

Ruffed Grouse Drumming Survey 2016

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Abstract

Statewide ruffed grouse population indices increased 1% between 2015 and 2016, based on the number of drumming grouse heard during roadside surveys. Changes in indices to breeding grouse populations varied by region, and the statewide mean number of drums/stop was not different ($P= 0.94$) from 2015 to 2016. Drummer densities on the Sandhill Wildlife Area in Wood County showed an increase of 2%, the Oneida County Stone Lake area drummer density counts were discontinued in 2015.

Methods

Statewide

Counts of drumming grouse heard along roadsides were conducted on 99 transects throughout the state in 2016. Eighteen statewide transects were considered to be zero and not run in 2016 and no routes were not run due to weather conditions. This roadside survey has been conducted annually since 1964 by DNR wildlife managers, wildlife technicians, foresters, law enforcement personnel, USFS staff, and Ruffed Grouse Society volunteers to determine grouse population trends throughout Wisconsin. A new 10-stop survey on 117 randomly located transects was initiated in 1994 and continued in 2016. This year marked the twenty-third year that the "new" ruffed grouse surveys were run. As per the change over plan, no "old" drumming routes were run since 1996. Also, "new" routes which had counts of zero for the first three years were not to be run for three years. After that three year period, they are to be run again every three years to confirm that they indeed are still zero.

Procedures for the "new" routes were similar to the earlier survey protocols except for one count instead of two and 10 stops instead of 15. Survey data were entered into the DNR server and summarized using the Statistical Analysis System (SAS).

Research Census Areas

DNR research personnel have conducted a census of drummers on Sandhill Wildlife Area and Stone Lake Area since 1968. This survey has provided comparative statistics on population trends and an estimate of drummer density. Searches for males were conducted during favorable weather between 1 April and 10 May. The census on the Sandhill Wildlife Area encompassed 2,020 acres of grouse habitat in the area open to hunting and 1,300 acres within the un hunted portion of the area. The census on the Stone Lake Experimental Area in Oneida County encompassed 3,310 acres of grouse habitat. The Stone Lake Experimental Area was discontinued in 2015 due to budgetary and workload concerns.

Results

Statewide

Roadside survey responses were received from wildlife managers, wildlife technicians, and other cooperators that helped conduct the survey on 99 transects in 2016. Eighteen transects were considered to be zero and not run in 2016. Weather conditions were favorable during most of the survey period; an early spring with only brief periods of rain should not have affected survey conditions. The total number of routes used in estimating a statewide ruffed grouse

drumming index in 2016 was 117. This is the maximum available and the same number of routes used in 2015.

Statewide, ruffed grouse population indices slightly increased between 2015 and 2016 (Table 1). This is the first increase in the ruffed grouse indices since 2011. An increase in the number of drumming grouse occurred in two of the four regions of the state (Fig. 1-6). Statewide, overall changes in results were not significant ($P= 0.94$) between 2015 and 2016. Transects completed in both 2015 and 2016 were compared to detect population changes. Transects were considered to have “changed” from last year if the change was greater than two drums per transect. The number of transects with increased drumming outnumbered by 27 to 24 those that showed decreases, with 66 transects unchanged.

Breeding grouse were stable or slightly declining while grouse brood production was up during the spring and summer of 2015. This increase in brood production in 2015 may have influenced the increase in breeding grouse numbers in 2016. Wisconsin’s primary grouse range, the Central and Northern Forest regions, both showed modest increases. The Central Forest had an increase in breeding grouse of 8% this spring, while the Northern Forest had an increase of 4%. Wisconsin is in the trough of the grouse cycle and may be on the increase; it is likely that declines in breeding grouse numbers may have ended till the next decline in 2021 or 2022. Good nesting and brood rearing conditions this summer should set the stage for the cyclic increase in the next 4-5 years.

While grouse populations ebb and rise on a nine to eleven year cycle, a longer term downward trend can be noted for the Wisconsin Grouse population since the inception of this survey. Grouse highs are not as high as they have been in the past and the population seems to be slower to recover from cyclic lows. The long term aging of Wisconsin’s forest are likely playing a role in these changes. Not all regions of the state see these changes in forest aging occurring at the same rate, with the more commercial forests of the Northern and Central regions aging at a slower rate than the more privately owned forests of the Southwest and Southeast regions. It is likely this trend in grouse numbers will continue to occur until our forests reach a stasis in their aging process.

Early spring conditions were above average for temperature with most of the snow melted prior to the start of the survey in the spring of 2016. No major weather events should have affected surveyors during the survey period, but more normal weather returned during the second part of the survey period and may have reduced surveyor’s evaluations. Overall survey conditions were “excellent” on 45% of transects run, while 65% rated the overall conditions as “excellent” in 2015. Conditions were rated as “Fair”, the lowest available weather condition rating, 5% of the time in 2015 and 7% in 2016. Survey conditions do influence drumming activity and may cause grouse numbers to be over or under estimated.

Research Census Areas

Grouse numbers on the Sandhill Wildlife Area were up in 2016 (Table 2). Sandhill Wildlife Area increased 2% (62 vs. 61 birds in 2015). The central region of the state showed an increase of 8% in drumming activity on the roadside survey. The unhunted portion of the wildlife area (1,300 acres) increased by two birds in 2016 (22 vs. 20 in 2015). The hunted portion of the wildlife area (2,020 acres) had a decrease in breeding grouse, with 40 birds counted in 2016, down from 41 in 2015. The Stone Lake census area survey was discontinued in 2015. The survey technique used to measure grouse densities on these two areas is different than that used on the statewide survey. Any comparison of these results to statewide totals should be done cautiously.

Table 1. Ruffed Grouse drumming results 2015-2016, drums per stop (routes run), % change, and number of routes with a change of greater than 2 drums per route from 2015 levels.

Region	Drums/Stop 2015 (routes run)	Drums/Stop 2016 (routes run)	% Change	# of Decreasing Routes	# of Increasing Routes	# of Routes with No Change
Central	0.90 (27)	0.97 (27)	8%	5	9	13
Northern	1.53 (43)	1.59 (43)	4%	16	17	10
Southeast	0.01 (30)	0.01 (30)	0%	0	0	30
Southwest	0.27 (17)	0.09 (27)	-67%	3	1	13
Statewide	0.81 (117)	0.82 (117)	1%	24	27	66

Table 2. Drummer densities on the DNR research census areas, 2015-2016.

Area	No. of Drummers (No./100A)	
	2015	2016
Sandhill Hunted (2,020 Acres)	41 (2.0)	40 (2.0)
Sandhill Unhunted (1,300 Acres)	20 (1.5)	22 (1.7)
Stone Lake Exp. Area (3,310 Acres)	N/A	N/A

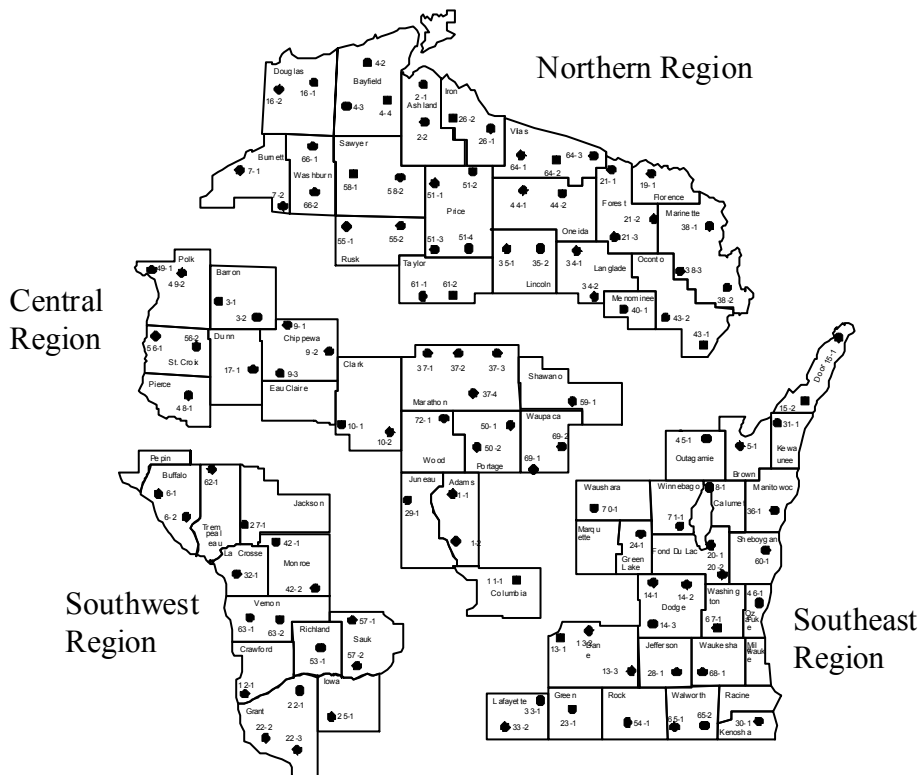


Figure 1. Ruffed grouse drumming regions with transect starting points.

Statewide -- Drums per stop 1964-2016

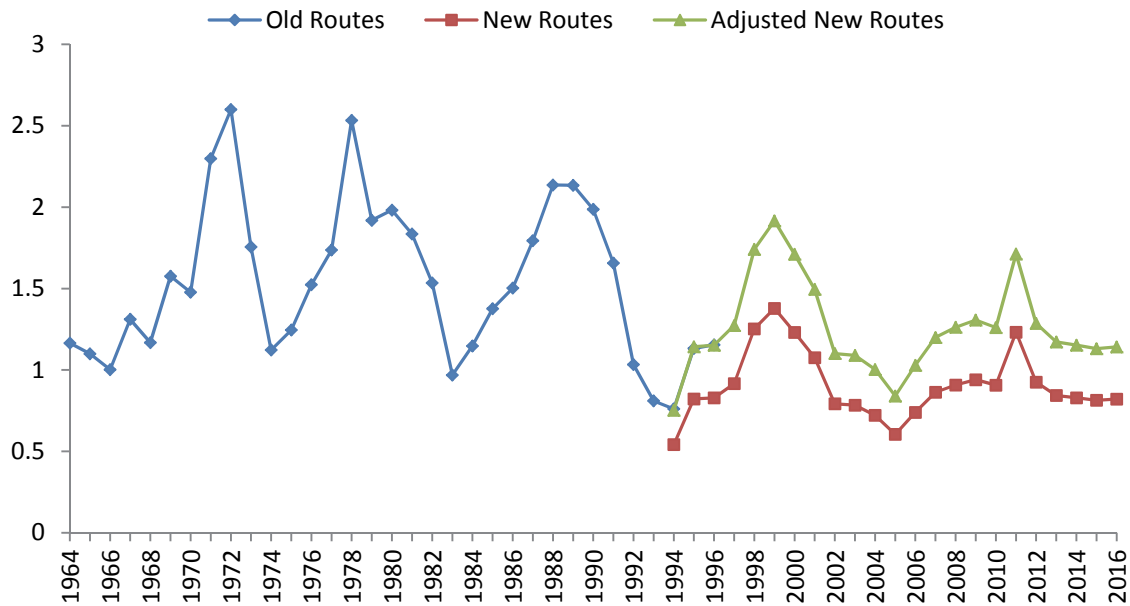


Figure 2. Statewide mean number of drums/stop on ruffed grouse drumming routes, 1964-2016.

Central Forest -- Drums per stop 1964-2016

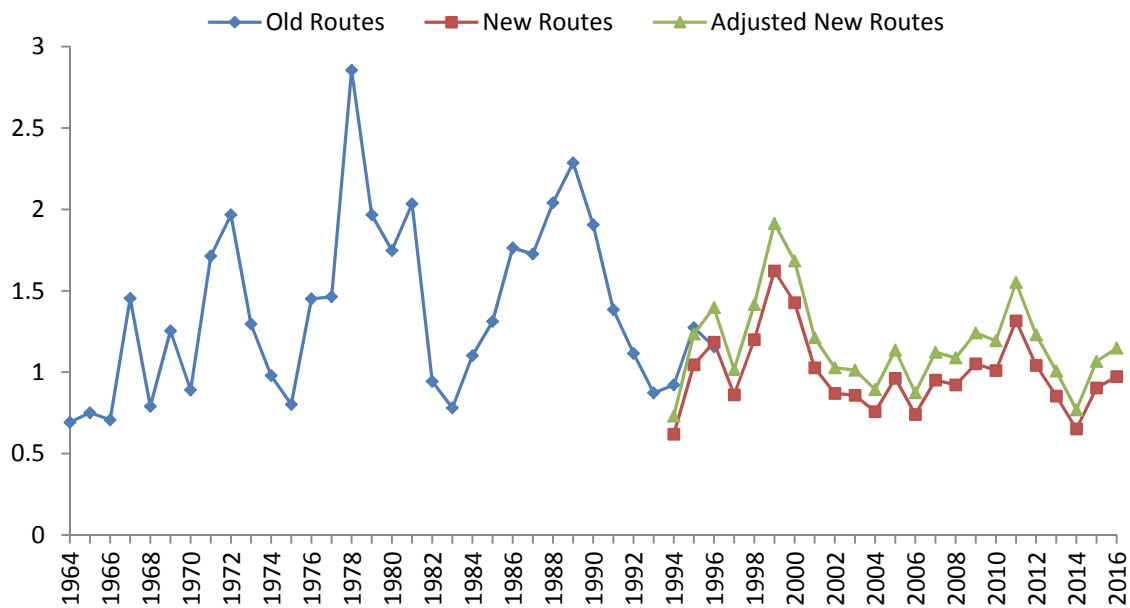


Figure 3. Central Forest mean number of drums/stop on ruffed grouse drumming routes, 1964-2016.

Northern Forest -- Drums per stop 1964-2016

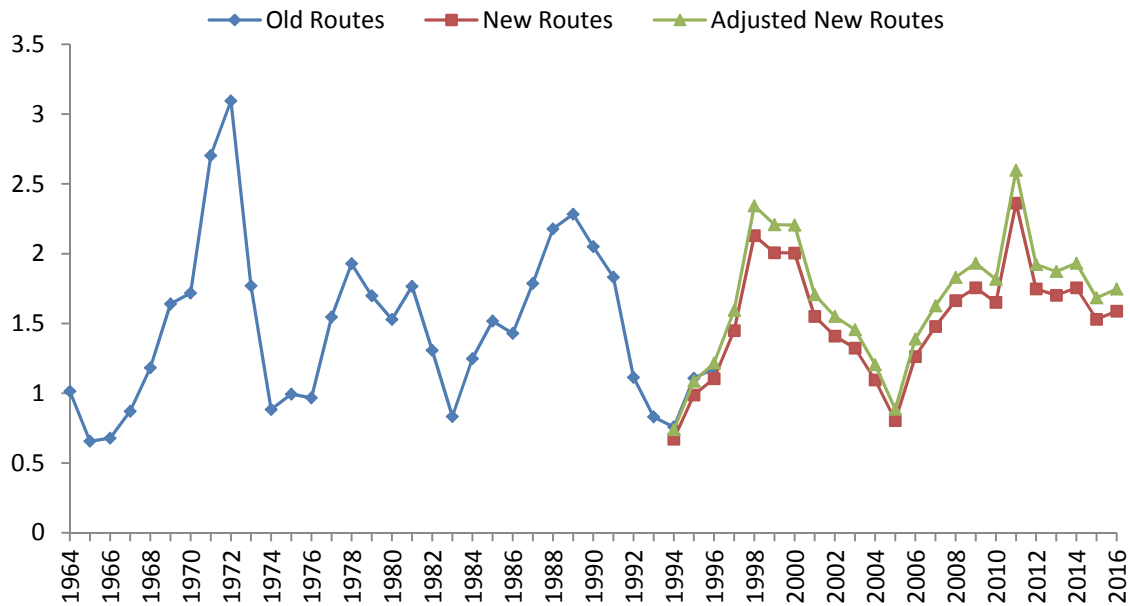


Figure 4. Northern Forest mean number of drums/stop on ruffed grouse drumming routes, 1964-2016.

Southeast -- Drums per stop 1964-2016

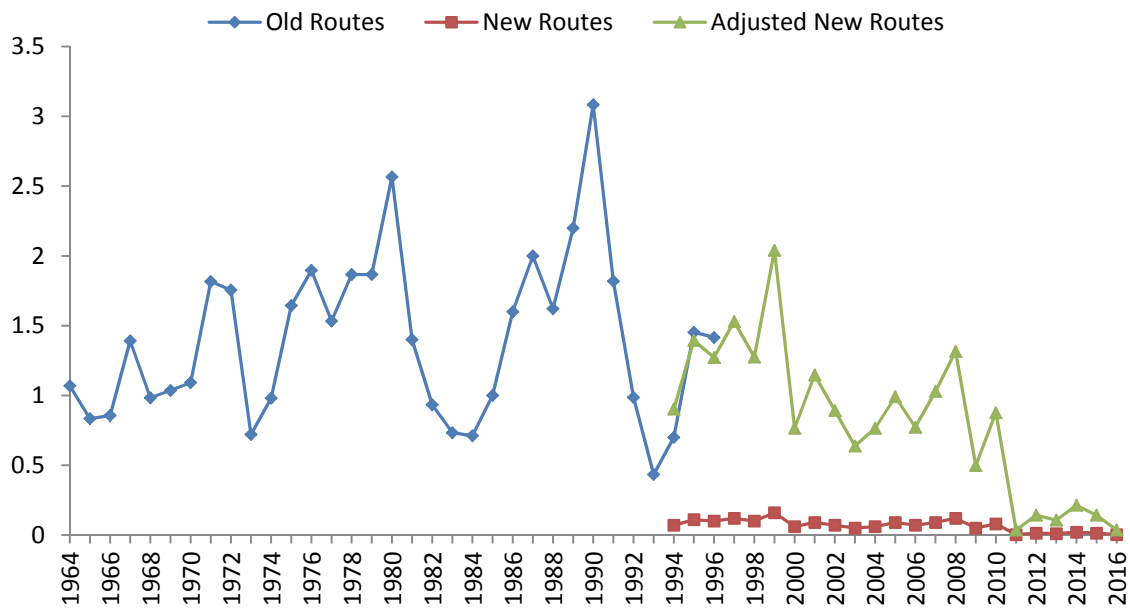


Figure 5. Southeast region mean number of drums/stop on ruffed grouse drumming routes, 1964-2016.

Southwest -- Drums per stop 1964-2016

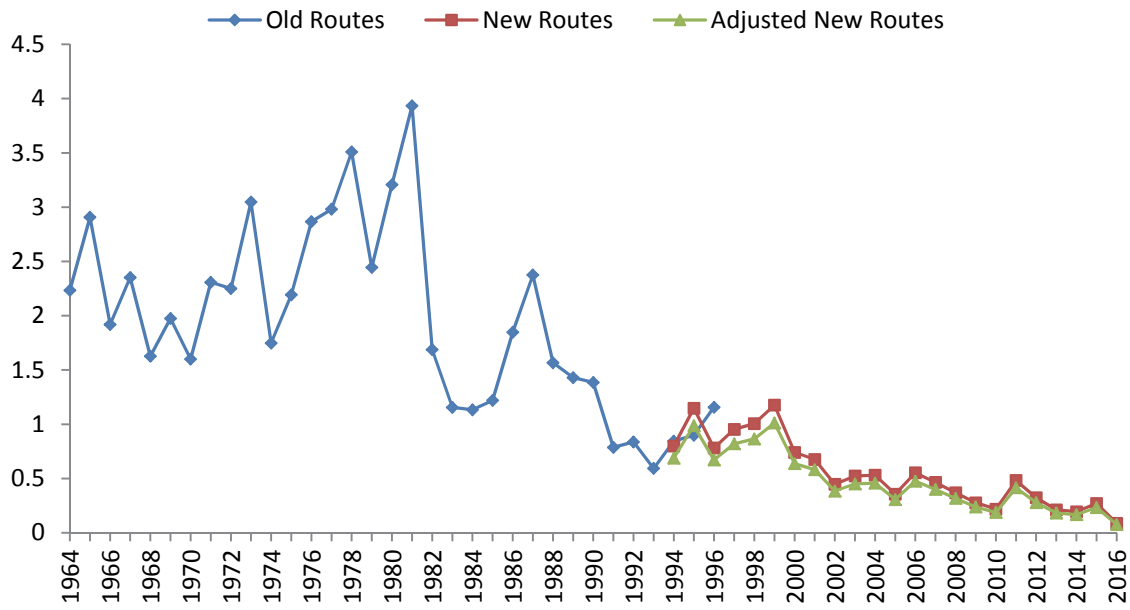


Figure 6. Southwest region mean number of drums/stop on ruffed grouse drumming routes, 1964-2016.