

# BACHMAN'S WARBLER HABITAT

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From the very beginning some descriptions of habitat occupied by Bachman's Warbler (*Vermivora bachmani*) have seemed contradictory. In the original description Audubon (1834) called it "Bachman's Swamp-warbler," and its association with swamps, at least in the breeding season, has not been questioned since. In regard to the first specimen taken, a female, he quoted John Bachman that it was "gliding among the branches of thick bushes." Yet when Bachman later took the first male, he wrote to Audubon, "I saw the bird on the upper branches of the largest Tupelo Tree" (Deane 1929).

The first nest discovered was 2 feet from the ground in a 2-acre patch of blackberry bushes, but the male generally sang "seated on a dry or thinly leafed branch at a height of twenty to forty feet from the ground" (Widmann 1897).

Fall migrants at Key West, male and female, were "found alike in the trees, low bushes, and shrubbery, sometimes on or quite near the ground" (Scott 1890). Males and females migrating up the Suwanee River in spring, however, "not only frequented the tops of the tallest trees, but at all times of the day and under every condition of weather kept at a greater average height than any other Warbler excepting *Dendroica dominica*" (Brewster 1891).

Of only 37 known nests, and a few more yet may turn up in scattered oological collections, 32 were found by Arthur T. Wayne (field notes and collection books, Charleston Museum) in I'On Swamp about 20 miles NE of Charleston, S.C. The remainder were found by four different ornithologists in widely separated localities (Embody 1907, Holt 1920, Stevenson 1938, Widmann 1897 and 1907). Wayne's finds resulted from prolonged purposeful searching, rather than from chance which would favor discovery of the more accessible and conspicuous nests. As such, his data are a less biased sample than the others, and must weigh heavily in determination of Bachman's Warbler breeding habitat.

Of the first six nests he found, Wayne (1907) wrote, "The swamp in which this warbler breeds is heavily timbered and subjected to overflow from rains and reservoirs. The trees are chiefly of a deciduous character, such as the cypress, black gum, sweet gum, tupelo, hickory, dogwood, and red oak. In the higher parts of the swamp short-leaved pines, water oaks, live oaks, and magnolias abound. The undergrowth is chiefly cane, aquatic bushes, and swamp palmetto, while patches of blackberry brambles and thorny vines are met with at almost every step . . . .

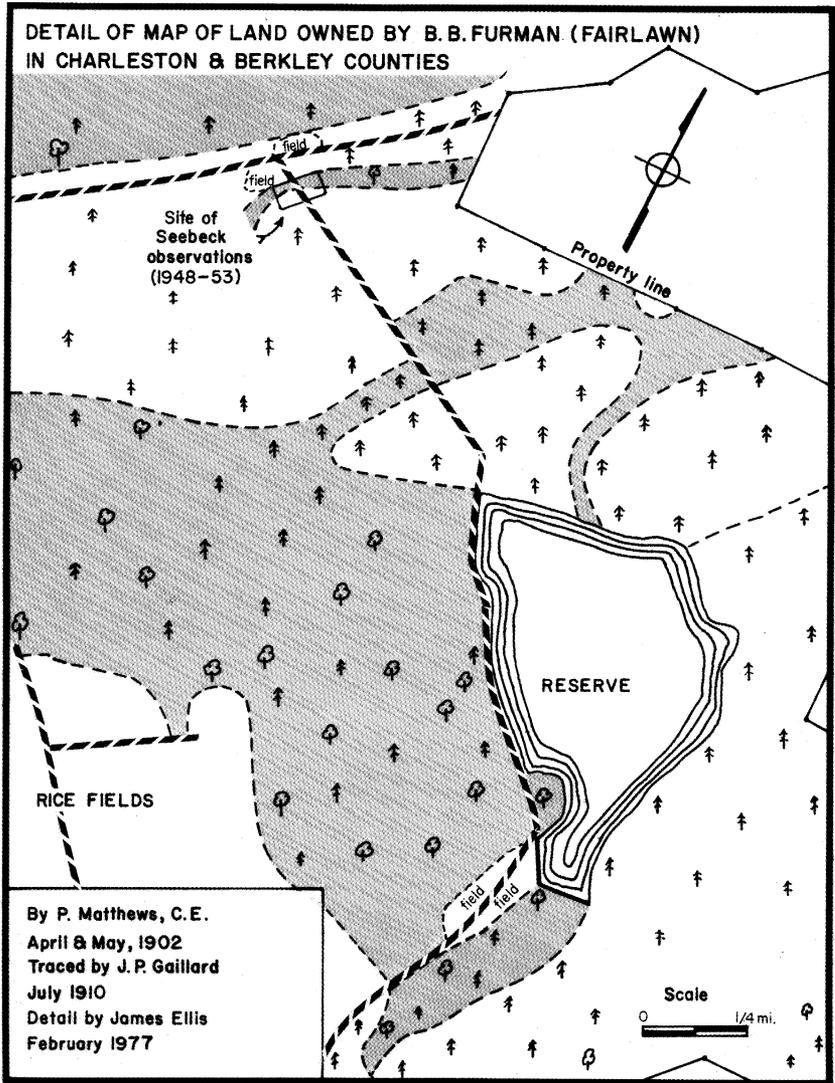
"Bachman's Warbler . . . generally sings from the top of a sweet gum or cypress . . . and upon leaving a tree it flies a long distance before alighting. On this account it is impossible to follow the bird through the dark forest, and it can only be detected by its song."

The exact location of the first six nests can be inferred by checking a map (Fig. 1) of the area drawn in 1902 against Wayne's (1907) placement of the site. "This primeval forest is flanked on the western side by an enormous reservoir, the water of which is used to flow the rice fields that are in close proximity to the swamp."

The relationship of rice fields, swamp, and reservoir on the map makes clear that Wayne lapsed, and meant to say that the forest was flanked *by* the western side of the reservoir. The road along the western edge of the reservoir gave Wayne easy access to the area. Although the bottomland hardwood forest there was cut shortly before 1920, today it again vividly matches Wayne's description.

We know the size of one tree in that dark forest. Wayne (1910) shot a singing male "from the top of a huge water oak some eighty feet from the ground." On 21 May 1904 Wayne (1910) observed in the forest Black-throated Green Warblers (*Dendroica virens*) that "were singing constantly from the tops of the tallest trees, some of them being scarcely visible from the ground at such a height."

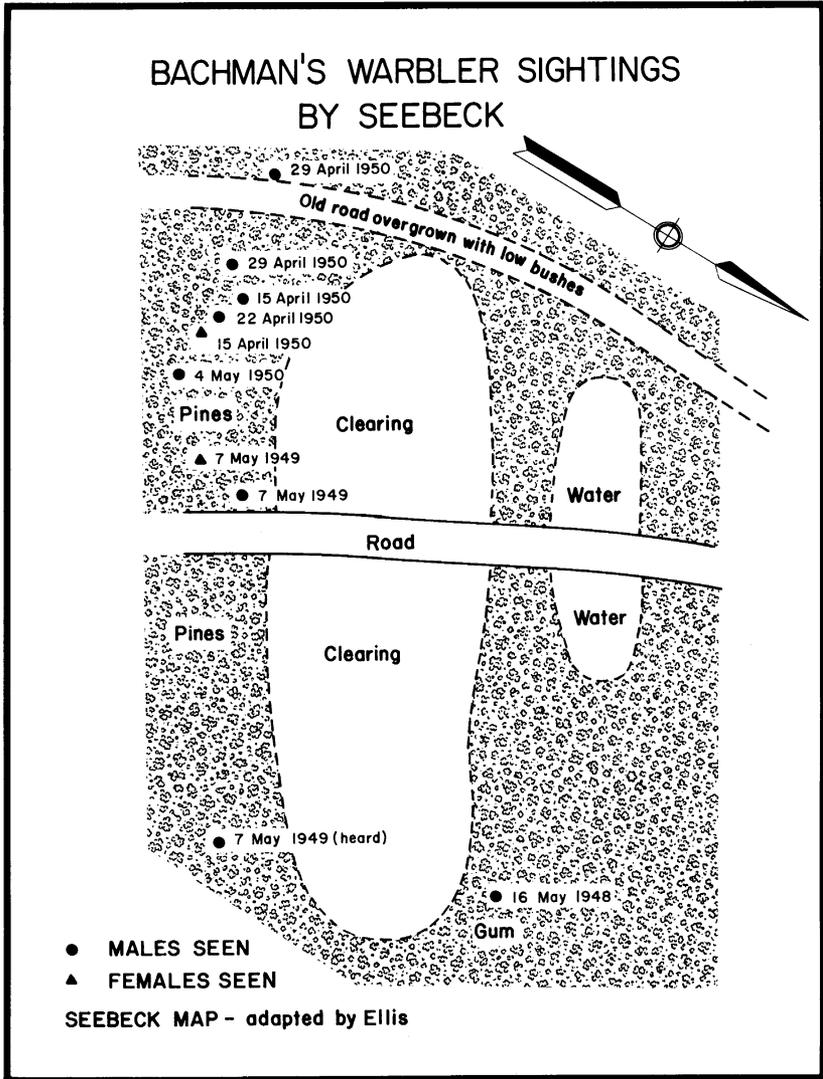
Analysis of Wayne's unpublished notes shows that no nests were placed higher



**Figure 1**

than 4 feet from the ground, and none lower than 1 foot. The average for the 28 nests for which data are given is 2.26 feet. All were concealed in dense underbrush, and usually were near, or over, standing water. To avoid the conclusion that these nests were found in the interior of a relatively mature, dense-canopied swamp forest one must assume that Wayne was not describing what he saw.

Here and there in Wayne's unpublished notes, however, are hints that while the Bachman's Warblers he saw were always associated with the interior of mature, or relatively mature, swamp forests during nesting, sometimes they simultaneously ex-



**Figure 2**

plotted habitat contiguous to the forest. On 10 May 1905 he shot an adult male, an immature male, an immature female, observed the parents of the young birds, and heard another male singing nearby, "All in low bushes on the edge of the backwater" (see Fig. 1). He found a nest on 17 April 1906 that was "three feet from the ground on comparative high-land and in an open place fully exposed to sunlight." This nest was in sharp contrast to the others, most of which were in deep shade.

Wayne (unpublished notes) saw his last Bachman's Warbler in l'On Swamp on 14 April 1920. Not until 8 May 1948 was it seen there again (Sprunt and Chamberlain

1949). From that day through the spring of 1953 (Barnes 1954) numerous observers, many of them professional ornithologists, observed Bachman's Warbler on Fairlawn Plantation, the privately owned part of l'On Swamp where Wayne (1907) first found nests.

Strikingly, females as well as males were recorded. In 1949 two males and a female were noted by N.H. Seebeck Jr., G.B. Rabb, T.M. Uzzell Jr., and others (Sprunt and Chamberlain 1949). Sprunt wrote to Shirley A. Briggs, editor of the *Atlantic Naturalist*, "The Bachman's Warbler appeared again in Fairlawn in 1950 and both the male and the female were seen on four occasions between April 15 and May 5" (Barnes 1954). Seebeck saw a female and two males on 4 April 1950 (Chamberlain 1958).

Published reports of the sightings made from 1948 through 1953 strongly suggest breeding, but unfortunately contain nothing to indicate location or extent of territory, habitat, or behavior beyond singing by males. Fairlawn is a large property, more than 6000 acres, and one could assume that the birds were found at several different places. This notion is dispelled by unpublished notes of N.H. Seebeck Jr. Included is a map (Fig. 2) showing forest types, location of a clearing, water, and roads. Exact sites and dates of many, but not all, of the observations are indicated.

The 1948-1953 observations centered upon a small clearing bisected by a dirt road (Fig. 2). Seebeck's notes of 15 April 1950 describe woods south of the clearing as "Almost all loblolly pine, few small gums, low bushes (inkberry?)." He recalls (letter, 23 November 1976), "There were large gum trees in the area; I remember distinctly that my first view of the bird on 16 May 1948 was in a very large gum on the left of the road near the end of the clearing (marked on the sketch)." According to notes of 7 May 1950 males were seen in the differing habitats on either side of the clearing: "Found bird [male] on far east side of road first, then moved into cypresses just north-west of clearing, then into usual territory to south-west of clearing."

At least one nearby territory was indicated by notes of 29 April 1950, "2 Males singing; one in woods east of clearing, one just south of it." And on 4 May 1950, "Another male singing to the west, heard only 3 or 4 times."

Encounters between Bachman's Warblers were recorded. On 15 April 1950 Seebeck "Saw male chasing female first, female had broken tail feather . . .", and on 6 May 1951 "Heard male singing as soon as we arrived. Very active but had good views for about 20 minutes. Charlie saw a movement in a small mulberry at edge of clearing and it turned out to be another male. He was not singing at all: appeared to be 'poaching' on other male's territory and wanted his presence unknown."

Within the pine zone of the territory the warblers kept mostly to the middle and lower stories. On 15 April 1950, "Male flew into small gum tree about 15 ft. high and fed for about 10-15 minutes"; 4 May 1950, "Fed through pines and low brush, singing constantly"; 7 May 1950, "Bird stayed in lower branches of pines almost constantly, only dropped into bushes once." Additional evidence for use of the lower story is the account given above of the "poaching" male.

Some detailed information and unifying conclusions about the habitat used by Bachman's Warbler are revealed by a careful reading of Wayne's published and unpublished writings, along with a study of Seebeck's notes. In sum, the Wayne and Seebeck data show that Bachman's Warbler territories may be limited to mature hardwood swamp forests that contain patches of thick undergrowth; or, territories may span the edge of swamp forest into other vegetative zones, including pine. Although nests are placed near the ground in the swamp forests, males in that habitat tend to spend much time in the upper story. Birds with territories spanning mixed habitats may satisfy their needs closer to the ground. Bachman's Warblers may colonize small patches of wet hardwood and cypress well removed from the main swamp.

## ACKNOWLEDGMENTS

I thank Albert E. Sanders and the Charleston Museum for access to Wayne's unpublished notes; Richard D. Porcher Jr. and Gaillard and Gaillard (surveyors) for the map on which Figure 1 is based; James Ellis for preparation of Figures 1 and 2; and N.H. Seebeck Jr. for sending me unpublished notes and other information. Seebeck is to be commended for his persistence in visiting Fairlawn, and for recording and preserving his observations. Without his diligence what may have been the last opportunity to collect data on known Bachman's Warbler breeding territories would have been lost.

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## BRIEFS FOR THE FILES

(Continued from Page 55)

- LINCOLN'S SPARROW: An individual was seen at North Litchfield Beach, S.C., on 1 November by Renee Probst. Inland migrants were observed at Raleigh, N.C., on 30 October by Clark Olson and at Townville, S.C., on 7 November by Harry LeGrand.
- LAPLAND LONGSPUR: One was identified among a flock of Horned Larks at Pendleton, S.C., on 2 November by Harry LeGrand. Six were seen there by the same observer on 30 November.
- SNOW BUNTING: A single bird was seen on 18 November at the Cape Point campground, Hatteras Island, N.C., by Joe Hudick. Elsewhere one was an unexpected find in the Raleigh, N.C., area on 13 November, observed at Beaver Dam Reservoir by Robert Hader.