

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

Title of Job: 2022 October Rural Mail Carrier Survey



John Laux, Upland Game Program Manager
 Dr. Jeffrey J. Lusk, Data & Biometry Program Manager
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The 2022 October Rural Mail Carrier Survey was conducted 3-6 October 2022. We received 391 cards by 26 October 2022, of which 366 cards contained information needed for analyses (Tables 1-3). Rural carriers made observations of wildlife while traveling 155,400 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. Except for Cottontail and Deer, species’ indices of abundance were mixed or similar to 2021. Pheasant statewide and regional indices were lower, except for the Northeast, Southeast, and Sandhills regions. Bobwhite indices were mostly lower except in the North Central and Northeast regions. Cottontail regional indices were higher, except Sandhills region where the index was unchanged from 2021. Grouse and jackrabbit indices were mixed, but deer indices were mostly higher. As indicated, turkey indices were mixed compared to 2021, with increases in indices in the Central and Panhandle regions. Turkey indices remained similar to 2021 statewide and in the Southeast. All indices were generally lower than their long-term means.

Take-Home Message. Indices were mixed for most species, potentially signaling some regional population increases compared to 2021. However, prolonged drought may have impacted observations and relative abundances of the species covered by the October survey.

TABLE 1. Raw counts of pheasants, prairie grouse, wild turkey, cottontail, and jackrabbits from the 2022 October Rural Mail Carrier Survey by pheasant management region (Figure 1).

Region	Carriers	Miles	Pheasant	Grouse	Turkey	Cottontail	Jackrabbit
Central	45	19,172	30	71	925	78	3
Northeast	82	37,514	171	34	457	162	2
Panhandle	46	17,030	106	52	678	47	4
Sandhills	35	14,296	46	51	565	6	2
Southeast	109	47,298	67	22	502	191	2
Southwest	49	20,091	124	72	1,227	81	7
Statewide	366	155,400	544	302	4,354	565	20

TABLE 2. Raw counts of deer (bucks, does, and fawns) by pheasant management region (Figure 1) from the 2022 October Rural Mail Carrier Survey.

Region	Carriers	Miles	Buck	Doe	Fawn	Total
Central	45	19,172	25	103	17	145
Northeast	82	37,514	16	83	34	133
Panhandle	46	17,030	73	186	81	340
Sandhills	35	14,296	16	120	44	180
Southeast	109	47,298	20	119	26	165
Southwest	49	20,091	48	204	28	280
Statewide	366	155,400	198	815	230	1,243

TABLE 3. Raw counts of bobwhite by bobwhite management zone (Figure 2) from the 2022 October Rural Mail Carrier Survey.

Region	Carriers	Miles	Bobwhites
East Central	59	25,116	45
North Central	45	20,019	35
Northeast	75	34,876	52
Republican	25	11,245	10
Southeast	42	18,180	23
West Platte	81	31,569	19
Not Quail Range	39	14,396	12
Statewide	366	155,400	196

FIGURE 1. Pheasant management regions.

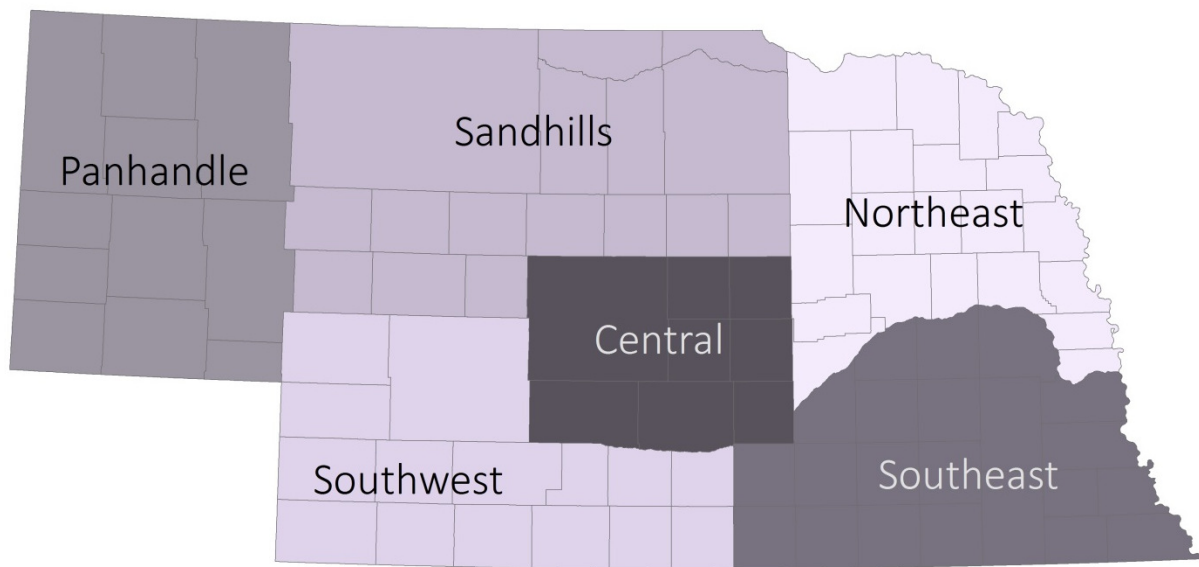
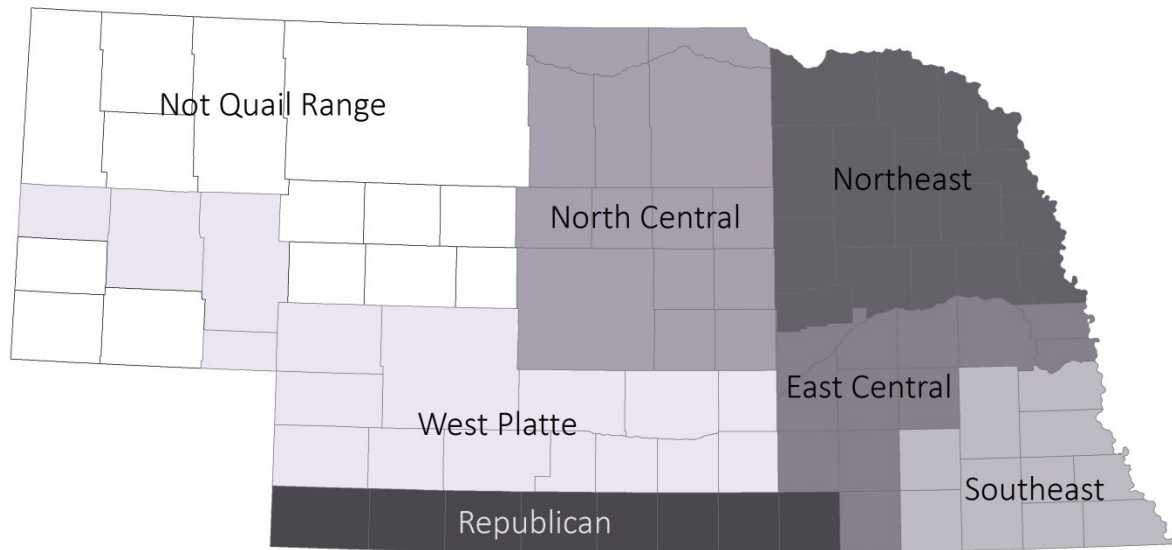


FIGURE 2. Bobwhite management zones.



Results. Relative abundances for species were generally lower to mixed, both regionally within species and among species compared to 2021 (Tables 4-10, Figures 3-9). Regional indices for pheasants were lower in all regions except the Northeast, Sandhills, and Southeast (Table 4, Figure 3). The index in the Northeast region was also higher than the 5-year and 10-year means (Table 4). Regional indices for prairie grouse were lower in the Sandhills, and Southwest (Table 5, Figure 4) compared to 2021. For bobwhites, regional indices were lower compared to 2021, with indices higher in the Northeast and North Central zones (Table 6, Figure 5). Wild turkey indices were mixed compared to 2021, with a higher index in the Central and Panhandle regions (Table 7, Figure 6). Turkey indices were lower than the 5-, 10-, and 20-year means, except for the Panhandle (Table 7). For Cottontails, indices were higher in all regions in 2022, except in the Sandhills region where the index was unchanged from 2021 (Table 8, Figure 7). Regional indices of abundance for jackrabbits were generally higher in 2022 compared to 2021, with lower indices in the Northeast and Southeast regions, however confidence intervals for most indices overlapped zero (Table 9, Figure 8). Finally, indices of deer abundance were generally higher compared to 2021, with higher indices observed in the Central, Northeast, and Panhandle regions. Indices in the Sandhills, Southeast, and Southwest regions were similar to those in 2021 (Table 10, Figure 9). Of the 366 usable cards returned, 72 (19.7%) had no observations of any wildlife. The number and percentage of the total usable cards received for each species is provided in Table 11.

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

Region	Mean pheasants per 100 miles & 95% Confidence Limits	Percent Difference from:			
		2021	Mean 2017-2021	Mean 2012-2021	Mean 2002-2021
Central	0.16 (0.03-0.19)	-20	5	-27	-48
Northeast	0.46 (0.28-0.63)	64	30	35	-9
Panhandle	0.62 (0.29-0.95)	-30	-45	-56	-45
Sandhills	0.32 (0.08-0.57)	28	-14	-28	-42
Southeast	0.14 (0.09-0.19)	27	-22	-37	-66
Southwest	0.62 (0.29-0.95)	-23	-40	-46	-55
Statewide	0.35 (0.27-0.43)	-3	-20	-31	-44

FIGURE 3. Regional and statewide time series (1983-2022) of pheasant population indices by pheasant management region (Figure 1) from the October Rural Mail Carrier Survey.

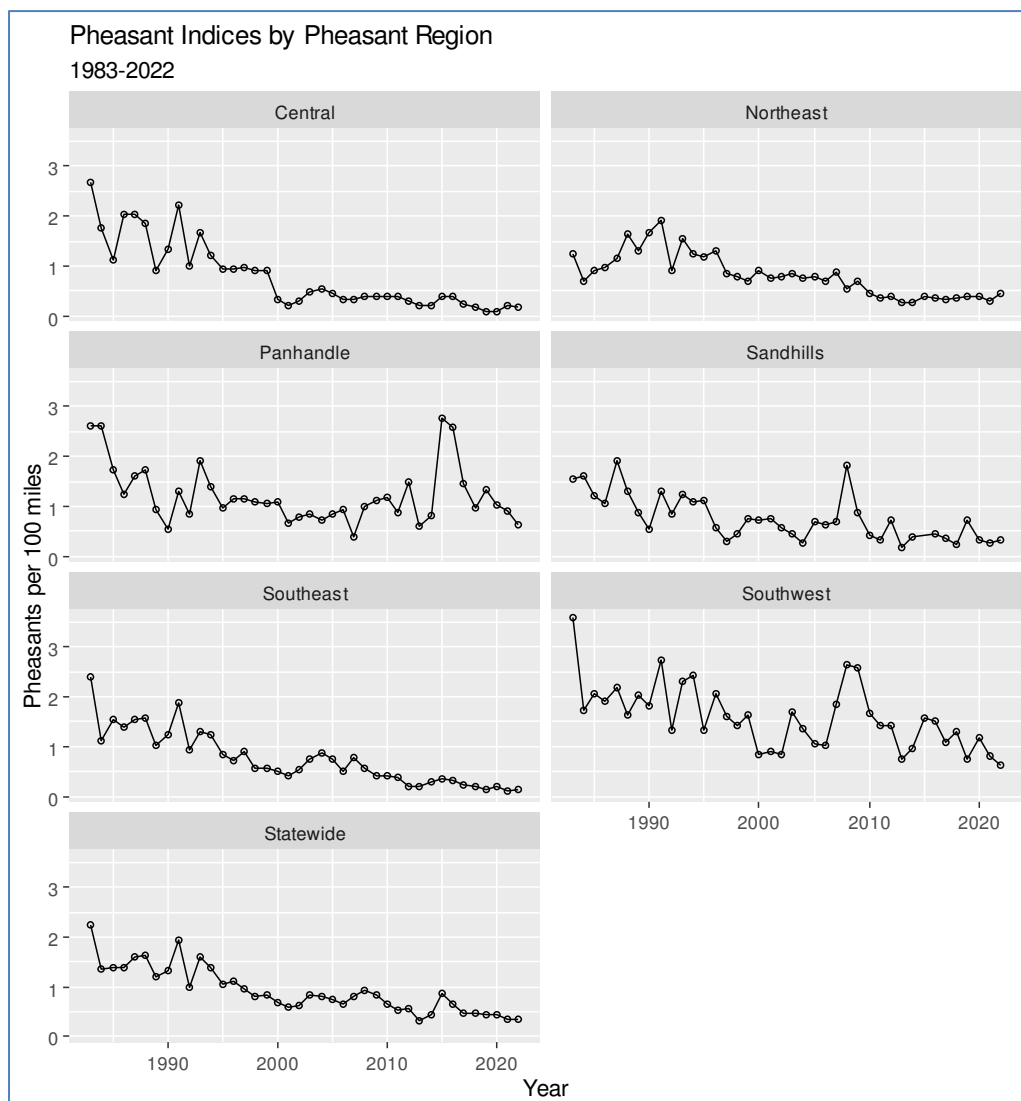


TABLE 5. Prairie grouse indices and percent change by pheasant management region (Figure 1) from the 2022 October Rural Mail Carrier Survey. Carrier means are weighted by miles traveled/carrier.

Region	Mean Grouse per 100 miles & 95% Confidence Limits	Percent Difference from:			
		2021	Mean 2017-2021	Mean 2012-2021	Mean 2002-2021
Central	0.37 (0.04-0.70)	42	-1	-10	-47
Northeast	0.09 (0.00-0.21)	NA	0	43	71
Panhandle	0.31 (0.04-0.57)	7	11	-30	-7
Sandhills	0.36 (0.14-0.57)	-68	-67	-73	-77
Southeast	0.05 (0.01-0.09)	67	-26	18	-13
Southwest	0.36 (0.00-0.83)	-16	1	19	39
Statewide	0.19 (0.10-0.28)	-10	-26	-32	-39

FIGURE 4. Regional and statewide time series (1983-2022) of prairie grouse indices by pheasant management region (Figure 1) from the October Rural Mail Carrier Survey.

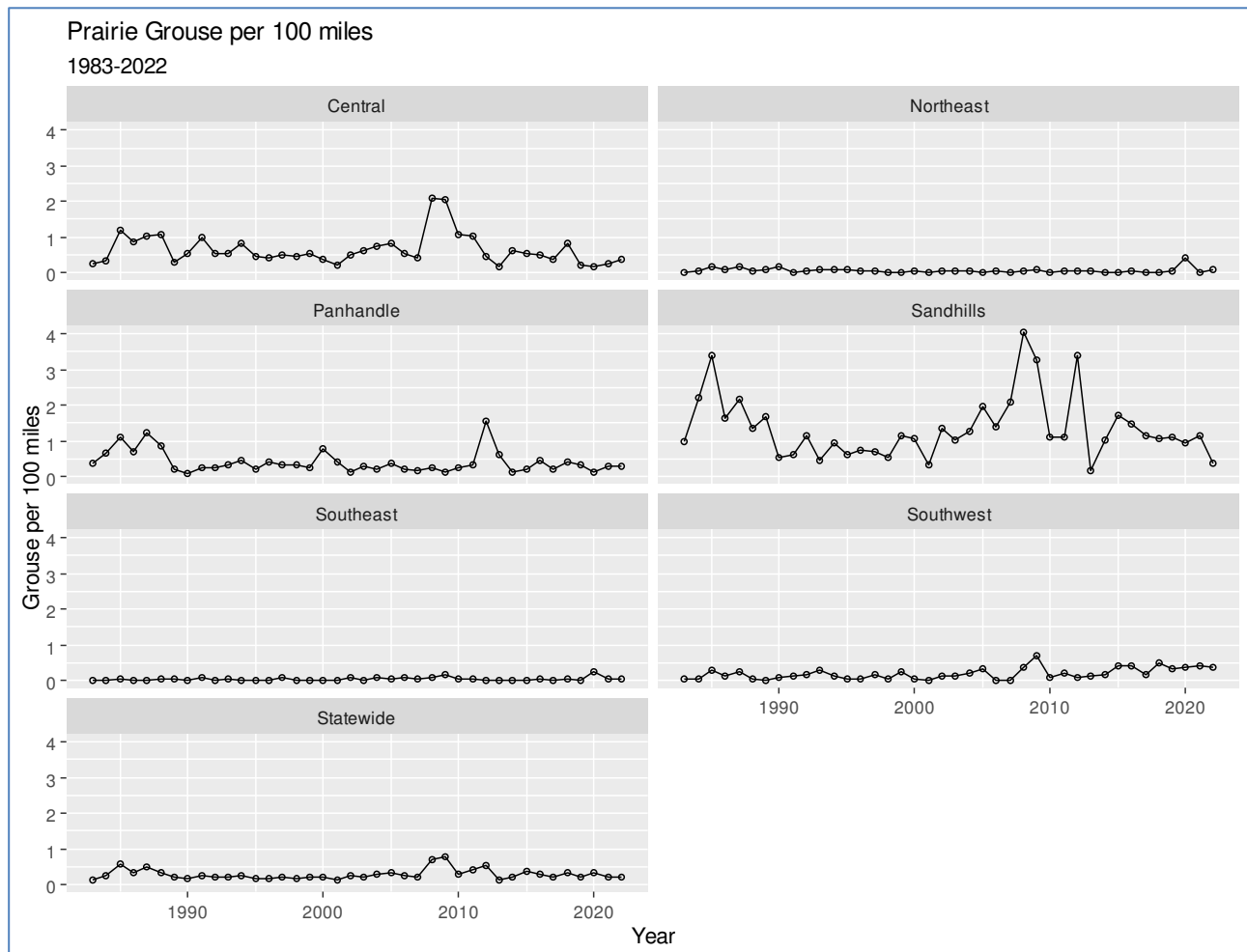


Table 6. Bobwhite indices and percent change by bobwhite management zone (Figure 2) from the 2022 October Rural Mail Carrier Survey. Carrier means are weighted by miles traveled per carrier.

Zone	Mean Bobwhites per 100 miles & 95% Confidence Limits	Percent Difference from:			
		2021	Mean 2017-2021	Mean 2012-2021	Mean 2002-2021
East Central	0.18 (0.06-0.30)	-14	-58	-46	-36
North Central	0.17 (0.01-0.34)	1,600	-55	-55	-51
Northeast	0.15 (0.03-0.27)	36	92	90	24
Republican	0.09 (0.00-0.18)	-71	-86	-84	-80
Southeast	0.13 (0.05-0.20)	-43	-57	-67	-68
West Platte	0.06 (0.01-0.11)	-14	-49	-53	-54
NQR	0.08 (0.00-0.22)	-71	11	34	42
Statewide	0.13 (0.09-0.17)	-13	-48	-47	-46

Figure 5. Regional and statewide time series (1983-2022) of bobwhite indices by bobwhite management zone (Figure 2) from the October Rural Mail Carrier Survey.

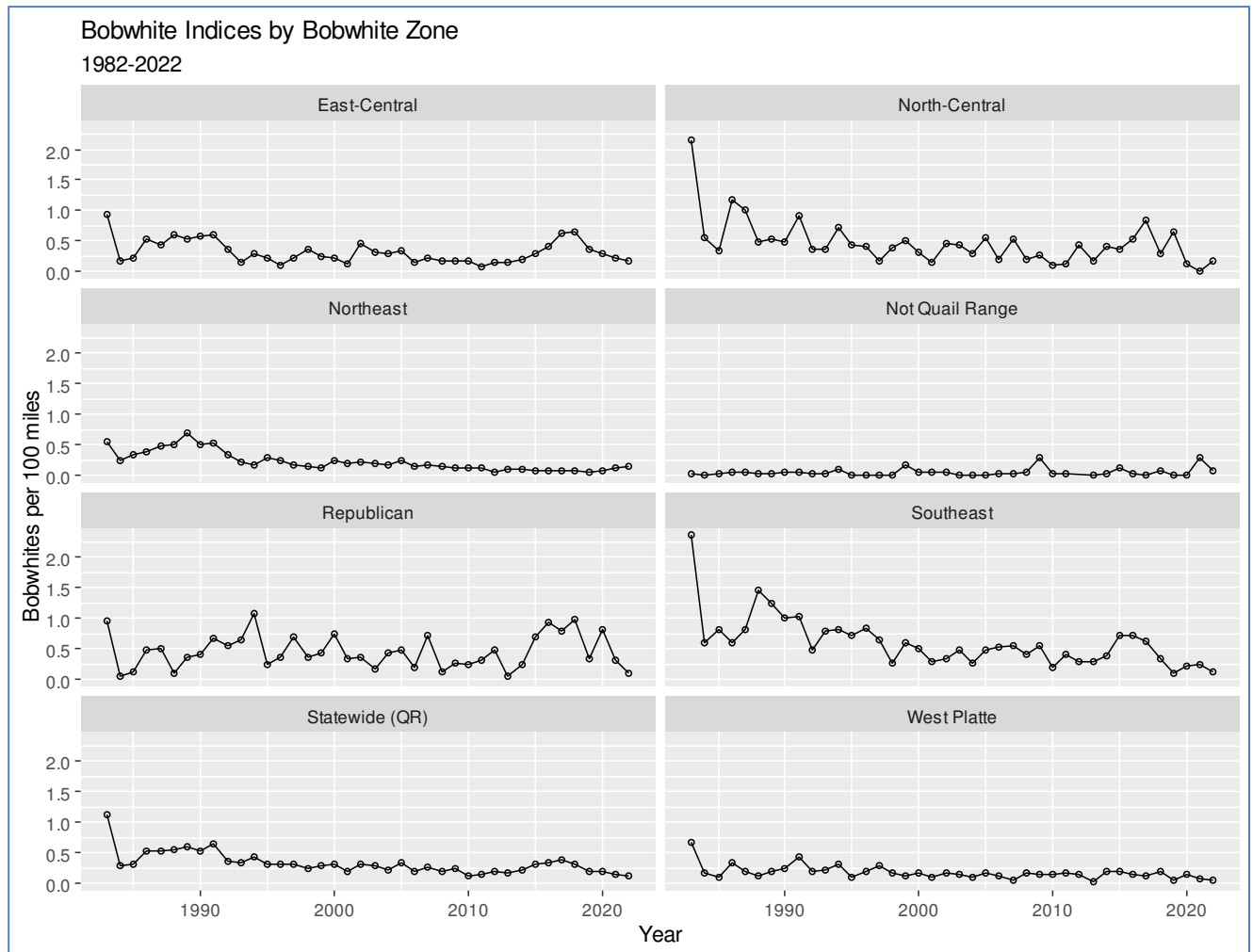


Table 7. Wild Turkey indices and percent change by pheasant management region (Figure 1) from the 2022 October Rural Mail Carrier Survey. Carrier means are weighted by miles travelled/carrier.

Region	Mean Turkeys per 100 Miles & 95% Confidence Limits	Percent Difference from:			
		2021	Mean 2017-2021	Mean 2012-2021	Mean 2002-2021
Central	4.82 (2.71-6.94)	33	-4	-2	-2
Northeast	1.22 (0.72-1.71)	-26	-47	-41	-34
Panhandle	3.98 (1.42-6.54)	171	82	50	73
Sandhills	3.95 (2.18-5.73)	-25	-24	-26	-37
Southeast	1.06 (0.73-1.39)	1	-48	-46	-47
Southwest	6.11 (2.36-9.85)	-13	-18	-26	-20
Statewide	2.80 (2.11-3.49)	1	-20	-23	-17

Figure 6. Regional and statewide time series (2000-2022) of wild turkey indices by pheasant management region (Figure 1) from the October Rural Mail Carrier Survey.

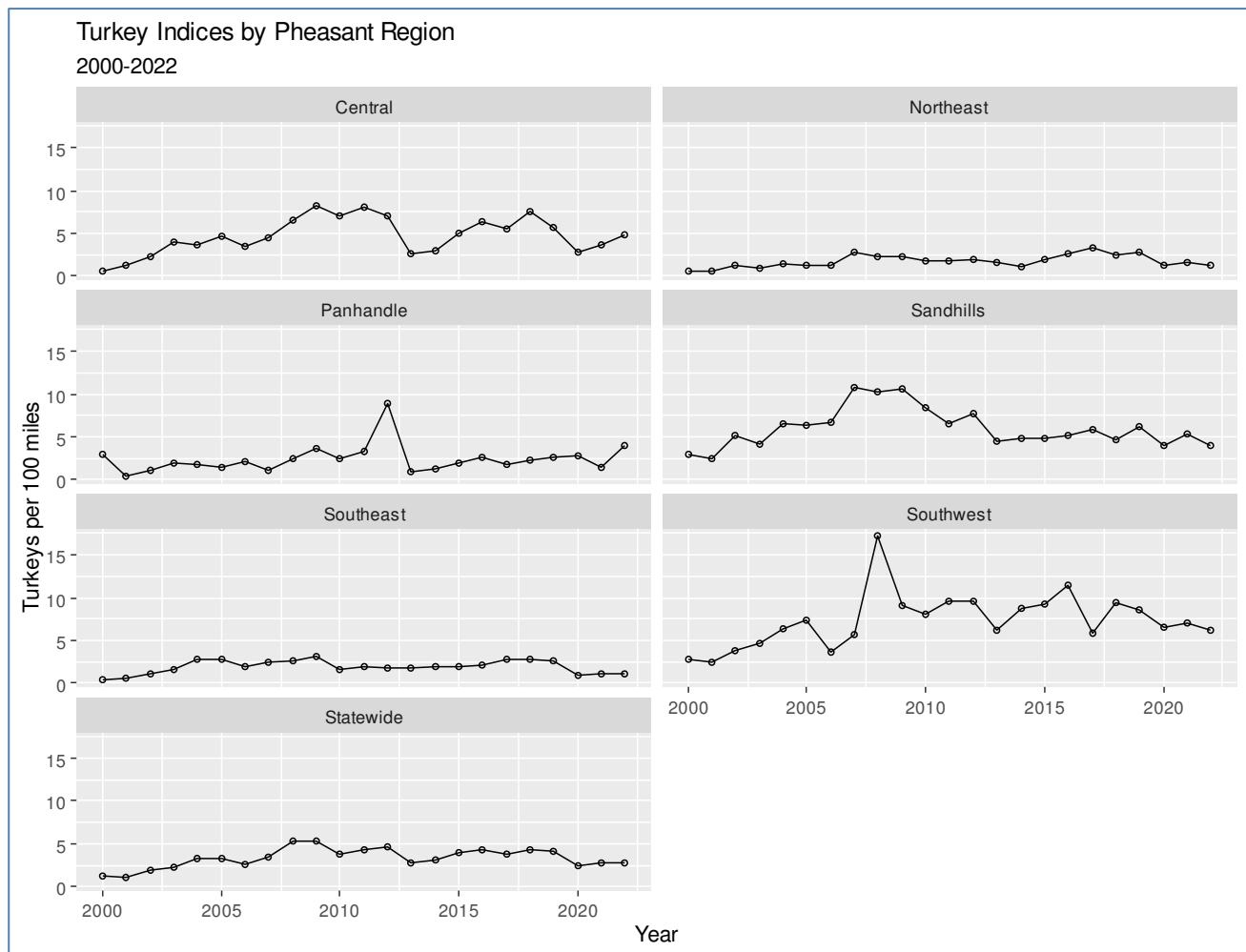


Table 8. Cottontail indices and percent change by pheasant management region (Figure 1) from the 2022 October Rural Mail Carrier Survey. Carrier Means are weighted by miles traveled per carrier.

Region	Mean Cottontails per 100 miles & 95% Confidence Limits	Percent Difference from:			
		2021	Mean 2017-2021	Mean 2012-2021	Mean 2002-2021
Central	0.41 (0.17-0.64)	32	52	39	-13
Northeast	0.43 (0.23-0.63)	39	41	25	-2
Panhandle	0.28 (0.11-0.45)	22	-12	-5	4
Sandhills	0.04 (0.00-0.10)	0	-69	-72	-76
Southeast	0.40 (0.24-0.57)	29	4	10	-3
Southwest	0.40 (0.21-0.60)	29	8	8	11
Statewide	0.36 (0.28-0.44)	24	12	9	-7

Figure 7. Regional and statewide time series (1983-2022) of cottontail indices by pheasant management region (Figure 1) from the October Rural Mail Carrier Survey.

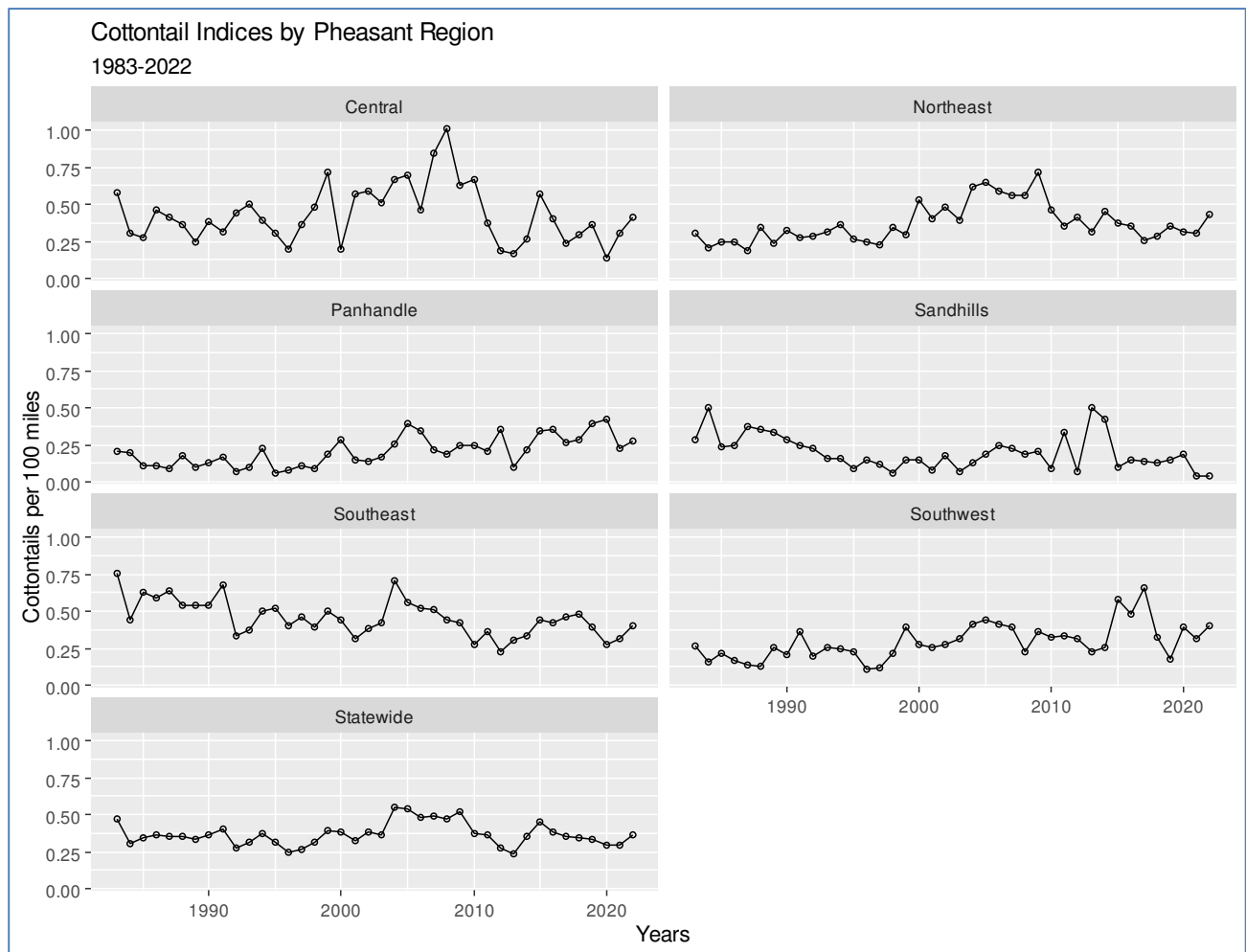


Table 9. Jackrabbit indices and percent change by pheasant management region (Figure 1) from the 2022 October Rural Mail Carrier Survey. Carrier means are weighted by miles traveled per carrier.

Region	Mean Jackrabbits per 1000 miles & 95% Confidence Limits	Percent Difference from:			
		2021	Mean 2017-2021	Mean 2012-2021	Mean 2002-2021
Central	0.16 (0.00-0.33)	23	21	25	22
Northeast	0.05 (0.00-0.17)	-44	-58	-46	-66
Panhandle	0.23 (0.02-0.45)	28	-70	-73	-71
Sandhills	0.14 (0.00-0.42)	40	-45	-44	-56
Southeast	0.04(0.00-0.11)	-71	-61	-49	-69
Southwest	0.35 (0.00-0.88)	106	106	-5	-21
Statewide	0.13 (0.04-0.22)	0	-34	-42	-51

Figure 8. Regional and statewide time series (1983-2022) of jackrabbit indices by pheasant management region (Figure 1) from the October Rural Mail Carrier Survey.

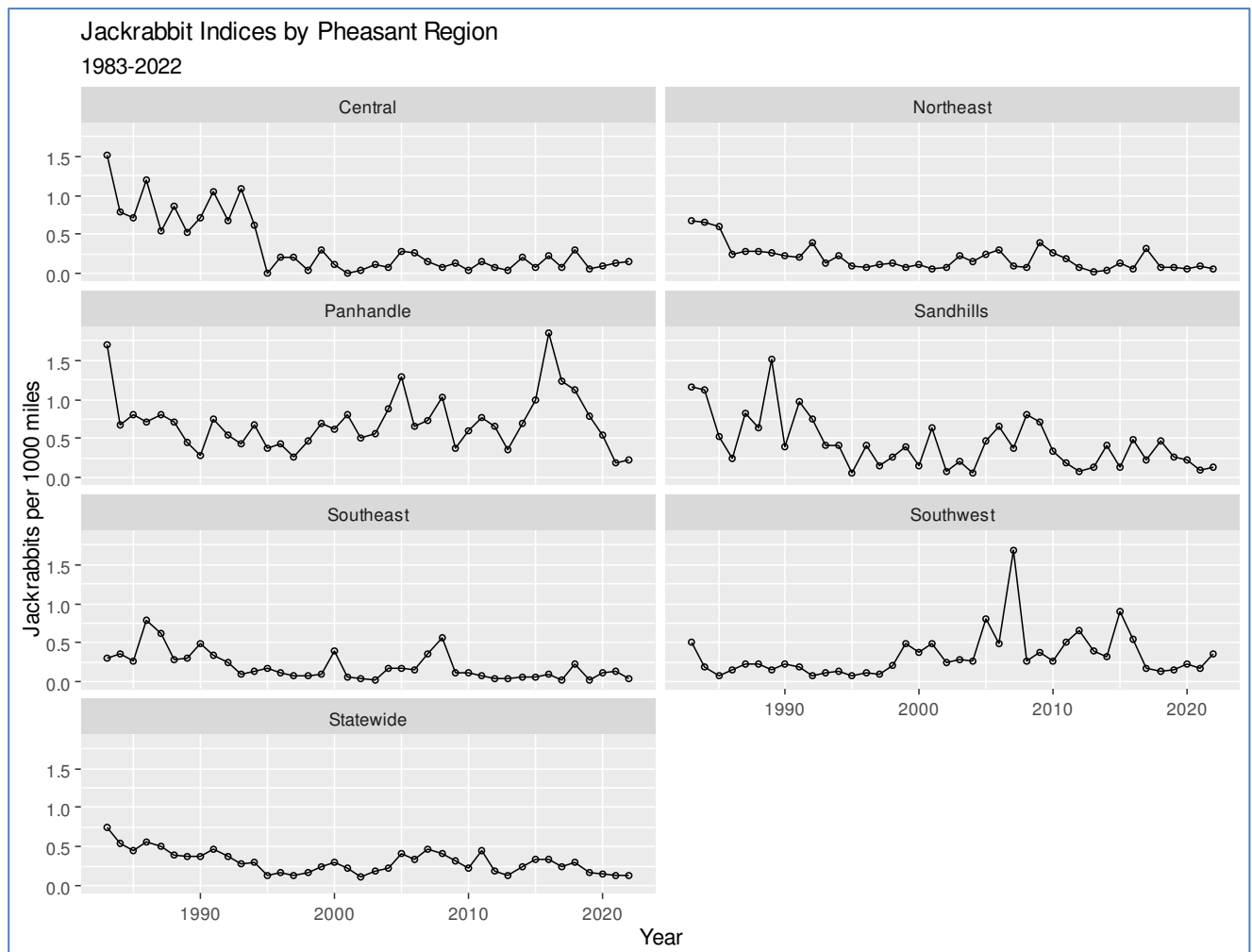


Table 10. Deer indices and percent change by pheasant management region (Figure 1) from the 2022 October Rural Mail Carrier Survey. Carrier means are weighted by miles traveled per carrier.

Region	Mean Deer per 100 miles & 95% Confidence Limits	Percent Difference from:		
		2021	Mean 2017-2021	Mean 2012-2021
Central	0.76 (0.48-1.03)	10	-15	-12
Northeast	0.35 (0.17-0.54)	13	-20	-9
Panhandle	2.00 (0.43-3.56)	147	14	39
Sandhills	1.26 (0.79-1.73)	-8	-20	-1
Southeast	0.35 (0.26-0.44)	3	-33	-28
Southwest	1.39 (0.51-2.28)	5	-31	-28
Statewide	0.80 (0.56-1.04)	27	-16	-7

Figure 9. Regional and statewide time series (2003-2022) of deer indices by pheasant management region from the October Rural Mail Carrier Survey.

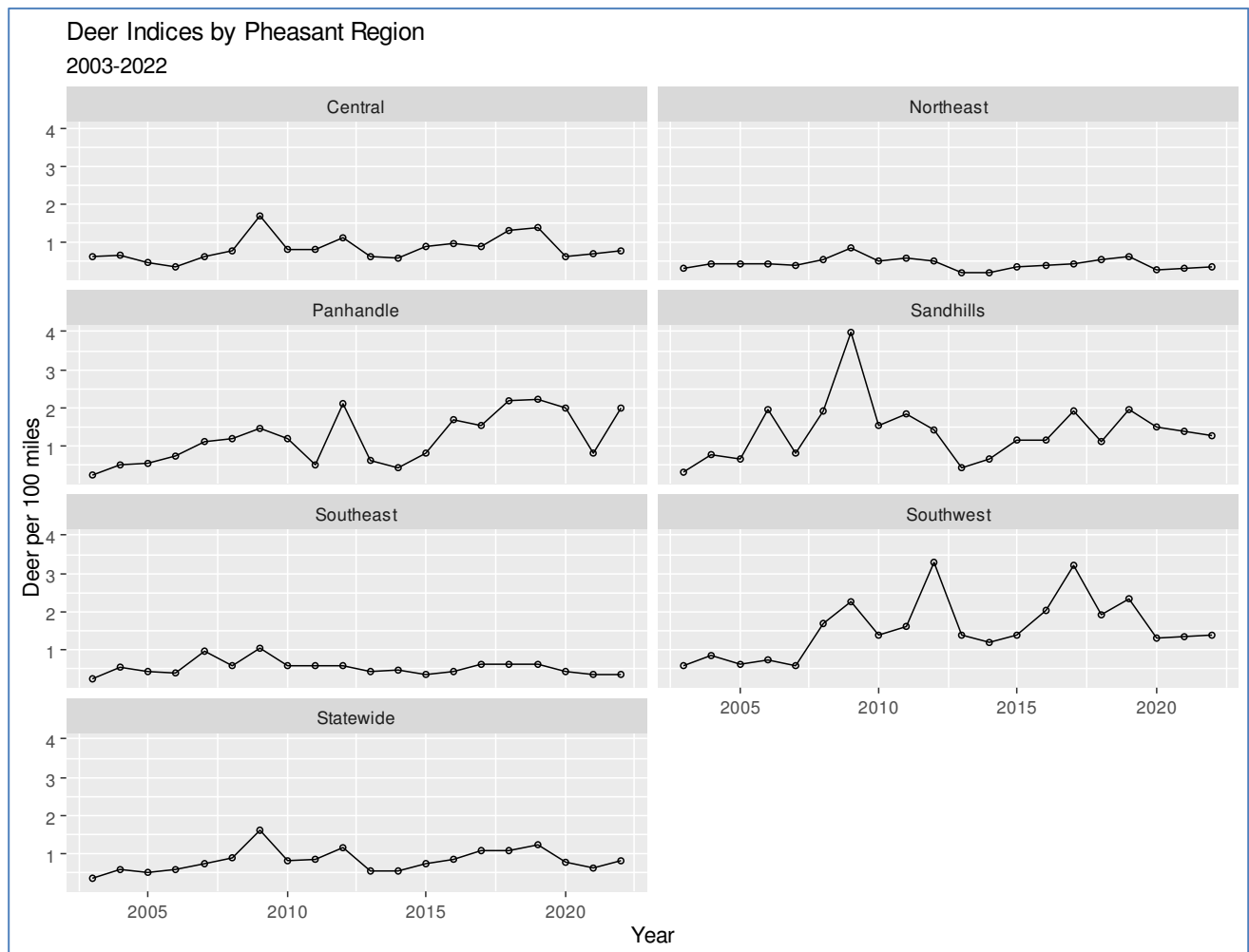


Table 11. Number of cards and the percent of total cards ($n = 366$) that contained zero observations of each wildlife species. Overall, 19.7% of October 2022 cards contained zero observations of all species (72 cards).

	Pheasant	Deer	Quail	Grouse	Turkey	Cottontail	Jackrabbit
Zero Counts	226	178	322	325	173	236	353
Percent Zero	62	49	88	89	47	64	96

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