



New Hampshire Fish and Game Department

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Scott R. Mason
Executive Director

Dear Small Game Hunting Enthusiast:

For those small game hunters who participated in our 2022-2023 survey efforts, and the dedicated Fish and Game staff who conduct grouse and woodcock surveys, you have my sincere thanks and deepest appreciation. This Small Game Summary Report will only be available online. Rather than the usual larger report, a brochure will be produced and mailed to last year's survey participants. The brochure will display population and survey trends on ruffed grouse and woodcock, and the brochure will be available at our regional offices or by request. Hunters and the public can view the survey results of all the small game species in this online report.

We received 153 usable survey cards, and this report summarizes your survey data, and data sent by other avid New Hampshire small game hunters. Over the past five years, an average of 141 hunters have participated in this survey annually. We urge you to participate again this coming season because the more surveys we receive the better our knowledge of small game populations will be. Please pass the word on by encouraging your friends to do the same. Sturm Ruger will once again donate a firearm to be raffled off at the conclusion of our small game seasons!

Signing up to become a small game survey participant is easy. Simply call the New Hampshire Fish and Game Department Wildlife Division at (603) 271-2461 or e-mail your name and mailing address to wildlife@wildlife.nh.gov. Be sure to mention your interest in the small game survey. You can also download a survey form from www.wildnh.com our NH Fish and Game website.

For the fifteenth year, the Small Game Summary Report has focused on New Hampshire's two most sought after small game species, specifically ruffed grouse and the woodcock. Of the surveys we received during the 2022-2023 Small Game season, 70% of the hunter-hours resulted from ruffed grouse hunting while 17% resulted from woodcock hunting. While all the data provided from your surveys is highly valued and used by the small game project, we feel it is best to focus on our premier species in this report. Included in this summary report are long-term trends for grouse observation rates, breeding surveys for grouse (drumming) and woodcock (singing ground), and results from the grouse wing and tail survey.

The Small Game Hunter Survey has proven to be an efficient means of achieving a good understanding of the distribution, abundance and trends of our small game populations. **YOUR** participation is important to the success of our small game survey. With a better understanding of small game populations, we hope to achieve improved management and to provide enhanced opportunities for public enjoyment of New Hampshire's small game species.

We want your feedback. If you have comments to share or ideas to offer, or if you would like to learn about our annual grouse wing and tail collection efforts, please feel free to contact me directly at (603) 744-5470. I look forward to hearing from you!

We wish you a safe and enjoyable hunting season in our beautiful state.

Sincerely,
Karen A. Bordeau
Karen A. Bordeau
Small Game Project Leader

New Hampshire Small Game Management Regions



Small Game Survey Information

Fig 1. New Hampshire small game hunter effort (2022-2023).

Small game hunters who return their annual surveys provide information on small game hunting effort, hunter observation rates and species distribution. A total of 153 hunters responded to our 2022-2023 survey, which spanned the period 09/1/22-3/31/23. The graphs below depict the distribution of hunter effort tallied from 3,704 hours over the small game seasons. Seventy-two (72%) percent of hunting occurred in October. The squirrel season begins Sept 1st, thus the data for the month of September. During the remainder of the season, weekend hunting and holidays account for the majority of small game hunter effort in New Hampshire.

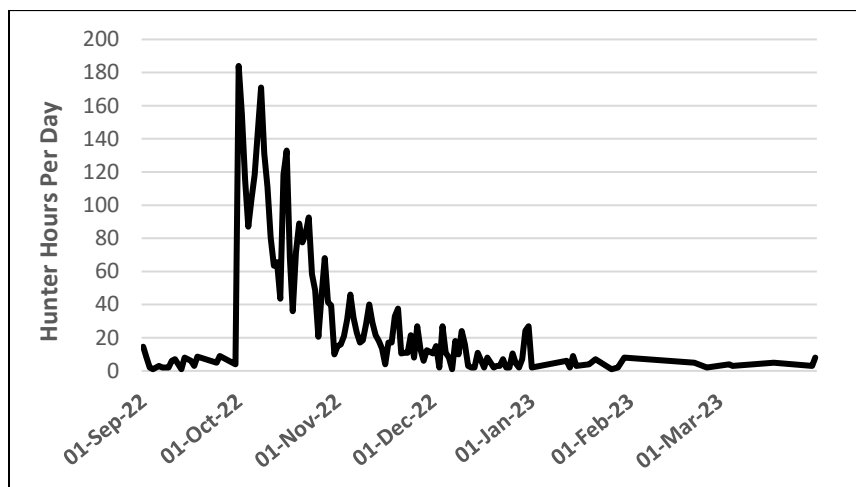
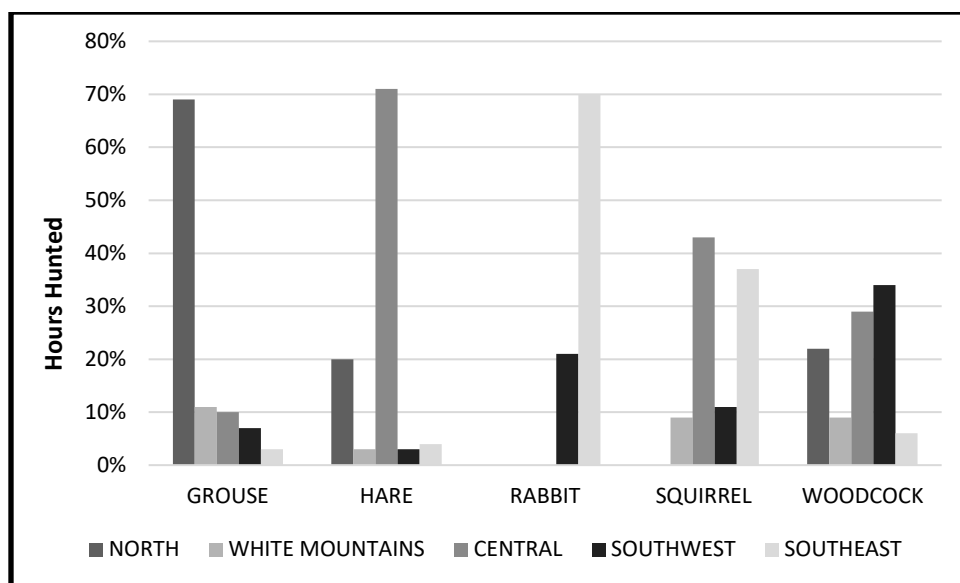


Fig 2. New Hampshire small game hunter effort per species and region (2022-2023).





Ruffed Grouse

Bonasa umbellus

A characteristic species of young forests.

Ruffed grouse are a ground dwelling bird of young forest, mixed woodlands, and thrive best where forests are actively managed. A phrase I often heard in my early days of habitat work was – Good hunting can literally follow in the footprints of the forester. The skid roads open the forest, create edge and are attractive to game and hunter alike. These trails and openings with low growing plants and sunlight provide abundant insects that are needed by grouse chicks in their early days after hatching. Grouse habitat varies according to the birds’ age and time of the year. There are in fact four basic cover types that will satisfy their needs – drumming log cover, nesting cover, brood cover, and fall and winter cover. Grouse covers decline 15-20 years following active timber management. Factors including food availability, cover, weather and predation all play a role in grouse survival. The farther grouse have to travel to find food, the more likely they will become prey. To a large extent, the forester and the grouse manager are hand-in-glove, when it comes to creating young forest habitat for grouse. Hunter observation rates in 2022 indicate that grouse are most abundant in northern New Hampshire, a clear reflection to more actively managed forests in northern NH that provide early successional habitat.

Hunter observation rates are a reliable index to species abundance and allows us to compare species within and between years. The hunter observation rate is expressed in terms of grouse (or woodcock) seen per 100 hunter hours. The observation rates and variability in grouse numbers for each region and statewide for the past decade (2013-2022) are depicted in Figure 3. Sample sizes for the Southeast region are modest and should be viewed with caution.

Fig 3. New Hampshire grouse observation rates by region and statewide for dog hunters (2013-2022).

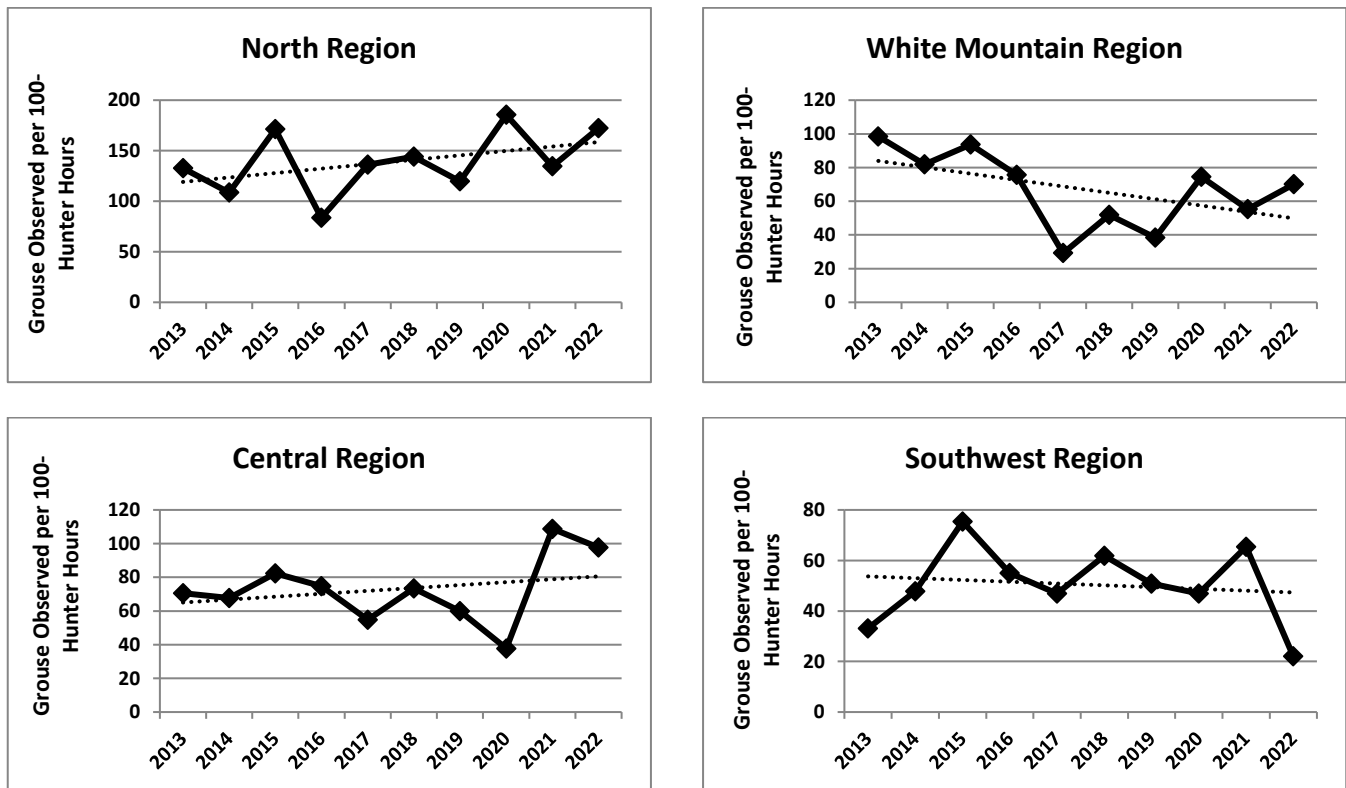
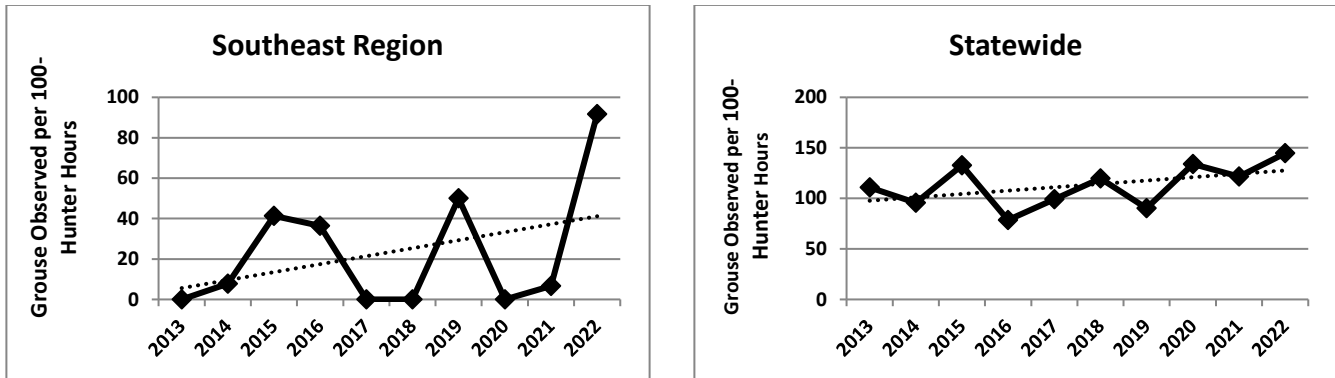


Fig 3. New Hampshire grouse observation rates by region and statewide for dog hunters (2013-2022), cont.



RESULTS FROM NH GROUSE SURVEY ROUTES CONDUCTED DURING SPRING 2022

Spring roadside drumming counts are used as an index to assess regional trends in ruffed grouse breeding populations, and these values routinely rise and fall. These roadside drumming routes are distributed throughout New Hampshire and are surveyed annually in mid-April through mid-May by wildlife biologists and volunteers. Our highest grouse densities are in the North Region. During spring 2023, the number of drumming events heard per stop increased in the Southwest and Southeast regions and decreased in the North, White Mountain, and Central regions, with an overall downward trend statewide. Figure 4 depicts the grouse drumming index for each region and statewide for the past decade (2014-2023).

Fig 4. Results from randomly stratified grouse drumming routes for each region in New Hampshire (2014-2022).

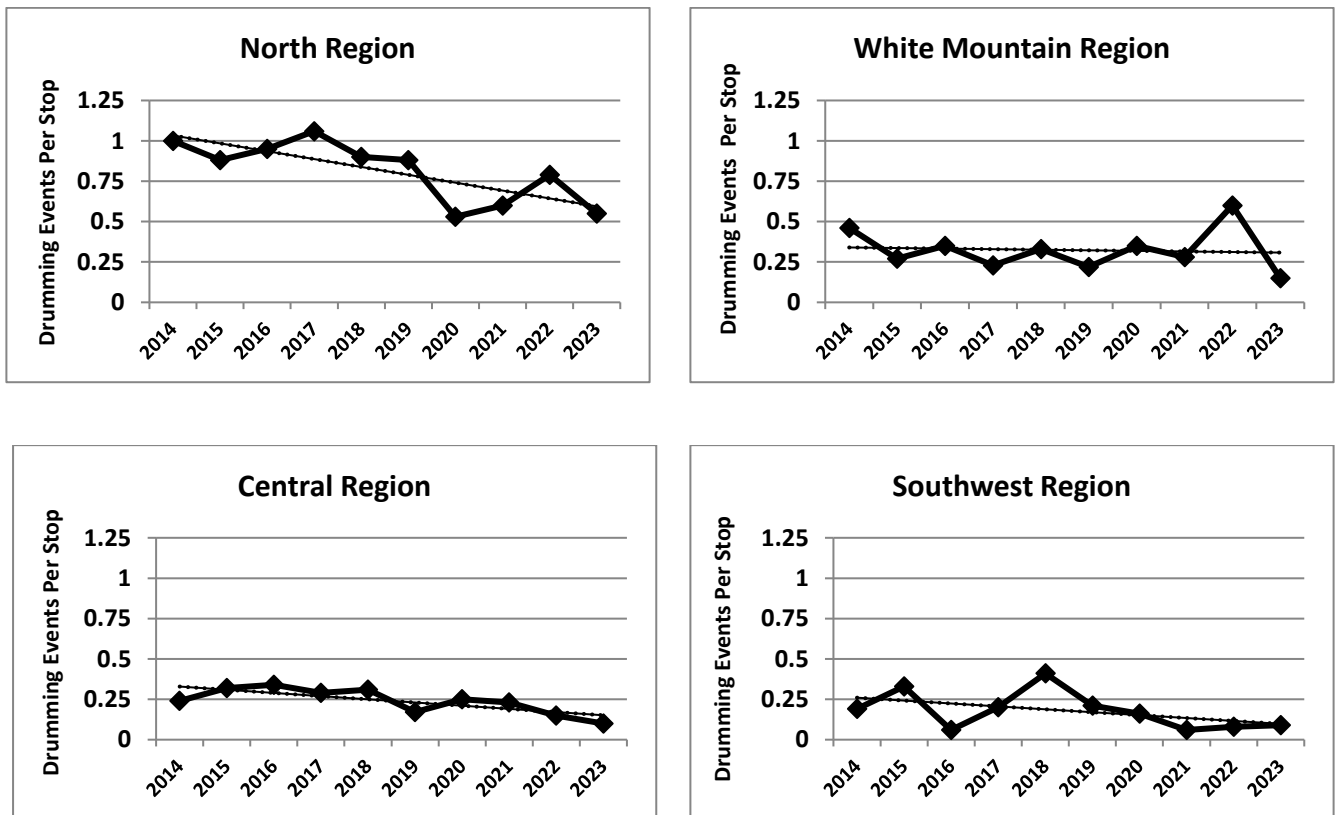
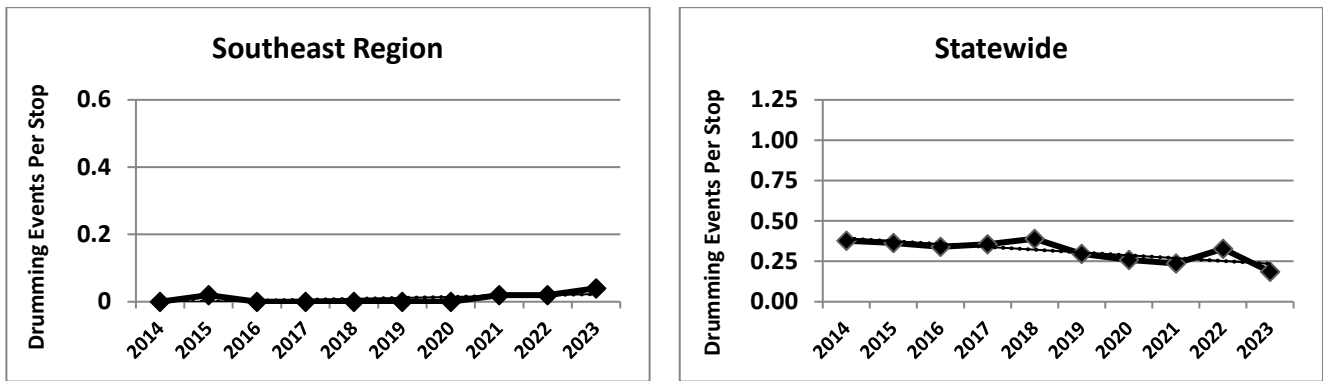
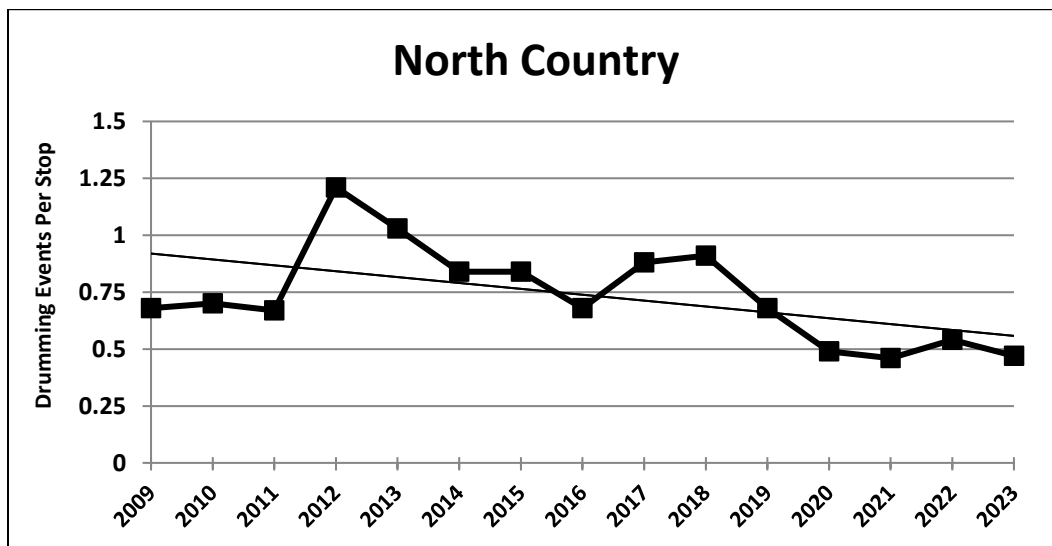


Fig 4. Results from randomly stratified grouse drumming routes for each region in New Hampshire (2014-2022), cont.



To monitor the grouse abundance on our premier grouse range we have run 6-8 select drumming routes in the North Country each year. These routes track changes in grouse abundance and in 2023 the survey results show an average of 0.47 drumming events per stop (Figure 5). This is a decrease from the reported 0.54 drumming events per stop in 2022.

Fig 5. Results from select ruffed grouse drumming routes run in New Hampshire’s North Country (2009-2023) depicting the number of grouse drumming events heard per stop per year.



Ruffed Grouse Wing and Tail Survey in New Hampshire

In 2022, hunters were again asked to submit ruffed grouse wings and tails from harvested birds and fill out a survey card for each harvested bird. This biological information continues to increase our knowledge of ruffed grouse and provides us with age and sex composition, distribution data and a juvenile to adult female ratio. Our 2022 survey results show a decrease in the number of samples from last year and a decrease in the juvenile/adult female ratio (Figure 6). The long-term trend for the number of grouse flushed per hour hunted is depicted in Figure 7. Below are some of the highlights from last year's wing and tail survey:

- 188 samples collected with 183 being useable
- Samples were taken from 24 towns, Pittsburg accounted for 66% of the samples
- 120 adult grouse were harvested (50 females, 70 males), compared to 63 juveniles (26 females, 37 males) Juvenile to adult female ratio was 1.26
- 86% of samples were harvested in October
- 55% of the hunters used a dog
- 1.45 grouse were flushed per hour hunted (595 hours hunted, 806 flushed grouse)
- Only 57 hunters reported flushing woodcock, with a rate of .58 flushed per hour
- Hunters came from 8 other states besides NH, including CA, CT, IL, MA, ME, NC, RI, and VT
- Crop content reported was mostly yellow birch catkins, alder leaves, fern and clover leaves, cranberries, slugs, mushrooms and apple and maple samaras
- 102 of the samples were the gray color phase, 62 were intermediate, and 19 were red

Fig 6. Results from ruffed grouse wing and tail survey showing the long-term trend (2013-2022) for the juvenile to adult female ratio.

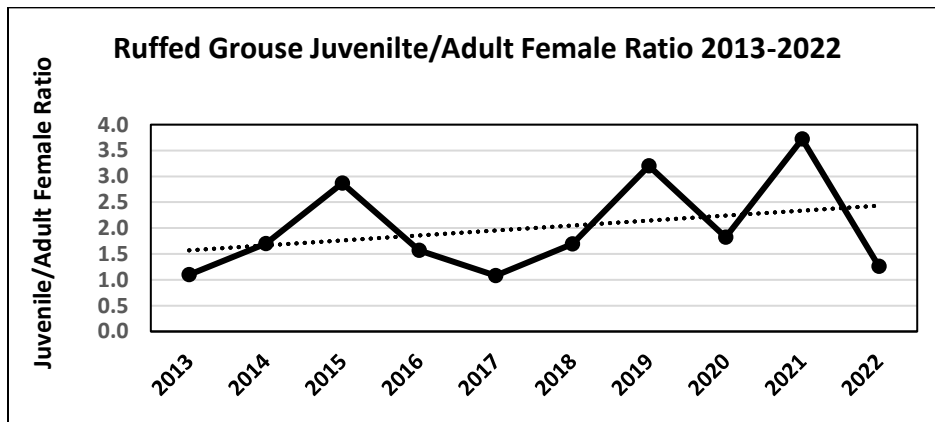
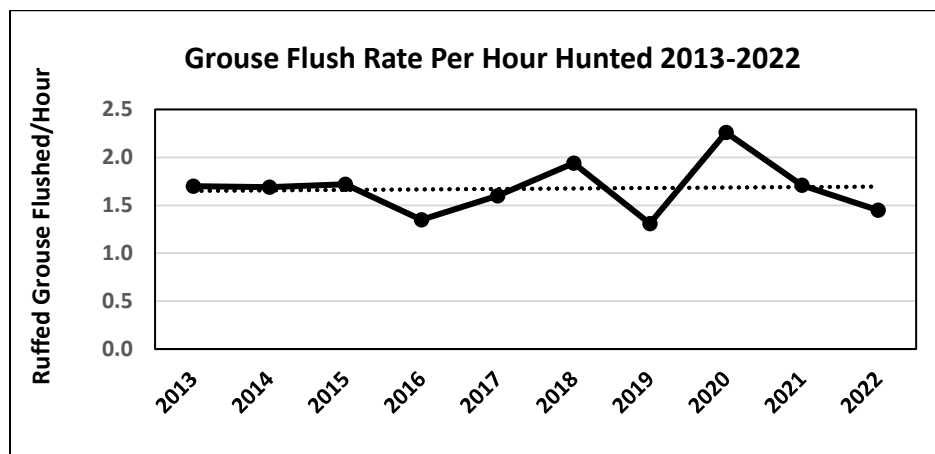


Fig.7. Results from the ruffed grouse wing and tail survey showing the long-term trend (2013-2022) for the number of grouse flushed per hour hunted.



Again in 2023, we will be asking ruffed grouse hunters THROUGHOUT NEW HAMPSHIRE to help us with our wing and tail survey efforts. As the hunting season approaches watch our website www.WildNH.com for details on where to pick up and drop off your completed packets! You can also call Karen Bordeau at 603-744-5470 for more details. As an incentive for hunters to participate in this wing/tail study, The Ruffed Grouse Society has generously donated a quality upland game bird gun to be given to a randomly selected participant. The drawing will take place in 2024 after the survey results are summarized.



American Woodcock

Scolopax minor

I know it is spring when I hear the woodcock peent!

Woodcock are a young forest species that use four different habitats depending on activity, time of day, and season. In spring, males need openings (“singing grounds”) to perform courtship displays and attract females. The courtship display of a male American woodcock is a combination of a nasal “peenting” sound made repeatedly on the ground followed by an acrobatic flight to proclaim a breeding territory and to attract females. Available nesting and rearing habitat determine the location of singing grounds within specific vegetative types. Nests and broods can be found in mixed-age forests, although young hardwood stands (especially aspen) are preferred. During the nesting and rearing period, weather is the key to chick survival. Dense, shrub-dominated forests with moist soils are ideal habitats. Moist soils ensure that earthworms, which comprise nearly 80% of woodcock diets, are near the soil surface and are available to foraging birds. NH Fish and Game has been and will continue to work with public and private landowners to increase small game habitat as a means to safeguard the future wellbeing of this species during all phases of its life cycle.

Each spring Fish and Game biologist and volunteers conduct approximately thirty-three woodcock singing ground surveys around the state. Fourteen of these routes are conducted in cooperation with the U.S. Fish and Wildlife Service, as part of the annual monitoring of woodcock populations in the Eastern Region of the United States. Counts of displaying male woodcocks along routes are used to assess the regional population status and trends, which is used to make inferences about the breeding population. The number of woodcock heard per stop increased in the North and Central Regions, remained consistent in the White Mountain, and decreased in the Southwest and Southeast Regions. Regional woodcock data should be interpreted with caution in our Southeast Region because of modest sample sizes. Figure 8 depicts regional and statewide long-term trends from the woodcock survey routes conducted during spring.

Fig 8. Regional results from randomly stratified woodcock singing ground surveys run in New Hampshire (2014-2023).

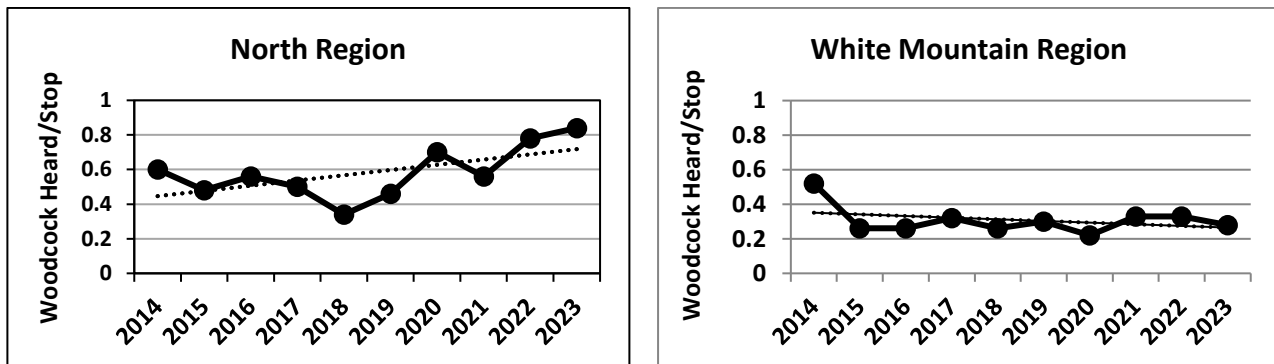
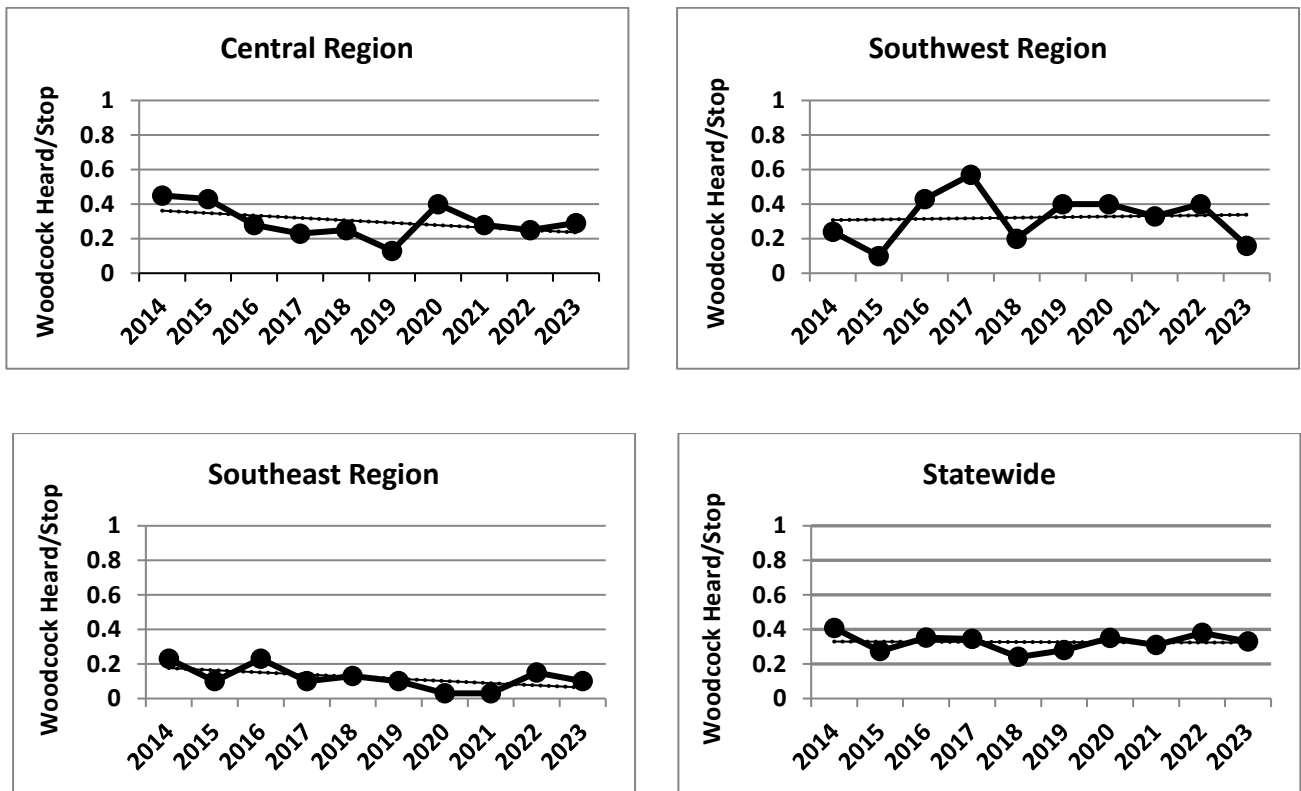


Fig 8. Regional results from randomly stratified woodcock singing ground surveys run in New Hampshire (2014-2023), cont.



Conclusion

This small game summary helps bring awareness to New Hampshire’s small game species. With your help by reporting what you see afield, we are obtaining a better understanding on these valuable resources. The most critical need right now is for more young forest habitat and New Hampshire Fish and Game is working hard on our lands and those of our partners to create and maintain those young forests on the landscape.

New Hampshire’s small game species are a valuable resource to the citizens of this state and to those that visit here. This report, compiled by the Fish and Game Department, is the most efficient means of achieving a good understanding of the distribution, abundance and trends of our small game populations. With greater understanding of these populations, we hope to achieve improved management and to provide enhanced opportunities for public enjoyment of small game species.

YOUR participation in our efforts is important to the success of our small game surveys. Without participation from hunters in the field, our project’s success would not be possible. The more surveys we get back, the more meaningful our data will be, so please take the time to participate in our small game survey.

You can sign up to participate in the 2023-24 survey by contacting us at NH Fish and Game Department, Wildlife Division Small Game Project, 11 Hazen Drive, Concord, NH 03301, or e-mail your name, address and small game interest to wildlife@wildlife.nh.gov, or call us at (603) 271-2461. We will send you a survey card in September. **And remember, we will be giving away a gun from Sturm Ruger to a randomly selected participant in the small game survey. In addition, The Ruffed Grouse Society has generously donated a quality firearm to be awarded to a randomly selected participant in the grouse wing and tail survey.**

Our thanks go out to Sturm Ruger and The Ruffed Grouse Society for their generosity in supporting our small game program. We also thank you for your continued participation in our survey efforts and for your interest in our small game project and in our state’s invaluable wildlife resources.