

## SWAINSON'S WARBLER IN SOUTH CAROLINA

Robert G. Hooper  
Southeastern Forest Experiment Station  
USDA; Forest Service  
Clemson, S. C. 29631

Paul B. Hamel  
Dept. of Zoology  
Clemson University  
Clemson, S. C. 29631

Some birds species have been rare since man discovered them. Two such birds, Bachman's warbler (*Vermivora bachmanii*) and Swainson's warbler (*Limnothlypis swainsonii*), occur in South Carolina. Both were discovered there in the early 1800's. Subsequently, both went unreported for several decades. Arthur T. Wayne found populations of both warblers near Charleston: Swainson's was rediscovered in 1884 and Bachman's in 1901. Both species nest in hardwood swamps and bottomland forests. Here the parallel ends. Bachman's warbler is now close to extinction. Swainson's is still considered rare, although sizeable local populations are known in the South (Meanley 1971). Overall, the population of Swainson's warbler may be less than that of the Bachman's at its historical peak (Stevenson 1972).

Rare does not necessarily mean endangered, but obviously rare species may require special attention. Without monitoring, such a species could pass a critical low point in its population before man becomes aware that a problem exists. This paper gives a history of the sightings of Swainson's warbler in South Carolina from the early 1800's through 1976. Those sightings are depicted by county and region in Figure 1 so that the reader can follow the discussion more easily.

### HISTORY IN SOUTH CAROLINA

#### *Coastal Plain*

The first reported Swainson's warbler was collected in 1832 or 1833 along the Edisto River near Jacksonboro, South Carolina, by the Reverend John Bachman (Sprunt and Chamberlain 1949). Bachman collected five birds (Brewster 1885). John Abbot had found the species 25 years earlier in Georgia but did not report his find (Meanley 1971). The next report of the bird within the State was in 1872 from Frogmore, Beaufort County (Brewster 1885). In 1883, eminent ornithologist William Brewster visited Charleston to rediscover Swainson's warbler. Both he and his guide, Arthur T. Wayne, failed. The following year they collected 50 specimens (Brewster 1885). In 1885, Wayne collected 46 birds and found 4 nests (Wayne, unpubl. notes on file at Charleston Museum). He occasionally collected skins and nests of the species into the second decade of the 20th century. Wayne's activities occurred primarily within 30 miles of Charleston.

After Wayne's death, few birds were reported from the Coastal Plain. A family of Swainson's warblers was found in Georgetown County in 1953 (Hodel 1953), and one bird was seen in Dillon County in 1972?

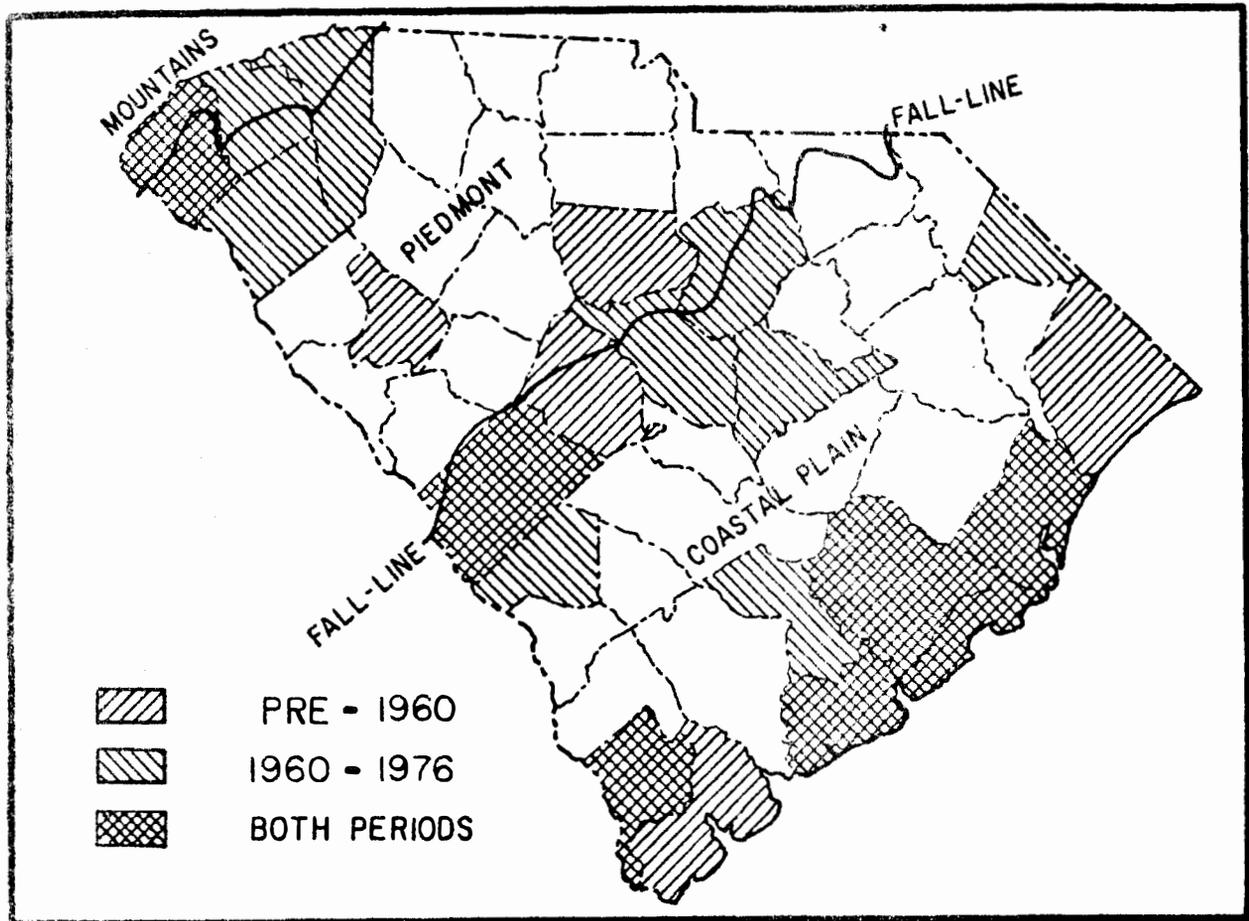


Figure 1. Sightings of Swainson's warbler in the various counties and regions of South Carolina during the nesting season (April-July) from the early 1800's through 1976. Based on citations in the text.

(Potter 1972). In Jasper County, five singing males were found in 1960 (Chamberlain 1960). Twenty-three birds were found in Richland and Sumter Counties in 1975 (E. Dabbs, Sumter, S. C., pers. commun., 1976).

Meanley (1966) considered Swainson's warbler to be less common in the Lower Coastal Plain of South Carolina and Georgia in the 1960's than at the turn of the century. His argument was based on the number of birds Wayne collected in 1884, on the 24 nests Perry (1887) found near Savannah in 1887, on the observation of E. S. Dingle of Huger that the bird had declined markedly in his lifetime, and on his personal observation in Jasper County in the 1960's.

#### *Piedmont*

Between 1900 and 1959, reports from other parts of the State were infrequent. Notable were two nests from the Piedmont—one near Winnsboro, Fairfield

County, in 1905 (Wayne 1910) and another from Greenwood County in 1924 (Sprunt and Chamberlain 1949). A male was collected near Walhalla in 1940 (Meanley 1971). H. E. LeGrand (Zoology Dep., Clemson Univ., pers. commun., 1976) found a bird in 1974, 1975, and 1976 in Anderson County.

#### *Fall-Line*

Four singing males were reported from Lexington County in 1932, and two nests were found in Aiken County in 1920 (Sprunt and Chamberlain 1949).

In 1937, Murphey (1937) found that Swainson's was abundant within its restricted habitat of canebrakes along the Savannah River near Augusta, Georgia: most of this habitat was on the Georgia side (J. F. Denton, Med. Coll. of Ga., Augusta, pers. commun., 1976). During 1955-58, Norris (1963) found Swainson's to be fairly common along the Savannah River in Aiken and Barnwell Counties.

In 1967, Simpson and Platt (1967) reported a singing male and possibly a nest along the Wateree River in Sumter County. P. McKenzie found 12 singing males on Big and Little Lynches Rivers in Kershaw County in 1975 (Teulings 1975).

#### *Mountains*

By 1950, it was known that a population of Swainson's warblers inhabited the Southern Appalachians of West Virginia, Kentucky, and Georgia (Meanley 1971). In 1935, Williams (1935) found the warbler in western North Carolina, but strong evidence of nesting was not found until 1961 when Parnell and Quay (1964) saw adults feeding fledglings along the Toxaway River near the South Carolina line. In 1962, Shuler (1962) found a singing male in Oconee County, and J. E. Cely saw and heard four more in 1969 (Parnell 1969). Mark Simpson found a singing male in northern Greenville County in 1965 and another in Pickens County along the Horsepasture River in 1970 (Burton 1970). H. E. LeGrand, S. A. Gauthreaux, and P. B. Hamel found 8 warblers in the Rocky Bottom area of Pickens in 1974 (Teulings 1974), 19 birds in 1975 (Teulings 1976), and 10 in 1976 (pers. obs., junior author). Hooper heard a Swainson's at Earl's Ford on the Chattooga River in Oconee County in 1975, and R. E. Gutkin (Zool. Dep., Clemson Univ., pers. commun., 1976) found four warblers at Burrell's Ford on the Chattooga in 1976. Hamel, LeGrand, and Gutkin found a singing male at Lake Jocassee in 1976.

### COASTAL PLAIN SURVEY: 1975-76

Our search for Bachman's warbler (Hamel et al. 1976, Hamel and Hooper 1977) provided an opportunity to gather data on Swainson's warbler in Berkeley, Dorchester, and Charleston Counties. Field work was concentrated on the Francis Marion National Forest, the Francis Beidler Memorial Forest, Cardin Bridge Swamp, and Caw Caw Swamp. We paced through bottomland hardwood stands and stopped every 400 feet to play a recording of the Swainson's advertising song for about 1 minute. In 1976, some areas were covered by canoe instead of foot; spot checks were made in likely habitats along roads, during which times the recording was not always used.

Field work started on 22 March 1975 and on 3 April 1976; the first Swainson's warblers were found on 11 April and 15 April, respectively. The data in Table 1

were collected on and after these dates. Acreage covered is based on a radius of detectability of 226 feet. In other words, we assumed we could attract Swainson's warblers that were within 226 feet of the tape recorder. Thus, at each stop we sampled 3.68 acres. We found 41 Swainson's warblers in 1975 and 55 in 1976.

TABLE 1

Results of search for Swainson's warbler in Berkeley, Charleston, and Dorchester Counties, South Carolina

Year	Field days	Locations	Area	Warblers
		Number	Acres	Number
1975	21	723	2,660	41
1976	28	1,112	4,093	55

### MOUNTAIN SURVEY: 1975

Encouraged by the relatively large numbers of Swainson's warblers found in the Rocky Bottom area of Pickens County (Teulings 1974, 1976), we searched 10 other drainages in Oconee County to obtain a better idea of the distribution and abundance of the bird in the mountains. Because it was not possible to pace along the creeks accurately, we recorded the start and end points of our searches on topographic maps and measured the miles of drainage covered (Table 2). During each search, we stopped every 400 feet (approximately) and played the advertising song for 1 minute. Only five Swainson's warblers were found along the 11.3 miles of drainage searched.

TABLE 2

Results of search for Swainson's warbler in Oconee County, South Carolina, in 1975

Drainage	Distance searched		Warblers found
	Miles	Feet	
Chattooga, East Fork	2.3	2,080-2,480	0
Limber Pole	.7	1,600-1,900	0
Tamassee	.9	1,150-1,350	0
King	.6	1,940-2,260	1
Chauga	1.0	1,420-1,440	0
Chauga	1.4	1,100-1,180	1
Stump	.6	1,400-1,640	0
Tugaloo Lake	1.1	980-1,300	2
Little Long Nose	1.2	950-1,400	1
Long	.6	1,040-1,200	0
Cedar	.9	1,200-1,600	0
Total	11.3		5

## DISCUSSION

Because we played the Swainson's advertising song during our searches and A. T. Wayne did not, the two sets of findings cannot be directly compared.

Furthermore, 12 of the 93 birds Wayne collected in 1884-85 were juveniles and 12 were adult females, indicating that he exploited family groups. Most of our birds were males, and all were adults. Brewster (1885) noted that Wayne often left the female to decoy other males, and in one case five males and one female were collected at the same location. Nonetheless, we found about twice as many birds per field day in 1975-76 as Wayne collected in 1884-85. Wayne spent 107 days in areas where he collected 93 Swainson's (Wayne, unpubl. notes on file at Charleston Museum), for an average of 0.9 bird per field day. We spent 49 days in the field and found 96 birds or 2.0 birds per field day.

We probably covered more ground per day than Wayne, but our greater mobility may not have given us advantage over Wayne in finding birds.

Brewster (1885, p. 70) said that Wayne pinpointed the few swamps that had birds: "... it might be inferred that Swainson's warbler is an abundant bird near Charleston. This, however, is certainly not the case. Indeed, there is no present evidence to show that it is even common there except in a few localities, and the keenest collector may cover miles of apparently suitable ground without finding a single specimen."

Our searches indicate that Swainson's warbler is probably as numerous today in suitable habitat in the Lower Coastal Plain as it was in 1884-85. Because some habitat has undoubtedly been destroyed by impoundments and other development, overall numbers of Swainson's in that region may be less today. However, habitat loss since Wayne's time may have been partially offset by reversion of former agricultural lands to forest.

Sightings near the Fall-Line and in the Upper Coastal Plain are much more frequent today than they were formerly. These sightings probably reflect an increase in observers rather than in birds. The apparent break in occurrence of the bird in the Coastal Plain (Figure 1) is probably due to lack of information.

Because the mountain population was discovered only recently, we cannot compare current numbers with those of earlier days. The relatively large numbers found in the Rocky Bottom area of Pickens County are not characteristic of other drainages. Some suitable habitat in these areas has been

destroyed by impoundments. However, there may be other mountainous areas with large number of birds: suitable habitat occurs on the Chattooga and Eastatoe Rivers, but we have not covered these areas during the nesting season.

Although Swainson's warbler is a rare species, it does not appear to be endangered in South Carolina. The bird has a wide distribution, probably greater than present information indicates. There appears to be no particular threat to its habitat in the Coastal Plain or near the Fall-Line at the present time. Little is known about the mountain population, but if the bird is concentrated in a few areas such as Rocky Bottom, it would be vulnerable to habitat destruction. Because the bird is rare, we feel additional research should be conducted. In particular, a better understanding of habitat requirements, distribution, and population densities would permit a more meaningful evaluation of the status of Swainson's warbler in the future.

## LITERATURE CITED

- Brewster, W. 1885. Swainson's warbler. *Auk* 2:65-80.
- Burton, E. M. 1970 Supplement, p. 573-642. In Sprunt, A., Jr., and E. B. Chamberlain, South Carolina bird life. Rev. ed. Univ. S. C. Press, Columbia.
- Chamberlain, B. R. 1960. Briefs for files. *Chat* 24:105.
- Hamel, P. B., and R. G. Hooper. 1977. Bachman's warbler: the most critically endangered. *Proc. S. C. Symp. on Endangered Spec.*, Charleston. (This vol.)
- Hamel, P. B., R. G. Hooper, and L. M. Wright. 1976. Where is the Reverend Bachman's warbler? *S. C. Wildl.* 23(2):9-13.
- Hodel, E. M. 1953. Swainson's warbler breeding in Georgetown County, S. C. *Chat* 17:94.
- Meanley, B. 1966. Some observations on habitat of the Swainson's warbler. *Living Bird* 5:151-165.
- Meanley, B. 1971. Natural history of Swainson's warbler. *North Am. Fauna* 69, 90 p. USDI Bur. Sport Fish & Wildl.
- Murphey, E. E. 1937. Observations on the bird life of the Middle Savannah Valley 1890-1937. *Charleston Mus. Contrib.* 9, 61 p.
- Norris, R. A. 1963. Birds of the AEC Savannah River Plant area. *Charleston Mus. Contrib.* 14, 78p.

- Parnell, J. F. 1969. Briefs for the files, Swainson's warbler. *Chat* 33:107.
- Parnell, J. F., and T. L. Quay. 1964. The summer birds of the Toxaway River Gorge of Southwestern North Carolina. *Wilson Bull.* 76:138-146.
- Perry, T. D. 1887. Some additional notes on Swainson's warbler. *Ornitholog. & Oologist* 12:141-142.
- Potter, E. F. 1972. Spring bird count—1972. *Chat* 36:82-87.
- Shuler, J. B. Jr. 1962. Swainson's warbler in the South Carolina mountains. *Chat* 26:75-76.
- Simpson, M., Jr., and D. Pratt. 1967. Evidence of nesting of the Swainson's warbler in Sumter County, S. C. *Chat* 31:77.
- Sprunt, A., Jr., and E. B. Chamberlain. 1949. South Carolina bird life. 571 p. Univ. S. C. Press, Columbia.
- Stevenson, H. M. 1972. A recent history of Bachman's warbler. *Wilson Bull.* 84:344-347.
- Teulings, R. P. 1974. Briefs for the files, Swainson's warbler. *Chat* 38:96-98.
- Teulings, R. P. 1975. Briefs for the files, Swainson's warbler. *Chat* 39:95-98.
- Teulings, R. P. 1976. Briefs for the files, Swainson's warbler. *Chat* 40:21.
- Wayne, A. T. 1910. Birds of South Carolina. *Charleston Mus. Contrib.* 1, 254 p.
- Williams, E. A. 1935. Swainson's warbler in the North Carolina mountains. *Auk* 52:458-459.