



Michigan Department of Natural Resources Wildlife Division

Ruffed Grouse Drumming Survey Preliminary Results^a

CONTACTS: Al Stewart or Val Frawley 517-373-1263

^aThe 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 2011

Ruffed grouse drumming counts were conducted statewide along 103 survey routes during April and May 2011 (Figure 1). There was an average of 14.7 drums heard per route statewide. Highest drumming counts were in the Zone 1 (Upper Peninsula; 20.9), followed by Zone 2 (northern Lower Peninsula; 11.3) and Zone 3 (southern Lower Peninsula; 5.7; Fig. 1). Zone boundaries are shown in Figure 2.

In 2010, 106 survey routes were conducted statewide and paired *t*-tests were performed to statistically compare data from 97 routes run in both 2010 and 2011. Statewide there was a 20% increase ($n=97$; $t=2.3$; $P=0.02$) in the average number of drums heard per route between 2010 (12.5) and 2011 (15.0). Analysis at the regional scale indicated there was no significant difference ($n=47$; $t=0.6$, $P=0.55$) in the number of drums heard per route in Zone 2 (northern Lower Peninsula) between 2010 (10.8) and 2011 (11.6). However, there was about a 37% increase in the average number of drums heard per route in Zone 1 (Upper Peninsula) between 2010 (15.3) and 2011 (20.9; $n=41$; $t=3.0$, $P=0.004$). In Zone 3, there were 9 routes conducted in both 2010 and 2011. 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). Based on current survey data, we expect the grouse population this fall will be near the peak of



the cycle. With favorable spring production, 2011 fall ruffed grouse and woodcock numbers could be similar in the Lower Peninsula and similar or slightly higher in the Upper Peninsula compared to fall 2010. The best grouse and woodcock hunting opportunities will continue to be in areas of young early forest successional habitat.

Acknowledgments

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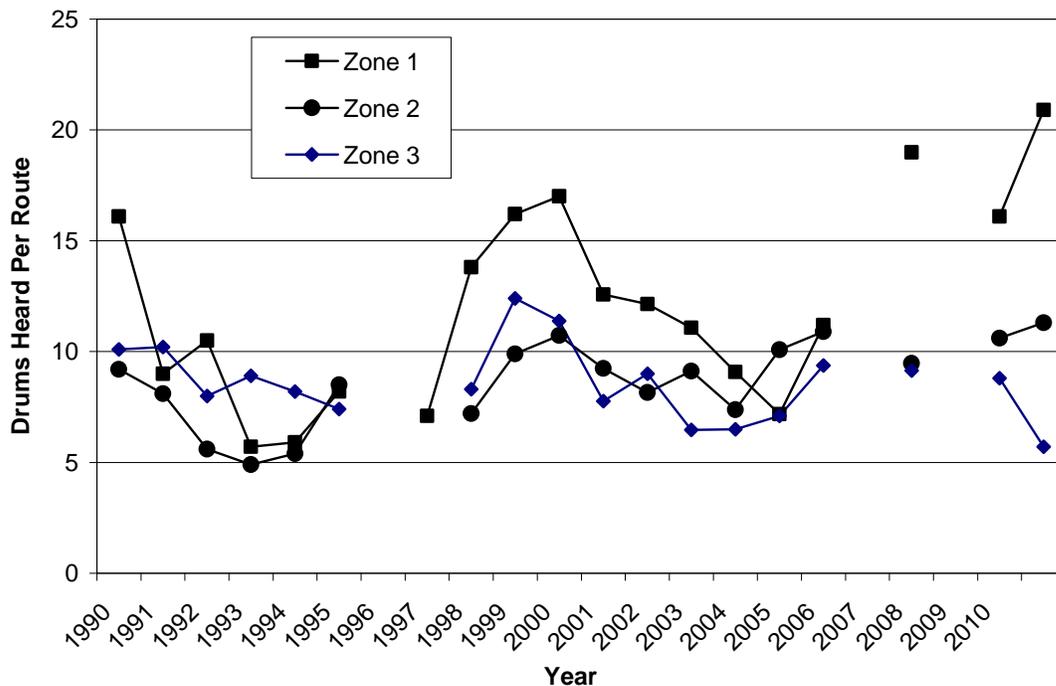


Figure 1. Ruffed grouse breeding population index (average drums per route) in Michigan, 1990-2011. Drumming surveys were not conducted statewide in 1996, 2007, and 2009, and were conducted only in Zone 1 in 1997.

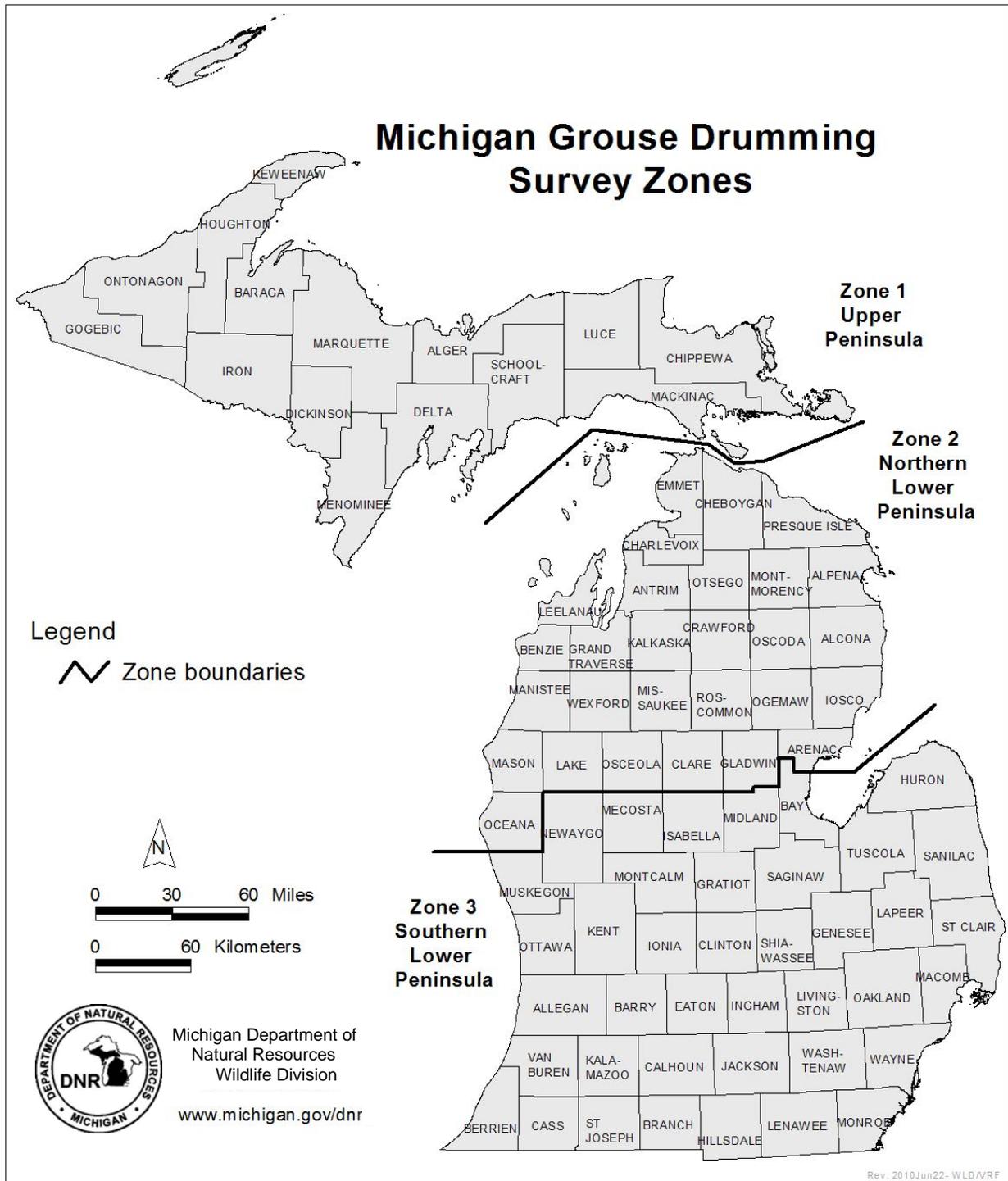


Figure 2. Zone boundaries for the ruffed grouse drumming survey.