CULLMAN COUNTY SUMMER BIRD COUNT – 2004

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Although there is a general understanding of the current distribution, abundance, and breeding status of birds in Alabama, data from many regions are incomplete. While Breeding Bird Surveys (BBS) are excellent ways to monitor the distribution and abundance of breeding birds over time, they do have limitations (Jackson 2000). An excellent way to supplement BBS data and improve our knowledge of breeding birds is to assign experienced birders to specific areas during the breeding season and have them identify and count all individuals seen and heard, much like what is done during Christmas Bird Counts (Jackson 2000). Summer Bird Counts (SBC) have been conducted in counties in Alabama where our understanding of breeding bird distribution and abundance is inadequate (Jackson 2000, Gardella 2003, 2004). Begun in 2000, SBC's have been carried out in conjunction with the Alabama Breeding Bird Atlas (BBA) project, both to assist the BBA and to obtain quantitative data. The primary goal of the BBA is to determine the breeding distribution of species by sampling uniformly distributed 25 km^2 (10 mi^2) blocks throughout the state. In June 2004, an SBC incorporating BBA methodology was conducted in Cullman County and the objective of this paper is to report the findings.

STUDY AREA AND METHODS

Physiographically, Cullman County (Fig. 1) is in the Southwestern Appalachians ecoregion and contains three level IV ecoregions within its borders: the Plateau Escarpment along the northwestern edge, the Southern Table Plateaus in the northern one-third and the Dissected Plateau in the southern end of the county (Mirarchi et al. 2004). The county encompasses 1,919 km^2 (738 mi^2) and has a population of approximately 40 people/km^2 (105 people/mi^2) (USCB 2005). The Mulberry Fork of the Black Warrior River flows along its southeastern border and the Ryan Creek branch of Lewis Smith Lake is in the southwestern corner of the county. Almost all creeks and rivers of the county are considered part of the Black Warrior drainage of the Mobile Basin, with minimal drainage in the far north to the Tennessee River (Mirarchi et al. 2004). Traditionally Cullman County has been considered part of the Mountain Region of bird reporting geographic regions (Imhof 1976).

Predominant habitats within the county include extensive pasturelands, croplands, and forests. Woodland types range from riparian and slope hardwoods to pine and mixed pine-hardwoods. Extensive fragmentation of wooded habitat has occurred, less so in the southern and western portions of the county. Wetland habitats are rather limited in Cullman County, consisting primarily of Lewis Smith Lake as well as scattered smaller lakes, agricultural ponds, small rivers and creeks, and minimal marsh/swamp habitat. Elevations range from approximately 76 m (250 ft) to just over 305 m (1000 ft).

Figure 1. County map of Alabama showing location of Cullman County (darkened).

To conduct the count, nine parties composed of 12 observers surveyed BBA blocks on various single mornings during the period 5-20 June 2004. Eight blocks (Massey: CE, Eva: CE, Lawrence Cove: CE, Jones Chapel: CE, Simcoe: CE, Crane Hill: CE, Hanceville: CE, and Cold Springs: CE) were surveyed by automobile and on foot by eight parties; additional data were collected from four blocks (Hanceville: CW, Arkadelphia: CE, Arkadelphia: SE, and

Creel: NE) by a single party transiting the Mulberry Fork by kayak. The quantitative period of the survey extended from roughly dawn until late morning (ca. 1100 hrs), but additional breeding status data were collected after 1100 hours and on other days. A total of 49.7 party-hours was expended searching for diurnal species; surveys for nocturnal species involved 0.75 hours. All individuals seen or heard were counted, and relative abundance estimates were obtained by dividing the total number of individuals of a species by the total number of party-hours. All counts were done during periods of favorable weather conditions (i.e., no sustained precipitation or strong winds).

In addition to counting, surveyors looked for evidence of breeding. The breeding designation codes used in this study are the same as those currently used by the Alabama BBA project and that have been used previously on similar counts (Gardella 2003, 20043). "Confirmed" breeding was designated if a species was observed carrying nest material or food, constructing a nest, performing a distraction display, or incubating. Further, the discovery of a nest with eggs or young, a used nest, or dependent short-tailed young also confirmed breeding. "Probable breeding" for a species was indicated when at least seven singing males were noted on the same date in the same block within safe dates (i.e., when migrants are unlikely to occur). This designation also was used for the detection of a pair in suitable habitat, for individuals showing courtship behaviors or agitated behaviors that are associated with nest disturbance, and for species of wrens and woodpeckers that were nest building. "Possible breeding" was noted if a species was found in suitable habitat within the safe dates. An "observed" breeding status was used for species that were seen or male song heard in suitable habitat outside safe dates. This designation was also used for independent juveniles, for species not in suitable habitat, and for soaring vultures and colonial species away from their colony.

RESULTS AND DISCUSSION

A total of 94 species and 6664 individuals was recorded during 49.7 hrs of surveying for a total of 134.1 individuals per party-hour (Table 1). The most frequently encountered species (i.e., > 4.0 individuals/party-hr; > 199 individuals) were Mourning Dove, American Crow, Purple Martin, Barn Swallow, Carolina Wren, Eastern Bluebird, Northern Mockingbird, European Starling, Northern Cardinal, Indigo Bunting, and Common Grackle (Table 1). Interestingly, five of these 11 species (Mourning Dove, Purple Martin, Barn Swallow, Northern Cardinal, and Indigo Bunting) were also reported as the most abundant species on the Perry County SBC (Gardella 2004) and seven

species (Mourning Dove, American Crow, Purple Martin, Carolina Wren, Northern Mockingbird, Northern Cardinal, and Indigo Bunting) were also listed as most abundant species on the Monroe County SBC (Gardella 2003).

The most widely distributed species (i.e., discovered by all nine parties) were Great Crested Flycatcher, White-eyed Vireo, Blue Jay, American Crow, Purple Martin, Barn Swallow, Carolina Chickadee, Carolina Wren, Blue-gray Gnatcatcher, American Robin, Brown Thrasher, Common Yellowthroat, Yellow-breasted Chat, Eastern Towhee, Northern Cardinal, Indigo Bunting, Brown-headed Cowbird, and American Goldfinch (Table 1). Species with a more limited distribution (i.e., seen in only one or two blocks) included: Canada Goose, Mallard, Pied-billed Grebe, Great Egret, Black Vulture, Sharp-shinned Hawk, Broad-winged Hawk, American Kestrel, Eurasian Collared-Dove, Eastern Screech-Owl, Barred Owl, Whip-poor-will, Cliff Swallow, Northern Parula, Yellow-throated Warbler, American Redstart, Swainson's Warbler, Ovenbird, Grasshopper Sparrow, and Song Sparrow.

Summer Bird Counts are an excellent way to obtain data on species of conservation concern. None of the seven species (Snowy Plover, Wilson's Plover, Piping Plover, Red-cockaded Woodpecker, Bewick's Wren, Cerulean Warbler, and Henslow's Sparrow) listed by Mirarchi et al. (2004) as species of highest conservation concern (Priority I Species) were found on the Cullman County SBC. However, four species (Wood Thrush, Worm-eating Warbler, Swainson's Warbler, and Kentucky Warbler) considered of high conservation concern (Priority II Species) were recorded and are worthy of note. The Wood Thrush was found in fairly good numbers (69 or 1.39/party-hr) and in seven of nine sample areas. This species is declining throughout its range, so population monitoring is needed (Kittle 2004). The Kentucky Warbler is also a species that needs monitoring because of population declines in the last few decades (Hill 2004). It was found in relatively good numbers (31 or 0.62/party-hr) and in seven blocks. The Worm-eating Warbler and Swainson's Warbler numbers were not as impressive. Only nine (0.18/party-hr) Worm-eating Warblers were counted and they were found in only three blocks (Massey: CE, Cold Springs: CE, and Jones Chapel: CE). Three (0.06/party-hr) Swainson's Warblers were found along the Mulberry Fork in two blocks (Arkadelphia: CE and Arkadelphia: SE).

Five other species of interest were recorded on the Cullman County SBC. Pied-billed Grebe is an uncommon and erratic breeder in Alabama, with no known nesting records in Cullman County. A single possible breeder was discovered in the northwest part of the county in the Jones Chapel: CE block. American Kestrel suffered a severe decline as a breeder in the state several

decades ago (Imhof 1976), but appears to be recovering. Three were found in Hanceville: CE and another in Lawrence Cove: CE. Eurasian Collared-Dove is a recent addition to the state's avifauna, with the first record for Alabama in 1991 (Holmes 1992); since that time the species has spread throughout much of the state. Three birds were found on the SBC in Hanceville: CE (a pair) and Jones Chapel: CE. Grasshopper Sparrow is an irregularly-distributed breeder in Alabama, particularly so in the Mountain Region. Four birds were recorded, three in Jones Chapel: CE and one in Massey: CE. Song Sparrow nesting in the state is limited primarily to the northeast quadrant, though it breeds locally in northwest Alabama, and in recent years has extended as a breeder to just east of Birmingham. No previous nesting has been reported from Cullman County, though the species has bred for years in adjacent Marshall and Morgan counties. A lone individual was discovered in Lawrence Cove: CE near the Morgan County line.

Thirty-six species (38%) on the count were confirmed as breeders, 34 (36%) were probable breeders, 21 (23%) were possible breeders, and three (3%) were noted as only observed species (Table 1).

Table 1. Cullman County Summer Bird Count Totals, June 2004.

Species	Total	Total/party-hr	No. Blocks	Breeding status
Canada Goose	2	0.04	1	Probable
Wood Duck	16	0.32	4	Confirmed
Mallard	6	0.12	1	Confirmed
Northern Bobwhite	73	1.47	8	Probable
Pied-billed Grebe	1	0.02	1	Possible
Great Blue Heron	25	0.50	6	Observed
Great Egret	5	0.10	2	Observed
Green Heron	24	0.48	7	Probable
Black Vulture	8	0.16	2	Observed
Turkey Vulture	44	0.89	8	Possible
Sharp-shinned Hawk	2	0.04	2	Possible
Cooper's Hawk	3	0.06	3	Possible
Red-shouldered Hawk	14	0.28	7	Confirmed
Broad-winged Hawk	2	0.04	2	Possible
Red-tailed Hawk	11	0.22	7	Confirmed
American Kestrel	4	0.08	2	Possible
Killdeer	93	1.87	7	Confirmed
Rock Pigeon	26	0.52	4	Probable
Eurasian Collared-Dove	3	0.06	2	Probable

Table 1. cont.

Species	Total	Total/party-hr	No. Blocks	Breeding status
Mourning Dove	274	5.51	8	Probable
Yellow-billed Cuckoo	49	0.99	7	Confirmed
Eastern Screech-Owl	2	0.04	1	Probable
Barred Owl	3	0.06	2	Confirmed
Chuck-will's-widow	11	0.22	3	Probable
Whip-poor-will	1	0.02	1	Possible
Chimney Swift	43	0.87	5	Confirmed
Ruby-throated Hummingbird	9	0.18	5	Possible
Belted Kingfisher	21	0.42	6	Confirmed
Red-headed Woodpecker	13	0.26	6	Confirmed
Red-bellied Woodpecker	75	1.51	8	Confirmed
Downy Woodpecker	27	0.54	7	Probable
Hairy Woodpecker	7	0.14	3	Possible
Northern Flicker	17	0.34	6	Probable
Pileated Woodpecker	17	0.34	8	Possible
Eastern Wood-Pewee	29	0.58	8	Probable
Acadian Flycatcher	68	1.37	6	Probable
Eastern Phoebe	22	0.44	7	Confirmed
Great Crested Flycatcher	46	0.93	9	Probable
Eastern Kingbird	114	2.29	8	Confirmed
Loggerhead Shrike	27	0.54	5	Confirmed
White-eyed Vireo	94	1.89	9	Probable
Yellow-throated Vireo	18	0.36	7	Probable
Red-eyed Vireo	118	2.37	8	Confirmed
Blue Jay	154	3.10	9	Confirmed
American Crow	229	4.61	9	Confirmed
Purple Martin	202	4.06	9	Confirmed
N. Rough-winged Swallow	110	2.21	7	Confirmed
Cliff Swallow	2	0.04	1	Possible
Barn Swallow	212	4.27	9	Confirmed
Carolina Chickadee	110	2.21	9	Probable
Tufted Titmouse	146	2.94	8	Confirmed
White-breasted Nuthatch	12	0.24	6	Confirmed
Brown-headed Nuthatch	12	0.24	5	Probable
Carolina Wren	220	4.43	9	Probable
Blue-gray Gnatcatcher	66	1.33	9	Probable
Eastern Bluebird	200	4.02	8	Confirmed
Wood Thrush	69	1.39	7	Possible
American Robin	142	2.86	9	Confirmed

Table 1. cont.

Species	Total	Total/party-hr	No. Blocks	Breeding status
Gray Catbird	17	0.34	4	Confirmed
Northern Mockingbird	253	5.09	8	Confirmed
Brown Thrasher	94	1.89	9	Confirmed
European Starling	351	7.06	8	Confirmed
Northern Parula	16	0.32	1	Probable
Yellow-throated Warbler	3	0.06	1	Possible
Pine Warbler	55	1.11	8	Probable
Prairie Warbler	22	0.44	5	Possible
Black-and-white Warbler	10	0.20	3	Probable
American Redstart	1	0.02	1	Possible
Worm-eating Warbler	9	0.18	3	Possible
Swainson's Warbler	3	0.06	1	Possible
Ovenbird	2	0.04	2	Possible
Louisiana Waterthrush	18	0.36	4	Probable
Kentucky Warbler	31	0.62	7	Confirmed
Common Yellowthroat	78	1.57	9	Probable
Hooded Warbler	28	0.56	5	Possible
Yellow-breasted Chat	156	3.14	9	Probable
Summer Tanager	41	0.82	8	Probable
Scarlet Tanager	13	0.26	4	Probable
Eastern Towhee	164	3.30	9	Probable
Chipping Sparrow	150	3.02	8	Confirmed
Field Sparrow	63	1.27	7	Probable
Grasshopper Sparrow	4	0.08	2	Possible
Song Sparrow	1	0.02	1	Possible
Northern Cardinal	363	7.30	9	Confirmed
Blue Grosbeak	61	1.23	8	Probable
Indigo Bunting	416	8.37	9	Confirmed
Red-winged Blackbird	180	3.62	7	Confirmed
Eastern Meadowlark	187	3.76	8	Probable
Common Grackle	203	4.08	8	Confirmed
Brown-headed Cowbird	166	3.34	9	Probable
Orchard Oriole	30	0.60	7	Probable
House Finch	42	0.85	6	Confirmed
American Goldfinch	45	0.91	9	Probable
House Sparrow	35	0.70	5	Confirmed

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