

Federal Aid in Wildlife Restoration Project N^o: W-15-R

Title of Job: 2021 April Rural Mail Carrier Survey



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The 2021 April Rural Mail Carrier Survey was conducted 5-8 April 2021. We received 419 cards by 31 April 2021, of which 402 cards contained complete information necessary for processing. The results below (Tables 1 & 2) are based on the complete cards. Rural Carriers made observations while traveling 165,194 miles or rural roads in 86 of Nebraska’s 93 counties.

Caveats. The April survey provides a snapshot of wildlife populations entering the breeding season and might not reflect conditions experienced by hunters the subsequent fall. Interpretations of 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 from one year to the next translates into large percent changes, but result in no observable difference in abundance within a region. For example, an increase in a species index from 0.01 to 0.02 animals observed per 100 miles is a 100% increase, but would not likely be noticeable to hunters afield. Further, survey methodology does not allow for the estimation of population size or density, but only trends in relative abundance through time. At a statewide scale, these indices are correlated with harvest and are, therefore, useful for forecasting.

Interpretations. Despite a worldwide pandemic, rural mail carriers participated in the April survey. Statewide indices for all species were lower compared to the 2020 survey. Regionally, pheasant indices were higher in the Central, Northeast, and Southeast regions, and lower elsewhere. The highest regional increase was in the Southeast region. This pattern was similar for bobwhites, with the highest regional increase in the Southeast and East Central zones. Regionally, turkey indices were lower in all regions except the Northeast and Panhandle regions. Regional cottontail indices were mixed with higher indices in the Northeast, Panhandle, and Southwest, and lower elsewhere,

Take Home Message. Pheasant numbers were lower this year going into the breeding season. However, good spring and summer weather, could lead to good production. Although turkey abundance had declined, abundance still appears robust. Bobwhites, however, still appear to be in a “bust” phase over much of the state.

TABLE 1. Raw counts of pheasants, prairie grouse, wild turkey, cottontails, and jackrabbits from the 2021 April Rural Mail Carrier Survey by pheasant management region (Figure 1).

Region	Carriers	Miles	Pheasants	Grouse	Turkey	Cottontail	Jackrabbit
Central	50	21,507	79	165	586	72	4
Northeast	102	43,406	236	29	1,136	182	5
Panhandle	50	17,884	235	50	626	86	15
Sandhills	38	15,832	116	209	962	6	7
Southeast	107	45,228	141	49	927	166	3
Southwest	55	22,969	294	91	1,185	155	3
Statewide	402	166,827	1,101	593	5,422	667	37

FIGURE 1. Pheasant Management Regions.

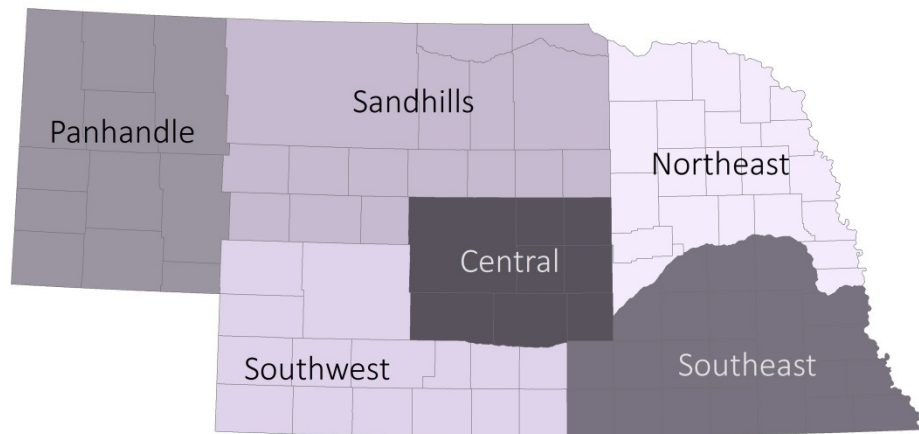
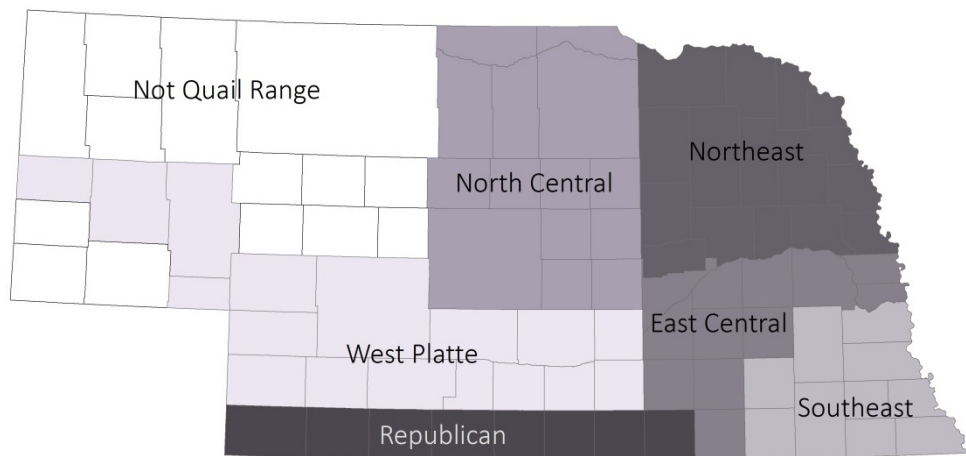


TABLE 2. Raw bobwhite counts from the 2021 April Rural Mail Carrier Survey by bobwhite management zones (Figure 2).

Zone	Carriers	Miles	Bobwhites
East Central	62	24,782	42
North Central	49	22,246	36
Northeast	91	40,589	18
Republican	28	13,000	20
Southeast	40	16,394	17
West Platte	88	33,878	5
Not Quail Range	44	15,939	3
Statewide	358	150,888	138

FIGURE 2. Bobwhite Management Zones.



Results. Statewide indices were lower for all species (Tables 3-6, Figures 3-6). Regional indices were generally mixed for all species compared to 2020. A total of 64 rural carrier cards were returned with no observations on them (15.9%) which is higher than in 2020. Table 7 shows how many cards contained zero observations by species.

TABLE 3. Pheasant indices from the 2021 April 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:			
		2020	Mean 2016-2020	Mean 2011-2020	Mean 2001-2020
Central	0.37 (0.18-0.56)	3	-12	-39	-55
Northeast	0.54 (0.00-2.18)	29	11	4	-48
Panhandle	1.31 (0.75-1.88)	-42	-42	-40	-41
Sandhills	0.73 (0.36-1.11)	-60	-40	-47	-52
Southeast	0.31 (0.18-0.44)	35	5	-16	-57
Southwest	1.28 (0.85-1.71)	-48	-32	-41	-46
Statewide	0.66 (0.24-1.08)	-31	-23	-31	-47

FIGURE 3. Regional and statewide time series (1979-2021) of pheasant population indices from the April Rural Mail Carrier Survey by pheasant management region (Figure 1).

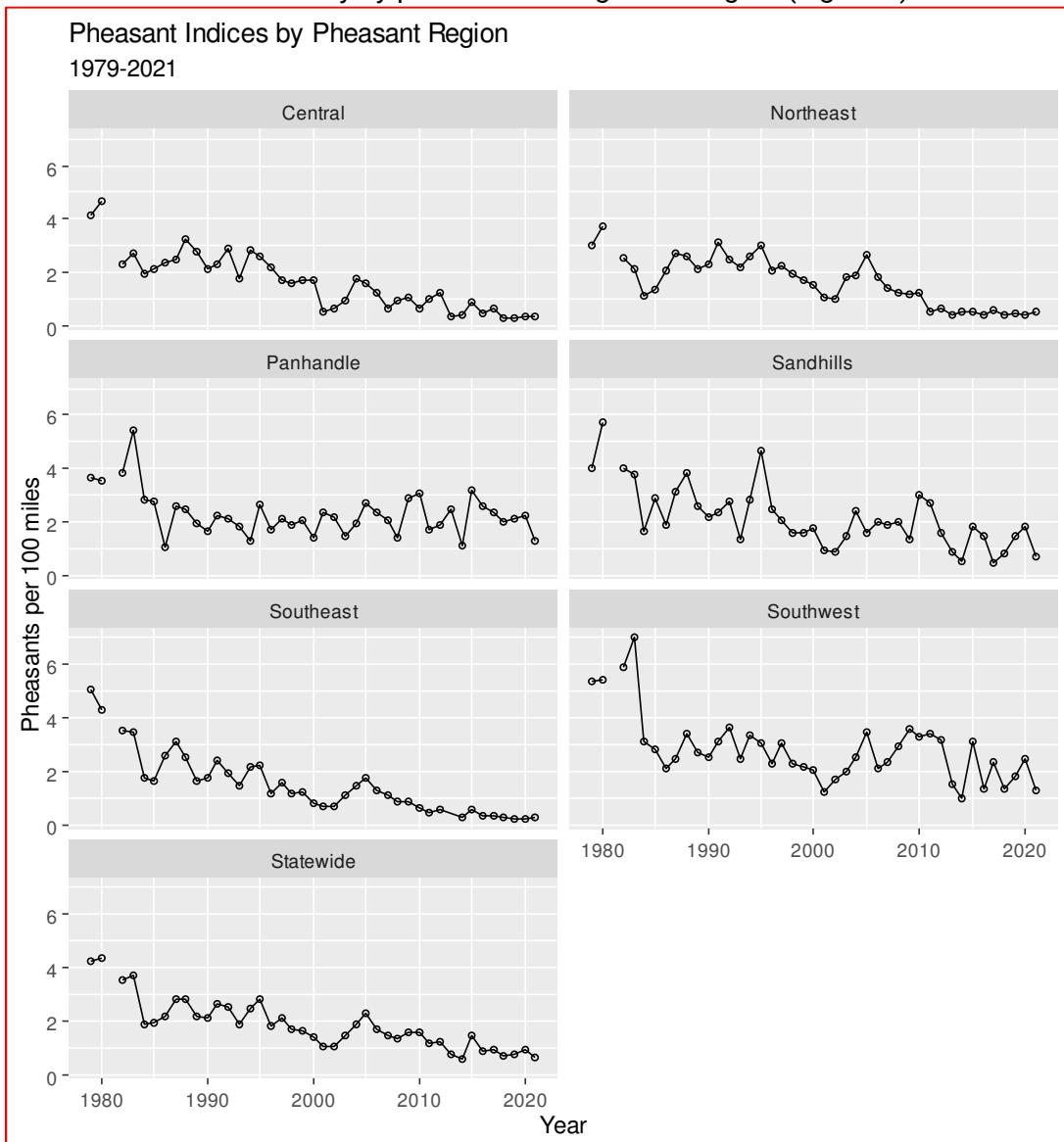


TABLE 4. Northern bobwhite indices from the 2021 April Rural Mail Carrier Survey by bobwhite management zone (Figure 2). Carrier means are weighted by miles traveled per carrier.

Zone	Mean Bobwhites per 100 miles & 90% Confidence Limits	Percent Difference from:			
		2020	Mean 2016-2020	Mean 2011-2020	Mean 2001-2020
East Central	0.17 (0.08-0.26)	112	-2	56	63
North Central	0.16 (0.00-0.34)	23	-42	-36	-24
Northeast	0.04 (0.01-0.08)	0	-5	5	-46
Republican	0.15 (0.05-0.26)	-42	-44	-18	-22
Southeast	0.10 (0.02-0.19)	150	-38	-35	-34
West Platte	0.01 (0.00-0.03)	-80	-89	-87	-88
Not in Range	0.02 (0.00-0.04)	-88	-55	-68	-55
Statewide	0.08 (0.05-0.11)	-11	-39	-26	-30

FIGURE 4. Regional and statewide time series (1979-2021) of bobwhite population indices from the April Rural Mail Carrier Survey by bobwhite management zone (Figure 2).

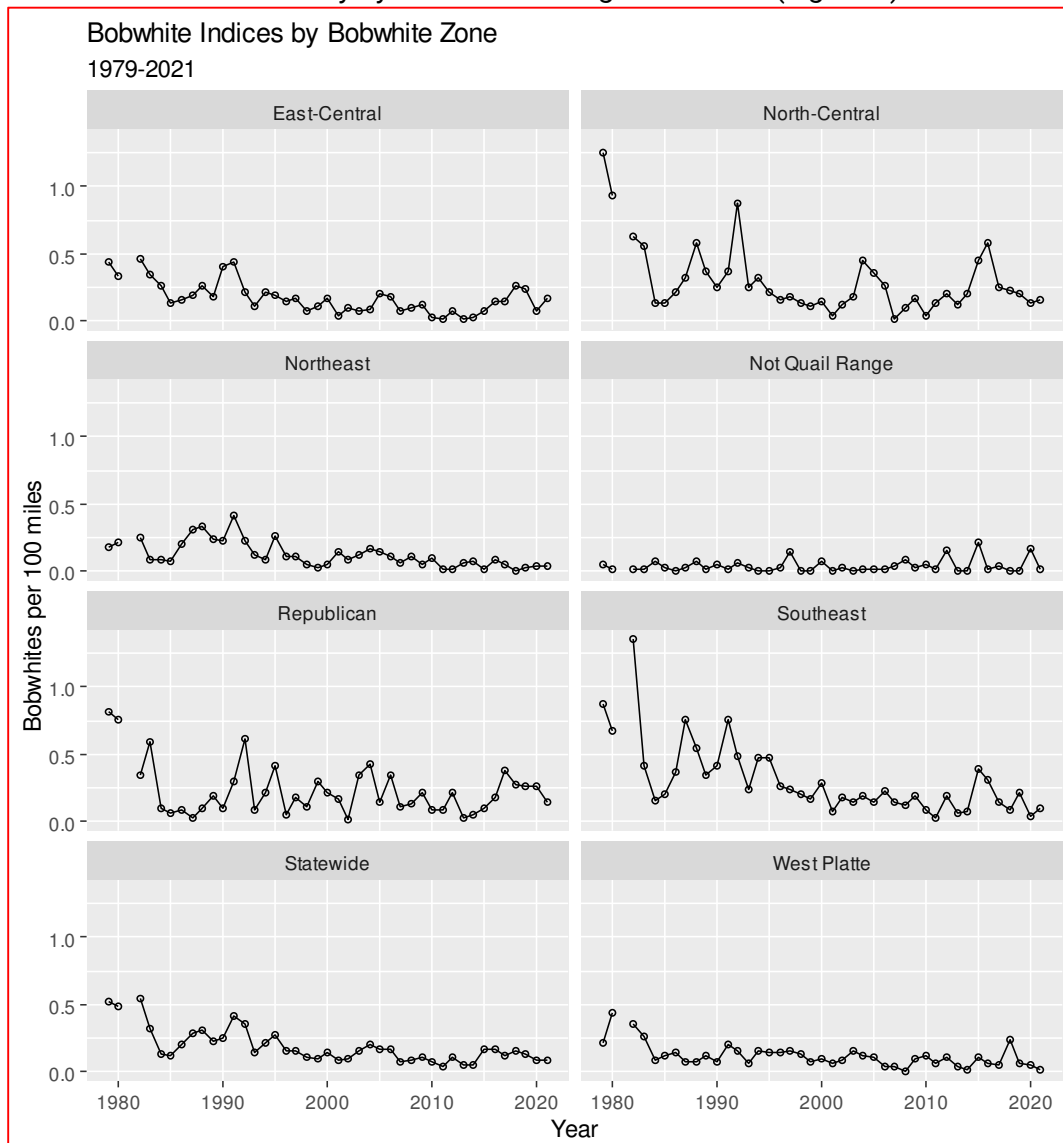


TABLE 5. Cottontail indices from the 2021 April Rural Mail Carrier Survey by pheasant management region (Figure 1). Carrier means are weighted by miles traveled per carrier.

Region	Mean Cottontails per 100 miles & 90% Confidence Limits	Percent Difference from:			
		Mean 2020	Mean 2016-2020	Mean 2011-2020	Mean 2001-2020
Central	0.33 (0.17-0.50)	-23	-33	-31	-47
Northeast	0.42 (0.02-0.82)	17	19	-1	-27
Panhandle	0.48 (0.23-0.74)	33	40	40	37
Sandhills	0.04 (0.01-0.07)	-82	-82	-85	-85
Southeast	0.37 (0.24-0.49)	-27	-18	-10	-34
Southwest	0.67 (0.19-1.16)	34	20	17	17
Statewide	0.40 (0.37-0.53)	-5	-4	-10	-25

FIGURE 5. Regional and statewide time series (1958-2021) of cottontail population indices from the April Rural Mail Carrier Survey by pheasant management region (Figure 1).

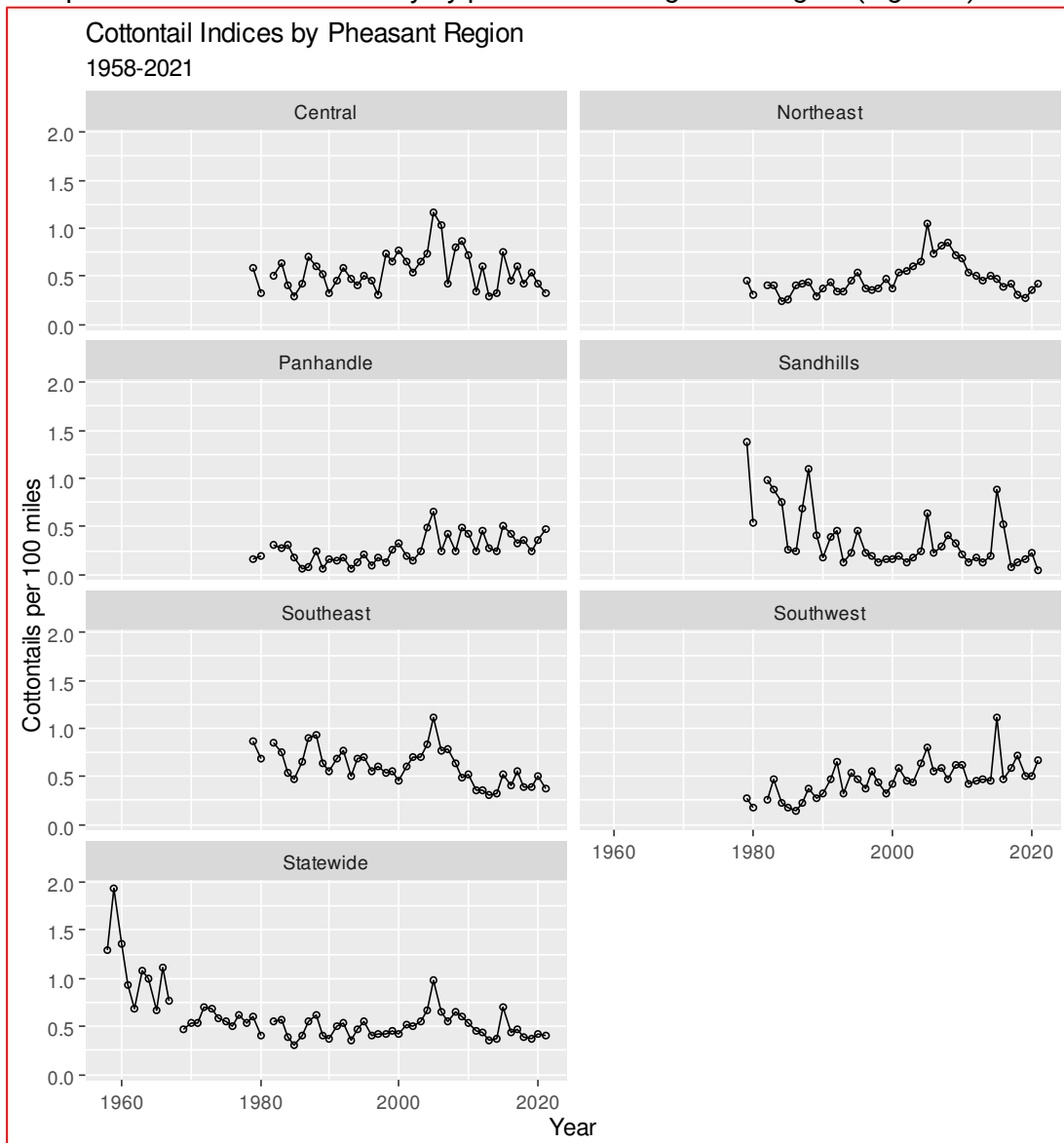


TABLE 6. Wild turkey indices from the 2021 April Rural Mail Carrier Survey by pheasant management region (Figure 1). Carrier means are weighted by miles traveled per carrier.

Region	Mean Wild Turkeys per 100 miles & 90% Confidence Limits	Percent Difference from:			
		2020	Mean 2016-2020	Mean 2011-2020	Mean 2001-2020
Central	2.72 (1.67-3.79)	-26	-42	-56	-53
Northeast	2.62 (1.45-3.79)	52	4	-4	12
Panhandle	3.50 (0.11-6.89)	107	80	90	130
Sandhills	6.08 (3.45-8.70)	-7	-8	-21	-24
Southeast	2.05 (1.26-2.84)	-5	-16	-26	-25
Southwest	5.16 (3.64-6.67)	-39	-52	-54	-45
Statewide	3.25 (2.60-3.95)	-5	-23	-31	-23

FIGURE 6. Regional and statewide time series (2000-2021) of wild turkey population indices from the April Rural Mail Carrier Survey by pheasant management region (Figure 1).

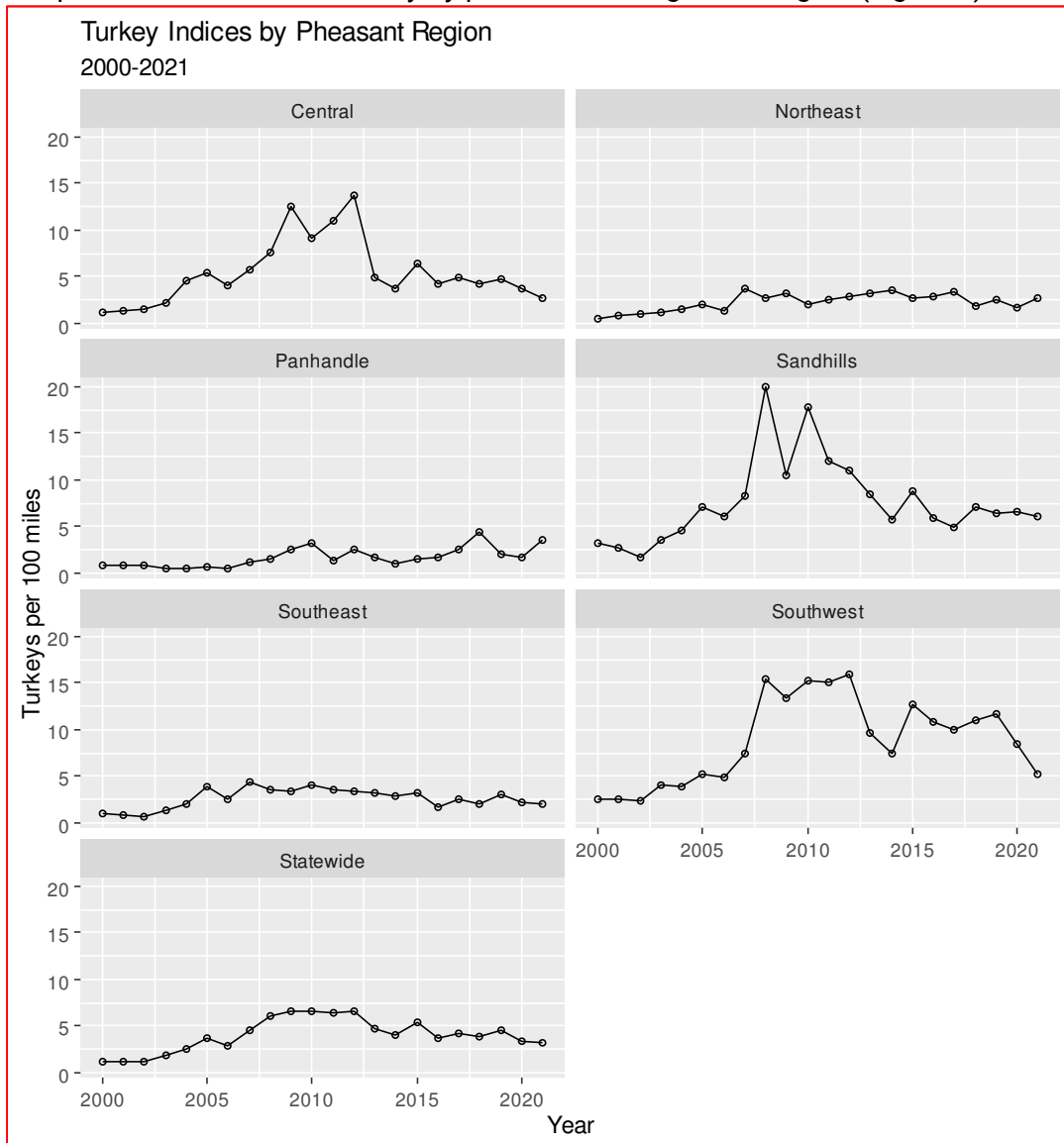


TABLE 7. Number of cards and percent of total cards ($n = 402$) that contained zero observations by species. Overall, 15.9% (cf. 12.4% in 2020, $n = 378$) of cards contained zero counts for all species (64 cards). Percentages by species from the 2020 survey are reported for comparison.

	Pheasant	Quail	Grouse	Wild Turkey	Cottontail	Jackrabbit
Nº of Cards	200	366	341	137	252	385
Percent (2020)	50	91	85	34	63	96
Percent (2019)	45	89	81	31	52	96