

SCDNR SMALL GAME PROGRAM SUMMER BOBWHITE QUAIL BROOD SURVEY - 2011

A sighting survey for bobwhite quail (*Colinus virginianus*) broods was conducted for the 18th consecutive year during the summer of 2011. The quail brood survey was again conducted in conjunction with the summer turkey brood survey.

Past survey cooperators and additional potential cooperators were provided with data forms and requested to record sightings of turkeys and quail during the period July 1, 2011 through August 29, 2011. Cooperators included SCDNR Conservation Officers and Wildlife Section staff, Natural Resources Conservation Service (NRCS) staff, foresters, plantation managers and others.

Several assumptions had to be made in compiling the data due to variations in reporting. These assumptions are: (1) 1-4 birds not identified to sex and age were assumed to be adults, (2) groups of birds of 5 or greater were assumed to be a mated pair of adults with the remainder being juveniles, (3) when a numerical range for number of birds was given, the median was used (Ex: 8-12=10), and (4) if no adult quail were observed with a brood, one adult was assumed present.

Results were compiled from 319 observations of quail during the 2011 survey period (Table 1), up from 285 in 2010. The Southern Coastal Plain reported the greatest number of quail observations. Brood sightings were also highest in the Southern Coastal Plain region (Table 1). Age ratio (juveniles per adult) increased in the Midlands and the Northern Coastal Plain and decreased in the Piedmont and Mountains (Table 2). Statewide, the age ratio of 2.2 juveniles per adult was higher than the age ratio detected in 2010 (1.9); the average brood size (8.0) decreased slightly from 2010. The percentage of adults without chicks was lowest and age ratio highest in the Northern Coastal Plain (Table 3). Statewide, sixty-eight percent (428/628) of adult quail were observed without chicks, up from 60 percent of adult quail observed without chicks in the 2010 survey.

Statewide, the percentage of adults observed without chicks increased and the average brood size decreased from 2010, while the age ratio increased slightly (Table 4). The percentage of adults observed without chick (68%) is the highest since the brood survey began. Total numbers of adults observed decreased by 30% and total number of chicks observed decreased by 20% from the 2010 survey. Collectively, these indices indicate that total reproductive output during the survey period was less in 2011 than in 2010. Based on information from the 2011 survey, the Northern Coastal Plain and Midlands regions exhibited much better nesting success than the Piedmont and Mountains and the Southern Coastal Plain regions.

Figure 1. Physiographic regions used in the South Carolina Summer Bobwhite Quail Brood Survey, 2011. Number of broods sighted is in parentheses.

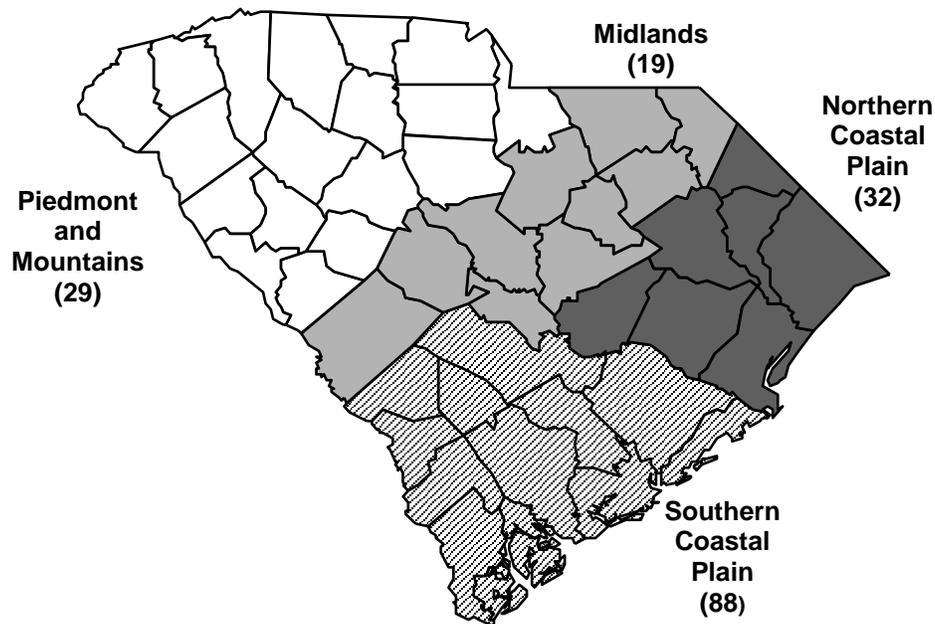


Table 1. Results of the South Carolina Summer Bobwhite Quail Brood Survey by Region, 2011.

Physiographic Region	Observations	Broods Sighted	Chicks	Adults	Total Quail
Piedmont & Mountains	65	29	245	112	357
Midlands	34	19	172	58	230
Northern Coastal Plain	52	32	284	93	377
Southern Coastal Plain	168	88	647	365	1,012
2011 Totals	319	168	1,348	628	1,976

Table 2. Bobwhite quail recruitment data from South Carolina Summer Bobwhite Quail Brood Survey, 2007 - 2011

<u>Region</u>	<u>Year</u>	<u>Average Brood Size</u>	<u>Age Ratio (Juveniles / Adults)</u>
Piedmont & Mountains	2007	7.9	2.4
	2008	6.6	1.4
	2009	7.4	1.6
	2010	8.0	2.7
	2011	8.5	2.2
Midlands	2007	6.7	1.4
	2008	6.3	1.0
	2009	8.4	1.6
	2010	9.1	1.7
	2011	9.1	3.0
Northern Coastal Plain	2007	10.3	4.5
	2008	9.9	4.3
	2009	8.9	2.2
	2010	9.7	2.4
	2011	8.9	3.1
Southern Coastal Plain	2007	8.9	2.0
	2008	10.7	5.4
	2009	8.7	2.7
	2010	8.5	1.7
	2011	7.4	1.8
Statewide	2007	9.2	2.9
	2008	9.8	3.7
	2009	8.6	2.3
	2010	8.6	1.9
	2011	8.0	2.2

Table 3. Summary of reproductive data for 2011 South Carolina Summer Bobwhite Quail Brood Survey by region.

Region	Adults w/Chicks	Adults w/o Chicks (%)	No. Chicks	Avg. Brood Ratio	Age Size
Piedmont and Mountains	50	62 (55)	245	8.5	2.2
Midlands	32	26 (45)	172	9.1	3.0
Northern Coastal	58	35 (38)	284	8.9	3.1
Southern Coastal	60	305 (84)	647	7.4	1.8
Statewide	200	428 (68)	1,348	8.0	2.2

Table 4. South Carolina Summer Bobwhite Quail Brood Survey reproductive data 2002 - 2011.

Year	Adults w/Chicks	Adults w/o Chicks (%)	No. Chicks	Avg. Brood Ratio	Age Size
2002	272	340 (56)	1,232	7.5	2.0
2003	199	255 (56)	1,065	8.5	2.3
2004	275	221 (45)	1,190	7.3	2.4
2005	320	418 (57)	1,354	7.7	1.8
2006	380	353 (48)	2,153	8.2	2.9
2007	309	296 (49)	1,769	9.2	2.9
2008	315	322 (51)	2,367	9.8	3.7
2009	274	399 (59)	1,575	8.6	2.3
2010	355	541 (60)	1,695	8.6	1.9
2011	200	428 (68)	1,348	8.0	2.2
10 -Year Average	290	357 (55)	1,575	8.3	2.4