

2024 IOWA AUGUST ROADSIDE SURVEY

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2024 IOWA UPLAND WILDLIFE POPULATIONS

This report is a summary of the 2024 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.

The August roadside survey generates data from approximately 225, 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 2023 and 2024 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 slightly milder than normal winter, followed by a wetter than normal spring. Iowa’s weather model predicted pheasant numbers would decrease based on these weather trends. This prediction was confirmed by the roadside counts which showed statewide pheasant numbers decreased significantly (-14%) compared to 2023. Starting dew conditions were similar to 2023, making counts between years very comparable. Pheasant numbers showed decreasing trends in 7 of the 9 survey regions, with counts similar to last year in other regions. Similar to pheasants, gray partridge numbers showed a significant statewide decrease (-37%), with northern and central regions showing the best counts. Bobwhite quail numbers also declined (-32%), while cottontail numbers showed a significant increase (11%) compared to last year. Pheasant hunters should have good to excellent hunting in many regions this fall given the 2024 counts and the success hunters reported last year. Last year Iowa pheasant hunters reported harvesting over half a million roosters, Iowa’s best harvest since 2007. The 2024 roadside counts are very similar to the 2021 and 2022 counts and hunters harvested 350,000 – 400,000 roosters in each of those years. 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.

2023-24 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 2022-23 weather summary.

Weather Variables	Survey Regions									STATE
	NW	NC	NE	WC	C	EC	SW	SC	SE	
Winter Weather*										
Total Snowfall (inch)	15	11	22	21	25	26	19	23	23	20.6
Departure**	-11.3	-18.3	-7.7	-6.0	0.1	1.5	-2.4	1.6	0.3	-4.7
Spring Weather										
Total Rainfall (inch)	11.9	13.4	12.1	11.1	11.8	10.1	10.4	11.4	11.8	11.6
Departure	5.9	6.5	5.0	4.1	4.5	2.9	2.9	3.7	4.3	4.4
Mean Temperature (F)	55	55	54	56	56	57	58	58	58	56.4
Departure	1.3	1.1	0.8	0.2	1.6	1.6	0.5	1.5	1.0	1.1

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

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

The 2023-24 winter statewide snowfall was slightly below normal at 21 inches (Table 1). Snowfall was at or below normal in all regions, except in parts of the EC and SC regions (Table 1, Figure 1). Virtually the entire winters snowfall came in a mid-January 2-week blizzard, with very little snowfall in February or March. These conditions likely led to average to above average overwinter survival for all small game in most of the state. However, the January blizzard was severe enough to likely have caused some mortality in the EC and SC regions. The big impact to Iowa's upland game in 2024 was the historic rainfall and flooding during the spring of 2024. While the spring was warmer than normal, every region reported rainfall during the nesting season that was 3-7 inches above normal, ending Iowa's 4-year string of dry nesting seasons (Table1, Figure 1). This unfavorable spring weather likely offset any gains seen from the milder winter. In summary, the weather of 2023-24 can be summed up as a good winter followed by a bad spring. The Wildlife Bureau's weather model predicted a decrease in the statewide pheasant population based on these weather patterns. The 2024 roadside counts confirmed a decline in pheasant populations from last year.



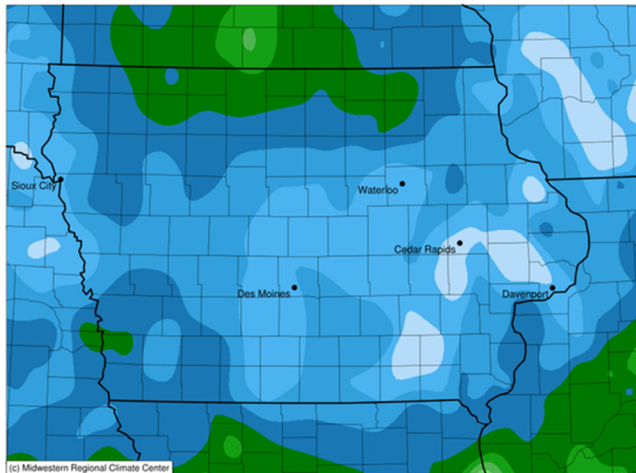
Stressed pheasant EC and quail SC in Iowa during January 2024 blizzard.

Figure 1. Iowa 2023-24 snowfall and rainfall summary. Normal winter snowfall is 25 inches, while normal nesting season rainfall is 7 inches.

Winter 2023-24

Accumulated Snowfall (in)

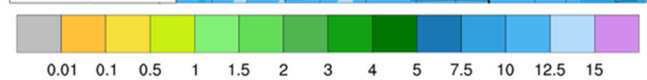
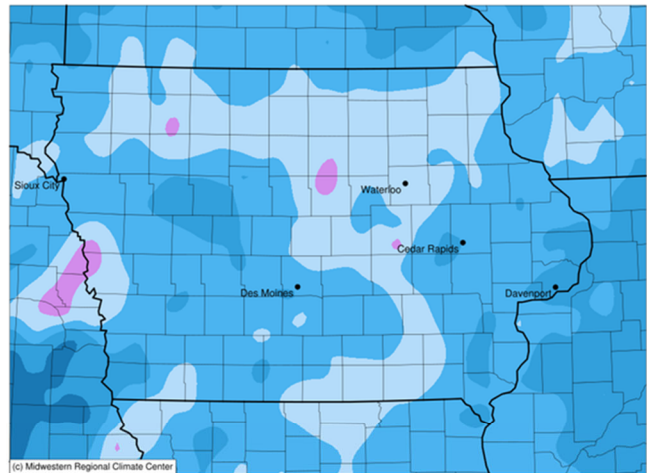
December 01, 2023 to March 31, 2024



Nesting 2024

Accumulated Precipitation (in)

April 01, 2024 to May 31, 2024



Arrows denote important thresholds for Iowa, snowfall (≥ 30 ") and rainfall (≥ 8 "). Precipitation above these values trend toward decreased pheasant 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 mi² 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 16.1 million acres enrolled in traditional CRP, as of April 2024, the lowest in program history. Iowa has 1.68 million acres enrolled, with 74,312 acres expiring in September 2024. Opportunities to enroll additional land into CRP in Iowa are declining. 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 USDA grants 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. Klonglan 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 172 routes (78%) started with a heavy dew versus 177 routes (82%) in 2023. Staff reported sunny starting conditions on 76% of routes in 2024 versus 74% last year. The US Drought Monitor showed no drought across Iowa in early August of 2024 compared to 100% of the state in some level of drought in 2023. Conditions the first two weeks of August were very good for conducting counts.

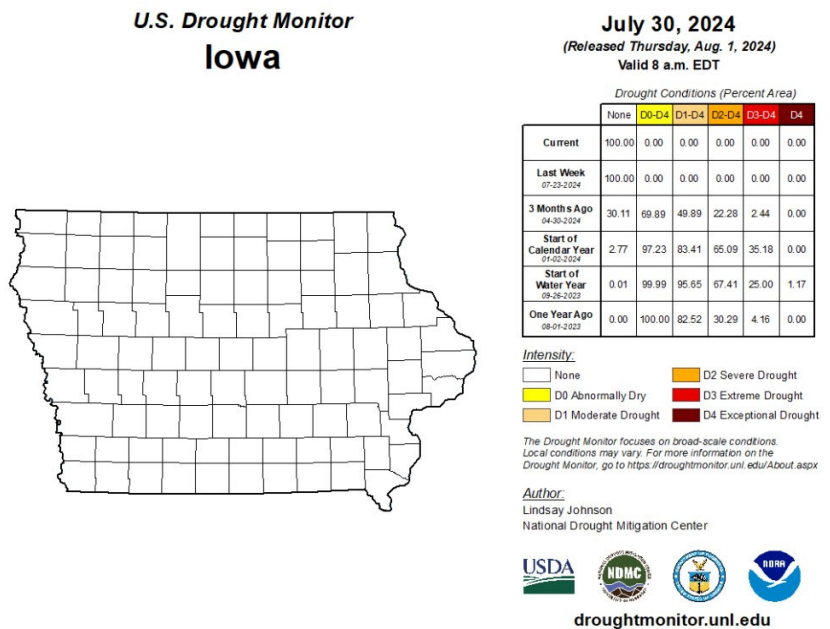


Figure 2. Early August drought map of Iowa.

RING-NECKED PHEASANT

Statewide: This year the statewide pheasant index of 19.3 birds/route represents a significant decrease over last year's estimate of 22.6 birds/route (Table 3). However, even with this decline the statewide pheasant population index is at (-1%) the 10-year trend (Table 4, Figure 3). Iowa research indicates overwinter hen survival, brood survival, and nest success are the major factors influencing annual changes in pheasant numbers. Statewide, the total cocks and hens counted on routes were essentially unchanged from 2023, suggesting good overwinter survival (Table 3). However, statewide data on total chicks, chicks/brood (measure of chick survival) and age ratios (chicks per adult hen – measure of overall hen success) were all statistically lower than last year, suggesting from an overall statewide perspective that nest success and brood survival were much poorer in 2024 compared to 2023 (Table 3). Hens without broods was also significant higher (18%) compared to 2023 also supporting a poorer nesting season in 2024. These trends match up well with the weather Iowa experienced over the past year. Only counts in the SW region were statistically lower than 2023, while all other regions reported numbers comparable to 2023 with counts showing upward or downward trends, but none statistically significant - meaning there was no consistent trend in the counts within these regions; some routes increased while others decreased. Counts in the EC and SE regions showed small increases, while counts in other regions showed slight downward trends. The downward trend in 7 of the 9 survey regions contributed to the overall significant statewide decline, even though most regions did not report statistically significant changes in counts.

Overall, pheasant hunters in the Hawkeye state should expect pheasant numbers to be slightly lower than in 2023 in most regions. The NW, NC, NE, WC, and C regions show the best overall densities, however hunters in the EC and SE regions might see a few more birds compared to a year ago. Five (NW, NC, NE, WC, C) of the 9 survey regions reported pheasant averages of 20+ birds per route (Table 3/Figure 5) and should offer good to excellent hunting. Pheasant hunting last fall in the Hawkeye state was the best seen since 2007 with over half a million (591,000) roosters harvested. Given this year's statewide index of just under 20 birds per route, Iowa pheasant hunters should harvest approximately 350,000 to 400,000 roosters this fall (Figure 3). Hawkeye pheasant hunters could have another very good fall! As of early September, Iowa was still experiencing 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.

Northern Regions: Counts in all northern regions exhibited downward trends compared to last year, but none of the declines were statistically significant – meaning generally counts decreased, but some routes increased (Table 3, Figure 5). Counts in all three regions are above their 10-year averages, especially the NE region. The NW region averaged 33 birds per route which was the highest density of any region in 2024, while the NE and NC regions averaged 25 and 24 birds/route respectively (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, Clay, Emmet, and Osceola counties. Butler, Floyd, Hancock, and Humboldt counties reported better numbers in the NC region, while the NE region reported the best counts in Bremer, Chickasaw, and Howard counties (Figure 6).

Central Regions: The WC region reported the second highest counts in the state with 26 birds per route in 2024, with the C region reporting 22 birds/route (Figure 5). Counts in the EC region were statistically unchanged from 2023, but showed an upward trend (Table 3). The EC region was one of the few regions that reported more hens with broods (50%) and chicks (18%) than in 2023, which led to upward trend in counts. 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 Ida, Calhoun, Greene, and Sac counties. The Central region reported good bird numbers in Boone, Grundy, Marshall, and Webster counties, while the EC region reported better numbers in Johnson, Jones, and Muscatine counties (Figure 6).

Southern Regions: Counts in this region were highly variable with counts in the SE region showing a small upward trend, while counts in the SW region declined significantly compared to 2023 (Table 3 & Figure 5). Counts in all three regions remain below their 10-year means (Table 4). Hunters should expect bird numbers

similar (SE region) or lower (SC and SW regions) compared to 2023. Some of the better counts in 2024 came from Henry, Louisa, Union, and Washington counties (Figure 6).

BOBWHITE QUAIL

Iowa's statewide bobwhite quail index trended lower from last year with 0.5 quail per route in 2024 compared to 0.7 quail per route in 2023 (Table 3, Figure 4), however the change was not statistically significant. This is related to the variation in quail counts across the state this year, with higher counts in the WC and SE regions lower counts in the SC region, and no change in counts in the SW region. This year's statewide quail index is -49% below the 10-year average and -62% below the long term mean (Table 4). Staff reported coveys appeared very stressed in the SC region during the mid-January blizzard, but in other regions like the WC, the blizzard was less severe. Counts showed no statistically significant trend in any Southern region this year (Table 3, Figure 5). Staff detected similar brood numbers in 2024 (Table 3). The SW region reported the best overall quail numbers in 2024, followed by the WC region (Figure 5). Better counts in 2024 came from Adams, Cass, Crawford, Guthrie, Mills, Page, Shelby and Wayne counties (Figure 6). Hunters should focus quail hunting where there is a good mix of shrubs, ag fields, and weedy habitat.

GRAY PARTRIDGE

The 2024 statewide gray partridge count decreased significantly (-37%) when compared to 2023 (Table 3 & Figure 4). Typically, partridge numbers increase following mild winters and when spring/summer precipitation is well below normal. The wet spring no doubt impacted partridge reproduction. Partridge are only found in the northern and central regions of Iowa, and counts showed downward trends in all northern regions as well as the central region. The WC and EC regions reported increases, but only the decline in the NC region was statistically significant (Table 3), meaning there was no consistent trend in gains versus losses among routes within most regions. This year's statewide estimate is -26% below the 10-year mean and -56% 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 NW, NC, and C regions reported the best densities in 2024 (Figure 5). Better counts in 2024 came from Buchanan, Buena Vista, Calhoun, Pocahontas, Poweshiek, and Wright counties (Figure 6).

COTTONTAIL RABBIT

Staff reported an average of 5.25 rabbits per 30-mile route in 2024, which represents a statistically significant increase from the 2023 estimate (Table 3, Figure 4). Cottontails remain very abundant in Iowa. Regionally, rabbit numbers showed statistically significant increases in the NC, C, and SE regions, with relatively stable numbers in other regions (Table 3 and Figure 5). Cottontails typically increase following mild winters with good moisture during spring and summer, thus the excess rainfall this year likely benefitted reproduction in many regions. The statewide cottontail index remains very close to the 10-year and long-term averages respectively (Table 4). Cottontail hunters can expect good to excellent 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 WC, EC, SW, and SE regions (Figure 5 and 6).

Table 3. Mean numbers of wildlife observed per 30-mile route on the August roadside survey in 2023 and 2024. Only directly comparable routes 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
Northwest	28														
2024		32.64	4.07	2.07	4.32	7.50	22.18	4.06	2.82			3.50	0.36	3.29	
2023		39.85	4.12	2.04	5.27	8.15	28.42	4.45	3.40			5.54	0.50	2.00	
% CHG		-18%	-1%	1%	-18%	-8%	-22%	-9%	-17%			-37%	-28%	65%	
Northcentral	25														
2024		24.44	3.20	1.84	3.28	6.16	16.12	3.51	2.50			2.48	0.32	2.48	
2023		29.04	3.00	0.91	3.35	5.48	21.78	4.42	3.93			6.65	0.57	2.17	
% CHG		-16%	7%	102%	-2%	12%	-26%	-21%	-36%			-63%	-44%	14%	
Northeast	20														
2024		25.05	3.50	1.25	3.20	5.40	17.10	4.14	2.99			1.40	0.05	3.95	
2023		28.32	2.32	0.47	3.26	4.74	22.26	5.03	4.58			1.84	0.21	4.32	0.05
% CHG		-12%	51%	166%	-2%	14%	-23%	-18%	-35%			-24%	-76%	-9%	
West Central	25														
2024		26.12	2.92	1.72	3.72	5.92	17.76	4.21	3.15	1.48	0.12	1.72	0.20	6.72	
2023		27.35	3.22	1.96	3.09	6.43	19.09	4.24	3.23	0.87		1.30	0.13	6.09	
% CHG		-4%	-9%	-12%	20%	-8%	-7%	-1%	-2%	70%		32%	54%	10%	
Central	32														
2024		21.81	2.72	1.28	2.69	4.66	15.13	4.79	3.64			2.53	0.31	5.31	
2023		26.42	3.03	1.39	2.74	5.65	19.26	4.76	3.79	0.03		4.52	0.42	4.00	0.10
% CHG		-17%	-10%	-8%	-2%	-18%	-21%	1%	-4%			-44%	-26%	33%	
Eastcentral	19														
2024		13.05	1.26	0.63	1.58	2.68	9.58	4.43	3.72			1.26	0.11	6.21	
2023		11.16	1.58	0.42	1.05	2.11	8.11	4.28	3.69	1.00	0.11	0.26	0.05	6.74	
% CHG		17%	-20%	50%	50%	27%	18%	4%	1%			385%	120%	-8%	
Southwest	18														
2024		3.56	0.94	0.28	0.44	0.89	1.89	3.06	2.20	2.06	0.06			4.78	
2023		12.72	1.94	0.61	1.61	2.89	8.56	3.68	2.93	2.17	0.06			5.11	
% CHG		-72%	-52%	-54%	-73%	-69%	-78%	-17%	-25%	-5%	0%			-6%	
Southcentral	25														
2024		5.24	1.08	0.44	0.64	1.24	3.08	3.54	2.14	0.76	0.04			8.16	
2023		8.28	1.16	0.24	0.92	1.68	5.96	4.38	3.39	2.76	0.16			7.60	
% CHG		-37%	-7%	83%	-30%	-26%	-48%	-19%	-37%	-72%	-75%			7%	
Southeast	24														
2024		14.79	2.17	0.67	1.92	2.96	10.04	4.39	3.33	0.42				6.46	
2023		14.14	2.50	0.59	1.95	2.91	9.09	4.47	3.24					5.27	
% CHG		5%	-13%	14%	-2%	2%	10%	-2%	3%					23%	
Statewide	216														
2024		19.33	2.52	1.19	2.53	4.34	13.09	4.13	3.03	0.49	0.02	1.56	0.17	5.25	
2023		22.57	2.61	1.01	2.66	4.61	16.29	4.45	3.59	0.72	0.03	2.46	0.23	4.73	0.02
% CHG		-14%	-3%	18%	-5%	-6%	-20%	-7%	-16%	-32%	-33%	-37%	-26%	11%	

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

Statewide Pheasant Trends

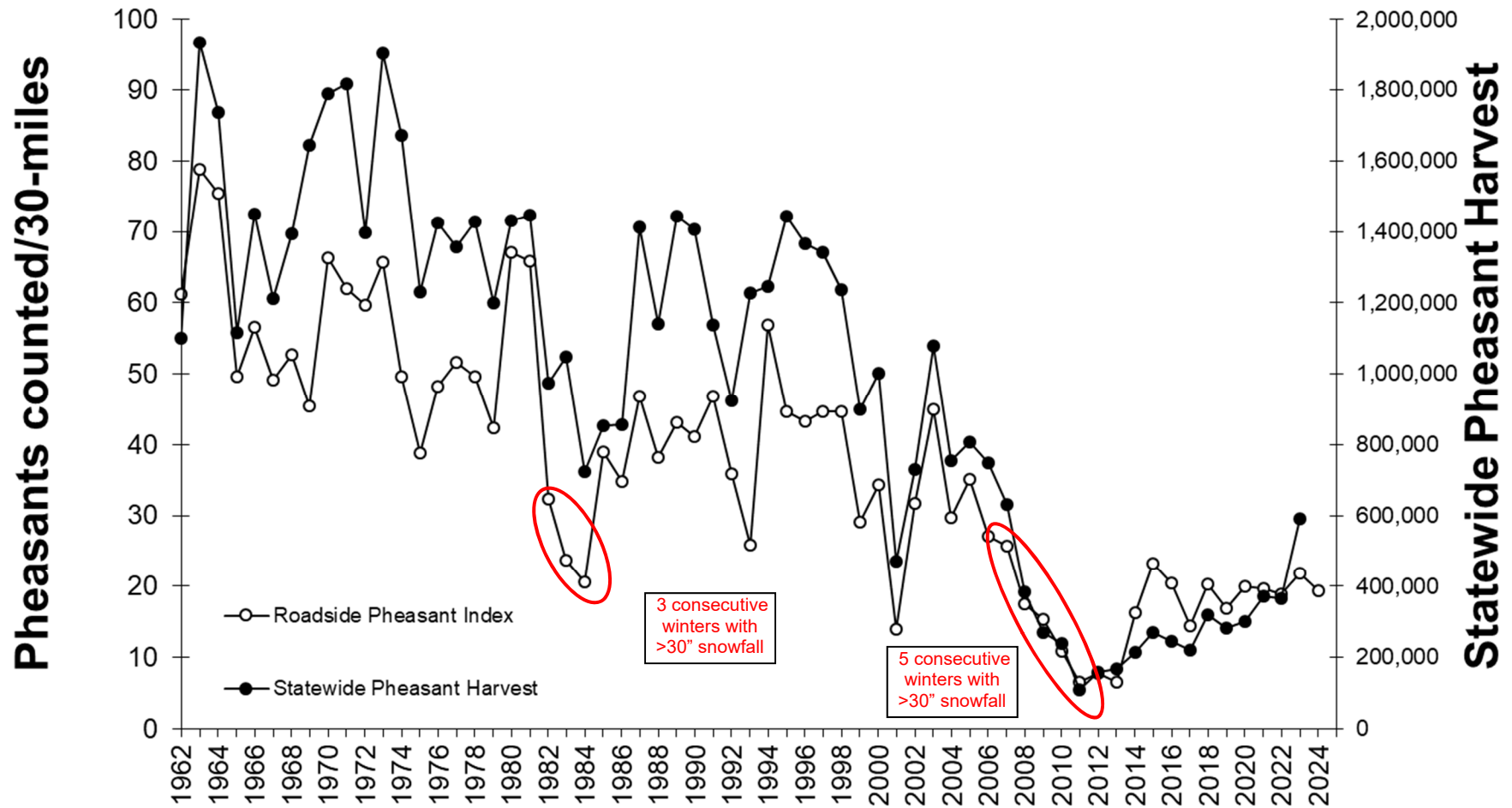


Figure 3. Mean number of pheasants counted on 30-mile August roadside survey routes, statewide, 1962-present compared to total statewide pheasant harvest.

Statewide Upland Game Trends

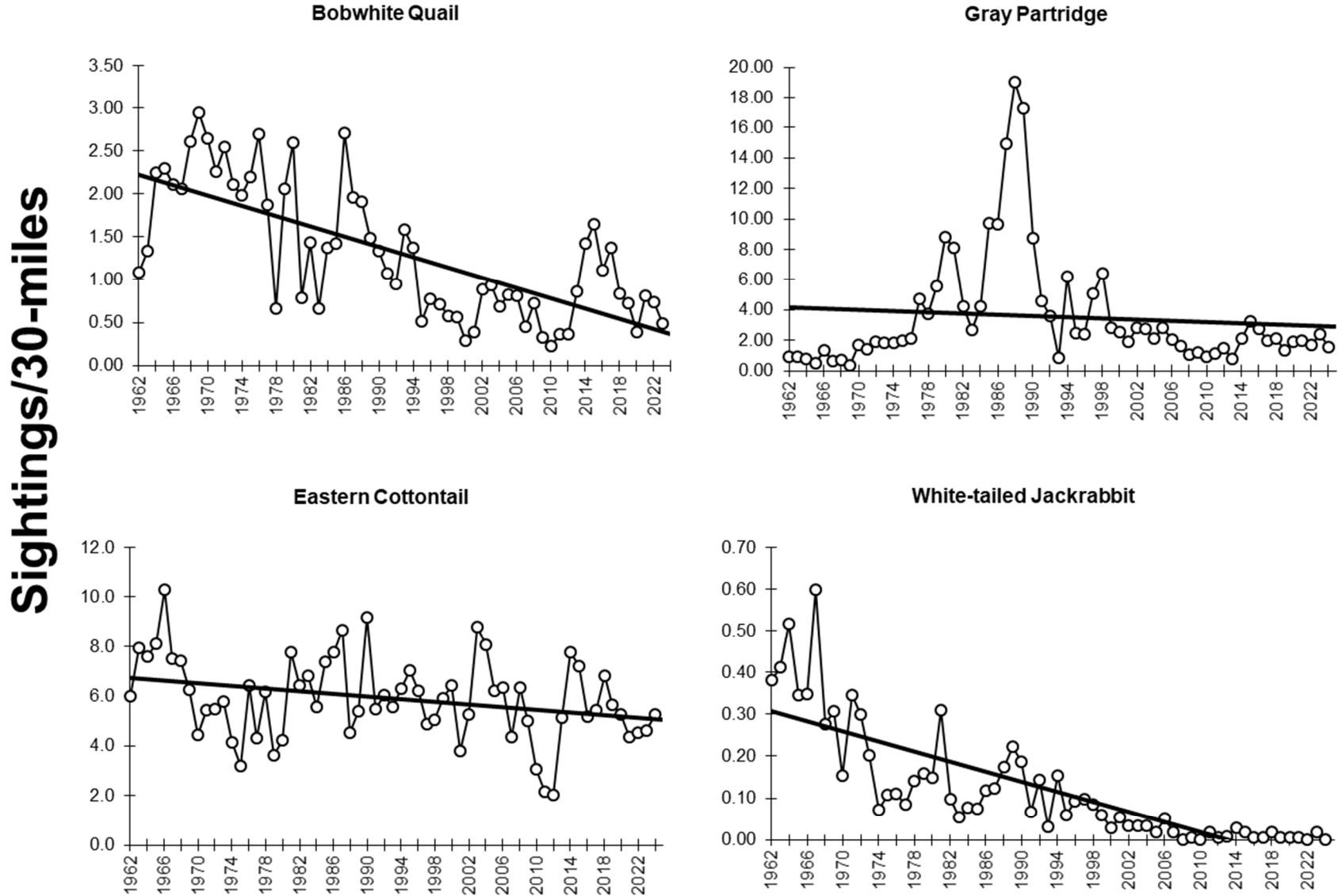


Figure 4. Mean number of quail, partridge, cottontails, and jackrabbits sighted per 30 mile route on the August roadside survey, statewide, 1962 to the present.

2024 August Roadside Survey

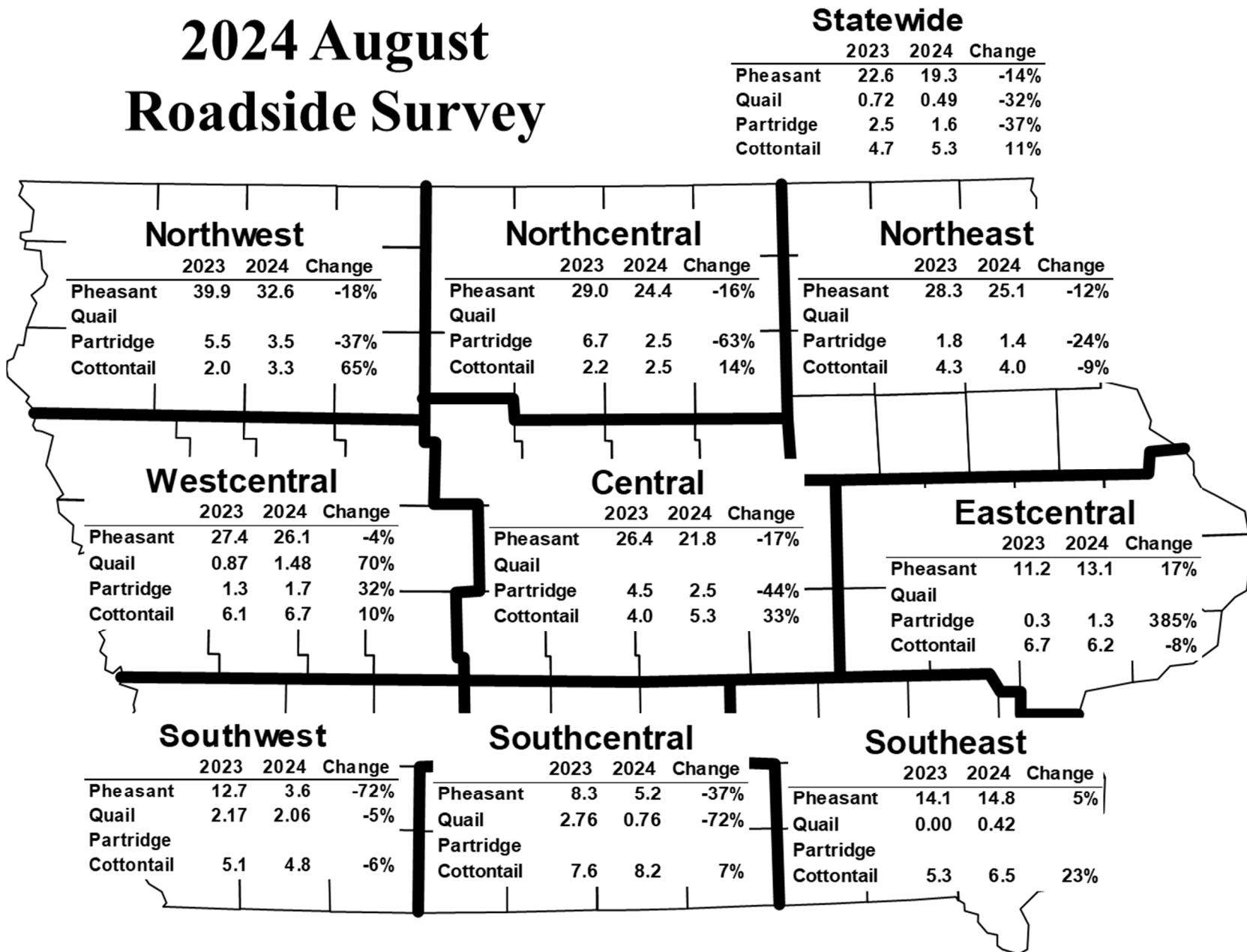
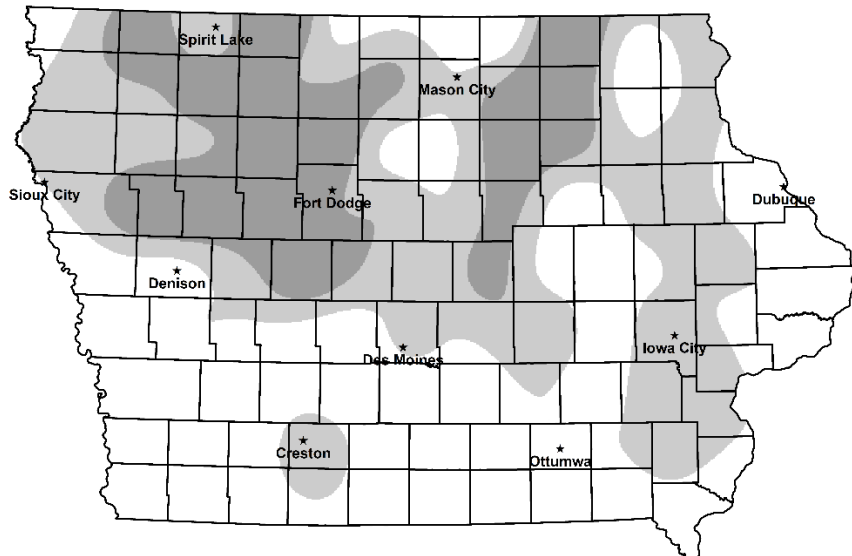


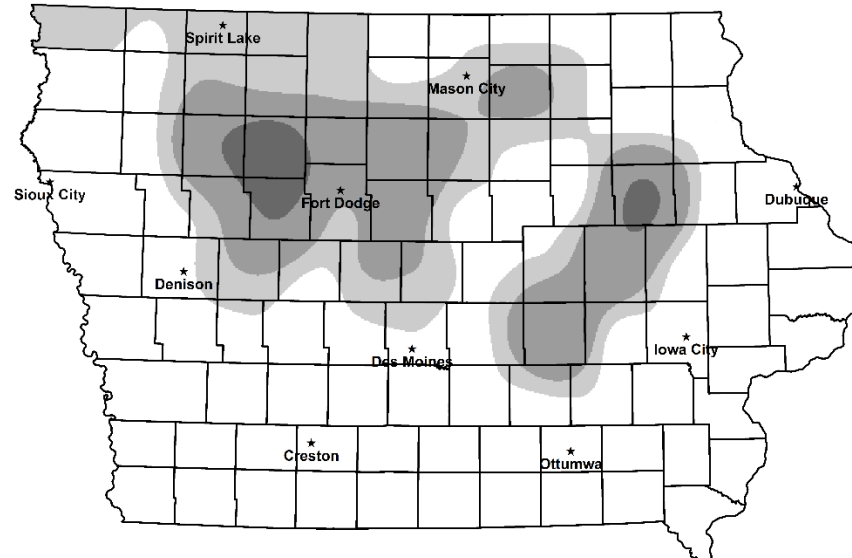
Figure 5. Numbers indicate the average number of animals counted on 30-mile routes in each region (e.g., the northwest region counted an average of 32.6 pheasants on survey routes in 2024). Data from 216 of 224 comparable returned surveys.

2024 GAME DISTRIBUTION

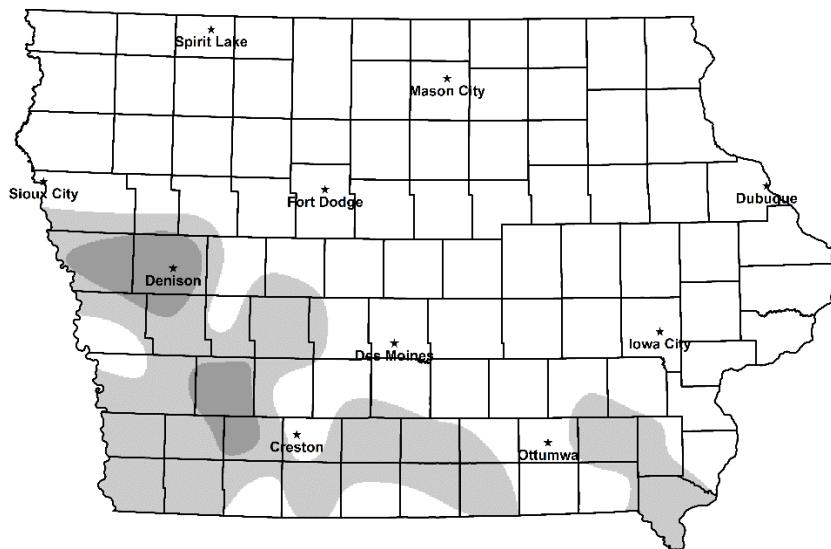
PHEASANT



GRAY PARTRIDGE



QUAIL



COTTONTAIL

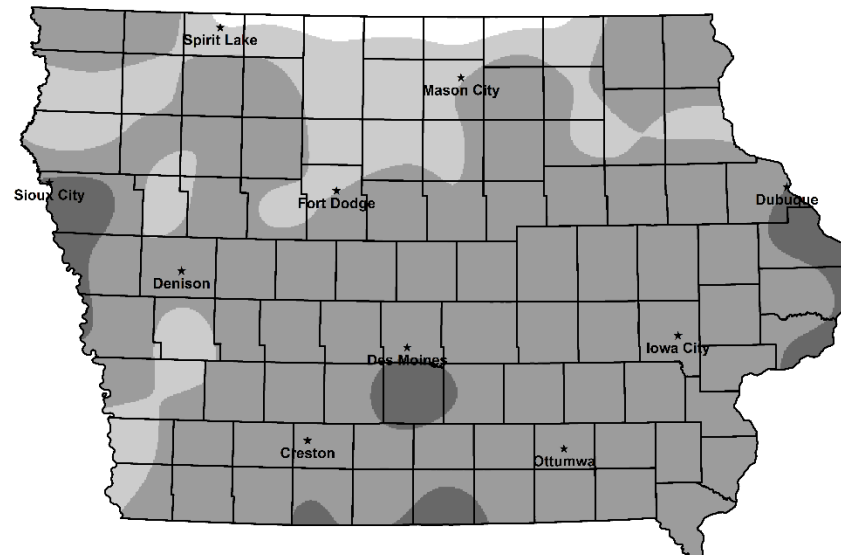


Figure 6. Iowa small game distribution maps represent generalized game abundance. There can be areas of low game abundance in regions with "high" counts and vice versa.