



## Michigan Department of Natural Resources Wildlife Division

### Ruffed Grouse Drumming Survey Preliminary Results<sup>a</sup>

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<sup>a</sup>The results will be final when the annual ruffed grouse status report is published.

#### Introduction

Like many wildlife species, ruffed grouse breed in the spring. Males create a well-known springtime drumming sound by rapidly beating their wings while standing on a stationary object. They start slowly and it sounds like loud thumps at first, but as the wings build up speed it sounds like a drum or a 2-cycle engine starting. The sounds are created by the compression of air between the birds' bodies and their wings.

The Wildlife Division takes advantage of this spring ritual by conducting roadside routes to count the number of drums heard. Routes were established in locations suitable for ruffed grouse and the number of drums heard is used as an indicator of relative abundance. Each route has ten listening stops that are consistent from year to year. The number of ruffed grouse drums heard during a fixed time interval (four minutes) is recorded at each stop. Data are summarized as the average number of drums heard per survey route.

#### Preliminary Grouse Drumming Results for 2012

Ruffed grouse drumming counts were conducted statewide along 103 survey routes during April and May 2012 (Figure 1). There was an average of 12.3 drums heard per route statewide. Highest drumming counts were in Zone 1 (Upper Peninsula; 17.7), followed by Zone 2 (northern Lower Peninsula; 9.5) and Zone 3 (southern Lower Peninsula; 7.5; Fig. 1). Zone boundaries are shown in Figure 2.

In 2011, 103 survey routes were conducted statewide and paired *t*-tests were performed to statistically compare data from 95 routes run in both 2011 and 2012. Statewide there was a 16% decrease ( $n=95$ ;  $t=-2.3$ ;  $P=0.02$ ) in the average number of drums heard per route between 2011 (14.4) and 2012 (12.1). Analysis at the regional scale indicated there was nearly a significant difference ( $n=36$ ;  $t=-2.0$ ,  $P=0.06$ ) in the number of drums heard per route in Zone 1 (Upper Peninsula) between 2011 (20.8) and 2012 (16.6). There was no significant change in the average number of drums heard per route in Zone 2 (Northern Lower Peninsula) between 2011 (11.1) and 2012 (9.6;  $n=51$ ;  $t=2.0$ ,  $P=0.11$ ). In Zone 3, there were 8 routes conducted in both 2011 and 2012. Due to the low sample size, statistical analysis at the Zone 3 regional scale is not appropriate.

Ruffed grouse populations have exhibited ten-year cycles in abundance over much of Canada, Alaska, and the Great Lakes states of Wisconsin, Minnesota, and Michigan (Rusch et al. 1999). Many factors affect grouse populations including changes in habitat and food availability. It is unclear why the population cycles occur, but many theories have been proposed (Rusch 1989).



When comparing cycle trends, the averages throughout the current ten-year cycle are substantially higher than previous cycles. As for year to year comparisons, current survey data shows the expected grouse population this fall to be a slight decline following the peak of the cycle. Based on this information, it is suggested that 2012 fall ruffed grouse numbers could be similar if not a little bit lower statewide compared to 2011. The best grouse hunting opportunities will continue to be in areas of young early forest successional habitat.

### **Acknowledgments**

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### **Literature Cited**

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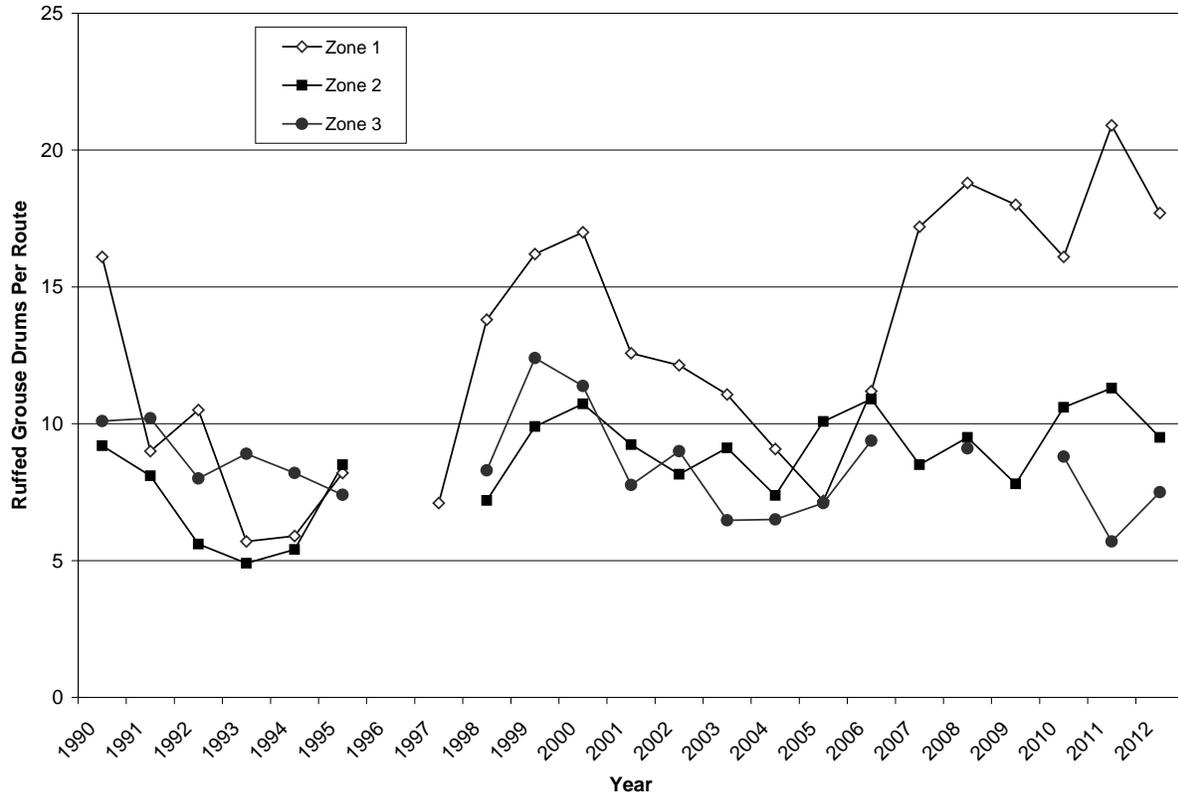


Figure 1. Ruffed grouse breeding population index (average drums per route) in Michigan, 1990-2012. Drumming surveys were not conducted statewide in 1996, 2007, and 2009, and were conducted only in Zone 1 in 1997.

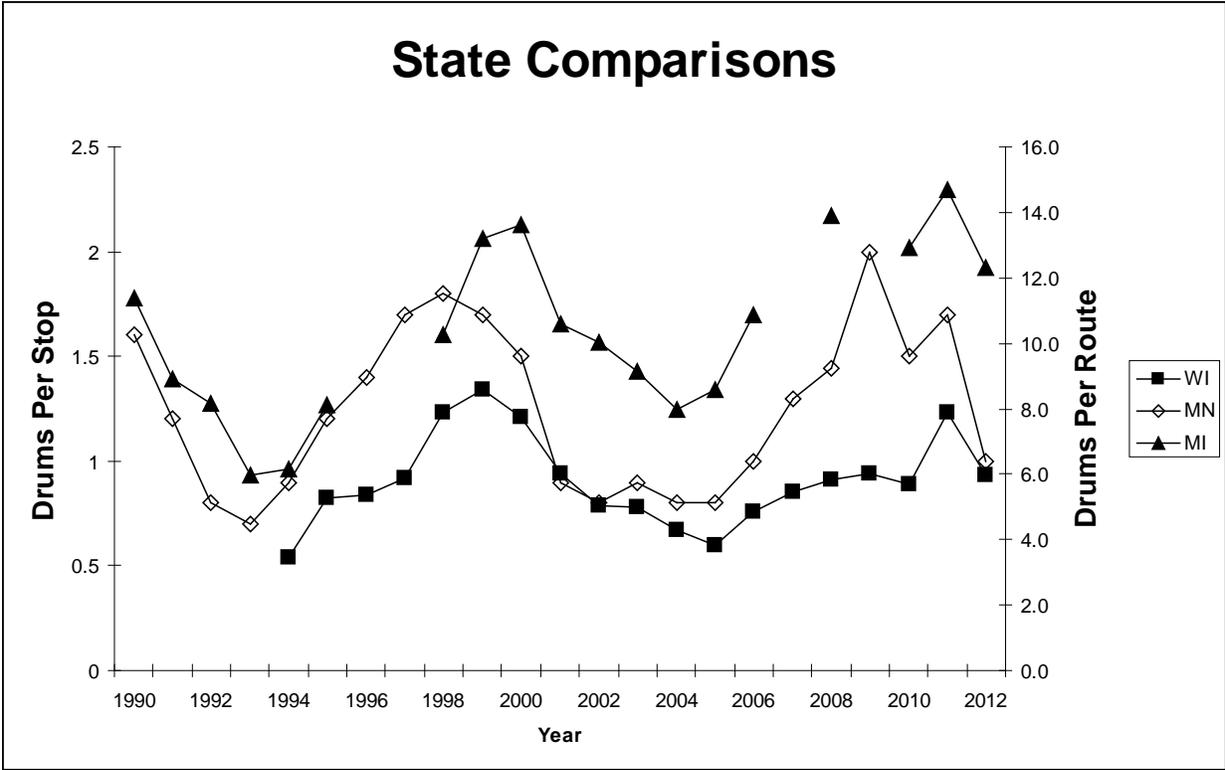


Figure 5. Ruffed grouse breeding population indices from Michigan (drums per route), Minnesota and Wisconsin (drums per stop), 1990-2012. Michigan statewide data is not available for 1996, 1997, 2007, and 2009.

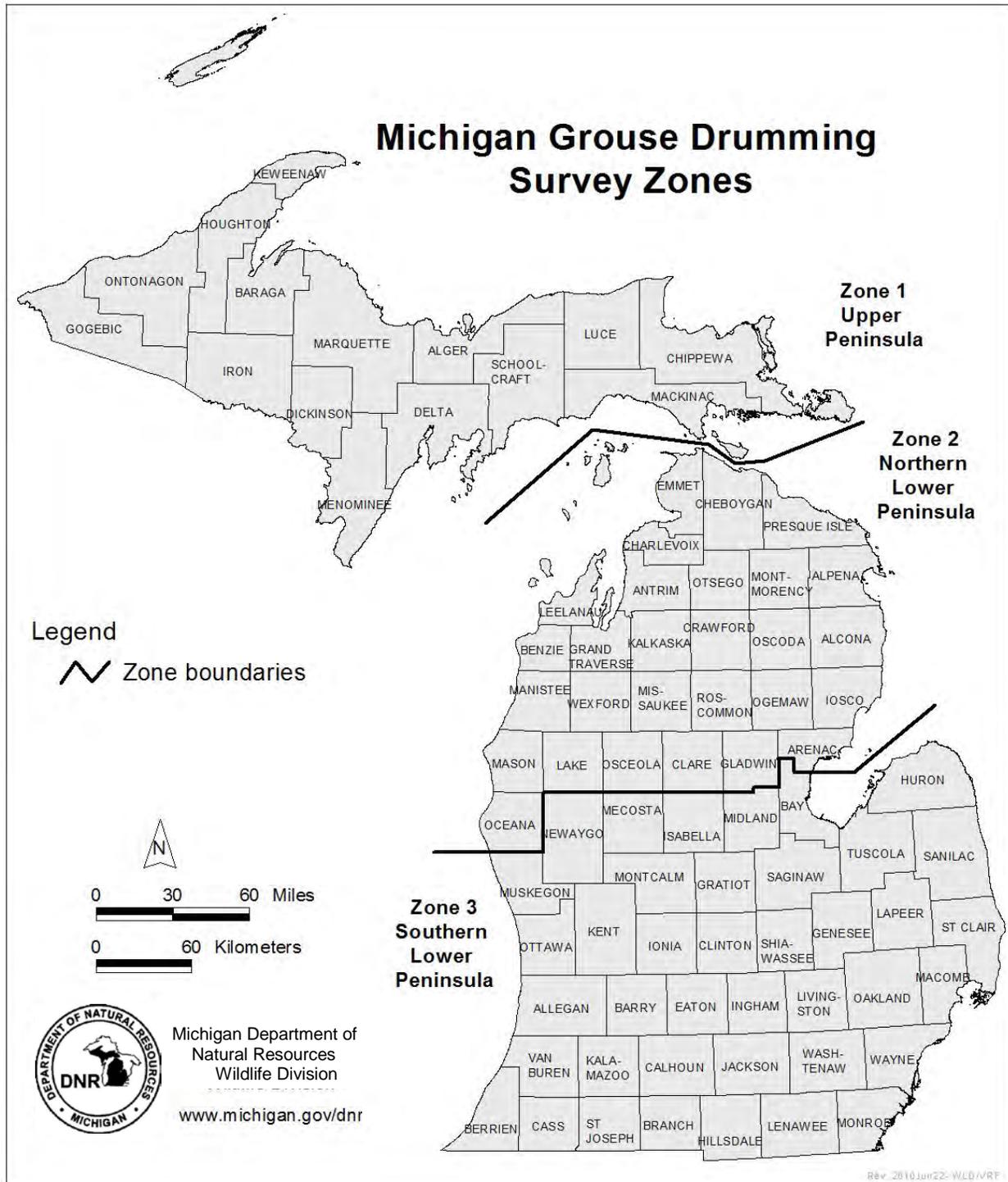


Figure 2. Zone boundaries for the ruffed grouse drumming survey.