

## **NORTHERN ALABAMA BREEDING BIRD ATLAS RESULTS 1994 - 1997**

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### **INTRODUCTION**

A Breeding Bird Atlas project was conducted in northern Alabama from 1994 through 1997 in order to determine relative abundance and distribution of breeding birds. Atlas results were used to provide consistent breeding bird data for interstate bird conservation planning and project development for the Interior Low Plateaus (ILP) physiographic area (see Ford and Roedel 2000). The objective of this paper is to provide a summary of the northern Alabama Breeding Bird Atlas results.

### **STUDY AREA AND METHODS**

The atlas work was conducted in the Interior Low Plateaus (ILP) portion of northern Alabama, an area encompassing parts of six counties (Figure 1). The ILP physiographic area includes approximately 12,000,000 ha in southern Ohio, Indiana, and Illinois, central Kentucky, central Tennessee, and northern Alabama. The rolling-to-flat topography was dominated historically by oak-hickory forests, but scattered throughout the region were rock outcrops, glades, prairies, and barrens (Martin et al. 1993). All habitats are presently highly fragmented. In Tennessee, about 95% of the land base consists of non-industrial forest lands, open lands for agriculture, and urban areas. Less than 5% of the total area is in public or forest industry ownership (Vissage and Duncan 1990). Geographic information systems (GIS) analysis of mid-1990's land use shows a similar pattern in northern Alabama (Tennessee Gap Analysis Program, Tennessee Wildlife Resources Agency). The Tennessee River represents the southern border of the physiographic province where row crop agriculture, bottomland hardwood forests, and open water were common.

Field protocols for the atlas were similar to the methods used in both Tennessee and Kentucky (see Nicholson 1997, Palmer-Ball 1996), both of which were similar to atlas protocols of other states. Each USGS 7.5 minute topographic map was divided into six equal-sized blocks of 5.71 by 4.64 km (25.5 sq km). Observers were asked to sample birds in the eastern central block area (i.e., priority block) of each topographic map. Each observer conducted searches for

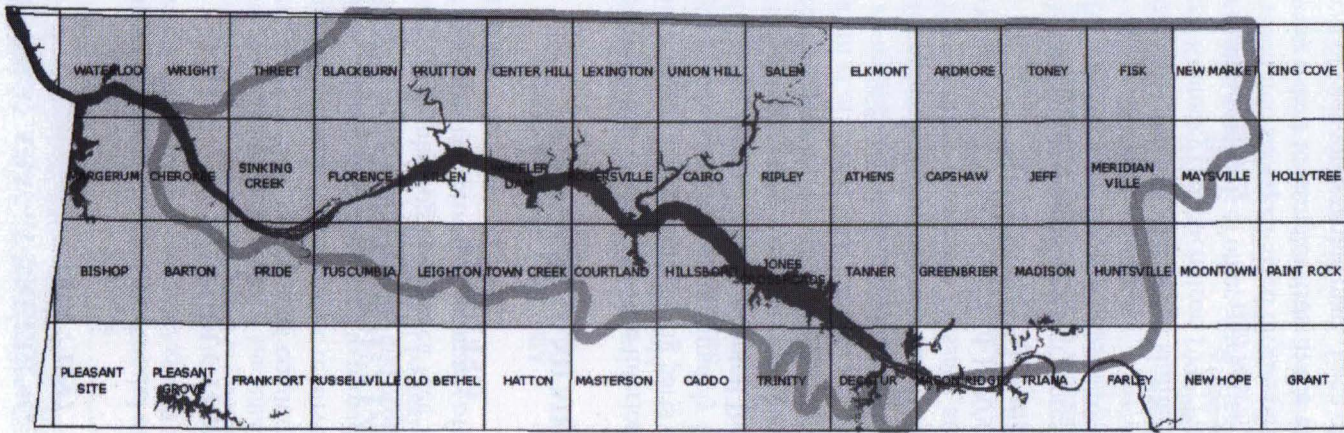
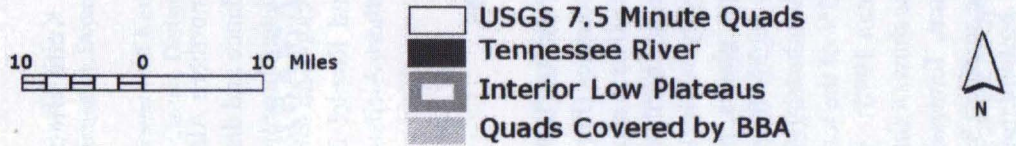


Figure 1. USGS 7.5 minute quad index for the ILP in northern Alabama with BBA coverage shaded.





breeding birds in the block and recorded the highest breeding evidence possible.

Observers also conducted roadside counts, or "miniroutes" in each priority block. Each miniroute consisted of 15 three-minute stops where observers recorded the presence of birds (not the number of individuals). Miniroutes were designed to sample as many habitats of the priority block as possible while remaining on public roads.

The Breeding Bird Atlas was conducted during the months of May, June, and July in each year from 1994 through 1997. About 600 hours were spent in the field by a number of volunteers (the exact number is no longer known). Criteria were developed to determine when a breeding bird atlas block may be considered complete. For this project, a completed block had 50 or more species recorded, a completed miniroute, and/or at least 25 observer hours. Using these criteria, 39 of the 42 atlas blocks were completed in northern Alabama. Miniroutes were conducted in 37 of those blocks with a total of 555 roadside stops. In many blocks, observers worked during more than one year and/or conducted more than one miniroute. In those cases where multiple miniroutes were conducted, the average number of stops per species from all miniroutes in that block is included in this report.

## RESULTS AND DISCUSSION

During the Breeding Bird Atlas project, 111 species were recorded (Table 1). Positive breeding evidence was recorded for 80 of those species. The average number of species per block was 59, while the species number per block ranged from 31 to 94. In the Western and Eastern Highland Rim of middle Tennessee, an average of 66 species was recorded per atlas block (Nicholson 1997). The cumulative number of species that were observed over all miniroutes was 92.

The most common species were representative of open lands and small, scattered woodlots; 29 species were detected in more than 90% of the blocks (>35 blocks). Species that were observed on more than 97% of the blocks (>37 blocks) and on more than 50% of miniroute stops (277) were Northern Cardinal, Indigo Bunting, Mourning Dove, Eastern Meadowlark, Northern Mockingbird, and Northern Bobwhite; this was consistent with the middle Tennessee atlas results (Nicholson 1997). Several species were widespread in northern Alabama, but much less abundant than those listed above, occurred on at least 90% of atlas blocks (>35 blocks), but occurred on fewer than 20% of miniroute stops (111 miniroute stops). These were Killdeer, Downy Woodpecker, Chimney Swift, Eastern Kingbird, American Goldfinch, and Barn Swallow. Loggerhead Shrike was more commonly encountered than expected, occurring on 20 atlas blocks.

Loggerhead Shrike fledglings were observed in the region from 31 May to 28 June.

For most species, the breeding dates followed expected patterns, although there was variation because of dates observers were in the field (most nesting records were in June) and the ability to detect nesting evidence. For example, positive nesting evidence for Eastern Bluebirds extended from 24 April through 9 July, while one nesting record for Cattle Egret was on 22 July.

*Rare or unusual species.*— A single record of an American Woodcock was noted. American Woodcock is an uncommon and local permanent resident that nests early in the season. Imhof (1976) reported downy young between 24 Feb to 12 April in Alabama. In Tennessee counties adjacent to Alabama, fewer than six records occurred during the Tennessee Breeding Bird Atlas (Nicholson 1997).

One occurrence of Brown-headed Nuthatch was recorded during the atlas period. Brown-headed Nuthatch is a common, breeding, permanent resident in Alabama north to at least southern Lawrence, Marshall, and DeKalb counties (Imhof 1976). In Tennessee, most records occur around Chattanooga (Nicholson 1997), although fledgling young were observed at Pickwick Landing on the Tennessee River just north of the Alabama border in 1997 (Mike Roedel, pers. obs.).

Seven observations of Cedar Waxwings were recorded during the atlas period, although none documented positive breeding evidence. Breeding records are rare in Alabama, but wintering Cedar Waxwings may linger in Alabama as late as June (Imhof 1976). However, waxwings may be increasing their breeding range; many new county records occurred during the Tennessee Breeding Bird Atlas, but with seemingly sporadic distribution (Nicholson 1997).

Bachman's Sparrows were observed in three atlas blocks and on four miniroute stops during the atlas period, and positive breeding evidence was recorded. Bachman's Sparrow is an uncommon permanent resident in suitable habitat almost anywhere in Alabama, but in the Tennessee Valley it is rare and local and has been noted only in summer (Imhof 1976). In a Tennessee concentration just north of the Alabama – Mississippi state line, almost all birds were in young pine plantations less than five years old (Nicholson 1997).

Lark Sparrows occurred in four atlas blocks and on one miniroute stop during the atlas period, and positive breeding evidence was recorded. The Lark Sparrow is rare to uncommon and local as a breeder in the western parts of the Tennessee Valley and the Black Belt (Imhof 1976). Fewer than five records occur from the Tennessee counties adjacent to Alabama. In Tennessee it was



mostly in limestone cedar glades, but in Alabama (and south-central Tennessee) it occurred in large, dry, fallow fields or in young even-aged forestry or “clearcuts” (Nicholson 1997).

*Species occurring in lower than expected numbers.*— The Blue-winged Warbler occurred on two atlas blocks, although suitable habitat seemed common. A Tennessee center of abundance is just north of the Alabama-Tennessee state line in Hardin County (Nicholson 1997).

American Redstarts were observed on two atlas blocks, although suitable habitat occurred commonly in the bottomland hardwood forests near the Tennessee River. American Redstart is a common summer resident in Alabama south to within five miles of Mobile (Imhof 1976).

Because these routes were conducted primarily during daylight hours, nocturnal species were under-represented, resulting in low numbers for nightjars and owls.

*Species not found.*— Species likely to occur in northern Alabama as breeding species, but not detected by atlas observers, include Barn Owl, Yellow Warbler, Bank Swallow, and Cerulean Warbler. Other species that were not detected during this project, but which have been recorded as breeders in Alabama and are present in the Tennessee Valley during their breeding season, included Pied-billed Grebe, Least Bittern, Osprey, Mississippi Kite, Bald Eagle, King Rail, Common Moorhen, Scissor-tailed Flycatcher, and Swainson’s Warbler (Jackson *in* Porter 2001). Further field work would likely reveal the presence of some of these. The atlas method, particularly as used here with a 17% sample, is not designed to find all breeding species. However, more work under the atlas protocol might include any of the following: additional field work in the sampled blocks, sampling an additional block in each quad to find additional species, or focused searching for additional species throughout the Alabama ILP (such as airplane searches for Osprey and eagle nests and heronries).

*Species not expected.*— Double-crested Cormorant and American Coot occurred on the atlas records, but do not typically breed in this region. American Black Duck was also observed during the atlas period, and although this species breeds regularly in small numbers in the Tennessee Valley (Greg Jackson, pers. comm.), no breeding evidence was recorded. These individuals may have been lingering migrants or were crippled during the hunting season and incapable of long flights.

ALABAMA BIRDLIFE

TABLE 1. Northern Alabama Breeding Bird atlas results, 1994 - 1997.

Species	No. BBA <sup>a</sup>	Miniroute <sup>b</sup>	Breeding <sup>c</sup>	Dates <sup>d</sup>
	Blocks	Stops	Evidence	
Double-crested Cormorant	1	-	-	-
Great Blue Heron	21	7	-	-
Great Egret	3	1	-	-
Cattle Egret	3	-	ON	7/22
Green Heron	22	8	CN, FL	5/09 - 6/23
Black-crowned Night-Heron	2	-	-	-
Black Vulture	8	1	-	-
Turkey Vulture	22	4	-	-
Canada Goose	6	7	FL	5/27 - 6/19
Wood Duck	7	1	FL	6/15 - 6/21
American Black Duck	1	-	-	-
Mallard	13	10	NE, FL	6/01 - 7/06
Sharp-shinned Hawk	3	1	-	-
Cooper's Hawk	5	1	-	-
Red-shouldered Hawk	8	2	NY	6/01
Broad-winged Hawk	11	1	ON, FL	6/06 - 6/12
Red-tailed Hawk	28	22	NY, FL	6/05 - 7/11
American Kestrel	18	9	FL	7/10
Wild Turkey	6	4	FL	6/15
Northern Bobwhite	38	288	FL	6/15 - 7/28
American Coot	1	-	-	-
Killdeer	36	79	ON, DD, NE, FL	5/08 - 7/02
American Woodcock	1	-	-	-
Rock Dove	21	14	ON, NY, FL	6/01 - 6/29
Mourning Dove	39	380	CN, ON, NE, NY, FL	5/08 - 6/28
Yellow-billed Cuckoo	32	143	NE, FY	6/10 - 7/10
Eastern Screech-Owl	2	-	-	-
Great Horned Owl	4	-	-	-
Barred Owl	9	-	UN	-
Common Nighthawk	7	1	FL	6/13
Chuck-will's-widow	8	-	-	-
Whip-poor-will	6	-	-	-
Chimney Swift	36	110	ON, FL	6/08 - 6/29
Ruby-throated Hummingbird	26	18	ON, NE	6/10 - 6/15
Belted Kingfisher	22	12	ON, FL	6/02 - 7/06
Red-headed Woodpecker	16	10	ON, FY	6/10 - 7/02
Red-bellied Woodpecker	39	181	ON, FL	6/01 - 7/12
Downy Woodpecker	36	79	ON, FL	5/09 - 7/28
Hairy Woodpecker	17	10	NE, FL	5/31 - 6/29
Northern Flicker	25	26	UN	-
Pileated Woodpecker	26	17	NY	-
Eastern Wood-Pewee	36	112	ON, FY, NY, FL	6/01 - 7/08

TABLE 1. Continued

Species	No. BBA Blocks	Miniroute Stops	Breeding Evidence	Dates
Acadian Flycatcher	17	21	NE	6/01
Eastern Phoebe	30	20	ON, NE, NY, FY, FL, UN	6/01 - 7/08
Great Crested Flycatcher	27	50	ON, FL	6/08 - 6/30
Eastern Kingbird	37	72	NB, ON, FY, NY, FL	6/10 - 7/09
Loggerhead Shrike	20	8	FL	5/31 - 6/28
White-eyed Vireo	33	79	FY, FL	6/18 - 6/19
Yellow-throated Vireo	11	8	-	-
Warbling Vireo	1	-	-	-
Red-eyed Vireo	24	45	-	-
Blue Jay	39	258	ON, FS, NY, FY, FL	6/01 - 7/08
American Crow	39	234	FY, FL	6/04 - 6/30
Horned Lark	9	8	-	-
Purple Martin	31	52	NB, ON, NE, NY, FL	6/01 - 7/08
N. Rough-winged Swallow	20	12	-	-
Cliff Swallow	16	17	CN, ON, NY, FL	5/16 - 6/29
Barn Swallow	38	102	NB, ON, NE, NY, FL	5/04 - 6/29
Carolina Chickadee	38	143	FY, FL	5/08 - 6/28
Tufted Titmouse	37	232	FY, FL	6/06 - 6/29
White-breasted Nuthatch	19	15	ON, FL	6/08 - 6/10
Brown-headed Nuthatch	1	-	-	-
Carolina Wren	39	215	ON, NY, FL	5/20 - 6/29
Bewick's Wren	1	-	-	-
House Wren	2	-	-	6/14
Blue-gray Gnatcatcher	32	103	CN, ON, NY	5/04 - 6/25
Eastern Bluebird	37	122	NY, FL	4/24 - 7/09
Wood Thrush	28	50	ON	6/10
American Robin	38	216	NB, NE, NY, FY, FS <sup>m</sup> , FL	5/20 - 7/02
Gray Catbird	16	7	NE, FL	6/01 - 6/22
Northern Mockingbird	38	369	ON, NE, NY, FL	5/10 - 7/14
Brown Thrasher	35	93	NB, ON, NE, NY, FL	5/09 - 6/29
European Starling	34	134	ON, FY, FL	5/09 - 7/02
Cedar Waxwing	7	-	-	-
Blue-winged Warbler	2	-	FL	6/26
Northern Parula	14	4	-	-
Yellow-throated Warbler	13	7	-	-
Pine Warbler	17	20	FY, FL	6/19 - 6/21
Prairie Warbler	11	15	FL	6/11
Black-and-white Warbler	7	4	FY, FL	6/10 - 6/19
American Redstart	2	-	-	-
Prothonotary Warbler	15	9	ON	6/19
Worm-eating Warbler	6	2	-	-
Ovenbird	2	1	-	-



TABLE 1. Continued

Species	No. BBA Blocks	Miniroute Stops	Breeding Evidence	Dates
Louisiana Waterthrush	8	-	-	-
Kentucky Warbler	17	13	-	-
Common Yellowthroat	37	158	FY, FL	6/14 - 7/02
Hooded Warbler	3	1	-	-
Yellow-breasted Chat	33	158	FY, FL	6/27 - 7/02
Summer Tanager	32	56	ON, NE, NY, FL	6/08 - 6/29
Scarlet Tanager	9	5	-	-
Eastern Towhee	39	270	FL	5/20 - 6/30
Bachman's Sparrow	3	4	FY	7/02
Chipping Sparrow	28	48	NB, FY, FL	5/08 - 6/29
Field Sparrow	38	232	FL, FS, FL	6/06 - 7/02
Lark Sparrow	4	1	FL	6/19
Grasshopper Sparrow	13	16	FY, NY	6/01 - 6/30
Song Sparrow	9	8	NY	6/22
Northern Cardinal	39	502	CN, ON, NE, FY, FL, UN	5/08 - 7/08
Blue Grosbeak	28	34	CN, FY, FL	6/11 - 7/08
Indigo Bunting	39	401	CN, FY, NY, FL, UN	6/08 - 7/02
Dickcissel	17	31	ON, FY	5/30 - 6/19
Red-winged Blackbird	39	242	CN, ON, NE, FY, FL, UN	5/31 - 7/02
Eastern Meadowlark	38	332	ON, NE, FY, FL, UN	5/15 - 6/29
Common Grackle	39	211	FY, FS, FL	6/08 - 7/14
Brown-headed Cowbird	36	145	FL	6/10 - 7/13
Orchard Oriole	18	20	NY, FL	6/10 - 6/11
Baltimore Oriole	5	-	FL	6/19
House Finch	32	40	NB, ON, NE, NY, FL	6/01 - 7/08
American Goldfinch	36	79	CN	6/12
House Sparrow	36	119	NB, ON, NE, NY, FL	5/04 - 7/0

<sup>a</sup> Number of Breeding Bird Atlas blocks in which the species was recorded (n = 39)

<sup>b</sup> Number of miniroute stops on which the species was recorded (n = 555)

<sup>c</sup> ON = Occupied nest, CN = Carrying nest material, FL = Recently fledged young  
NE = Nest with eggs, NY = Nest with young, DD = Distraction display,  
FY = Food for young, UN = Used nest, FS = Fecal sac being carried by adults

<sup>d</sup> Range of dates for which breeding was recorded for species

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