



EASTERN COTTONTAIL POPULATION STATUS REPORT

October 2022

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 2022 was 10.2 rabbits/1,000 survey miles, indicating that the population is relatively stable when compared to 2021 (8.8 rabbits/1,000 survey miles). During the summer, the 2022 statewide index for eastern cottontails was 14.0 rabbits/1,000 survey miles, slightly less than 2021 (16.4 rabbits/1,000 survey miles). There were an estimated 54,333 rabbit hunters during the 2021–22 hunting season. Total hunter harvest was estimated to be 222,191 rabbits during the 2021–22 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 2021–22 hunting season. The number of hunters pursuing rabbits was calculated by dividing the number of hunters that indicated 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 4.2.0; R Core Team 2022).

Results and Discussion

The eastern cottontail statewide index after the spring 2022 survey was 10.2 rabbits/1,000 survey miles (SE = 0.6; 95% confidence interval: 9.0–11.3), which was not significantly different from 2021 (8.8 rabbits/1,000 survey miles; SE = 0.5; 95% confidence interval: 7.9–9.7; Fig. 1), indicating a stable rabbit population. The 2022 spring population index is 36% greater than the 10-year average (7.5 rabbits/1,000 survey miles; SE = 0.1; 95% confidence interval: 7.3–7.8) and not statistically different from the 5-year average (8.6 rabbits/1,000 survey miles; SE = 0.2; 95% confidence interval: 8.2–9.0).

The 2022 summer RMC survey yielded a statewide index of 14.0 rabbits/1,000 survey miles (SE = 0.7; 95% confidence interval: 12.7–15.4; Fig. 2). The relative abundance of cottontails in 2022 summer RMC was not

significantly different from the 2021 summer RMC statewide index (16.4 rabbits/route; SE = 0.7; 95% confidence interval = 15.0–17.8). The 2022 summer population index was 35% greater than the 10-year average (10.0 rabbits/1,000 survey miles; SE = 0.2; 95% confidence interval: 9.6–10.4) and similar to the 5-year average (14.4 rabbits/1,000 survey miles; SE = 0.4; 95% confidence interval: 13.6–15.3).

The 2022 spring and summer RMC surveys indicate rabbit populations are well distributed throughout the state (Fig. 3, Fig. 4). Following the summer RMC survey, indices of eastern cottontail populations were greatest in the north-central, northeastern, and southeastern Ohio weather regions. The central hills Ohio weather region had the lowest indices of rabbits in the state.

Eastern cottontails were pursued by 16.7% of questionnaire respondents and there were an estimated 54,333 (95% confidence interval: 53,928–54,743) eastern cottontail hunters in Ohio during the 2021–22 season. Eastern cottontail hunters averaged 5.8 days afield. Of the questionnaire respondents in pursuit of eastern cottontail, 69.8% hunted solely on private land, 16.4% hunted solely on public land, and 13.8% hunted on both public and private land. Of all respondents that pursued eastern cottontails, 24.5% hunted on public wildlife areas, 2.3% hunted on state forests, 1.6% hunted on national forests, and 5.2% hunted in Ohio's state parks. Average annual harvest was 4.1 eastern cottontails per hunter. Total estimated harvest of eastern cottontails was 222,191 during the 2021–22 season (95% confidence interval: 171,621–278,422).

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.

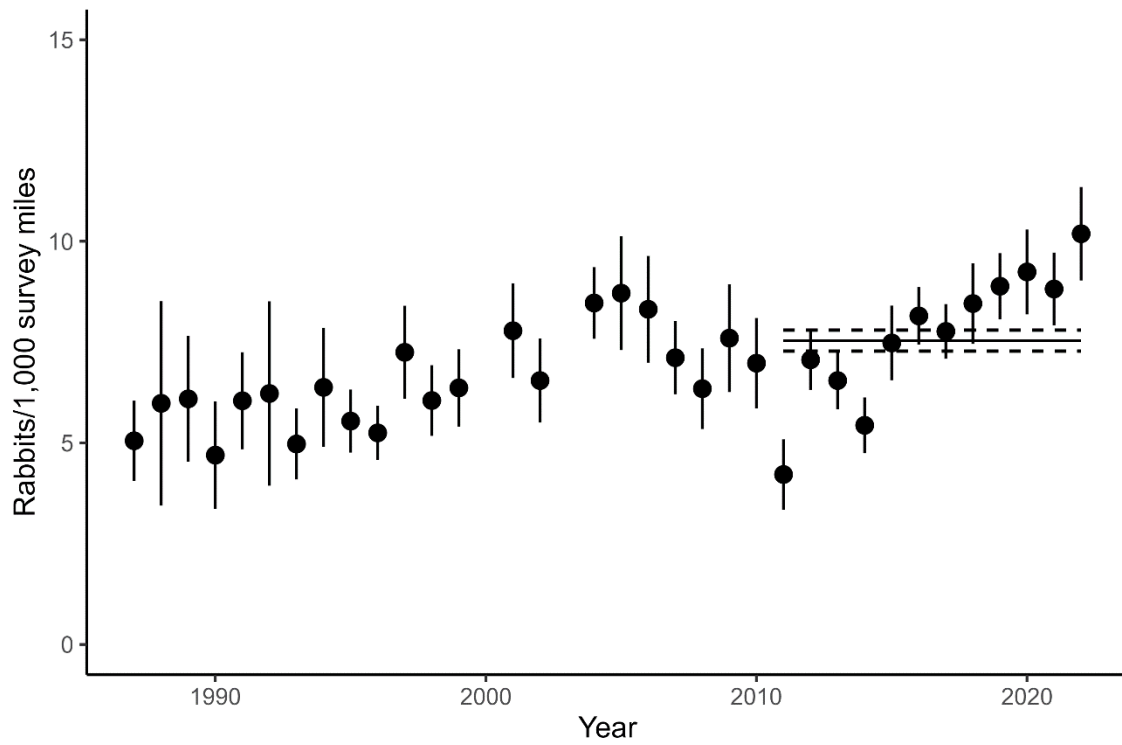


Figure 1. Statewide index of eastern cottontail rabbits (rabbits/1,000 survey miles) observed by rural mail carriers during the spring for the state of Ohio (rabbits/route), 1987–2022. Solid black horizontal line indicates the 10-year average, and the horizontal dashed lines indicate the 95% confidence intervals for the 10-year average statewide index of eastern cottontail.

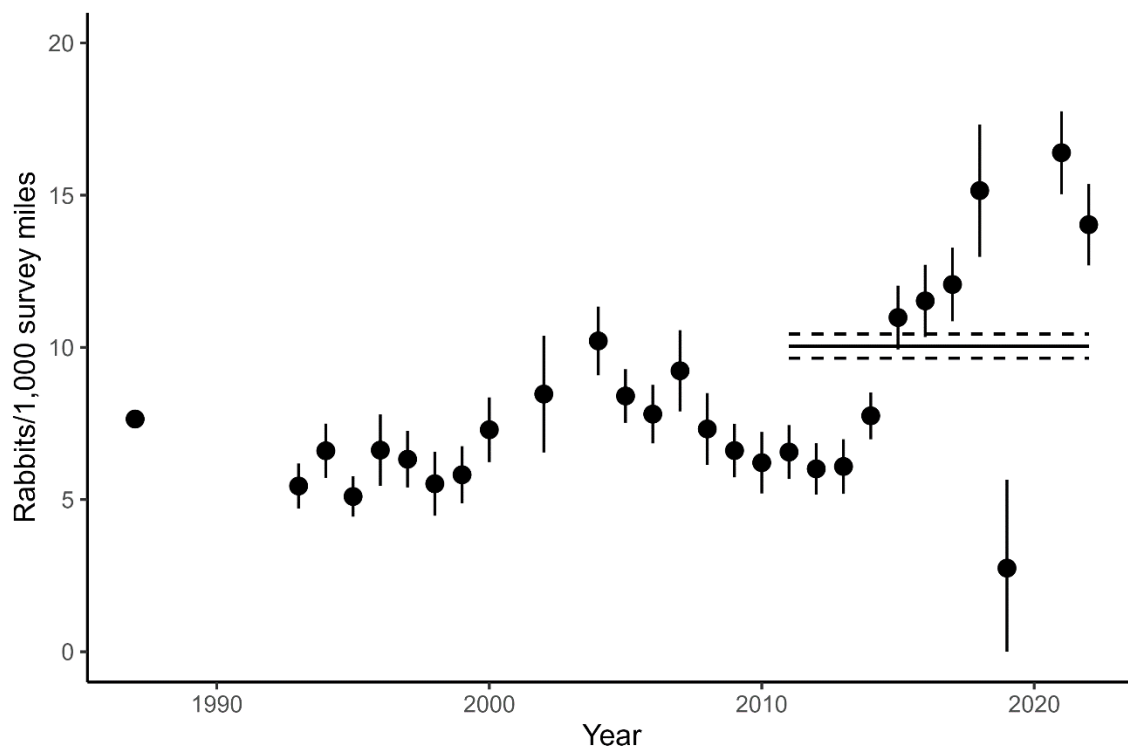


Figure 2. Statewide index of eastern cottontail rabbits(rabbits/1,000 survey miles) observed by rural mail carriers during the summer for the state of Ohio (rabbits/route), 1987–2022. Data are missing for 1988–1992, 2001, 2003, and 2020. Solid black horizontal line indicates the 10-year average, and the horizontal dashed lines indicate the 95% confidence intervals for the 10-year average statewide index of eastern cottontail.

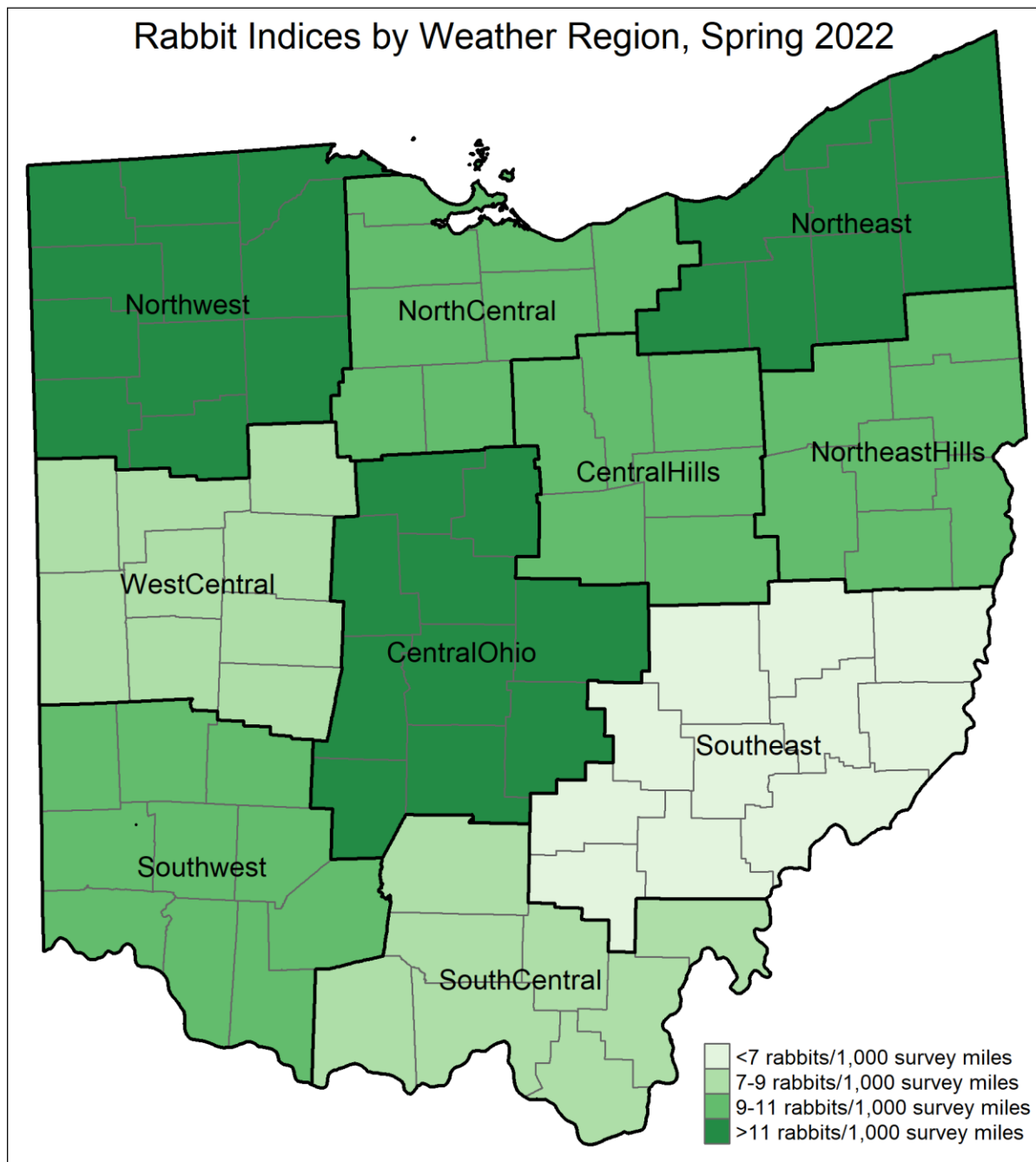


Figure 3. Population indices of eastern cottontail populations by weather region in Ohio, derived from the 2022 spring rural mail carrier survey.

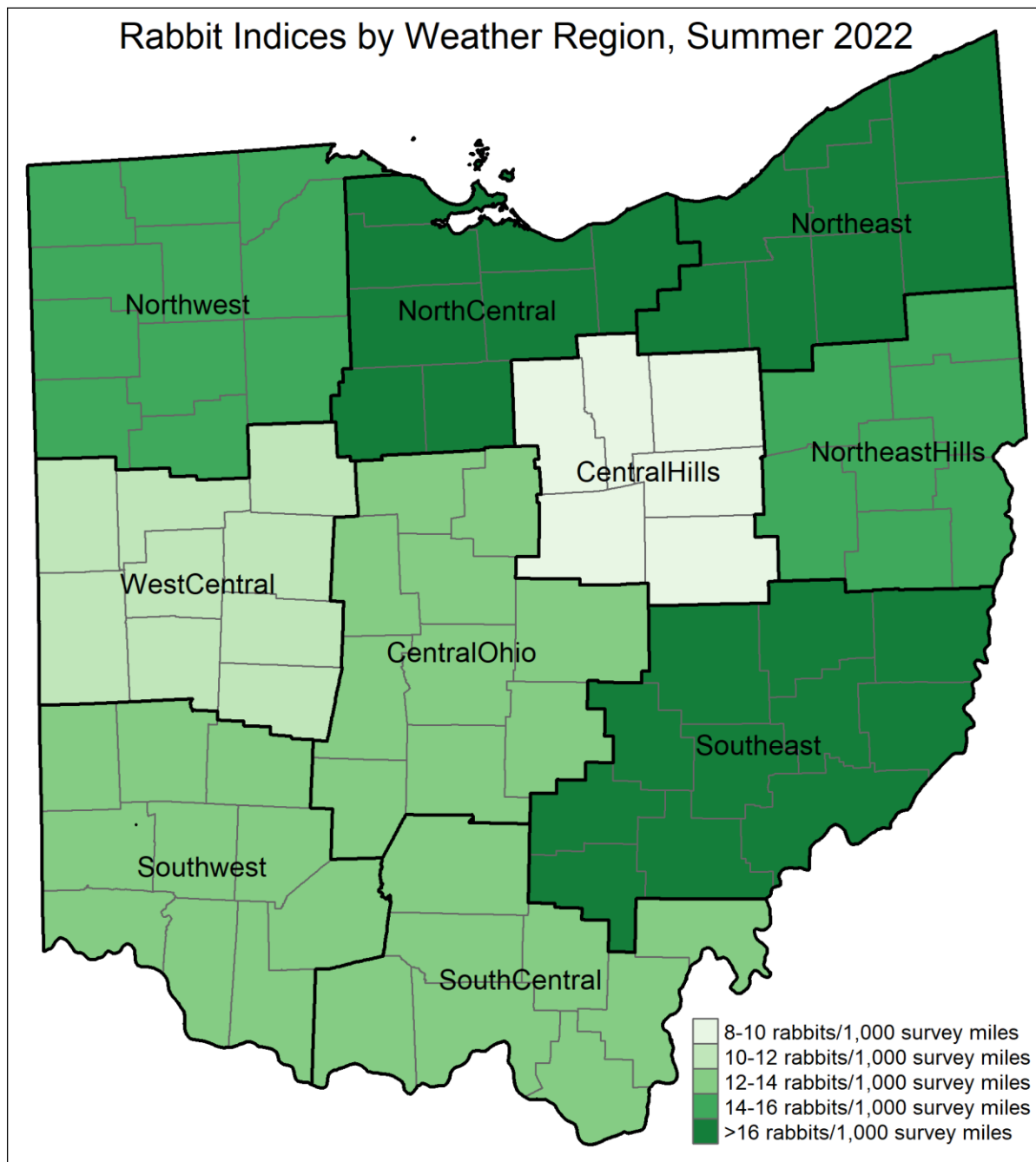


Figure 4. Population indices of eastern cottontail populations by weather region in Ohio, derived from the 2022 summer rural mail carrier survey.