



EASTERN COTTONTAIL POPULATION STATUS REPORT

November 2021

Summary

The eastern cottontail rabbit (*Sylvilagus floridanus*) is one of the most common wildlife species in Ohio. Although native to the state, it was not nearly as widespread prior to European settlement. As with several other species of wildlife, the eastern cottontail was a beneficiary of settlement; the clearing of woodlands and forests and the establishment of more open areas along wooded borders provided an ideal environment. This brushland edge species is one of Ohio's most popular small game animals for hunters. Its adaptability to a variety of habitat types and conditions has allowed it to maintain reasonable numbers despite human population growth, habitat loss, and intensive land use.

Ohio's eastern cottontail population has remained relatively stable over the past several decades. The statewide spring population index for eastern cottontail in 2021 was 8.82 rabbits/1,000 survey miles, indicating that the population is relatively stable when compared to 2020 (9.24 rabbits/1,000 survey miles). During the summer, the statewide index for eastern cottontails was 16.40 rabbits/1,000 survey miles. There were an estimated 58,461 rabbit hunters during the 2020–21 hunting season. Total hunter harvest was estimated to be 196,708 rabbits during the 2020–21 hunting season.

Methods

In Ohio, eastern cottontail populations have been monitored through the Rural Mail Carrier (RMC) survey since the 1950s. The RMC survey is run for two working weeks in the spring and two working weeks in the summer. Surveys are done voluntarily by U.S. Postal Service rural mail carriers. Each day participating mail carriers record the number of rabbits observed while driving their route over 12 consecutive working days. A population index (rabbits/1,000 survey miles) is calculated statewide and by weather region (defined in Spinola and Gates 2008).

To estimate hunters and harvest, the Ohio Hunter Questionnaire was distributed to a random sample of adult license holders in Ohio following the 2020–21 hunting season. Number of hunters pursuing rabbits was calculated by dividing the number of hunters indicating they pursued rabbits by the total number of responses, this was then extrapolated to the pool of hunters from which the sample was drawn. Confidence intervals were derived by bootstrap resampling the data 5,000 times. All analyses were done in program R (Version 4.1.1; R Core Team 2021).

Results and Discussion

The eastern cottontail statewide index after the spring 2021 survey was 8.82 rabbits/1,000 survey miles (SE = 0.46; 95% confidence interval: 7.91–9.72), which was not significantly different from 2020 (9.23 rabbits/1,000 survey miles; SE = 0.54; 95% confidence interval: 8.19–10.29; Fig. 1), indicating a stable rabbit population. The 2021 spring population index is 17% greater than the 10-year average (7.54 rabbits/1,000 survey miles; SE = 0.13; 95% confidence interval: 7.28–7.80) and nearly equivalent to the 5-year average (8.63 rabbits/1,000 survey miles; SE = 0.21; 95% confidence interval: 8.23–9.03).

The 2021 summer RMC survey yielded a statewide index of 16.40 rabbits/1,000 survey miles (SE = 0.70; 95% confidence interval: 15.03–17.76). The relative abundance of cottontails in 2021 summer RMC increased 497% when compared to the relative abundance from the 2019 summer RMC statewide index (2.75

rabbits/route; SE = 1.48; 95% confidence interval = 0.00–5.65). The summer RMC was not carried out in 2020 due to COVID-19. The 2021 summer population index was 63% greater than the 10-year average (10.04 rabbits/1,000 survey miles; SE = 0.13; 95% confidence interval: 7.28–7.80) and similar to the 5-year average (14.44 rabbits/1,000 survey miles; SE = 0.43; 95% confidence interval: 13.59–15.29).

The 2021 spring and summer RMC surveys indicate rabbit populations are well distributed throughout the state (Fig. 3, Fig. 4). In general, indices of eastern cottontail populations were greatest in the northeastern Ohio weather region. The west-central and southeastern Ohio weather regions had the lowest indices of rabbits in the state.

Eastern cottontails were pursued by 17.8% of questionnaire respondents, with an estimated 58,461 rabbit hunters (95% confidence interval: 58,031–58,893) in Ohio during the 2020–21 season. Eastern cottontail hunters averaged 4.9 days afield. Of the questionnaire respondents in pursuit of eastern cottontail, 71.5% hunted solely on private land, 14.9% hunted solely on public land, and 13.7% hunted on both public and private land. Of all respondents who pursued eastern cottontail, 19.9% hunted on Ohio Division of Wildlife areas, 1.6% hunted on state forests, 1.3% hunted on national forests, and 4.7% hunted on Ohio State Parks (Table 3). Average harvest was 3.4 eastern cottontails per hunter during the 2020-21 hunting season. Total estimated harvest of eastern cottontail was 196,708 (95% confidence interval: 167,027–232,366) during the 2020–21 season.

Literature Cited

- R Core Team. 2021. R: A language and environment for statistical computing. R Foundation for Statistical Computing, Vienna, Austria. URL: <https://www.R-project.org/>
- Spinola, R.M., and R. Gates. 2008. Population Status and Trends of Northern Bobwhite (*Colinus virginianus*) in Ohio: 1984–2004. Ohio Journal of Science 108:26–30.

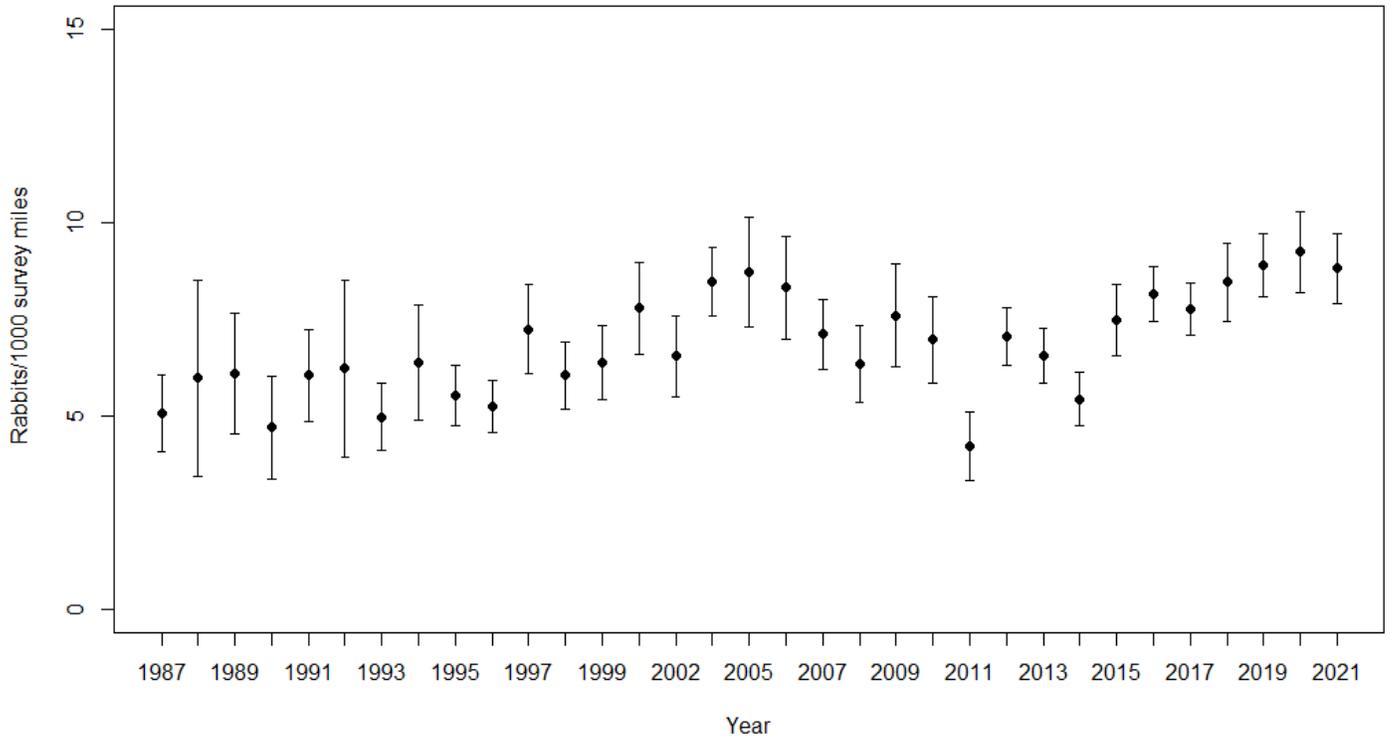


Figure 1. Statewide index of eastern cottontail (rabbits/1,000 survey miles) as observed by rural mail carriers during the spring for the state of Ohio (rabbits/route), 1987–2021. Error bars indicate 95% confidence intervals.

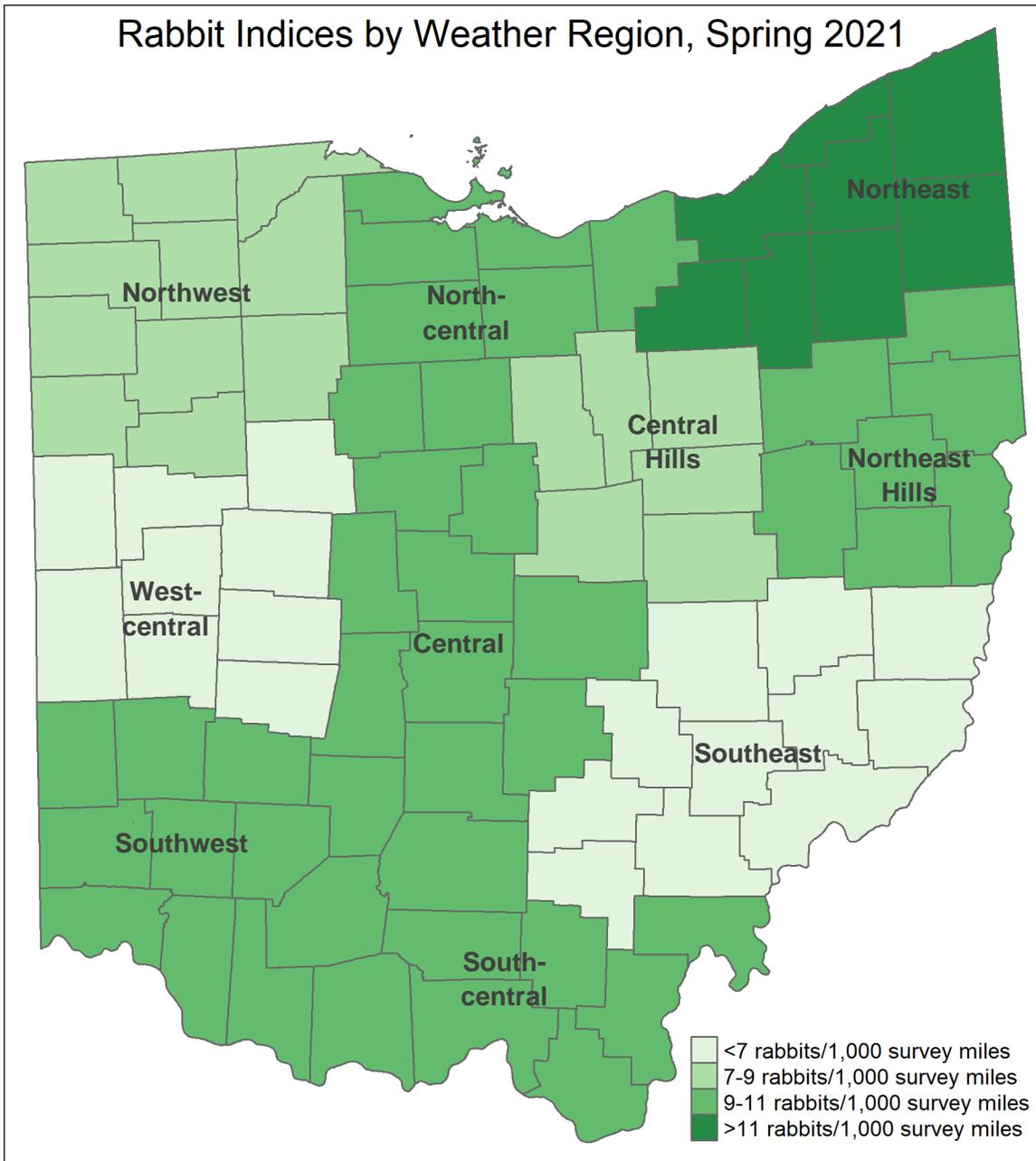


Figure 3. Population indices of eastern cottontail populations by weather region in Ohio, derived from the 2021 spring rural mail carrier survey.

Rabbit Indices by Weather Region, Summer 2021

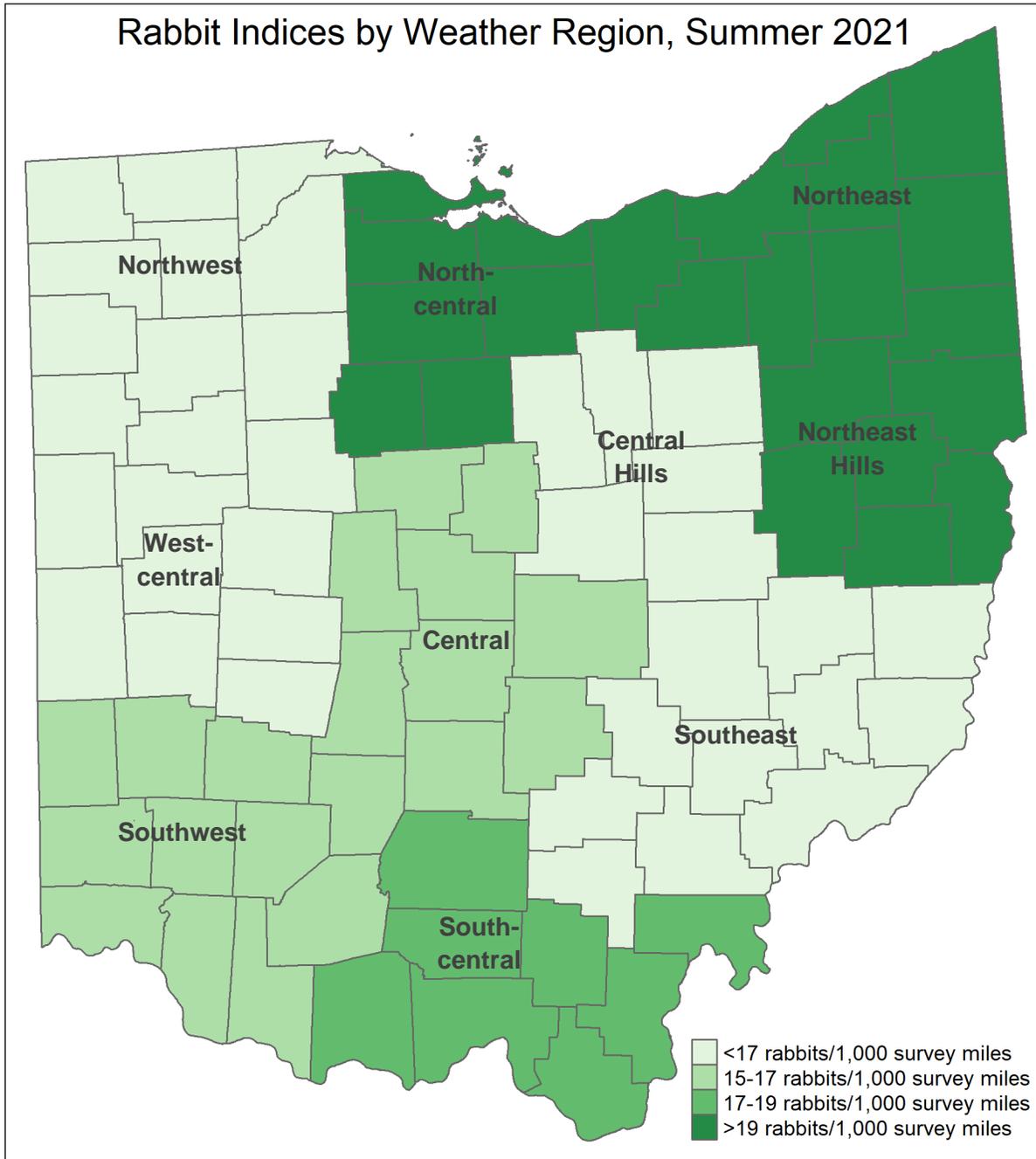


Figure 4. Population indices of eastern cottontail populations by weather region in Ohio, derived from the 2021 summer rural mail carrier survey.