

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

Title of Job: 2022 July Rural Mail Carrier Survey



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The 2022 July Rural Mail Carrier Survey was conducted 5-8 July 2022. We received 355 cards by 30 July 2022, of which 335 cards contained complete information needed for analysis (Tables 1-3). Rural carriers made observations while traveling 140,719 miles of rural roads in 83 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 2021, statewide indices of relative abundance were mixed for the various upland game species: indices were up for pheasant, turkey, quail, and cottontail, but were down for grouse and jackrabbit. However, none of the statewide indices were significantly different than those observed in July 2021, based on confidence intervals, except for the statewide index for cottontail, which was significantly higher. Compared to the five-year mean, statewide indices were mixed or similar to 2021 for all species. Regional indices were also very mixed depending on the species. Pheasant age ratios were higher in all regions except the Central and Southwest regions, potentially indicating better production in much of the state compared to 2021.

Take-Home Message. The results of the 2022 July Rural Mail Carrier Survey indicate that the relative abundance of small game species was generally higher compared to July 2021, 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 2022 July Rural Mail Carrier Survey by pheasant management region (Figure 1).

Region	Carriers	Miles	Grouse	Turkey	Cottontail	Jackrabbit
Central	38	15,437	19	378	240	5
Northeast	84	37,578	8	398	513	5
Panhandle	38	14,203	24	234	128	11
Sandhills	36	13,708	18	193	104	6
Southeast	101	42,672	16	376	593	3
Southwest	38	17,121	34	477	190	4
Statewide	335	140,719	119	2,056	1,768	34

TABLE 2. Raw counts from the 2022 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	38	15,437	44	0.10
Northeast	84	37,578	309	0.33
Panhandle	38	14,203	286	0.34
Sandhills	36	13,708	48	0.17
Southeast	101	42,672	154	0.52
Southwest	38	17,121	173	0.02
Statewide	335	140,719	1,014	0.28

TABLE 3. Raw counts from the 2022 July Rural Mail Carrier Survey for bobwhites, by bobwhite management zone (Figure 2).

Zone	Carriers	Miles	Bobwhites
East Central	64	25,718	162
North Central	44	18,032	37
Northeast	75	34,864	106
Republican	21	9,944	35
Southeast	33	13,738	57
West Platte	65	26,231	67
Not Quail Range (NQR)	33	12,192	1
Statewide	335	140,719	465

Results.

Pheasant: This year's statewide pheasant index was higher than in 2021 and was slightly above the 5- and 10-year averages. Regionally, survey results were higher in the Central, Northeast, Panhandle, and Southeast regions. 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 higher than those observed in 2021 (Table 2).

Quail: The bobwhite index was up 32% statewide compared to 2021 but remains well below the long-term averages. In 2022, declines were observed in the Republican and Southeast management regions and were higher in the East Central, Northeast, and West Platte (Table 5).

Wild Turkey: Statewide, this year's wild turkey index was 11% higher compared to 2021, and is higher than the long-term means. Increases were observed in 5 of 6 regions (all except the Southwest region; Table 6).

Prairie Grouse: The statewide index for prairie grouse was lower than in 2021 and was lower than the long-term averages. Regionally, results were mixed this year with increases in the Southeast and Southwest regions and declines elsewhere (Table 7). All regional indices had confidence limits overlapping zero, indicating they were not statistically different from zero.

Cottontail/Jackrabbit: The statewide cottontail index was much higher than that observed in 2021, and increases were observed in all 6 management regions (Table 8). Jackrabbit indices decreased in 4 of 6 management regions, and the statewide index was 59% lower than in 2021 (Table 9). Relative abundance of jackrabbits was highest in the Panhandle and Sandhills regions.

In 2021, 35 of 335 usable cards returned (10.5%) contained no observations of any wildlife species, which is slightly down from the 42 of 371 cards (11.3%) with no observations returned in 2021 (Table 10).

FIGURE 1. Pheasant management regions.

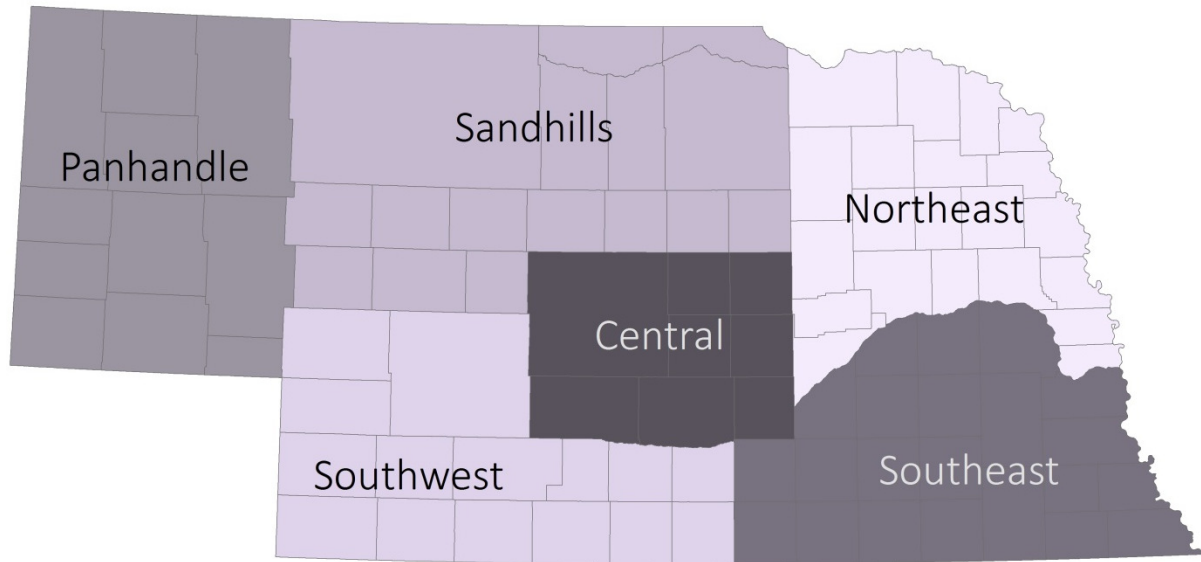


FIGURE 2. Bobwhite management zones.

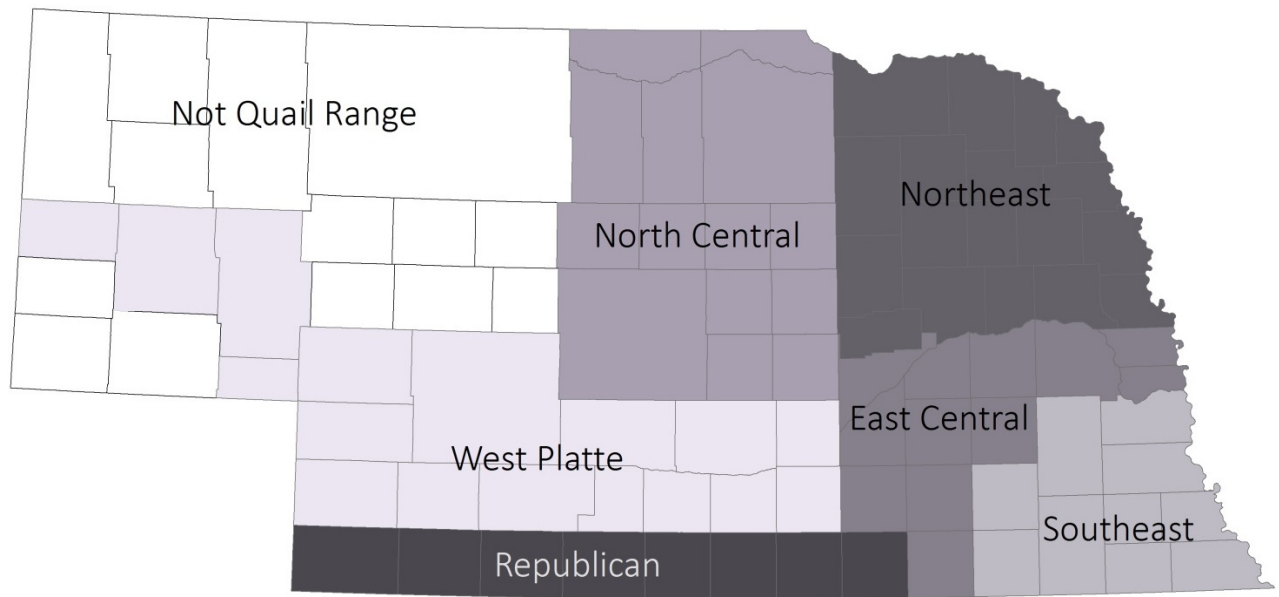


TABLE 4. Pheasant indices from the 2022 July Rural Mail Carrier Survey by pheasant management region (Figure 1). Carrier means are weighted by miles traveled per carrier.

Region	Mean pheasants per 100 miles & 90% Confidence Limits	Percent Difference from:			
		2021	Mean 2017-2021	Mean 2012-2021	Mean 2002-2021
Central	0.29 (0.15-0.42)	32	-18	-36	-61
Northeast	0.82 (0.64-1.01)	39	43	35	-23
Panhandle	2.01 (0.45-3.57)	48	5	29	46
Sandhills	0.35 (0.11-0.59)	-19	-24	-34	-56
Southeast	0.36 (0.26-0.46)	44	14	-6	-53
Southwest	1.01 (0.61-1.42)	-6	-34	-37	-48
Statewide	0.72 (0.53-0.91)	26	7	1	-31

FIGURE 3. Regional and statewide time series (1979-2022) of pheasant abundance indices from the July Rural Mail Carrier Survey by pheasant management region (Figure 1).

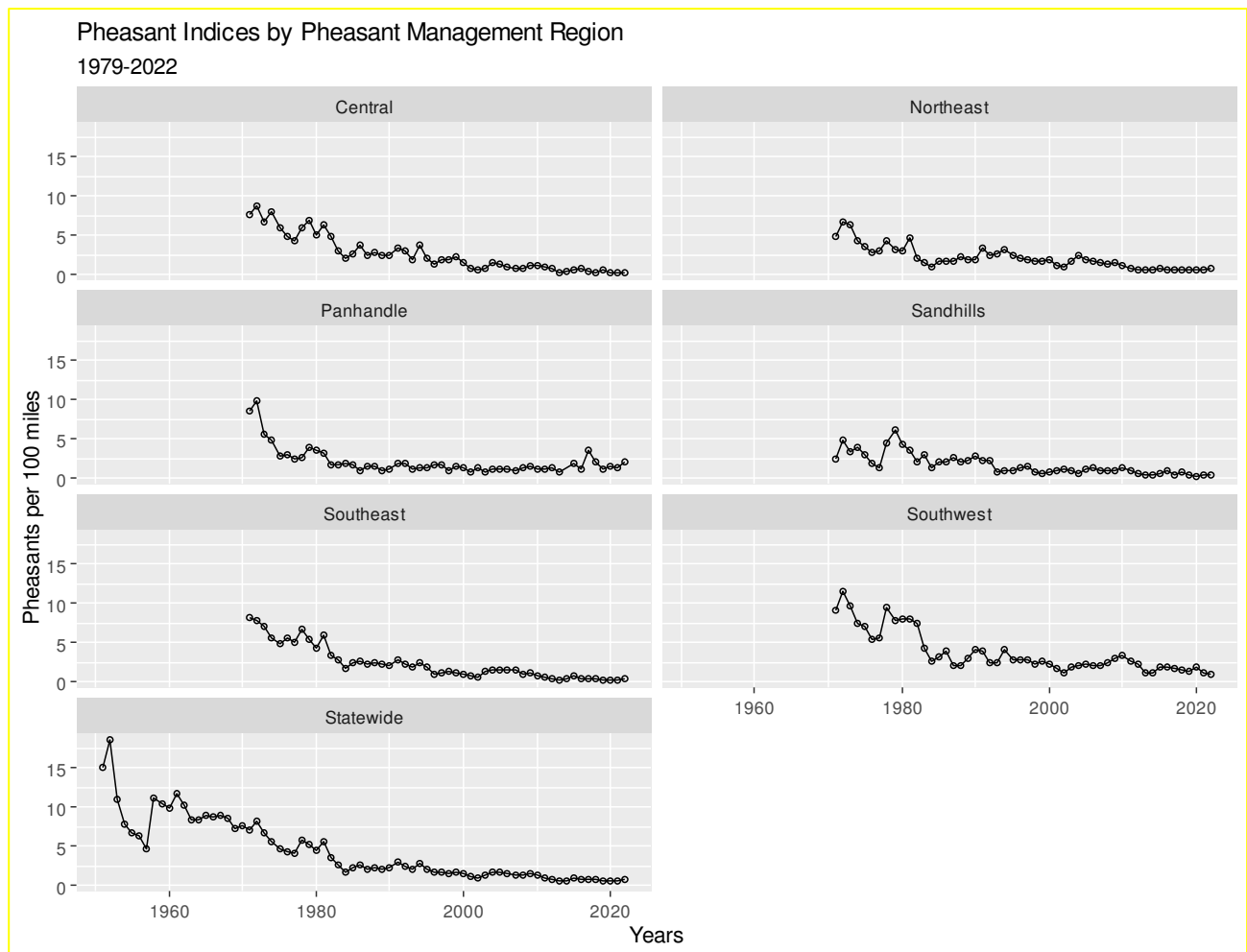


TABLE 5. Northern bobwhite indices from the 2022 July Rural Mail Carrier Survey by bobwhite management zone (Figure 2). Carrier means are weighted by miles traveled per carrier.

Zone	Mean bobwhites per 100 miles & 90% Confidence Limits	Percent Difference from:			
		2021	Mean 2017-2021	Mean 2012-2021	Mean 2002-2021
East Central	0.63 (0.37-0.89)	142	-9	19	14
North Central	0.21 (0.00-0.47)	0	-61	-64	-69
Northeast	0.30 (0.20-0.41)	58	85	100	36
Republican	0.35 (0.18-0.53)	-34	-64	-55	-56
Southeast	0.41 (0.27-0.56)	-28	-38	-49	-47
West Platte	0.26 (0.11-0.40)	136	6	17	-1
NQR	0.01 (0.00-0.04)	-80	-74	-77	-76
Statewide (QR)	0.33 (0.26-0.40)	32	-21	-16	-25

FIGURE 4. Regional and statewide time series (1979-2022) of indices of northern bobwhite abundance from the July Rural Mail Carrier Survey.

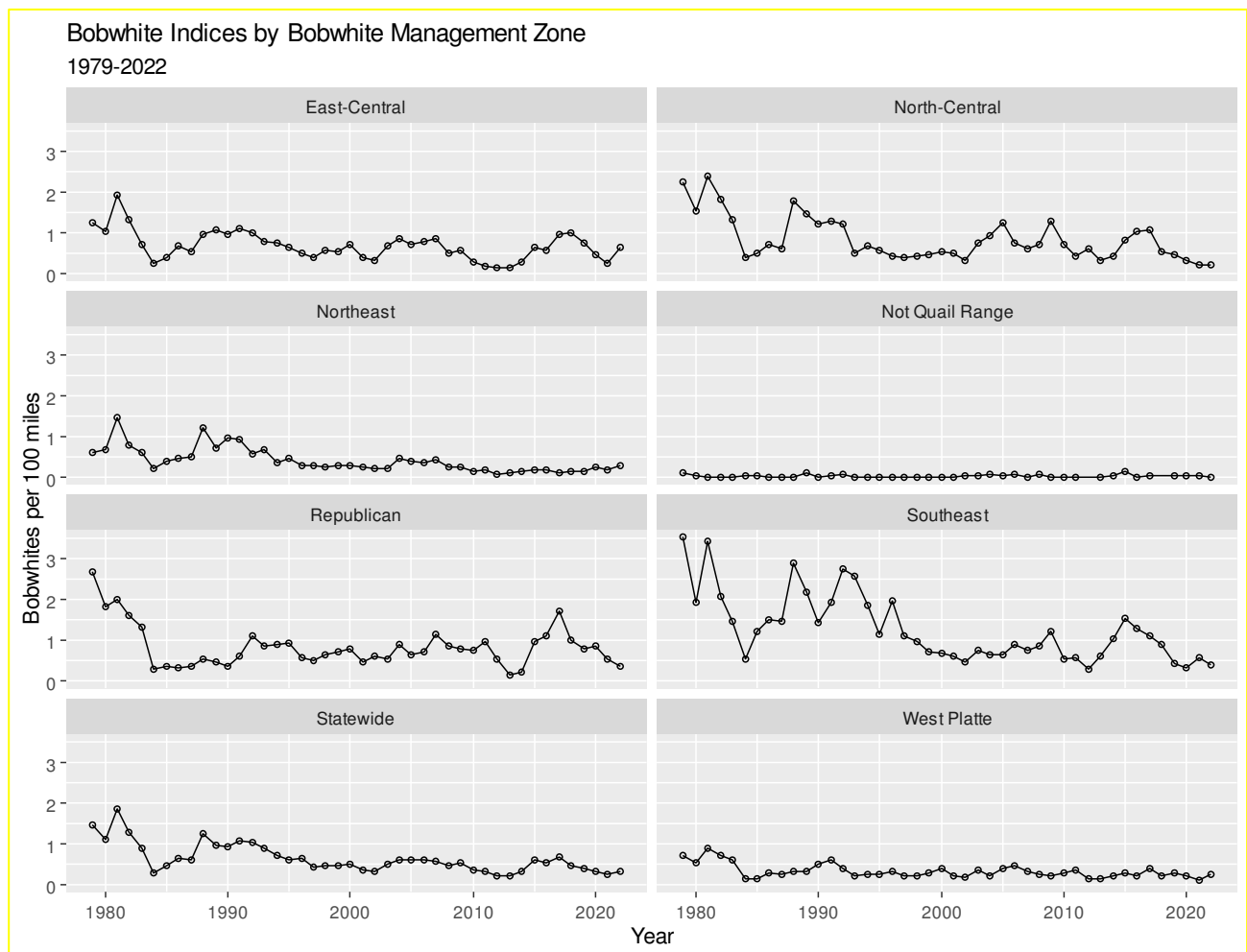


TABLE 6. Wild turkey indices from the 2022 July Rural Mail Carrier Survey by pheasant management region (Figure 1). Carrier means are weighted by miles traveled per carrier.

Region	Mean turkeys per 100 miles & 90% Confidence Limits	Percent Difference from:			
		2021	Mean 2017-2021	Mean 2012-2021	Mean 2002-2021
Central	2.45 (1.00-3.90)	143	77	76	64
Northeast	1.06 (0.55-1.57)	6	24	19	32
Panhandle	1.65 (0.24-3.06)	1	61	95	160
Sandhills	1.41 (0.61-2.21)	5	-13	-27	-45
Southeast	0.88 (0.59-1.17)	11	12	-5	-14
Southwest	2.79 (0.88-4.69)	-11	-7	2	4
Statewide	1.46 (1.11-1.81)	11	17	10	9

FIGURE 5. Regional and statewide time series (2000-2022) of wild turkey abundance indices from the July Rural Mail Carrier Survey.

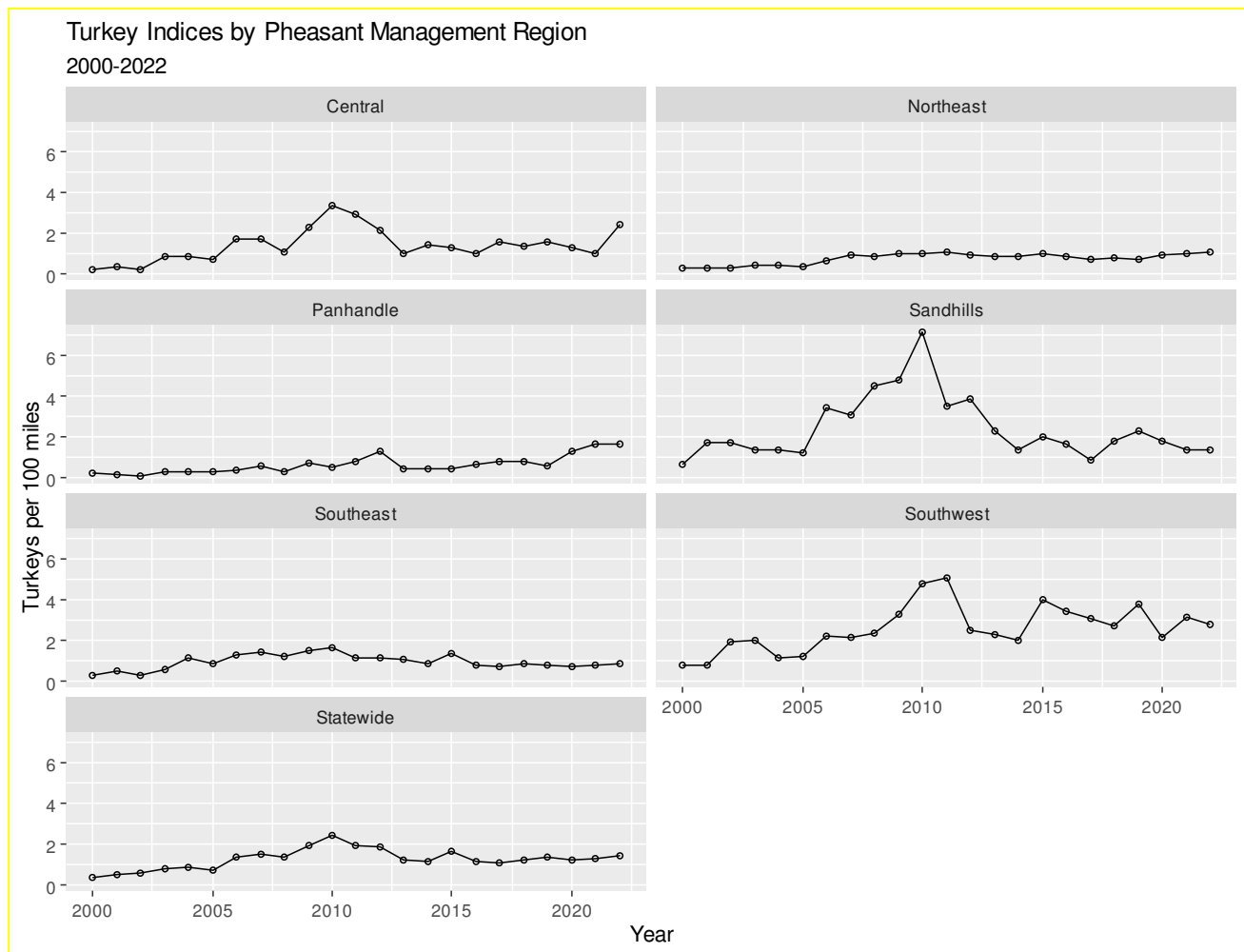


TABLE 7. Prairie grouse indices from the 2022 July Rural Mail Carrier Survey by pheasant management region (Figure 1). Carrier means are weighted by miles traveled per carrier.

Region	Mean grouse per 100 miles & 90% Confidence Limits	Percent Difference from:			
		2021	Mean 2017-2021	Mean 2012-2021	Mean 2002-2021
Central	0.12 (0.00-0.35)	-29	-43	-57	-53
Northeast	0.02 (0.00-0.04)	-67	-67	-49	-47
Panhandle	0.17 (0.00-0.38)	-29	21	42	60
Sandhills	0.13 (0.00-0.28)	-46	-52	-67	-64
Southeast	0.04 (0.00-0.08)	100	82	54	33
Southwest	0.20 (0.00-0.56)	400	163	217	326
Statewide	0.08 (0.02-0.14)	-20	-17	-26	-17

FIGURE 6. Prairie grouse regional and statewide time series (1979-2022) of indices of abundance from the July Rural Mail Carrier Survey.

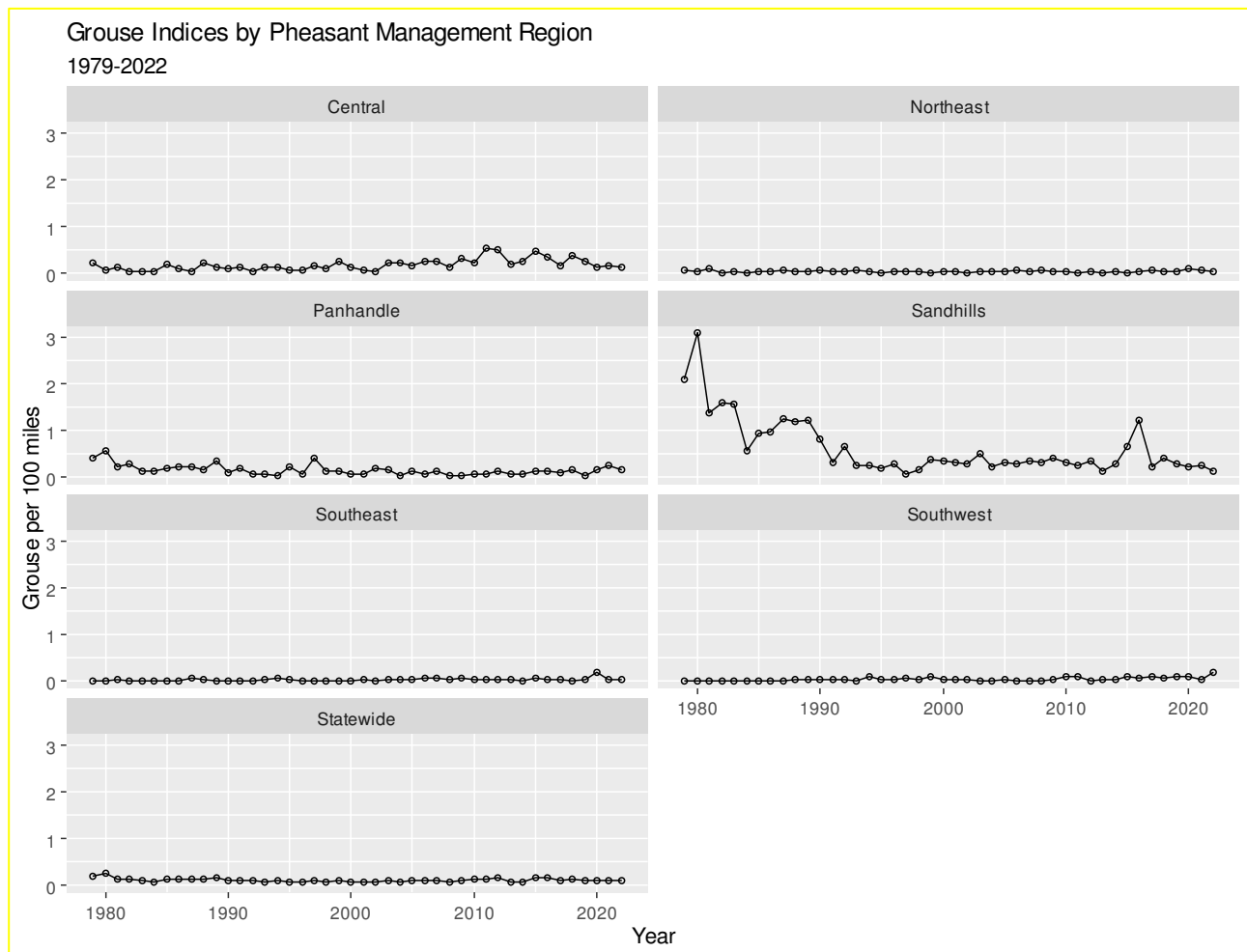


TABLE 8. Cottontail indices from the 2022 July Rural Mail Carrier Survey by pheasant management region (Figure 1). Carrier means are weighted by miles traveled per carrier.

Region	Mean cottontails per 100 miles & 90% Confidence Limits	Percent Difference from:			
		2021	Mean 2017-2021	Mean 2012-2021	Mean 2002-2021
Central	1.55 (0.89-2.22)	99	36	16	-27
Northeast	1.37 (0.98-1.75)	65	94	67	19
Panhandle	0.90 (0.43-1.38)	55	4	23	36
Sandhills	0.76 (0.44-1.07)	55	124	36	2
Southeast	1.39 (1.03-1.75)	64	52	37	9
Southwest	1.11 (0.67-1.55)	21	20	12	-3
Statewide	1.26 (1.08-1.44)	59	51	31	0

FIGURE 7. Regional and statewide time series (1958-2022) of cottontail abundance indices from the July Rural Mail Carrier Survey.

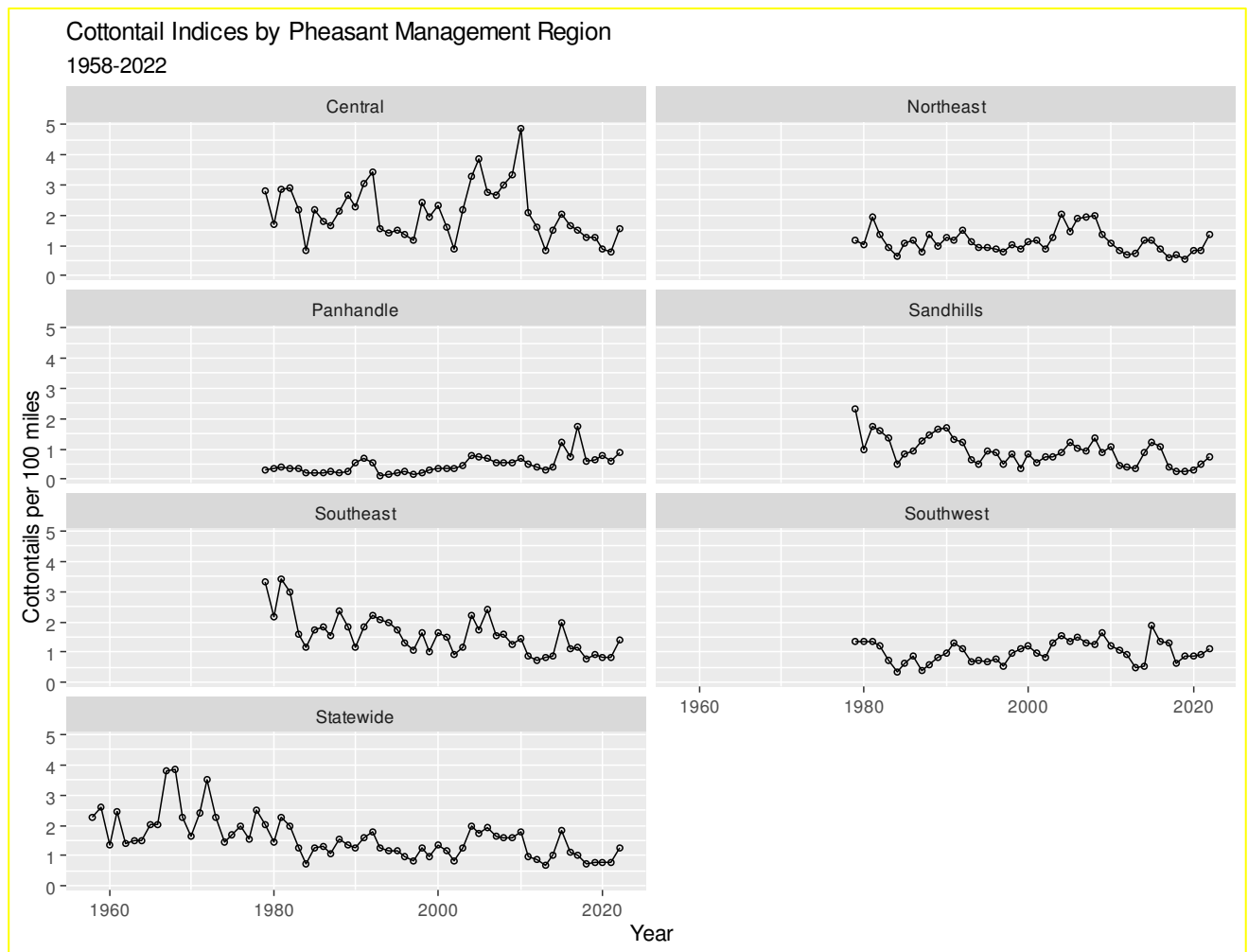


TABLE 9. Jackrabbit indices from the 2022 July Rural Mail Carrier Survey by pheasant management region (Figure 1). Carrier means are weighted by miles traveled per carrier.

Region	Mean Jackrabbit per 1000 miles & 90% Confidence Limits	Percent Difference from:			
		2021	Mean 2017-2021	Mean 2012-2021	Mean 2002-2021
Central	0.32 (0.00-0.68)	-76	-72	-64	-65
Northeast	0.13 (0.00-0.31)	30	-52	-48	-61
Panhandle	0.77 (0.07-1.48)	-38	-74	-76	-71
Sandhills	0.44 (0.00-1.10)	63	20	-58	-74
Southeast	0.04 (0.00-0.16)	-77	-44	-47	-78
Southwest	0.20 (0-00-0.62)	-79	-82	-88	-88
Statewide	0.24 (0.11-0.37)	-59	-62	-71	-74

FIGURE 8. Regional and statewide time series (1963-2022) of jackrabbit abundance indices from the July Rural Mail Carrier Survey.

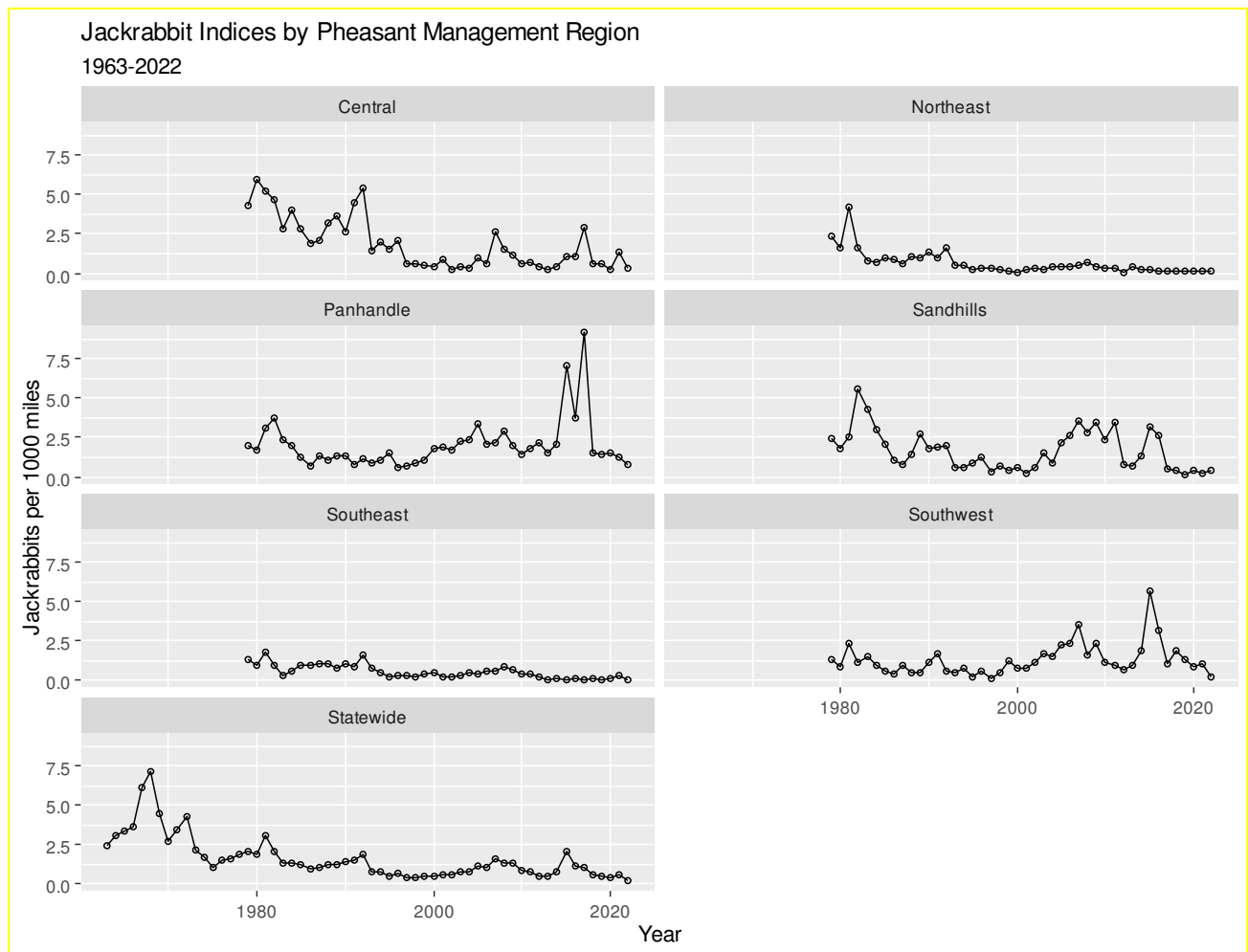


TABLE 10. Number of cards and percent of total cards ($n = 335$) that contained zero observations of each species of wildlife. Overall, 10.5% of cards contained zero observations of all species (35 cards).

	Pheasant	Bobwhite	Grouse	Turkey	Cottontail	Jackrabbit
Nº of Cards	160	233	309	145	82	316
Percent	47.8	69.6	92.2	43.3	24.5	94.3

For more information, contact John Laux, Upland Game Program Manager at john.laux@nebrasks.gov