Ruffed Grouse Drumming Survey
2017

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Abstract

Statewide ruffed grouse drumming activity increased 17% between 2016 and 2017, based on the roadside survey to monitor breeding grouse activity. Changes in indices to breeding grouse populations varied by region, and the statewide mean number of drums/stop was different (P= 0.0009) from 2016 to 2017. Drummer densities on the Sandhill Wildlife Area in Wood County showed a decrease of 26%, the Oneida County Stone Lake area drummer density counts were discontinued in 2015.

Methods

Statewide

Counts of grouse drumming activity heard along roadsides were conducted on 77 transects throughout the state in 2017. Thirty-eight statewide transects were considered to be zero and not run in 2017 and two 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 2017. This year marked the twenty-forth 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 unhunted 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 77 transects in 2017. Thirty-eight transects were considered to be zero and not run in 2017. Weather conditions were favorable early in the survey period with no snow cover and above average temperatures. In the North the survey start dates were advanced by 10 days because of earlier than normal spring weather; surveys could begin on the 10th instead of the 20th of April. Above average rainfall occurred during the

last half of the survey period and may have affected survey conditions. The total number of routes used in estimating a statewide ruffed grouse drumming index in 2017 was 115. This is less than the maximum of 117 available which had been used in the previous 3 years.

Statewide, ruffed grouse population indices increased between 2016 and 2017 (Table 1). This is the second increase in the ruffed grouse drumming indices since 2011. An increase in the number of drums heard occurred in two of the four regions of the state (Fig. 1-6). Statewide, overall changes in results were significant (P= 0.0009) between 2016 and 2017. Transects completed in both 2016 and 2017 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 20 those that showed decreases, with 68 transects in the unchanged category.

Breeding grouse were stable or slightly increasing while grouse brood production was down during the spring and summer of 2016. While decreases in brood production may have been noted, these may have been offset by an increase in the number of birds breeding. This along with mild winter weather conditions with little or no ice storms to cause undue losses may have influenced the increase in breeding grouse activity in 2017. Wisconsin's primary grouse range, the Central and Northern Forest regions, showed mixed results. The Central Forest had a decrease in breeding grouse of 13% this spring, while the Northern Forest had an increase of 30%. Wisconsin is through the trough of the grouse cycle and is likely to be on the increase until the next decline in 2021 or 2022. Good nesting and brood rearing conditions this summer should set the stage for more grouse in the woods in the fall of 2017.

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 April. Most of the early part of May had normal temperatures but above average rainfall. Those that chose to run their assigned survey(s) early, should have had no major weather events. Overall survey conditions were "excellent" on 53% of transects run, while 46% rated the overall conditions as "excellent" in 2016. Conditions were rated as "Fair", the lowest available weather condition rating, 8% of the time in 2017 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 down in 2017 (Table 2). Sandhill Wildlife Area decreased 26% (46 vs. 62 birds in 2016). The central region of the state showed a decrease of 13% in drumming activity on the roadside survey. The unhunted portion of the wildlife area (1,300 acres) decreased by 5 birds in 2017 (17 vs. 22 in 2016). The hunted portion of the wildlife area (2,020 acres) had a decrease in breeding grouse, with 29 birds counted in 2017, down from 40 in 2016. 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 2016-2017, drums per stop (routes run), % change, and number of routes with a change of greater than 2 drums per route from 2016 levels.*

Region	Drums/Stop 2016 (routes run)	Drums/Stop 2017 (routes run)	% Change	# of Decreasing Routes	# of Increasing Routes	# of Routes with No Change
Central	0.97 (27)	0.85 (27)	-13%	9	5	13
Northern	1.59 (43)	2.06 (41)	30%	11	20	10
Southeast	0.01 (30)	0.01 (30)	0%	0	0	30
Southwest	0.09 (27)	0.14 (27)	55%	0	2	15
Statewide	**0.82 (117)**	**0.96 (115)**	**17%**	**20**	**27**	**68**

Table 2. *Drummer densities on the DNR research census areas, 2016-2017.*

Area	No. of Drummers (No./100A)	
	2016	2017
Sandhill Hunted (2,020 Acres)	40 (2.0)	29 (1.4)
Sandhill Unhunted (1,300 Acres)	22 (1.7)	17 (1.3)
Stone Lake Exp. Area (3,310 Acres)	N/A	N/A

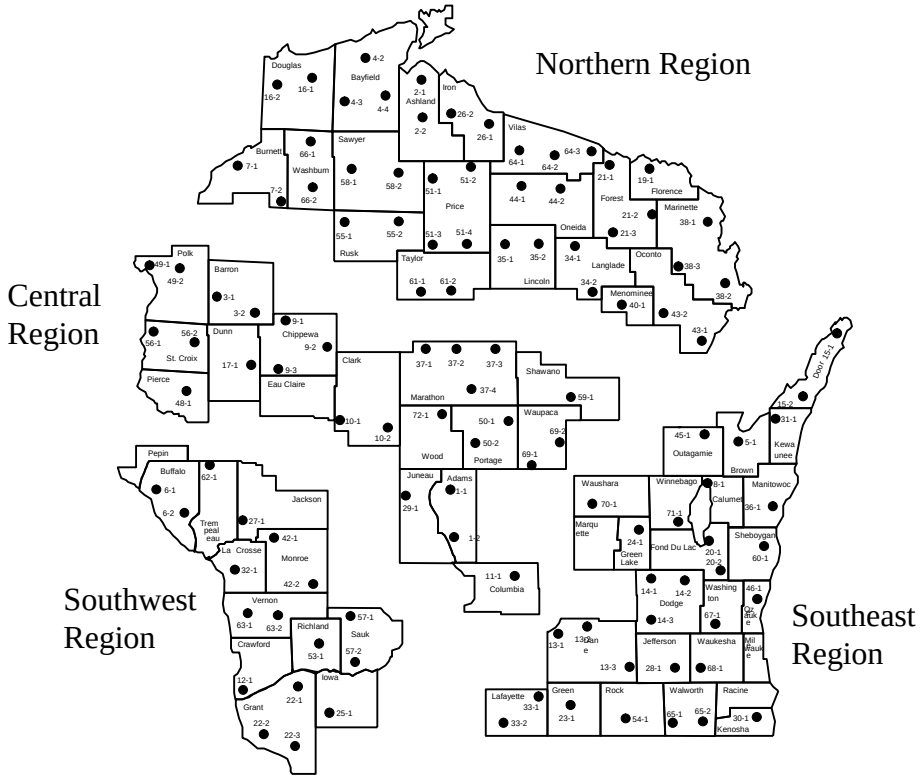

Figure 1. *Ruffed grouse drumming regions with transect starting points.*

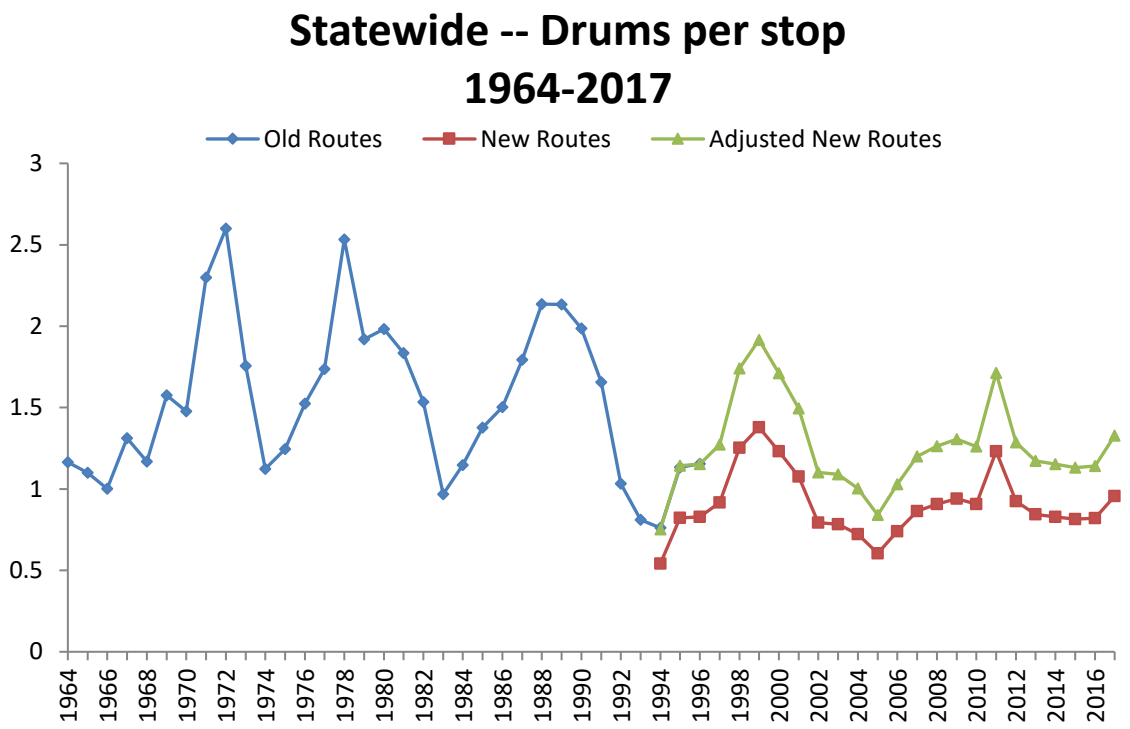

Figure 2. *Statewide mean number of drums/stop on ruffed grouse drumming routes, 1964-2017.*

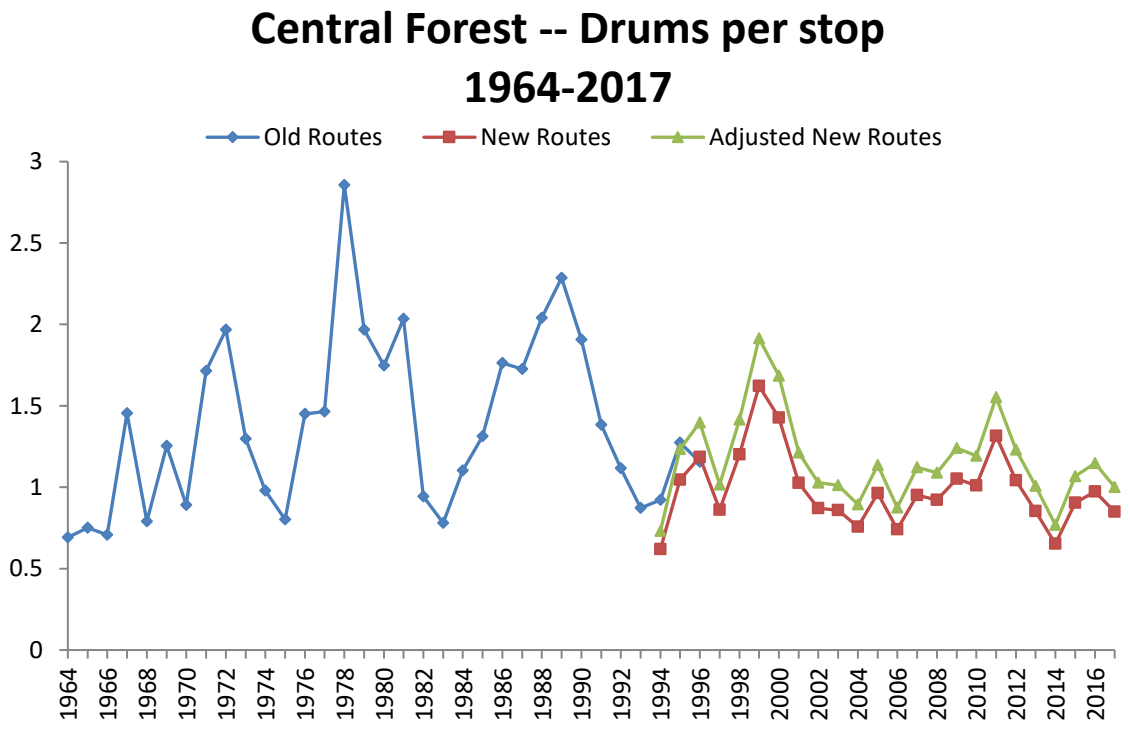

Figure 3. *Central Forest mean number of drums/stop on ruffed grouse drumming routes, 1964-2017.*

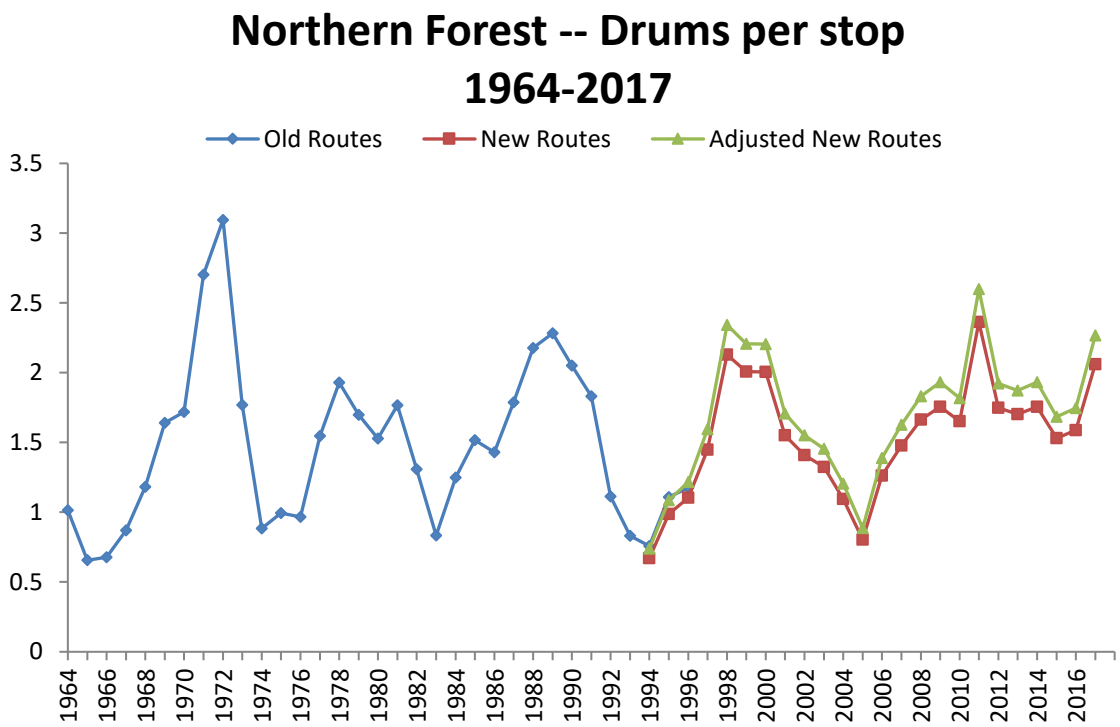

Figure 4. *Northern Forest mean number of drums/stop on ruffed grouse drumming routes, 1964-2017.*

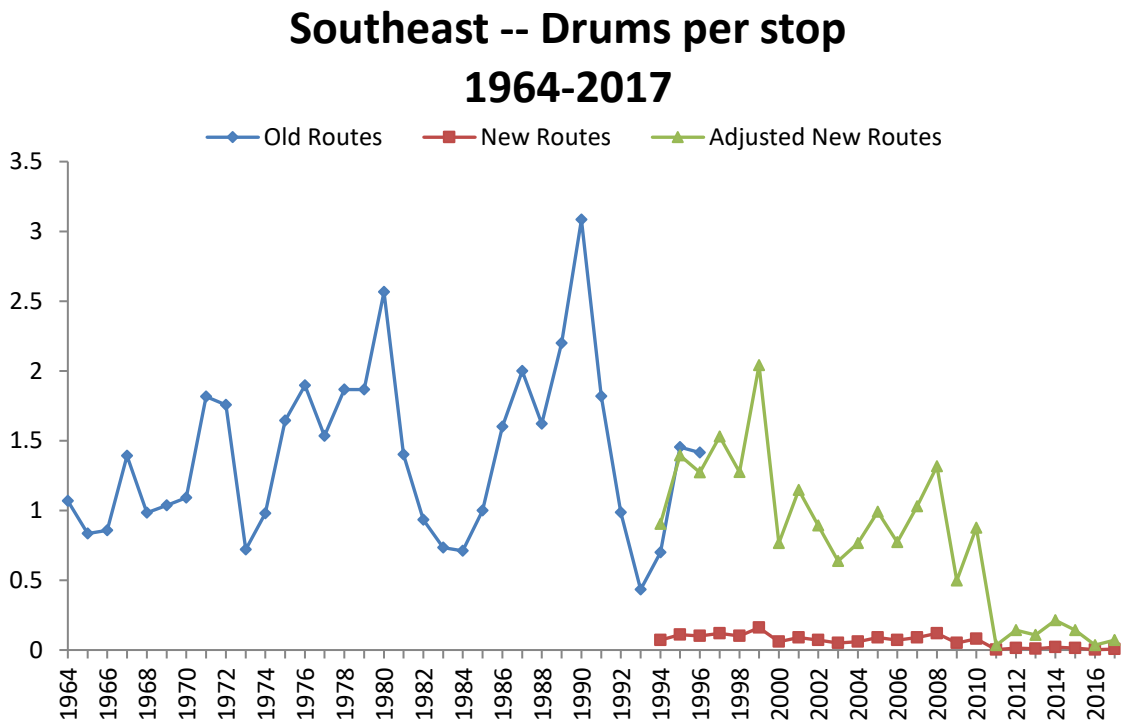

Figure 5. *Southeast region mean number of drums/stop on ruffed grouse drumming routes, 1964-2017.*

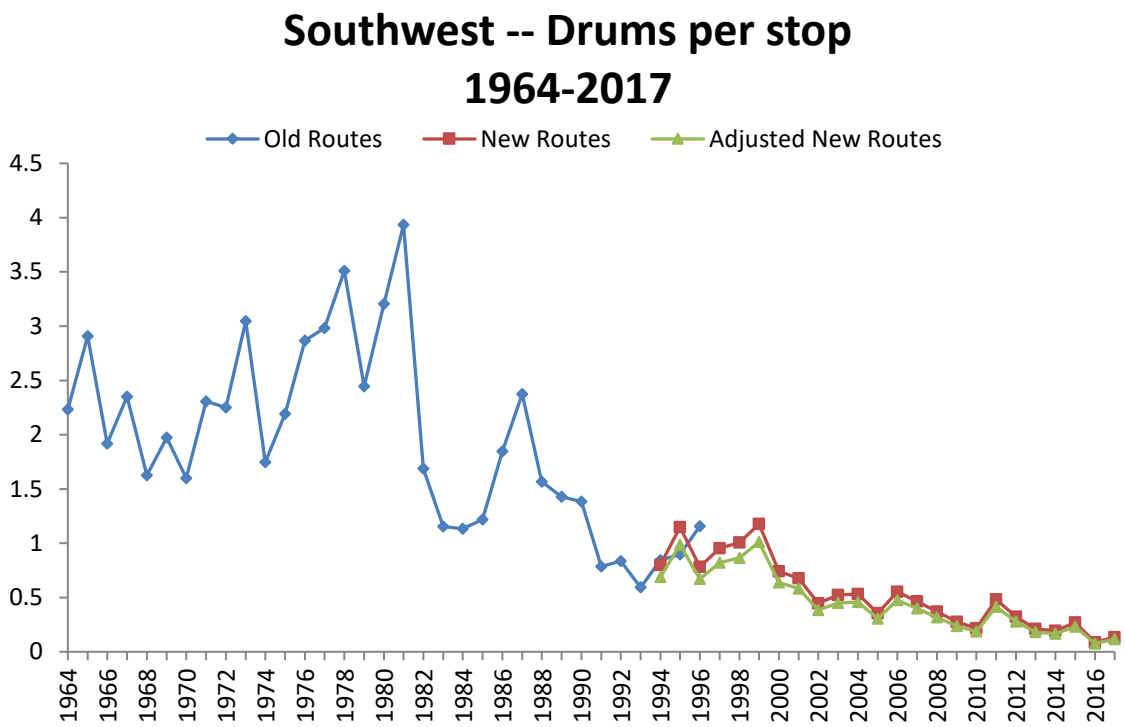

Figure 6. *Southwest region mean number of drums/stop on ruffed grouse drumming routes, 1964-2017.*