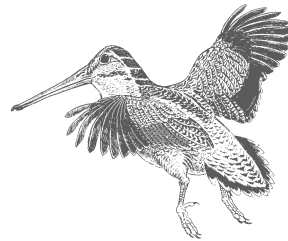
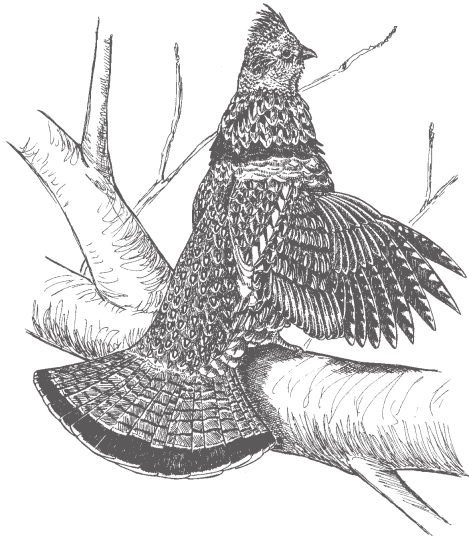


2010/2011  
NEW HAMPSHIRE  
**SMALL  
GAME**  
SUMMARY REPORT



**NEW HAMPSHIRE  
FISH AND GAME DEPARTMENT**

[www.huntnh.com](http://www.huntnh.com)



We thank our partners in wildlife conservation, hunters and shooters, the U.S. Fish and Wildlife Service and private industry.

Excise taxes collected on the purchase of firearms, ammunition and archery equipment are distributed to state agencies like the N.H. Fish and Game Department to conduct research, restore and manage wildlife populations, purchase habitat, conduct hunter education programs and create opportunities for hunting and other wildlife-associated recreation.

You are the key to wildlife restoration success in New Hampshire!

The N.H. Fish and Game Department receives Federal Assistance from the U.S. Fish & Wildlife Service, and thus prohibits discrimination on the basis of race, color, national origin, disability, age and sex, pursuant to Title VI of the Civil Rights Act of 1964, Section 504 of the Rehabilitation Act of 1973, Title II of the Americans with Disabilities Act of 1990, Title IX of the Education Amendments of 1972, and the Age Discrimination Act of 1975. If you believe you have been discriminated against in any program, activity or service, please contact or write the U.S. Fish & Wildlife Service, Division of Wildlife and Sport Fish Restoration, 4001 N. Fairfax Drive, Mail Stop: WSFR – 4020, Arlington, Virginia 22203, Attention: Civil Rights Coordinator for Public Programs.



Glenn Normandeau  
Executive Director

# New Hampshire Fish and Game Department

11 Hazen Drive, Concord, NH 03301-6500  
Headquarters: (603) 271-3421  
Web site: [www.WildNH.com](http://www.WildNH.com)

TDD Access: Relay NH 1-800-735-2964  
FAX (603) 271-1438  
E-mail: [wildlife@wildlife.nh.gov](mailto:wildlife@wildlife.nh.gov)

Dear Small Game Hunting Enthusiast:

Thank you for your participation in our 2010-2011 Small Game Hunter Survey. This report summarizes your survey data, and data sent to us by other avid New Hampshire small game hunters. Hopefully, these annual reports will prompt you to continue to participate in our survey for many years to come. **The information that you provide us through your participation in our survey provides us with valuable abundance and distribution data on small game species. We urge you to participate again this coming small game season.**

This is the fourth year that the Small Game Summary Report has focused on New Hampshire's two most sought after small game species, those being the ruffed grouse and the woodcock. Of the 179 surveys we received for the 2010-2011 Small Game Survey, 67% 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 still used by the small game project, we feel it is best to focus on our premier species in this report.

This survey effort 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 key 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.

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](mailto:wildlife@wildlife.nh.gov). Be sure to mention your interest in the small game survey. You can also download a survey from [www.huntnh.com](http://www.huntnh.com). *Please pass the word on by encouraging your friends to do the same.* Sturm Ruger has once again donated a firearm to be raffled off at the conclusion of our 2011-2012 season!

For those small game hunters who participated in our 2010-2011 survey efforts, you have our sincere thanks and deepest appreciation. We congratulate the winner of this year's Ruger quality firearm and wish the winner years of safe hunting enjoyment. Without survey participants and the dedicated Fish and Game staff who conduct grouse and woodcock surveys each spring, we would have little to report on.

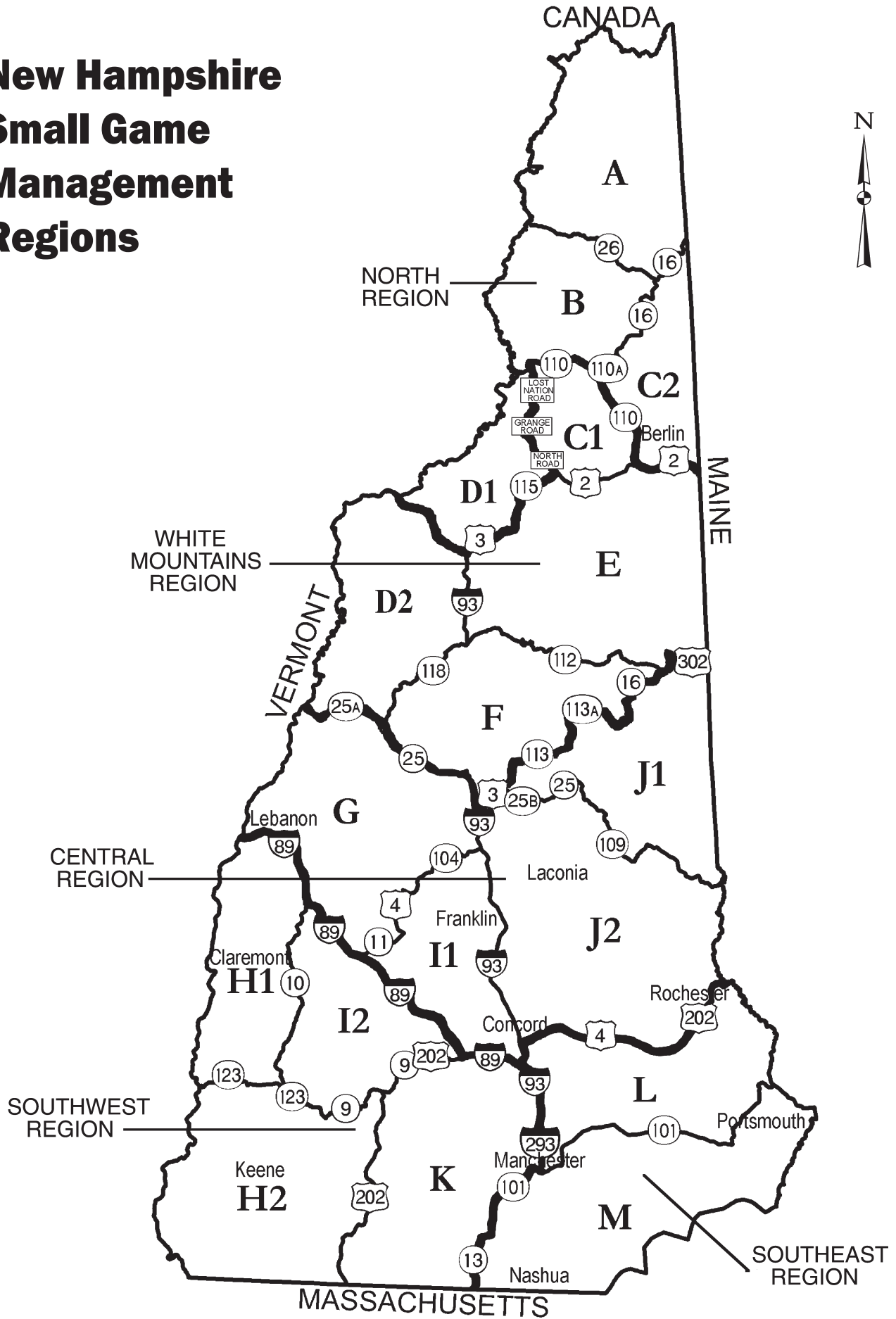
We want your feedback. If you have comments to share or ideas to offer, or if you would like to learn about our annual grouse wing and tail collection efforts, please feel free to contact me directly at (603) 868-1095. I look forward to hearing from you!

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

Sincerely,

Julie Robinson  
Small Game Project Leader

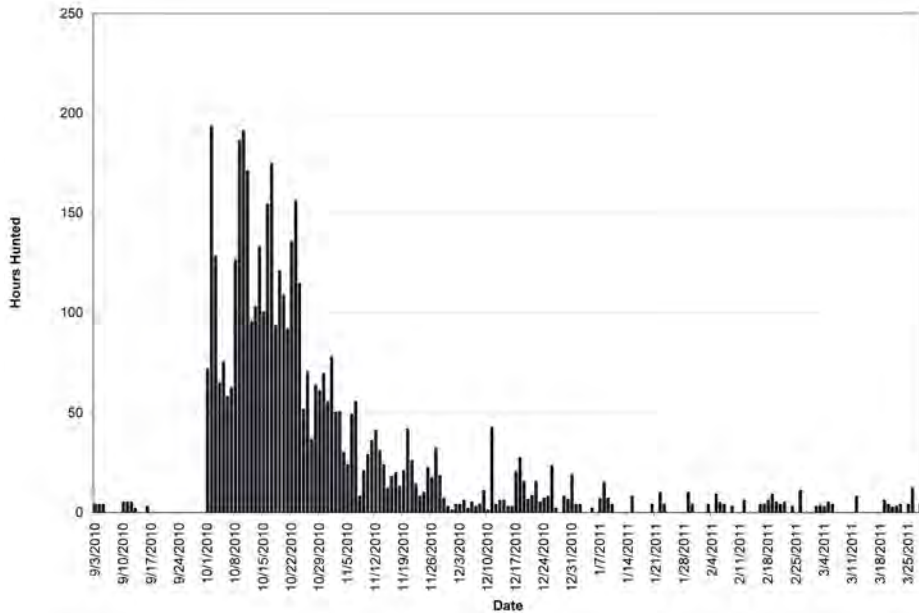
# New Hampshire Small Game Management Regions



# GENERAL SURVEY INFORMATION

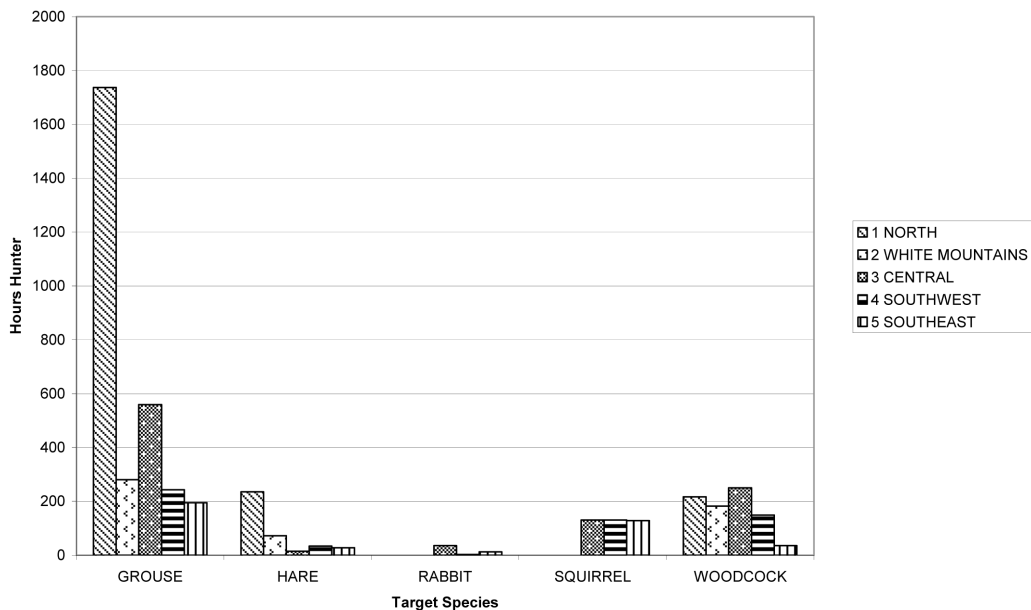
**Fig 1. New Hampshire small game hunter effort (2010-2011).**

Small game hunters who return their annual surveys provide information on small game hunting effort, hunter observation rates and species distribution. A total of 179 hunters responded to our 2010-2011 survey, which spans the period 09/1/10-3/31/11. Sturm Ruger Company’s generous donation of a firearm as an incentive for survey participation has helped increase survey participation rates. A total of 4579.5 hunter-hours were reported on the 2010 small game survey. The graph below depicts the distribution of hunter effort over New Hampshire’s 2010-2011 small game season. Seventy-three 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 accounts for the majority of small game hunting in New Hampshire.



**Fig 2. New Hampshire small game hunter effort per species and region (2010-2011).**

Ruffed grouse were the most sought after small game animal in NH, accounting for 64% of hunter-hours, while woodcock accounted for 17% of hunter effort. Other species of interest included snowshoe hare, cottontail rabbit and gray squirrel.



# RUFFED GROUSE

*Bonasa umbellus*

*The king of game birds*

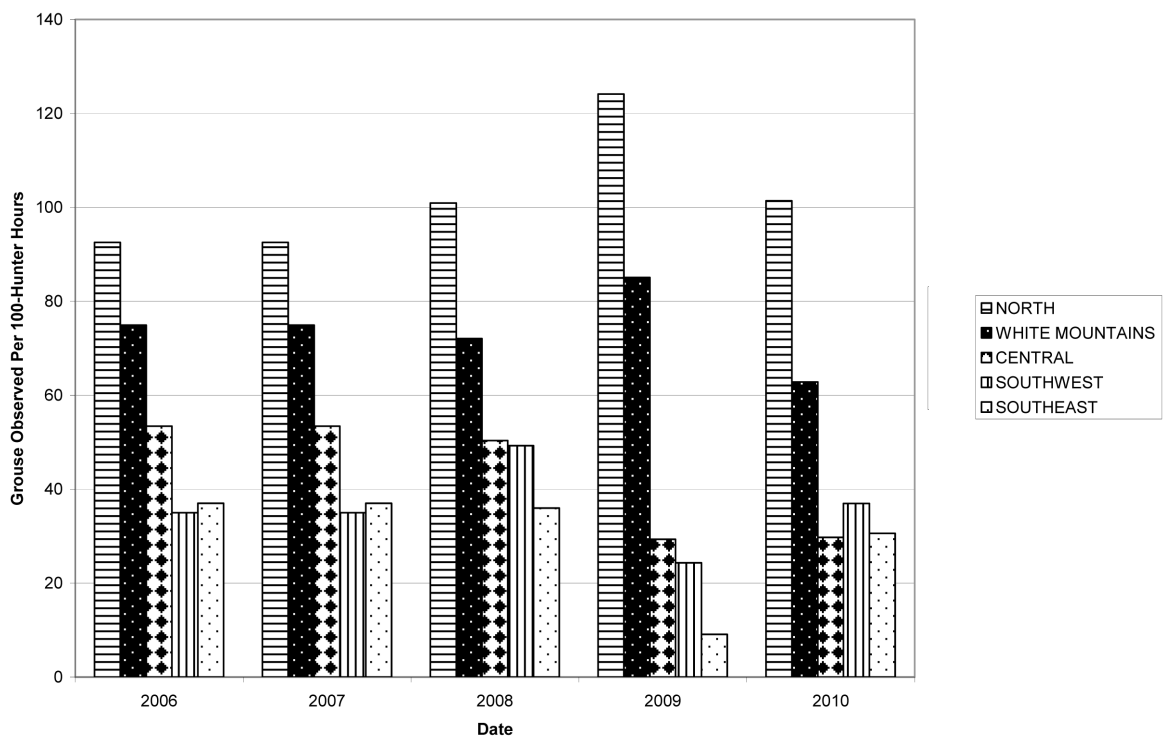
The ruffed grouse (*Bonasa umbellus*) is a bird of northern woodlands. In North America they can be found in 38 states and 10 Canadian provinces. Ruffed grouse can adapt to a variety of different forest types, but aspen is the prime “partridge” cover. Where aspen is not prevalent, young, second-growth forests are utilized by ruffed grouse. There are several factors that influence the bird’s distribution, its abundance and the cyclical high and lows in the population. Factors including food availability, cover, weather and predation all play a role in grouse survival.



Management of ruffed grouse is science-based. Successful management requires knowledge of habitat needs and population dynamics. In New Hampshire, early successional stages of forest are what ruffed grouse prefer – they require a wide variety of habitats. The birds are often tied to a particular niche by preferred food items, especially in fall and winter.

Ruffed grouse are the most sought after species of small game in New Hampshire. The majority of ruffed grouse hunting effort during 2010 occurred in northern New Hampshire (Fig 2). Observation rates are expressed in terms of individual birds/animals seen per 100 hunter hours. Observation rates are viewed as a reliable index to species abundance and allows us to compare species within and between years. Fig 3 shows the variability in grouse numbers from year to year and region to region.

**Fig 3. New Hampshire grouse observation rates by region for dog hunters (2006-2010).**

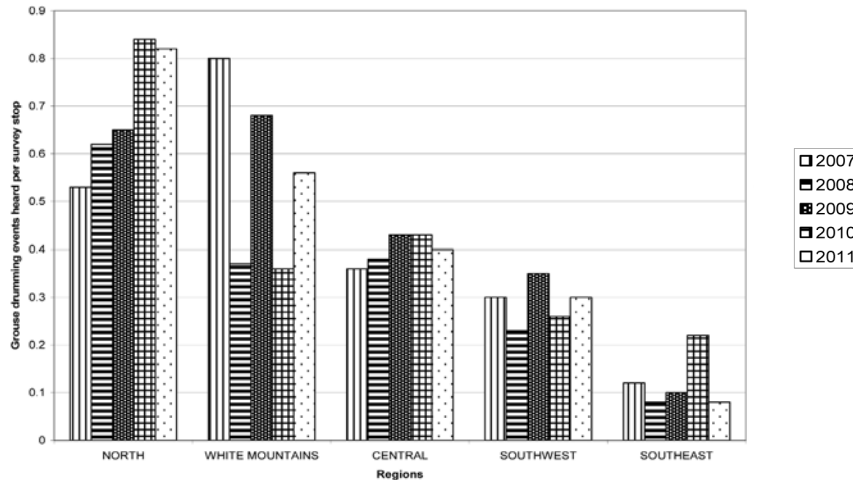


# RESULTS FROM NH GROUSE SURVEY ROUTES CONDUCTED DURING SPRING 2011

Wildlife biologists and volunteers perform grouse drumming surveys from mid-April through mid-May to assess regional grouse breeding populations. This survey effort began in 1999 and continues today. Ruffed grouse populations are surveyed by counting the number of male ruffed grouse drumming events heard per stop on established routes throughout the state. The following two graphs depict the results from these surveys.

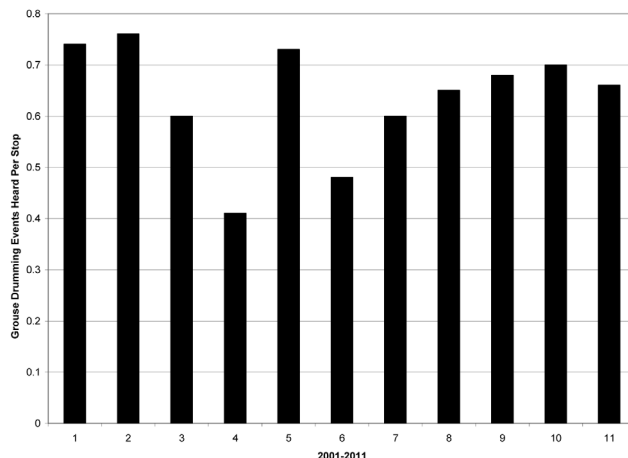
**Fig 4. Results from randomly stratified grouse drumming routes run in New Hampshire during the last 5-years (2007-2011).**

The number of drumming events heard per stop in 2011 increased in the White Mountains and the Southwest Regions, declined slightly in the North and Central Regions, and dropped sharply in the Southeast. The spring of 2011 came early and birds were heard drumming well before the start of the survey period. Surveys that were conducted towards the end of the survey period may have been after drumming had slowed. Weather during the hatch and brooding time has a significant impact on nesting success and chick survival. In the southern portion of the state, the spring of 2011 appeared excellent for breeding birds. The weather remained seasonably warm and with no persistent rain events. The northern portion of the state was not so lucky. With major rain events, flooding and cooler weather this spring, brood numbers may be lower. Early reports indicate that we should have above-average production in the south and average or slightly below in the north.



**Fig 5. Results from select ruffed grouse drumming routes run in New Hampshire’s North Country (2001-2011) depicting the number of grouse drumming events heard per stop per year.**

For the past 11 years, we have run 6-8 select drumming survey routes in the North Country. These routes track changes in grouse abundance on our premier grouse range. In 2011 the survey results show an average of 0.66 drumming events per stop compared to 0.70 in 2010. This relatively high count bodes well for the upcoming grouse season. The North Country continues to have the most abundant grouse habitat in the state.



# RUFFED GROUSE WING AND TAIL SURVEY IN NORTHERN NEW HAMPSHIRE

New Hampshire Fish and Game is working hard to increase our knowledge of ruffed grouse. A pilot study was started in 2005 in the town of Pittsburg to collect data on this popular game bird. Hunters were asked to submit tails and wings from their harvested birds and to fill out a short survey for each harvested bird. The samples provide us with age and sex composition, distribution data and a juvenile to adult female ratio. Each year the sample size increases and the data we are gathering is increasingly more important by providing age and sex data over a multiple-year period.

Again in 2011, we will be asking ruffed grouse hunters THROUGHOUT NEW HAMPSHIRE to help us with our survey efforts. As the hunting season approaches watch our website [www.WildNH.com](http://www.WildNH.com) for details on where to pick up and drop off your completed packets! Below are some of the highlights of last year's survey:

## *Results from the 2010 Ruffed Grouse Wing and Tail Survey:*

- 188 samples were collected, 168 were useable (20 samples could not be used because there were no matching survey cards).
- Samples were taken from 23 towns with Pittsburg having the most.
- 61 different hunters participated in the survey.
- 103 adult grouse were harvested compared to 65 juveniles.
- Juvenile to adult female ratio was 1.81, an increase from 1.72 in 2009.
- 89% of samples were harvested in October.
- 48% of hunters used a dog.
- 157 of 168 samples included flushing rate data for grouse. The average was 4 flushes per hour.
- 53 hunters reported flushing rates for woodcock. The average was 5 flushed per hour (5 hunters recorded seeing 15 or more woodcock. These observations were likely flight birds that were migrating south).
- Crop examinations provided the following foods:
  - Apples and apple leaves
  - Mountain ash
  - Ferns
  - Raspberry leaves
  - Mushrooms
  - Birch buds
  - Greens
  - Misc buds
  - Clover
  - Goldenthread
  - Partridge berry



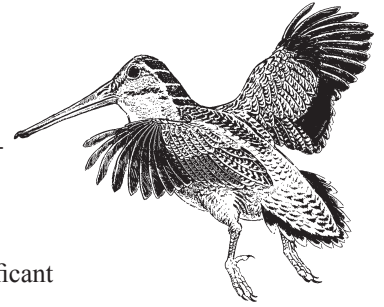
The following table provides a synopsis of the first 5 years of the Wing and Tail Survey. It is important to remember that the flushing rates can be skewed because not all hunters report flushing rates on their survey cards, so the total number of samples will not necessarily coincide with the rate of flushes.

Year	Grouse Sample Size	Grouse Juvenile/Adult Female Ratio	Grouse Flush Rate/Per hour	Woodcock Flush Rate/Per hour	Comments
2005	54	.58	Not Recorded	Not Recorded	Pilot study
2006	112	.78	Not Recorded	Not Recorded	Expanded study
2007	108	1.90	1.36	1.9	Expanded study
2008	162	1.71	1.5	1.62	Expanded study
2009	194	1.72	2.0	1.78	Statewide
2010	168	1.81	4.0	5.0	Statewide

Watch our website as the 2011 season approaches at [www.WildNH.com](http://www.WildNH.com) for more information on where you can pick up sample packets throughout the state. You can also call Julie Robinson at 603-868-1095 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 after the close of the 2011 ruffed grouse season.

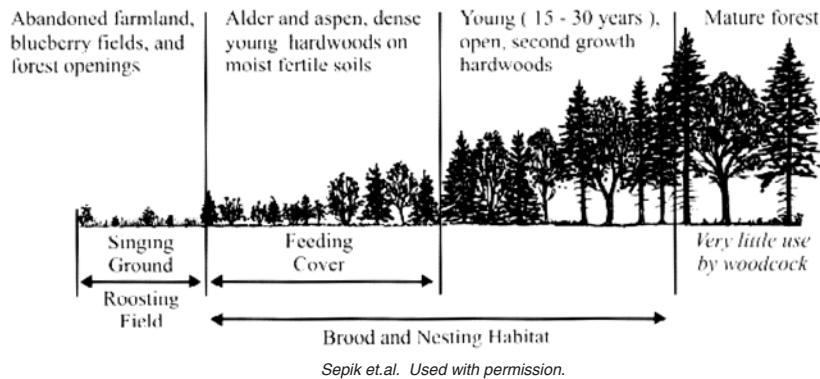
# AMERICAN WOODCOCK

*Scolopax minor*



Woodcock (*Scolopax minor*) is an early successional species that uses different habitats depending on activity, time of day, and season. 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. Tree species can vary from aspen, poplar, alder, dogwood and hawthorn to name a few. Stem density has a significant impact on woodcock habitat quality.

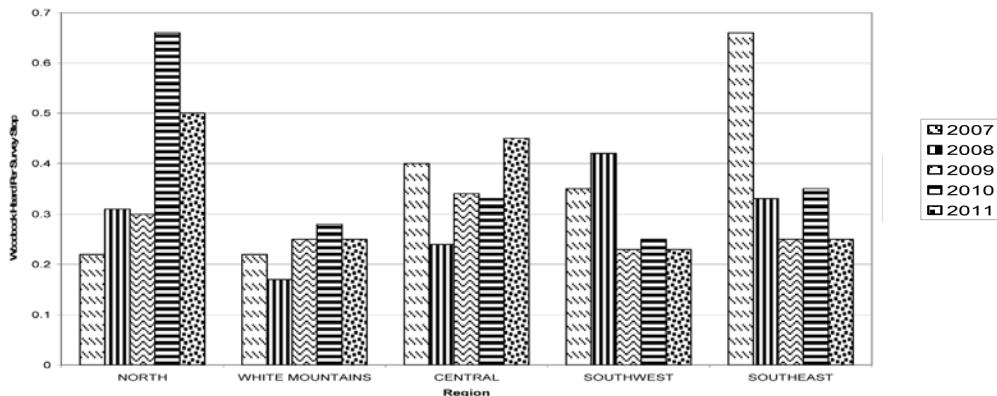
In spring, males need openings (“singing grounds”) to perform courtship displays and attract females. Available nesting and rearing habitat help determine the location of singing grounds within specific vegetative types. Migrating and breeding woodcock favor areas of young aspen, birch, or alders and may also use overgrown fields, burned or recently logged areas, and wetlands. Nests and broods can be found in mixed-age forests, although young hardwood stands (especially aspen) are preferred.



## RESULTS FROM WOODCOCK SURVEY ROUTES CONDUCTED DURING SPRING 2011

**Fig 6. Regional results from randomly stratified woodcock singing ground surveys run in New Hampshire during 2007-11.**

Singing ground survey routes provide an index to the overall abundance of resident singing males, which is used to make inferences about the breeding population. The number of woodcock heard on routes increased this year in the Central Region. The Southwest, Southeast and the White Mountains Regions decreased slightly. The North Region had a significant decline in the number of birds heard per stop. This one year decline could be due to the cold rainy weather that the northern portion of the state had this spring, making surveying efforts difficult. During the nesting and rearing period, weather is the key to chick survival. The spring of 2011 came early in the southern portion of the state providing excellent conditions for nesting. In the North Country, persistent rainy and cold weather might have a negative effect on brood sizes. NH Fish and Game continues working with public and private landowners to increase small game habitat as a means to safeguard the future wellbeing of this invaluable species.



## **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 to increase early successional habitat. Currently there is less regenerating habitat across New England than at any time in recorded history. You can help change that! The N.H. Fish and Game Department has a Small Grants Program to help landowners with a minimum of 25 acres restore or enhance habitat for wildlife. Funding of up to \$2,000 per year (no more than \$6,000 over a ten-year period) is available for the pre-approved creation and/or maintenance of wildlife habitat within the property. Examples of projects that may qualify for funding include: brush clearing or mowing to maintain grasslands and shrub-lands; release of old apple trees; and maintenance of woodland openings. In exchange for the grant, landowners agree that their land will remain open for non-motorized public access activities, including hunting. For more information, contact the Wildlife Division at (603) 271-2461, or e-mail [wildlife@wildlife.nh.gov](mailto:wildlife@wildlife.nh.gov).

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 key 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 2011-12 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](mailto: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.*

**NEW HAMPSHIRE FISH AND GAME DEPARTMENT'S MISSION:**

*As the guardian of the state's fish, wildlife and marine resources, the N.H. Fish and Game Department works in partnership with the public to:*

- conserve, manage and protect those resources and their habitats;*
- inform and educate the public about those resources; and*
- provide the public with opportunities to use and appreciate those resources.*



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