure 6). Typically partridge recruitment is highest in Iowa when precipitation is well below normal. Years with average to above average rainfall generally are not conducive to good partridge reproduction. The NE, NC and C regions had the highest average partridge counts in 2007. Better counts came from Emmet, Plymouth, Hancock, Cerro Gordo, Humboldt, Kossuth, Sac, Greene, Boone, and Story counties (Figure 7).

### **COTTONTAIL RABBIT**

Cottontail rabbit numbers, 4.4 rabbits/route, declined significantly from last year's estimate of 6.5 rabbits/route (Table 2, Figure 5). This year's count is 27% and 28% below the 10-year and historical averages (Table 3). Regionally rabbit numbers declined in nearly all areas, significantly so in the WC and SC regions (Table 2). The decline in the SC region was the largest reported decline, 6.5 rabbits per 30 miles in 2007 verses 15.3 in 2006. Very hot dry condition across most of Iowa in June and July likely reduced summer litters of cottontails. Cottontail hunters should focus their efforts in Taylor, Decatur, Lucas, Warren, Wayne, Davis, Henry, Louisa, Jefferson, Van Buren, Washington, Cedar, and Johnson counties in 2007 (Figure 7).

### **WHITE-TAILED JACKRABBIT**

The average number of jackrabbits counted on this year's survey was significantly lower than the 2006 index (Table 2). This year's index was 52% below the 10-year average and 88% below the historic average (Table 3, Figure 5). Jackrabbit numbers have declined over time with the loss of their preferred habitats (i.e., small grains, pasture, hayfields) in the NW, NC, WC and C regions. This year the Wildlife Bureau reduced the jackrabbit bag/possession limit from 2/4 to 1/2.

Table 2. Mean numbers of wildlife observed per 30-mile route on the August roadside survey in 2006 and 2007. Only routes run under heavy to moderate dew conditions, in both years, are used for statistical comparisons.

REGION	n	RINGNECKED PHEASANTS										BOBWHITE QUAIL			GRAY PARTRIDGE			RABBITS			
		TOTAL		HENS W/O BROODS		HENS W/ BROODS		CHICKS		BROODS		CHICKS/ BROOD		TOTAL	BIRDS	COVEYS	TOTAL	BIRDS	COVEYS	EASTERN COTTONTAIL	WHITE-TAILED JACKRABBIT
		PHEASANT	COCKS	BROODS	W/O	BROODS	HENS	CHICKS	BROODS	BROODS	BROOD	BROOD	BIRDS	COVEYS	BIRDS	COVEYS	BIRDS	COVEYS			
<b>Northwest</b>	26																				
2007		41.31	3.62	1.65	5.08	6.73	30.96	7.65	4.23	0.04									1.65	0.04	
2006		50.04	5.12	2.52	6.04	8.56	36.36	8.04	4.8	2.32									3.8	0.12	
% CHG		<b>-17.4%</b>	<b>-29.3%</b>	<b>-34.5%</b>	<b>-15.9%</b>	<b>-21.4%</b>	<b>-14.9%</b>	<b>-4.9%</b>	<b>-11.9%</b>	<b>-5.6%</b>									<b>-56.6%</b>	<b>-66.7%</b>	
<b>Northcentral</b>	26																				
2007		36.31	2.50	1.00	4.85	5.85	27.96	6.38	4.31	2.46									2.69	0.08	
2006		37.68	3.60	1.92	5.24	7.16	26.92	7.52	3.80	5.16									2.68	0.08	
% CHG		<b>-3.6%</b>	<b>-30.6%</b>	<b>-47.9%</b>	<b>-7.4%</b>	<b>-18.3%</b>	<b>3.9%</b>	<b>-15.2%</b>	<b>13.4%</b>	<b>-52.3%</b>									0.4%	0.0%	
<b>Northeast</b>	18																				
2007		21.56	1.89	0.94	2.83	3.78	15.89	3.61	4.13	2.56									4.28	0.03	
2006		19.89	1.50	1.06	1.94	3.00	15.39	3.67	4.07	2.33									5.22	0.15	
% CHG		8.4%	<b>26.0%</b>	<b>-11.3%</b>	<b>45.9%</b>	<b>26.0%</b>	<b>3.2%</b>	<b>-1.6%</b>	<b>1.5%</b>	9.9%									<b>-18.0%</b>	<b>-80.0%</b>	
<b>West Central</b>	21																				
2007		27.29	1.76	0.95	3.14	4.10	21.43	4.81	4.59	0.86									3.52	0.11	
2006		26.16	2.16	1.05	3.63	4.68	19.32	5.21	4.06	0.37									6.05	0.11	
% CHG		4.3%	<b>-18.5%</b>	<b>-9.5%</b>	<b>-13.5%</b>	<b>-12.4%</b>	<b>10.9%</b>	<b>-7.7%</b>	<b>13.1%</b>	132.4%									<b>-41.8%</b>	<b>0.11</b>	
<b>Central</b>	29																				
2007		38.66	2.66	1.17	5.07	6.24	29.76	6.79	4.29	0.00									2.83	0.03	
2006		37.89	3.15	1.96	5.04	7.00	27.74	6.96	4.20	0.04									4.81	0.15	
% CHG		2.0%	<b>-15.6%</b>	<b>-40.3%</b>	<b>0.6%</b>	<b>-10.9%</b>	<b>7.3%</b>	<b>-2.4%</b>	<b>2.1%</b>	<b>-100.0%</b>									<b>-41.2%</b>	<b>-80.0%</b>	
<b>Eastcentral</b>	18																				
2007		24.89	1.78	1.67	2.94	4.61	18.50	4.44	4.03	1.56									6.50	0.06	
2006		22.82	2.24	0.94	2.59	3.53	17.06	4.24	4.25	0.65									6.59	0.06	
% CHG		9.1%	<b>-20.5%</b>	<b>77.7%</b>	<b>13.5%</b>	<b>30.6%</b>	<b>8.4%</b>	<b>4.7%</b>	<b>-5.2%</b>	140.0%									<b>-1.4%</b>	<b>0.0%</b>	
<b>Southwest</b>	15																				
2007		11.80	1.33	0.60	1.40	2.00	8.47	2.33	3.51	0.67									5.60	0.03	
2006		18.60	1.60	0.73	2.53	3.27	13.73	3.33	4.14	1.87									8.20	0.15	
% CHG		<b>-36.6%</b>	<b>-16.9%</b>	<b>-17.8%</b>	<b>-44.7%</b>	<b>-38.8%</b>	<b>-38.3%</b>	<b>-30.0%</b>	<b>-15.2%</b>	<b>-64.2%</b>									<b>-31.7%</b>	<b>-80.0%</b>	
<b>Southcentral</b>	22																				
2007		5.45	0.77	0.50	0.55	1.05	3.64	0.73	4.22	1.68									6.45	0.02	
2006		8.43	0.71	0.86	0.90	1.76	5.95	1.29	4.57	1.33									15.33	0.06	
% CHG		<b>-35.3%</b>	<b>8.5%</b>	<b>-41.9%</b>	<b>-38.9%</b>	<b>-40.3%</b>	<b>-38.8%</b>	<b>-43.4%</b>	<b>-7.7%</b>	26.3%									<b>-57.9%</b>	<b>0.0%</b>	
<b>Southeast</b>	22																				
2007		19.82	2.14	0.59	2.59	3.18	14.50	3.45	4.53	3.45									8.32	0.08	
2006		20.91	2.36	0.73	1.86	2.59	15.95	3.23	5.11	3.36									8.09	0.06	
% CHG		<b>-5.2%</b>	<b>-9.3%</b>	<b>-19.2%</b>	<b>39.2%</b>	<b>22.8%</b>	<b>-9.1%</b>	<b>6.8%</b>	<b>-11.4%</b>	2.7%									2.8%	<b>-66.7%</b>	
<b>Statewide</b>	197																				
2007		26.81	2.15	1.03	3.38	4.41	20.25	4.75	4.23	0.86									4.43	0.02	
2006		28.44	2.65	1.40	3.51	4.91	20.88	5.09	4.34	2.11									6.54	0.06	
% CHG		<b>-5.7%</b>	<b>-18.9%</b>	<b>-26.4%</b>	<b>-3.7%</b>	<b>-10.2%</b>	<b>-3.0%</b>	<b>-6.7%</b>	<b>-2.5%</b>	<b>-23.7%</b>									<b>-32.3%</b>	<b>-66.7%</b>	

**BOLD** numbers indicate a mathematically significant change from the previous year ( $P < 0.10$ , Wilcoxon Signed Rank Test). Changes in covey numbers are not tested.



# Statewide Pheasant Trends

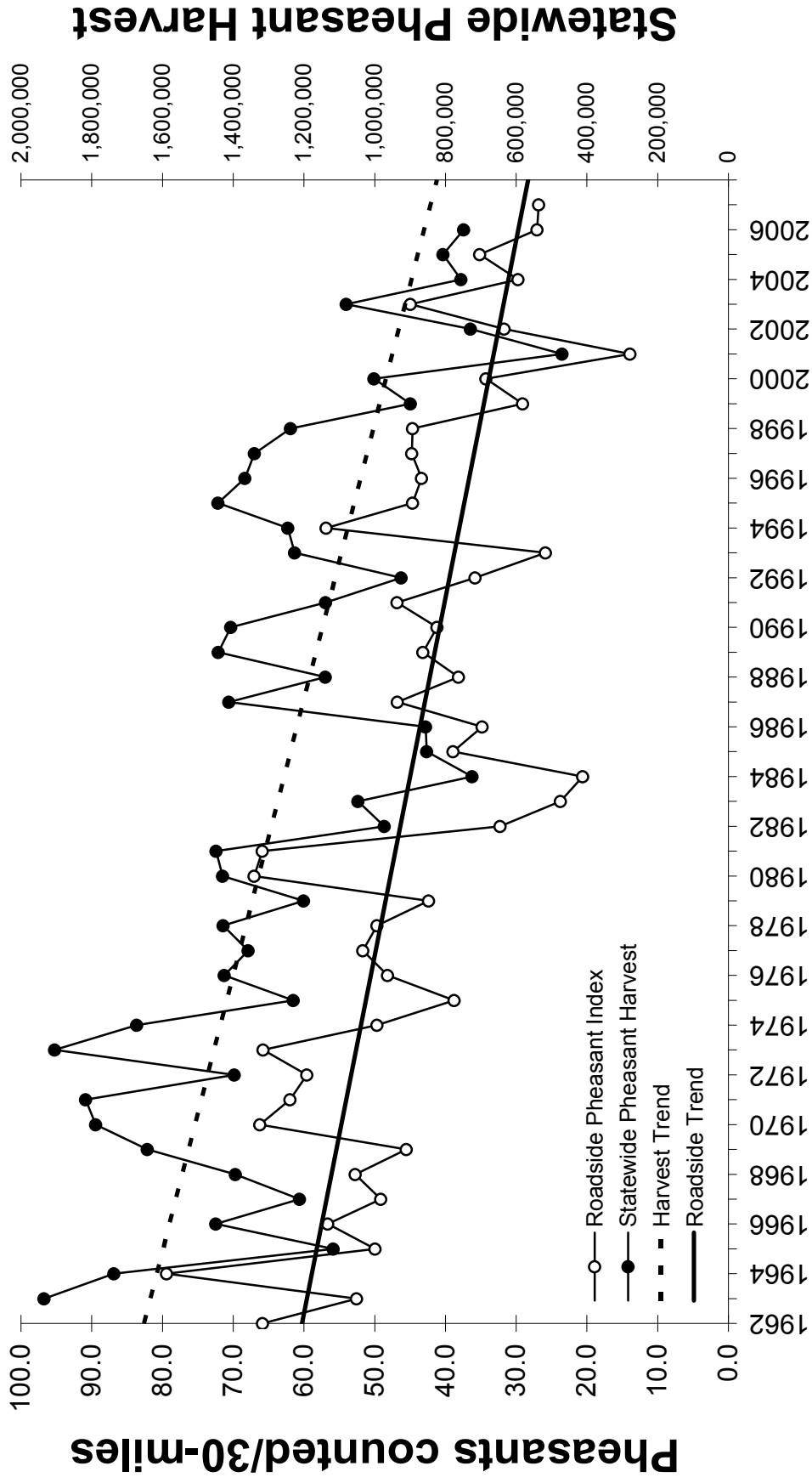


Figure 4. Mean number of pheasants counted on 30-mile August roadside survey routes, statewide, 1962-present compared to total statewide pheasant harvest.

# Statewide Upland Game Trends

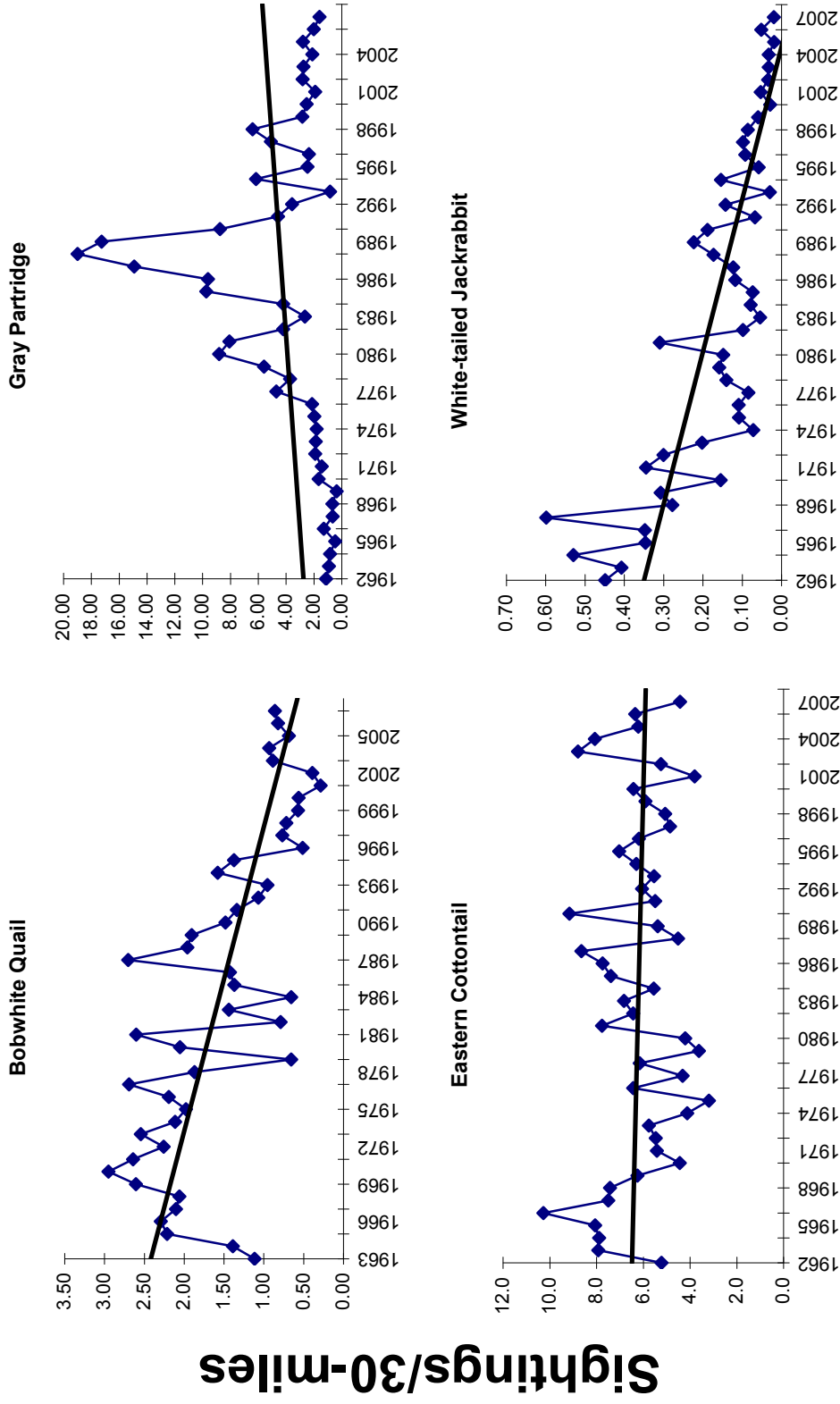


Figure 5. Mean number of quail, partridge, cottontails, and jackrabbits sighted per 30 mile route on the August roadside survey, statewide, 1962 to the present.

# 2007 August Roadside Survey

## Statewide

	2006	2007	Change
Pheasant	28.4	26.8	-5.7%
Quail	0.79	0.86	8.9%
Partridge	2.1	1.6	-23.7%
Cottontail	6.5	4.4	-32.3%

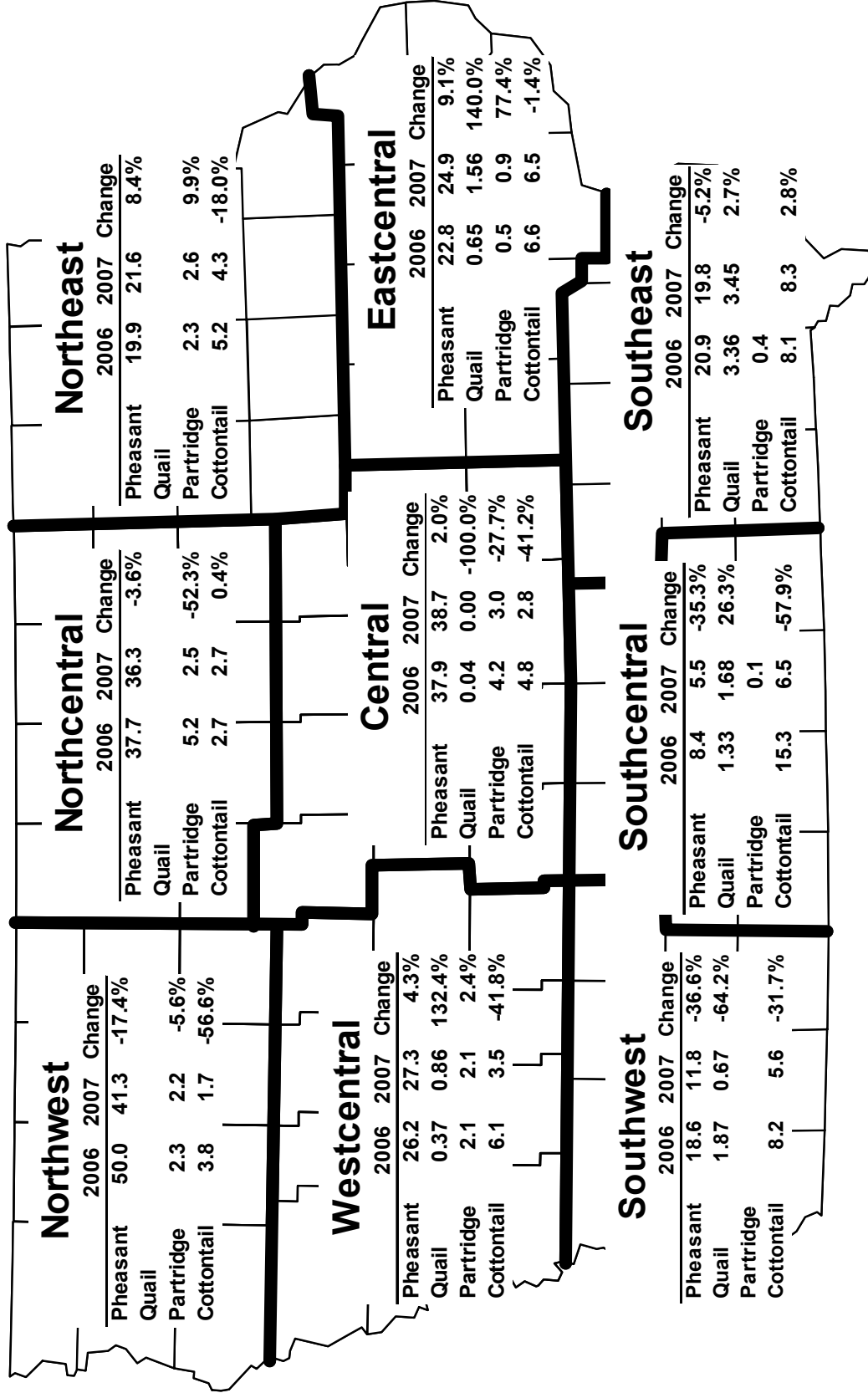
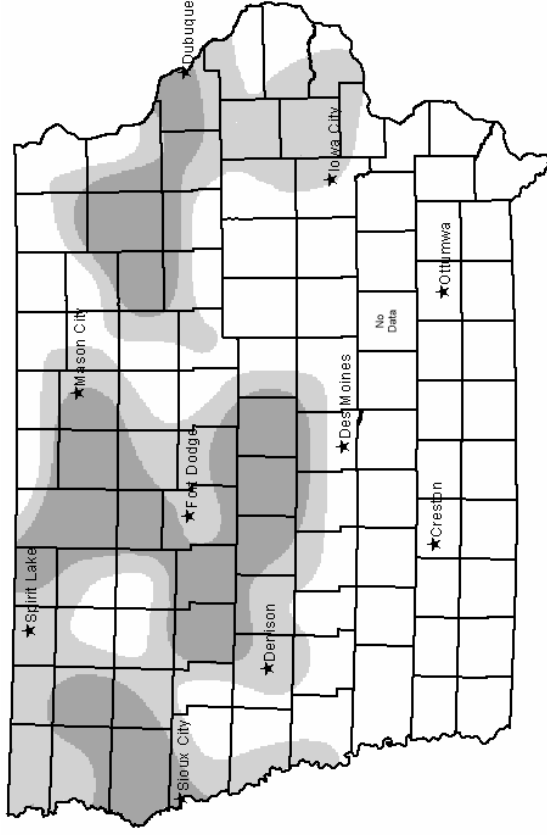
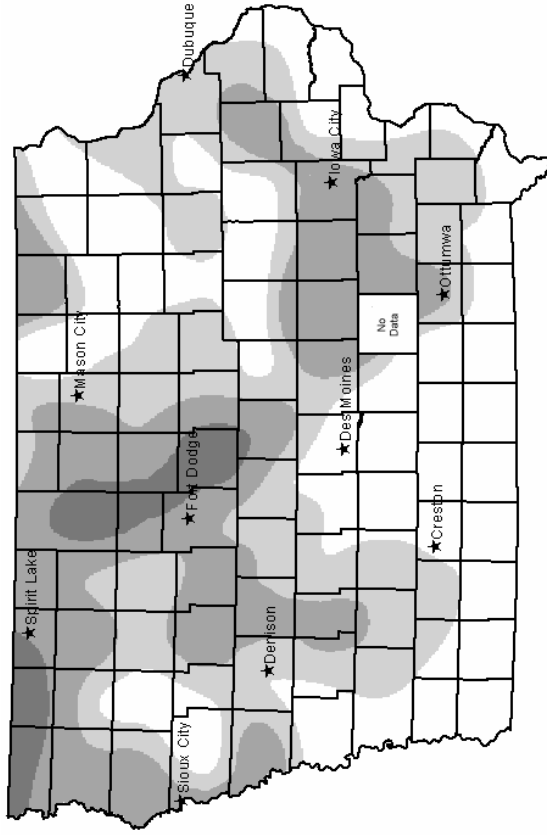


Figure 6. Numbers indicate the average number of animals counted on 30 mile routes in each region (e.g., the northwest region counted an average of 41.3 pheasants on 30-mile survey routes in 2007). Data from 206 of 217 total routes.

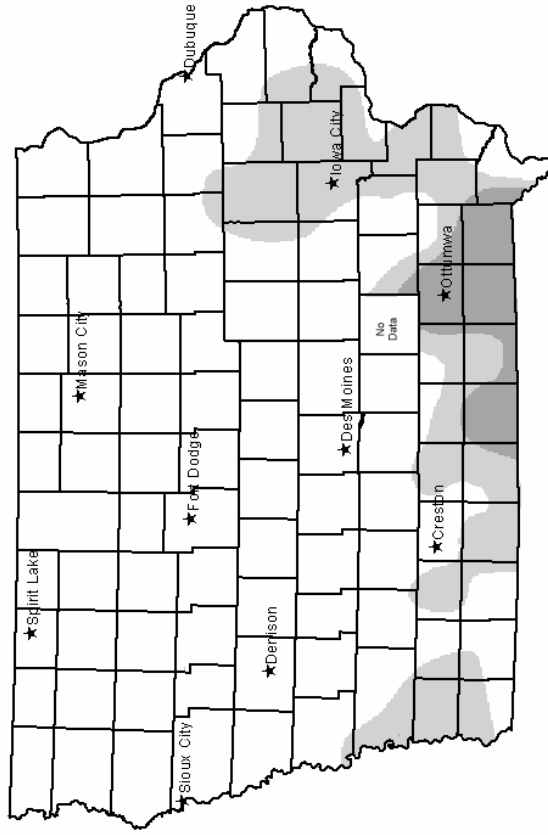
# 2007 GAME DISTRIBUTION

## GRAY PARTRIDGE

### PHEASANT



### QUAIL



### COTTONTAIL

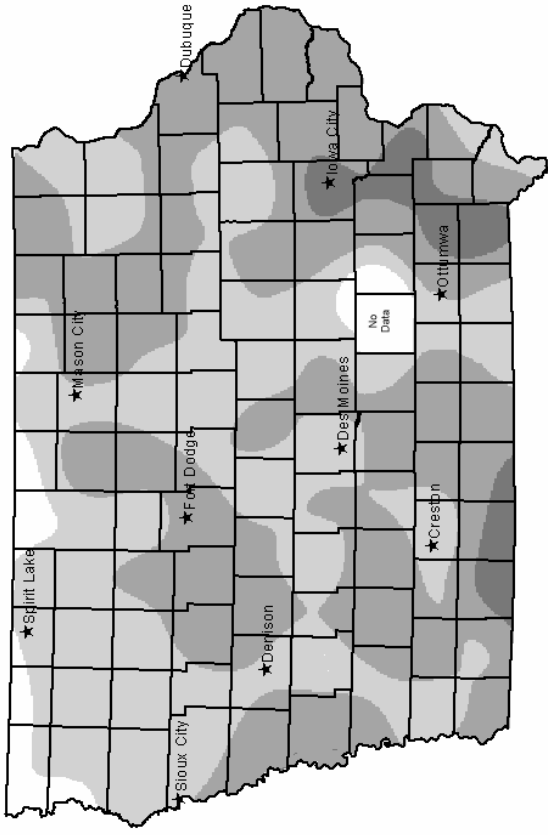


Figure 7. Iowa 2007 small game distribution maps represent generalized game abundance. There can be areas of low game abundance in regions with "high" counts and vice versa.