



## **SOUTH CAROLINA RABBIT HUNTER SURVEY 2009-10**

The Small Game Project, South Carolina Department of Natural Resources (DNR), implemented the South Carolina Rabbit Hunter Survey in the 1991-92 season. The survey was designed to provide reliable, quantitative information about rabbit numbers and rabbit hunter success across the state.

This report presents information from the latest survey and compares data collected for the past 10 years. Information is used to identify trends in rabbit populations and rabbit hunting activities in South Carolina.

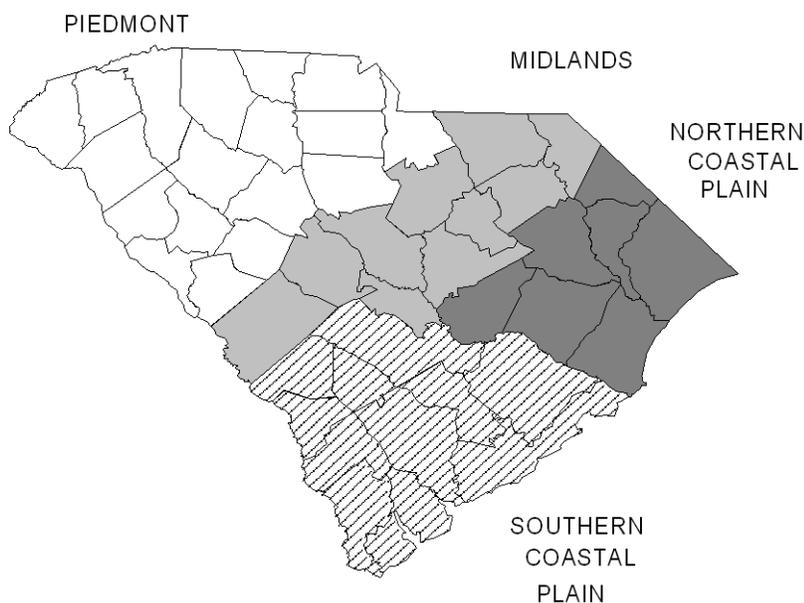
### **METHODS**

Individuals contacted for this rabbit hunter survey included respondents to last year's survey, persons who called, emailed or wrote requesting a survey form this past year, and respondents from a 1999-2000 Responsive Management Telephone Survey. Potential survey cooperators are also solicited through public presentations and the DNR website.

A total of 147 individuals were provided with data sheets, instructions and self-addressed stamped envelopes prior to the start of the 2009-10 rabbit-hunting season. Cooperators were asked to keep accurate records of their hunting activities and to provide the following information about each individual hunt: date and county of hunt, number of hunters, number of hours hunted, number of rabbits jumped, number of rabbits harvested, quail coveys and woodcock flushed. Additional information requested includes the number and species of rabbits bagged during the season along with comments on dog performance and season quality. Information on food habits, diseases and general comments was also requested.

At the end of the hunting season, a reminder card was sent to each individual asking that the survey form be returned. A period of 60 days was allowed for hunters to respond. Data were analyzed by county, geographic region and statewide basis.

South Carolina is divided into four broad geographic regions (Fig. 1) based on habitat. The "Piedmont" encompasses about 1/3 of the state and includes the mountain and foothills area. The "Midlands" extends on a broad northeast/southwest axis across the upper coastal plain of the state. The "Pee Dee" region is located on the northern lower coastal plain and the "Low Country" is situated in the southern lower coastal plain.



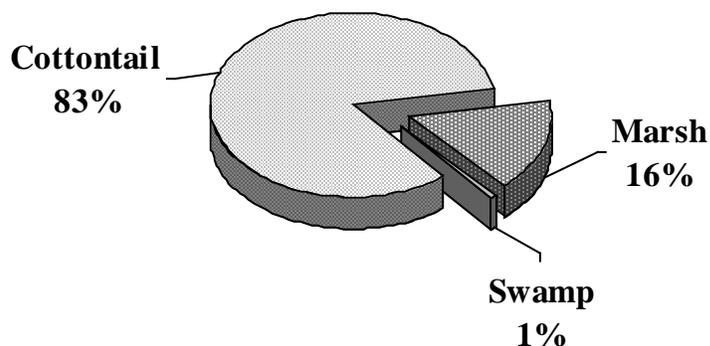
**Figure 1. Physiographic regions of South Carolina, South Carolina Rabbit Hunter Survey.**

## RESULTS AND DISCUSSION

### STATEWIDE

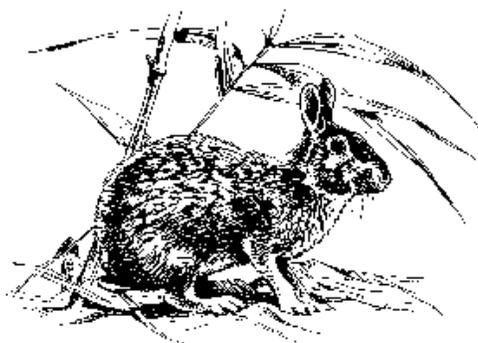
A total of 30 individuals to the survey for a response rate of 20% response from potential cooperators. Survey cooperators recorded 556 hunts and logged 2,440 hours in the field. Hunting parties averaged four individuals per trip and the average hunt length was 4.4 hours. Based on this information, survey cooperators and their companions expended a minimum of 9,760 man-hours.

Hunting parties jumped an average of 1.20 rabbits per hour and harvested 0.70 rabbits per hour. Based on these figures 58% of the rabbits jumped were harvested. Cottontails (*Sylvilagus floridanus*) were the predominant species reported harvested followed by marsh rabbits (*S. palustris*) and swamp rabbits (*S. aquaticus*), respectively (Fig. 2).



**Figure 2. Reported species composition of rabbits harvested by cooperators, South Carolina Rabbit Hunter Survey, 2009-10.**

Historically, swamp rabbits have been documented only in the Savannah River drainage of Oconee, Pickens and Anderson Counties (Webster et. al. 1985, Platt and Bunch 2000). It is possible that some marsh rabbits are mistakenly identified as swamp rabbits. Cooperators are provided with a fact sheet describing how to distinguish the three species of rabbits.



A majority (61%) of the rabbit hunting activity documented in South Carolina occurred in the Piedmont Region (337 hunts) and the least amount of activity occurred in the Midlands at 5% (29 hunts) (Fig. 3). The highest rabbit-jumping rate (1.40) was recorded in the Midlands (29 hunts). The, Low Country, Pee Dee, and Piedmont recorded 1.25, 1.21, and 1.16 rabbits jumped per hour, respectively (Fig. 4).

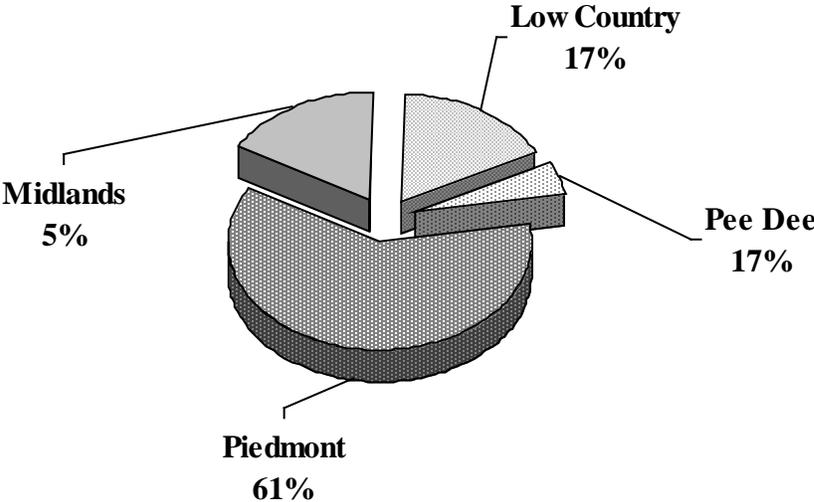


Figure 3. Percentage of expended hunting time by region, South Carolina Rabbit Hunter Survey, 2009-10.

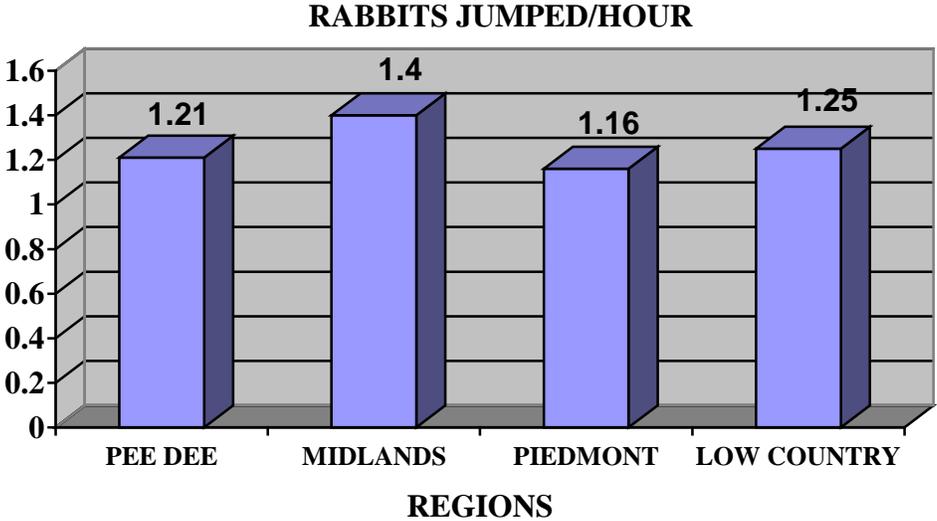


Figure 4. Average number of rabbits jumped per hour by region, South Carolina Rabbit Hunter Survey, 2009-10.

## COUNTY RESULTS

Survey cooperators reported rabbit hunting activity from 40 of the 46 counties in South Carolina during the 2009-10 season. Hampton County led the state in hunter effort (hours hunted) with hunters logging 211 hours in the field during 43 hunts. Following Hampton in hunter effort were Chester (185 hours, 41 hunts) and Abbeville (165 hours, 43 hunts).

The top five counties, in terms of rabbits jumped per hour (based on a minimum of 25 hunts), were: Saluda (2.32), Lee (1.60), followed by Hampton (1.50), Chester (1.27) and Abbeville (1.06). Jumping rates may have variables affecting them such as shooting (or not shooting) on the initial jump, cover thickness delaying a killing shot during the chase, and letting the dogs run for exercise or training. However, jumping rates do give an index to the relative abundance of rabbits in a given area.

## COMPARISON TO 2008-09 SURVEY

The number of individuals provided with data sheets decreased from 164 to 147 and individuals responding decreased from 33 to 30. Response rate remained the same at 20%. Number of hunts (556) recorded by all hunting parties decreased from 568 with a decrease in total hours afield from 2,457 to 2,440 hours. Average hunt length increased slightly from 4.3 hours to 4.4 hours. The minimum number of man-hours expended by rabbit hunters and their companions decreased from 9,828 to 9,760.

Number of rabbits jumped per hour decreased significantly ( $P < 0.05$ ) from 1.37 in 2008-09 to 1.20 in 2009-10. Rabbits harvested per hour also decreased significantly from 0.78 to 0.70.

Statewide, quail flushes decreased from 0.04 to 0.03 coveys per hour and the number of coveys flushed decreased from 72 in 2008-09 to 70 in 2009-10. This was the 14th year data were collected on number of woodcocks flushed. Woodcocks flushed per hour increased from 0.10 to 0.12 and the number of woodcocks flushed also increased from 246 to 286 for 2009-10.

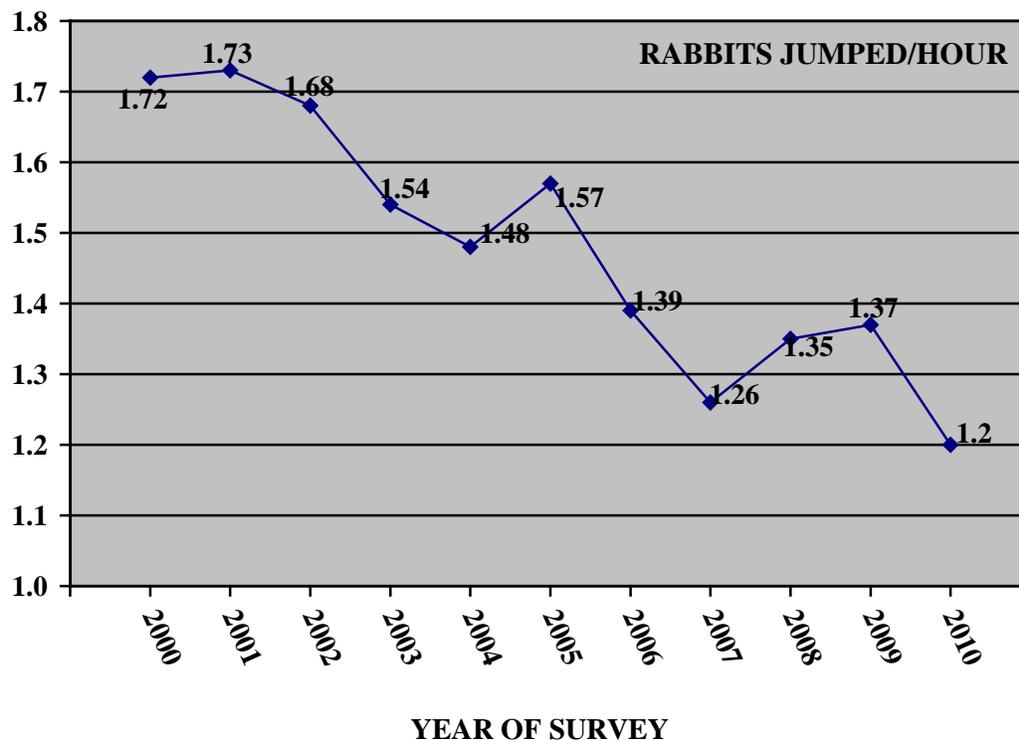
The number of counties reporting rabbit hunting activity increased for the fourth year from 37 to 40 this past season. In 2009-10 Hampton, Chester, and Abbeville Counties were first, second and third, respectively, in hunter effort (hours hunted), followed by Laurens and Sumter Counties. In terms of rabbits jumped per hour (minimum of 25 hunts), Saluda, Lee, Hampton, Chester, and Abbeville were the top five counties.

Table 3 summarizes the data collected for the past 10 years of the survey and Figure 5 shows the general trend in rabbits jumped per hour. The number of rabbits jumped per hour has fluctuated over the past years but has demonstrated a declining trend over that time. Due to the relatively small sample sizes of cooperators and hunts, factors other than rabbit abundance can contribute significantly to changes in the rabbits jumped per hour index.

**Table 3. Statewide results, South Carolina Rabbit Hunter Survey, 2000-2010.**

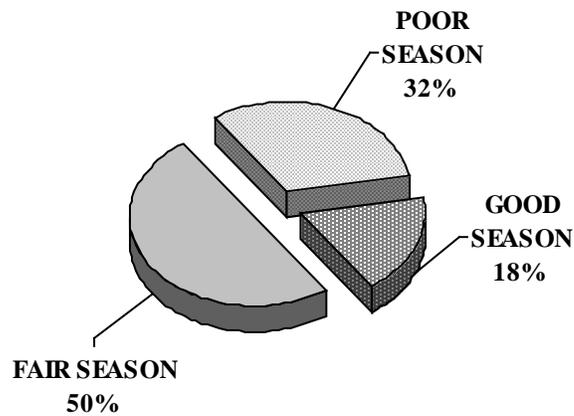
YEAR OF SURVEY	RABBITS JUMPED PER HOUR	RABBITS HARVESTED PER HOUR	QUAIL COVEYS FLUSHED PER HOUR
1999-00	1.72	0.98	0.03
2000-01	1.73	1.00*	0.03
2001-02	1.68	1.00	0.04
2002-03	1.54*	0.92*	0.03
2003-04	1.48*	0.90	0.04
2004-05	1.57*	0.98*	0.05
2005-06	1.39*	0.84*	0.04
2006-07	1.26*	0.77*	0.03
2007-08	1.35*	0.83*	0.02
2008-09	1.37	0.78*	0.04
2009-10	1.20*	0.70*	0.03

\*Significantly different from the previous year ( $P < 0.05$ )

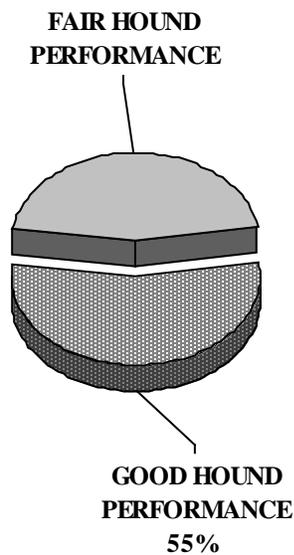
**Figure 5. Rabbits jumped per hour, South Carolina Rabbit Hunter Survey, 2000-2010.**

## COOPERATOR COMMENTS

As a whole, most cooperators rated the 2009-10 rabbit-hunting season as good or fair with 32% rating the season as poor (Fig. 6). All cooperators rated the performance of their dogs as good or fair (Fig. 7).



**Figure 6. Rating of season quality by cooperators, South Carolina Rabbit Hunter Survey, 2009-10.**



**Figure 7. Rating of hound performance by cooperators, South Carolina Rabbit Hunter Survey, 2009-10.**

Cooperators reported cold, wet days, including freezing temperatures and snow as having a negative influence (fewer days in the field, scent conditions, etc.) on hunting this past year. Three cooperators expressed concern over the habitat quality on public lands and decreased opportunity on private lands due to competition with deer hunting clubs. Increasing evidence of coyotes was cited as a cause of concern for some cooperators. While several cooperators indicated that rabbit populations had declined from the previous year, one cooperator noted “lots of rabbits, not enough time!”

When used as an index of abundance, the rabbit jumping rate for the 2009-10 rabbit season would indicate a slight decrease in population from the previous year. However, cooperators and other rabbit hunters should bear in mind that numerous factors like weather and dog performance also have significant impacts on the rabbit jump rate. As in all wildlife species, rabbit populations are directly linked to the quantity and quality of available habitat.

## **SUMMARY**

The 2009-10 Rabbit Hunter Survey marked the 19th year of building a database on rabbit populations and rabbit hunter success in South Carolina. Plans are to continue this survey during the 2010-2011 season. Additional efforts will be made to increase cooperator response as well as reporting accuracy.

If you are aware of someone who hunts rabbits but does not participate in this survey, please encourage them to do so. Potential cooperators should contact the DNR Small Game Project at 803-734-3609 or [castinep@dnr.sc.gov](mailto:castinep@dnr.sc.gov).

**A reminder for next year: Data cannot be entered without hunter name and address or if all hunts are submitted as one entry.**

## **LITERATURE CITED**

Webster, W. D., J. F. Parnell, Jr. and W. C. Biggs, Jr. 1985. *Mammals of the Carolinas, Virginia and Maryland*. The University of North Carolina Press.

Platt, Steven G., and Mary Bunch. 2000. Distribution and Status of the Swamp Rabbit in South Carolina. *Proc Annual Conference, Southeast Association Fish and Wildlife Agencies* 54:407-413.