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AN ANALYSIS OF CHRISTMAS BIRD COUNTS IN TENNESSEE

James T. Tanner

One of the original goals of the Christmas Bird Counts was to be a kind of annual census of winter bird life. The history of the counts in Tennessee through the year 1964 was described in detail by Laurence O. Trabue in the 50th Anniversary Issue (June 1965) of *The Migrant*. The first reports published in *The Migrant* were for 1930, from Memphis, Nashville, and Knoxville. Participation increased, and in 1984 twenty localities were included. Since 1930 counts have been made in almost 50 localities in Tennessee, some for only one year.

This report is an analysis of winter bird populations in Tennessee as recorded in the Christmas Bird Counts (hereafter abbreviated to CBC). The ideal sources of data would be long and continuous records of CBC, each from the same area and each with complete information on the area, numbers of observers and party-hours, and unusual species. No ideal records exist, but eight localities were chosen as satisfactory for this analysis. These have continuous records, with the exceptions noted below, and with adequate information published in *The Migrant* for evaluating the counts. Memphis has a continuous record for 1934 through 1984, except for 1963 when a heavy snow storm disrupted the count, making a total of 50 years of good records. Reelfoot has a continuous record for 1960-84, 25 years, except for 1967 when the lake was frozen and water bird counts were abnormal. Columbia has a record for 1962-84, 23 years; Nashville for 1938-84, 47 years; Chattanooga for 1954-84, 31 years; Knoxville for 1958-84, except for 1976 when no details were submitted, leaving 26 years. CBC in the Great Smoky Mountains are continuous in one area from 1937 except that the center was moved to another area for the years 1957-61, leaving a record of 43 years for the original area. Elizabethton's record begins in 1944, but in 1960 the area was moved to include more of Watauga Lake, leaving a record of 25 years for water birds and 41 years for land birds. Centers of all areas were moved some, but with the exception described above of Elizabethton, the shifts made no obvious change in the species or numbers of birds observed.

The eight locations can be grouped on the basis of geography and birds observed into four regions: Memphis and Reelfoot in West Tennessee,

Columbia and Nashville in Middle Tennessee, Chattanooga and Knoxville in the Eastern Valley, and the Smokies and Elizabethton in the Appalachian Region.

METHODS OF ANALYSIS

The data were analyzed for frequency, abundance, and trends of each species. Frequency is measured as the percent of years a species was present in the CBC for each locality (total number of CBC for each locality is given in a preceding paragraph).

When measuring abundance, some method of standardizing the number reported is necessary to allow for the amount of effort—number of observers, party-hours, miles traveled—spent in counting (Raynor 1975). For standardizing, I tried two bases: the number of observers and the number of party-hours. The second gave more consistent results, so the number of birds reported per 50 party-hours is used as the standardized measure. The number 50 was chosen because it is an approximate average of party-hours in a CBC in Tennessee.

Standardization by party-hours does not work well for birds which congregate in small areas. For a simple example, if there is one lake with waterfowl in the CBC area, it will be inspected no matter how many observers are active, and the number of waterfowl counted will be independent of the number of party-hours. When analyzing the waterfowl counts for Columbia, I found that using a base of party-hours led to inconsistent results, so for that locality alone no adjustment was made in the numbers of waterfowl. The same problem occurs to a lesser extent with birds like European Starlings and blackbirds that congregate in large roosts, but because these birds are scattered over the countryside during the day I adjusted all their numbers as described above.

As an average of the number of individuals present over the years at each locality, I used the median; this is the middle number in that reports higher than the median are as frequent as reports lower than this number. The advantage of the median is that it is little affected by large errors. Also it is a good average in the sense that half of the records are higher and half are lower.

To test for trends in the abundance of a species I used the statistical method of runs (Conover 1971). This method calculates the statistical significance of a series of either high or low numbers as compared with a random series. Also, comparisons were made between the trends of a species at one locality with the trends at the other locality in the same region. The criterion used for deciding whether or not a species had changed in abundance was a combination of the statistical significance and similar trends in abundance at two or more localities.

ABUNDANCE ACROSS TENNESSEE

Table 1 summarizes the frequency and abundance of 120 species of birds at eight locations in Tennessee as reported in the CBC record. The first line for each species is the frequency, the percent of the times that the bird was listed for that locality. Eighteen species were recorded in from 99% to 100% of all counts. The low average frequency in the table is 4%; birds reported less often were not included.

The second line for each species is a measure of abundance. Each figure is an average of the number of individuals observed per 50 party-hours; the average is the median for all times that the bird was present (i.e., zeroes were not counted in computing the median). These figures are not adjusted for the fact that some localities have records beginning much earlier than others nor for any trends in abundance, but the names of birds which have changed in abundance are marked with an asterisk.

The highest numbers are for species which congregate in roosts. The average number of European Starlings reported in the CBC across Tennessee is 26,600, of Common Grackles is 26,100, and of Red-winged Blackbirds is 21,900. Waterfowl as a group have high numbers because they flock; Mallards lead with an average of 11,300, most of which were at Reelfoot Lake.

One weakness of the CBC record is that there is no way to compare the true abundance over the whole of Tennessee of birds occurring in large, conspicuous flocks with birds that do not congregate but are scattered over the countryside. The latter may actually be more abundant. Of these, the commonest in Tennessee is the White-throated Sparrow with an average (across all localities) of 296 individuals per 50 party-hours; second is the Dark-eyed Junco with 215; third the American Crow with 212; and fourth the House Sparrow with 178. These four species actually do occur in flocks in the winter, but the flocks are much smaller than those referred to in the preceding paragraph.

The table presents a general picture of the population of winter birds in Tennessee. It could be analyzed in countless ways. One interesting observation is that there are about 40 species which increase in abundance westward across the state and only about 10 that increase eastward.

Comments on a few species are necessary. Rock Dove was omitted from the table because it was not included in the earlier CBC. Greater and Lesser Scaup are combined under "Scaup" because of the uncertainty of many figures. The numbers under "Carolina Chickadee" include the Black-capped Chickadees observed in the Great Smoky Mountains. The following species were omitted from the table because they were observed in only one locality; the figures in parentheses are the frequency and abundance as they would be in the table: Golden Eagle at Reelfoot (52%, 1); Sora at Columbia (35%, 5); Brown-headed Nuthatch at Chattanooga (16%, 8); Western Meadowlark at Memphis (28%, 2).

CHANGES IN ABUNDANCE

Changes in abundance with time differed between species. For some species the adjusted numbers were very consistent from year to year, supporting the method of standardizing numbers by the party-hours. On the other hand, the most erratic numbers were for European Starlings and blackbirds; they depended on whether or not a winter roost was in the count area. Most of the species, about 66%, showed no consistent trends. Forty-two species were identified as having significant changes in abundance; the criteria for these decisions are described above.

The changes in abundance had no overall pattern. I could find no correlations between the changes and the temperature and precipitation in November and December of each year, which would be the weather condi-

tions most likely to affect the CBC. For describing the changes and explaining some of them, I found that they could be grouped as they are in the following paragraphs. In these descriptions, "high numbers" means that there was a run or sequence for at least five years of numbers above the median, and "low numbers" refers to runs below the median. The year given for the start or end of a run is often an average of what occurred in two or more localities.

Two species expanded their range into Tennessee. Evening Grosbeaks first appeared in CBC in the Appalachian region, in the Smokies in 1951 and at Elizabethton in 1958, and first in other regions in 1968. House Finches were first recorded in Knoxville in 1975 and in all regions by 1982.

Two species have increased because of wildlife management. Breeding populations of the Giant Canada Goose were established in Tennessee, resulting in high numbers in the Eastern Valley beginning in 1973 and in Middle Tennessee about 1976. Wild Turkeys had high numbers in West Tennessee since 1975. On the other hand, they have almost disappeared from the Smokies CBC after 1948.

Two species of herons have changed in abundance, probably because of changing locations or success of rookeries. Great Blue Herons statewide were low from 1963 through 1974 and high since 1978. Black-crowned Night-Herons at Nashville were high from 1954 through 1963 and after that almost absent, while at Knoxville and in the Smokies CBC they have been high since 1982.

Five aquatic birds have increased and one decreased. Some of the increases are correlated with the spread of water milfoil in the large reservoirs of the Eastern Valley. Pied-billed Grebes have been high statewide except in the Appalachian region since 1970. Mallards have been high in Middle Tennessee and at Chattanooga since 1978, but in the same areas Black Ducks have been low since 1973; these changes match nationwide changes in these two species. American Wigeon have been high in the Eastern Valley since 1977, and Gadwall in Middle Tennessee and the Eastern Valley since 1979. American Coots have shown more distinct and widespread changes than have the ducks, being high in West Tennessee since 1961 and in Middle Tennessee and the Eastern Valley since 1971.

Three raptors have changed significantly in abundance, but not with parallel trends. Red-tailed Hawks, consistently low before the following dates, have been high at Memphis since 1959 and in the rest of Tennessee since about 1973. American Kestrels at Memphis were high until 1958 and low thereafter, while in the Eastern Valley and Smokies they were low from 1961 to 1974 and high before and after that period. Eastern Screech-Owls have been high in all regions except Memphis since about 1971; this may be a result of more time and effort in "owling".

Four species of forest birds have increased, possibly because of the growth and maturation of forests and woodlots resulting in more acorns and woodboring and bark insects. Pileated Woodpeckers have been high at Memphis since 1959, at Reelfoot since 1972, and in the Appalachian Region since 1962. Red-bellied Woodpeckers have been high at Memphis since 1965, at Reelfoot since 1976, in Middle Tennessee since about 1965, and in the Appalachians since about 1972. White-breasted Nuthatches and Blue Jays have both been high in the Appalachian Region since 1968. At

Nashville Blue Jays were consistently low before 1959.

Three migrant insectivorous birds usually found in woods have increased in all regions; Ruby-crowned Kinglet after 1972, Red-breasted Nuthatches since 1974, and Yellow-rumped Warbler after 1976.

The following six species had relatively long periods (5 to 14 consecutive years) of either highs or lows, with the high numbers being consistently more frequent since 1970. The beginning of the recent high numbers varies. Common Snipe increased in West and Middle Tennessee by 1968. Mourning Doves have been high in West Tennessee since 1970 and in the rest of the state since 1975. Belted Kingfishers have been high statewide since 1971. Brown Thrashers have been high in Middle Tennessee and the Appalachian Region since 1972. Both White-throated and Swamp Sparrows were high from 1960 through 1975 in West Tennessee, after 1975 at Nashville, and after 1972 in the Eastern Valley and Appalachian Region.

Three species have increased recently but otherwise had different trends from those of the preceding group. Crow numbers have been erratic, but in all localities except in Middle Tennessee they were low from 1971 to 1978 followed by highs thereafter. Although European Starling numbers depended largely on the location of winter roosts, in the Appalachian Region they were consistently low before 1960 and high after that. American Woodcock were consistently low in all areas before 1970; then in Middle Tennessee the numbers were high after 1975.

The preceding discussion concentrated on birds which have increased in recent years. Others have decreased, and two species have almost disappeared. Peregrine Falcons were erratically present in the Smokies through 1955 and then once in 1965; the last record on a CBC in Tennessee was in 1971 at Reelfoot. Bewick's Wrens have been low statewide since 1965, and there have been no records on CBC in the Appalachian Region since 1968 and in the Eastern Valley since 1975.

Eastern Bluebirds have decreased in three localities or regions: at Memphis after 1955, at Nashville after 1958, and in the Appalachian Region after 1965. Both Dark-eyed Juncos and Field Sparrows had low numbers in the Eastern Valley and Appalachian Region after 1971. House Sparrows in all areas except West Tennessee had long periods of high numbers before 1970 and of low numbers after 1973.

Five species had similar patterns of several long periods (5 to 20 years) of high or low numbers, with mostly low numbers statewide before 1955, many high periods in the interval 1956 to 1970 or 1975, followed by decreases. Cardinals and Rufous-sided Towhees in the Eastern Valley had low numbers beginning in 1971. Loggerhead Shrikes in West Tennessee, the Eastern Valley, and Appalachian Region were low beginning in 1974. Eastern Meadowlarks were low in all regions except the Appalachian beginning in 1976. Northern Mockingbirds had a similar pattern through 1971, but the figures after that were erratic.

The changes in abundance can be summarized in several ways. If seven species are removed from consideration because they changed due to invasion, game management, or other unique reason, there are 24 species that increased recently, having runs of high numbers since 1970, and 11 species with low numbers since then. These numbers are significantly different (chi-square has a probability of less than 5%). These 35 species

can be classified according to whether their winter populations are permanent residents in Tennessee, or a mixture of residents and individuals which migrate here for the winter, or individuals all of which are migrants, not breeding in the state except in a very few localities mostly in the mountains. Dividing each of these groups into those which increased and those which decreased since about 1970, the figures sort out as follows: permanent residents which have increased, 4; permanent residents which have decreased, 4; mixed populations which have increased, 8; mixed populations which have decreased, 5; migrants which have increased, 12; migrants which have decreased, 2. There is a consistent trend; winter populations of migrants have increased in Tennessee relatively more than permanent residents. The reasons for this are unknown.

A broader test can be made by using the figures from a total of 56 species which in the period since 1970 had a significant number of runs of either high or low numbers lasting at least five years. The total number of high runs was 180 and of low runs was 116. These runs or sequences of highs or lows were counted according to which of the four regions of the state they occurred in. The proportions of highs to lows in each region were almost the same. The number of runs of high numbers is very significantly larger than those of low numbers (chi-square has a probability of less than 1%).

In summary, of the 124 species that appeared in about 4% or more of the eight longest CBC records in Tennessee, 42 or 34% had significant changes in abundance in one or more of the four regions of the state. In the last fifteen years (1970-84) there were more increases than decreases—68% of the significant changes were increases—and these occurred most in species migrating to Tennessee for the winter. Changes were almost equally common in the four regions. Causes for a few of the changes can be identified or suggested, but for most the causes are unknown.

TABLE 1. Frequency and abundance of winter birds in Christmas Bird Counts in Tennessee. The first line for a species is the percent of CBC that the species has been reported from each locality. The second line is the median number reported from the locality. Species followed by an asterisk have changed in abundance as described in the text.

	<u>MEMP</u>	<u>REEL</u>	<u>COLU</u>	<u>NASH</u>	<u>CHAT</u>	<u>KNOX</u>	<u>GSMN</u>	<u>ELIZ</u>
Common Loon	0	24	4	11	58	23	0	48
		3	1	1	3	2		1
Pied-billed Grebe *	76	88	87	100	87	77	12	92
	2	6	8	2	5	8	1	5
Horned Grebe	4	16	13	15	97	54	0	64
	1	2	1	1	12	3		4
Double-cr. Cormorant	20	44	4	0	26	19	0	4
	8	5	1		2	1		1

	<u>MEMPH</u>	<u>REEL</u>	<u>COLU</u>	<u>NASH</u>	<u>CHAT</u>	<u>KNOX</u>	<u>GSMN</u>	<u>ELIZ</u>
Great Blue Heron *	74	100	87	77	71	100	28	44
	1	14	10	2	3	16	1	1
Black-cr. Night-Heron *	0	4	9	23	0	12	9	0
		1	4	9		4	4	
Snow Goose	26	84	9	2	6	4	2	0
	3	9	2	1	7	1	1	
Canada Goose *	42	100	74	28	55	50	9	8
	14	18	30	20	16	41	6	1
Wood Duck	52	100	91	19	65	27	5	24
	4	117	3	3	6	1	1	3
Green-winged Teal	6	92	65	9	23	15	0	12
	1	195	10	2	2	2		4
American Black Duck *	32	100	96	66	97	65	9	72
	2	2000	24	5	33	8	1	8
Mallard *	94	100	96	89	97	85	7	88
	24	90K	82	18	34	12	2	34
Northern Pintail	18	96	35	6	19	27	2	16
	7	480	2	3	3	2	1	2
Blue-winged Teal	16	56	22	2	3	8	2	0
	3	15	2	1	1	1	1	
Northern Shoveler	20	96	61	11	13	15	0	4
	2	660	3	3	1	1		1
Gadwall *	20	100	74	51	68	73	0	8
	2	3500	28	4	14	17		5
American Wigeon *	16	96	74	32	48	50	0	52
	2	2000	9	5	6	2		5
Canvasback	34	92	74	68	23	23	0	8
	3	71	5	6	3	1		1
Redhead	14	88	74	28	35	19	5	20
	2	28	3	3	2	2	1	3
Ring-necked Duck	60	100	91	89	55	73	5	100
	5	4100	75	16	10	4	1	23
Scaup (2 species)	84	96	96	91	81	65	2	100
	22	214	12	31	45	3	1	5
Common Goldeneye	22	96	52	72	74	62	0	40
	3	30	3	3	7	2		2

	<u>MEMP</u>	<u>REEL</u>	<u>COLU</u>	<u>NASH</u>	<u>CHAT</u>	<u>KNOX</u>	<u>GSMN</u>	<u>ELIZ</u>
Bufflehead	10	84	26	45	39	54	0	100
	5	52	1	21	8	3		51
Hooded Merganser	20	92	65	17	68	69	5	48
	1	30	3	2	4	8	1	3
Common Merganser	6	76	0	12	13	31	0	12
	1	8		1	2	1		5
Red-breasted Merganser	6	24	4	0	29	19	0	20
	4	2	8		3	2		4
Ruddy Duck	26	84	74	40	27	27	0	12
	2	600	3	2	7	1		1
Black Vulture	42	72	96	85	19	4	12	5
	4	5	212	11	2	1	2	1
Turkey Vulture	58	48	39	57	32	23	65	17
	4	4	4	2	2	1	3	1
Bald Eagle	6	100	0	0	19	15	5	0
	1	64			2	1	1	
Northern Harrier	98	96	91	81	74	31	14	5
	3	7	6	2	1	1	1	1
Sharp-shinned Hawk	30	8	13	30	42	58	40	34
	1	2	2	2	2	1	1	1
Cooper's Hawk	56	28	39	72	55	69	60	56
	2	2	3	2	1	1	1	2
Red-shouldered Hawk	76	100	39	83	74	54	21	15
	4	8	2	2	2	1	1	1
Red-tailed Hawk *	100	100	100	100	97	100	88	46
	13	27	25	8	10	3	3	2
Rough-legged Hawk	14	36	22	9	0	0	0	0
	1	1	2	1				
American Kestrel *	98	100	100	100	100	100	98	100
	11	19	30	21	6	6	2	7
Peregrine Falcon *	2	8	0	2	0	0	26	0
	1	1		1			1	
Ruffed Grouse	0	0	0	0	0	0	95	37
							3	1
Wild Turkey *	26	40	0	0	0	0	19	0
	5	12					3	

	<u>MEMP</u>	<u>REEL</u>	<u>COLU</u>	<u>NASH</u>	<u>CHAT</u>	<u>KNOX</u>	<u>GSMN</u>	<u>ELIZ</u>
Northern Bobwhite	100	60	96	98	97	92	77	73
	50	9	65	24	16	22	8	18
American Coot *	50	96	96	77	81	73	5	32
	5	4000	500	16	40	210	1	2
Killdeer	100	96	100	100	100	100	81	100
	42	24	16	43	42	48	12	14
Common Snipe *	86	68	91	91	86	96	37	59
	3	8	16	2	8	9	1	4
American Woodcock *	22	16	61	21	45	15	9	0
	1	2	2	1	2	1	1	
Bonaparte's Gull	8	52	0	0	29	31	0	4
	4	16			19	2		7
Ring-billed Gull	92	100	9	30	97	100	2	28
	36	110	60	5	54	127	1	2
Herring Gull	56	88	4	21	90	92	0	16
	3	28	2	2	6	2		1
Mourning Dove *	100	100	100	100	100	100	98	100
	70	52	143	115	219	238	52	46
Common Barn-Owl	6	0	22	15	39	4	0	2
	1		1	1	1	1		1
Eastern Screech-Owl *	30	48	70	81	61	77	44	61
	1	1	4	2	2	2	1	2
Great Horned Owl	42	84	100	81	55	65	47	12
	1	2	7	2	1	2	1	1
Barred Owl	92	88	78	66	32	12	14	0
	1	4	2	2	1	1	1	
Belted Kingfisher *	90	96	100	100	97	100	100	95
	2	6	16	8	8	11	5	9
Red-headed Woodpecker	98	96	57	62	90	42	12	12
	8	20	4	2	7	2	2	1
Red-bellied Woodpecker *	100	100	100	100	100	100	63	83
	42	80	60	42	17	16	3	3
Yellow-bell. Sapsucker	100	100	100	100	100	100	95	85
	13	13	17	13	6	7	3	5
Downy Woodpecker	100	100	100	100	100	100	100	100
	30	39	74	54	22	22	16	26

	<u>MEMP</u>	<u>REEL</u>	<u>COLU</u>	<u>NASH</u>	<u>CHAT</u>	<u>KNOX</u>	<u>GSMN</u>	<u>ELIZ</u>
Hairy Woodpecker	100	100	100	100	93	92	95	71
	9	7	16	9	4	3	5	3
Northern Flicker	100	100	100	100	100	100	86	100
	80	88	34	40	24	17	4	11
Pileated Woodpecker *	90	100	100	100	100	100	100	83
	2	19	25	13	6	8	7	6
Eastern Phoebe	56	72	57	72	65	65	95	83
	1	2	4	2	2	2	4	3
Horned Lark	90	92	83	98	74	81	37	51
	48	81	22	62	6	8	8	7
Blue Jay *	100	100	100	100	100	100	95	100
	204	72	59	64	102	134	16	58
American Crow *	100	100	100	100	100	100	100	100
	35	382	177	226	150	282	152	290
Fish Crow	30	28	0	0	0	0	0	0
	10	2						
Common Raven	0	0	0	0	0	0	95	27
							3	3
Carolina Chickadee	100	100	100	100	100	100	100	100
	86	135	157	137	75	112	132	90
Tufted Titmouse	100	100	96	100	100	100	100	98
	45	53	116	93	62	51	33	57
Red-breasted Nuthatch *	42	44	30	38	74	58	98	59
	3	3	2	1	3	10	8	5
White-breasted Nuthatch *	80	96	74	94	97	92	91	66
	2	7	4	4	18	5	7	14
Brown Creeper	100	96	74	100	90	100	98	85
	7	7	4	7	4	5	7	3
Carolina Wren	100	100	100	100	100	100	100	100
	64	47	43	47	40	56	22	44
Bewick's Wren *	44	32	78	96	39	27	28	5
	1	2	3	3	2	1	1	1
House Wren	28	8	9	0	6	4	7	12
	1	2	2		1	1	1	1
Winter Wren	96	96	83	94	87	92	100	68
	8	12	3	3	3	2	4	3

	<u>MEMP</u>	<u>REEL</u>	<u>COLU</u>	<u>NASH</u>	<u>CHAT</u>	<u>KNOX</u>	<u>GSMN</u>	<u>ELIZ</u>
Golden-crowned Kinglet	98	100	65	83	100	100	100	98
	28	12	6	7	10	26	48	16
Ruby-crowned Kinglet *	100	96	91	79	94	96	100	71
	15	18	10	3	8	5	5	5
Eastern Bluebird *	84	92	100	100	100	96	100	95
	16	10	36	60	30	19	22	30
Hermit Thrush	100	96	87	89	87	69	98	61
	11	12	5	3	3	1	6	4
American Robin	100	96	100	100	100	100	100	100
	445	35	1100	440	142	69	43	19
Gray Catbird	16	16	0	0	10	4	12	2
	1	1			1	1	1	1
Northern Mockingbird *	100	100	100	100	100	100	100	100
	85	24	54	89	72	92	8	32
Brown Thrasher *	100	80	78	57	100	96	42	34
	14	6	5	3	10	3	1	1
Water Pipit	60	20	9	36	48	23	12	0
	5	7	10	11	6	25	4	
Cedar Waxwing	98	52	65	89	100	96	67	73
	54	10	47	20	133	40	16	30
Loggerhead Shrike *	100	100	96	98	100	100	84	93
	15	17	14	9	5	5	2	3
European Starling *	100	100	100	100	100	100	100	100
	3100	9800	192K	2800	1388	2950	130	1030
Yellow-rumped Warbler *	100	80	87	100	100	100	91	100
	58	66	12	32	29	36	9	41
Pine Warbler	22	0	0	0	81	27	15	7
	1				2	1	1	1
Palm Warbler	6	0	9	13	19	23	16	2
	2		1	2	2	1	1	3
Northern Cardinal *	100	100	100	100	100	100	100	100
	330	229	306	303	130	174	63	139
Rufous-sided Towhee *	100	92	100	100	100	100	98	100
	49	6	78	68	75	52	8	13
American Tree Sparrow	20	76	0	28	0	0	2	5
	3	4		2			1	1

	<u>MEMP</u>	<u>REEL</u>	<u>COLU</u>	<u>NASH</u>	<u>CHAT</u>	<u>KNOX</u>	<u>GSMN</u>	<u>ELIZ</u>
Chipping Sparrow	14	20	4	9	71	23	9	7
	1	2	8	2	2	2	1	1
Field Sparrow *	100	96	100	98	100	100	100	100
	104	68	136	110	102	106	61	66
Vesper Sparrow	22	12	0	6	58	8	16	2
	2	1		2	3	2	1	1
Savannah Sparrow	100	72	96	74	87	96	56	44
	44	12	11	6	8	7	3	3
LeConte's Sparrow	50	8	0	4	0	8	0	0
	1	1		1		1		
Fox Sparrow	99	96	100	94	87	81	53	58
	43	18	14	7	4	2	2	4
Song Sparrow	100	100	100	100	100	100	100	100
	110	101	143	107	89	174	75	84
Swamp Sparrow *	98	100	100	100	100	100	86	78
	75	112	71	27	25	11	2	3
White-throated Sparrow *	100	100	100	100	100	100	100	100
	775	319	320	163	231	337	100	119
White-crowned Sparrow	100	76	100	98	81	96	16	88
	14	12	57	28	6	11	2	14
Harris' Sparrow	18	8	0	4	3	0	0	0
	1	1		1	1			
Dark-eyed Junco *	100	100	100	100	100	100	100	100
	396	302	199	279	119	78	185	164
Lepland Longspur	36	36	0	0	0	0	0	0
	100	8						
Red-winged Blackbird	100	100	100	83	87	92	65	29
	2600	168K	4200	58	455	120	4	3
Eastern Meadowlark *	*00	100	100	100	100	100	100	98
	220	102	190	132	124	93	28	56
Rusty Blackbird	80	72	96	64	100	85	21	12
	26	22	2000	27	32	20	2	4
Brewer's Blackbird	32	20	39	13	3	0	0	0
	7	4	4	4	2			
Common Grackle	100	100	100	91	97	96	47	59
	2850	156K	50K	98	110	140	2	12

	<u>MEMP</u>	<u>REEL</u>	<u>COLU</u>	<u>NASH</u>	<u>CHAT</u>	<u>KNOX</u>	<u>GSMN</u>	<u>ELIZ</u>
Brown-headed Cowbird	98	100	100	89	87	96	19	22
	330	81K	2000	25	23	31	10	2
Purple Finch	96	68	87	91	97	100	91	83
	27	5	62	23	45	44	14	15
House Finch *	2	0	17	11	23	27	9	10
	1		12	6	4	31	4	18
Red Crossbill	0	0	0	0	0	0	63	24
							11	22
Pine Siskin	16	4	26	36	48	46	74	24
	4	2	14	4	5	12	50	16
American Goldfinch	100	96	100	100	100	100	100	100
	106	88	102	143	117	108	60	104
Evening Grosbeak *	0	12	26	17	23	15	47	34
		10	16	6	22	6	75	12
House Sparrow *	100	96	100	100	100	100	100	100
	230	532	127	129	107	75	52	169

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Route 28, Box 155, Knoxville, TN 37920. Accepted 10 November 1985.

ROUND TABLE NOTES

RED-SHOULDERED HAWK MIGRATION AT CHILHOWEE MOUNTAIN, TENNESSEE: A CLARIFICATION—The Tennessee hawk migration report for the 1982 season (Fowler, L. 1983, Autumn Hawk Flights 1982, *Migrant* 54:33-37) presents a factual error about, and superficial analysis of, the Red-shouldered Hawk (*Buteo lineatus*) migration which took place on Chilhowee Mountain (Blount County) during the 1981 fall migration. This note presents a correction of the error and a clarification of the analysis offered in that report.

First of all, it is erroneously claimed in the 1982 report that "33 hours of observation" (1983:33) were accumulated during the 1981 hawk-watching season at Chilhowee Mountain. In fact, 99¼ hours of observation occurred, as noted in the 1981 Tennessee hawk migration report (Fowler, L. 1982, Autumn Hawk Flights 1981, *Migrant* 53:58-62), which followed data presented in an earlier publication (Puckette, D. 1982, Southern Appalachians, The Newsletter of the Hawk Migration Association of North America 7:24-27).

Due to the large number of observer hours spent hawk-watching on Chilhowee Mountain in 1981, as well as to the excellent weather for raptor migration which prevailed that season, notable numbers of several raptors besides Red-shouldered Hawks occurred there. For instance, 22 Northern Harriers (*Circus cyaneus*) were reported there in 1981; this figure surpasses the total number of harriers seen in the entire state for any single year from 1973 to 1980. Also, as Fowler has previously noted (1982:58), Broad-winged Hawks (*Buteo platypterus*) were observed in record numbers at this site in 1981. Additionally, unidentified accipiters were recorded in unusually high numbers from this site in 1981, with 120 seen between 16 September and 26 November (B. Stedman, personal data). Thus, when viewed in the context of the entire 1981 migration at Chilhowee Mountain, the 23 Red-shouldered Hawks reported there that year should not be considered an aberrant phenomenon, as they are made to appear in Fowler's 1982 report (1983:33).

Furthermore, the percentage of Red-shouldered Hawks in the entire raptor migration at Chilhowee Mountain in 1981 is not appreciably greater than the percentage of this species in the raptor migration that year at all other lookouts in the state exclusive of Chilhowee Mountain (Table 1). Although these two figures are higher than those for previous years, it is evident that Red-shouldered Hawks were more common than usual in 1981 on a statewide basis, not just at Chilhowee Mountain. This increase in Red-shouldered Hawks continued in 1982 (Table 1), though a return to the pre-1981 levels occurred in 1983 (Table 1). Thus, Fowler's comment (1983:33) that the 1981 Red-shouldered Hawk total from Chilhowee Mountain is inconsistent with the totals from previous years' totals in the region and state was a misleading one.

The age of the Red-shouldered Hawks seen in 1981 at Chilhowee Mountain also lends credence to the high number recorded. Again following Puckette (1982:26), Fowler noted in the 1981 Tennessee hawk migration report (1982:59) that all the red-shoulders seen there were adults, which pose fewer problems of identification than do immatures. This factor appears not to have been considered when the 1982 hawk migration report was written. However, it must be pointed out that Puckette's assertion about the age of

Table 1. Red-shouldered Hawk (RSH)
Migration Data for 1973-1983¹

Year	RSH at Chilhowee Mountain (CM)	Total Hawks at CM	Percent RSH at CM	RSH in TN	Total Hawks in TN	Percent RSH in TN
1983	3	4036	0.074	8	10,382	0.077
1982	2	1507	0.132	18	7,874	0.228
1981	23	9010	0.255	38	15,517	0.244
1981	--	--	--	15	6,507	0.230
1980	2	2870	0.069	13	11,026	0.117
1979	0	1243	0	6	9,255	0.064
1978	--	--	--	--	--	--
1977	--	--	--	5	8,549	0.058
1976	--	--	--	5	3,659	0.139
1975	--	--	--	4	11,717	0.034
1974	--	--	--	8	9,340	0.085
1973	--	--	--	6	7,272	0.082

¹ *Migrant* 54:35, 1983 and *Migrant* 54:79, 1983.

² 1981 Tennessee data exclusive of Chilhowee Mountain.

³ Prior to 1979 data not available for Chilhowee Mountain in adequate amounts for analysis; data for 1978 not published in tabular form.

these birds is slightly inaccurate: i.e., though the majority of the Red-shouldered Hawks seen at Chilhowee Mountain in 1981 were adults, a few were immatures, especially those seen later in the season.

The correction and clarification made above are offered to reflect more accurately than occurred in the 1982 Tennessee hawk migration report the status of Red-shouldered Hawks at Chilhowee Mountain and in Tennessee during the 1981 season.

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RED-SHOULDERED HAWK MIGRATION AT CHILHOWEE MOUNTAIN: FURTHER CLARIFICATION—Stedman *et al.* (*Migrant* 56:98-100, 1985) questioned the interpretation of the Red-shouldered Hawk (*Buteo lineatus*) migration records for Chilhowee Mountain as reported in the 1981 and 1982 Autumn Hawk Flights (Fowler, *Migrant* 53:58-62, 1982 and Fowler, *Migrant* 54:33-37, 1983). This note addresses and clarifies the four points of contention raised.

First, Stedman *et al.* state that the number of observation hours used to analyze the 1981 hawk data at Chilhowee Mountain was inaccurate, thus invalidating subsequent conclusions drawn in the report. There is a typographical error in the text of the 1982 hawk report indicating 33 hours of hawk observation at Chilhowee Mt. when the actual number of observer-reported for that site was 99¼ hours. However, the accurate number of observation hours was clearly presented in the tabular data (Fowler, *Migrant* 53:60, 1982) and all analyses and conclusions presented were based upon the actual number of observer hours reported for Chilhowee Mountain.

Secondly, Stedman *et al.* refute the conclusion that the number of Red-shouldered Hawks at Chilhowee Mt. in 1981 (24 birds) was inconsistent with previous statewide totals. However, the records clearly indicate that the Red-shouldered Hawk has always been an uncommon migrant in seasonal totals (Table 1) since the TOS adopted the hawk project in 1951 and began monitoring lookouts in Tennessee and the surrounding region. From 1951-1958, the count averaged 8 Red-shouldered Hawks per year (Finucane, *Migrant* 32:54, 1961) and from 1959-1979 averaged 10.8 RSH/year and .042 RSH/hr. Until 1979, these fall hawk reports also contained data collected from other states within the southern Appalachian region. A summary of hawk migration data for Tennessee only (Fowler, *Migrant* 54:35, 1983; Fowler, *Migrant* 54:79; Fowler, *Migrant* 55:78, 1984) from 1972-1984 shows an average of .046 RSH/hr, which does not significantly vary ($p < .05$) from the 20-year regional average of .042 RSH/hr. In contrast, the 38 RSH (.138 RSH/hr) reported statewide in 1981 (Fowler, *Migrant* 53:61, 1982) is the highest number ever reported in a Tennessee hawk count (Table 1) and significantly ($p < .05$) exceeds the 1959-1979 average of .042 RSH/hr. Sixty-three percent of these total birds were reported from Chilhowee Mountain. The 1981 Red-shouldered Hawk count at Chilhowee Mt. (.231 RSH/hr) also exceeded the 1966 statewide Red-shouldered hawk count (.145 RSH/hr), which was previously the state's highest count for the species (Table 1). In addition, Red-shouldered Hawk totals at Chil-

howee Mt. differed from those reported regionally in 1981. For example, in the southern Appalachian region, many stations reported no Red-shouldered Hawks (*HMANA Newsletter* 7(2):25, 1981). In the northern Appalachian region Seth Benz (*HMANA Newsletter* 7(2):23, 1981) reported that "sightings of Red-shoulders were lower at a majority of the lookout stations." On the basis of these readily available data, it is difficult to see why this particular conclusion was questioned.

Table 1. Red-shouldered Hawk migration in Tennessee.¹

Year	#RSH	Hrs	RSH/hr	Year	#RSH	Hrs	RSH/hr
1955	1	121	.008	1970	7	180	.039
1956	1	45	.022	1971	12	250	.048
1957	5	110	.045	1972	10	337	.030
1958	4	110	.036	1973	10	316	.032
1959	23	327	.070	1974	10	369	.027
1960	9	197	.046	1975	7	422	.017
1961	10	286	.035	1976	0	290	0
1962	14	252	.056	1977	0	313	0
1963	11	289	.038	1979	8	273.8	.029
1964	13	267	.049	1980 ²	13	187.25	.069
1966	29	200	.145	1981	38	275.25	.138
1967	11	201	.054	1982	18	327.5	.055
1968	14	299	.047	1983	8	237.5	.034
1969	7	249	.028	1984 ³	8	228.8	.035

¹ Complete data unavailable for 1951-54, 1965, and 1978.

² 1980-84 includes data from Tennessee only.

³ Average from 1955-1984 is 10.8 RSH and .044 RSH/hr.

The third point expressed by Stedman *et al.* is that 1981 Red-shouldered Hawk numbers at Chilhowee Mt. were not unusually high because of high observer hours and high numbers of other hawks (i.e., Broad-winged Hawks, *Buteo platypterus*) reported at this site. However, current hawk migration data do not indicate that high observer hours and high numbers of other raptors are necessarily related to high numbers of Red-shouldered Hawks. For example, the southern Appalachian site with the most extensive observer coverage (344 hours), Harvey's Knob, Virginia, reported only 18 Red-shouldered Hawks (.052 RSH/hr) in 1981. In addition, at Mendota Firetower, Virginia, (manned until recently by TOS members), which had

observation hours (94.5) comparable to those at Chilhowee Mt., no Red-shouldered Hawks were reported in 1981 (Table 2). The author knows of no published studies which correlate interspecific hawk abundances in a given season. It is doubtful that such a correlation would be meaningful because of the variables involved (i.e., flapping vs. gliding hawks, interspecific differences in initiation of migration, weather, etc.). In addition, this correlation is not supported by historical hawk data for the region. For example, in the 1976 hawk count (Finucaine, *Migrant* 48:87, 1978) when the statewide record high number of Broad-winged Hawks was observed (14,221), no Red-shouldered Hawks were reported.

Table 2. Fall migration of Red-shouldered Hawks at Chilhowee Mountain, Tennessee, and Mendota Firetower, Virginia.

	Chilhowee Mt.			Mendota FT		
	RSH	Hrs	RSH/hr	RSH	Hrs	RSH/hr
1984	3	82.7	.036	2	108.0	.018
1983	3	63.6	.047	7	83.0	.084
1982	2	86.0	.023	1	81.0	.012
1981	24	104.0	.231	0	94.5	0
1980	2	35.0	.057	0	76.0	0

Finally, Stedman *et al.* (1985: 98) explain that the high number of adult Red-shouldered Hawks "seen in 1981 at Chilhowee also lends credence to the high number recorded." This statement seems to indicate that the 1982 hawk report questioned the validity of the high numbers of Red-shouldered Hawks reported at Chilhowee Mt. in 1981. Such was not the case. The experience and raptor identification expertise of the observers manning the Chilhowee Mt. tower in 1981 are well established in the state.

In conclusion, the 1981 Red-shouldered Hawk count at Chilhowee Mt. was clearly higher than other annual counts at that site (Table 2). However, future monitoring of this site throughout the hawk migration season (September-November) will be necessary to ascertain if this situation is just an infrequent occurrence or if Chilhowee Mt. is becoming a major migration corridor for Red-shouldered Hawks.

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Accepted 10 November 1985.

BANDED PURPLE FINCH IN SEWANEE, TENNESSEE—On 20 March 1984, Mrs. Helen Smith found a dead Purple Finch (*Carpodacus purpureus*) below a window at her home in Sewanee, Franklin County, Tennessee. She noted that it bore a band and therefore gave it to her daughter, Mrs. John Booty, who gave it to me for preservation and investigation. It was an adult male, bearing band no. 0950-12728. The Fish and Wildlife Service Bird Banding Laboratory reported that it had been banded near Stephens City in northern Virginia on 22 April 1982 by Mr. R.

C. Simpson. Mr. Simpson has written me that the bird's plumage at banding time indicated that it was hatched in 1980 or earlier, and therefore it was at least four years old at its death. Mr. Simpson and his helpers banded over 200 Purple Finches on the day of this bird's banding. On 1 May 1982, he caught one of Dr. O. S. Pettingill's Purple Finches, which had been banded in Maine on 30 August 1981. A Purple Finch banded by Mr. Simpson on 22 April 1982 was found in Galway, New York in August 1982. The recovery of one or a few birds does not establish a route of migration for Purple Finches from New England and along the Appalachian Mountains (via northern Virginia) to southeastern Tennessee, but an accumulation of many records might indicate this.

HARRY C. YEATMAN, University of the South, Sewanee, Tennessee 37375. Accepted 10 November, 1985.

EXTREME DRAWDOWN ATTRACTS UNUSUAL SHOREBIRDS TO WATAUGA LAKE, TENNESSEE—Watauga Lake, a reservoir in the mountains of Carter and Johnson Counties, Tennessee, was formed by damming the Watauga River near Elizabethton in 1948. Although the lake's shoreline is slightly over 160 km long, most of it is too steep and rocky to attract shorebirds. A notable exception is the Roan Creek embayment in Johnson County which has a few acres of mud flats gradually exposed during routine fall drawdown, forming a narrow band of suitable habitat throughout the fall shorebird migration. Small numbers of the more common species can be found there at that time. This area is usually inundated before the arrival of spring migrants.

In 1983 Watauga Lake was drawn down well below its normal minimum elevation of 584m. The drawdown began in early summer with the lake level at about 596m and ended in early December at 556m, more than 27m below normal minimum elevation. This exposed the intake gate guides for maintenance which had not been performed since initial installation. At Roan Creek, the rapid drawdown exposed extensive mud flats and springs which kept large tracts from drying up in the late summer heat. This combination provided much more shorebird habitat than normal. Invertebrate prey were abundant.

I made fourteen visits to Roan Creek between 13 July and 1 October 1983 and recorded sixteen species of shorebirds, an exceptional number for upper east Tennessee. The lake level fell 14m during this ten week period. Table 1 lists the shorebirds sighted and approximate lake elevation for each visit. Readers are encouraged to review the excellent fall shorebird migration statewide for 1983 as reported in *The Season (Migrant 55:17-28, 1984)*. The following species deserve additional comments on their status in the upper east Tennessee region comprised of Johnson, Carter, Unicoi, Washington, and Sullivan Counties.

Willet (*Catoptrophorus semipalmatus*)—8-14 Sept. (1); second fall and sixth overall record—five published and one previously unpublished: late April 1977 (11) at a farm pond near Jonesborough, Washington County, by R. L. Knight.

Ruddy Turnstone (*Arenaria interpres*)—8-14 Sept. (1); third record, with the previous records also of single birds at Roan Creek in early to mid September (*Migrant 34:54, 1963 and 43:103, 1972*).

Table 1. Summary of 1983 Fall Shorebird Records at Roan Creek, Johnson County, Tennessee.

	July 13	July 25	July 29	Aug 11	Aug 19	Aug 29	Sept 4	Sept 8	Sept 10	Sept 14	Sept 18	Sept 21	Sept 25	Oct 1
Semipalmated Plover				1	1	5	4	1	4					
Killdeer*	15	25	+	+	+	32	+	+	+	+	+	+	+	+
Lesser Yellowlegs						2	1	1	5	5	5	5	4	1
Solitary Sandpiper			1				2	2	4	4	4	2	1	1
Willet							1	1	1	1				
Spotted Sandpiper	2	4	4	1	2	2	5	6	10	3	4			
Ruddy Turnstone							1	1	1					
Sanderling							1	2	3	3				
Semipalmated Sandpiper				20	13	10	6	6	9	1	1			
Western Sandpiper				6		12	7	4	3	1	2			
Least Sandpiper				4	9	13	4	6	12	18	12	14	6	6
Baird's Sandpiper	1				1	1	1	1	3	4	3			
Pectoral Sandpiper				2	3	4	1	4	6	7	8			
Stilt Sandpiper							2							
Common Snipe									1					
Wilson's Phalarope							1							
Total Individuals (excluding Killdeer)	0	3	4	11	40	34	38	41	33	67	40	43	11	16
Total Species	1	3	2	5	7	7	10	14	9	14	10	11	4	5
Approximate Lake Elevation (ft.)	1941	1935	1932	1923	1919	1913	1910	1909	1908	1905	1903	1900	1897	1894

*Killdeer were difficult to count, peaked at about 60 in late September.

Sanderling (*Calidris alba*)—4 Sept. (1) and 14-21 Sept. (2-3); of the previous 17 records, all but one are fall sightings and about half were at Roan Creek.

Western Sandpiper (*C. mauri*)—19 Aug. thru 21 Sept. (1-12); although reported from this region annually in recent years, seldom exceeds two or three individuals.

Baird's Sandpiper (*C. bairdii*)—25 July (1) and 29 Aug. thru 21 Sept. (1-4); third fall and sixth overall record.

Stilt Sandpiper (*C. himantopus*)—8 Sept. (2); eighth fall and eleventh overall record.

Wilson's Phalarope (*Phalaropus tricolor*)—8 Sept. (1); first fall and fourth overall record, with all of the previous records occurring in a nine day period in May 1978 (*Migrant* 49:69&71, 1978).

I thank Earl Griffith of TVA for providing information about the draw-down of Watauga Lake and Charles Nicholson for comments on an early draft of this note.

RICHARD L. KNIGHT, 804 Hills Drive, Johnson City, TN 37601.
Accepted 5 October 1985.

HUDSONIAN GODWITS IN LAKE COUNTY, TENNESSEE—On 8 May 1983 at 1500 Central Daylight Time, George R. Payne, Jr., Jeff Wilson, Michael Todd, Wallace Todd and I were observing shore birds in a mud flat formed by field flooding, from atop the levee that borders the eastern side of the Mississippi River, approximately 2.4 km west of Ridgely, Lake County, Tennessee. My attention was drawn to two birds that were much larger than the Lesser Yellowlegs (*Tringa flavipes*) we had been watching. The birds were some 50 m distant. We observed the long upturned bill on both birds and identified them as godwits. With the warm glow of the evening sun at our backs the reddish breast observed on both birds was confused with the warm light. After we watched and photographed the birds for nearly ten minutes, the birds took flight, heading away from us. We then observed the very distinct black and white pattern on the tail and identified them as Hudsonian Godwits (*Limosa haemastica*).

We consulted Roger Tory Peterson's *Field Guide to the Birds*, and Chandler Robbins' et al., *Birds of North America*. The observation was made under clear skies with light winds, temperature was in the 80s°F. Viewing was done with 10x40 Bushnell binoculars, 32x50 Bushnell Sentry II scope, and a C-90 Celestron Scope.

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Accepted 20 November 1985.

THE SEASON



SUMMER: 1 JUNE-31 JULY 1985

No weather information was received from the Western Coastal Plain Region. In the rest of the state, June temperatures ranged from "moderately cool" in the Central Plateau and Basin Region to "slightly below average" in the Eastern Ridge and Valley Region to "slightly above average" in the Eastern Mountain Region. July temperatures ranged from "slightly below normal" in the ridge and valley to "close to normal" in middle Tennessee to "above average" in the eastern mountains. The dry conditions present in the spring extended into June and July in middle Tennessee and some of the ridge and valley. Only the eastern mountains reported above average rainfall in July. In no region reporting, however, was the rainfall so little as to produce marked drought conditions.

Summer is the season when much of the nesting takes place, and one of the exciting aspects of the season is discovering species nesting in new areas. Among the exciting observations of this sort are the several Osprey and Bald Eagle nest attempts in middle Tennessee, reports of Brown Creepers from 2 locations in west Tennessee, and strong evidence of Canada Warblers nesting in the Cumberland Mountains. As might be expected, House Finches extended their range into new locations in middle Tennessee. An occurrence less easily explained was a Western Tanager found at Reelfoot Lake in mid-June, hundreds of miles east of its normal breeding range.

The numerous Breeding Bird Survey (BBS) routes and other census projects conducted across the state provide information for determining population trends, such as the effect of the recent severe winter. Information from the Central Plateau and Basin Region and from the Knoxville area showed reductions in Carolina Wren numbers of from 30 to 50%. While this may seem drastic, please recall that the species entered the winter in very high numbers, and the reduction was not nearly as drastic as that in the late 1970's. Other species which declined in numbers were Eastern Phoebe in the Knoxville area and Eastern Bluebirds and Field Sparrows in middle Tennessee. No information on the populations of these susceptible species was received from west Tennessee or from the eastern mountains.

Much other information on our breeding species, as well as the beginning of the fall migration, follows. —CHARLES P. NICHOLSON.

WESTERN COASTAL PLAIN REGION—Summer birding centered around specific locations such as the sewage lagoons near Memphis and Mississippi River islands for shorebirds. Several new early dates resulted from observations at these areas. The Tennessee Department of Conservation began surveys in Mississippi River bottomlands, and some of their early results are given here. Fieldwork in the pine woods for Bachman's Sparrow produced negative results, and few Grasshopper Sparrows were found in previously occupied nesting areas.

Bittern—Hawk: Least Bittern: 28 Jun (4) REL, S of Air Park Inn (SJS, MT). **TRICOLORED HERON:** 4 Jul (1 imm) ESL, 3 Aug (1 imm) 2 mi S of ESL (BBC, LCC); 18-31 Aug (1) ESL (JRW, MGW). Cattle Egret: uncommon until last week of July in Shelby Co. and Desoto Co., MS (BBC). Yellow-crowned Night-Heron: 14 Mar (1), 16 Mar (2), then absent from site until 8 May (pair on nest) McCorkle site, MEM (BBC, LCC); 15 Jun (24 ad, 5 imm) HWR (MTOS). **WOOD STORK:** 17 Jul (1) ESL (JEW, MGW). Mississippi Kite: 7 Jul (9) S of Hwy 19, LDC, (8) N of Hwy 19, LDC (PBH, MGW); Jun and Jul observations show the kites fairly common and increasing; for third year, young kites hacked in Shelby Co. area, 20 banded and released (JLS, MGW). Red-shouldered Hawk: observed on 23 of 30 selected TDOC survey sites (RPF).

Plover—Tern: Semipalmated Plover: 17 Jul (4) I13 (SJS); 21 Jul (3) ESL (CHB, MGW, JRW). Solitary Sandpiper: 13 Jul (4) ESL (JRW). Spotted Sandpiper: 4 Jul (1) ESL (JRW). Western Sandpiper: 17 Jul (1) I13 (SJS); 27 Jul (4) ESL (CHB, JRW). Least Sandpiper: 4 Jul (7), 13 Jul (72) ESL (JRW). White-rumped Sandpiper: 9 Jun (4) ESL (JRW). Pectoral Sandpiper: 4 Jul (2), 21 Jul (110), 10 Aug (245) ESL (DAD, MGW, JRW). Stilt Sandpiper: 13 Jul (1), 20 Jul (1) ESL (JRW). Short-billed Dowitcher: 13 Jul (1), 21 Jul (1) ESL (CHB, MGW, JRW). Ring-billed Gull: 1 Jul (1), 4 Jul (1) ESL (JRW). Least Tern: 30 Jun (2), 4 Jul (5), 13 Jul (12) ESL (JRW).

Woodpecker—Cowbird: Red-headed Woodpecker: 15 Jun (14) HWR (MTOS); 24 Jun (no birds seen or heard from 0830-1300) S and E of HWR along boundary (BBC, LCC). Tree Swallow: 15 June (10) HWR (GRP), 24 Jun (no birds observed in same area) HWR (BBC, LCC); an effort will be made to determine nesting status of this species next summer. Brown Creeper: 10 May, 20 Jun (1 seen and heard) Old Cranetown, REL, LKC (RPF); 1 June, 7 Jul (1 heard) Obion River S of Hwy 54 near Como (RPF). Blue-winged Warbler: 13 Jun (1) S of Camden, Benton Co. (BBC); 13 Jul (1) NE corner of Decatur Co. (CHB). Yellow Warbler: none observed on Mud Island, Shelby Co. during June and July (BBC). Swainson's Warbler: 14 Jun (14) Hatchie River by boat between miles 97 and 86, HWR Breeding Bird Survey (BBC, LCC, Joe B. Guinn); 24 Jun (1) by road along same area (BBC, LCC). Scarlet Tanager: 15 Jun (none) HWR Breeding Bird Survey (MTOS); 24 Jun (1) NWR (BBC, LCC); 28 Jun (1 singing) REL, OBC (SJS, MT). **WESTERN TANAGER:** 19 Jun (1 male) REL, NE of Samburg, OBC (William P. Peeples, W. Robert Peeples); 21 Jun (1 heard singing) same area (LCC). Lark Sparrow: 16 Jun (3) Sweetlips BBS, NW corner of Hardin Co., 3 mi W of Hinkle (Charles D. Rollins, Sue Rollins). Grasshopper Sparrow: 2 Jun (1) Tibbs BBS, NW of Brownsville (GRP). Brown-headed Cowbird: increasingly common in Memphis area in June and July (BBC *et al.*).

Locations: ESL - Ensley Sewage Lagoons, Shelby Co.; HWR - Hatchie

National Wildlife Refuge, Haywood Co.; I13 - Island 13, Lake Co.; LDC -Lauderdale Co.; LKC - Lake Co.; MEM - Memphis; OBC - Obion Co.; REL -Reelfoot Lake.

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CENTRAL PLATEAU AND BASIN REGION—The 1985 breeding season was successful for most species nesting in the region. Temperatures in June were moderately cool (e.g., the 54°F recorded on 20 June established a new record low for that date in Nashville), while those in July were close to normal. Rainfall in Nashville fell decidedly below normal (2.17 inches deficient in June and 1.71 deficient in July), continuing the dry conditions of the preceding season; however, the eastern half of the region enjoyed more plentiful precipitation (e.g., 3.5 inches fell in northern Rutherford County in July). Whatever its amount, the rain that did fall came at well-spaced intervals, as no prolonged periods without rain occurred. In addition to being moderately cool and somewhat dry, late spring and early summer in the Central Basin were also characterized by the appearance of 13-year cicadas (*Magicicada* sp.), which supplied many species of birds with an abundant food source for their young. Probably in response to the outbreak of this cicada brood, Eastern Bluebirds laid three clutches during the season in some areas, as in the Warner Parks and Williamson County.

Two raptors and a fringillid represent the highlights of the season. A pair of Ospreys returned to nest in the region for the second consecutive year and successfully fledged 1 young, while no fewer than 5 Bald Eagle nests were built or reused, up from 2 last year, and 1 presumed in 1983. Although only 2 of these nests successfully produced young, the increase in the number of attempted nestings is still a very encouraging sign for the regional population of this species. For the first time in nearly a decade, Bachman's Sparrows were discovered nesting in the region. Responsibility for this outstanding find goes to that indefatigable nestseeker, Morris D. Williams, whose records grace these pages all too infrequently.

The Breeding Bird Surveys conducted in the region produced some of the most useful information for this report. However, before proceeding to discuss it, let me offer congratulations to three regional fieldworkers. Katherine A. Goodpasture, George R. Mayfield, Jr., and John O. Ellis each completed twenty consecutive years of BBS work in 1985. Their efforts are certainly worthy of commendation. Dr. Goodpasture also deserves accolades for the considerable effort which she expended over the years as State Coordinator of the BBS program. After this season she is stepping down as State Coordinator, to be replaced by Paul B. Hamel.

The Breeding Bird Surveys produced data about 96 species of breeding birds in the region, making it the third most successful BBS season ever in terms of the number of species recorded on the 15 routes run. Twelve species were recorded in higher numbers in 1985 than in any of the preceding 19 years: Great Blue Heron (8), Green-backed Heron (36), Black Vulture (51 - a remarkable turn-around from 1984), Downy Woodpecker (69), Northern Rough-winged Swallow (52), Tufted Titmouse (246), White-breasted Nuthatch (29), Blue-gray Gnatcatcher (122), American Robin (298), Warbling Vireo (6), Northern Parula (11), and Pine Warbler (6). Only 5 species were recorded in lowest-ever numbers: Whip-poor-will (5), Blue Jay (173), Prairie Warbler (39), Eastern Meadowlark (562), and Common Grackle

(764). Species noted to be in decline in the Summer 1984 report (*Migrant* 55:90, 1984) showed little reversal of that trend in 1985, with the exception of Dickcissel which had a relatively good breeding season. Species noted to be increasing in that report revealed a continuation of that trend in all cases except for Brown Thrasher; however, the decline in that species' numbers from 1984 to 1985 was not significant.

Most of us follow with some interest the fate of the semi-hardy species breeding in the region. After the very cold winter of 1984-85, it was expected that several of them would show a reduction in numbers, and BBS data proved this to be the case. Carolina Wren numbers were down about 30% from 1984 levels, Bewick's Wrens went unrecorded on the BBSs for the first time ever, and Eastern Bluebird numbers were reduced about 20% (although many regional observers had earlier expressed the opinion that their numbers had not been affected by the previous winter's cold). Field Sparrows also appeared to be affected by the cold winter, being down about 30% from 1984 levels. Let it be recalled, however, that these declines are rather moderate compared to those which attended the severe winters of 1976-77 and 1977-78, when both Carolina Wren and Eastern Bluebird numbers were more than halved (*Migrant* 49:92, 1978). Despite the modest setbacks for these and a few other species, prospects for most breeding birds in the region were enhanced as a result of the 1985 season.

Grebe—Vulture: Pied-billed Grebe: 6 Jul (1) DRU (DFV, SJS, BHS), only report. Double-crested Cormorant: 15 Jun (1) Old Hickory L. (JDP), new NA late spring date (but possibly summering). Least Bittern: 6 May (1 ad flushed from nest containing 1 egg) Goose Pond, Grundy Co. (PBH, CPN); 22 Jun (2 ad) DRU (SJS, BHS, LDR). Great Blue Heron: all season (190+ nests) DRU (*vide* BPP), highest number of nests in recent years, but still well below the level of nesting at the heronry in the late 1940s (*Migrant* 20:41-42, 1949); all season (197 active nests) AEDC ponds, CFC (*vide* BPP), also highest level in recent years; 16 Jun (2 ad) MC (DFV); 29 Jun (3) GSP (DTC, JPC, SJS, BHS); last 2 records indicate early dispersal from heronries or possibility of local nesting, never yet confirmed in the NA; both the TVA-sponsored heronry-monitoring program and the BBS results show this species undergoing expansion; with the advent of the Tennessee Breeding Bird Atlas Project in 1986, it may be predicted that several new heronries will be discovered in the region in the near future. Great Egret: 14 Jun (1) BAR (DWB); 7 Jul-EOP (1) Robertson Pond, LWC (DJS); 10 Jul (1) Laguardo, WLC (SJS); 4 birds, possibly comprising 2 pairs, were observed at the DRU heronry early in the season, but no nesting evidence was obtained (*vide* BPP); this species' return to breeding status in the region may be imminent. Snowy Egret: 13 Jul-EOP (1) CCNWR (SJS, DWB), only report. Little Blue Heron: 1 Jul (3) BAR (DWB); 24 Jul (3 imm) MOP (SJS, BHS); 24 Jul (1 ad) north-central WMC (BHS); 13 Jul-EOP (up to 70, including 55 imm) CCNWR (DWB, SJS, BHS); 27 Jul (13, including 10 imm) DRU (SJS, BHS, Anne Nixon, Robert Nixon); all reports probably denote post-breeding dispersal. Cattle Egret: 13 Jul (1) DRU (SJS); 13-22 Jul (up to 6) CCNWR (DWB, SJS); 25 Jul-EOP (4) LWC (DJS, MAB); only reports. Black-crowned Night-Heron: all season (up to 200 ad) Bordeaux heronry, DVC (*vide* BPP), heronry not well reported this season; small numbers also reported in MUC (ARL, OBL), HPC (SJS), and SWC (DWB). Yellow-crowned Night-Heron: 26 Jun (11 ad) Shrader Lane, DVC (JDP), highest number reported; smaller numbers also reported from

CHC (CGD, EJW, AHH), HPC (SJS, BHS, LDR), LWC (DJS, MAB), SUC (DTC, JPC), and SWC (DWB, Maxey Irwin, Camille Crenshaw). White Ibis: 13-14 Jul (1 imm) CCNWR (SJS, DWB), only report. Black Vulture: nesting reported at GSP (JPC, SJS) and Warner Parks, DVC (DFV).

Osprey—Eagle: **OSPREY**: by 4 Apr 2 returned to the nest built in 1984 at DRU, and by 6 July large young was in the nest; it apparently fledged successfully, making 1985 the second consecutive year that the DRU nest has produced young (SJS *et al.*); another pair carried sticks in the Bryant Grove area of PPL, but no nest was reported (*vide* RVM); in late June at GSP two other birds were observed in copulatory-like behavior and were suspected of placing sticks on top of a lighting tower (DTC, JPC); hacking results: 2 fledged at PPL on 20 Jul; 2 fledged about 6 Jul at AEDC; 1 fledged probably on 8 Jul at Cordell Hull L. (*vide* RMH). **BALD EAGLE**: the pair nesting on the Westvaco land near CCNWR began incubating 1 Mar and fledged 2 young on 21 Jun, the third consecutive year that this nest has been successful, while another pair built a nest on the refuge but raised no young (*vide* Vicki Grafe); the pair at LBL raised and fledged 1 young, making the second consecutive year this nest has been successful (*vide* RMH); another pair built a nest at DRU, but the 1 young bird which hatched died when only a few weeks old of unknown causes (*vide* Carrell L. Ryan); another pair built a nest at Normandy L., CFC, but abandoned it without producing any young (*vide* RMH); hacking results: 5 imm released 16 Jul-15 Aug at LBL (1 of these died shortly after release) and 2 ad released in mid-Aug there (1 of these recaptured and held) (*vide* RMH); 6 Jun (1 imm) S Robertson Co. (PBH), possibly a bird which had been raised or hacked in the region in a previous year (also, first NA summer record).

Hawk—Tern: Sharp-shinned Hawk: no reports. Cooper's Hawk: 4 Jun (1 circling over a wooded hill) Edwin Warner Park, DVC (DFV); 19 Jun (1) Leiper's Fork, WMC (SJS, BHS, Alice Wray Taylor); 6 Jul (1) DRU (SJS, BHS, DFV); only reports, but an *Accipiter* sp. was seen twice in Jul at CCNWR (SJS). Red-shouldered Hawk: 15 May-EOP (nest with 2 y) Love Lady, PIC (RCH, JDH). Broad-winged Hawk: 13 Apr (1 ad nest-building) Burgess Falls S. P., Putnam Co. (CGD, *et al.*). Virginia Rail: 27 Apr-3 Jul+ (2 ad and at least 1 y) MOP (KGA, OBL, *et al.*), second consecutive year of nesting at this site. Common Moorhen: 18 May-11 Jun (1 ad) MOP (WNJ, KGA, DTC, JPC, *et al.*), nesting suspected for second consecutive year, but no concrete evidence discerned. Ring-billed Gull: 1 Jul (2) OHD (SJS), summering. Least Tern: 22 Jun (1 ad) DRU (LDR, SJS, BHS), indicates possible breeding of this endangered subspecies along the nearby Tennessee R.

Cuckoo—Lark: Black-billed Cuckoo: 25 May, 22 Jun (1 singing) BAH (RWS); 7 Jun (2 singing) Silver Point BBS (PBH). Common Barn-Owl: 3 Jun, 13 Jul (2, 1) Clarksville, MTC (EJW, *et al.*), only report. Red-bellied Woodpecker: 8 Jul+ (1 ad male feeding suet to an imm male Northern Flicker) Stonewall Dr., DVC (Lindsay W. Johnson, Theresa Johnson), photographs of this behavior were obtained and are on file with the compiler. Willow Flycatcher: 6 May (2) Bear Creek WMA, SWC (DWB); 11, 25 May (up to 4) MC (DFV, CRD); 12 May (1) Pardue's Pond, Dickson Co. (CGD); 12 May (2) Herbert's Bottoms, CHC (CGD); 30 May (3) DRU (SJS); 6 Jun (1) Indian Mound BBS (PBH), first regional BBS record (although a "Traill's" Flycatcher was recorded in 1972); 1 Jun-27 Jul (up to 8) MOP (WNJ, ARL, OBL, KGA, *et al.*); only reports. Scissor-tailed Flycatcher: 25 Apr (1) Ced-

ars of Lebanon S.P., WLC (RVM), possibly a bird returning to the RUC site; 12 May-mid-Jun (1 ad noted building nest or nests) Thompson Lane, RUC (RVM, Mac R. McMillan, m.ob.), returnee to only regional breeding site, now occupied for the eighth consecutive year. Horned Lark: 6 Apr-22 Jun (2 pairs, later up to 9 birds) DRU (SJS, BHS, LDR); 13 Jun (2) Collinwood BBS (DJS); only reports; all records Apr-Jun should be reported.

Swallow—Shrike: Tree Swallow: 11 May (16) ACI (CGD), probably late migrants, but perhaps local breeders; 11 May (2) Shelby Park, DVC (M. Patricia Stallings), also possible breeders; 11-30 May (2, near a nest hole) GSP (DTC, JPC); 23 May (1) LWP (SJS, JPC); 11 May-mid-Jun (pair with 3 y) Laurel Hill L., LWC (MDW, DJS, G. Ned Piper, Jennifer Moses); 30 May (13, including 3+ ad at 3 nest sites) DRU (SJS), 2 Jun (2) MOP (KGA). Bank Swallow: 23 May (20) OHD (SJS); 23 May (2) LWP (SJS, JPC); 27 Jun (2) Davy Crockett S.P., LWC (DJS); possible breeders. Cliff Swallow: 11 May (1600+) ACI (CGD); 8 Jun (7) Pond Creek BBS (John O. Ellis); 13 Jun (3) Collinwood BBS (DJS, Royce Neidert); also reported nesting near Cumberland City Steam Plant, SWC (DWB). Bewick's Wren: 27 Apr (2) north WLC (FOD, Ray Pope); 18 May (2) Lebanon State Forest, WLC (RVM); 12 May (1) Owens Farm, SUC (DTC, JPC); 16-30 May (2 singing) Rock Springs Rd., RUC (TJW); 24 May-13 Jul (1) w of Columbia, MUC (WNJ); 24 May (1 singing) Brentwood, WMC (RG, DG); 30 Jul (1) Loretto, LWC (Donna N. Simbeck); see introduction also. House Wren: nesting reported in Nashville with many pairs active, mainly in the suburbs (CRD, *et al.*), in DOV with 1 pair (DWB), in GAL with perhaps as many as 10 pairs (DTC, JPC), and in Clarksville, MTC, with 7 singing birds noted (EJW, AHH). Cedar Waxwing: 2 Jun (2) MOP (SJS, BHS); 14, 28 Jun (2) 5 km SW of DOV (DWB); 27 Jul (2/1) DRU/CCNWR (SJS, BHS); species probably bred in region, but no solid evidence reported. Loggerhead Shrike: all season (3) PIC (RCH, JDH), scarce on the eastern Highland Rim; 12 May (31, including adults at 2 nests and 2 ad with 3 y) eastern and central WMC (SJS, BHS), though down 80% in 20 years on the Peytonsville BBS, WMC, species is still fairly common in the county; overall, slightly up in numbers on the BBSs, but recorded on fewer than half of the 15 routes for the first time; definitely a species in need of close monitoring.

Vireo—Finch: Yellow-throated Vireo: 4 May (pair at nest) MOP (JRW, CPN, *et al.*), nests of this species are difficult to locate. Warbling Vireo: had a very good year on BBSs; also reported from CHC, DVC, HPC, MUC, SWC, and WLC away from BBSs. Black-and-white Warbler: all season (up to 6 singing) BAH (RWS); few other reports, including only 1 BBS record. Mourning Warbler: 25 Jun (1 singing) BAH (RWS), of very rare occurrence at this season. Blue Grosbeak: very good numbers on BBSs. Dickcissel: a very good season, compared to most years this decade; 27 singing at DRU, 15 at CCNWR, 7 at BAR, 5 in WMC, 11 in MUC, 2 in RUC, 1 at LWP, 1 in LWC, and 1 in MTC; also 13 on the BBSs, slightly up. **BACHMAN'S SPARROW**: 12 Jun-EOP (up to 3 singing males and 1 juvenile) Fall River, GLC (MDW, DJS, *et al.*), first known regional breeding in a decade; these birds were located in a clearcut area which had grown up with 3-6 foot pines and which had a few isolated clumps of deciduous trees and deciduous stumps available as singing perches for the sparrows. Lark Sparrow: nesting noted at 3 sites in WLC (RVM, TJW), 3 sites in RUC (RVM, Anne L. Hettish), and 1 site on GLC/LWC line (MDW, DJS). Grasshopper Sparrow: half a dozen reports 27 Apr-12 May, but then noted only on 4 BBSs.

Song Sparrow: still increasing in region with birds at MC (up to 30), GSP (4), LWP (2), CCNWR (1), MOP (1), DRU (1), Old Hickory WMA, WLC (2), and Anne Hettish Bird Sanctuary, RUC (1); also noted on Union Hill (2) and Silver Point (1) BBSs, as well as Glen BBS (17). White-throated Sparrow: 23 Jun (1 seen regularly until this date) GAL (DTC, JPC), late but not unexpected. Northern (Baltimore) Oriole: recorded only on Belotes Bend (Katherine A. Goodpasture) and Indian Mound (PBH) BBSs and 1 Jun (pair) pre-run of Petonsville BBS (SJS). House Finch: birds sighted in mid-May at 2 sites in WLC (FOD, Cecile Detlefsen, Grace Speck), late May in Cookeville (RWS), and mid-June in WMC (RG, DG); nesting was confirmed for second consecutive year in DVC (Frances Abernathy and Roy H. Anderson) and for the first time in LWC (Lee Mann, Ann Mann) and SUC (DTC, JPC).

Corrigendum: *Migrant* 54:89, 1983: in the 9 Jun entry for Bewick's Wren change "KJS" to "DJS."

Locations: ACI - Ashland City, Cheatham Co.; AEDC - Arnold Engineering and Development Center, Coffee and Franklin Cos.; BAH - Barnes Hollow, Putnam Co.; BAR - Barkley Waterfowl Management Unit, Stewart Co.; CCNWR - Cross Creeks National Wildlife Refuge, Stewart Co.; CFC - Coffee Co.; CHC - Cheatham Co.; DOV - Dover, Stewart Co.; DRU - Duck River Unit, Tennessee National Wildlife Refuge, Humphreys Co.; DVC - Davidson Co.; GAL - Gallatin, Sumner Co.; GLC - Giles Co.; GSP - Gallatin Steam Plant, Sumner Co.; HPC - Humphreys Co.; LBL - Land Between the Lakes, Stewart Co.; LWC - Lawrence Co.; LWP - Lewis Pond, Sumner Co.; MC - Metro Center, Davidson Co.; MOP - Monsanto Ponds, Maury Co.; MTC - Montgomery Co.; MUC - Maury Co.; NA - Nashville Area (Davidson Co. and parts of 7 surrounding counties); OHK - Old Hickory Dam, Davidson Co.; PIC - Pickett Co.; PPL - Percy Priest Lake (in Davidson, Rutherford, and Wilson Cos.); RUC - Rutherford Co.; SUC - Sumner Co.; SWC - Stewart Co.; WLC - Wilson Co.; WMC - Williamson Co.

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EASTERN RIDE AND VALLEY REGION—In the northern part of the region the weather was both warm and humid during the period, while July was the first month of the year with above average rainfall. At Knoxville June rainfall was slightly above average, as rains late in the month provided some respite from the spring drought. Knoxville's July rainfall was about 75% of normal, with only 2.6 inches. By the end of the period, they still had a large rainfall deficit for the year. Knoxville's June temperatures were slightly above normal, while July temperatures were slightly below normal. Chattanooga's temperature for June was slightly above average while July was slightly below. Rainfall in the period at Chattanooga was below average registering a deficit of 1.10 inches in June and 1.45 inches in July.

In the Johnson City area Cedar Waxwings, Blue Grosbeaks and Grasshopper Sparrows were all more numerous during the period. They also had several reports of young House Finches in different locations.

Breeding Bird Survey routes and mini-routes conducted in the Knoxville area showed a decrease in numbers of Eastern Phoebes and Carolina

Wrens following the recent severe winter, but they detected no noticeable decline in other susceptible species.

In an effort to control aquatic weeds in Chickamauga Lake, TVA initiated a special summer drawdown on 26 July. Intense efforts were made to observe the wading and shorebirds attracted to this newly created habitat. A few of the observations made at Savannah Bay and in the Hiawassee River Area are mentioned in this summary, but a fuller discussion will be made in the Fall Season Report.

Nesting data was received on a total of 3 pairs of Loggerhead Shrikes. We are still interested in the species so please forward any information on their reproduction.

As is usual, there is much more of interest in the body of the report, so read on!

Loon—Kestrel: Common Loon: 18 Jul (1) CHL, MEC (Wesley K. James). Pied-billed Grebe: 28-31 Jul (1-3) SAB (KHD, LHD). **AM. WHITE PELICAN**: 22 to about 30 Jun (1) Fort Loudoun L., Knox Co. (Paul S. Pardue, Louise F. Fuller, *et al.*), a first regional summer record? Least Bittern: 30 Jun (1 calling) Sugar Cr., HRA (KHD, LHD). Great Blue Heron: 5-7 regular Boone Lake (LHTOS). Great Egret: 30 Jun - EOP (1) SAB (KHD, LHD, RAR *et al.*); 8 Jul - EOP (3-9) HRA (KHD, LHD); 20 Jul (3) DOL (JAK). Little Blue Heron: late Jun - EOP (1) Loudon Co. (*vide* J. B. Owen). Black-crowned Night-Heron: 20 Jul (1 imm), 25 Jul (1 ad) AUS (RLK). Yellow-crowned Night-Heron: 29 Jul (7) HRA (Johnny T. Parks, Albert M. Jenkins). Hooded Merganser: 2 Jun (1 male) NIL (DCC). Black Vulture: 7 Jul (2 ad, 2 y) Armstrong Bend, MEC (KHD, PHD). Osprey: 15 young fledged from 7 active nests on Watts Bar L. (T. Edward Beddow). Bald Eagle: 20 Jun (1 ad) NRL (JCH). Sharp-shinned Hawk: 12 Jul (1) Signal Mt. (RAR); 18 Jun (1) Bristol (GDE); 25 Jul (1) AUS (RLK). Cooper's Hawk: 1 through period, Seymour (PDH); 2 Jun (1) WHP (JAK); 22 Jun (1) Johnson City (Sally Goodin). American Kestrel: nesting again at WHP (JAK).

Moorhen—Tern: Common Moorhen: 25 Jun - 7 Jul (1-2) HRA (DCC, PHD, PCH *et al.*). American Coot: 15 Jun - 28 Jul (2-3) CHL (KHD). Greater Yellowlegs: 20 Jul (2) DOL (JAK); 27 Jul (2) HRA (KHD, DCC, CRH). Lesser Yellowlegs: 27-28 Jul (3-5) HRA (LHD, CRH, DCC). Semipalmated Sandpiper: 20 Jul (10) DOL (JAK); 25 Jul (8) Jonesborough (RLK); 28 Jul (8) HRA (KHD, LHD). Least Sandpiper: 20 Jul (1) DOL (JAK); 27 Jul (4) AUS (RLK); 28 Jul (2) HRA (KHD, LHD). Pectoral Sandpiper: 27-28 Jul (6-31) HRA (CRH, DCC, LHD). Stilt Sandpiper: 27 Jul (2) HRA (KHD, LHD). Short-billed Dowitcher: 31 Jul (4) SAB (KHD, LHD). Common Snipe: 29 Jul (3) SAB (LHD). Ring-billed Gull: 23 Jul (2) NRL (JCH) - summering or very early fall arrivals. Caspian Tern: 23 Jul (1) NRL (JCH). **LEAST TERN**: 7 Jul (2) Fort Loudoun Lake, Blount Co. (Marcia L. Davis) - the closest nesting area is along the Mississippi River, could they have been blown in from the east coast? Black Tern: 28 Jul (3) SAB (KHD, LHD); 30 Jul (2) NIL (CDB).

Flycatcher—Shrike: Least Flycatcher: 1 Jun (1, appeared territorial) Smoky Jct. BBS route, SOC (CPN); there are no previous summer records from the county, although this individual could possibly be a late migrant. Eastern Phoebe: Knoxville area census routes showed some decrease in numbers following the severe winter. Tree Swallow: DOL nesting site had

2 ad and 2 imm on 15 Jun (JAK); 29 Jul (2) SAB (LHD). Bank Swallow: about 10 pairs nested in East Knox Co. for the second year in a row (PDH); at the KSP site, on 9 Jun most of the bank had slipped away, destroying a majority of the nests; however, 1 imm was observed in a nest hole; on 8 Jul 65 nest holes counted with 1 y seen in nest cavity (KHD, LHD). Carolina Wren: data from census routes in Knoxville area showed 40-50% reduction in numbers following the severe winter; however, the species entered the winter in very high numbers, and was not reduced to the low level following winters in the late 1970's (CPN). House Wren: pair present all season Maryville (JAK). Cedar Waxwing: 11 Jun (1) Cleveland (PHD); 18 Jun (2) Guild, Marion Co. (CDB, LHD). Loggerhead Shrike: in addition to Rudd's nest last period, active family groups were noted at HRA (DCC) and SAB (KHD); only reports received.

Warblers—Bobolink: Chestnut-sided Warbler: 1 Jun (1) Smoky Jct. BBS route, SOC (CPN) - first time on route. Swainson's Warbler: notable decline in numbers, with birds not found in some regular locations in Anderson and Campbell Counties (James M. Campbell, CPN). **CANADA WARBLER**: 4 Jul (pair carrying food) Frozen Head Mountain, Morgan Co. (CPN); this is the first breeding record from the Cumberland Mountains in Tennessee; they are known from the Cumberlands in Kentucky (details to be published in *The Migrant*). Lark Sparrow: 28 Jul (1 imm) Chattanooga (RAR, KHD). Bobolink: 2 Jun - pair on territory at WHP; on 15 Jun the area had been mowed; a male was present at this same site on 14 Jun 1980 (JAK).

Locations: AUS - Austin Springs, Washington Co.; CHL - Chickamauga Lake; DOL - Douglas Lake; HRA - Hiwassee River Area; MEC - Meigs Co.; NIL - Nickajack Lake; NRL - Norris Lake, Union Co.; SAB - Savannah Bay, Hamilton Co.; SOC - Scott Co.; WHP - White Pine, Jefferson Co.

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EASTERN MOUNTAIN REGION—The temperature for both months was above average. June rainfall was near average, while July was the first month of the year with above average rainfall. These conditions resulted in a hot, humid summer.

Heron—Sandpiper: Great Blue Heron: 2-3 seen regularly around Watauga Lake (*vide* GDE, RLK), unusual in area during summer. Yellow-crowned Night-Heron: 2 pairs successfully nested in ELI area (*vide* GDE). Osprey: 2 Jun (1) over RNM (GDE), late migrant. Cooper's Hawk: 25 Jul (1) SJP (RLK). Solitary Sandpiper: 20 Jul (1) SJP (RLK), first fall report. Spotted Sandpiper: 26 Jul (2) Roan Creek, Johnson Co. (RLK), first fall report. Least Sandpiper: 25 Jul (4) SJP (RLK), first fall report.

Barn-Owl—Finch: Common Barn-Owl: 2 pairs fledged y from same tree in July near South Holston Lake (*vide* GDE). Barred Owl: 22 Jun (1) SJP (Edward H. Schell). Alder Flycatcher: 1 Jun - 5 Jul (3-5) RNM (LHTOS). Loggerhead Shrike: no reports. Blue-winged Warbler: 9 Jul (1) Bays Mtn. (Richard Clark). Golden-winged Warbler: 2-4 pairs in RNM State Park area (*vide* GDE, RLK). Swainson's Warbler: 7 Jun (2) Rock Creek Park, Unicoi Co. (LHTOS). Blue Grosbeak, Grasshopper Sparrow: both more

numerous in ELI area than in many previous seasons (*vide* RLK, GDE). House Finch: several broods reported in ELI area (*vide* GDE, RLK).

Locations: ELI - Elizabethton; RNM - Roan Mountain; SJP - St. Johns Pond, Washington Co.

GLEN D. ELLER, Rt. 9, Box 1340, Elizabethton, TN 37643.

OBSERVERS

KGA—Kenneth G. Anderson	JCH—Joseph C. Howell
MAB—Michael A. Beuerlein	CRH—C. Richard Hughes
CDB—C. Del Blum	WNJ—William N. Jernigan
DWB—Donald W. Blunk	RLK—Richard L. Knight
CHB—Carolyn H. Bullock	JAK—Jon A. Koella
DCC—David C. Chaffin	ARL—Anne R. Lochridge
BBC—Ben B. Coffey, Jr.	OBL—O. Bedford Lochridge
LCC—Lula C. Coffey	RVM—Ruth V. McMillan
DTC—Dot T. Crawford	CPN—Charles P. Nicholson
JPC—J. Paul Crawford	JDP—James D. Parrish
DAD—Dollyann Daily	GRP—George R. Payne, Jr.
CRD—C. Rowan Debold	BPP—Burline P. Pullin
PHD—Paul H. Dietrich	LDR—Larry D. Raye
FOD—Fred O. Detlefsen	RAR—Robin A. Rudd
CGD—C. Gerald Drewry, Jr.	RWS—Richard W. Simmers, Jr.
KHD—Kenneth H. Dubke	DJS—Damien J. Simbeck
LHD—Lillian H. Dubke	BHS—Barbara H. Stedman
GDE—Glen D. Eller	SJS—Stephen J. Stedman
RPF—Robert P. Ford	JLS—John L. Stokes
DG—Dewey Griffin	MT—Michael Todd
RG—Ruth Griffin	DFV—David F. Vogt
PBH—Paul B. Hamel	JEW—James E. Waldron
PCH—Paul C. Harris	MGW—Martha F. Waldron
PDH—Paul D. Hartigan	EJW—Ellen J. Walker
JDH—J. David Hassler	MDW—Morris D. Williams
RCH—Robbie C. Hassler	JRW—Jeff R. Wilson
RMH—Robert M. Hatcher	RJW—Terry J. Witt
AHH—Anne H. Heilman	LHTOS—Lee R. Herndon Chapter, TOS

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