



## 2015-2016 South Carolina Bobwhite Quail Hunter Survey



The South Carolina Department of Natural Resources Small Game Project conducts an annual survey of the state's bobwhite quail (*Colinus virginianus*) hunters. This survey was initiated during the 1987-88 hunting season and was conducted for the 29<sup>th</sup> consecutive year during the 2015-16 season. The purpose of the Quail Hunter Survey is to collect quantitative information on hunting success, which aids biologists in tracking quail population trends.

### **METHODS**

As in previous years, a mailing list was generated from individuals who had participated in the Quail Hunter Survey in previous years and individuals who responded to news releases or otherwise heard about the survey.

Immediately prior to the opening of the 2015-16 quail hunting season cooperators were provided with materials necessary to participate in the survey. The materials included a pocket-size hunting diary, a data sheet, a postage-paid return envelope, and instructions for the survey. Potential cooperators were also provided with a larger return envelope with tags and asked to collect 10 wings from harvested quail. The wings were used to estimate sex and age ratios for the state's quail population. Funds for printing of the hunting diary booklets were generously provided by the South Carolina State Committee of Quail Unlimited.

In addition, this year hunters were provided the opportunity to sign-up to participate on-line and given the option of downloading a hunt report form or reporting their hunts directly using their computer or mobile device. Hunters can now sign up to participate at [www.dnr.sc.gov/surveys/smallgame](http://www.dnr.sc.gov/surveys/smallgame).

Cooperators were instructed to keep accurate records while quail hunting by recording the following information for each hunt: date, county of hunt, number of quail coveys flushed, number of quail bagged, an estimate of average covey size. This year, for on-line reporting we discontinued asking for the number of woodcock (*Scolopax minor*) flushed, number of woodcock bagged, and number of rabbits (*Sylvilagus* spp.) seen while quail hunting because these have their own on-line surveys.

Information and comments concerning the overall quality of the season, dog performance, quail food habits, weather, habitat conditions and other observations were also requested. Cooperators were asked to collect 1 wing from each quail harvested (up to 10 per cooperator) and affix a tag with the date, county and sex of the bird for each wing. Survey participants were urged to record information for wild, native bobwhite quail hunts only.

Near the close of the quail season, a reminder postcard was mailed (or an email sent) to each potential cooperator encouraging prompt return of the survey forms and wings. Data received were entered into a computer file, proofed, and summarized. Data were then analyzed to determine differences by year, county, region, month, or a combination of these variables.

## **RESULTS AND DISCUSSION**

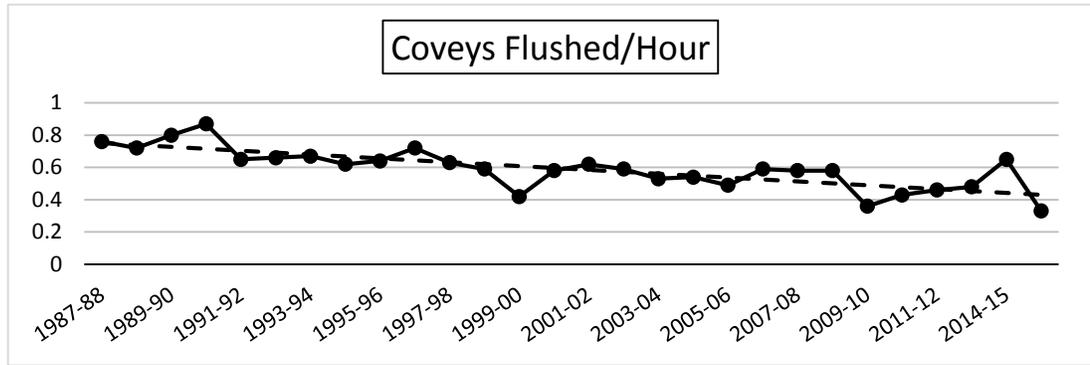
### **Statewide**

Responses were received from 10 (6 on-line, 4 mailed) individuals, with all hunters providing usable data. Information was obtained from 136 hunts. Average hunt length was 3.06 hours and average hunter group size was 1.60. The highest frequency of survey quail hunting activity occurred during the months of January and February, closely followed by December (Table 1).

**Table 1. Quail hunting activity by month, 2015-16 South Carolina Quail Hunter Survey**

Month	Number of Hunts	Percentage of Total
November	9	6.62
December	30	22.06
January	51	37.50
February	43	31.62
March	3	2.21
<b>TOTAL</b>	<b>136</b>	<b>100.00</b>

Survey cooperators flushed an average of 0.33 coveys per hour during the 2015-16 season, a decrease from the 2014-15 season (Table 2). Quail bagged per hour also decreased from the previous year. The reported average covey size increased slightly from the previous year. The trend in the coveys per hour index for the past 28 years of the survey is illustrated in Figure 1.

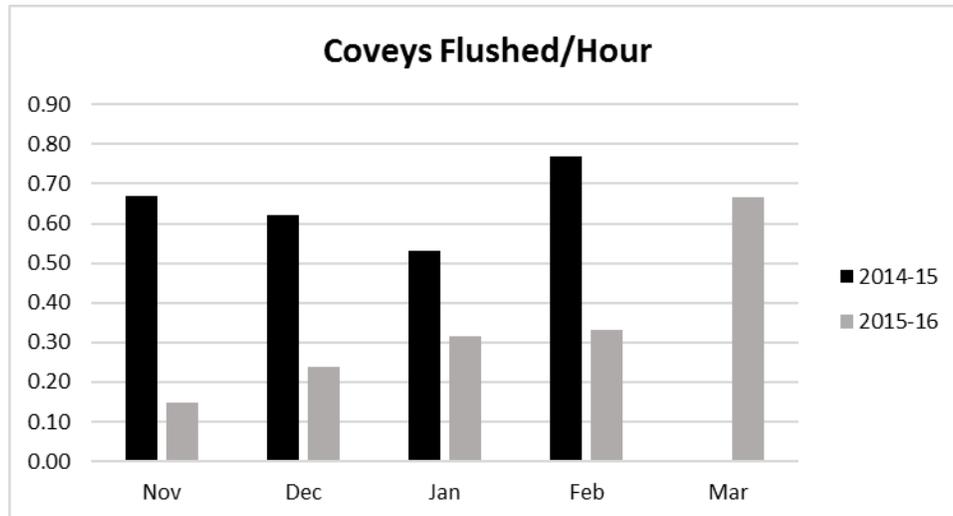


**Figure 1. Coveys per hour index and trend, South Carolina Quail Hunter Survey, 1988-2015.**

**Table 2. Statewide South Carolina Quail Hunter Survey results, 1988-2015.**

Year of Survey	Coveys Flushed Per Hour	Quail Bagged Per Hour	Average Covey Size	Rabbits Jumped Per Hour
1987-88	0.76	0.99	12.5	0.21
1988-89	0.72	0.94	12.2	0.19
1989-90	0.80	1.04	12.9	0.16
1990-91	0.87	1.07	12.5	0.19
1991-92	0.65	0.75	12.2	0.15
1992-93	0.66	0.73	12.2	0.15
1993-94	0.67	0.73	11.9	0.22
1994-95	0.62	0.72	11.8	0.17
1995-96	0.64	0.76	11.7	0.16
1996-97	0.72	0.79	12.3	0.18
1997-98	0.63	0.66	11.9	0.14
1998-99	0.59	0.62	11.3	0.16
1999-00	0.42	0.38	10.7	0.14
2000-01	0.58	0.55	11.4	0.13
2001-02	0.62	0.56	11.8	0.17
2002-03	0.59	0.56	11.2	0.16
2003-04	0.53	0.49	11.6	0.13
2004-05	0.54	0.55	11.1	0.14
2005-06	0.49	0.42	10.5	0.13
2006-07	0.59	0.43	11.2	0.14
2007-08	0.58	0.33	12.1	0.15
2008-09	0.58	0.41	10.9	0.18
2009-10	0.36	0.32	11.1	0.10
2010-11	0.43	0.33	10.4	0.15
2011-12	0.46	0.40	10.1	0.20
2013-14	0.48	0.32	10.2	0.19
2014-15	0.65	0.47	8.0	0.08
2015-16	0.33	0.29	8.9	NA

The Quail Hunter Survey also provides information on hunting success by month, region, and county. Hunting success rates as measured by coveys flushed per hour were lower in all months except February when compared with the previous season (Fig. 2).

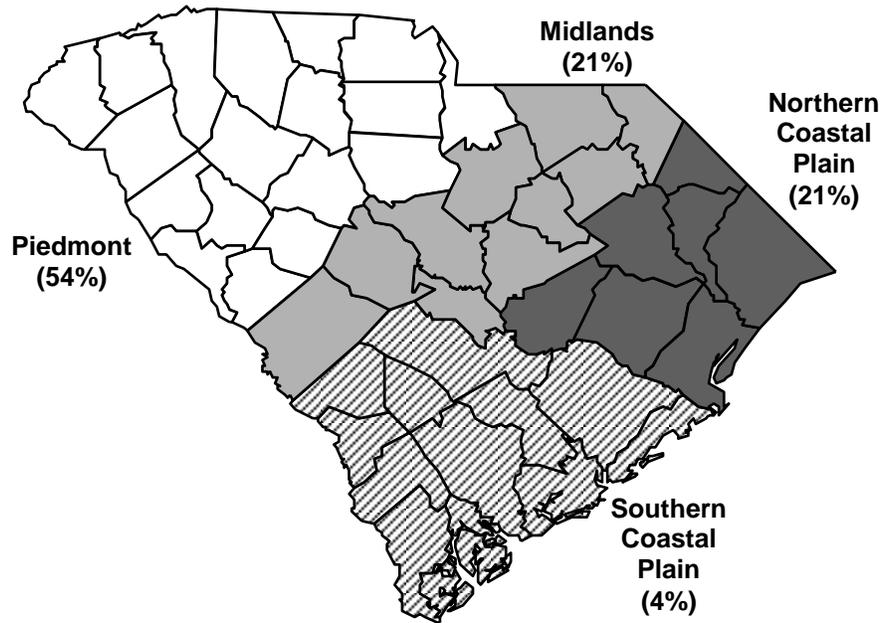


**Figure 2. Coveys flushed per hour index by month for the 2014-15 and 2015-16 seasons, South Carolina Quail Hunter Survey.**

### **Regional Comparisons**

South Carolina can be divided into 4 broad geographical regions based on habitat type similarities. The Piedmont, which includes the mountain and foothills areas, encompasses about 1/3 of the state. The Midlands extends in a broad band of mostly sandhills habitat on a northeast - southwest axis across the middle of South Carolina. The Northern Coastal Plain or "Pee Dee" and the Southern Coastal Plain or "Low Country" are the other 2 regions.

Hunting effort expended in the 2015-16 Quail Hunter Survey was greatest in the Piedmont, accounting for 54% of all hunts (Fig. 3). The coveys per hour index was highest in the Northern Coastal Plain followed by the Midlands and Piedmont, respectively (Table 3). However, quail harvest rate in the Southern Coastal Plain was higher than in the other regions. The reported average size of quail coveys ranged from 8.2 birds per covey in the Piedmont to 13.4 birds per covey in the Southern Coastal Plain.



**Figure 3. Percentage of total hunts occurring in each region, South Carolina Quail Hunter Survey, 2015-16.**

**Table 3. Results by region, South Carolina Quail Hunter Survey, 2015-16.**

Region	Coveys Flushed Per Hour	Quail Bagged Per Hour	Average Covey Size
Midlands	0.27	0.05	8.5
N. Coastal Plain	0.36	0.08	7.0
S. Coastal Plain	0.24	0.36	13.4
Piedmont	0.29	0.26	8.9

## **County Results**

The top 3 counties for each of 4 indices are listed in Table 4. A minimum of 10 sample hunts had to occur in a particular county to be included in this ranking. Horry County claimed the top spot in the coveys per hour index at 0.50, followed by Edgefield (0.42) and Newberry (0.25) counties. Edgefield County led the state in quail harvested per hour at 0.44, followed by Newberry (0.17) and Horry (0.14).

**Table 4. Ranking of the top counties for indices measured in the South Carolina Quail Hunter Survey, 2015-16.**

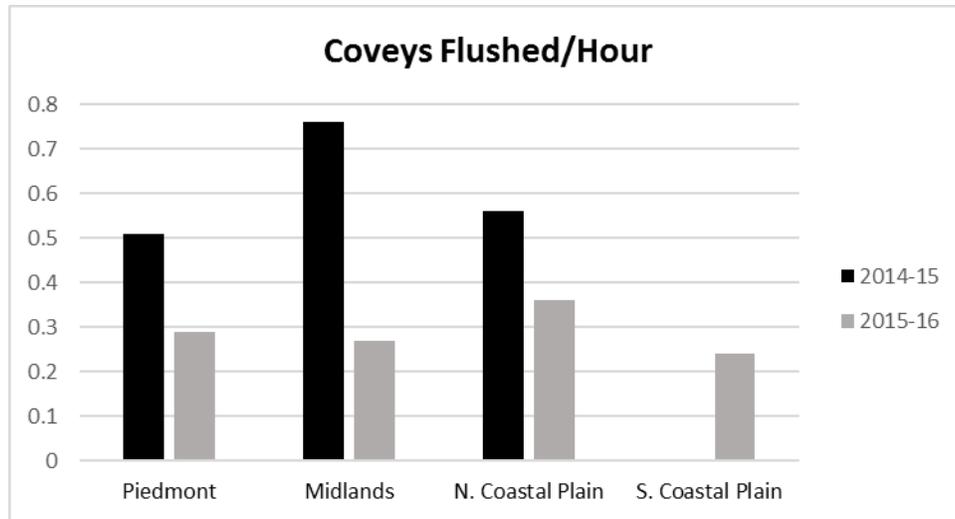
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Rank*	Coveys Found Per Hour	Quail Harvested per Hour	Average Covey Size
1	Horry (0.50)	Edgefield (0.44)	Edgefield (12.50)
2	Edgefield (0.42)	Newberry (0.17)	Aiken (11.40)
3	Newberry (0.25)	Horry (0.14)	Horry (6.91)

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\*Counties with a sample size of less than 10 hunts not included.

Northern Coastal Plain counties led in most of the major quail hunting indices, including coveys flushed per hour (Fig. 4). Historically, Northern Coastal Plain counties have proven better for quail hunting in South Carolina. County results should be interpreted cautiously due to the relatively low number of hunts upon which they are based.



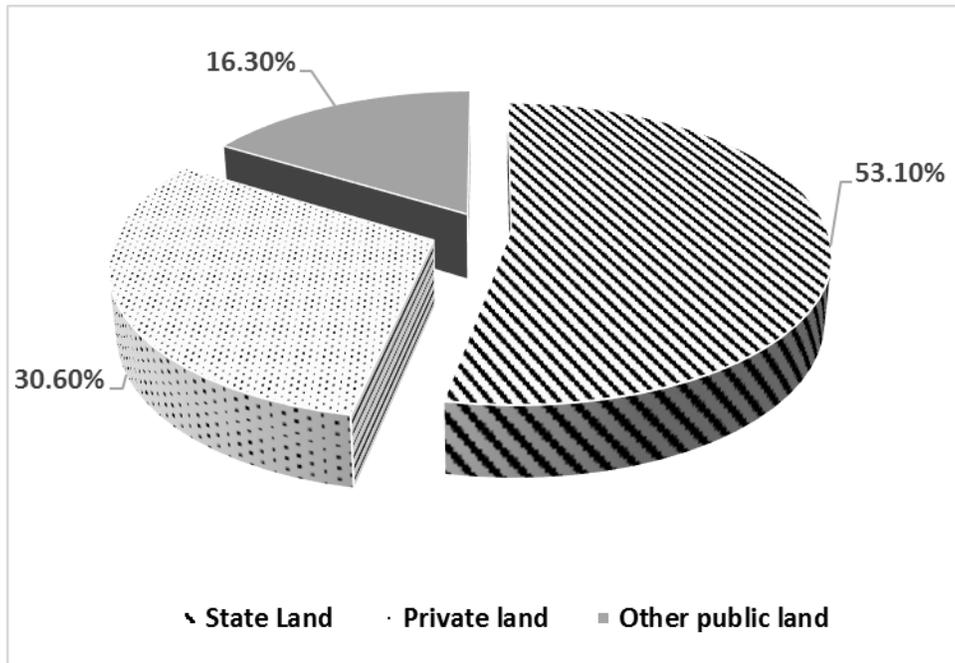
**Figure 4. Coveys flushed per hour index by region for the 2014-15 and 2015-16 seasons, South Carolina Quail Hunter Survey.**

### **Comments From Cooperators**

As is our practice, we encourage hunters to provide comments on their hunting experience for the season. Of particular concern for the 2015-16 season was the unusually warm weather and the “thousand year flood event” and the detrimental effect it had on hunting success. The other concern of note was that covey sizes seemed small this season.

Only 2 respondents rated their 2015-16 hunting season and dog performance. One rated both as good and one rated both as poor.

New to this year's survey is a question about where each hunt occurred. Over half of our respondent's hunts this season were conducted on state managed lands (Fig 5).



**Figure 5. Percent of hunts by land category for the 2015-2016 season.**

Plans are underway to continue the Quail Hunter Survey for the 2015-16 season. Efforts are ongoing to increase the number of cooperators and all avid quail hunters are encouraged to participate. Contact the SCDNR Small Game Project, P.O. Box 167, Columbia, SC 29202 (telephone 803-734-3609) to be included in the survey or go to [www.dnr.sc.gov/surveys/smallgame](http://www.dnr.sc.gov/surveys/smallgame) and sign up online.