

Federal Aid in Wildlife Restoration Project №: W-15-R-78
Title of Job: 2021 Northern Bobwhite Whistle Count Survey

Job: H1



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Northern bobwhite whistle counts were conducted between 15 June and 10 July 2021, inclusive, within each of the 6 bobwhite management zones (Figure 1). A total of 55 routes were surveyed in 2021 by Nebraska Game & Parks Commission and Pheasants/Quail Forever partnership staff. Along each 20-mile route, observers made stops one mile apart and conducted an auditory survey to quantify the number of unique male bobwhites calling.

Caveats. The bobwhite whistle count survey does not provide information on bobwhite population size, but is an index of breeding male abundance. At a statewide scale, these indices are correlated with harvest, and are useful for forecasting conditions hunters might encounter during the fall hunting season, particularly when combined with the results from other surveys. New routes were added in recent years to this survey, so comparisons with the 5-year mean include only those routes for which ≥ 5 years of data had been collected.

Interpretations. This year's statewide bobwhite index was 10% lower compared to 2020 and 35% below the 5-year mean. Relative abundance declined in all management zones however, decreases in the Republican, Southeast, and West Platte were slight, indicating that populations will likely be similar to 2020. Confidence intervals overlapped for all regional indices, except in the North Central compared with the 5-year mean, indicating differences were not generally statistically significant. Regional indices were 6% to 31% lower than in 2020, and 20% to 65% lower than 5-year averages. The relative abundance of bobwhites observed in 2021 was highest in the Republican, Southeast, and East Central management zones.

Take-home Message. Bobwhite populations appear to have entered a "bust" phase of their population cycle. Nebraska's bobwhites are at the northernmost extent of their range in the U.S. and extreme weather events have negatively impacted populations in recent years. Weather was relatively mild throughout much of this past hunting season but Nebraska experienced extended periods of snow cover and extreme freezing temperatures during February and March 2021. Consequently, this year's breeding population is down compared to recent years. Bobwhite numbers remains highest across southern Nebraska (core range) and this year's fall population will largely depend on production during the nesting season that is currently underway. Bobwhites are prolific breeders and have the ability to rapidly repopulate when good habitat and weather conditions persist. Although drier than normal conditions have prevailed in many areas of the state as we approach the fall, nesting conditions were relatively favorable throughout much of the core range this summer.

Table 1. Mean number of calling male bobwhites heard per stop along roadsides during the 2021 bobwhite whistle count survey, by bobwhite management zone (Figure 1).

Zone	Number of Routes	Calling Males per Stop:		
		2021 x̄ & 90% CI	2020 x̄ & 90% CI	2016-2020 x̄ & 90% CI
East Central	4	0.94 (0.62-1.41)	1.12 (0.26-1.98)	1.17 (0.07-2.28)
North Central	8	0.19 (0.00-0.40)	0.23 (0.07-0.40)	0.55 (0.69-1.03)
Northeast	7	0.37 (0.09-0.65)	0.54 (0.24-0.85)	0.52 (0.23-0.81)
Republican	10	1.04 (0.60-1.48)	1.13 (0.70-1.55)	1.45 (1.03-1.86)
Southeast	15	1.02 (0.62-1.41)	1.11 (0.83-1.38)	1.75 (1.38-2.13)
West Platte	11	0.92 (0.27-1.58)	0.98 (0.48-1.48)	1.16 (0.67-1.66)
Statewide	55	0.79 (0.60-0.99)	0.88 (0.72-1.05)	1.21 (1.00-1.41)

Table 2. Percent change in the mean number of calling males heard during the 2021 bobwhite whistle count survey from 2020 and the 5-year mean, by bobwhite management zone (Figure 1).

Zone	Percent Difference from:	
	2020 Mean	2016-2020 Mean ^a
East Central	-16	-20
North Central	-17	-65
Northeast	-31	-29
Republican	-8	-28
Southeast	-8	-42
West Platte	-6	-21
Statewide	-10	-35

^a Comparisons to the 5-year mean were limited to the routes for which sufficient data had amassed (*n* = 42).

Figure 1. Bobwhite management zones.

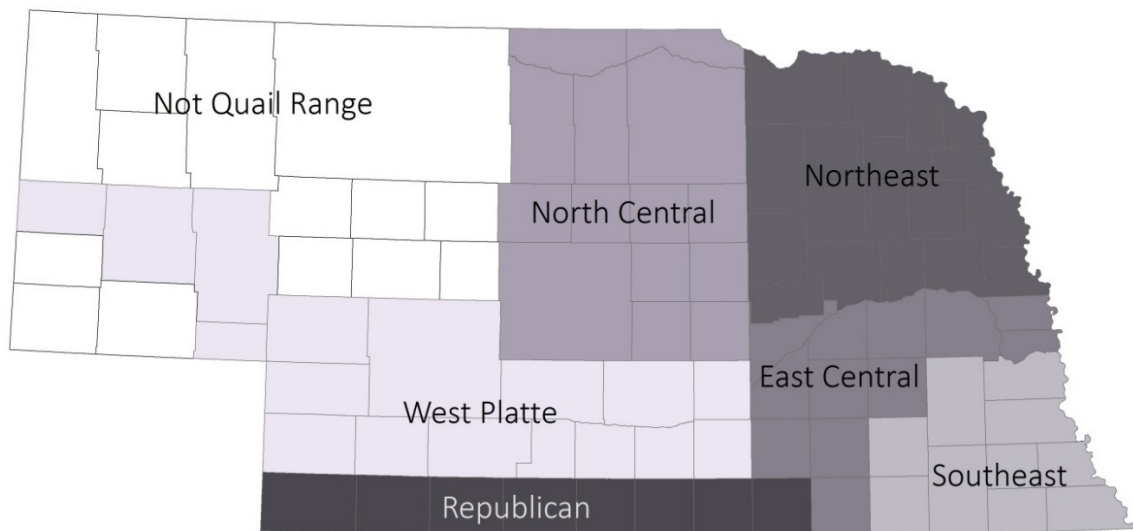
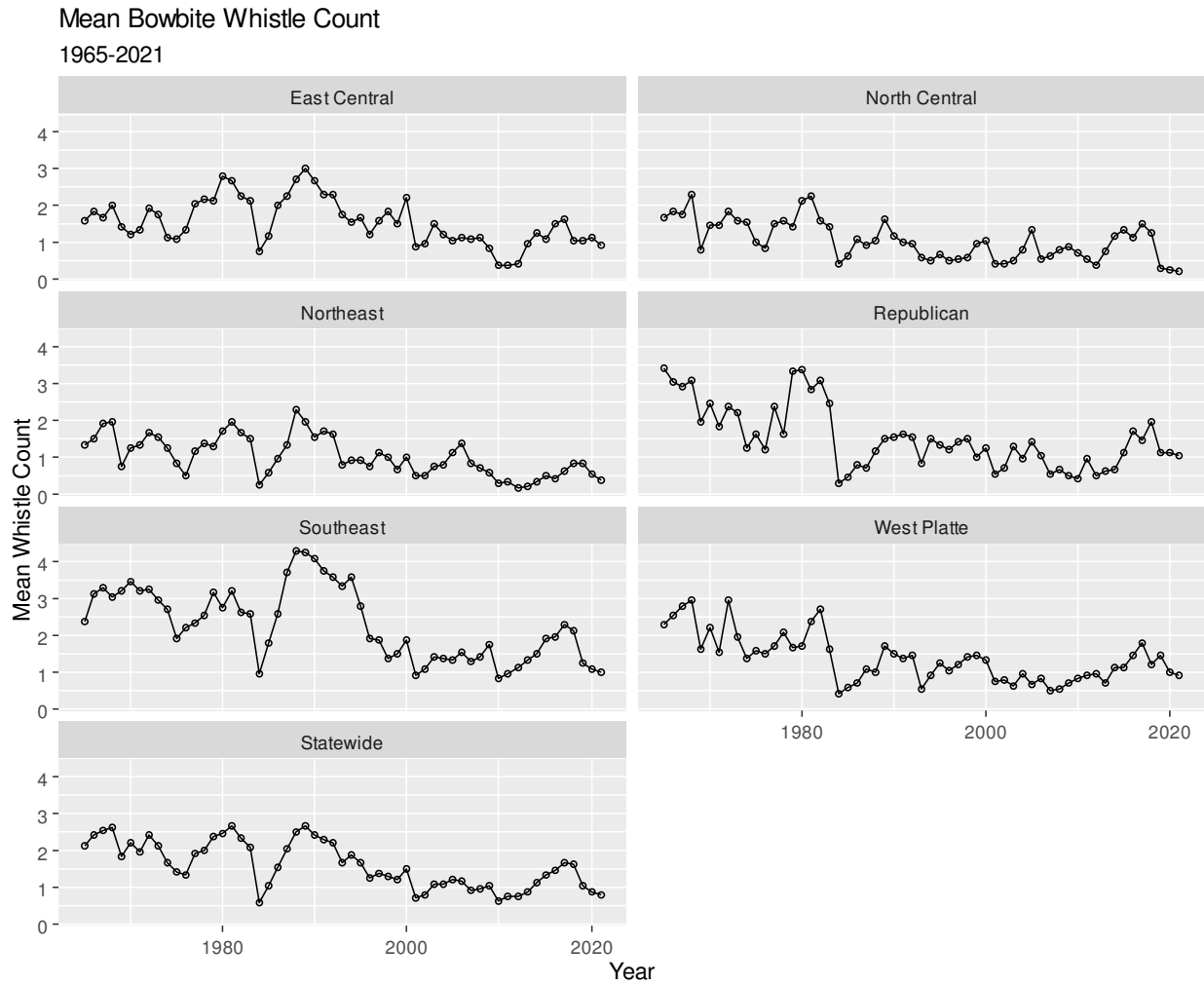


Figure 2. Time series (1965-2021) of the mean number of calling bobwhites heard per stop during the whistle count survey, by bobwhite management zone (Figure 1).



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