

QUAIL HUNTER RECORDS AND THEIR VALUE

GEORGE A. GEHRKEN, District Game Technician

Proc. Annu. Conf. Southeast. Assoc. Game & Fish Comm. 4:166-171

Wildlife administrators are in annual need of dependable data regarding the status of the various game population. Such information might be obtained in several ways, and each method of collecting the desired information has certain advantages and disadvantages. The use of hunting success and other information which may be obtained from hunter reports lends itself to supplying reasonable accurate information as to the trends in game population, and is certainly less difficult to apply than annual censusing. For example, the information supplied by hunters, if judiciously selected and carefully analyzed, should indicate trends in the quail population from one year to another. Such data becomes more valuable each year, when collected over a period of years.

In order to obtain information on the quail population of the fifteen counties in the extreme southeastern section of Virginia (Fig. 1), hunter record forms were designed and distributed in the fall of 1949. These record forms were placed on 4 × 6 file cards by the use of a rubber stamp (Fig. 2). Each card, utilizing front and back, has sufficient space to accommodate the records for twenty hunts, showing date, hours hunting, number of coveys located, number of quail killed, sex of quail killed, number of shot and lost birds (cripples), and the number of coveys located in the woods. In addition to the hunter record forms, the sportsmen were requested to supply the wings of the quail which they shot. Quail wing-collecting envelopes ($3\frac{1}{4} \times 5\frac{1}{2}$ coin envelopes, Fig. 3), were developed to facilitate this collection. Data obtained from an analysis of the quail wings would indicate the productivity of the quail population by showing the adult:immature ratio, and the hatching dates of the quail 21 weeks of age or less (Petrides and Nestler 1943).

Prior to the 1949 - 50 hunting season, ten quail hunter record cards and 100 wing-collecting envelopes were distributed to the Game Warden in each of the fifteen counties in southeastern Virginia. The wardens were requested to distribute one card and ten envelopes to each of ten representative quail hunters in the county. Each hunter was requested to keep a record of each hunt and to save one wing from each of ten quail. In order to obtain the desired information, quail killed during the first half of the hunting season were preferred. Had these requests been fulfilled, there would have been 150 quail hunter records and 1,500 quail wings.

The returns of the quail hunter record cards and the quail wing-collecting envelopes were quite discouraging. In all, only twenty-five from nine counties were returned, filled out in usable condition, or a return of 16.6%. Because of the keen interest of a few hunters, there was a return of 482 quail wings, or 32.1% of the envelopes distributed.

The quail hunter record cards were divided into two groups, those who hunted in the Piedmont counties and those who hunted in the Coastal Plain counties. This division applied logically because of a slightly different climate and because of different crops. In the Coastal Plain the principal crops are peanuts, corn, and soya

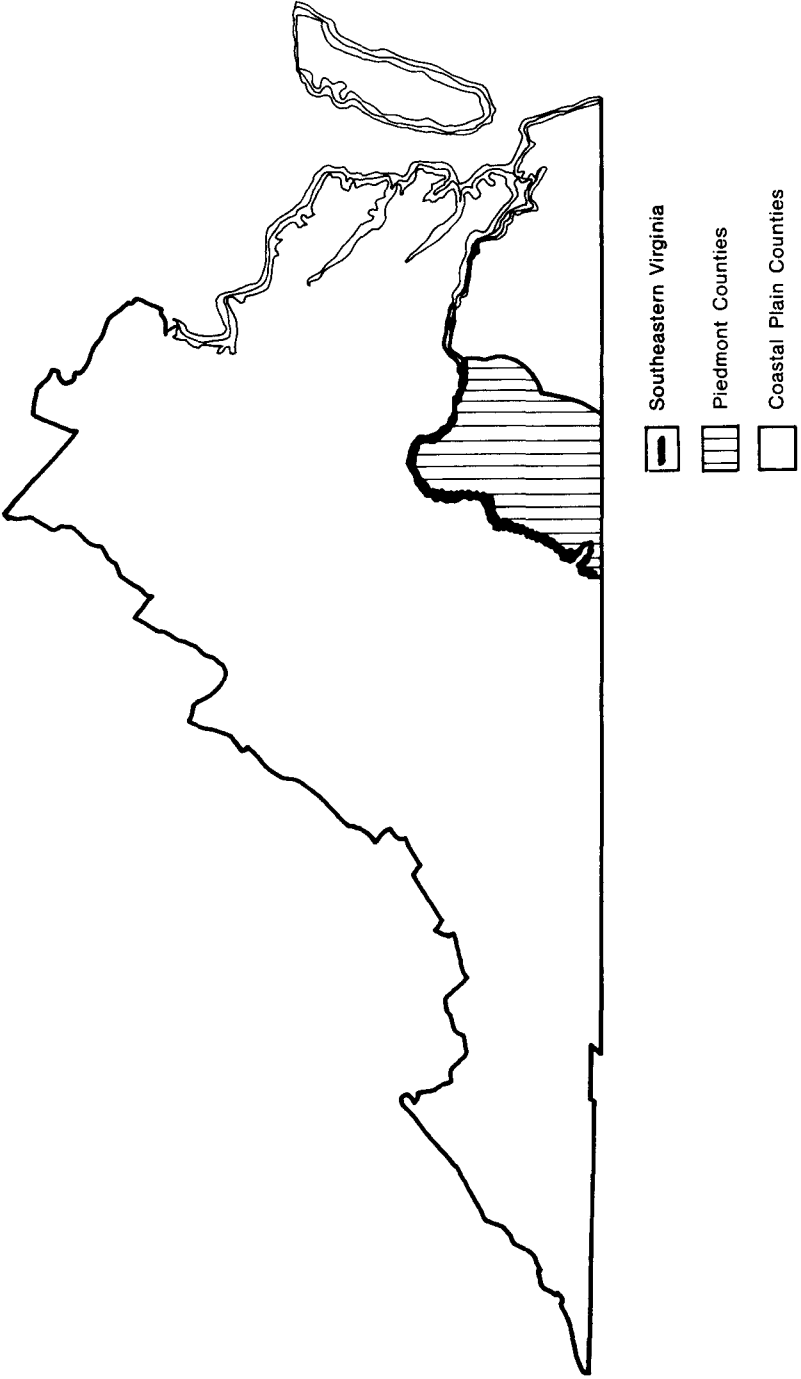


Fig. 1. Location of Virginia study area.

HUNTERS RECORD												
QUAIL												
NAME _____												
ADDRESS _____												
Date												
No. hours hunting												
No. coveys located												
No. quail killed												
Sex of kill: Male												
Female												
No. shot and lost												
Wings saved												
No. coveys located in woods												

Fig. 2. Quail hunter record card.

QUAIL WING RECORD DATA	
Date Killed	_____
County	_____
Nearest P. O.	_____
Right _____ or Left _____	Wing _____
Cock _____ or Hen _____	(Check One)
Collector	_____

Fig. 3. Quail wing record card.

beans, whereas in the Piedmont the major farm crops are tobacco, corn, grain and lespedeza.

It is quite obvious from the information available (Table 1), that the Piedmont counties have better quail hunting than the Coastal Plain counties. The average hunter in the Piedmont located 0.9 of a covey of quail and killed 1.1 quail for every hour hunting, while the average hunter in the Coastal Plain located only 0.68 of a covey of quail and killed only 0.64 of a quail per hour hunting.

The sex ratio of 113.5 and 110.0 males per 100 females is very normal as compared to the kill records of other states. For example, in the Northcentral states the sex ratio was 110.5 males per 100 females, based on 4,184 quail (Leopold 1933), and in Georgia and Florida the ratio was 114 males per 100 females, based on approximately 20,000 specimens (Stoddard 1932). The per cent shot and lost was 12.8% in the Piedmont and 13.0% in the Coastal Plain, both slightly less than Aldo Leopold's 18% crippling loss in New Mexico for 355 quail

This table goes on page 444.

Table 1. Results from quail hunter record cards.

Region	Hours		Kill		Number		Coveys		Kill per hour	M per 100 F	% Lost	% Coveys in woods
	Hunting	Coveys Located	Males	Females	Lost	in woods	Coveys per hour	Coveys per hour				
Piedmont	528	477	58	311	274	75	155	0.90	1.10	113.5	12.8	32.5
Coastal												
Plain	362	245	231	121	110	30	130	0.68	0.64	110.0	13.0	53.0
SE Va.	890	722	816	432	384	105	285	0.81	0.92	112.2	12.9	39.5

killed over the five year period 1919 - 1923 (Leopold 1933). Another interesting point, and probably the reason for fewer coveys being located and less quail killed in the Coastal Plain counties, was that 32.5% of the quail in the Piedmont were located in the woods, while 53.0% of the coveys of quail located in the Coastal Plain were found in the woods. Because of the dense cover normally found in ungrazed woodlands hardship was added to quail hunting in the Coastal Plain, and a safer life for the bobwhite family was indicated.

The greatest value of this investigation is that the data assembled in 1949 - 50 from Southeastern Virginia can be compared with similar information collected in the future. In the total of 890 hours hunting, 722 coveys were located; 816 quail were killed; 105 quail crippled; and 285 coveys were located in the woods. In the opinion of the writer, the principal points for comparison with future data are that during the 1949 - 50 hunting season in Southeastern Virginia, 0.81 coveys were located per hour hunting, 0.92 quail were killed per hour hunting, the sex ratio was 112.2 males per 100 females, 12.9% of the quail killed were shot and lost, and 39.5% of the coveys were located in the woods. If this type of hunter record is continued for several years, using the same hunters when possible, a reasonable indication as to the trends in the quail population will be available.

The information from the wings collected is not complete enough to show the peak periods of hatching because the wings were collected over the entire hunting season ranging from November 20, 1949 to January 20, 1950. Therefore, since the age of juvenile quail can only be determined up to 21 weeks, the hatching dates of the quail killed after the middle of December could only be narrowed down to an unknown date at least 21 weeks prior to the date killed (Petrides and Nestler 1943). From the results obtained a comparison was made of the productivity and hatching dates of the Piedmont and Coastal Plain, which are slightly different in climate and very different in farm crops.

In Table 2 it is interesting to note that 89.5% of the quail killed were hatched during the 1949 nesting season. This is considered to be a very high rate of productivity, or ratio of adults to birds hatched during the year, and a good nesting season for Southeastern Virginia quail as compared with a four year study in Blacksburg, Virginia. Information collected from 236 quail taken at Blacksburg showed that 80.5% were immature quail (Gehrken 1948). A continuation of the collection of hunter kill records and wing data, as well as a study of the weather conditions may indicate the conditions necessary for a good nesting season. This study may provide the means for the prediction of quail population, based on favorable or unfavorable weather conditions. Another point brought out by this study is that 47% of the quail killed during the year in the Coastal Plain counties were hatched after July 31, while only 30% of the quail collected from the

Table 2. Results from the collected wings.

Totals	Adults		Immature		Hatched before	Hatched after	Undeter-
	males	females	males	females	July 31	July 31	mined juveniles
Coastal							
Plain	9	9	79	60	63	57	29
Piedmont	17	16	149	143	145	62	75
Total	26	25	228	203	208	119	104

Piedmont counties were hatched after July 31. This seems to indicate a difference in the nesting habits of the quail in the Piedmont and Coastal Plain Regions of Southeastern Virginia.

The greatest value in this type of investigation is not found during the first year, but is found after a comparison is made using the same type of record for several years: thus, the trends in quail habits and population may be followed.

SUMMARY

The combined use of the data from wings and hunter records will give the trends in the quail population in Southeastern Virginia.

The hunter records will indicate the trends in the quail habits.

More complete information as to the hatching dates can be determined in the future from early season wing collections.

If the trends in the quail population can be determined, and future prediction of the population can be made, the present farm game program may be evaluated.

LITERATURE CITED

- Gehrken, G. A. 1948. Factors influencing the winter survival of the bobwhite quail on the V. P. I. college farms, Montgomery county, Virginia. (unpublished thesis) Va. Coop. Wildl. Res. Unit V. P. I., Blacksburg, Virginia.
- Leopold, Aldo 1933. Game Management, Charles Scribner's Sons, N. Y. 481 pp.
- Petrides, George A. and Nestler, 1943. Age determination in juvenile bobwhites quail. *Amer. Wild. Nat.* 30(3): 774-782.
- Stoddard, H. L. 1932. The bobwhite quail, its habits, preservation, and increase. Charles Scribner's Sons, N. Y.