

Federal Aid in Wildlife Restoration Project №: W-15-R

Title of Job: 2023 July Rural Mail Carrier Survey



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The 2023 July Rural Mail Carrier Survey was conducted 10-13 July 2023. We received 357 cards by 9 August 2023, of which 330 cards contained complete information needed for analysis (Tables 1-3). Rural carriers made observations while traveling 140,910 miles of rural roads in 86 of Nebraska's 93 counties.

Caveats. Interpretations of the percent change from previous year's indices and longer-term means are only meaningful in relation to the indices themselves. That is, when an index value is low, insignificant changes in the index can translate into large percent changes, but result in no observable difference in abundance within the region. For example, an increase in a species' index from 0.01 animals observed per 100 miles to 0.02 animals per 100 miles is a 100% increase, but would not likely be noticeable to hunters afield. Further, survey methodology does not allow the estimation of population size or density, but only trends in relative abundance through time. At a statewide scale, these indices are correlated with annual harvest and are, therefore, useful for forecasting conditions hunters may encounter in the fall, particularly when combined with results from other surveys.

Interpretations. Compared to 2022, statewide indices of relative abundance were mixed for the various upland game species: indices were up for grouse and jackrabbit, were down for pheasant, and were similar to 2022 for wild turkey, cottontail, and bobwhite. However, none of the statewide indices were significantly different than those observed in July 2022, based on confidence intervals. Regional indices were also very mixed depending on the species. Pheasant age ratios were lower in all regions except the Central and Southeast regions where ratios were higher and the Southwest where the ratio was similar to 2022.

Take-Home Message. The results of the 2023 July Rural Mail Carrier Survey indicate that the relative abundance of small game species was mixed compared to July 2022, but not significantly so. Fall abundance for most species will depend on this summer's production, so the results of the October Rural Mail Carrier Survey may provide more clarity on what to expect this fall.

TABLE 1. Raw counts of prairie grouse, wild turkey, cottontail, and jackrabbits from the 2023 July Rural Mail Carrier Survey by pheasant management region (Figure 1).

Region	Carriers	Miles	Grouse	Turkey	Cottontail	Jackrabbit
Central	47	20,092	43	226	396	9
Northeast	69	30,648	32	398	443	7
Panhandle	41	15,090	11	218	101	15
Sandhills	30	12,710	19	195	88	8
Southeast	99	42,626	3	352	495	22
Southwest	44	19,745	25	510	264	21
Statewide	330	140,910	133	1,899	1,787	82

TABLE 2. Raw counts from the 2023 July Rural Mail Carrier Survey for pheasants and pheasant age-ratios by pheasant management region (Figure 1).

Region	Carriers	Miles	Total Pheasants	Juveniles/Adults
Central	47	20,092	82	0.31
Northeast	69	30,648	257	0.29
Panhandle	41	15,090	157	0.13
Sandhills	30	12,710	9	0.00
Southeast	99	42,626	142	0.65
Southwest	44	19,745	168	0.03
Statewide	330	140,910	815	0.23

TABLE 3. Raw counts from the 2023 July Rural Mail Carrier Survey for bobwhites, by bobwhite management zone (Figure 2).

Zone	Carriers	Miles	Bobwhites
East Central	46	19,689	108
North Central	43	19,590	65
Northeast	63	28,639	73
Republican	26	12,760	47
Southeast	42	17,521	81
West Platte	76	30,888	39
Not Quail Range (NQR)	34	11,823	5
Statewide	330	140,910	418

Results.

Pheasant: This year's statewide pheasant index was lower than in 2022 and was lower than the 5- and 10-year averages. Regionally, survey results were higher in the Central and Northeast regions, and lower elsewhere. Relative abundance continues to be highest in the Southwest and Panhandle regions (Table 4). Statewide, pheasant age ratios, which can be indicative of production, were generally lower than those observed in 2022 (Table 2).

Quail: The bobwhite index was down slightly statewide compared to 2022, and was below the long-term averages. In 2023, declines were observed in the East-Central, Northeast, and West Platte management regions and were higher in the North Central and Southeast regions (Table 5).

Wild Turkey: Statewide, this year's wild turkey index was similar to 2022, and is higher than the 5- and 10-year means. Increases were observed in 2 of 6 regions (Northeast and Sandhills; Table 6).

Prairie Grouse: The statewide index for prairie grouse was higher than in 2022. Regionally, results were mixed this year with increases in the Central, Northeast, and Sandhills regions and declines elsewhere (Table 7). Almost all regional indices had confidence limits overlapping zero, indicating they were not statistically different from zero.

Cottontail/Jackrabbit: The statewide cottontail index was similar to that observed in 2022 and decreases were observed in all management regions except Northeast (similar), Central, and Southwest (Table 8). Jackrabbit indices increased in all 6 management regions and the statewide index was 142% higher than in 2022 (Table 9). Relative abundance of jackrabbits was highest in the Southwest and Panhandle regions.

In 2021, 39 of 330 usable cards returned (11.8%) contained no observations of any wildlife species, which is slightly up from the 35 of 335 cards (10.5%) with no observations returned in 2022 (Table 10).

FIGURE 1. Pheasant management regions.

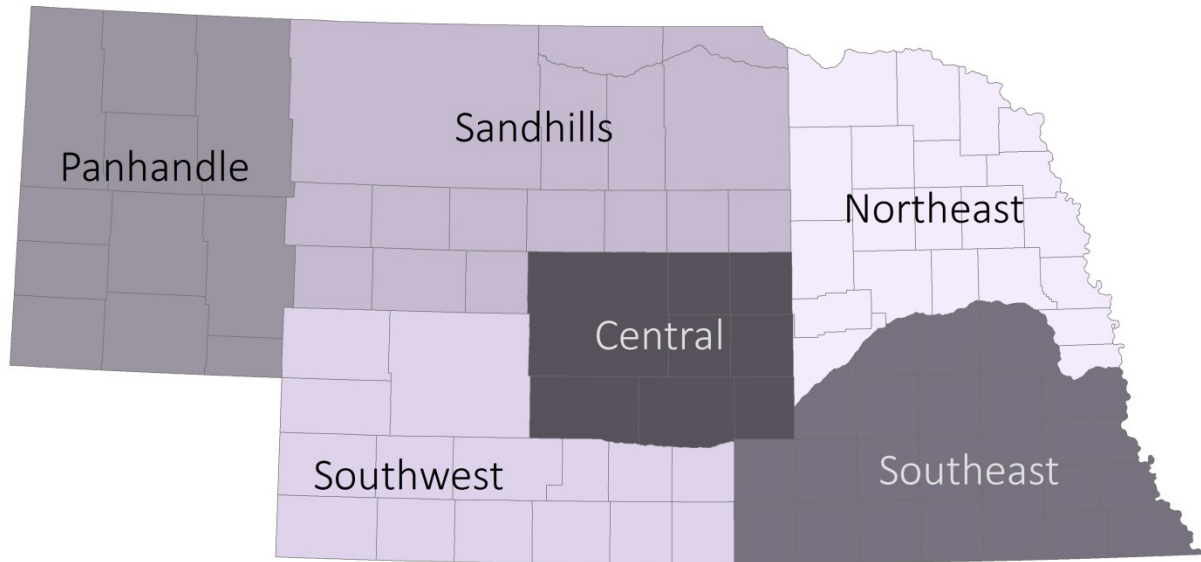


FIGURE 2. Bobwhite management zones.

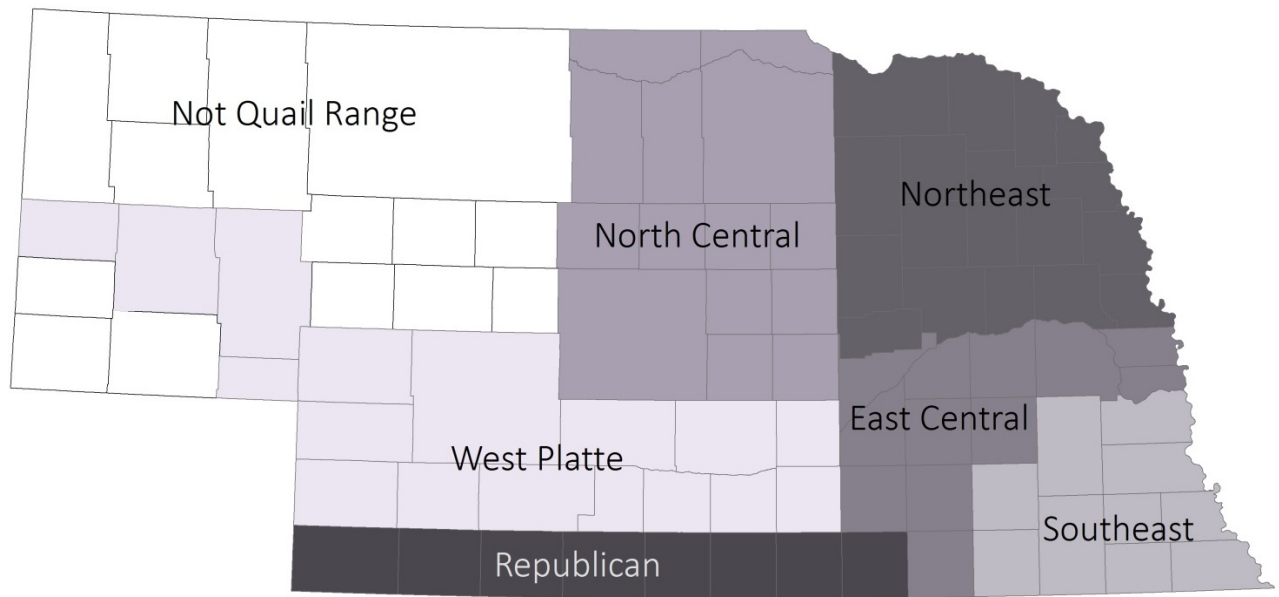


TABLE 4. Pheasant indices from the 2023 July Rural Mail Carrier Survey by pheasant management region (Figure 1). Carrier means are weighted by miles traveled per carrier.

Region	Mean pheasants per 100 miles & 90% Confidence Limits	Percent Difference from:			
		2022	Mean 2018-2022	Mean 2013-2022	Mean 2003-2022
Central	0.41 (0.03-0.78)	41	33	2	-43
Northeast	0.84 (0.56-1.12)	2	37	33	-20
Panhandle	1.04 (0.23-1.85)	-48	-35	-36	-26
Sandhills	0.07 (0.02-0.12)	-80	-84	-86	-91
Southeast	0.33 (0.19-0.48)	-8	6	-12	-56
Southwest	0.85 (0.16-1.54)	-16	-39	-42	-56
Statewide	0.58 (0.42-0.74)	-19	-12	-17	-44

FIGURE 3. Regional and statewide time series (1979-2023) of pheasant abundance indices from the July Rural Mail Carrier Survey by pheasant management region (Figure 1).

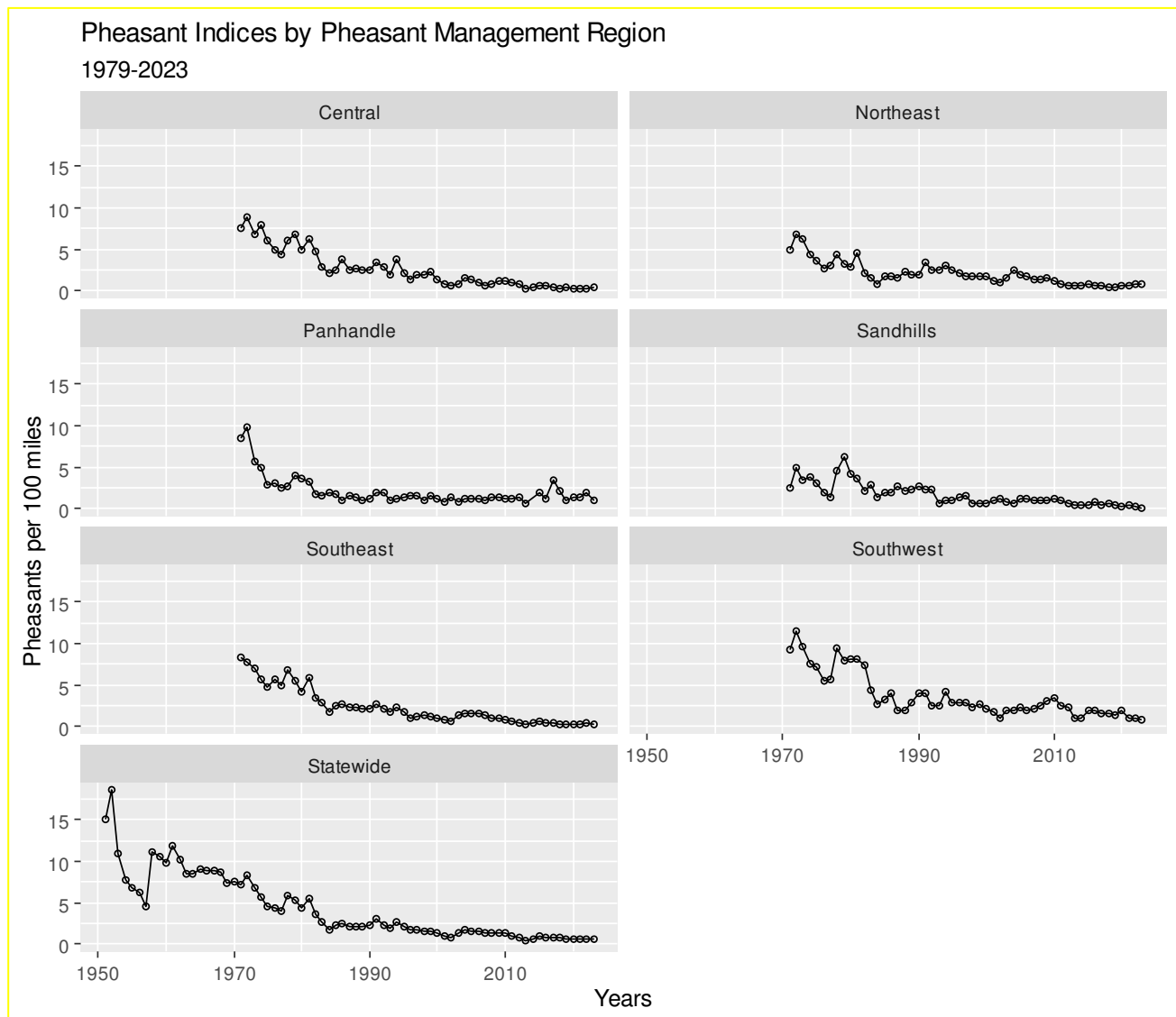


TABLE 5. Northern bobwhite indices from the 2023 July Rural Mail Carrier Survey by bobwhite management zone (Figure 2). Carrier means are weighted by miles traveled per carrier.

Zone	Mean bobwhites per 100 miles & 90% Confidence Limits	Percent Difference from:			
		2022	Mean 2018-2022	Mean 2013-2022	Mean 2003-2022
East Central	0.55 (0.29-0.81)	-13	-12	-5	-3
North Central	0.33 (0.12-0.54)	57	-7	-40	-51
Northeast	0.25 (0.14-0.37)	-17	24	45	12
Republican	0.37 (0.22-0.51)	6	-48	-52	-52
Southeast	0.46 (0.30-0.62)	12	-12	-44	-40
West Platte	0.13 (0.02-0.23)	-50	-40	-44	-51
NQR	0.04 (0.00-0.04)	300	33	-9	-1
Statewide (QR)	0.30 (0.24-0.36)	-9	-15	-26	-32

FIGURE 4. Regional and statewide time series (1979-2023) of indices of northern bobwhite abundance from the July Rural Mail Carrier Survey.

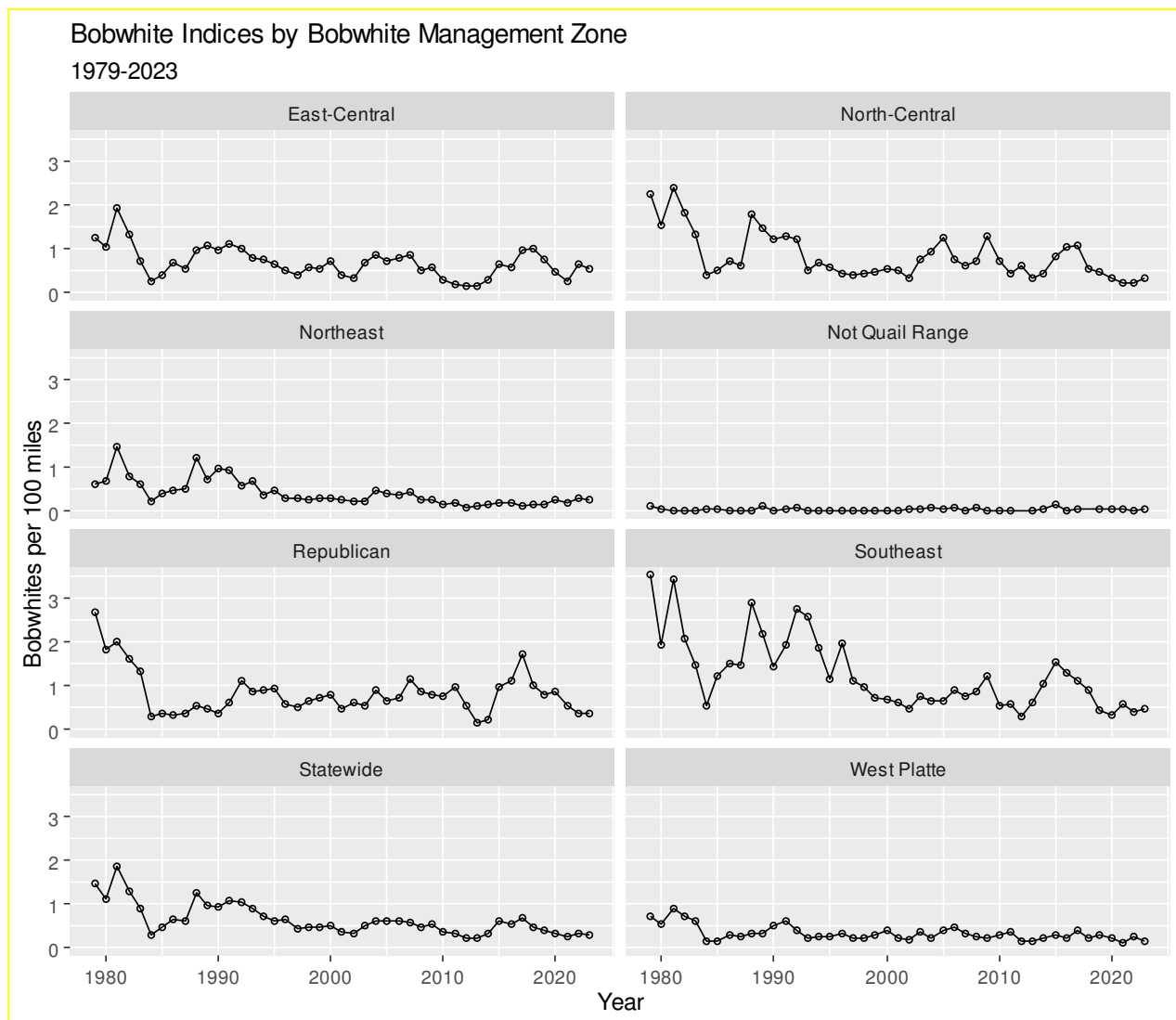


TABLE 6. Wild turkey indices from the 2023 July Rural Mail Carrier Survey by pheasant management region (Figure 1). Carrier means are weighted by miles traveled per carrier.

Region	Mean turkeys per 100 miles & 90% Confidence Limits	Percent Difference from:			
		2022	Mean 2018-2022	Mean 2013-2022	Mean 2003-2022
Central	1.12 (0.72-1.53)	-54	-28	-21	-30
Northeast	1.30 (0.47-2.13)	23	42	45	54
Panhandle	1.44 (0.00-3.14)	-13	20	64	102
Sandhills	1.53 (0.75-2.32)	9	-12	-10	-40
Southeast	0.83 (0.53-1.12)	-6	2	-7	-21
Southwest	2.58 (1.53-3.64)	-8	-12	-6	-5
Statewide	1.35 (1.02-1.68)	-8	2	5	-3

FIGURE 5. Regional and statewide time series (2000-2023) of wild turkey abundance indices from the July Rural Mail Carrier Survey.

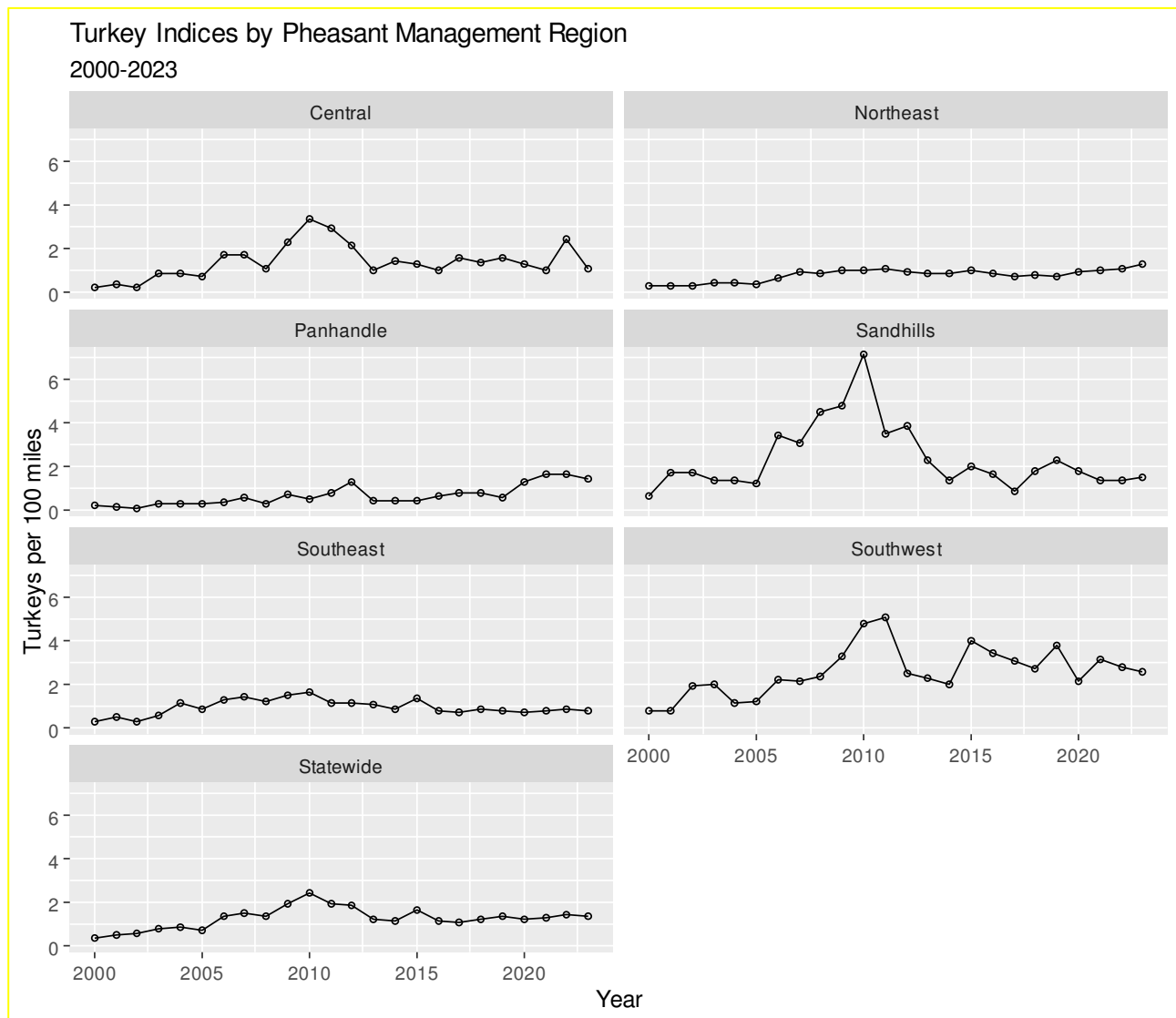


TABLE 7. Prairie grouse indices from the 2023 July Rural Mail Carrier Survey by pheasant management region (Figure 1). Carrier means are weighted by miles traveled per carrier.

Region	Mean grouse per 100 miles & 90% Confidence Limits	Percent Difference from:			
		2022	Mean 2018-2022	Mean 2013-2022	Mean 2003-2022
Central	0.21 (0.00-0.43)	75	1	-14	-20
Northeast	0.10 (0.03-0.18)	400	100	159	161
Panhandle	0.07 (0.00-0.30)	-59	-55	-44	-33
Sandhills	0.15 (0.02-0.18)	15	-41	-60	-58
Southeast	0.01 (0.00-0.02)	-75	-58	-62	-69
Southwest	0.13 (0.00-0.38)	-35	30	59	134
Statewide	0.09 (0.03-0.15)	12	-6	10	-8

FIGURE 6. Prairie grouse regional and statewide time series (1979-2023) of indices of abundance from the July Rural Mail Carrier Survey.

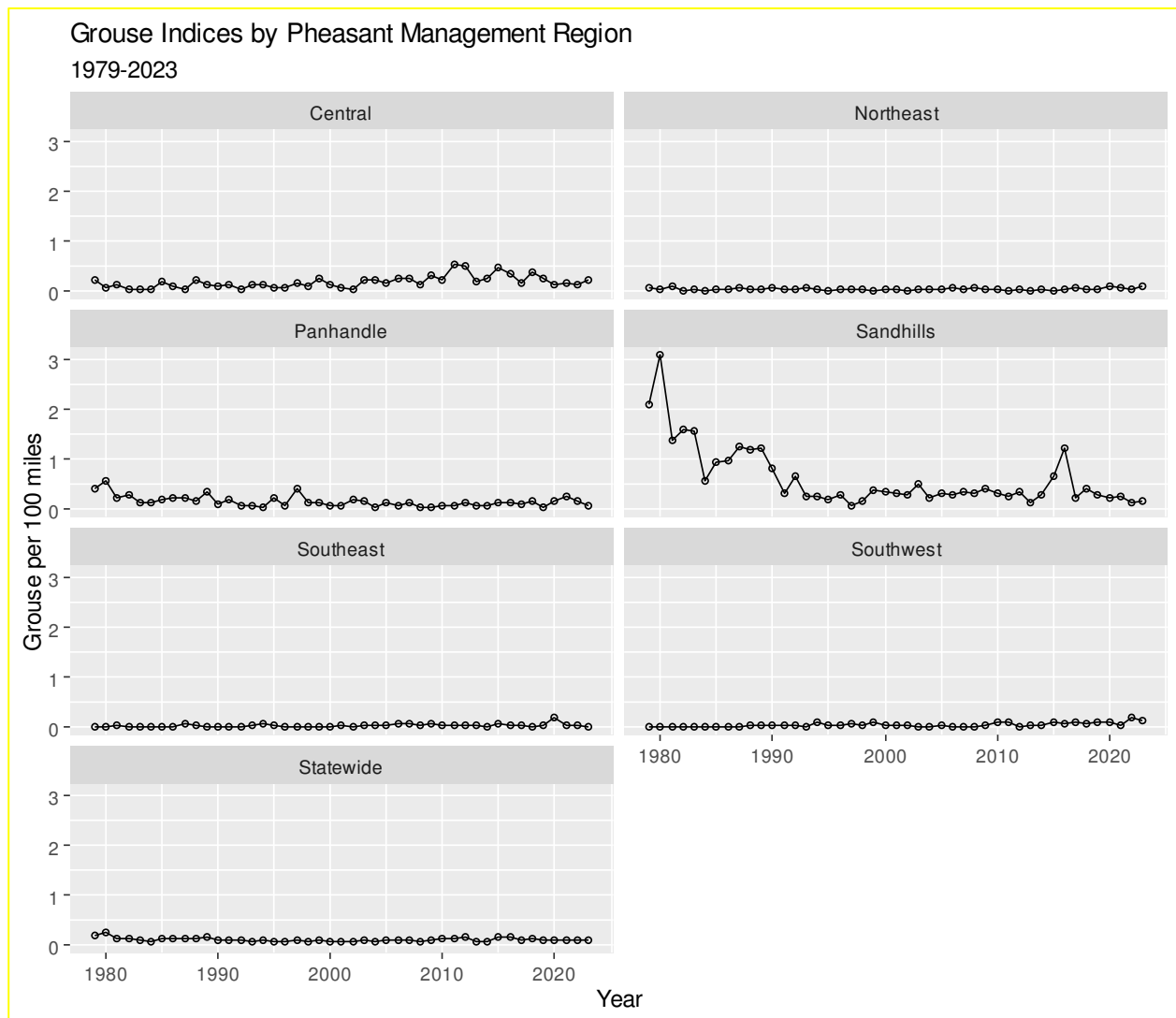


TABLE 8. Cottontail indices from the 2023 July Rural Mail Carrier Survey by pheasant management region (Figure 1). Carrier means are weighted by miles traveled per carrier.

Region	Mean cottontails per 100 miles & 90% Confidence Limits	Percent Difference from:			
		2022	Mean 2018-2022	Mean 2013-2022	Mean 2003-2023
Central	1.97 (1.38-2.56)	27	71	48	-8
Northeast	1.45 (1.01-1.88)	6	68	63	24
Panhandle	0.67 (0.35-0.99)	-26	-4	-15	-3
Sandhills	0.69 (0.42-0.96)	-9	67	16	-7
Southeast	1.16 (0.81-1.51)	-17	21	7	-10
Southwest	1.34 (0.63-2.04)	21	51	33	15
Statewide	1.27 (1.08-1.46)	1	45	27	-1

FIGURE 7. Regional and statewide time series (1958-2023) of cottontail abundance indices from the July Rural Mail Carrier Survey.

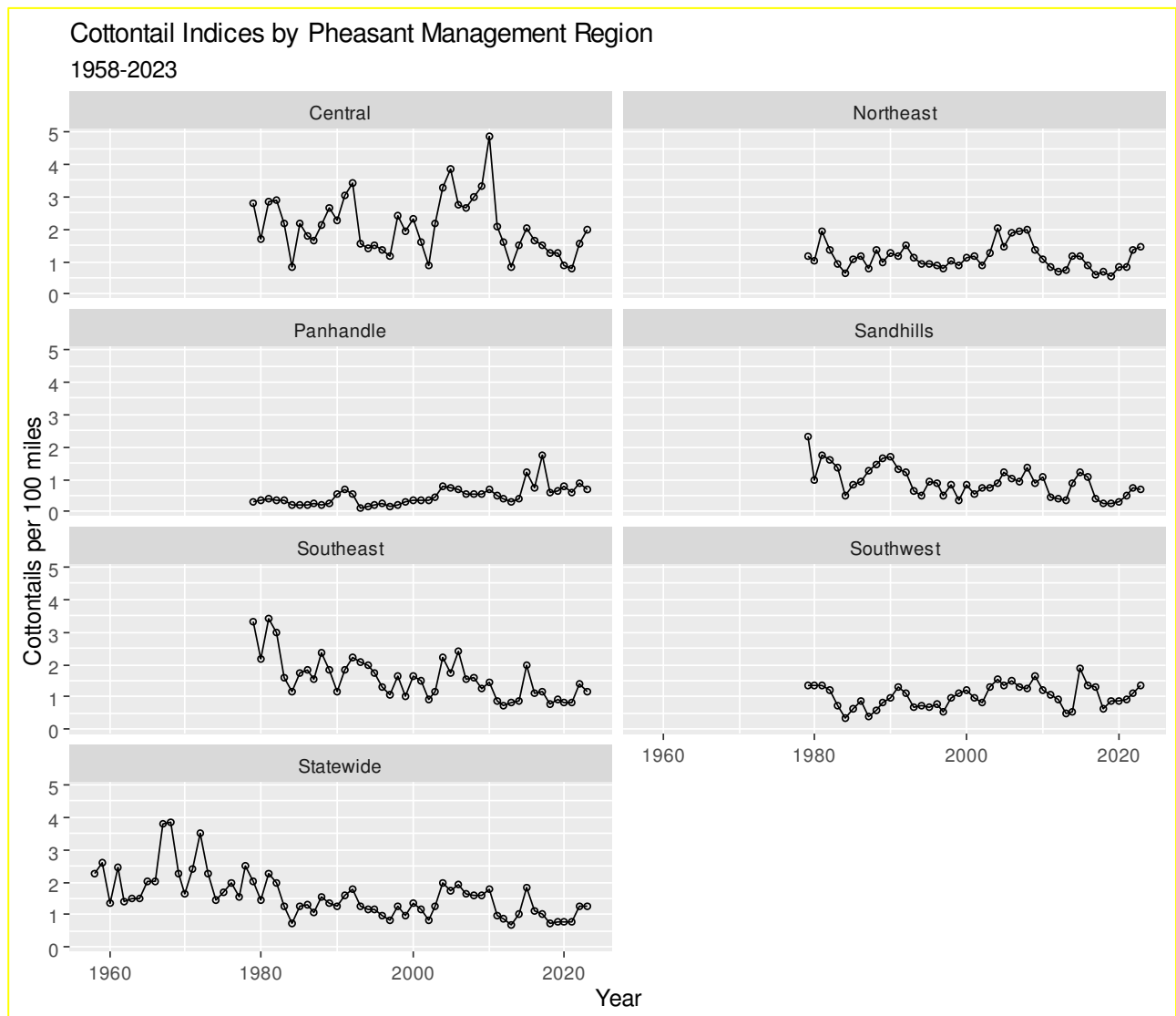


TABLE 9. Jackrabbit indices from the 2023 July Rural Mail Carrier Survey by pheasant management region (Figure 1). Carrier means are weighted by miles traveled per carrier.

Region	Mean Jackrabbit per 1000 miles & 90% Confidence Limits	Percent Difference from:			
		2022	Mean 2018-2022	Mean 2013-2022	Mean 2003-2022
Central	0.45 (0.21-0.69)	41	-28	-49	-51
Northeast	0.23 (0.00-0.52)	77	-17	-9	-28
Panhandle	0.99 (0.31-1.68)	29	-24	-67	-62
Sandhills	0.63 (0.00-1.58)	43	79	-38	-63
Southeast	0.52 (0.03-1.00)	643	294	352	66
Southwest	1.06 (0.54-1.58)	361	-3	-42	-42
Statewide	0.58 (0.37-0.79)	142	28	-26	-36

FIGURE 8. Regional and statewide time series (1963-2023) of jackrabbit abundance indices from the July Rural Mail Carrier Survey.

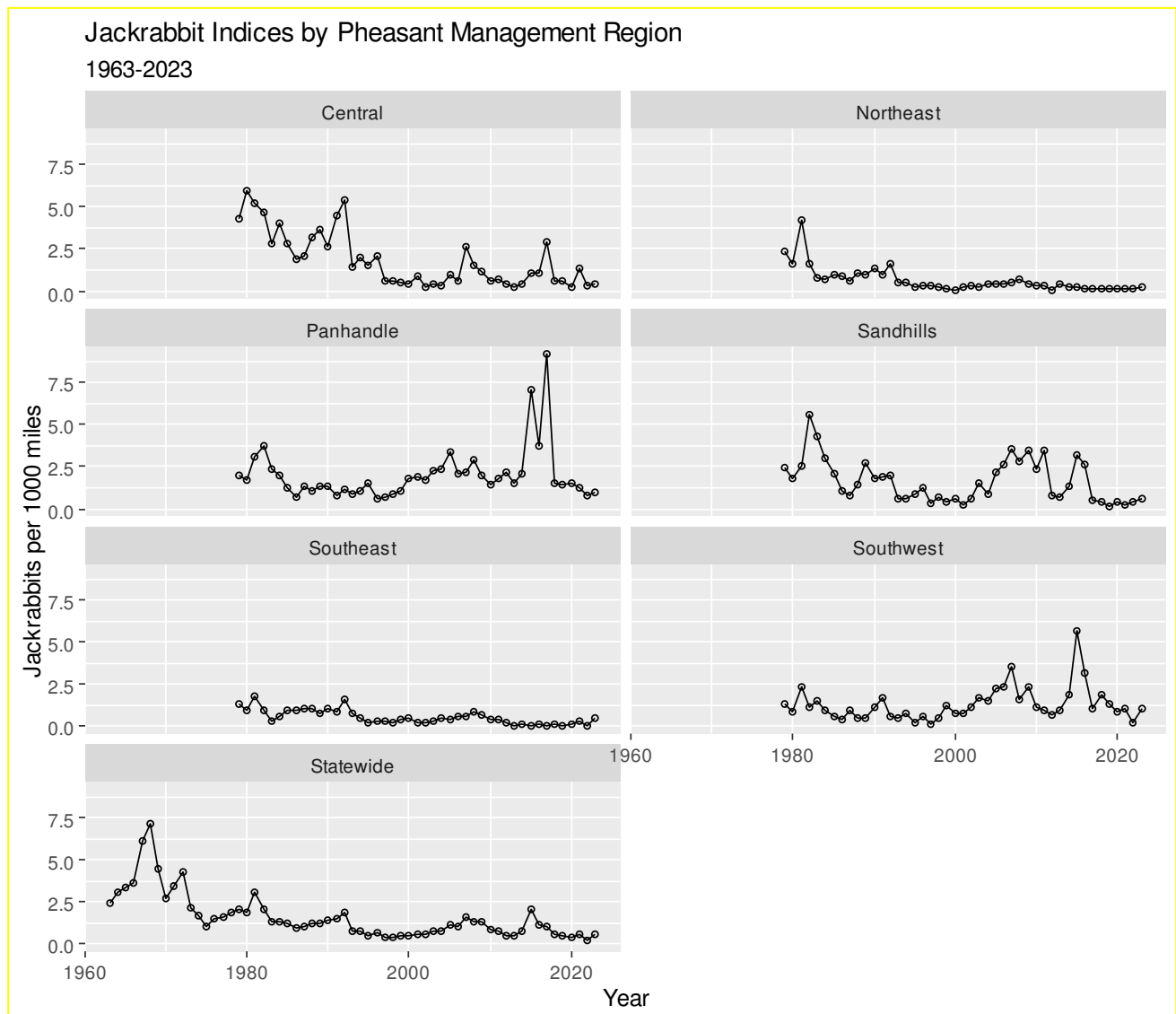


TABLE 10. Number of cards and percent of total cards ($n = 330$) that contained zero observations of each species of wildlife. Overall, 11.8% of cards contained zero observations of all species (39 cards).

	Pheasant	Bobwhite	Grouse	Turkey	Cottontail	Jackrabbit
N ^o of Cards	181	232	306	141	93	285
Percent	55%	70%	93%	43%	28%	86%

For more information, contact Bryan O'Connor, Upland Game Program Manager at bryan.oconnor@nebraska.gov