

Quetico Provincial Park Ruffed Grouse (Bine) Survey

2014-16 Summary

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Introduction

Ruffed grouse (*Bonasa umbellus*) or bine in Anishinaabemowin (*pronounced bih-neh*) are associated with a mix of early, mid, and late successional habitats. Extensive fire suppression has been shown to result in large areas lacking early successional habitat which has been linked to lower grouse population densities (Dessecker and Mcauley 2001). Ruffed grouse populations have also been shown to fluctuate over the long term in a cycle of approximately 10 years (MnDNR 2016).

Drumming counts has long been used as a methodology to get information on relative abundance and population trends of grouse (Dorney et al. 1958, Gullion 2014, Petraborg et al. 2014). In short, number of grouse heard drumming at sample plots over a period of time (5 minutes) is recorded and reported as the average number of birds/plot. The Department of Natural Resources in Minnesota has conducted statewide ruffed grouse drumming surveys since the early 80's to monitor changes in grouse population trends through time. This data also provides a long term reference for data collected from Quetico Park.

The objective of the Quetico Provincial Park surveys was to assess changes in ruffed grouse abundance over time in Quetico Park with a focus on the Aspen-Birch Hardwood (B055) ecosite (Banton et al. 2009). Surveys were conducted by Quetico Foundation and Quetico Park staff following the Quetico Provincial Park Long Term Ecological Integrity Monitoring Program Grouse Drumming Abundance Protocol (OMNR 2014). Permanent sampling sites were selected within stands identified as ecosite B055 in the 2007 FRI in the north central portion of the park and surveys were conducted in conjunction with set-up of song bird meters as part of the

Quetico Park Long Term Songbird monitoring project (Figure 1). Twenty-eight sites were assessed in 2014 and 2015 and twenty-six sites in 2016 (two sites on Alice Lake were dropped as a result of a modification of the song bird monitoring route).

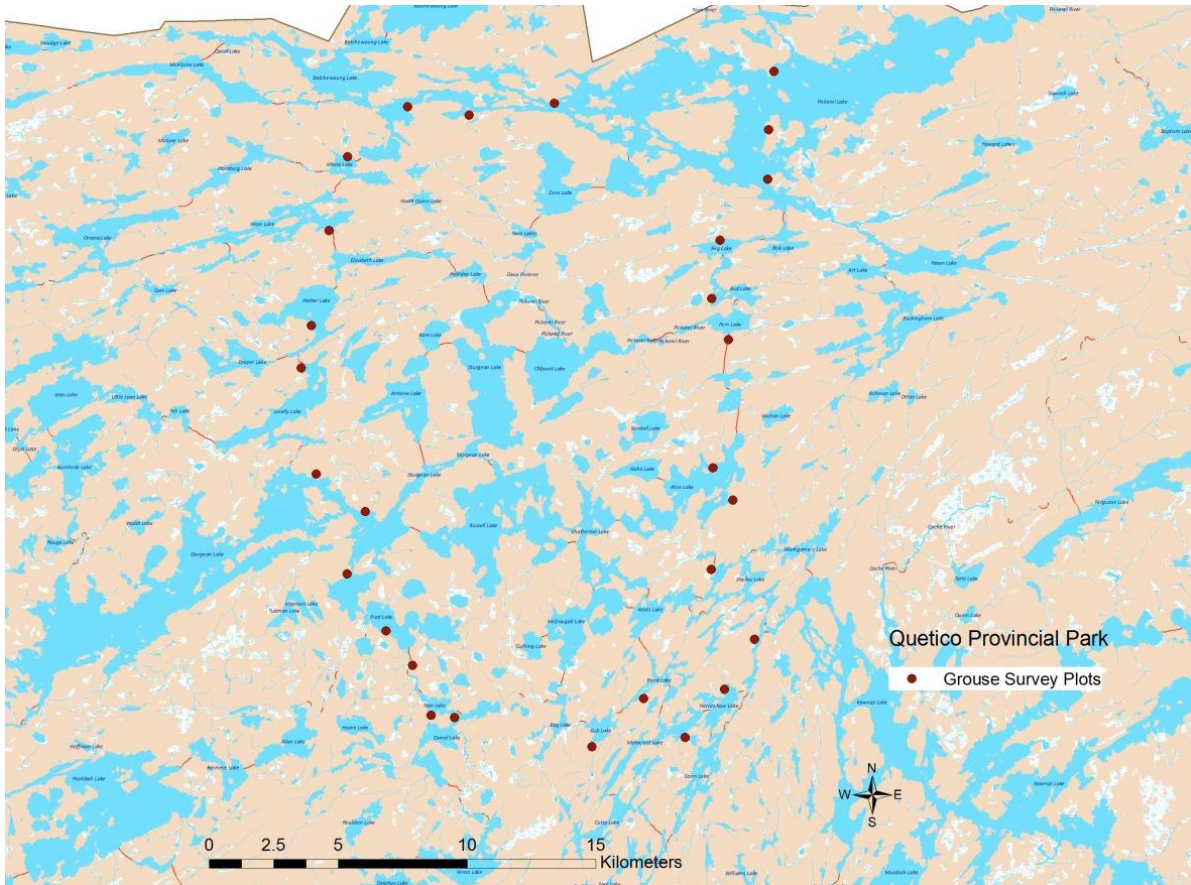


Figure 1. Location of ruffed grouse survey plots in Quetico Park -2014-2016.

Results

This report provides an interim assessment of data collected over the period 2014 to 2016. Although differences between year were not significant due to high variability between plots, the overall trend was increasing with more grouse to heard in 2016 than 2014 (Figure 2).

This corresponds with the trend observed in the northeast portion of Minnesota over the same period. Minnesota data suggests the grouse populations reached the bottom of their cycle in 2013 and have been increasing since then (Figure 3).

Minnesota data also suggests a higher abundance of grouse in the northeast portion of the state than in the area surveyed in Quetico. With a long term average of just under 1.5 grouse/plot, number of grouse heard is about three times as high in Minnesota than Quetico. Even when at the bottom of the population cycle, Minnesota surveys remained well above 0.5 grouse/plot currently heard in Quetico.

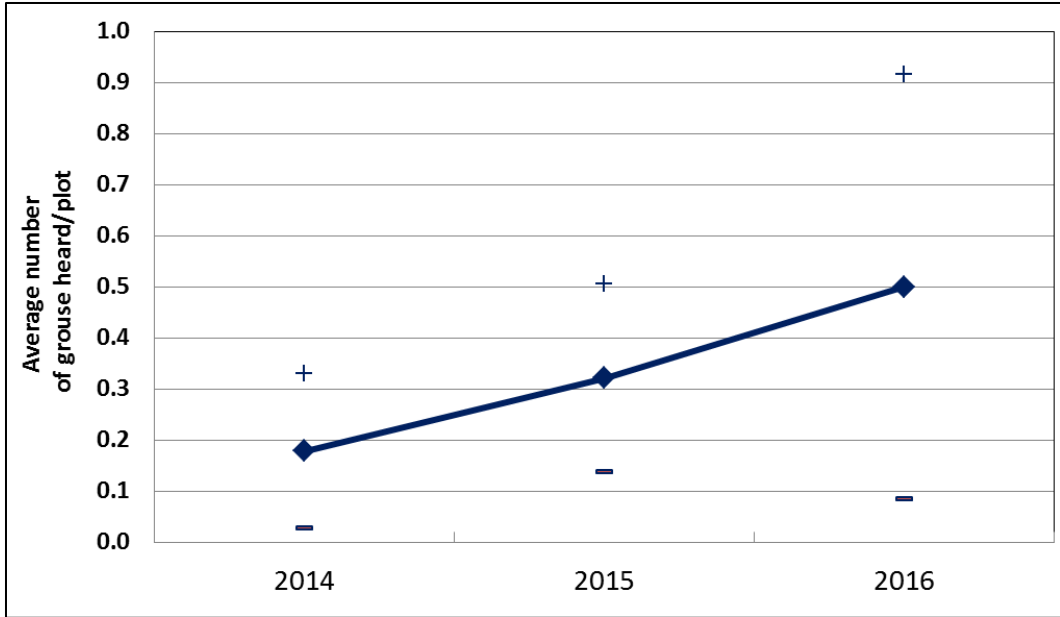


Figure 2. Average number of drumming ruffed grouse heard/plot for Quetico Provincial Park. 95% confidence intervals are indicated for each mean.

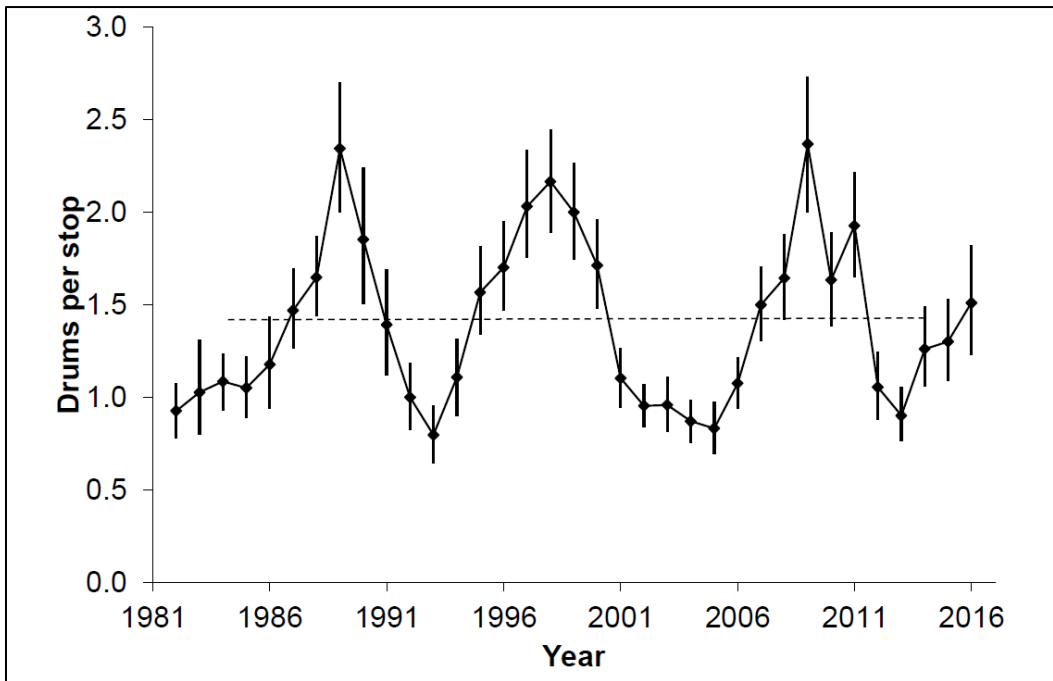


Figure 3. Ruffed grouse population index values for northeast Minnesota. 95% confidence intervals are indicated for each mean.

References

- Banton, E., J. Johnson, H. Lee, G. Racey, P. Uhlig, M. Wester. 2009. Ecosites of Ontario. Operational Draft. Ont. Min. Nat. Resources. 355p
- Dessecker, D. R., and D. G. Mcauley. 2001. Importance of Early Successional Habitat to Ruffed Grouse and American Woodcock. *Wildlife Society Bulletin* 29:456–465.
- Dorney, R. S., D. R. Thompson, J. B. Hale, and R. F. Wendt. 1958. An evaluation of ruffed grouse drumming counts. *Journal of Wildlife Management* 22:35–40. As cited in Zimmerman, G. S., and R. J. Gutiérrez. 2007. The Influence of Ecological Factors on Detecting Drumming Ruffed Grouse. *Journal of Wildlife Management* 71:1765–1772.
- Gullion, G. W. 1966. The use of drumming behaviour in ruffed grouse population studies. *The Journal of Wildlife Management* 30:717–729.
- MNDNR 2016. 2016 Minnesota Spring Grouse Surveys 2016. MNDNR
http://files.dnr.state.mn.us/recreation/hunting/grouse/grouse_survey_report16.pdf. 16p.
- Petraborg, W. H., E. G. Wellein, and V. E. Gunvalson. 1953. Roadside drumming counts a spring census method for Ruffed Grouse. *The Journal of experimental biology* 17:292–295.
- Rodgers, R. 1981. Factors affecting Ruffed Grouse drumming counts in Southwestern Wisconsin. *The Journal of Wildlife Management* 45:409–418.