

# **2022 IOWA AUGUST ROADSIDE SURVEY**

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September 2022

## 2022 IOWA UPLAND WILDLIFE POPULATIONS

This report is a summary of the 2022 Iowa August roadside survey. Iowa DNR Enforcement and Wildlife Bureau personnel throughout the state conduct the survey each year 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 218, 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 2021 and 2022 are based on routes that are directly comparable between years (routes with no alterations and started with good dew). 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**.

### SUMMARY

Statewide, Iowa experienced a mild winter, while spring temperatures were well below normal. Iowa’s weather model predicted pheasant numbers would remain stable or show a small increase based on these weather data. This prediction was confirmed by roadside counts which showed statewide pheasant numbers were essentially unchanged (-4%) compared to 2021. Starting dew conditions were less favorable this year compared to 2021, and counts were quite variable likely related to challenging dew conditions. Pheasant numbers showed increases in the EC and SE regions, with counts similar to last year in other regions. Quail showed large increasing trends all across the southern tier of Iowa. Partridge and cottontail numbers were similar to last year. Last fall’s pheasant harvest was the highest seen in 12 years (Figure 3) and total harvest was 46% above the 10-year average. Pheasant hunters should have good to excellent hunting this fall given the 2022 counts are similar to last year and given the success hunters reported last year, while quail hunting should be much improved from a year ago. If dry conditions persist into the fall, Iowa’s corn and soybean harvest should be mostly complete by the season opener, which generally leads to good success on the opener.

### 2021-22 IOWA WEATHER SUMMARY

Iowa pheasant numbers increase with mild winters (less than 19 inches snowfall) followed by warm, dry springs (less than 6 inches rainfall). They decline with snowy winters (30 or more inches of snowfall) followed by cold, wet springs (8 or more inches of rainfall), and remain generally stable with average weather conditions, (winters with 20–30 inches of snow and springs with 6–8 inches of rainfall).

Table 1. Iowa 2021-22 weather summary.

Weather Variables	Survey Regions									STATE
	NW	NC	NE	WC	C	EC	SW	SC	SE	
<b>Winter Weather*</b>										
Total Snowfall (inch)	11	19	18	9	19	19	9	18	17	<b>15.5</b>
Departure**	-15.2	-10.1	-11.1	-18.5	-6.1	-5.7	-12.1	-3.4	-5.4	-9.7
<b>Spring Weather</b>										
Total Rainfall (inch)	5.4	7.2	7.1	6.4	6.9	6.6	7.4	6.6	6.8	<b>6.7</b>
Departure	-0.6	0.3	0.0	-0.6	-0.3	-0.6	-0.1	-1.1	-0.7	-0.4
Mean Temperature (F)	51	50	50	53	53	54	55	55	55	<b>52.7</b>
Departure	-2.9	-3.3	-2.9	-3.0	-2.3	-2.1	-2.5	-2.2	-2.4	-2.6

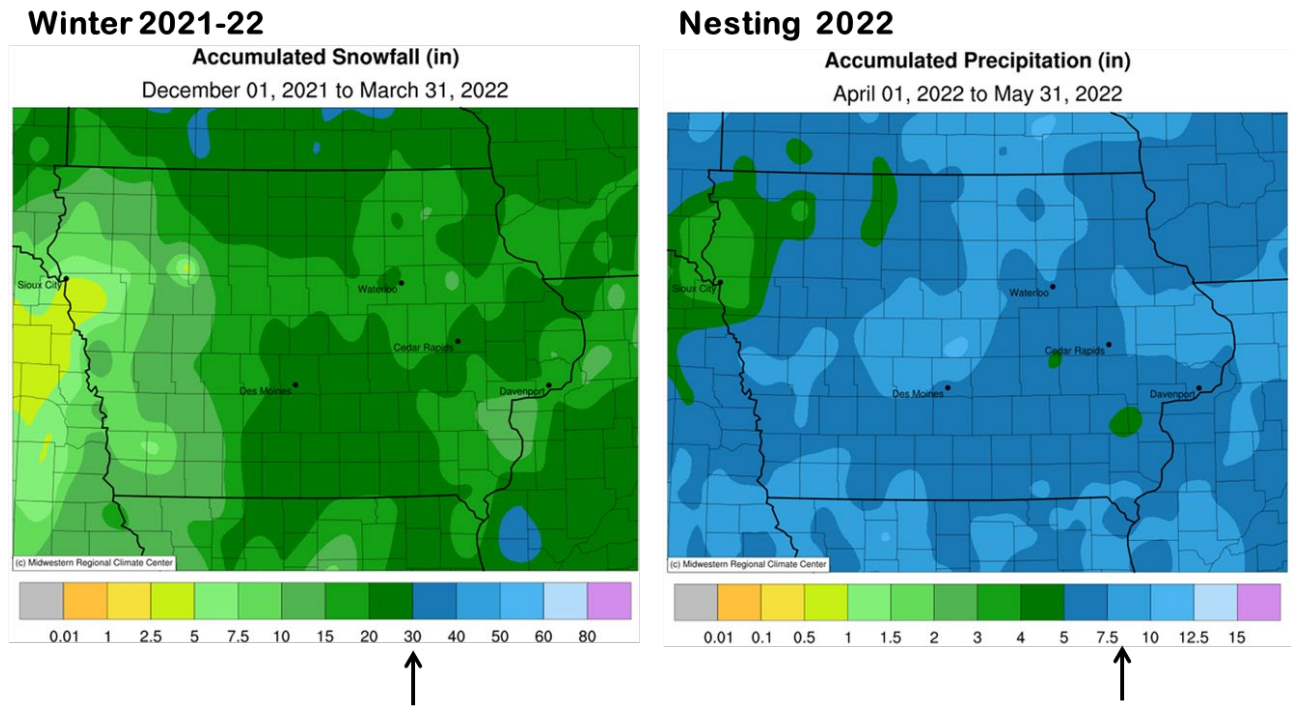
\* Winter weather period (1Dec.-31Mar.) and spring period (1April-31May).

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

The 2021-22 winter statewide snowfall was 15 inches, or 9.7 inches below the long term mean (Table 1). Snowfall was below normal in all regions, especially in western regions (Table 1, Figure 1). Over half the total snowfall came in January, with very little snowfall in other months. These conditions likely led to above average overwinter survival for all small game, pheasant, cottontail, and especially bobwhite. The spring of 2022 was again slightly drier than normal, the third consecutive year of below normal rainfall during the nesting season. However, spring temperatures were much cooler than normal, and averaged 2.6 F degrees cooler than normal. All regions reported nesting season temperatures as below normal (Table 1). Several downburst rain events (3-5") over parts of NC, NE, C, and SE Iowa in June may have also impacted some nesting.

In summary, the weather of 2021-22 was a mixed bag for upland wildlife. The winter was mild likely leading to good over winter survival, especially in western regions, but spring nesting season temperatures were well below normal likely impacting nest success. The Wildlife Bureau's weather model predicted a stable to perhaps small increase in the statewide pheasant population this year based on these weather patterns. The 2022 roadside counts confirmed the statewide pheasant population is unchanged from last year.

Figure 1. Iowa 2021-22 snowfall and rainfall summary. Normal winter snowfall is 25 inches, while normal nesting season rainfall is 7 inches.



Arrows denote snowfall (30") and rainfall (8") amounts critical for pheasant populations. Values above these points trend toward decreased populations in Iowa.

### UPLAND HABITAT TRENDS IN IOWA

The influence of habitat changes on upland populations are more gradual than the impacts of weather. The effects of habitat change are only evident after looking at several years of surveys. Information from the USDA shows that between 1990 and 2020 Iowa lost 2,637 square miles of potential pheasant habitat (Table 2). This habitat was a mix of small grains, hay, and Conservation Reserve Program (CRP) acres. To put this loss in perspective, 2,637 mi<sup>2</sup> is a strip of habitat **9 miles wide** that would stretch from Omaha to Davenport. The CRP has become critical for Iowa pheasant populations with the loss of small grains and hay lands to corn and soybean production.

The 2018 Farm Bill increased the CRP program from a 24 million acre to a 25-million-acre program. Nationally, USDA reports 18.2 million acres enrolled in traditional CRP, as of June 2022, the lowest in program history. Iowa has 1.69 million acres enrolled, with 118,494 acres expiring in September 2022. Opportunities to enroll additional land into CRP in Iowa are improving with recent changes to the program by USDA, with increased CRP incentives and rental rates. The 2018 Farmbill changed rental payments so landowners do not receive fair market rent for their land, which had reduced interest in the program. The CRP is a federal USDA program, thus folks who value CRP for pheasant habitat should visit with their elected congressional representatives. In 2020, Iowa had 2.94 million acres of potential pheasant habitat (Table 2). Grassland habitat acres within Iowa are near an all-time low, with reliable records dating back to 1901.

Table 2. Trends in Iowa habitat and total habitat loss from 1990 to 2020, 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
2020	1,160,000	73,000	1,705,188	2,938,188
Acres of Habitat Lost 1990 vs 2020				-1,687,873
Square Miles of Habitat Lost 1990 vs 2020				-2,637

The DNR’s walk-in hunting program, Iowa Habitat and Access Program (IHAP), is funded through a combination of the Farmbill and DNR license dollars. Most IHAP sites are typically private CRP lands where the DNR has provided incentives to landowners to manage habitat for wildlife in exchange for public hunting access. Iowa DNR has over 30,000 acres in this program. For a list of IHAP sites or information about enrolling visit <http://www.iowadnr.gov/ihap>.

**SURVEY CONDITIONS**

The August roadside survey yields the most consistent results on mornings with heavy dew, no wind, and sunny skies. Research by Dr. Klomglan at Iowa State University in the 1950s showed the number of pheasants counted on mornings with medium dew averaged a third fewer birds than routes run on a morning with heavy dew. Heavy dew conditions require good soil moisture in late July and early August. During this year’s survey, staff reported 138 routes (65%) started with a heavy dew versus 180 routes (85%) in 2021. The US Drought Monitor showed moderate to extreme drought across much of Iowa in early August. Many staff reported they felt the survey did not capture the birds they’ve been seeing, likely related to lack of good dew during the survey on many routes.

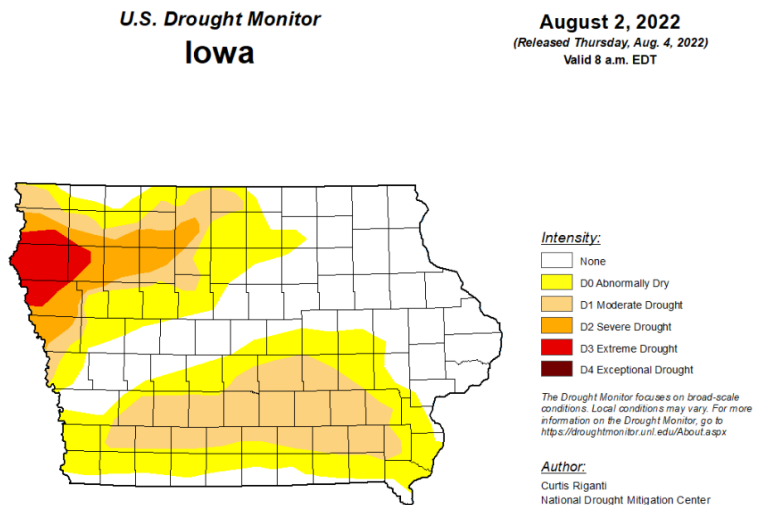


Figure 2. Early August drought map of Iowa.

**RING-NECKED PHEASANT**

**Statewide:** This year the statewide pheasant index of 19.6 birds/route is essentially identical to last year’s estimate of 20.1 birds/route (Table 3). This year’s statewide pheasant population index is 11% above the 10-year trend, but remains below the long-term average (Table 4, Figure 3). Only counts in the SE region were statistically higher than 2021. All other regions reported numbers comparable to 2021 with counts showing

upward or downward trends, but none statistically significant. This means there was no consistent trend in the counts within these regions; some routes increased while others decreased.

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 (-3%) and chicks (-5%) counted on routes this year were unchanged from 2021 (Table 3). Statewide data on chicks/brood (measure of chick survival) and age ratios (chicks per adult hen – measure of overall hen success), were also statistically unchanged from last year (Table 3), suggesting that winter hen survival and total nests were similar to 2021, from a statewide view. However, the regional numbers suggest status quo trends in the NW, WC, and SW regions, slightly downward trends in the NC, NE, C, and SC regions and positive trends in the EC and SE regions, and the overall statewide result was no change (Figure 5).

Overall, pheasant hunters in the Hawkeye state should expect pheasant numbers very similar to 2021. The NW, NC, WC, and C regions show the best overall densities, however hunters in the EC and SE regions should see more birds compared to a year ago. Three (NW, NC, WC) of the 9 survey regions reported pheasant averages of about 30 birds per route (Table 3/Figure 5) and should offer excellent hunting. Pheasant hunting last fall in the Hawkeye state was very good with a harvest of 373,000 roosters, and this fall should be on par with last year. Given this year's statewide index of approximately 20 birds per route, Iowa pheasant hunters should harvest approximately 300,000 to 400,000 roosters this fall (Figure 3). As of early September, Iowa was still experiencing very dry conditions across most of the state. If this pattern continues into October, Iowa could see an early crop harvest, with most fields harvested and plowed by the pheasant opener. Hunter success is usually very good on openers where most crops have been harvested. Hawkeye pheasant hunters could have another very good fall!

Northern Regions: Counts in the NW region trended up from last year, while the NC and NE showed a downward trend (Table 3, Figure 5). Counts in all three regions remain above their 10-year averages (Table 4). The NW region averaged 31.5 birds per route which was the highest density of any region in 2022 (Table 3). All 3 regions should offer good to excellent pheasant hunting, particularly around public and private lands with good winter habitat. Better counts in NW came from Buena Vista, Clay, Dickinson, Emmet, O'Brien, and Osceola counties. Floyd, Hancock, Kossuth, Winnebago, and Wright counties reported better numbers in the NC region, while the NE region reported good counts in Bremer, Fayette, and Howard counties (Figure 6).

Central Regions: The WC region reported the highest counts in the central third of Iowa with 29.6 birds per route in 2022, second only to the NW region in density. The C region also had good counts with 22.4 birds per route (Figure 5). Counts in the EC region increased the most (31%) of any region in 2022 and this year's average is the highest the region has seen since 2016 (Table 4). All 3 regions should offer good to excellent hunting this fall where good quality pheasant habitat exists (Figure 6). The WC region reported better counts in Audubon, Calhoun, Greene, Ida, and Sac counties. The Central region reported good bird numbers in Hamilton, Poweshiek, Story and Webster counties, while the EC region reported better numbers in Benton, Cedar, Johnson, and Jones counties (Figure 6).

Southern Regions: Counts across the southern regions were variable with SW showing no change, SC showing a downward trend, and the SE reporting the only statistically significant increase in pheasant numbers in 2022 (Table 3 & Figure 5). Counts in SE showed a consistent upward trend with most routes reporting more birds in 2022 compared to 2021. Drought conditions across much of this region likely impacted counts this year. Some of the better counts in 2021 came from Louisa, Keokuk, Ringgold, Union, and Warren counties (Figure 6).

## **BOBWHITE QUAIL**

Iowa's statewide bobwhite quail index doubled from last year jumping from 0.4 birds per route to 0.81 birds per route (Table 3, Figure 4) a statistically significant increase. This year's statewide quail index is just below the 10-year average of 0.95 quail per route (Table 4). This increase was expected given the lack of snowfall across southern Iowa, which lead to high overwinter survival. Good winter survival is crucial for increasing populations in Iowa, as Iowa represents the northern fringe of the quail range in the United States. All southern regions reported greater than 100% increases in quail numbers over 2021 counts (Table 3, Figure 5). The SW region reported the best overall quail numbers in 2022, followed by the SC region (Figure 5). Hunters harvested

24,000 bobwhite last fall, thus this harvest figure could double this fall. Better counts in 2022 came from Adair, Adams, Fremont, Page and Ringgold counties (Figure 6). Hunters should focus quail hunting where there is a good mix of shrubs, ag fields, and weedy habitat.

### **GRAY PARTRIDGE**

The 2022 gray partridge count was unchanged from 2021 counts with 1.7 versus 2.1 birds per 30 miles (Table 3 & Figure 4). Counts showed an upward trend in the NC region, a declining trend in NW, NE, WC, and C regions, and a stable trend in EC region. None of the regional numbers were statistically significant (Table 3), meaning there was no consistent upward or downward trend among routes. This year's statewide estimate is just below the 10-year mean and 54% below the long term mean (Table 4). Gray partridge prefer the wide-open and treeless agricultural lands of the northern two-thirds of the state. The northern regions (NW, NC, NE) and C region reported the best densities in 2022 (Figure 5). Typically, partridge numbers increase following mild winters and when spring/summer precipitation is below normal. Better counts in 2022 came from Cerro Gordo, Chickasaw, Delaware, Emmet, Fayette, Hamilton, Hardin, Kossuth, Palo Alto, Story, and Webster counties (Figure 6).

### **COTTONTAIL RABBIT**

Staff reported an average of 4.7 rabbits per 30-mile route in 2022, which represents no change from the 2021 estimate of 4.5 per route (Table 3, Figure 4). Cottontails remain very abundant in Iowa. The cottontail index is 19% below the 10-year average and 21% below the long-term average respectively (Table 4). Regionally, rabbit numbers showed the largest decrease in SW region and the largest increase in the NC region, however only the NC change was statistically significant (Table 3 and Figure 5). Cottontails typically increase following mild winters with good moisture during spring and summer. Cottontail hunters can expect good hunting across most of the state this fall. Staff reported the best cottontail numbers in the SC region with good numbers also reported in the EC, C, and SE regions (Figure 5 and 6).

Table 3. Mean numbers of wildlife observed per 30-mile route on the August roadside survey in 2021 and 2022. 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>	26														
2022		31.54	3.69	2.08	3.42	6.54	22.35	4.98	3.59			2.77	0.19	2.77	
2021		29.64	2.84	1.12	3.48	6.16	22.20	4.58	3.33			3.40	0.36	2.24	
% CHG		6%	30%	86%	-2%	6%	1%	9%	8%			-19%	-47%	24%	
<b>Northcentral</b>	25														
2022		27.56	3.44	1.48	3.44	6.04	19.20	4.12	2.71			4.56	0.44	2.60	
2021		31.44	2.80	1.60	4.00	6.88	23.04	4.3	3.38			4.08	0.36	1.64	
% CHG		-12%	23%	-8%	-14%	-12%	-17%	-4%	-20%			12%	22%	<b>59%</b>	
<b>Northeast</b>	18														
2022		17.33	2.33	0.83	1.56	3.83	12.61	3.80	2.95			2.39	0.28	4.33	
2021		21.61	2.39	0.44	2.39	4.00	16.39	4.9	4.09			4.50	0.44	5.00	
% CHG		-20%	-3%	<b>89%</b>	-35%	-4%	-23%	-22%	-28%			-47%	-36%	-13%	
<b>West Central</b>	22														
2022		29.55	4.09	1.41	3.36	5.77	20.68	4.41	3.44	0.91	0.05	0.09	0.00	4.55	0.00
2021		30.14	3.36	1.82	3.32	6.77	21.64	4.44	3.05	0.18	0.00	0.45	0.05	3.45	0.05
% CHG		-2%	22%	-23%	1%	-15%	-4%	-1%	13%			-80%	-100%	32%	-100%
<b>Central</b>	32														
2022		22.38	3.28	1.16	2.94	4.94	15.00	3.89	2.91	0.03	0.00	3.06	0.34	5.13	
2021		25.53	3.78	1.22	2.88	5.63	17.66	4.12	3.05	0.59	0.03	4.09	0.41	5.06	
% CHG		-12%	-13%	-5%	2%	-12%	-15%	-6%	-5%	-95%	-100%	-25%	-17%	1%	
<b>Eastcentral</b>	21														
2022		14.19	1.52	0.71	1.81	3.38	10.14	3.95	2.93	0.14		0.57	0.05	5.38	
2021		10.80	2.45	0.35	1.25	2.10	6.75	3.82	3.17	0.00		0.55	0.05	6.15	
% CHG		31%	-38%	<b>103%</b>	45%	<b>61%</b>	<b>50%</b>	3%	-8%			4%	0%	-13%	
<b>Southwest</b>	16														
2022		4.81	1.25	0.19	0.44	0.94	2.94	3.94	3.05	4.38	0.31			3.63	
2021		4.63	1.06	0.00	0.50	0.75	3.06	3.8	3.80	1.69	0.00			4.94	
% CHG		4%	18%		-12%	25%	-4%	4%	-20%	<b>159%</b>				-27%	
<b>Southcentral</b>	21														
2022		7.38	1.05	0.38	0.71	1.76	5.24	3.46	2.30	2.76	0.14			8.86	
2021		9.43	1.48	0.48	1.05	1.95	6.43	3.66	2.83	1.33	0.05			6.86	
% CHG		-22%	-29%	-21%	-32%	-10%	-19%	-5%	-19%	<b>108%</b>	180%			29%	
<b>Southeast</b>	24														
2022		12.63	1.29	0.79	1.46	2.50	9.08	5.21	3.61	0.58	0.04			5.08	
2021		10.33	2.46	0.71	1.50	2.42	5.67	3.37	2.22	0.17	0.04			5.67	
% CHG		<b>22%</b>	<b>-48%</b>	11%	-3%	3%	<b>60%</b>	<b>55%</b>	<b>63%</b>	241%	0%			-10%	
<b>Statewide</b>	205														
2022		19.61	2.56	1.07	2.27	4.19	13.71	4.25	3.08	0.81	0.05	1.66	0.16	4.67	
2021		20.35	2.64	0.93	2.39	4.33	14.39	4.2	3.19	0.40	0.01	2.07	0.20	4.47	
% CHG		-4%	-3%	15%	-5%	-3%	-5%	1%	-3%	<b>103%</b>	<b>250%</b>	-20%	-20%	4%	

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





# Statewide Pheasant Trends

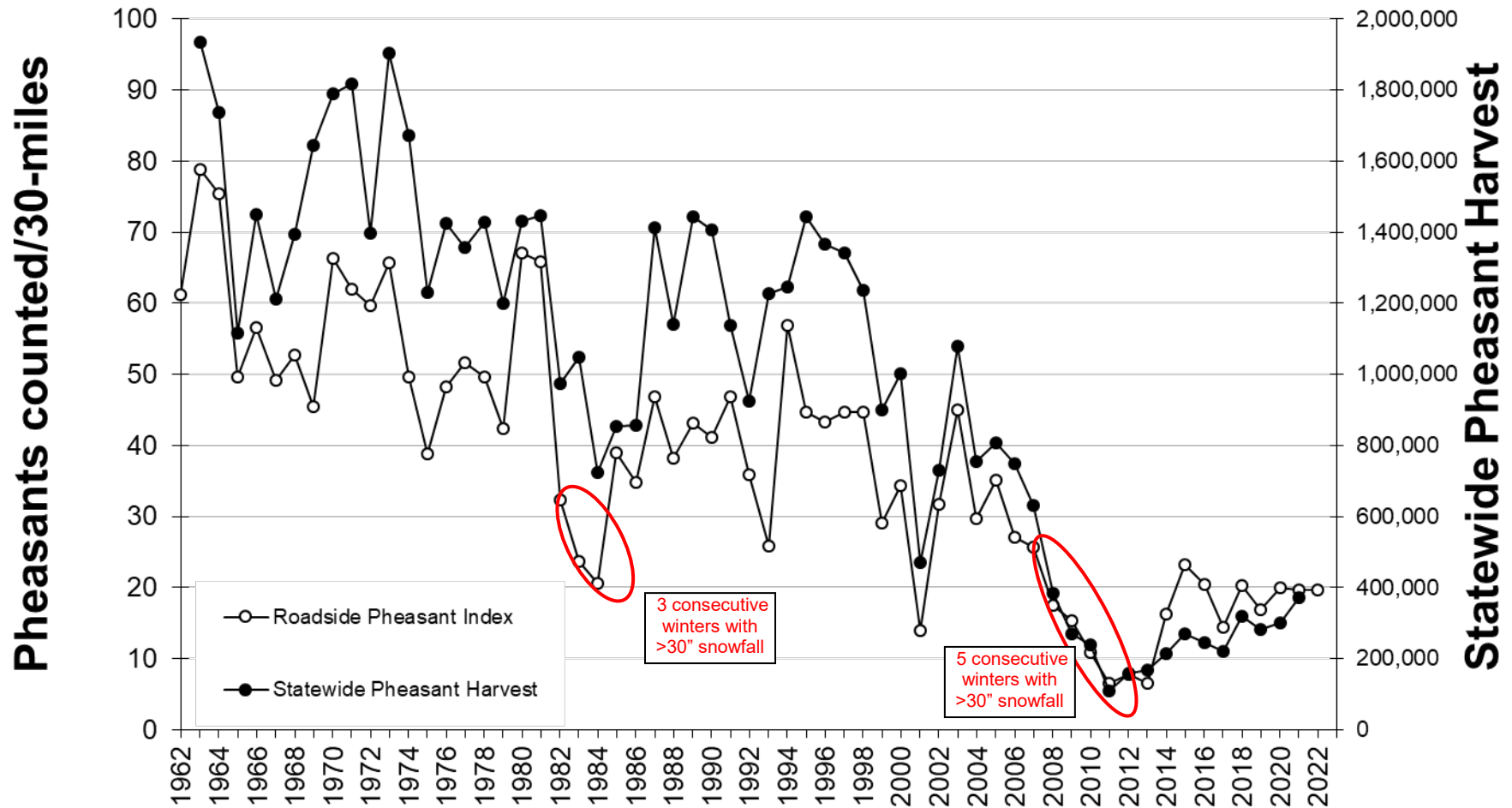
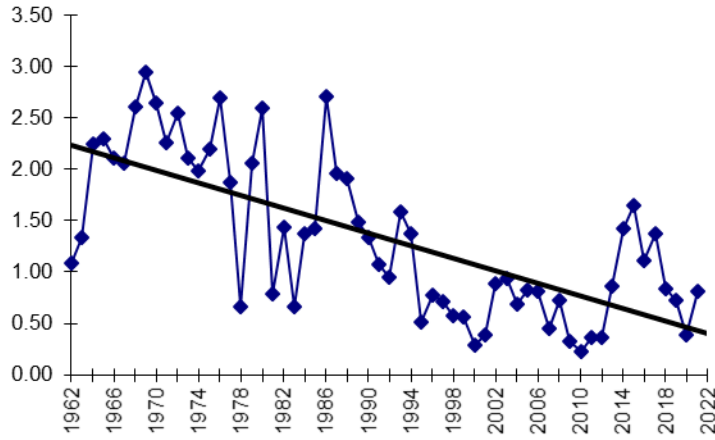


Figure 3. Mean number of pheasants counted on 30-mile August roadside survey routes, statewide, 1962-present compared to total statewide pheasant harvest.

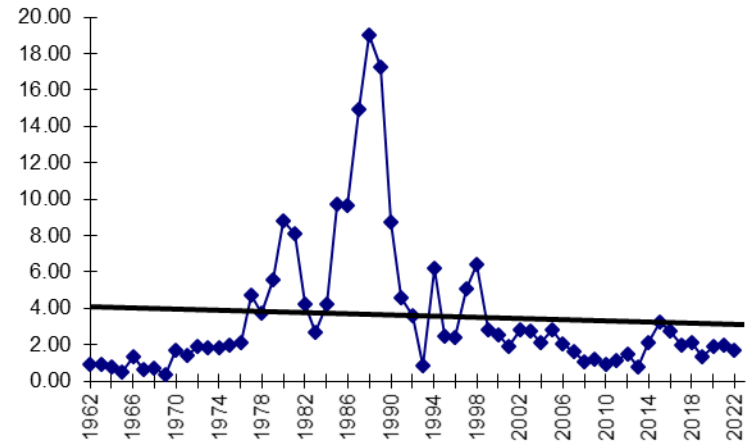
# Statewide Upland Game Trends

Sightings/30-miles

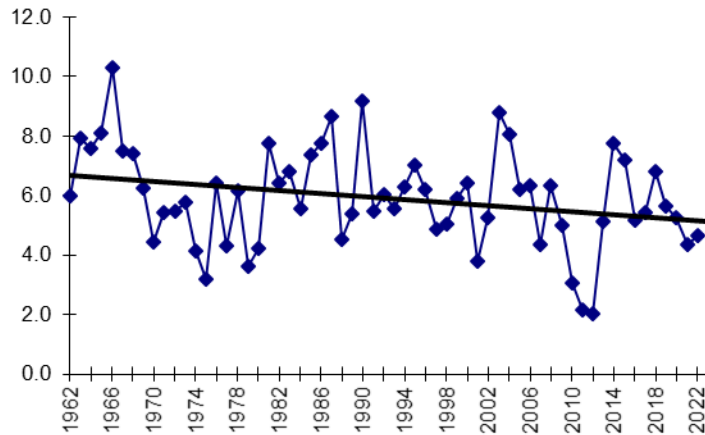
**Bobwhite Quail**



**Gray Partridge**



**Eastern Cottontail**



**White-tailed Jackrabbit**

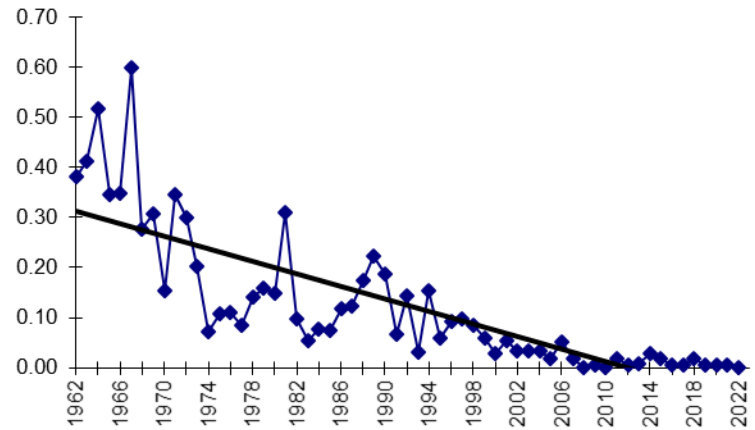


Figure 4. Mean number of quail, partridge, cottontails, and jackrabbits sighted per 30 mile route on the August roadside survey, statewide, 1962 to the present.

# 2022 August Roadside Survey

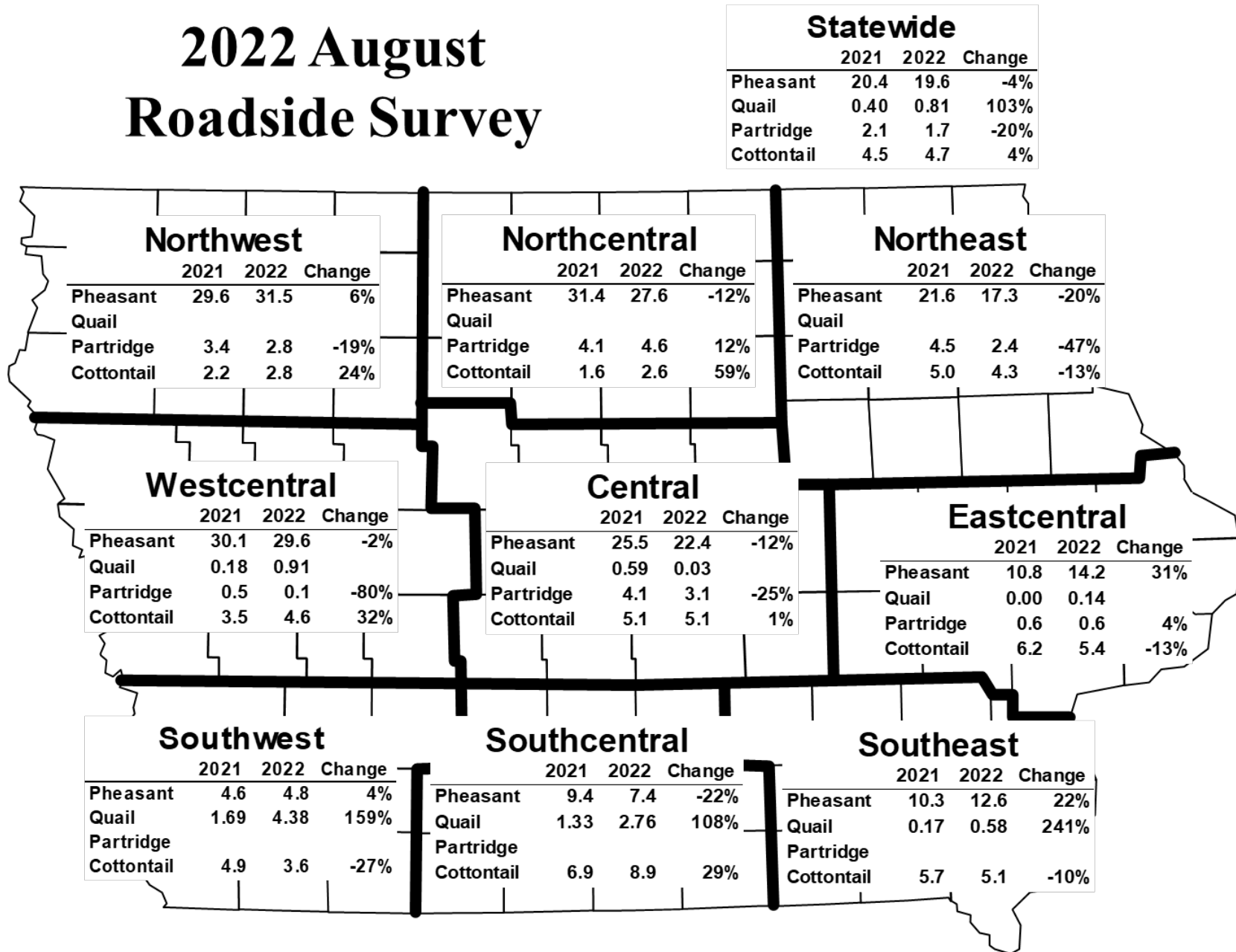
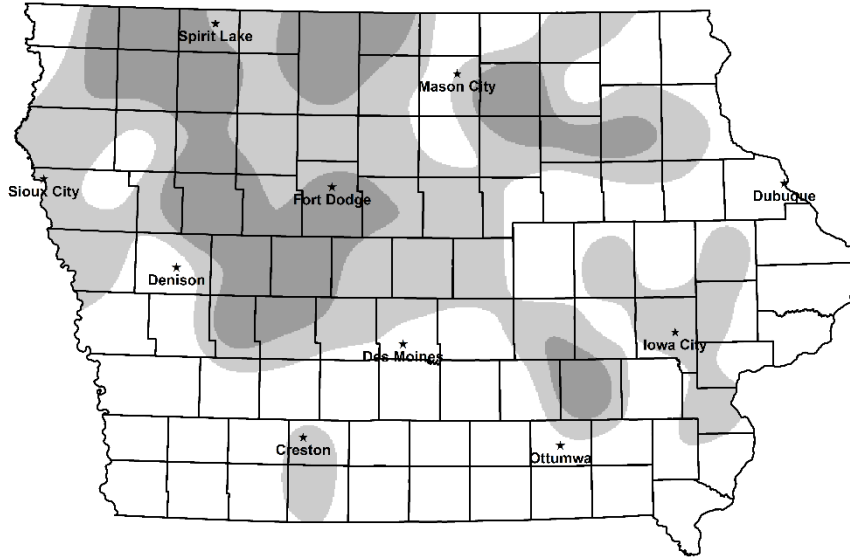


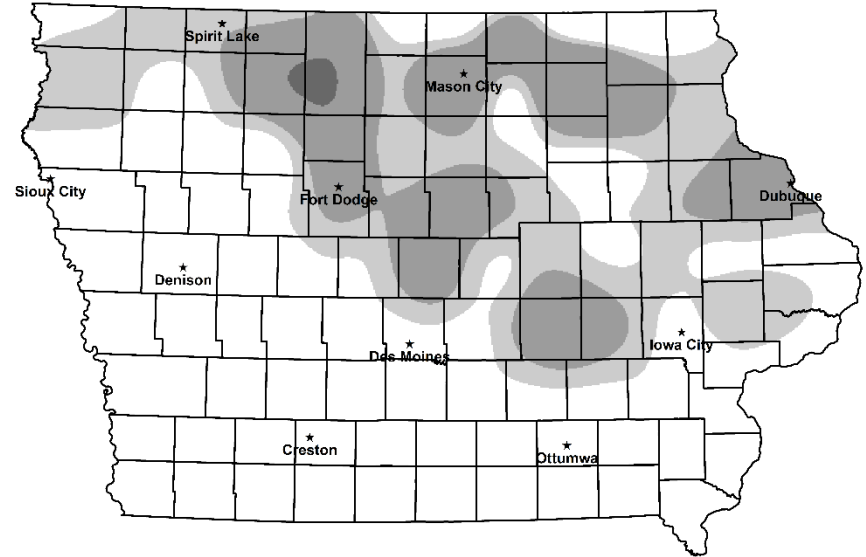
Figure 5. Numbers indicate the average number of animals counted on 30-mile routes in each region (e.g., the northwest region counted an average of 31.5 pheasants on 30-mile survey routes in 2022). Data from 205 of 216 comparable returned routes.

# 2022 GAME DISTRIBUTION

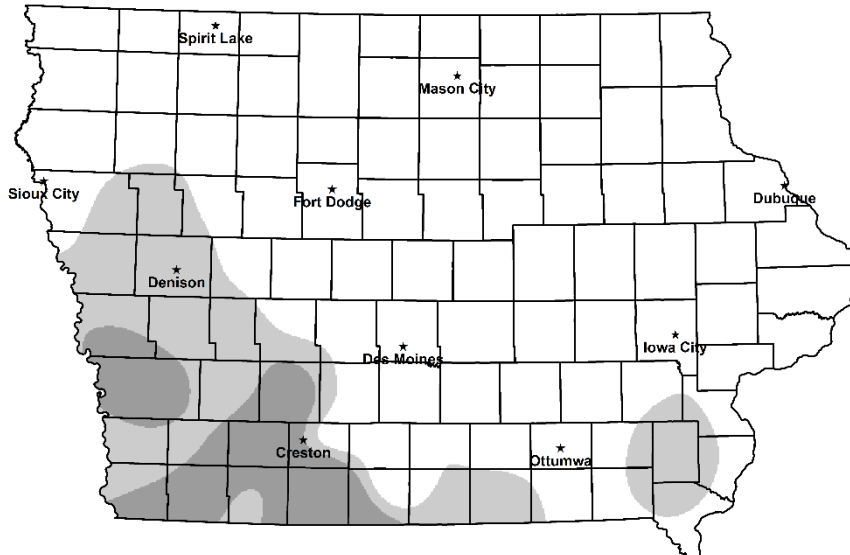
## PHEASANT



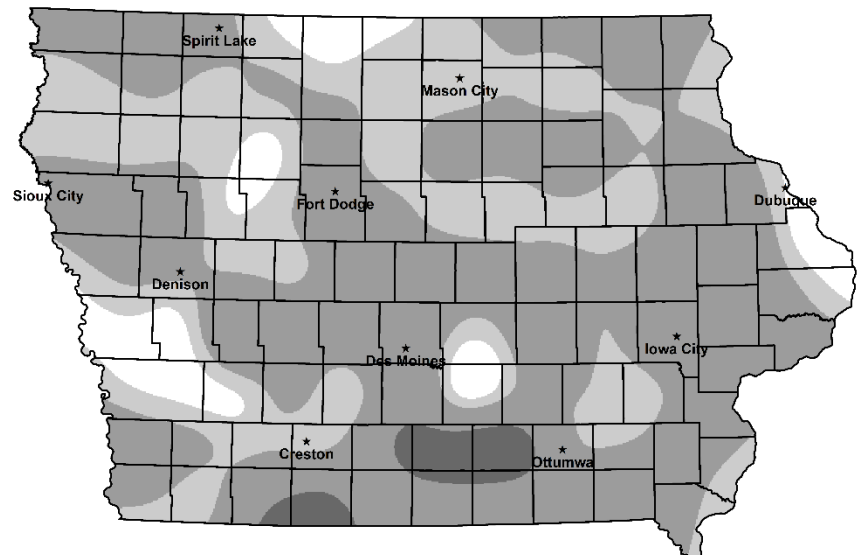
## GRAY PARTRIDGE



## 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.