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Territory Size and Density of Bachman's Sparrow in South Central Florida

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Territory size and density of Bachman's Sparrow in south central Florida.—Bachman's Sparrow (*Aimophila aestivalis*) breeds in a variety of grassy habitats in the southeastern United States. In West Virginia, Brooks (1938) found the species nesting in fields of beard grass (*Andropogon* sp.) containing various composites and shrubs. Wolf (1977) reports that in the southern part of its range, Bachman's Sparrow breeds "in open pine stands with a grassy substrate and scattered shrubs, oaks, and other hardwoods." Howell (1932) found the species common in Florida in treeless areas dense with saw palmetto (*Serenoa repens*).

Between 25 May and 15 July 1978 I estimated territory sizes of several male Bachman's Sparrows within a 267 ha (660 acre) tract of the Archbold Biological Station, 12 km south of Lake Placid, Highlands County, Florida. The tract consists of recently burned scrubby flatwoods interspersed with seasonal ponds. Scrubby oaks (*Quercus inopina*, *Q. virginiana*, *Q. chapmanii*) dominate the sandy ridges between ponds. Stands of saw and scrub palmettos (*Serenoa repens*, *Sabal etonia*) interspersed with wiregrass (*Aristida* sp.) form the margins of the ponds, which in 1978 were dry and densely covered by beard grass (see Abrahamson 1977; Woolfenden 1969). As indicated in Fig. 1, Bachman's Sparrow territories were centered about these pond margins. The birds were seldom seen in the higher oak ridges.

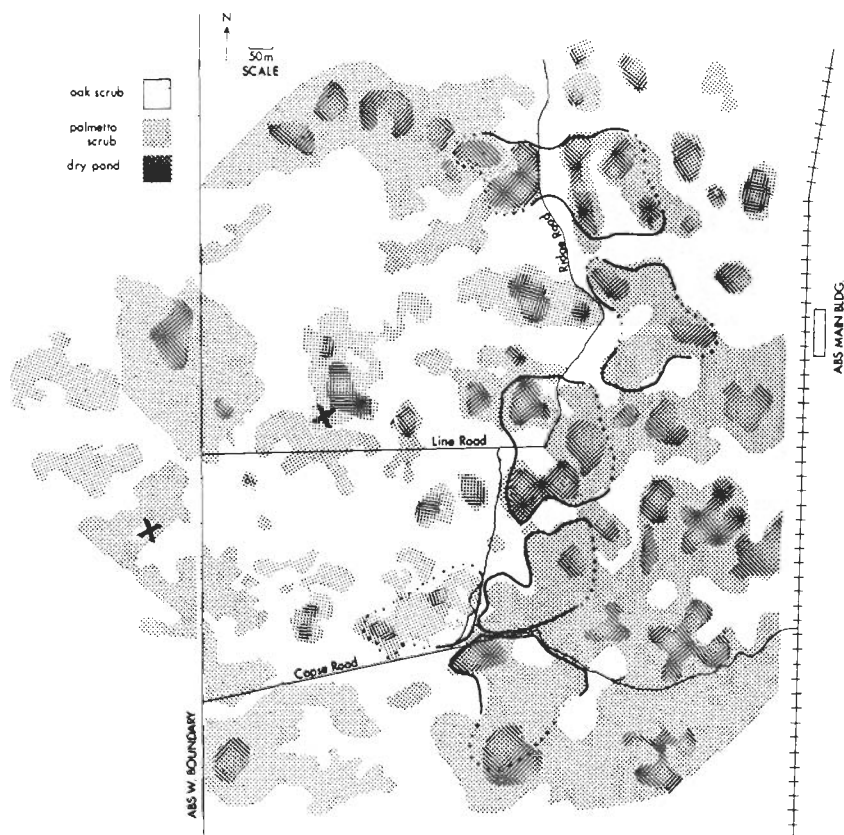


Fig. 1. Territories of Bachman's Sparrows at Archbold Biological Station. Known boundaries are designated by solid lines. Dotted lines delineate boundaries estimated from peripheral singing posts. Bold "X" 's indicate the location of singing males noted on several occasions but not under regular observation.

Territory sizes were estimated by plotting locations of singing males on an aerial photograph and measuring the area with a grid overlay. In Fig. 1, solid lines designate known territory boundaries and dotted lines show boundaries estimated only from peripheral singing posts. The average territory size of six males was 5.1 ha (12.5 acres), with a range of 4 to 6.7 ha (SD = 1.2 ha). Density of singing males throughout the 267 ha tract was one male per 33 ha (1.2/100 acres). This is a higher density than that estimated by Woolfenden (in Layne et al. 1977) for a similar tract at the Archbold Biological Station (1 male/86 ha).

In West Virginia, Brooks (1938) estimated the density of Bachman's Sparrows at one male per 3 acres (1.2 ha). Wolf (1977) found that four territories in southeastern Texas averaged 180×45 m (.84 ha or 2.1 acres), and Hicks (in Brooks 1938) stated that the average territory of this species in Ohio was 300 ft in diameter (= .67 ha or 1.7 acres). Territories of Bachman's Sparrows at Archbold Biological Station in 1978 were apparently much larger than those estimated by the above authors. Small sample sizes prohibit any tests for statistical significance in these differences. A relationship seems to exist, however, between vegetational contours and territorial boundaries as shown in Fig. 1. This suggests that variations in habitat composition may cause differences in territory size in Bachman's Sparrows. This factor must be taken into account before any meaningful regional comparisons can be made.

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