

SCDNR SMALL GAME PROGRAM SUMMER BOBWHITE QUAIL BROOD SURVEY - 2024

A sighting survey for bobwhite quail (*Colinus virginianus*) broods was conducted for the 31st consecutive year during the summer of 2024. 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, 2024, through August 29, 2024. 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 not seen 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. Data expressed in this report represents parameters per observation where appropriate.

Results were compiled from 166 observations of quail during the 2024 survey period (Table 1). The Piedmont and Mountains region reported the greatest number of quail observations (61) (Table 1). The Southern Coastal Plain reported the greatest rate of broods sighted per observation (0.59) (Figure 1). In addition, the percentage of adults without chicks was lowest in the Southern Coastal Plain region (Table 3). Age ratio (juveniles per adult) decreased in the Midland Region (Table 2). The Southern Coastal Plain region had the highest age ratio (2.3) of the four regions (Table 3). Statewide, the age ratio of 2.0 juveniles per adult was slightly higher than the age ratio detected in 2023 (1.8). The average brood size (9.7) increased from 2023 (8.0) (Table 4).

Allendale, Orangeburg, and Fairfield Counties had the most observations of quail in 2024 (Figure 2). Sumter County reported the highest age ratio of 6.0 juveniles per adult in 2024 (Figure 3). Twenty-five counties (54%) reported at least 1 observation for the year. Allendale, Bamberg, Barnwell, Newberry, Saluda, and Sumter Counties reported 75% or more of adults seen had juveniles (Figure 5).

Statewide, forty-three percent of adult quail were observed without chicks, down from forty-eight percent in the 2023 survey (Table 4). Also, the average brood size increased and age ratio per observation increased slightly from 2023 (Table 4). Total numbers of adults observed per observation (2.37) increased as well as the total number of chicks observed per observation (4.75) from the 2023 survey (2.05 and 3.72 respectively). Collectively, these indices suggest that the statewide total reproductive output during the survey period was slightly higher in 2024 than in 2023. This suggests that, while quail populations remain low across the state, the population has remained stable and average brood size has been increasing slightly.

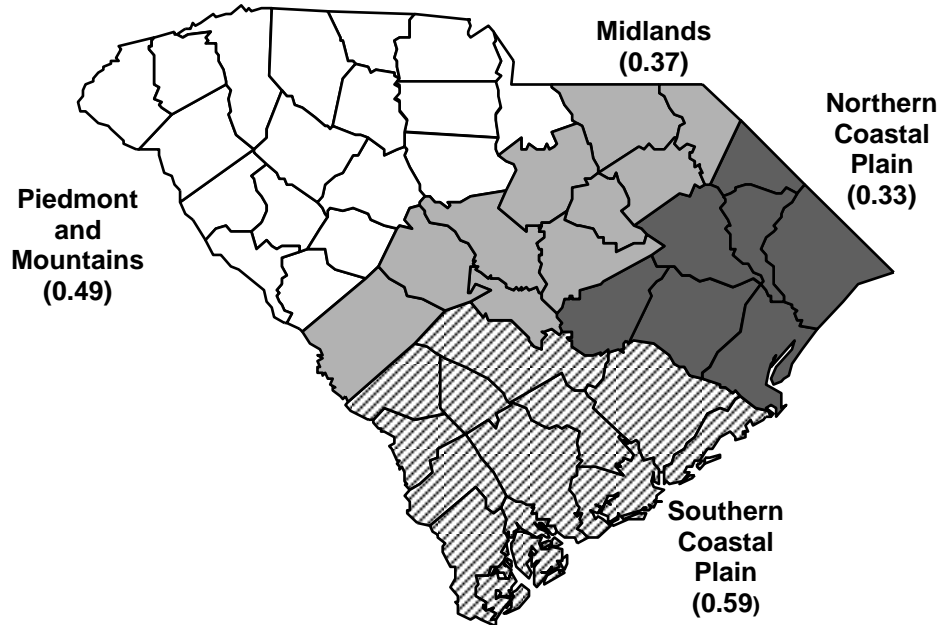


Figure 1. Physiographic regions used in the South Carolina Summer Bobwhite Quail Brood Survey, 2024. Number of broods sighted per observation is in parentheses.

Table 1. Results of the South Carolina Summer Bobwhite Quail Brood Survey per observation by Region, 2024.

Physiographic Region	Observations	Broods Sighted	Chicks	Adults	Total Quail
Piedmont & Mountains	61	0.49	4.03	1.79	5.82
Midlands	19	0.37	2.58	2.05	4.63
Northern Coastal Plain	27	0.33	1.74	2.00	3.74
Southern Coastal Plain	59	0.59	7.56	3.25	10.81
2024 Totals	166	0.49	4.75	2.37	7.12

Table 2. Bobwhite quail recruitment data from South Carolina Summer Bobwhite Quail Brood Survey, 2020 – 2024.

<u>Region</u>	<u>Year</u>	<u>Average Brood Size (Juveniles / Adults)</u>	<u>Age Ratio</u>
Piedmont & Mountains	2020	7.0	1.80
	2021	8.8	2.26
	2022	8.4	2.43
	2023	7.5	1.91
	2024	8.2	2.26
Midlands	2020	9.3	0.85
	2021	7.7	1.54
	2022	8.2	2.24
	2023	8.8	1.91
	2024	7.0	1.26
Northern Coastal Plain	2020	6.0	0.49
	2021	6.0	0.86
	2022	5.0	0.43
	2023	5.5	0.77
	2024	5.2	0.87
Southern Coastal Plain	2020	8.7	2.06
	2021	13.7	2.61
	2022	7.4	0.71
	2023	8.6	2.31
	2024	12.7	2.32
Statewide	2020	8.3	1.80
	2021	9.6	1.98
	2022	8.1	1.74
	2023	8.0	1.82
	2024	9.7	2.00

Table 3. Summary of reproductive data per observation for 2024 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	55	45	4.03	8.2	2.26
Midlands	41	59	2.58	7.0	1.26
Northern Coastal	37	63	1.74	5.2	0.87
Southern Coastal	66	34	7.56	12.7	2.32
Statewide	57	43	4.75	9.7	2.00

Table 4. South Carolina Summer Bobwhite Quail Brood Survey reproductive data per observation for 2015 - 2024.

Year	% Adults w/Chicks	% Adults w/o Chicks	No. Chicks	Avg. Brood Size	Age Ratio
2015	48	52	1.9	6.3	1.9
2016	49	51	3.9	5.8	2.1
2017	48	52	4.0	5.9	2.1
2018	51	49	5.1	7.9	2.5
2019	43	57	4.0	6.3	1.7
2020	39	61	3.2	8.3	1.8
2021	45	55	4.3	9.6	2.0
2022	41	59	3.2	8.1	1.7
2023	52	48	3.7	8.0	1.8
2024	57	43	4.7	9.7	2.0
10 -Year Average	47.3	52.7	3.8	7.6	2.0

Figure 2: Total quail observations by county for 2024

Figure 3: Age ratio by county for 2024.

Figure 4: Percentage of adults reported with juveniles in 2024.

If you are interested in improving quail and upland habitat on your property (owned or leased), SCDNR has partnered with other government and non-government organizations to provide landowners and managers with the latest information and improvements to upland management. This collective group of wildlife biologists and quail enthusiasts can also guide you through the process of requesting cost share assistance through various government and non-government sources. For more information about assistance and cost share please visit <http://scbobwhites.org/>. If you would like to participate in the annual turkey and quail brood survey, please visit <https://www.dnr.sc.gov/wildlife/turkey/volunbroodsurvey.html>.