

# Ruffed Grouse Drumming Survey 2018

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## **Abstract**

Statewide ruffed grouse drumming activity decreased 34% between 2017 and 2018, 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 ( $P < .0001$ ) from 2017 to 2018. Drummer densities on the Sandhill Wildlife Area in Wood County showed a decrease of 13%, 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 83 transects throughout the state in 2018. Thirty-four statewide transects were considered zero and not run in 2018, 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 2018. This year marked the twenty-fifth 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 83 transects in 2018. Thirty-four transects were considered zero and not run in 2018. The total number of routes used in estimating a statewide ruffed grouse drumming index in 2018 was 117, which is the maximum number of routes.

Statewide, ruffed grouse population indices decreased between 2017 and 2018 (Table 1). Decreases in the number of drums heard occurred in three of the four regions of the state (Fig. 1-6). Statewide, overall changes in results were significant ( $P = <.0001$ ) between 2017 and 2018. Transects run in both 2017 and 2018 were compared to detect changes in abundance. Transects were considered to have “changed” from last year if the change was greater than two drums per transect. The number of transects with decreased drumming was 33, compared to 12 that showed increases, and 72 transects that were unchanged.

Breeding grouse were increasing while grouse brood production was stable to slightly increasing in 2017. This should have set the stage for a continued increase in breeding grouse numbers in 2018. This decline in breeding grouse was unexpected, as once the cyclic low is reached, Wisconsin normally has a steady increase until the cyclic high in years ending in a 9, 0, or 1. The timing and severity of this decrease is not a pattern Wisconsin has witnessed in past ruffed grouse cycles and will likely take some time to decipher if it was part of the grouse cycle or just an anomaly.

While grouse populations ebb and rise on a nine to eleven-year cycle, an overriding 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 that this trend in grouse numbers will continue to occur until our forests reach a stasis in their aging process.

Spring was late to arrive in 2018, with much of the state having below normal temperatures and early spring snow storms until late into April. Much of the early survey period in the southern half of the state had conditions outside of the survey’s parameters. Surveyors in the south were given an extension of 10 days to get their survey routes completed. Most of the early part of May had normal temperatures and rainfall and surveyors were able to complete their transects on time. Overall survey conditions were “excellent” on 64% of transects run, while 53% rated the overall conditions as “excellent” in 2017. Conditions were rated as “Fair”, the lowest available weather condition rating, 2% of the time in 2018 and 8% in 2017. Survey conditions do influence drumming activity and may cause grouse numbers to be over or under estimated.

#### Research Census Areas

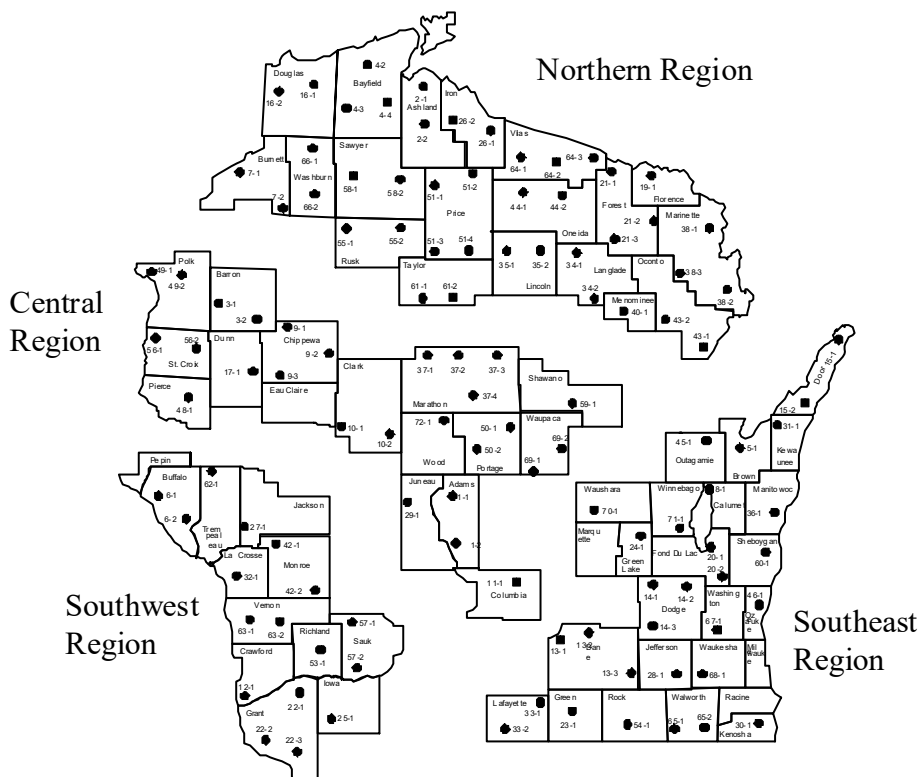
Grouse numbers on the Sandhill Wildlife Area were down in 2018 (Table 2). Sandhill Wildlife Area decreased 13% (40 vs. 46 birds in 2017). The central region of the state showed a decrease of 29% in drumming activity on the roadside survey. The un hunted portion of the wildlife area (1,300 acres) decreased by 3 birds in 2018 (14 vs. 17 in 2017). The hunted portion of the wildlife area (2,020 acres) had a decrease in breeding grouse, with 26 birds counted in 2018, down from 29 in 2017. 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 2017-2018, drums per stop (routes run), % change, and number of routes with a change of greater than 2 drums per route from 2017 levels.

Region	Drums/Stop 2017 (routes run)	Drums/Stop 2018 (routes run)	% Change	# of Decreasing Routes	# of Increasing Routes	# of Routes with No Change
Central	0.85 (27)	0.60 (27)	-29%	10	3	14
Northern	2.06 (41)	1.28 (43)	-38%	21	8	14
Southeast	0.01 (30)	0.02 (30)	100%	1	0	29
Southwest	0.14 (27)	0.12 (27)	-14%	1	1	15
<b>Statewide</b>	<b>0.96 (115)</b>	<b>0.63 (117)</b>	<b>-34%</b>	<b>33</b>	<b>12</b>	<b>72</b>

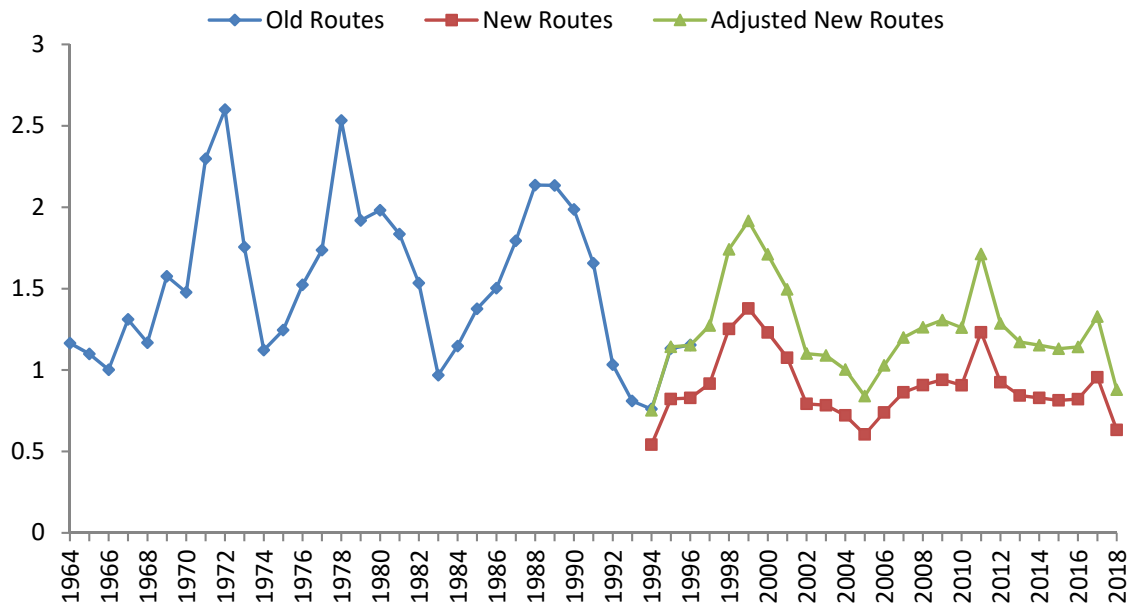
**Table 2.** Drummer densities on the DNR research census areas, 2017-2018.

Area	No. of Drummers (No./100A)	
	2017	2018
Sandhill Hunted (2,020 Acres)	29 (1.4)	26 (1.3)
Sandhill Unhunted (1,300 Acres)	17 (1.3)	14 (1.1)
Stone Lake Exp. Area (3,310 Acres)	N/A	N/A



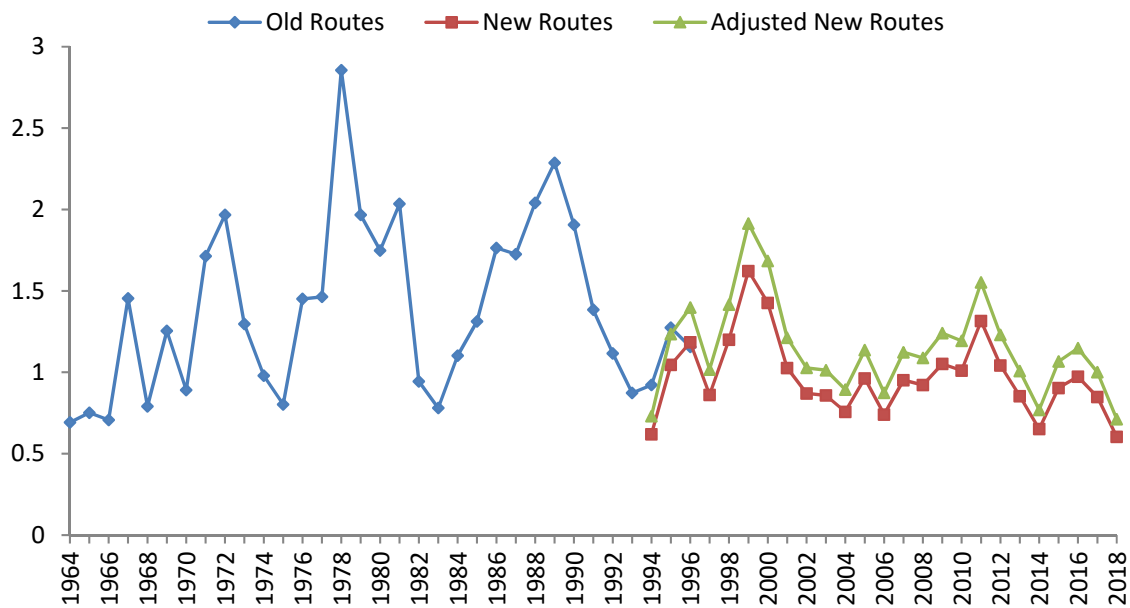
**Figure 1.** Ruffed grouse drumming regions with transect starting points.

## Statewide -- Drums per stop 1964-2018



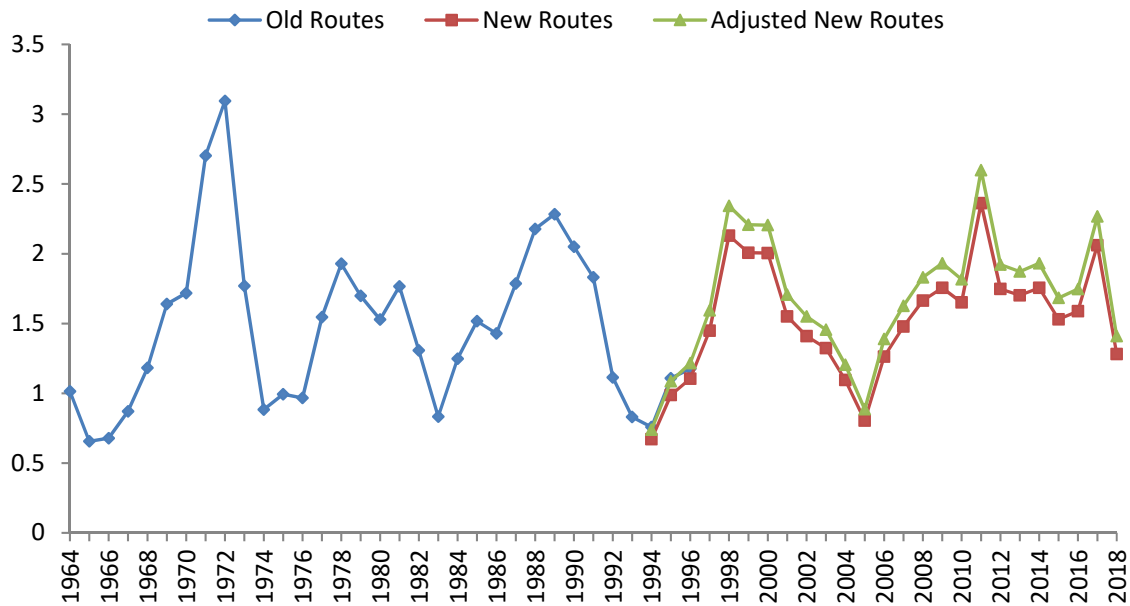
**Figure 2.** Statewide mean number of drums/stop on ruffed grouse drumming routes, 1964-2018.

## Central Forest -- Drums per stop 1964-2018



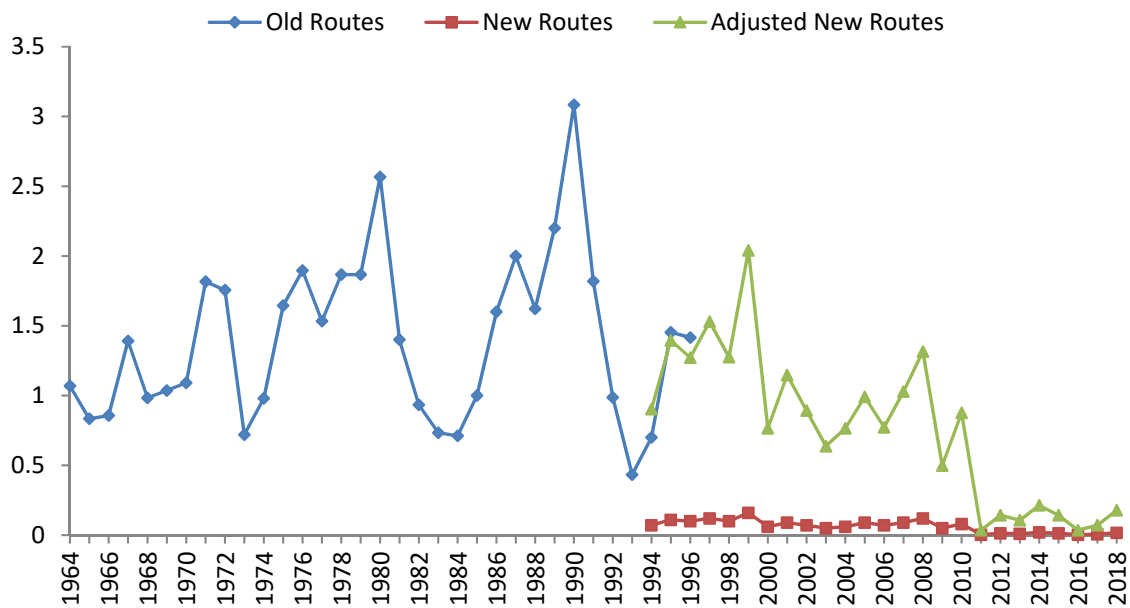
**Figure 3.** Central Forest mean number of drums/stop on ruffed grouse drumming routes, 1964-2018.

## Northern Forest -- Drums per stop 1964-2018



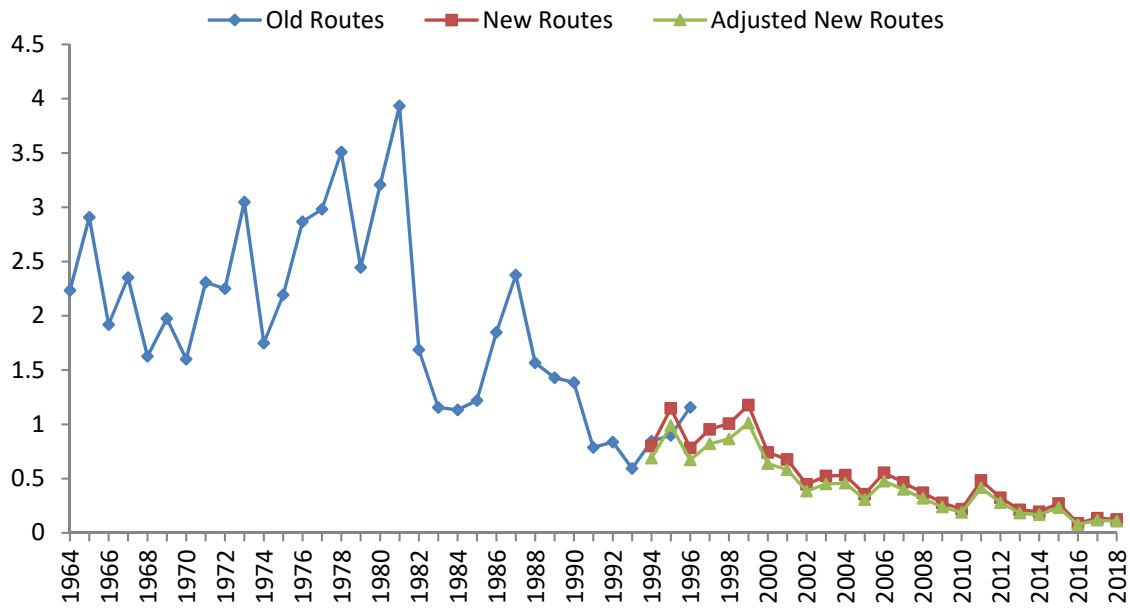
**Figure 4.** Northern Forest mean number of drums/stop on ruffed grouse drumming routes, 1964-2018.

## Southeast -- Drums per stop 1964-2018



**Figure 5.** Southeast region mean number of drums/stop on ruffed grouse drumming routes, 1964-2018.

## Southwest -- Drums per stop 1964-2018



**Figure 6.** Southwest region mean number of drums/stop on ruffed grouse drumming routes, 1964-2018.