

SMALL GAME PROGRAM



SC DEPARTMENT OF NATURAL RESOURCES

Summer Bobwhite Quail Brood Survey - 2018

A sighting survey for bobwhite quail (*Colinus virginianus*) broods was conducted for the 25th consecutive year during the summer of 2018. 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, 2018 through August 29, 2018. Cooperators included, but were not limited to, SCDNR Conservation Officers and Wildlife Section staff, Natural Resources Conservation Service (NRCS) staff, foresters, and plantation managers.

Several assumptions had to be made in compiling the data due to variations in reporting. These assumptions are: (1) groups of 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 (e.g.: 8-12=10), (4) if no adult quail were observed with a brood, one adult was assumed present and, (5) for adult pairs with more than 15 juveniles it was assumed these groups were comprised of adult pairs with 12 or fewer juveniles.

Results were compiled from 323 observations of quail during the 2018 survey period (Table 1), up from 305 in 2017. The Southern Coastal Plain region reported the greatest number of quail observations and brood sightings. In addition, the percentage of adults without chicks was lowest in the Southern Coastal Plain (Table 3). Age ratio (juveniles per adult) increased in all regions (Table 2). The Southern Coastal Plain (Table 3) had the highest age ratio of the four regions. Statewide, the age ratio of 2.5 juveniles per adult was higher than the age ratio detected in 2017 (2.1). The average brood size (8.5) increased from 7.3 in 2017.

Statewide, forty-two percent of adult quail were observed without chicks, down from sixty-four percent in the 2017 survey (Table 4). Also, the average brood size and the age ratio increased from 2017 (Table 4). Total numbers of adults observed decreased, however, total number of chicks observed increased from the 2017 survey. Collectively, these indices suggest that total reproductive output during the survey period was greater in 2018 than in 2017. It should be noted that the 2018 survey did indicate higher nesting success than the prior year and the statewide reproduction was also slightly higher than the ten year average.

Figure 1. Physiographic regions used in the South Carolina Summer Bobwhite Quail Brood Survey, 2018. Number of broods sighted is in parentheses.

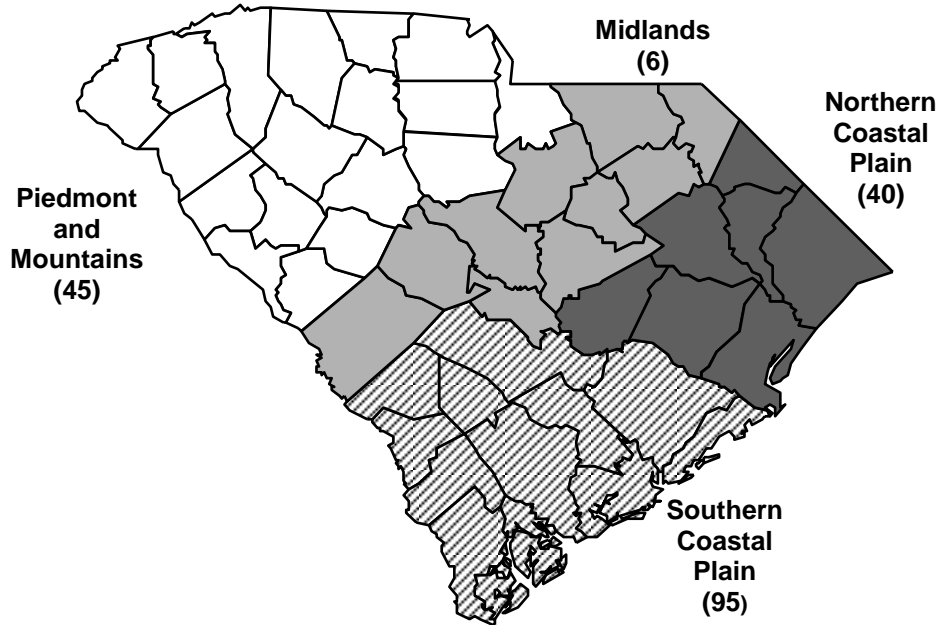


Table 1. Results of the South Carolina Summer Bobwhite Quail Brood Survey by Region, 2018.

Physiographic Region	Observations	Broods Sighted	Chicks	Adults	Total Quail
Piedmont & Mountains	85	45	368	153	521
Midlands	12	6	41	23	64
Northern Coastal Plain	82	40	327	172	499
Southern Coastal Plain	144	95	839	276	1115
2018 Totals	323	186	1575	624	2199

Table 2. Bobwhite quail recruitment data from South Carolina Summer Bobwhite Quail Brood Survey, 2014 – 2018.

<u>Region</u>	<u>Year</u>	<u>Average Brood Size</u>	<u>Age Ratio (Juveniles / Adults)</u>
Piedmont & Mountains	2014	8.0	2.10
	2015	7.3	2.20
	2016	8.1	1.70
	2017	7.6	1.10
	2018	8.2	2.41
Midlands	2014	5.9	1.10
	2015	4.9	1.50
	2016	6.4	1.00
	2017	5.7	0.28
	2018	6.8	1.78
Northern Coastal Plain	2014	6.5	1.50
	2015	7.5	2.70
	2016	9.8	3.20
	2017	7.6	0.76
	2018	8.2	1.90
Southern Coastal Plain	2014	7.5	1.30
	2015	6.0	1.60
	2016	8.0	2.20
	2017	8.0	1.05
	2018	8.8	3.04
Statewide	2014	7.2	1.50
	2015	6.3	1.90
	2016	8.1	2.10
	2017	7.3	0.87
	2018	8.5	2.52

Table 3. Summary of reproductive data for 2018 South Carolina Summer Bobwhite Quail Brood Survey by region.

Region	Adults w/Chicks	Adults w/o Chicks (%)	No. Chicks	Avg. Brood Size	Age Ratio
Piedmont and Mountains	88	65 (42)	368	8.2	2.4
Midlands	11	12 (52)	41	6.8	1.8
Northern Coastal	78	94 (54)	327	8.2	1.9
Southern Coastal	187	89 (32)	839	8.8	3.0
Statewide	364	260 (42)	1575	8.5	2.5

Table 4. South Carolina Summer Bobwhite Quail Brood Survey reproductive data 2009 - 2018.

Year	Adults w/Chicks	Adults w/o Chicks (%)	No. Chicks	Avg. Brood Size	Age Ratio
2009	274	399 (59)	1,588	8.6	2.3
2010	355	541 (60)	1,695	8.6	1.9
2011	200	428 (68)	1,348	8.0	2.2
2012	195	158 (45)	1,137	9.2	3.2
2013	139	148 (52)	715	7.9	2.5
2014	81	163 (67)	366	7.2	1.5
2015	145	160 (52)	592	6.3	1.9
2016	131	178 (58)	963	8.1	2.1
2017	345	626 (64)	808	7.3	0.8
2018	364	260 (42)	1,575	8.5	2.5
10 -Year Average	223	306 (57)	1,078	8.0	2.1