# *Ruffed Grouse Drumming Survey Summary 2017*

Christopher D. Kreh – Upland Game Bird Biologist

Ruffed grouse were monitored by counting drumming males at 739 listening stations distributed across 51 routes on the Pisgah and Nantahala National Forests. These National Forests are distributed throughout the mountain region and represent a great deal of potential grouse habitat and hunting opportunity (Fig. 1). NCWRC field staff spent approximately 887 hours and drove 9,005 miles clearing roads and conducting the surveys in 2017. Each of the 51 routes consisted of 3 to 27 listening stations. Observers counted drumming males within a 4-minute listening period at each station between March 29th and April 15th, 2017. Additional information collected but not summarized in this report includes number of drums, grouse sighted, turkeys sighted, and turkey gobbles.

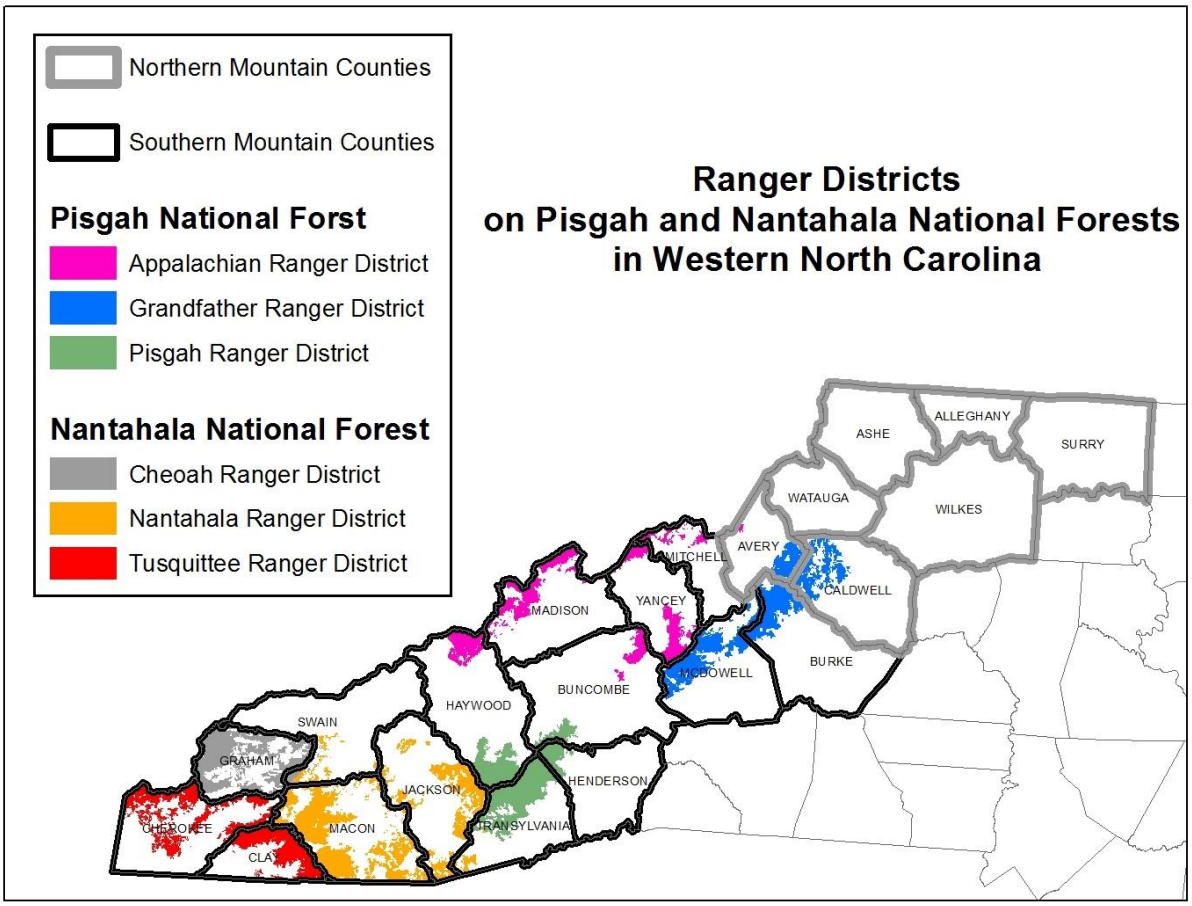


Figure 1. Ranger Districts on Pisgah and Nantahala National Forests in Western North Carolina.

Grouse drummed at 85 of the 739 stations (11.5%). A total of 92 drumming males was detected. On average, each grouse drummed 1.3 times within the 4-minute listening period. As seen in Figure 2, the Cheoah ranger district had both the highest abundance (0.22 grouse per station) and station occupancy rate (21%). As in most years of the survey, relatively few grouse were encountered on the Grandfather ranger district. This is not surprising given that district's relatively low elevation and lack of suitable habitat.

After accounting for variations between ranger districts, significant drumming count fluctuations are sometimes seen between years (Fig 3). On average, 0.13 grouse were heard at each station during this year's survey. This is comparable to numbers of grouse heard in many previous years of the survey, though the overall trend is slightly declining and shows considerable annual variation. Trends for individual ranger districts are presented in Figures 4 – 9.

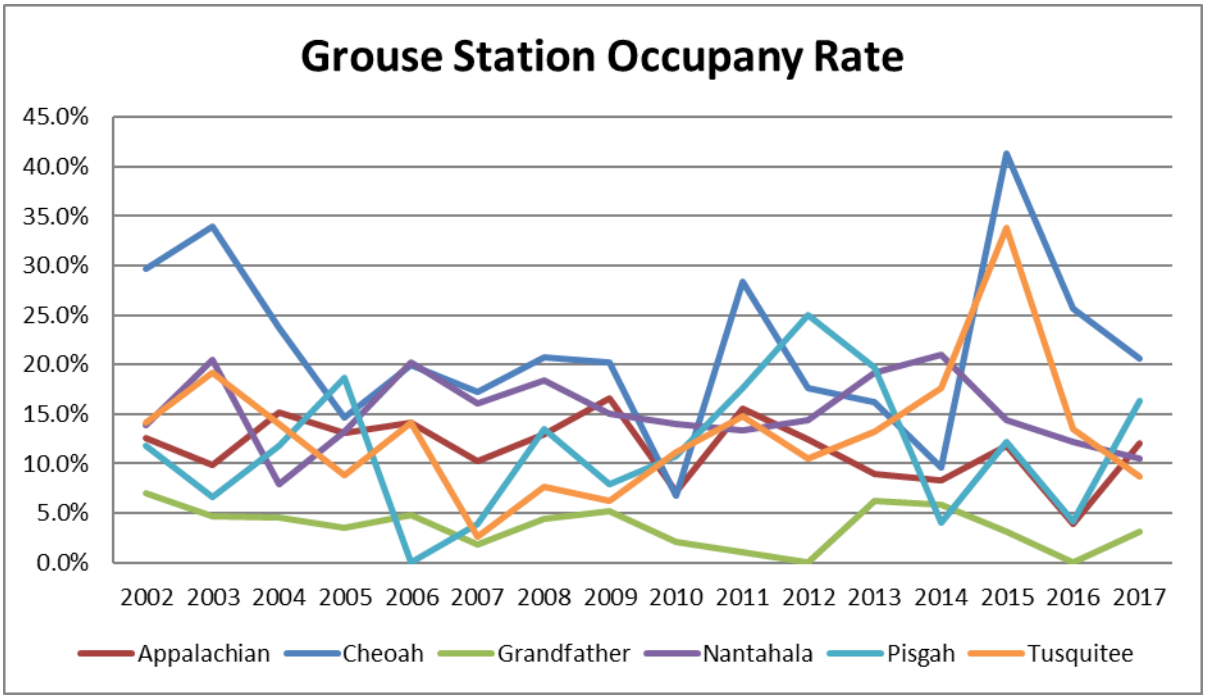


Figure 2. Average Number of Grouse Heard Drumming Per Station By USFS Ranger District, North Carolina Grouse Drumming Survey, 2002-2017.

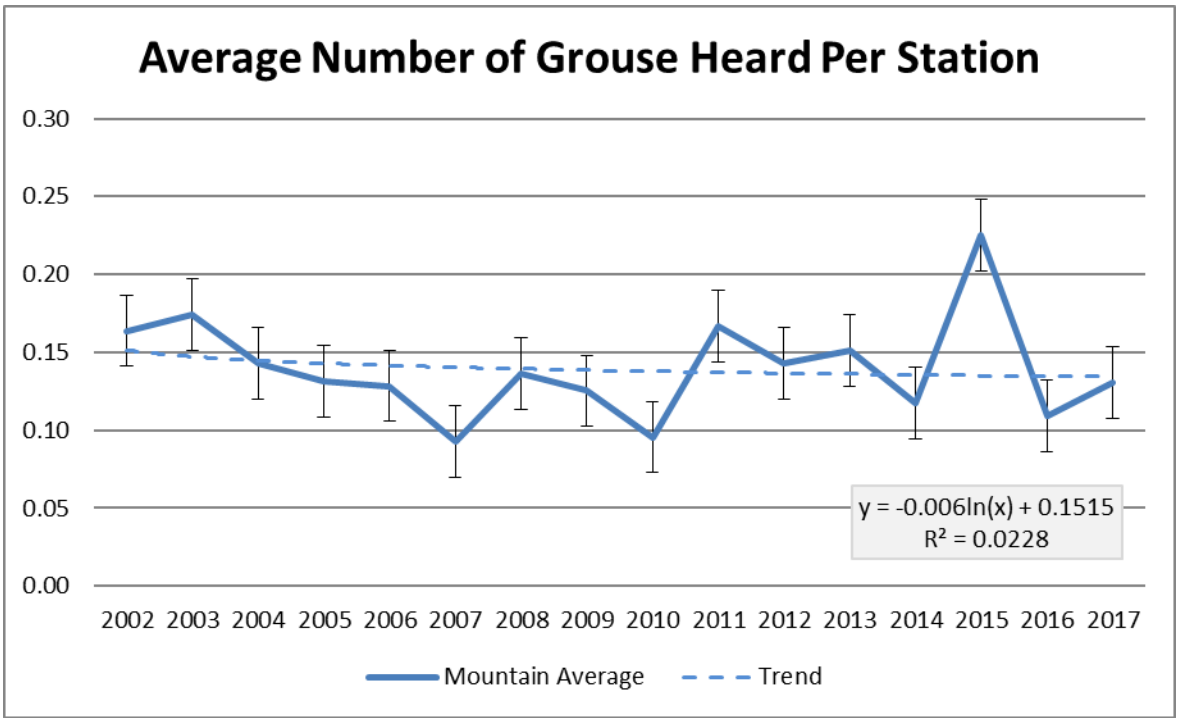


Figure 3. Average Number of Grouse Heard Drumming Per Station, North Carolina Grouse Drumming Survey, 2002-2017.

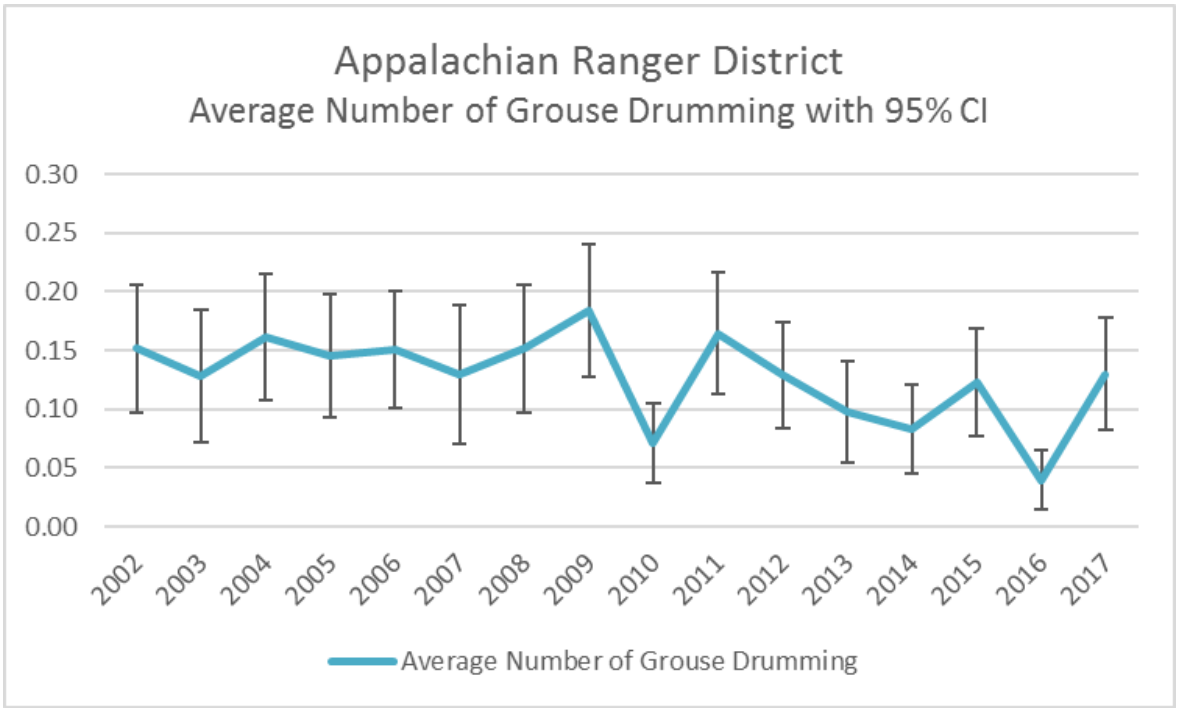


Figure 4. Average Number of Grouse Heard Drumming Per Station on Appalachian Ranger District of Pisgah National Forest, North Carolina Grouse Drumming Survey, 2002-2017.

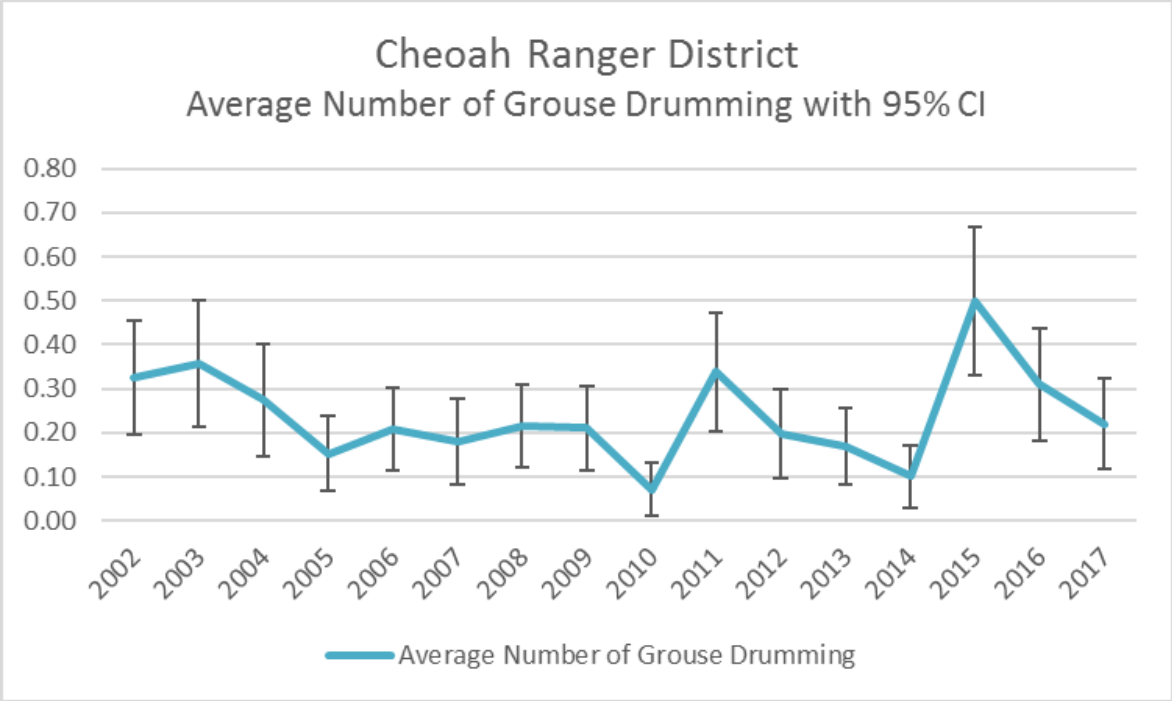


Figure 5. Average Number of Grouse Heard Drumming Per Station on Cheoah Ranger District of Nantahala National Forest, North Carolina Grouse Drumming Survey, 2002-2017.

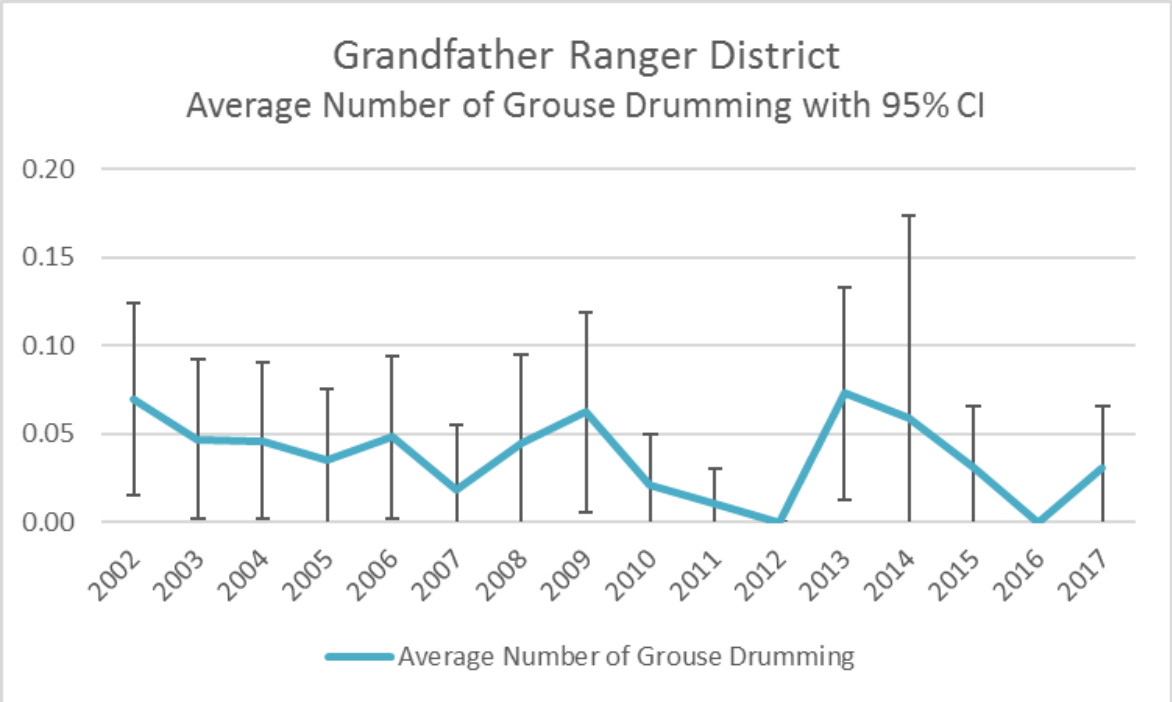


Figure 6. Average Number of Grouse Heard Drumming Per Station on Grandfather Ranger District of Pisgah National Forest, North Carolina Grouse Drumming Survey, 2002-2017.

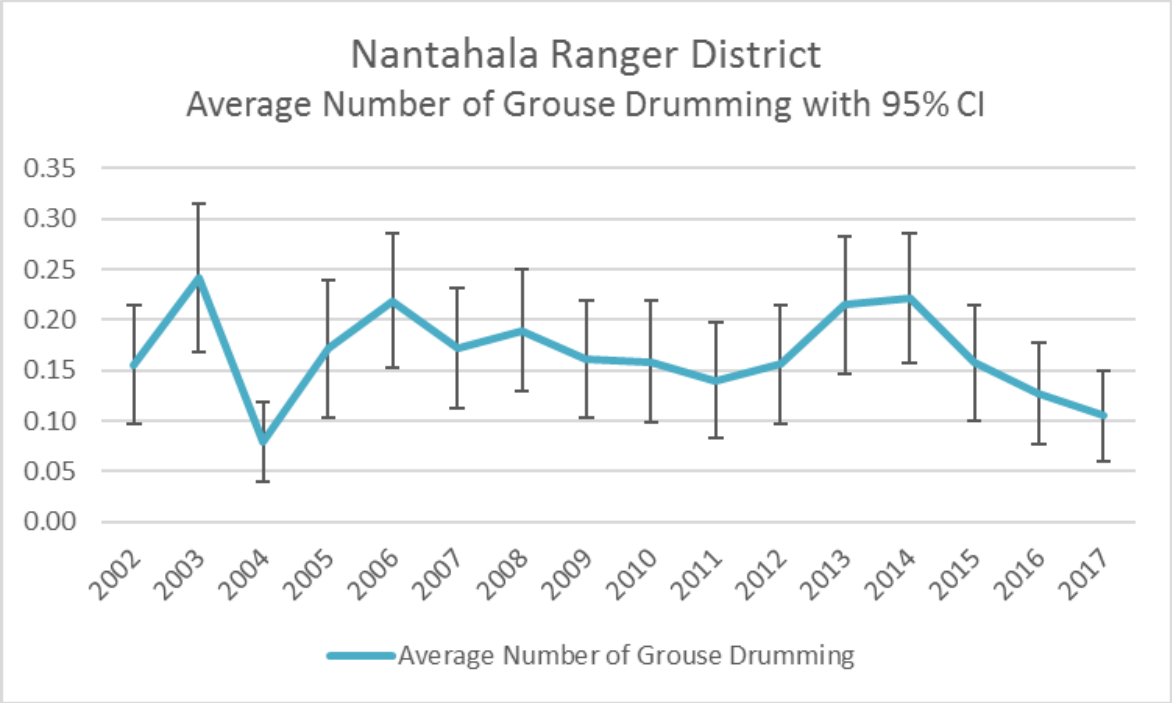


Figure 7. Average Number of Grouse Heard Drumming Per Station on Nantahala Ranger District of Nantahala National Forest, North Carolina Grouse Drumming Survey, 2002-2017.

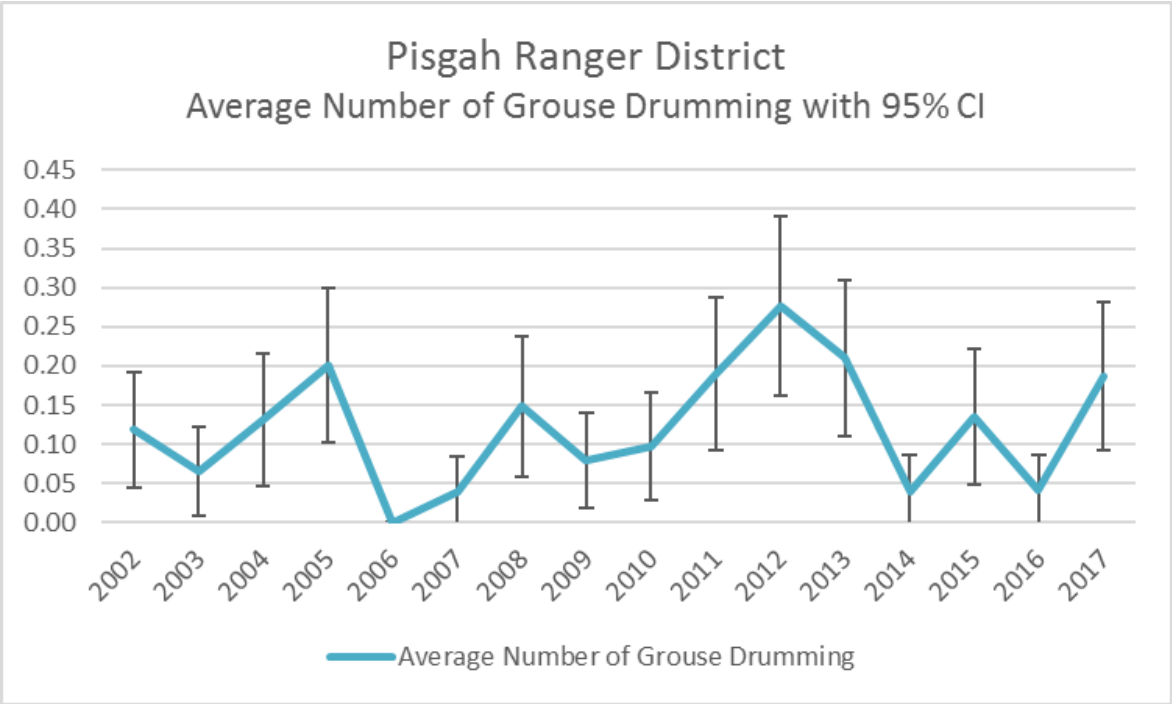


Figure 8. Average Number of Grouse Heard Drumming Per Station on Pisgah Ranger District of Pisgah National Forest, North Carolina Grouse Drumming Survey, 2002-2017.

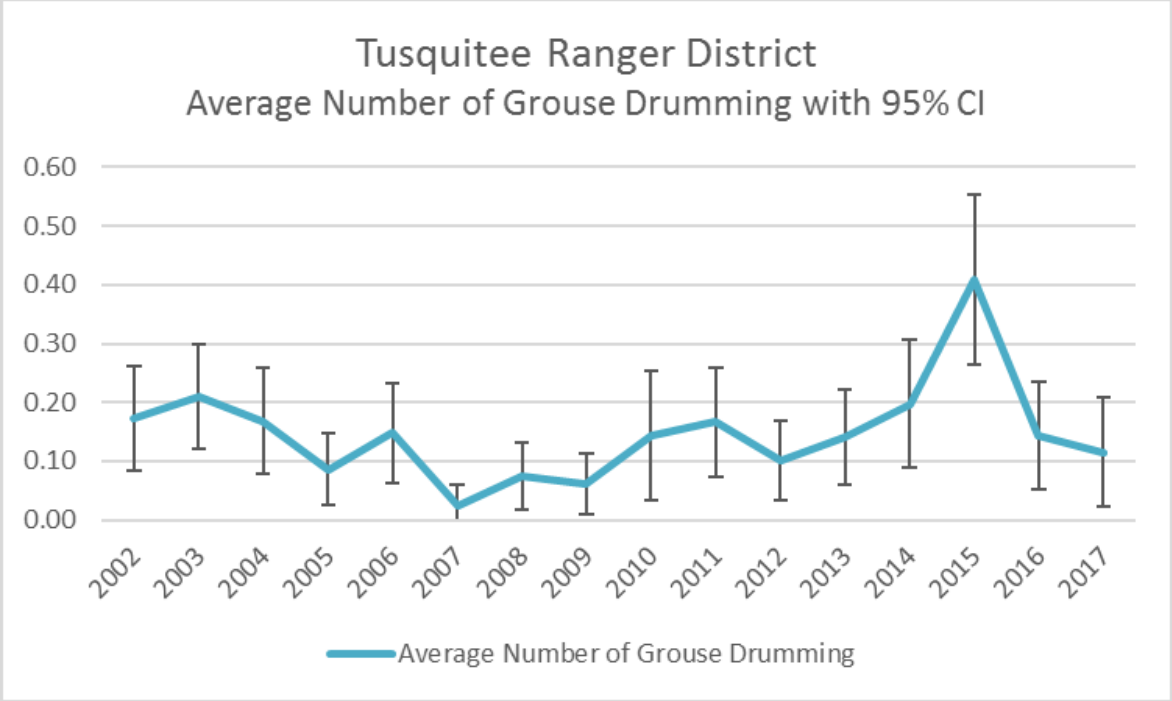


Figure 9. Average Number of Grouse Heard Drumming Per Station on Tusquitee Ranger District of Nantahala National Forest, North Carolina Grouse Drumming Survey, 2002-2017.

# Ruffed Grouse Drumming Survey 2018

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## Overview

Ruffed grouse are identified as a Species of Greatest Conservation Need in North Carolina's 2015 Wildlife Action Plan. They are one of only three resident game species with this designation. As such, information about grouse in North Carolina is vitally important and North Carolina Wildlife Resource Commission (NCWRC) staff strive to make the most of our time and resources.

This year, NCWRC biologists and technicians took steps to gain better information about ruffed grouse in western North Carolina. Our goals were to 1) continue to monitor grouse on United States Forest Service property in western North Carolina and 2) increase the scope of our survey work by beginning to monitor grouse populations on state-owned Game Lands in western North Carolina.

Since 2002, we have surveyed drumming grouse across all Ranger Districts of the Nantahala and Pisgah National Forests. This survey was initiated in 2002, with the goal to provide precise annual estimates of grouse abundance for each of the six Ranger Districts across the Nantahala-Pisgah Forest. We thoroughly evaluated all drumming grouse survey data collected from 2002 through 2017 to see how our survey efforts might be improved. The existing survey involved more than 700 listening stations each year, which provided very detailed information, but was limited by the fact that all stations were located on National Forest lands in the southern mountains. We saw a need to reallocate some survey effort to other areas and regions. Analysis of the number of stations, confidence intervals, and the survey's ability to identify population trends revealed that we could reduce the number of stations and routes on National Forest lands by approximately one-half and still have precise estimates of grouse abundance for the Nantahala-Pisgah National Forest as a whole. We expect this will allow us to correctly identify grouse population trends across the Nantahala-Pisgah National Forest. At the scale of Ranger Districts, we expect less precision in our estimates, but we do expect that survey results will provide reasonable insight into grouse populations at that scale. Reducing our survey effort on National Forests will allow our biologists and technicians to establish new survey routes and efforts on state-owned Game Lands and in other parts of the region. Therefore, we dropped 29 routes (348 stations) from the grouse drumming survey on Nantahala-Pisgah National Forest. The remaining 22 routes (391 stations) are representative of the National Forests and can be accomplished with better logistics and efficiency. We were very deliberate in choosing to continue routes that would offer reliable and representative data. We did not simply choose routes based on how many grouse had been heard on those routes in the past.

Since we were reducing our survey efforts on Nantahala-Pisgah National Forests this year, NCWRC biologists and technicians were able to establish grouse survey routes on Cold Mountain (21 stations), Needmore (12 stations), Sandy Mush (10 stations), and Silver (18 stations) Game Lands. This represents the maximum number of stations possible given the size of the areas, road configuration, and spacing requirements. At this time, we are unsure as to what level of precision

these routes will provide in understanding grouse population trends on state-owned Game Lands. It may be necessary to increase survey effort in the future by surveying these routes multiple times each year or changing survey methodology in other ways. However, at a minimum, we feel including these survey routes will add to a better overall understanding of regional trends in grouse populations. Also, we took steps to survey grouse on Pond Mountain Game Land, which is more than 75 miles from other state-owned Game Lands and it's road system is not conducive to using normal driving routes and procedures. Thus, instead of using the established procedures of driving to specific listening stations, on Pond Mountain Game Land we walked a survey route and mapped all grouse we encountered.

## METHODS

### Driving Routes

Driving routes are situated along roads that receive little to no vehicle traffic. Listening stations are established (marked with GPS units and yellow paint) every 0.5 miles. Surveys begin 30 minutes before sunrise and continue for up to 3 hours. Observers listen for drumming grouse at each station for four minutes. In addition to the number of drumming grouse heard, observers also make note of turkey gobbles heard and the number of grouse and turkeys sighted while traveling along the route. Basic weather parameters are collected at the beginning and end of the survey.

### Walking Route

The walking route on Pond Mountain Game Land was surveyed by groups of observers, with each observer walking a particular section of approximately two miles each. Surveys began no earlier than 30 minutes before sunrise and continued for up to 3 hours. Observers adjusted their walking pace based on habitat conditions (i.e. walk more slowly in forests and suitable habitat than in open fields) and generally covered 1 – 2 miles per hour. Observers noted locations of drumming males on a map and also noted the time, number of drums heard, and other related information.

### Survey period and weather

Our goal is to complete drumming grouse surveys each year in the two-week period immediately prior to the opening of the spring turkey hunting season. Grouse are expected to be drumming at this time and conflicts with hunters are avoided. To the extent possible, surveys are conducted on days with light winds and clear skies. Surveys are not conducted during periods of rain or snow. This year, routes (both driving and walking) were surveyed between March 26$^{th}$ and April 11$^{th}$, 2018.

**RESULTS**

In total, NCWRC biologists and technicians spent 446.5 hours and drove 4,227 miles conducting grouse surveys this year. Survey locations can be seen in Figure 1 and categorized as follows:

1) continued with 22 driving routes (391 stations) on Nantahala - Pisgah National Forests (254 hours / 2,625 miles),
2) established four new driving routes (61 stations) on state-owned Game Lands in the southern mountains (103 hours / 616 miles), and
3) established a new 10.8-mile walking survey on Pond Mountain Game Land in the northern mountains (89.5 hours / 986 miles).

**Nantahala – Pisgah National Forest**

In 2018, ruffed grouse were monitored by counting drumming males at 391 listening stations distributed across 22 routes on the Nantahala - Pisgah National Forests. These National Forests are distributed throughout the southern mountains and represent a great deal of potential grouse habitat and hunting opportunity. A total of 35 drumming males were heard at the 391 stations, yielding an average of 0.09 grouse drumming/station (95% confidence interval 0.06 to 0.12 grouse/station). This is the lowest annual estimate since the survey began in 2002 and continues to suggest an overall declining trend in the grouse population. (Fig. 2).

**State-owned Game Lands**

NCWRC biologists and technicians surveyed routes on Cold Mountain (21 stations), Needmore (12 stations), Sandy Mush (10 stations), and Silver (18 stations) Game Lands. Two grouse were heard at stations on Needmore Game Land and 1 grouse was heard on Sandy Mush Game Land. No grouse were heard at stations on Cold Mountain or Silver Game Lands. Thus, the overall average number of grouse drumming per station on these state-owned Game Lands was 0.05 grouse/station (95% confidence interval 0 to 0.10 grouse/station). No trend information is available since this is the first year of surveys on these areas. As on the Nantahala – Pisgah National Forests, this suggests that grouse population is low.

**Pond Mountain Game Land – Walking Route**

NCWRC biologists and technicians laid out a 10.8-mile grouse survey route on Pond Mountain Game Land in the northern mountains (Figure 3). Assuming that drumming grouse can be heard from 1/8 of a mile, the survey route gives the opportunity to detect grouse on approximately 1,700 acres. However, it is important to note that not all that area is potential grouse habitat. For logistical reasons, the survey route follows the main ridge and in some cases passes through open fields and mature forest. Over the course of three mornings (April 3, 5, and 11), we surveyed the entire route twice. In total, we spent approximately 20 man-hours walking the route and listening for drumming grouse. We found drumming grouse at five separate locations along the survey route. At two of these locations we heard a grouse drumming both days we surveyed and so conclude that we encountered a total of five drumming grouse. We plan to continue this survey, with the same methodology, for two more years at which time we will evaluate whether this technique offers worthwhile insight to the grouse population on Pond Mountain Game Land. If results are encouraging, we may establish similar walking routes on other areas.

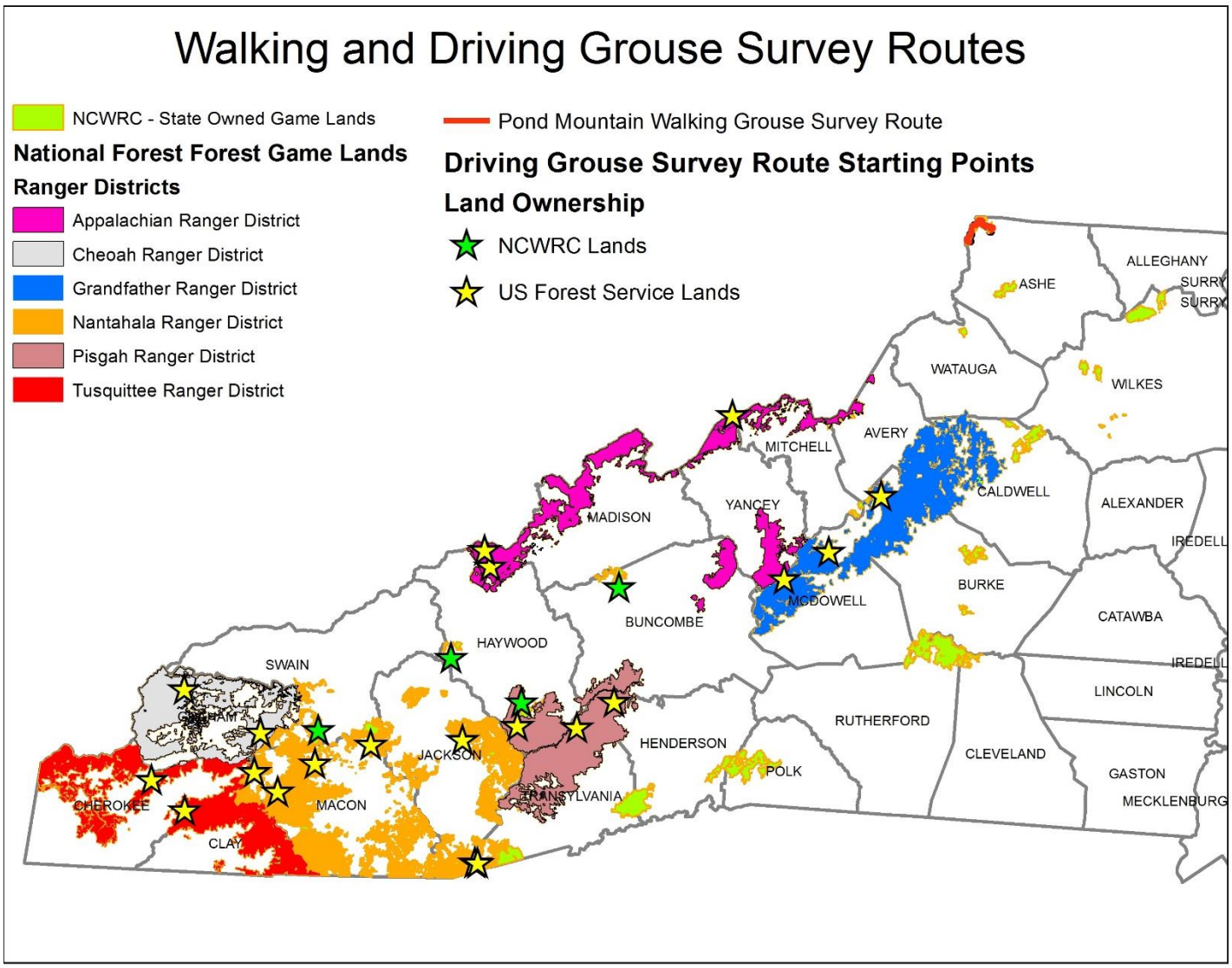


Figure 1. Locations of NCWRC grouse surveys on NCWRC Game Lands and Nantahala – Pisgah National Forests, March 26 – April 11, 2018.

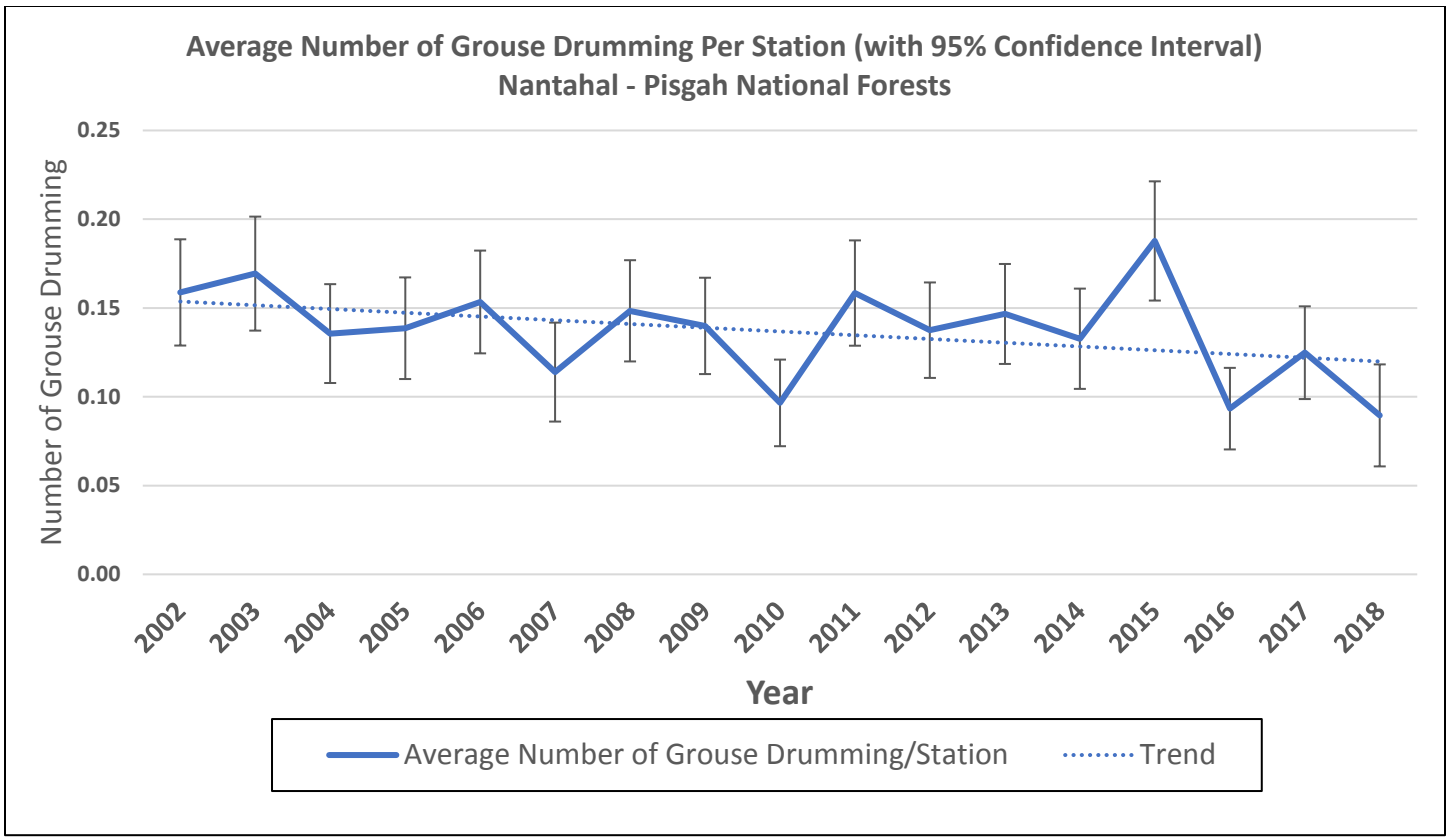


Figure 2. Average Number of Grouse Heard Drumming Per Station on Nantahala – Pisgah National Forests, North Carolina Grouse Drumming Survey, 2002-2018.

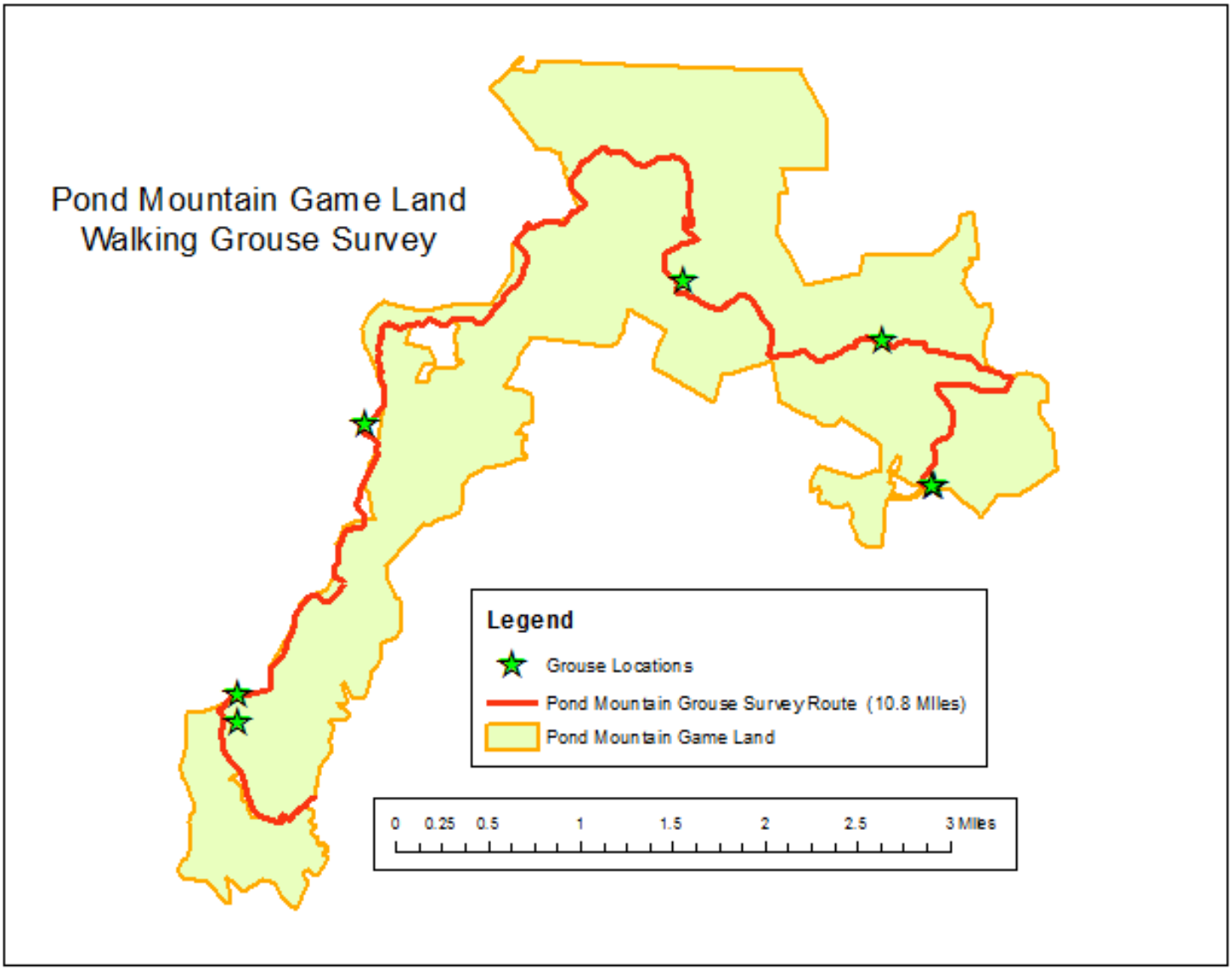


Figure 3. Pond Mountain Game Land grouse survey route and grouse locations, 2018.

# 2018-19 North Carolina Avid Grouse Hunter Survey

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Since 1984, the North Carolina Wildlife Resources Commission (NCWRC) has conducted an annual avid grouse hunter survey to estimate long term grouse hunting trends and provide annual insight into avid grouse hunting demographics throughout the mountains of North Carolina. Volunteer grouse hunters participate by recording and submitting their annual hunting activity throughout the season. Grouse hunting activity is recorded by county and landownership type (Private Land or Game Land) within the two grouse management regions (Northern Mountains and Southern Mountains) (Fig. 1). Reported hunting trips typically consist of a single day per hunting party.

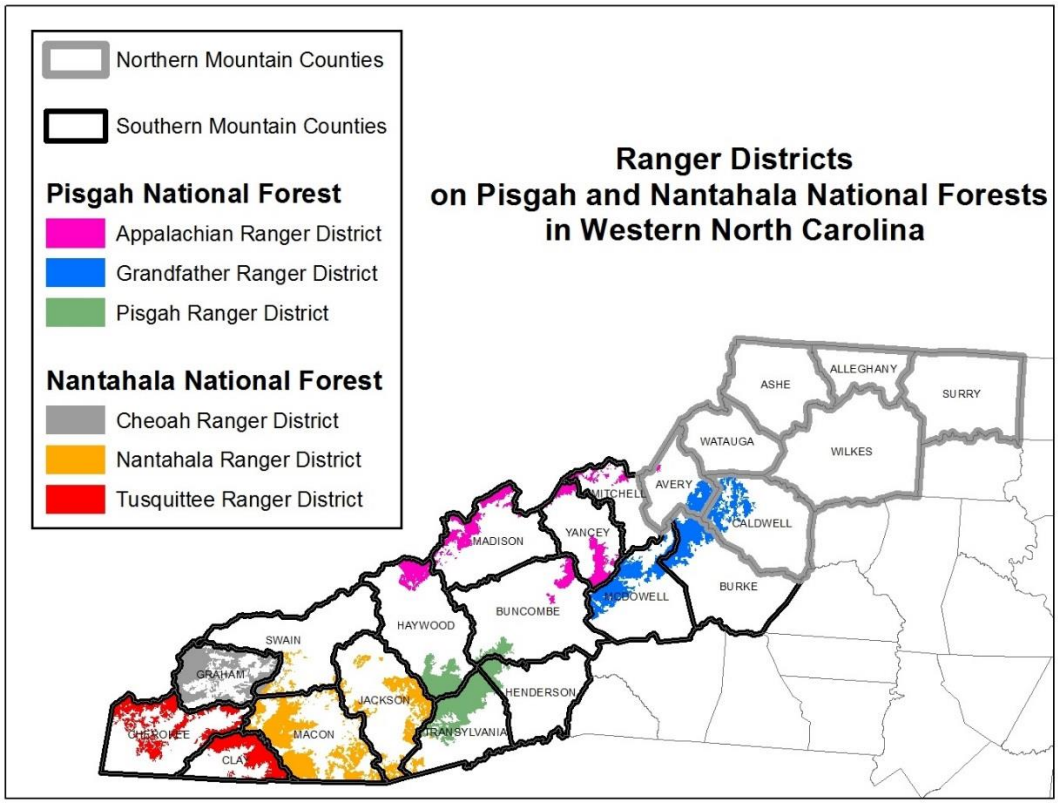


Figure 1. Grouse Management Regions and Ranger Districts on Pisgah and Nantahala National Forests in Western North Carolina.

Fifty-four avid grouse hunters reported information during the 2018-19 season, providing grouse hunting statistics for 507 hunting trips (Fig. 2). The gradual annual decline of total reported grouse hunting trips has primarily been a function of fewer hunters and fewer hunting trips per hunter. Presumably this is due to fewer grouse and poor hunting in recent years. Since the inception of the survey in 1984, Ashe and Madison Counties have had the most grouse hunts reported, with over 4,000 hunts occurring in each of these counties (Fig. 3). During the 2018-19 season, Macon, Haywood, and Clay Counties were most often reported, with more than 60 hunts reported from each.

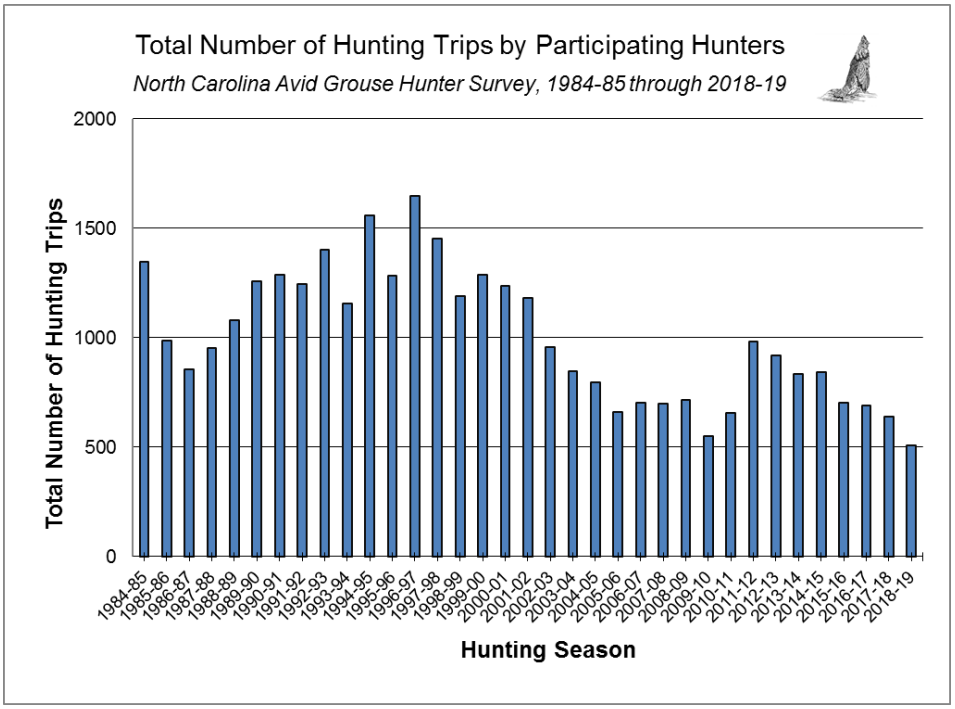


Figure 2. Total number of reported hunts by volunteer avid grouse hunter survey participants, 1984-85 through 2018-19.

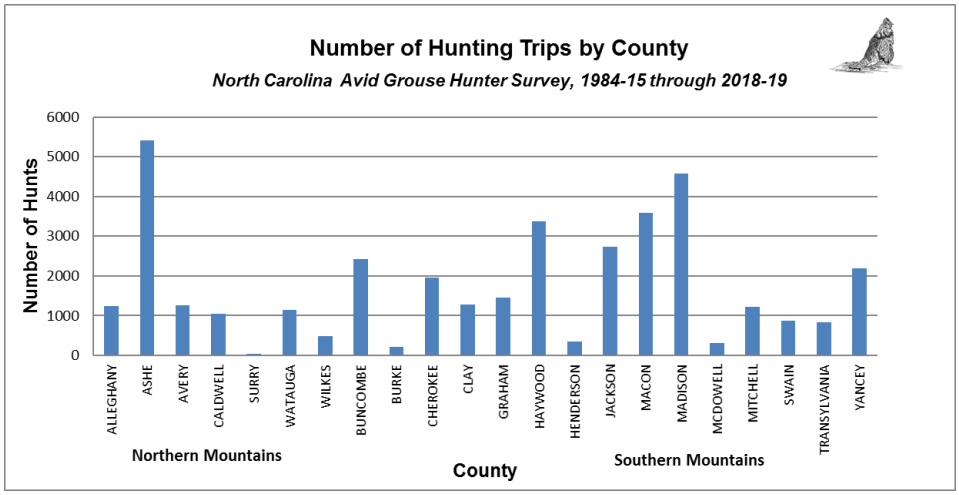


Figure 3. Total number of hunts by county as reported by volunteer avid grouse hunter survey participants, 1984-85 through 2018-19.

During the 2018-19 season, avid grouse survey participants hunted an average of 9.4 times (Fig.4). This represents a substantial drop from the previous season and it is clear that participants are now hunting considerably fewer times than during the 1980's and 1990's. The average length of a hunting trip has declined somewhat over that time period as well, with an

average trip length of 3.5 hours reported during the 2018-19 season (Fig 5). This may be a result of aging hunters, poor hunting, or a combination of both.

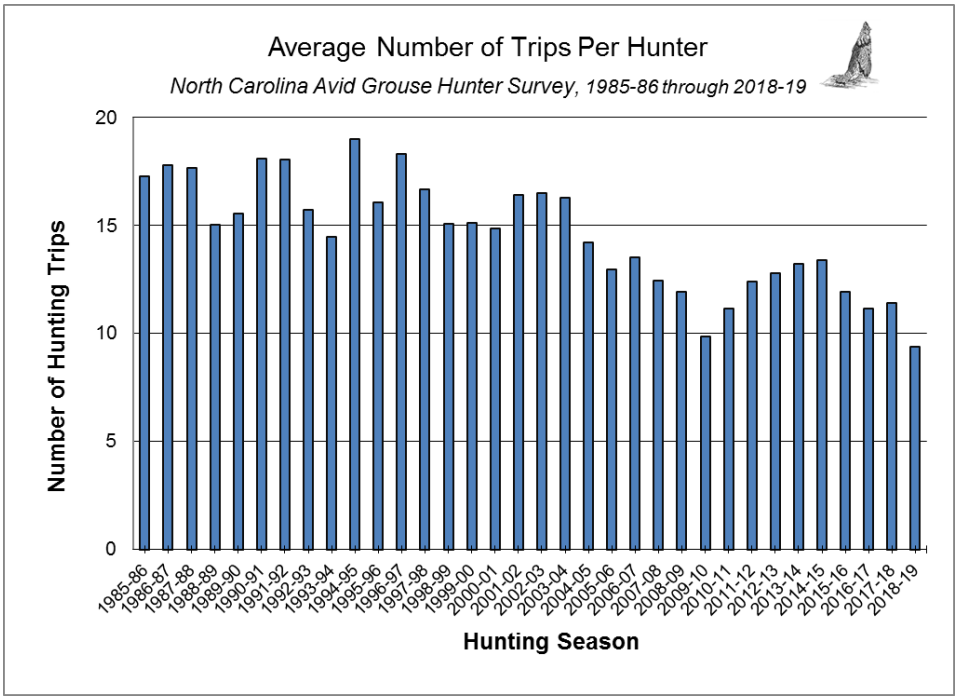


Figure 4. Average number of hunting trips per hunter based on avid grouse hunter survey participants, 1985-86 through 2018-19.

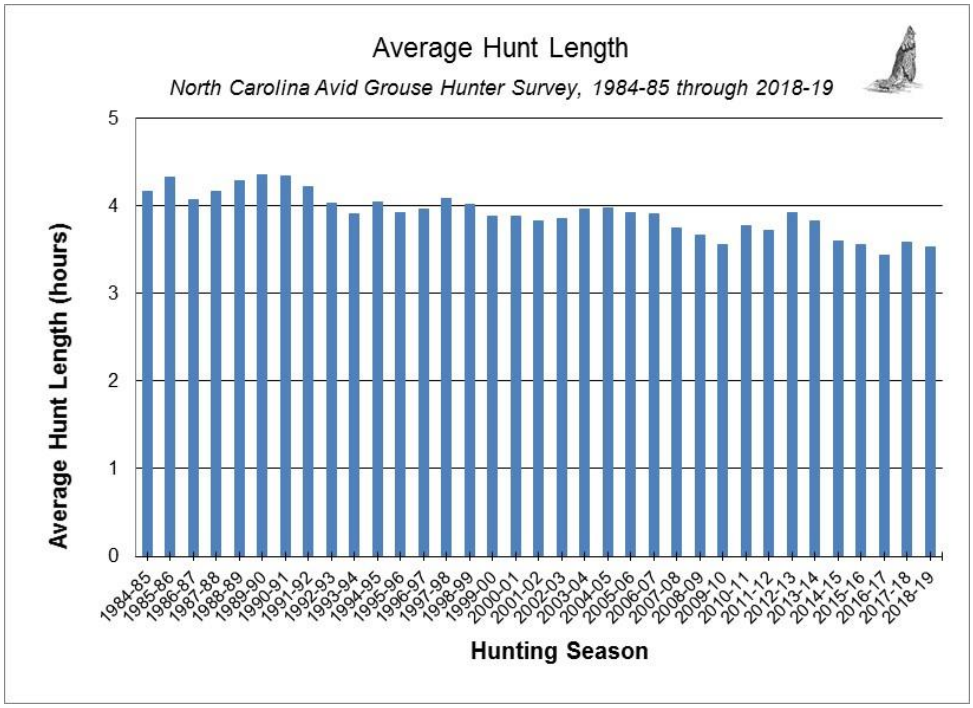


Figure 5. Average length (hours) of hunting trips of avid grouse hunter survey participants, 1984-85 through 2018-19.

Flush rates are presented both by hunting trip and by hours hunted in this report. Flush rates by hour may provide a more precise index to grouse abundance, while flush rates by hunting trip are more applicable from grouse hunting perspectives. However, we recognize that hunters will change their hunting locations over time to areas with relatively more grouse. This selective hunting behavior has a tendency to skew trend estimates such that they may not represent actual annual abundances or changes in abundance across the full landscape.

The avid grouse hunter survey has documented overall long-term declines in hourly flush rates. While some years have shown slight increases, the overall trend has been a steady decline. This has been true on both private land and Game Lands and in both the northern and southern mountain regions. In 2018-19 flush rates continued to be higher on private land than on public game lands (Fig. 6). Flush rates this year increased somewhat on both Game Lands and private lands as compared to previous years. Historically more grouse were reported in the southern mountain region, however flush rates reported from the northern mountains have been very comparable for the last decade (Fig. 7). This may be a result of declining grouse numbers on Game Lands (primarily National Forests) where most of the hunts in southern mountains take place.

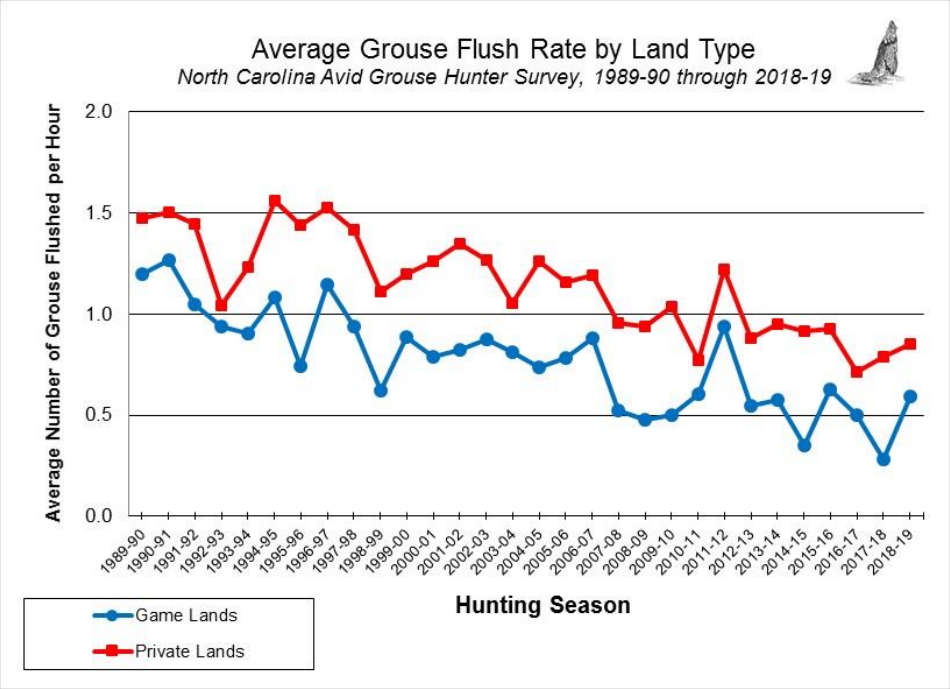

Figure 6. Average grouse flushed per hour by land type by avid grouse hunter survey participants, 1989-90 through 2018-19.

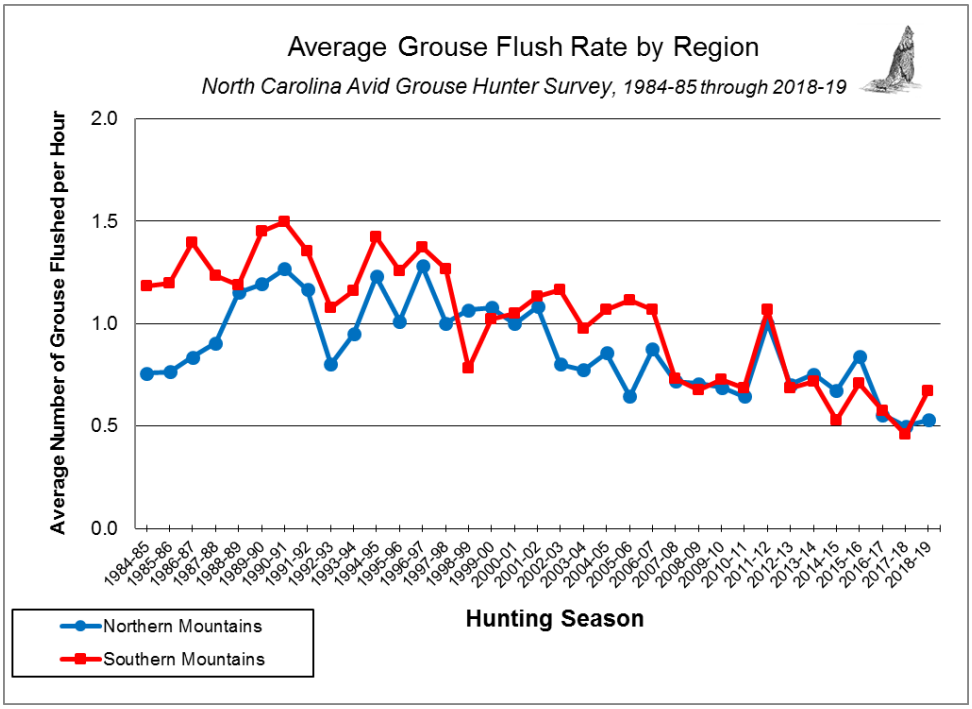


Figure 7. Average grouse flushed per hour by region by avid grouse hunter survey participants, 1984-85 through 2018-19.

Grouse hunting during the 2018-19 season was poor in comparison to what hunters encountered when this survey began in the 1980's. The previous season (2017-18) was in many ways the worst on record, so it was good to see some improvement in numbers of grouse flushed, bagged, and numbers of hunts with no flushes. However, the improvements were relatively small and grouse populations are still at very low levels (Figures 8 – 10).

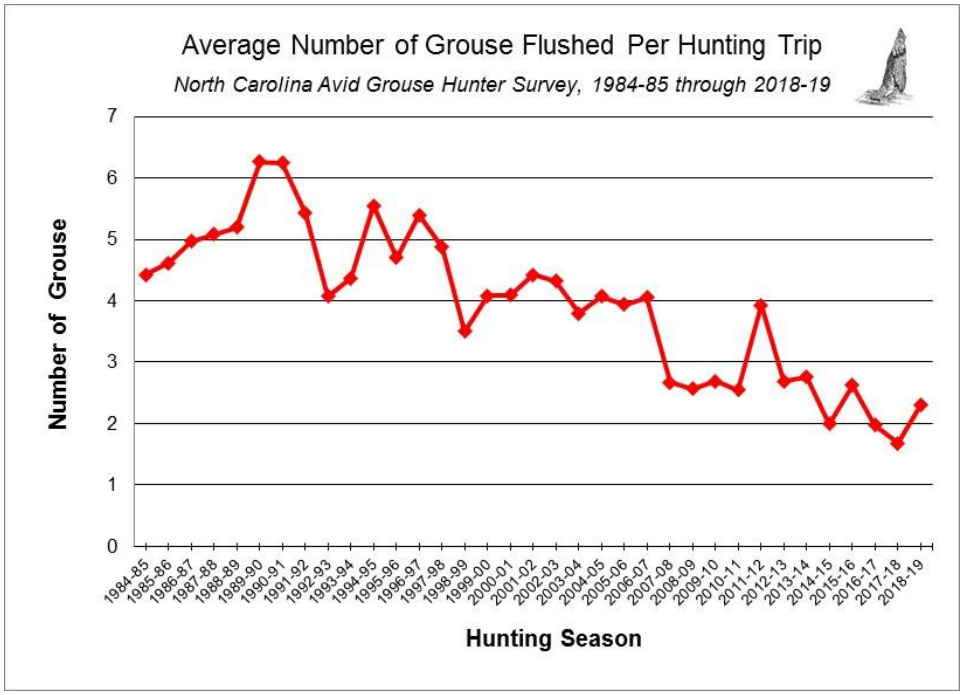


Figure 8. Average number of grouse flushed per hunting trip by avid grouse hunters, 1984-85 through 2018-19.

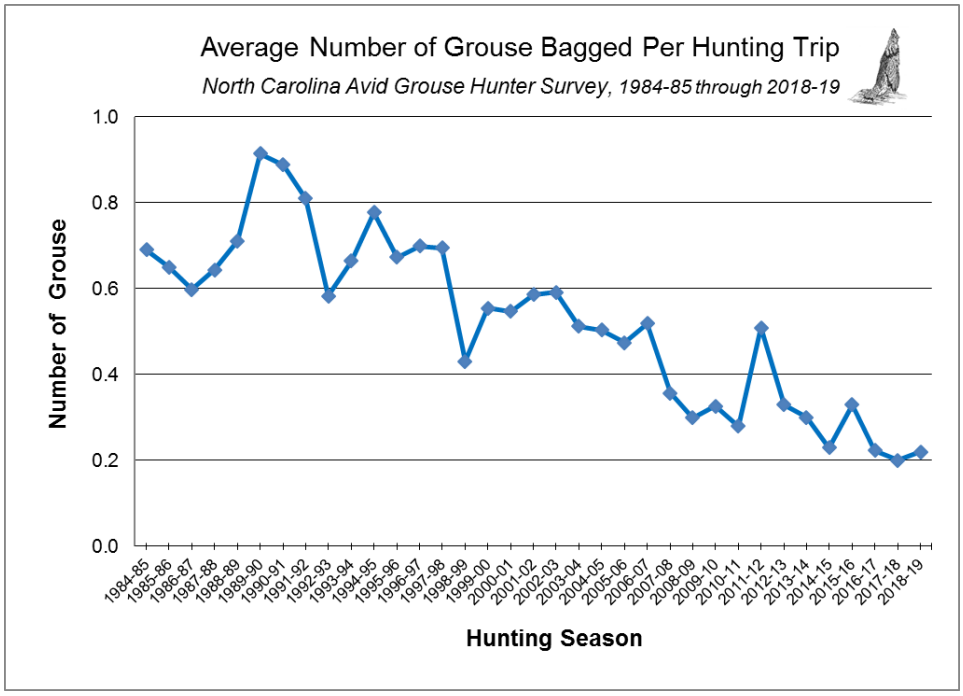


Figure 9. Average number of grouse bagged per hunting trip by avid grouse hunters, 1984-85 through 2018-19.

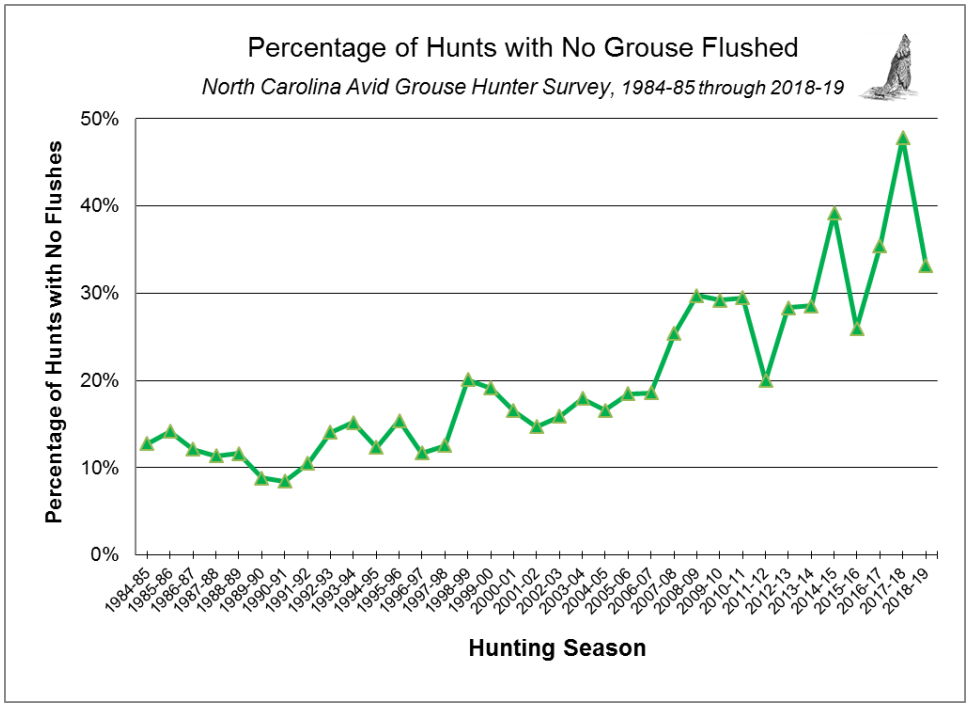


Figure 10. Percent of reported grouse hunting trips with no flushes by avid grouse hunters, 1984-85 through 2018-19.

Not surprisingly, during the 2018-19 hunting season, avid hunters reported more hunting activity later in the winter after big game hunting seasons have closed (Fig. 11). Grouse hunters made substantially more trips in January and February than earlier in the season. However, the number of grouse killed did not increase in a similar fashion. Hunters reported killing between 13 and 29 grouse each month of the season.

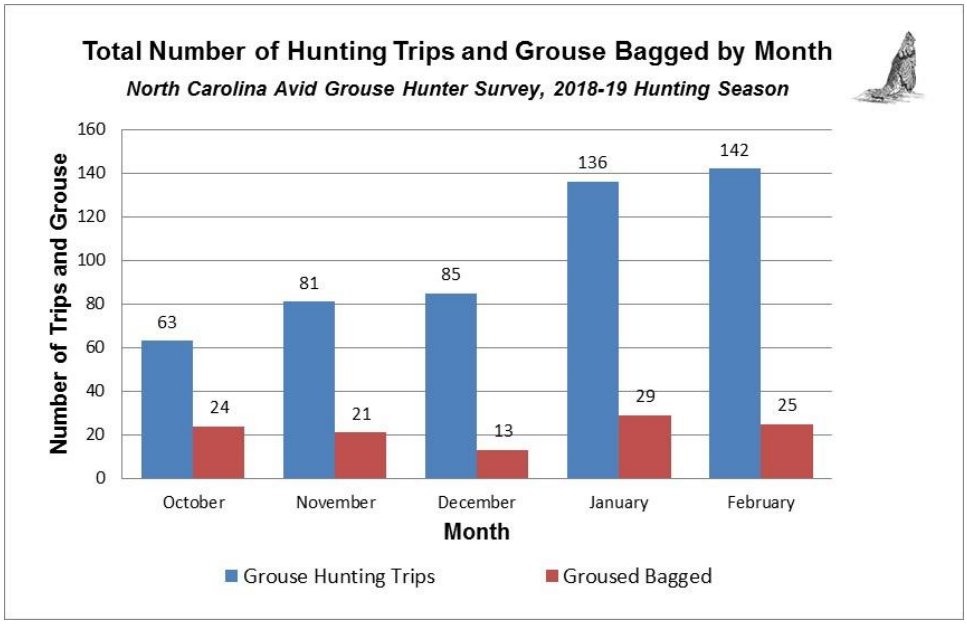


Figure 11. Total reported grouse hunting trips and harvests during the 2018-19 hunting season by avid grouse hunter survey participants.

Many avid grouse hunters assisted with an NCWRC project to learn more about the effects of West Nile virus on ruffed grouse. Hunters provided feather and blood samples from 68 ruffed grouse killed during the 2018-19 hunting seasons. These samples were used to determine sex, age, and previous exposure to West Nile virus for these birds. Sixty-three birds came from North Carolina and 5 from Tennessee. Birds came from 13 different North Carolina counties, with the majority received from Haywood, Macon and Madison counties. Samples came from 15 adult females, 21 adult males, 16 immature females and 14 immature males. West Nile virus test results are not available yet, but will be reported separately in another report. Avid hunters will be asked to assist in this effort again during the 2019-20 grouse hunting season.

*Funding for the avid grouse hunter survey report was partially provided through a Pittman-Robertson Wildlife Restoration Multi-state Grant. The Federal Aid in Wildlife Restoration Act, popularly known as the Pittman-Robertson Act, was approved by Congress on September 2, 1937, and began functioning July 1, 1938. The purpose of this Act was to provide funding for the selection, restoration, rehabilitation and improvement of wildlife habitat, wildlife management research, and the distribution of information produced by the projects. The Act was amended October 23, 1970, to include funding for hunter training programs and the development, operation and maintenance of public target ranges.*

*Funds are derived from an 11 percent Federal excise tax on sporting arms, ammunition, and archery equipment, and a 10 percent tax on handguns. These funds are collected from the manufacturers by the Department of the Treasury and are apportioned each year to the States and Territorial areas (except Puerto Rico) by the Department of the Interior on the basis of formulas set forth in the Act. Funds for hunter education and target ranges are derived from one-half of the tax on handguns and archery equipment.*

*Each state's apportionment is determined by a formula which considers the total area of the state and the number of licensed hunters in the state. The program is a cost-reimbursement program, where the state covers the full amount of an approved project then applies for reimbursement through Federal Aid for up to 75 percent of the project expenses. The state must provide at least 25 percent of the project costs from a non-federal source*


**Appendix I. Reported hunting activity from avid grouse hunter survey respondents, 1984-85 through 2018-19 hunting seasons.**

| Year | # Avid Hunter Respondents | # Hunting Trips Reported | # Hunting Hours Reported | Respondent Age | Trips/Hunter | Hunting Hours/Trip | # Grouse Flushed Reported | Grouse Flushed/Trip | Grouse Flushed/Hour | Grouse Flushed/Hour - Northern Mountains | Grouse Flushed/Hour - Southern Mountains | Grouse Flushed/Hour - Game Land | Grouse Flushed/Hour - Private Land | # Grouse Harvests Reported | Grouse Harvested/Trip | Grouse Harvested/Hour | # Hunts No Grouse Flushed | % Hunts No Grouse Flushed |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1984-85 | * | 1,347 | 5,606 | 44 | * | 4.16 | 5,962 | 4.42 | 1.05 | 0.76 | 1.18 | | | 933 | 0.69 | 0.17 | 172 | 12.79% |
| 1985-86 | 57 | 985 | 4,284 | 44 | 17.28 | 4.33 | 4,553 | 4.62 | 1.07 | 0.76 | 1.20 | | | 641 | 0.65 | 0.15 | 140 | 14.17% |
| 1986-87 | 48 | 854 | 3,474 | 43 | 17.79 | 4.07 | 4,240 | 4.97 | 1.20 | 0.84 | 1.39 | | | 512 | 0.60 | 0.15 | 104 | 12.13% |
| 1987-88 | 54 | 954 | 3,973 | 41 | 17.67 | 4.16 | 4,841 | 5.08 | 1.13 | 0.90 | 1.24 | | | 613 | 0.64 | 0.15 | 109 | 11.39% |
| 1988-89 | 72 | 1,082 | 4,639 | 43 | 15.03 | 4.29 | 5,618 | 5.19 | 1.18 | 1.15 | 1.19 | | | 769 | 0.71 | 0.17 | 126 | 11.65% |
| 1989-90 | 81 | 1,259 | 5,479 | 44 | 15.54 | 4.35 | 7,890 | 6.27 | 1.38 | 1.19 | 1.45 | 1.20 | 1.48 | 1151 | 0.91 | 0.21 | 111 | 8.82% |
| 1990-91 | 71 | 1,286 | 5,576 | 45 | 18.11 | 4.34 | 8,036 | 6.25 | 1.42 | 1.27 | 1.49 | 1.27 | 1.51 | 1142 | 0.89 | 0.20 | 109 | 8.48% |
| 1991-92 | 69 | 1,244 | 5,258 | 45 | 18.03 | 4.23 | 6,749 | 5.43 | 1.28 | 1.17 | 1.35 | 1.05 | 1.45 | 1008 | 0.81 | 0.19 | 131 | 10.53% |
| 1992-93 | 89 | 1,401 | 5,642 | 46 | 15.74 | 4.03 | 5,706 | 4.07 | 0.99 | 0.80 | 1.08 | 0.94 | 1.04 | 817 | 0.58 | 0.14 | 197 | 14.06% |
| 1993-94 | 80 | 1,158 | 4,525 | 48 | 14.48 | 3.91 | 5,055 | 4.37 | 1.10 | 0.95 | 1.16 | 0.90 | 1.23 | 769 | 0.66 | 0.17 | 176 | 15.20% |
| 1994-95 | 82 | 1,559 | 6,312 | 49 | 19.01 | 4.05 | 8,653 | 5.55 | 1.36 | 1.23 | 1.42 | 1.08 | 1.56 | 1213 | 0.78 | 0.19 | 192 | 12.32% |
| 1995-96 | 80 | 1,285 | 5,042 | | 16.06 | 3.92 | 6,038 | 4.70 | 1.18 | 1.01 | 1.26 | 0.74 | 1.44 | 865 | 0.67 | 0.17 | 198 | 15.41% |
| 1996-97 | 90 | 1,648 | 6,524 | 50 | 18.31 | 3.96 | 8,898 | 5.40 | 1.35 | 1.28 | 1.37 | 1.15 | 1.53 | 1152 | 0.70 | 0.18 | 193 | 11.71% |
| 1997-98 | 87 | 1,451 | 5,932 | 50 | 16.68 | 4.09 | 7,071 | 4.87 | 1.20 | 1.00 | 1.27 | 0.94 | 1.41 | 1008 | 0.69 | 0.17 | 182 | 12.54% |
| 1998-99 | 79 | 1,190 | 4,788 | 51 | 15.06 | 4.02 | 4,160 | 3.50 | 0.87 | 1.07 | 0.78 | 0.62 | 1.11 | 512 | 0.43 | 0.11 | 239 | 20.08% |
| 1999-00 | 85 | 1,286 | 4,987 | 50 | 15.13 | 3.88 | 5,245 | 4.08 | 1.04 | 1.08 | 1.02 | 0.89 | 1.20 | 713 | 0.55 | 0.14 | 246 | 19.13% |
| 2000-01 | 83 | 1,235 | 4,792 | 53 | 14.88 | 3.88 | 5,050 | 4.09 | 1.03 | 1.00 | 1.05 | 0.79 | 1.26 | 676 | 0.55 | 0.14 | 204 | 16.52% |
| 2001-02 | 72 | 1,181 | 4,519 | 53 | 16.40 | 3.83 | 5,228 | 4.43 | 1.12 | 1.08 | 1.13 | 0.82 | 1.35 | 692 | 0.59 | 0.15 | 174 | 14.73% |
| 2002-03 | 58 | 956 | 3,686 | 55 | 16.48 | 3.86 | 4,128 | 4.32 | 1.08 | 0.80 | 1.17 | 0.88 | 1.27 | 565 | 0.59 | 0.15 | 152 | 15.90% |
| 2003-04 | 52 | 847 | 3,355 | 54 | 16.29 | 3.96 | 3,212 | 3.79 | 0.93 | 0.77 | 0.98 | 0.81 | 1.05 | 434 | 0.51 | 0.13 | 152 | 17.95% |
| 2004-05 | 56 | 795 | 3,160 | 54 | 14.20 | 3.97 | 3,238 | 4.07 | 1.01 | 0.86 | 1.07 | 0.74 | 1.26 | 400 | 0.50 | 0.13 | 132 | 16.60% |
| 2005-06 | 51 | 660 | 2,590 | 55 | 12.94 | 3.92 | 2,601 | 3.94 | 0.97 | 0.65 | 1.12 | 0.79 | 1.16 | 313 | 0.47 | 0.12 | 122 | 18.48% |
| 2006-07 | 52 | 704 | 2,751 | 56 | 13.54 | 3.91 | 2,855 | 4.06 | 1.02 | 0.88 | 1.07 | 0.88 | 1.19 | 365 | 0.52 | 0.13 | 131 | 18.61% |
| 2007-08 | 56 | 697 | 2,616 | 55 | 12.45 | 3.75 | 1,864 | 2.67 | 0.73 | 0.72 | 0.73 | 0.52 | 0.96 | 249 | 0.36 | 0.10 | 177 | 25.39% |
| 2008-09 | 60 | 716 | 2,623 | 56 | 11.93 | 3.66 | 1,835 | 2.56 | 0.68 | 0.71 | 0.68 | 0.48 | 0.94 | 214 | 0.30 | 0.08 | 213 | 29.75% |
| 2009-10 | 56 | 551 | 1,960 | 53 | 9.84 | 3.56 | 1,483 | 2.69 | 0.72 | 0.69 | 0.72 | 0.50 | 1.04 | 180 | 0.33 | 0.09 | 161 | 29.23% |
| 2010-11 | 59 | 658 | 2,482 | 54 | 11.15 | 3.77 | 1,677 | 2.55 | 0.67 | 0.64 | 0.68 | 0.60 | 0.77 | 184 | 0.28 | 0.07 | 194 | 29.48% |
| 2011-12 | 79 | 983 | 3,657 | 56 | 12.40 | 3.72 | 3,867 | 3.93 | 1.06 | 1.00 | 1.07 | 0.94 | 1.22 | 500 | 0.51 | 0.14 | 203 | 20.00% |
| 2012-13 | 72 | 920 | 3,603 | 56 | 12.78 | 3.92 | 2,475 | 2.69 | 0.69 | 0.70 | 0.68 | 0.54 | 0.88 | 303 | 0.33 | 0.08 | 261 | 28.37% |
| 2013-14 | 63 | 833 | 3,186 | 56 | 13.22 | 3.82 | 2,303 | 2.76 | 0.72 | 0.75 | 0.72 | 0.58 | 0.95 | 249 | 0.30 | 0.08 | 238 | 28.57% |
| 2014-15 | 62 | 843 | 3,037 | 56 | 13.38 | 3.60 | 1,678 | 1.99 | 0.55 | 0.67 | 0.53 | 0.35 | 0.91 | 190 | 0.23 | 0.06 | 330 | 39.15% |
| 2015-16 | 59 | 704 | 2,503 | 58 | 11.93 | 3.56 | 1,842 | 2.62 | 0.74 | 0.84 | 0.71 | 0.63 | 0.93 | 229 | 0.33 | 0.09 | 183 | 25.99% |
| 2016-17 | 62 | 692 | 2,375 | 59 | 11.16 | 3.43 | 1,360 | 1.97 | 0.57 | 0.55 | 0.58 | 0.50 | 0.71 | 154 | 0.22 | 0.06 | 245 | 35.40% |
| 2017-18 | 56 | 640 | 2,290 | 58 | 11.43 | 3.58 | 1,074 | 1.68 | 0.47 | 0.50 | 0.46 | 0.28 | 0.79 | 127 | 0.20 | 0.06 | 306 | 47.81% |
| 2018-19 | 54 | 507 | 1,788 | 60 | 9.40 | 3.53 | 1,167 | 2.30 | 0.65 | 0.53 | 0.67 | 0.59 | 0.85 | 112 | 0.22 | 0.06 | 168 | 33.13% |