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## THE DISTRIBUTION AND LIFE HISTORY OF THE BROWN-HEADED NUTHATCH (*Sitta pusilla*) IN TENNESSEE

J. CHRISTOPHER HANEY

The Brown-headed Nuthatch (*Sitta pusilla*) is a social species characteristic of the open pinelands of the southeastern United States and Grand Bahama Island. Among the three eastern U.S. nuthatches, the Brown-headed is often called the most atypical in terms of vocalizations and feeding habits.

In Tennessee the Brown-headed Nuthatch occupies a very restricted range and, while occurring more or less regularly in the state since late 1968, its status still remains largely unknown. I conducted field work involving this species from December 1979 through September 1981. This paper summarizes the limited published data relating to the species in Tennessee and presents new information on its range, reproduction, and behavior in the state.

### DISTRIBUTION

The first reference to the Brown-headed Nuthatch in Tennessee was by Glenn H. Marchbanks who reported them on a Christmas Count near Knoxville in 1914 and in a census along the Ocoee River between Copperhill, Tennessee and Blue Ridge, Georgia in 1915 (Trabue 1965). Little is known about Marchbanks and I consider the records suspect.

The first verified record of the species occurred on 14 December 1968 when Nat Halverson and his son Mike observed first one and later two individuals at their suet feeder in southeastern Hamilton County, northeast of Collegedale near the Bradley County line (Basham 1969). Dr. C. F. Dean photographed these birds and they were observed regularly through the remainder of that winter. The Halverson residence continued to be the only location where the Brown-headed Nuthatch could regularly be found in Tennessee until late 1979.

Brown-headed Nuthatches have been recorded from additional locations in Hamilton (Figure 1), Van Buren and apparently Wayne Counties. Descriptions of these areas, with pertinent information on the status of this species in each location follow:

1. McDonald Road-Tallant Road, Hamilton Co. — This, probably the widest area over which Brown-headed Nuthatches occur, is the site of the original record

(Location 1 on Figure 1). Open woodlands of large (greater than 25 cm dbh) loblolly pine (*Pinus taeda*) and shortleaf pine (*P. echinata*) with grass understories extend 0.5 km south, 3.0 km north, 0.7 km west (including Sherry Lane), and 2.0 km east of the intersection of the two roads. Most of the land is residential or pasture. Several areas contain nearly pure stands of pines. The elevation is between 250 and 300 meters.



Figure 1. Distribution of the Brown-headed Nuthatch in Hamilton County, Tennessee. See text for descriptions of numbered locations. Years refer to first observation at a location.

Between 22 January 1978 and 23 January 1980, Mrs. R. E. Lynn banded seven Brown-headed Nuthatches at her residence on Sherry Lane. All were banded between October and February and were not present in summer (Mrs. R. E. Lynn pers. comm.). Two individuals were recaptured, each within seventeen days of the initial capture date. I observed three birds on 8 March 1980 at the Lynn residence.

Brown-headed Nuthatches have remained regular at the Halverson residence (Devore 1969, Smith 1969, Alsop 1976a, Alsop 1976b). They are also seen in small numbers along other McDonald and Tallant Road sites near pine groves (Nat Halverson pers. comm.). I saw two birds 0.4 km south of the intersection of the two roads on 22 June 1980 in a stand of large pines that were later harvested.

2. Collegedale, Hamilton Co. — Brown-headed Nuthatches were present in the Pierson Drive (elevation ca. 300 m) area from at least the spring of 1971 until sometime in 1974 when they suddenly disappeared (Loc. 2 on Figure 1). This is a residential area with a few open groves of Virginia pine (*P. virginiana*).

Brent Barrow (pers. comm.) stated that a maximum of three or four birds frequented feeders at his home and probably nested close by. Fred Alsop (1971) and others saw a Brown-headed Nuthatch excavating a cavity in a dead scrub pine on 14 March 1971 in the Barrow's yard. One bird was seen 29 April 1972 (Alsop 1972). I saw two individuals on 15 October 1972 and again on 22 November 1973.

Brown-headed Nuthatches were rediscovered in northern Collegedale on Penney Lane at the Basham residence during the spring of 1981. Several visited the Basham's feeders and two were later banded (Benton Basham pers. comm.). This area is a lightly wooded subdivision with many small (less than 25 cm dbh) loblolly pines.

3. Apison, Hamilton Co. — I found Brown-headed Nuthatches to be fairly common in loblolly pine groves along Bill Jones Road south of Apison (elevation ca. 250 m) during February, March, and April 1980 (Loc. 3 on Figure 1). Dave Matthewson (pers. comm.) observed several pairs here during the summer of 1980. On 17 June 1981 I saw five birds feeding in a few solitary loblolly pines along Shortcut Road. Mrs. Gertrude Fleming (pers. comm.) has had the species regularly at her feeders on Apison Pike 1.5 km east of Apison since 1980.

4. East Brainerd, Hamilton Co. — Lying between I-75 to the west, Gunbarrel Road to the east, Igou Gap Road to the north, and East Brainerd Road to the south is a large residential area (elevation ca. 220 m) with extensive groves of loblolly and shortleaf pines (Loc. 4 on Figure 1).

Robert Roach (pers. comm.) has had two to four Brown-headed Nuthatches since 1977 at his home on Clayton Road. Mr. Roach observed the birds during the summer of 1978 with young. I found from six to eight birds regularly in this area during June 1980. The birds nested in the Roach's yard during April and May 1981 (Figure 2).

There are extensive areas of suitable habitat to the east and south of this area that probably harbor additional Brown-headed Nuthatches. They have been seen at the Graysville Elementary School 1.8 km south of the Georgia-Tennessee line (Halverson pers. comm.). Large areas of loblolly pine occur between this school and the East Brainerd area.

5. Chickamauga Dam, Hamilton Co. — Randy Stringer first found Brown-headed Nuthatches in a picnic area at Chickamauga Dam (elevation ca. 230 m) in November 1979 (Loc. 5 on Figure 1). Daniel Jacobson (pers. comm.) saw two on 2 January 1980 and two individuals were present regularly until the summer of 1980. On 22 August 1980 Jacobson saw four individuals. I noted from four to six present during September 1980. These additional birds possibly included offspring from the original pair.

The birds usually frequent a picnic area west of Chickamauga Boat Harbor on top of the hill. This grove is made up almost entirely of loblolly pines. I have occasionally seen them on the east side of the harbor where there are fewer pines.

6. Chester Frost Park, Hamilton Co. — Brown-headed Nuthatches were first seen here during March 1979 by Johnny Parks (pers. comm.) (Loc. 6 on Figure 1). He observed two birds excavating a cavity in a dead vertical limb of a shortleaf pine on Dallas Island (elevation ca. 220 m). They remained until late summer and apparently raised young. On 14 March 1980 I located eight individuals on Dallas Island. They have been resident in the park since then and during both the 1980 and 1981 breeding season, three pairs of Brown-headed Nuthatches nested on the Dallas Island section of the Park.

Chester Frost Park (formerly Hamilton County Park) differs from the other localities in certain respects. It contains more Virginia pine, the stands are younger, and there is a greater proportion of deciduous trees. It is similar to the others in being open and devoid of undergrowth.

I found another group of nuthatches about 2.0 km west of Chester Frost Park in the Lakeside Circle subdivision near Dallas Bay (Loc. 7 on Figure 1). I found four birds here on 25 October 1980 and three birds during the 1980 Chattanooga Christmas Bird Count.

7. Other Hamilton Co. locations — Two additional locations were reported to me during late 1981 and early 1982. I did not personally visit these sites. At the first of these (Loc. 8 on Figure 1), 6863 Longview Road, Chattanooga, Joe Stone observed 1 to 2 birds between 18 October and 26 November 1981. At the second site (Loc. 9 on Figure 1) Carl Swafford observed 1 or 2 birds at 3997 Nile Terrace during January 1982.

8. Fall Creek Falls State Park, Van Buren Co. — Tony Koella and Don Pfitzer

recorded five Brown-headed Nuthatches from the park on 29 July 1974 (Alsop 1974). Koella (pers. comm.) found them in group camp number 1 or 2 (elevation ca. 550 m) where "the growth is mostly pine."

Lee Shafer and Daniel Jacobson (Jacobson pers. comm.) searched the park later in 1974 and failed to find them. In July 1980 I also searched unsuccessfully for the birds in both group camps and other sites in the park. In my opinion, the park is no longer suitable for the nuthatches. There is a great deal of undergrowth in the group camp areas and hardwoods have generally overgrown the pines.

9. Natchez Trace Parkway, Wayne Co. — Mike Bierly (1980) states that the Brown-headed Nuthatch has been recorded "near the Tennessee-Alabama line on the Natchez Trace Parkway." This refers to an, as yet, unverified sight record about 20 km north-east of the state line (Bierly pers. comm.).

### REPRODUCTION

The Brown-headed Nuthatch usually excavates a nest hole each year but may occasionally select an existing one (Imhof 1976). In Tennessee instances of each type have been recorded (Table 1). Pearson et al. (1942) state that this species may start and later abandon several cavities until one to their liking is found. I observed this near Chickamauga Dam on 14 April 1980 when a bird spent several minutes excavating a nearly complete cavity in a redbud (*Cercis canadensis*). The cavity was situated about 2.5 m up in a dead vertical limb. The bird did not use the cavity that summer, and presumably nested elsewhere.

TABLE 1  
CHARACTERISTICS OF NESTS

NEST #	CAVITY HT, M	CAVITY TYPE	NUMBER OF EGGS	DATE	LOCATION
1.	1.2	P	6	5/10/77	bluebird box
2.	1.1	E	4	4/17/81	hardwood stump
3.	7.5	E	—	4/14/81	loblolly pine
4.	0.3*	P	4	5/2/80	fence post
5.	5.5	E	a	4/29/80	white oak
6.	3.2	P	—	4/17/81	telephone pole
7.	2.5	E	—	4/17/81	shortleaf pine

Note: P—preformed cavity, not excavated by nuthatches; E—excavated by nuthatches; \*—nest was in post in 1 m of water at Chickamauga Lake; a—undetermined number of eggs destroyed by a predator; Nest 1 at Halverson residence, Nest 2 at Roach residence, Nest 3 at Chickamauga Dam picnic area, and Nests 4-7 at Chester Frost Park.

While digging, the Brown-headed Nuthatch approaches the cavity somewhat from the side and with the tail at a slight angle below the horizontal. The bird alternates five to ten second drilling sessions with intervals of scrutinizing the surroundings, presumably for predators. The wood chips are taken from the cavity in the bill and released with a rapid shaking of the head. Individuals I watched seldom spent more than ten minutes excavating before resuming feeding. Occasionally a bird's mate would replace it at the cavity and also work at drilling.

In Alabama, Brown-headed Nuthatches have been recorded excavating cavities between 15 February and 22 April (Imhof 1976). I have recorded cavity excavation between 21 February and 14 April. Most excavation probably occurs



Figure 2. Brown-headed Nuthatch at nest cavity on 12 April 1981, at Roach residence, Hamilton County, Tennessee.



Figure 3. Nest of Brown-headed Nuthatch at Halverson residence on 10 May 1977 in Hamilton County, Tennessee. Photo by Daniel Jacobson.

from mid-March to mid-April in Tennessee.

The Brown-headed Nuthatch has an egg-laying period from 4 March to 20 July (Bent 1948). Only three complete sets of eggs have been recorded in Tennessee. A nest located in a bluebird house at the Halverson residence had six eggs 10 May 1977 (Alsop 1977) (Figure 3). I found a nest 2 May 1981 with four eggs in a fence post in one meter of water at Chester Frost Park. Roach (pers. comm.) noted four eggs in late April 1981 at his residence on Clayton Drive. Clutch size for the Brown-headed Nuthatch is usually four or five, rarely six or seven (Skutch 1976).

In Tennessee, egg-laying likely occurs during the last half of April or very early in May. Brown-headed Nuthatches raise only one brood (Sprunt 1949). If the first brood fails, the adults do not attempt to nest again (Skutch 1976). A pair I observed at Chester Frost Park made no additional nesting attempts after a predator, feathers found indicated the Blue Jay (*Cyanocitta cristata*), destroyed the nest and an undetermined number of eggs on or before 29 April 1980. A non-nesting pair may act as helpers to other breeding pairs (Norris 1958), but I did not observe this.

The incubation period for Brown-headed Nuthatches is fourteen days (Skutch 1976). During this period the male often interrupts feeding to take food or additional nest-lining material to the incubating female. During April 1980, two males at Chester Frost Park regularly took pine seeds and other small objects to their cavities. The females would then join the males for a period of courtship feeding. As the male approached her, she would respond with "wing-quivering" and a begging note like that of many young passerines. At no time did I see both birds act in the same manner. This display probably functions as a pair-maintenance bond during incubation.

The nestlings remain in the nest from seventeen to nineteen days after hatching (Skutch 1976). Little is known about this segment of the reproductive cycle for Tennessee birds. Roach (pers. comm.) noted that the pair and young at his residence left by 19 May. Most nestlings are probably fledged by at least mid-June.

## BEHAVIOR

Burleigh (1958) found that Brown-headed Nuthatches occur throughout much of the year in small flocks that break up temporarily at the onset of the breeding season. These flocks may number from six to over two dozen individuals (Bent 1948). The largest flock I have recorded varied from five to eight individuals at Chester Frost Park during the winter of 1980-1981.

Brown-headed Nuthatches may also join mixed-species flocks during the non-breeding season. Downy Woodpeckers (*Picoides pubescens*), Carolina Chickadees (*Parus carolinensis*), Brown Creepers (*Certhia familiaris*), Golden-crowned Kinglets (*Regulus satrapa*), and Pine Warblers (*Dendroica pinus*) associated with Brown-headed Nuthatches in loose, roving flocks at Chester Frost Park and Chickamauga Dam from October to late February or early March. On 4 October 1981 at Chester Frost Park, Joe Stone, Al Jenkins, and I observed several Brown-headed Nuthatches in a large mixed-species flock consisting of several warbler species, Carolina Chickadee, Red-breasted Nuthatch (*Sitta canadensis*), and White-breasted Nuthatch (*Sitta carolinensis*).

While nesting, however, Brown-headed Nuthatches can be highly aggressive toward other species that approach the nest site or even a favored feeding area. I saw nuthatches chase Chipping Sparrows (*Spizella passerina*) and Carolina Chickadees from pine trees that both species were feeding in and mob Starlings (*Sturnus vulgaris*) that perched on limbs close to the nest cavity. The nuthatch dove at the Starlings without actually striking them and continued to complain vocally until they left. On 20 April 1981, a Starling entered the nuthatch's nest cavity at Chickamauga Dam while the female was incubating. I did not find the nuthatches at this location in May, and interference by the Starlings could have been responsible for the desertion.

Often the best indications of the presence of Brown-headed Nuthatches is their unique vocalizations. The loudest and most distinctive is a rapid, complaining, nasal "chnee-nee-nee" or "jnee-nee-nee-nee" varying from three to six syllables and occasionally accelerating into a rapid trill. The call is often given when the birds are agitated or are moving from one feeding area to another. It is very unlike either of the other eastern nuthatches and slightly resembles some chickadee calls. Mockingbirds (*Mimus polyglottos*) imitate this call frequently in the Collegedale and East Brainerd areas.

Other vocalizations include a soft "pip" or "pit," heard singly or in a short series, that is given while the birds feed close together. On 14 April 1980, I heard a nuthatch give a very soft goldfinch-like warbling while it remained quite still. Another call is given by the female during courtship feeding and resembles notes given by young passerines begging for food.

Brown-headed Nuthatches are very active feeders. Individuals I observed at Chickamauga Dam during March and April 1980 spent an average of 40 seconds (range 5-90 seconds,  $n = 67$ ) feeding in one tree before moving to another. When feeding in pine trees, they prefer the smaller branches, pine cones, or terminal needle clusters. Brown-headed Nuthatches use the branches and trunk less often than the other two eastern nuthatches (pers. obs.).

Although most feeding occurred in pines, Brown-headed Nuthatches also fed in sweetgum (*Liquidambar styraciflua*), hackberry (*Celtis* spp.), hickory (*Carya* spp.), and other deciduous trees at Chester Frost Park and Chickamauga Dam during the spring and summer. They particularly favored newly-emergent leaf

clusters of white-oak (*Quercus alba*) in spring, perhaps due to a local abundance of insects in the new foliage.

Brown-headed Nuthatches eat pine seeds, grasshoppers, moths, beetles, ants, and spiders (Wetmore 1964). They frequently visit feeders in Tennessee for suet and sunflower seeds, mostly during the winter months.

On 21 June 1980, I saw a Brown-headed Nuthatch carefully conceal a round object, probably a pine seed, under loose bark of a Virginia pine after trying several other locations. I could find no references to food concealment by this species.

### DISCUSSION

It now seems certain that at least a small population of the Brown-headed Nuthatch is well established in southeastern Tennessee. I estimate that population to number from 50-70 individuals based on the maximum number of individuals found in the various Hamilton County locales. This figure does not account for any individuals that may be present in other parts of the state.

The northern and western limits of the Brown-headed Nuthatch's geographical range (Peterson 1980, A.O.U. 1957) coincide very closely to the northern and western limits of Kuchler's (1978) oak-hickory-pine forest. The species' range coincides even closer to the U.S. Forest Service's mapping of loblolly-shortleaf pine forest in the southeastern states (Anon. 1969). In this "major forest-type" classification scheme, loblolly-shortleaf pine forest is defined as a forest in which 50 percent or more of the stand is loblolly pine, shortleaf pine, and other southern pines, singly or in combination. Common associates include oak (*Quercus*), hickory (*Carya*), and gum (*Nyssa*).

In Tennessee, this loblolly-shortleaf pine forest is found in parts of Hamilton, Bradley, Polk, McMinn, and Monroe counties and is isolated somewhat from similar forest to the south and east, i.e., it is surrounded by different forest types containing more hardwoods. I think it is significant that presently known breeding populations of Brown-headed Nuthatches in Tennessee are limited to this region. The loblolly-shortleaf pine forest also extends northward from Mississippi into Hardeman and McNairy Counties, Tennessee. The Brown-headed Nuthatch has been found in Benton, Alcorn, and Tishomingo Counties, as far north as Corinth and Iuka, Mississippi, but never in southwest Tennessee, less than 16 km to the north (A.O.U. 1957; B. B. Coffey, Jr., pers. comm.). The Red-cockaded Woodpecker (*Picoides borealis*), often sympatric with the nuthatch (Bent 1948), formerly occurred in this portion of southwest Tennessee (Nicholson 1977).

The Brown-headed Nuthatch has extended its range elsewhere in the southeast within the past twelve years. They have increased in numbers at Dalton, Georgia (Hall 1972, 1973) and have occurred west of the Blue Ridge in Virginia near Waynesboro and Harrisonburg (Hall 1981a, 1981b). In North Carolina, Brown-headed Nuthatches have nested as far west as Lenoir in Caldwell County (LeGrand 1974), and have been recorded in Buncombe County near Asheville (Hall 1973, 1981a, Simpson 1972).

The Buncombe County records are restricted to pine or pine-hardwood forests along the French Broad River and its tributaries at elevations below 700 meters. The first records of Brown-headed Nuthatches from this region are those of John S. Cairns, who observed and collected the birds near Weaverville in the late 1800's

(Simpson 1969). Cairns observed Brown-headed Nuthatches during late autumn and winter of 1893-1894, and obtained a nest with eggs during the summer of 1894. Cairns died in 1895 and the birds were not recorded in Buncombe County until 1970. Parts of Buncombe County also lie within the boundaries of an isolated segment of the loblolly-shortleaf pine forest-type (Anon. 1969).

Why the Brown-headed Nuthatch has extended its range is not clear. Bird ranges are seldom static and usually in a constant state of flux. The Cardinal (*Cardinalis cardinalis*), Tufted Titmouse (*Parus bicolor*) and Carolina Wren (*Thryothorus ludovicianus*), partly in response to winter feeding stations, have extended their ranges northward in recent decades, while the Robin (*Turdus migratorius*), Song Sparrow (*Melospiza melodia*) and House Wren (*Troglodytes aedon*) have extended their breeding ranges southward. All of these species show a marked attraction to disturbed areas following the removal of forests. Apparently climate was less a limiting factor than were suitable feeding and nesting habitats (Pettingill 1970, Kricher 1981).

Populations of species that are permanent residents may, on occasion, show mass movement (invasion or irruption) after failure of their food supply. If the species find suitable breeding areas, they may become established (Pettingill 1970). Simpson (1972) noted that winter invasions of Brown-headed Nuthatches in western North Carolina may have been a response to population pressure and inadequate food supply in the piedmont, but hard evidence of this is lacking.

The range of the Brown-headed Nuthatch has historically been close to Tennessee, especially in Mississippi (discussed above), Alabama and Georgia. Prior to 1968, the range of the species came to within 30 km of Tennessee in several locations. It is a permanent resident in Alabama north to at least southern Lawrence, Marshall and Dekalb counties (Imhof 1976). Frank Hixon has reported the species from Scottsboro, Jackson County, Alabama (Jacobson pers. comm.). In Georgia, the Brown-headed Nuthatch is resident north to Toccoa in Stephens County and in western Georgia to Rome in Floyd County (Burleigh 1958). More recent sightings, however, indicate that the species is well established further north. They have been recorded at Chickamauga National Military Park (Comstock 1963) and considered regular at Rock Spring and Ringgold, Georgia (Alsop 1973).

The absence of pine woodlands will likely limit the Brown-headed Nuthatch's range extension in Tennessee. Sprunt (1949) recorded the species only in open pinelands, occurring in "no other place." Brown-headed Nuthatches either disappear or greatly decrease after logging operations remove the pine timber in a given locality (Burleigh 1958).

Woodlands in Hamilton County where Brown-headed Nuthatches occur vary somewhat in their composition. The species of pines, the age of the stands, and the proportion of hardwoods are not uniform throughout. All, however, have been kept from complete succession to hardwood forest by periodic mowing or cattle grazing.

In many parts of the Brown-headed Nuthatch's range, regular burning maintains the open character of these pine woodlands. Prescribed burning, as currently practiced in timber management, is economically desirable since it results in stimulating pine growth and eliminating hardwood competition (Lewis 1974). Thinning pine stands also results in larger, though not taller trees (Iyer and Dosen 1974).

Brown-headed Nuthatches did not frequent an unthinned and unmanaged pine plantation adjacent to the Halverson residence (Halverson pers. comm.). The nuthatches seem to prefer older, thinned pine stands with an abundance of cones. Searches for additional Brown-headed Nuthatch populations in the state are thus most likely to be fruitful in areas containing old and open loblolly-shortleaf pine forests at elevations below 700 meters, especially in the southeastern counties of Bradley, Polk, McMinn and Monroe.

Johnston and Odum (1956) noted that the Brown-headed Nuthatch, Pine Warbler and Red-cockaded Woodpecker are the only breeding species entirely restricted to southern pines. In the summer of 1981 several private land holdings in Hamilton County containing large pines were clear cut for pulpwood. Since the Brown-headed Nuthatch is endemic to pines and at least two of the areas clear cut formerly contained Brown-headed Nuthatches, continued investigation of this species' status in Tennessee is warranted.

### SUMMARY

The Brown-headed Nuthatch is a very local permanent resident of Tennessee, only extending its range into the state since 1968. Known breeding populations are restricted to central and southeast Hamilton County with additional sight records from Wayne and Van Buren County. The species favors open loblolly-shortleaf pine woodlands for feeding and nesting. Eggs are laid in late April or early May. Range extension in Tennessee has been concurrent with range extension elsewhere in the southeast.

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University of Georgia, Department of Zoology, Athens, Georgia 30602.  
Accepted 8 April 1982.

## 1980 AUTUMN HAWK COUNT

LINDA J. TURNER

A total of 11,026 hawks of 10 different species was reported from 10 lookout stations in Tennessee during the fall 1980 season. Between 8 September and 26 October, a total of 187¼ hours of observation was accumulated. Hawk records from the Mendota, Virginia firetower, which have been previously included in the Tennessee compilation, have been omitted from this year's totals. However, a summary of the Mendota data is included in Table 1 and a daily report for the 1980 season will be published in *The Raven* by the Virginia Ornithological Society as part of their state's autumn hawk flight compilation. Daily hawk records from the Chilhowee Mountain area were not available for this report, but a summary was obtained from *Migrant* 52:38-40, 1981 and is included in this year's totals.

Following a large early flight of 1500 Broad-winged Hawks on 13 September observed by Adele West at Fairfield Glade, the main flight of Broad-wings was observed between 20 and 24 September. On 20 September, 974 birds were reported from Bon Air and 736 birds at Ooltewah lookout tower. High peaks in Broad-wings were reported on 23 and 24 September when 1500 and 1403 birds passed over Fairfield Glade and Ooltewah lookout tower, respectively. The Broad-wing total for 1980 was 9,989 birds (18,522 birds when combined with Mendota data). Although it is impossible to accurately compare Broad-wing numbers from year to year because of variation in total number of observation hours, number of lookout stations manned, and various other factors, Broad-wing numbers seemed to be comparable to previous years. For example, in 1979, 8,820 Broad-wings were counted in 204.3 hours of observation in Tennessee (16,674 birds when combined with Mendota).

A total of 140 *Accipiters* (80 Sharp-shinned Hawks, 17 Cooper's Hawks, and 43 unidentified) was recorded in the 1980 season with Sharp-shins outnumbering Cooper's by a ratio of 7:1. Numbers of Sharp-shins, Cooper's, and total *Accipiters* seem to be comparable to those reported in 1975-1977 and 1979 (data unavailable for 1978): 127-36-211; 83-26-152; 141-23-176; and 77-17-128.

Only three Osprey were reported from Tennessee lookouts in 1980. This number is much lower than numbers reported in previous years (e.g., 25 Osprey were reported in 1979). However, reports of Ospreys on area reservoirs were numerous during the fall 1980 season.

A total of 12 Marsh Hawks that were reported during the 1980 season seemed comparable to numbers reported in 1975-77 and 1979 (30-26-6, 13). Although this raptor is not very commonly observed from Tennessee lookouts, miscellaneous reports were available during the migration period. Only one Peregrine Falcon was reported from a Tennessee lookout station in 1980. Chuck Nicholson recorded one adult bird at his Norris banding station October 5. On the same day, Linda Turner saw an immature bird at the Kingston Steam Plant. Numbers of Peregrines reported from Tennessee lookouts in 1975-79 were 0-0-1-1-3.

## KEY TO ABBREVIATIONS IN TABLE

REPORTERS: — SB— Susan Bell, KHD — Kenneth H. Dubke, LHD — Lillian H. Dubke, CPN — Charles P. Nicholson, TO — Tom Odom, MP — Marvin Patton, SS — Barbara and Steve Stedman, RCS — Randy C. Stringer, LJT — Linda J. Turner, AW — Adele West, and EMW — Eugene M. West.

# 1980 AUTUMN HAWK COUNT

DATE	STATION	REP. (NO. OBS.) <sup>1</sup>	HRS.	WIND	SKY	T(°C)	UV	QV	SS	CH	RT	RS	BW	MH	US	AK	OTHERS	TOTAL
9/08	BRM	LJT(2)	1	SW(1)	1	26	-	-	-	-	-	-	2	-	-	-	2a	4
9/13	FFC	EMW(2)	1	SW(1)	1	27	-	-	-	-	-	-	100	-	-	-	-	100
9/13	FFC	AW(1)	1/2	SW(1)	1	27	-	-	-	-	-	-	1500	-	-	-	-	1500
9/13	SIP	KHD(2)	9	SW(1-5)	1,5	26-33	11	4	-	1	1	-	3	-	-	-	1a	21
9/14	STP	KHD(4)	9	SW(4-8)	1,5	27-32	-	-	4	-	1	1	59	-	1	-	-	66
9/19	FFC	EMW(1)	3	SW(1)	1,2	21-24	-	-	-	-	-	-	103	-	-	-	-	103
9/20	STP	KHD(2)	9	SW(3)	2,5,9	24-30	-	-	-	-	3	-	33	-	-	-	-	36
9/20	BNA	SB(22)	7 1/2	SE(1)	1	24-30	10	-	5	-	1	1	974	1	-	-	3a, 1f	996
9/20	OLT	LHD(4)	9	SW(3)	2,5,9	24-30	6	-	1	1	1	-	736	-	-	-	-	745
9/21	OLT	LHD(7)	8	W(3-4)	1,3	26-31	8	-	1	2	2	1	30	-	-	1	-	45
9/21	MRF	LIT(5)	3	SW(1)	1	26-31	-	-	2	-	-	-	3	-	-	-	1a, 5h	11
9/21	BNA	SK(7)	6	SW(1)	2	27	-	2	1	1	-	-	41	-	1	-	1a	47
9/21	STP	KHD(2)	9	W(3-4)	1,3	26-31	-	-	7	-	2	-	64	-	-	-	-	73
9/22	SIP	MP(1)	1/2	W(0-4)	1,3	27-32	-	-	-	-	-	-	400	-	-	-	-	400
9/22	OLT	LHD(3)	5	W(0-4)	1,3	27-32	-	4	1	1	2	6	104	-	1	1	-	120
9/22	SIP	KHD(1)	4	W(0-4)	1,3	27-32	-	-	3	1	-	-	1	-	-	-	-	5
9/23	DOI	RCS(1)	1	W(2-3)	2,3	27-32	-	-	-	-	-	-	86	-	-	-	-	86
9/23	FFC	EMW(2)	1 1/2	SW(1-2)	1	27-28	-	-	-	-	-	-	1500	-	-	-	-	1500
9/24	FFC	EMW(2)	1	N(2)	2	27	1	-	-	-	-	-	16	-	-	-	-	16
9/24	OLT	LHD(3)	4 1/2	NE(2-3)	3,7	21-28	1	8	3	1	2	1	1403	-	-	-	-	1419
9/24	BRM	LIT(2)	1	NE(2)	3	27	3	-	1	-	3	-	59	-	-	-	-	66
9/25	WOM	KHD(1)	2 1/2	SW(3)	5,7	20-21	1	-	-	-	2	-	68	-	-	-	-	71
9/27	KFF	TO(1)	6	E(2-5)	3	10-16	-	-	6	-	2	-	437	-	-	-	3u	448
9/27	OLT	LHD(1)	4	E,NE(2-4)	3	16	-	-	1	-	-	-	134	1	-	-	-	136
9/27	SIP	KHD(2)	8	E,NE(3-4)	3	16-17	-	-	8	-	-	-	6	-	-	-	3a	17
9/27	NOR	CPN(3)	3	E(1)	3	16	1	-	-	-	-	1	72	-	1	-	1u, 2a, 1b	79
10/02	BRM	LIT(2)	1	SW(2)	2	17	2	-	1	-	1	-	1	-	-	2	-	7
10/04	SIP	KHD(1)	9	SW(1-3)	3	10-13	-	-	1	-	2	-	-	-	-	-	1b	4
10/05	STP	KHD(1)	9	N(4)	4	10-17	-	-	-	-	8	-	-	-	-	-	1a	9
10/25	STP	KHD(1)	7 1/2	SW(3)	5,7	20-21	1	2	-	-	-	5	-	-	-	-	-	8
10/26	STP	KHD(1)	9	SW(0-3)	0,3	9-17	-	-	3	-	13	-	-	-	-	-	-	16
11 days <sup>2</sup>	CHM	SS(-)	35	-	-	-	145	36	31	3	19	2	2054	10	4	3	4u, 18a, 522b, 2f	2870
-	MEF <sup>3</sup>	VOS	76	-	-	-	-	-	-	47	40	-	8533	5	16	27	16a, 1sh	8809
TOTAL			187 1/2	-	-	-	190	56	80	11	70	13	9989	12	8	7	590u	11026

<sup>1</sup> Reporter (Number of observers)

<sup>2</sup> Stedman and Stedman (1981): Migrant Sl(4):12-14

<sup>3</sup> Data from MEF is not included in the totals

SPECIES: TV — Turkey Vulture, BV — Black Vulture, SS — Sharp-shinned Hawk, CH — Cooper's Hawk, RT — Red-tailed Hawk, BW — Broad-winged Hawk, SH — Swainson's Hawk, MH — Marsh Hawk, OS — Osprey, AK — American Kestrel, BE — Bald Eagle, a — unidentified *Accipiter*, b — unidentified *Buteo*, f — unidentified falcon.

LOOKOUT STATIONS: *Bon Air* (BNA) — Reports from this station, which is located 7.5 mi ENE of Sparta in the community of Bon Air, White County, have been received since 1941. At an elevation of approximately 1800 ft. (35°56'35"N, 85°20'25"W, De Rossett, Tenn. 7.5 Quad. USGS), hawks can be seen migrating along the western edge of the Cumberland Plateau.

*Brushy Mountain* (BRM) — Located in the Cumberland Mountains of Campbell County (36°19'30"N, 84°18'30"W, Block, Tenn. 7.5 Quad. USGS) at an elevation of 3000 ft., BRM offers an excellent view of hawks migrating along the eastern edge of the Cumberlands.

*Chilhowee Mountain* (CHM) — The Chilhowee Mountains form a long ridge that runs along the northern boundary of the Great Smoky Mountains National Park for about 32 mi. from Chilhowee Dam in the SW to near the Slate Top Mountains in the NE. The elevation averages approximately 2950 ft. A lookout tower located at Look Rock (35°37'57"N, 83°56'79"W, Blockhouse, Tenn. 7.5 Quad. USGS), Blount County, probably offers the best view of hawks migrating along this ridge.

*Dowler Heights* (DOH) — DOH is located on Walden's Ridge, approximately 5 mi. NW of the town of Red Bank in Hamilton County (35°12'05"N, 85°20'45"W, Fairmount, Tenn. 7.5 USGS Quad. USGS) at an elevation of 2000 ft. In earlier reports, this lookout has been referred to as Mountain Creek.

*Fairfield Glade* (FFG) — FFG is situated on the Cumberland Plateau, 14 mi. NE of Crossville (36°00'30"N, 84°53'30"W, Fox Creek, Tenn. 7.5 Quad. USGS) at an elevation of 1600 ft. in Cumberland County.

*Kyles Ford Firetower* (KFF) — Located at an elevation of 2401 ft. in Hawkins County, 7 mi. N of Rogersville (36°35'00"N, 83°01'10"W, Kyles Ford, Tenn.-Va. 7.5 Quad. USGS), this firetower is excellent for viewing raptors migrating along the Clinch Mountains.

*Mendota Firetower* (MEF) — This firetower is located at an elevation of 3018 ft. on Clinch Mountain on the border of Russell and Washington Counties, Virginia (36°43'50"N, 82°18'02"W, Mendota, Va. 7.5 Quad. USGS). Both the TOS and VOS have monitored this station since the 1950's. However, since the VOS is compiling and publishing the hawk flights from this lookout, only a summary of this data will be published in future *Migrant* autumn hawk flights.

*Mount Roosevelt Firetower* (MRF) — In past autumn hawk flights, this lookout has been referred to as Rockwood Firetower. This firetower is located approximately 2 mi. W of the town of Rockwood in Mount Roosevelt State Forest in Roane County. At an elevation of 2036 ft. (35°51'59"N, 84°28'52"W, Rockwood, Tenn. 7.5 Quad. USGS), hawks can be seen migrating along the eastern escarpment of Walden's Ridge.

*Norris Banding Station* (NOR) — Located 1.2. mi. SE of Norris Dam in Anderson County at an elevation of 920 ft. (36°21'55"N, 84°04'28"W, Norris, Tenn. 7.5 Quad. USGS), occasional hawks, migrating near the western edge of the

Ridge and Valley are seen at the site of Chuck Nicholson's passerine banding station.

*Signal Point (SIP)* — SIP is located on Signal Mountain approximately 2 mi. N of the town of Lookout Mountain (35°01'20"N, 85°20'30"W, Chattanooga, Tenn. 7.5 Quad. USGS) at an elevation of 1972 ft. in Hamilton County. This station is manned by Ken Dubke during the entire fall migration season from an interpretative center on the point which is part of the Chickamauga and Chattanooga National Park.

*Ooltewah Lookout Tower (OLT)* — Located on White Oak Mountain at an elevation of 1495 ft. on the border of Hamilton and Bradley Counties (35°08'57"N, 85°01'27"W, Snow Hill, Tenn. 7.5 Quad USGS), hawks can be seen on their migration through the Ridge and Valley region.

- WIND CODES: 0 Less than 1 mph; smoke rises vertically.  
1 1-3 mph; smoke drift shows wind direction.  
2 4-7 mph; leaves rustle, wind is felt on face.  
3 8-12 mph; leaves, small twigs in constant motion; light flag extended.  
4 13-18 mph; raises dust, leaves, loose paper; small branches in motion.  
5 19-24 mph; small trees in leaf sway.

- SKY CODES: 0 Clear; 0-15% cloud cover.  
1 Partly cloudy; 16-50% cover.  
2 Mostly cloudy; 51-75% cover.  
3 Overcast; 76-100% cover.  
5 Fog or haze.  
7 Rain.  
9 Thunderstorm with or without precipitation.

Rt. 4, Box 541, Valley Lane, Clinton, TN 37716. Accepted 1 Feb. 1982.

## ROUND TABLE NOTES

**WHIMBRELS ON BIG BALD MOUNTAIN, TENNESSEE**—On 30 August 1980, while banding songbirds on Big Bald Mountain, I observed 2 Whimbrels (*Numenius phaeopus*). The Whimbrels were first seen walking and feeding in the open road and grassy meadow on the peak of the mountain, which is along the North Carolina state line in Unicoi County, Tennessee, at an elevation of 5500 ft. The birds were also seen by Mark Mayfield, Anne and Bedford Lochridge, and Barbara and James Finney. The Whimbrels were observed again on 31 August, but were not seen on 1 September. During this period, the birds were carefully studied at close range, and the striped crown, length of the bill, and pale underparts were noted by all observers.

The status of the Whimbrel in Tennessee has been recently summarized by Stedman (*Migrant* 51:88-89, 1980), and this is apparently the ninth state record. All of the previous observations have been at low elevations in association with water. During the fall migration, Whimbrels are often found in grassy fields, heaths and blueberry barrens in Maine and Maritime Canada (Palmer, R. S., 1949, *Maine Birds*, Bull. Mus. Comp. Zool. Vol. 102; Godfrey, W. E., 1979, *The Birds of Canada*, Ottawa, 428pp.; C. P. Nicholson, pers. comm.). The grassy meadow on Big Bald Mountain was probably selected by the Whimbrels because of its resemblance to the habitat used in northeastern North America.

GEORGE R. MAYFIELD, JR. Sunnyside Drive, Columbia, TN 38401. Accepted 1 March 1982.

**GOSHAWK FROM GREAT SMOKY MOUNTAINS NATIONAL PARK** — On 11 April 1981 at 0730 hours, Loren Rieseberg, Cheryl Wierzbic, Del Blum and I (J. Christopher Haney) were hiking along the Appalachian Trail near the Sevier Co., Tennessee-Swain Co., North Carolina border, approximately one-half mile east of the Newfound Gap parking area. Our attention was drawn to a bird flying from the southwest after we realized all bird song in the vicinity had abruptly ceased. We observed a hawk with relatively short, rounded wings, very long tail, and flap and glide method of flight. We identified it as an accipiter but were at first uncertain as to species. It was larger than a Common Crow (*Corvus brachyrhynchos*) and seen the length of a Northern Raven (*Corvus corax*), both of which we had seen earlier in the area. The bird altered its flight and flew directly over our heads, 3 meters above the trees. We then saw an indistinctly striped tail, fine gray barring on the underparts, and white fluffy undertail coverts. We identified it then as an adult Goshawk (*Accipiter gentilis*) after consulting Robbins' et al; *Birds of North America*. The observation was made under mostly cloudy skies with light winds, temperature about 55° F. The location was in spruce-fir forest at 5500 feet elevation. Viewing was done with 7X35 Bushnell binoculars. Del Blum had previously seen a Goshawk in Tennessee.

This marks the third or fourth record of the Goshawk in GSMNP. The first was seen by Douglas Pratt at Heintooga Overlook on 15 June 1970 (*Chat* 35:2, 1971). On 18 June 1971, G. Ronald Austing saw a Goshawk at Indian Gap on the Tennessee-North Carolina boundary (*Migrant* 42:67, 1971). There is also an unpublished June (1976 ?) record on file at Park Headquarters at the Sugarlands.

J. CHRISTOPHER HANEY, Department of Zoology, The University of Georgia, Athens, Georgia 30602. Accepted 3 December 1981.

## MINUTES OF THE 1981 FALL MEETING AND SYMPOSIUM

The 1981 Fall Meeting and Symposium, consisting of a Board of Director's meeting, paper session, and field trips, was held 13-15 November 1981 at Paris Landing State Park.

### BOARD OF DIRECTORS' MEETING

The Fall Meeting of the Board of Directors was called to order at 1725 on 14 November. President Michael L. Bierly presided with Secretary Pat Stallings recording the minutes.

The minutes of the 2 May 1981 meeting were read. After noting a discrepancy between the May 1981 minutes and the October 1980 minutes in that David Pitts was listed on the Fall Meeting Arrangements Committee in the Spring minutes, having replaced George Mayfield who was appointed at the Fall 1980 meeting, the minutes were approved as amended.

In response to a call for statements from any officer, George Payne, Jr., Treasurer, gave a report covering 1 May 1981 through 31 October 1981 showing Assets of \$24,704.65, estimated Liabilities for the coming year of \$4,500.00, Income of \$6,575.81, Expenses of \$2,894.65, and Capital Reserve of \$20,204.65. He listed operating expense per member per year as \$6.54 and suggested that an increase in membership dues be considered at the Spring meeting.

Tom Guschke questioned the Season records for the Central Basin region being missing from the past three issues of THE MIGRANT. The Editor, Chuck Nicholson, responded that he had received the current Season report from the Central Basin and that the missing reports would be published later if he received them. Lula Coffey stated that it was the responsibility of the reporters to meet the deadlines set forth. Chuck stated that the June issue of THE MIGRANT was at the printer now. He hopes to have it published at Knoxville in the future and to have it mailed from Norris where he lives. He made a plea for manuscripts and count results. Effective with this Fall season, THE MIGRANT will use the same reporting dates for each season as those used by AMERICAN BIRDS. The Summer Season will replace the season currently known as the Nesting Season.

The President stated that the newsletter was mailed on 7 October, but delivery had been very slow with some members not receiving theirs until in November. THE MIGRANT was mailed 14 October with most of them being received within a week; however, in the past, some members had experienced problems in receiving their publications. The staff hopes to have the Spring newsletter mailed by 15 February to counteract the slow delivery problem.

The President read a proposal submitted by the Fall Meeting Arrangements Committee for a procedure to set up Fall State Meetings:

“That the President appoint for a two-year term a person to be responsible for the organization of the Fall Meeting. That person will present potential Fall Meeting sites at least one year in advance for the approval of the Board of Directors.”

George Payne moved that the Board adopt the proposal as submitted; Chuck Nicholson seconded and the motion carried unanimously.

In order to comply with the motion just passed, the President stated that it was necessary to determine a site for the Fall 1982 meeting. Sally Goodin moved that the meeting be held near Woods Reservoir the second weekend of November. The motion was seconded and passed.

Tom Guschke announced that the Spring Meeting would be held 7-9 May 1982 at Brentwood at the Baptist Convention Center with rooms being reserved at the Holiday Inn at the Franklin exit on I-65 south of Nashville. Other accommodations will be available also. Field trips will focus on specific birds during the peak migration period in the Nashville area. David Pitts pointed out a conflict with the Wilson Ornithological Society meeting on the same dates; however, when this conflict was noticed, it was too late to change the arrangements already made.

There being no further business, the meeting adjourned at 5:45 p.m.

## SYMPOSIUM

The afternoon paper session, chaired by T. David Pitts, began at 1300 on 14 November 1981. Papers presented were as follows:

CHARLES P. NICHOLSON — The 1981 McNairy County Foray and suggestions for future forays.

JOHN L. STOKES — Raptor rehabilitation at Memphis.

J. CHRISTOPHER HANEY — Brown-headed Nuthatch studies in southeast Tennessee.

TOM SMITH AND DARYL DURHAM — Plant classification and wildlife habitat evaluation of the Highland Rim — a study proposal.

MARK GUDLIN — Ruffed Grouse restoration in Tennessee.

ANN TARBELL — Tufted Titmouse studies in Tennessee.

CHARLES P. NICHOLSON — A proposal for state bird list criteria and formation of a certification committee.

The evening program, "The Reelfoot Lake Bald Eagle hacking project," by Arlo and Noreen Smith, was presented by Robert M. Hatcher.

Pat Stallings, *Secretary*

## BOOK REVIEWS

Birds of the Carolinas. — Eloise F. Potter, James F. Parnell, and Robert P. Teulings. 1980. University of North Carolina Press, Chapel Hill. 408 pp. \$14.95 from Univ. of N. Carolina Press, Box 2288, Chapel Hill, NC 27514.

This is a compact, attractive hardbound work describing the birdlife of both North and South Carolina. Although not a comprehensive state bird book, it does include information on 415 species, which is much updated over that available in "Birds of North Carolina" by Pearson *et al.*, and "South Carolina Bird Life" by Sprunt *et al.*

Introductory chapters include information on bird identification, migration, annual cycle, avian habitats in the Carolinas, and conservation. Following this are the species accounts, which comprise the bulk of the book. The accounts include descriptions of the species' range in the Carolinas, nesting habits, feeding habits, and a description of the bird. The amount of information given in the "nesting habits" section varies, and is very detailed for a few species which the authors have studied in detail. In the Black-capped Chickadee account, the lack of a nest record for North Carolina (*Chat* 44:1-4, 1980) is not mentioned, and the nesting information is presumably from nearby states. Maps on the end papers show major towns, cities, lakes, parks and refuges in the Carolinas. Many of the range descriptions, however, refer to counties and physiographic regions, and the maps would have been more useful if these were included. The bird descriptions provide little information not found in field guides, and very little information on vocalizations is given.

Also included with the species accounts are color photographs of about two-thirds of the species. These are one of the strong points of the book. The photographs, mostly taken by amateurs, are of high quality, well reproduced, and mostly of birds in the wild. Because of the substantive (although non-technical) text, beautiful photographs, and very reasonable price, I strongly recommend this book.

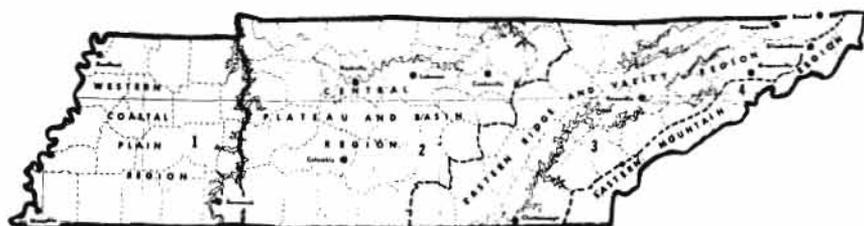
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A Dichotomous Key to the Shorebirds of North America. — Richard Mellon. 1981. Mellon Biological Services, Morrisville, PA 24 pp. \$2.95 from Mellon Biol. Serv., P. O. Box 63, Morrisville, PA 19067.

This key is divided into two sections, one for identifying shorebirds regularly occurring in North America, and one for identifying rare or accidental Eurasian species. Many of the couplets are based on relative head-bill length. On free, actively feeding shorebirds, making decisions on this ratio, as well as choosing among many of the other couplets, will be difficult. The section on "peeps" provides little of value that is not in standard field guides, and, for regularly occurring species, the key is not a substitute for field guides. Inclusion of a species index would have made it easier to key backwards a bird whose identification is known or suspected. Perhaps the most useful feature of the book is the section on rare or accidental shorebirds. Much of this information is not included in standard North American guides. This will be useful for visitors to Alaska and other hotspots for vagrant shorebirds, and a familiarity with these species will help the serious shorebird watcher in Tennessee.

—Charles P. Nicholson

## THE SEASON



## NESTING SEASON: 16 MAY - 31 JULY 1981

Three of the four regional compilers commented on the weather during this season, and, as their comments differed, it is difficult to draw conclusions from them. Among the highlights of the season were Common Loons at Kingston Steam Plant and at Old Hickory Dam, Ruddy Ducks at Memphis, and White-throated Sparrows at two locations in the Western Coastal Plain during June. The Song Sparrow continued to spread in Middle Tennessee, and was recorded at new locations near Hartsville, Dixon Springs, and Livingston. On the negative side, observers in the two eastern regions reported low Purple Martin numbers.

**WESTERN COASTAL PLAIN REGION** — The western section of the state experienced a mild summer and moderate rainfall.

*Heron-Tern:* W. G. Criswell reported a new heron roost west of Dyersburg. He was unable to determine the exact location. The old roost, located within the city limits, was abandoned this year. He made the following observations:

	2 Jul	3 Jul	9 Jul	12 Jul	19 Jul	22 Jul	5 Aug
Little Blue Heron							
Ad	194	170	208	265	489	248	513
Pied	—	6	7	9	5	3	3
Imm	—	—	23	50	125	78	115
Cattle Egret	1	1	1	1	6+	5	50
Yellow-crowned Night Heron							
Ad	—	6+	—	—	6+	—	—
Imm	4	—	7	6	—	—	—
White Ibis							
Imm	1	1	4	4	—	—	3

Yellow-crowned Night Heron: 8 nests observed at McCorkle site, MEM (JLS). Least Bittern: 15 Jun (3 ad; nest with 4 eggs) HM (WGC). Ruddy Duck: 18 Jun (6) ROL (BBC, LCC); 3 Jul (3) ROL (CWB); 15 Jul (0) ROL (CWB). Hooded Merganser: 10 Jun (2) WL (WPP, WRP). Mississippi Kite: present at 4 locations in N Dyer Co. (WGC); 4 Jun - 24 Aug (2-13) within city limits of Memphis (JLS). Bald Eagle: 2 young hacked from nest platform, RL (AIS, NMS, TWRA). Osprey: 24 Jul (3) Lost Pond, RL (DP); 3 active nests, RL (TWRA); 2 immatures near Eagle hacking project RL (AIS, NMS). American Kestrel: 31 May (1) MI (MCTOS), 2 Aug (1) MI (BF). Spotted Sandpiper: 14-22 Jun (2) TN 79, Lake Co. (WGC). Greater Yellowlegs: 12 Jul (2) TN 79, near Powell's Ferry (WGC). Lesser Yellowlegs: 15 Jul (2) 2 mi SE of Millington (DP). Pectoral Sandpiper: 14 Jul (3), 23 Jul (3) 2 mi SE of Millington (DP). Least Tern: 31 May (5), 14 Jun (20), 26 Jul (10+) TN 79, Lake Co. (WGC). Black Tern: 24 Jul (17) RL (DP).

*Whip-poor-will - Wren*: Chuck-will's-widow: 8 Jun (17 at 12 of 20 stops) Lick Creek Rd. 9.6 mi S of Henry Co. in Benton Co. (BBC, LCC). Whip-poor-will: 8 Jun (27 at 16 of 20 stops) Lick Creek Rd. 9.6 mi S of Henry Co. in Benton Co. Willow Flycatcher: (3 territorial males, no nests found) CB (TDP). Tree Swallow: 7 Jun (1 flushed from nest cavity) CB (TDP); 9 Jun (8) central RL (TDP); 9 Jun (10 birds, 2 ads feeding y) CL (BBC, LCC); 18 Jun (5) NL (BBC, LCC). Bank Swallow: 31 May (21 burrows in sand ridge) TN 79, Lake Co., 14 Jun (1) same area (WGC). Cliff Swallow: 1 May (20 birds, 68 nests, 16 almost complete) I-40 mile 133; 4 May (60 birds, 50 nests) TN 69, White Oak Creek; (no birds, 75 nests from last year, traces of 180 nests in years past) TN 142, Owl Creek (BBC, LCC). House Wren: 29 Jun (2) FPSP, W side of old channel (BBC, DP). Bewick's Wren: 9 Jun (1) HB (BBC, LCC).

*Warbler-Sparrow*: Worm-eating Warbler: 7 Jun (1) SFSP (BBC). Yellow Warbler: 9 Jun (1, fewer than previous years) CL (BBC, LCC). Prairie Warbler: 8 Jun (6) on ridge at head of Rutherford Fork of Obion River, east of US 70 (BBC, LCC); 13 Jun (1) TN 76, (3) H (CDR, MGW); 25 Jun (1) H (LCC). Scarlet Tanager: 13 Jun, 25 Jun, 13 Jul (6) at 9 locations in bottoms of HNWR (MCTOS, BCC, LCC). Painted Bunting: 31 May (8) PI (MCTOS), (2) PI Causeway (MCTOS). Grasshopper Sparrow: 9 Jun (2) TN 69, SW Decatur Co., 13 Jun (1) Henry-Weakley Co line, south of Middle Fork of Obion River (DM, GM); 12 Aug (2 ad, 5 imm) PF (CHB, HBD, NMS, WRP). Bachman's Sparrow: 27 Jun (1) 3 mi N of Toone (RJ, ARL). White-throated Sparrow: 11 Jun (1) 2 mi NE of Samburg (WPP, WRP); 29 Jun - 2 Jul (1) MEM (BW, WLW).

*Locations*: CB—Crockett Bottoms, Gooch WMA, Obion Co.; HB—Hooker's Bend, Hardin Co.; H—Hillville, Hatchie National Wildlife Refuge, Haywood Co.; CL—Camden Landing, Benton Co.; MI—Mud Island, Shelby Co.; NL—North Lake, Shelby Co.; RL—Reelfoot Lake; ROL—Robco Lake, SW Shelby Co.; WL—Walnut Log, Reelfoot Lake, Obion Co.; MEM—Memphis; HM—Hooper Marsh, Dyer Co.; Powell's Ferry—Lake Co.; PI—President's Island, west Shelby Co.; FPSP—Fort Pillow State Park; SFSP—Shelby Forest State Park.

MARTHA WALDRON, 1626 Yorkshire Drive, Memphis, TN 38119.

CENTRAL PLATEAU AND BASIN REGION—In Nashville, the last half of May was cool, June was wet and July normal.

*Loon-Hawk*: Common Loon: 30 Jul - 6 Aug (1, breeding plumage) Old Hickory Dam (MPS, VMS), (Jul/Aug records in 1975, 1977, 1979 in Nash area). Black-crowned Night Heron: at least 75 active nests Bordeaux Heronry, Nash, seemed successful (NTOS); colony on Mill Creek, Nash did not breed (MLB, FJM, ADP). Least Bittern: 6 Jun (3) Goose Pond, GYC (FJM, DRJ); 6 Jul (1) and 4 Sept (1) Metro Center, Nash (DFV), not found between these dates, possibly 2 birds. American Bittern: 6 Jun (1) Goose Pond, GYC (FJM, DRJ). Blue-winged Teal: 31 May (2, pair) Metro Center (DFV). Cooper's Hawk: 17 Jun (1) I-40, mi 276, PUC (CPN). Broad-winged Hawk: 1 Jul (2 y in nest), 5 Jul (2 y perched in nest tree) BS (KAG, DFV), nest successful.

*Gallinule-Flycatcher*: Common Gallinule: 17-18 May (1) Metro Center (LDR), 14th Nash record (8th spring). American Woodcock: 9-17 May (1-2 singing) Metro Center (MLB). Common Snipe: 18 May (1) Metro Center (DFV). Spotted Sandpiper: 17 Jun (1 y + 2 ads) Metro Center (DFV), nested here 1977, 1979, 1980. Ring-billed Gull: 30-31 Jul (1 imm) beach, Old Hickory L (MPS), limited summer records Nash area. Forster's Tern: 6 Jul (1) Metro Center (DFV),

6th Jul record Nash. Black Tern: 6 Jul (1) Metro Center (DFV). Willow Flycatcher: 3 males singing on territory during summer Metro Center (DFV).

*Warbler-Sparrow:* Kentucky Warbler: 31 Jul (1 found dead) Vanderbilt, Nash (MAG), denotes definite movement. Connecticut Warbler: 29 May (1) Shelby Bottoms, Nash (MPS). Mourning Warbler: 22 May (1) Love Circle, Nash (JCA). Song Sparrow: 16 May (1) Livingston, OVC (CPN) and (2 singing) Gallatin Steam Plant (DFV); 16-17 Jun (9) Hartsville, (3) at 1980 location near Johntown, TRC and (1) 2.5 mi S Dixon Springs, SMC (CPN); second consecutive summer one singing near 100 Oaks Shopping Center, Nash (MLJ); in Nashville, Metro Center breeding population seemed to be going strong (DFV).

*Locations:* GYC—Grundy Co.; OVC—Overton Co.; PUC—Putnam Co.; SMC—Smith Co.; TRC—Trousdale Co.

MICHAEL LEE BIERLY, 3825 Bedford Avenue, Nashville 37215.

**EASTERN RIDGE AND VALLEY REGION**—Once again Steve and Barbara Stedman were the vanguard in monitoring the spring shorebird movement at the Kingston Steam Plant. Their efforts extended from 28 February to 27 May. There were 89-305 unidentified "peeps" recorded between 16 and 27 May. Other birders noted the first southward migration at the site on 6 July.

Good news can be reported on nesting Sharp-shinned Hawks and Ospreys. Two nestings of Sharp-shinned were reported and 4 nests of Ospreys were followed on Watts Bar Lake.

Ann Gibson has been closely monitoring the summering House Wrens in Chattanooga and has yet to fully document their successful reproduction in the area. Among other notes of interest, Chuck Nicholson recorded an all-time high state Breeding Bird Survey count of 83 Song Sparrows on his Lovell route.

*Loon-Osprey:* Common Loon: 20 May (1) KSP (MWA); 20 Jun - 28 Jul (1) KSP (KHD, LHD, et al.). Double-crested Cormorant: 20 May (1) Fort Loudoun Lake (PSP). Little Blue Heron: 29 May (1) Dandridge (PSP); 18 Jun (2) Reflection Riding (KHD, LHD); 3 Jul (2) KNX (PSP). Cattle Egret: 27 May (1) KSP (SJS, BHS, ARH, MWA); 28 May (2) SAB (KHD, LHD); 8, 26 Jul (2-1) HRA (*vide* J. W. Knott). Great Egret: 27 Jul (1) SAB (KHD, LHD). Black-crowned Night Heron: 30-40% increase in numbers at colonies in KNX area (Burline Pullin). Least Bittern: through period Surgoinsville (WKJ). American Bittern: 30 May (1) MAC (RBW). Redhead: 27 May (1) KSP (BHS, SJS). Lesser Scaup: one during period JNC (RLK). Ruddy Duck: 22 May (1) KSP (BHS, SJS). Sharp-shinned Hawk: active nest OKR (FJA); ad, 2 y Jefferson City (Howard Chitwood, Nelson Ross). Cooper's Hawk: 22 May (1) AUS (HHD); 20 Jun (1) Huntsville (CPN). Red-shouldered Hawk: active nest OKR (FJA). Broad-winged Hawk: 22 Jun (nest w/2 y) Orebank, Sullivan Co. (Thomas F. Laughlin). Bald Eagle: 22 May (1 imm) KSP (MWA, BHS, SJS); 25 May (1) Baileyton, GNC (Michael McGrew); 24 Jun (1 ad) Norris Lake (JCH); 30 Jul (1 ad) Holston R. at Rogersville (WKJ). Osprey: at their usual locations on Watts Bar Lake with 4 nesting attempts; 3 nests fledged a total of 4 young with one nest destroyed in a storm (T. Edward Beddow).

*Rail-Owl:* Virginia Rail: 18 May (1) CHA (JCH). Sora: 20 May (1) CHA (JWS). American Coot: 18, 27 Jul (2) KSP (KHD, LHD). Semipalmated Plover: 16-27 May (1-18) KSP (LNA, MWA, BHS, SJS, ARH). Ruddy Turnstone: 19 May (4) KSP (BHS, SJS). American Woodcock: 31 May (2), 6 Jun (1) MAC

(RBW). Willet: 6 Jul (2) KSP (KHD, LHD). Greater Yellowlegs: 19 May (1) KSP (BHS, SJS); 14-31 Jul (1) KSP (KHD, LHD). Lesser Yellowlegs: 6-31 Jul (1-12) KSP (KHD, LHD). Pectoral Sandpiper: 16 May (4) KSP (BHS, ARH); 14-31 Jul (4-20) KSP (KHD, LHD). White-rumped Sandpiper: 16-27 May (1-20) KSP (ARH, LNA, MWA, BHS, SJS); 18 Jul (1) KSP (KHD, LHD). Baird's Sandpiper: 13-14 Jul (1) KSP (KHD, LHD); 19 Jul (1) KSP (CPN). Least Sandpiper: 19 May (25) KSP (BHS, SJS); 6-31 Jul (3-34) KSP (KHD, LHD). Dowitcher spp. 20-28 Jul (1-2) KSP (KHD, LHD). Marbled Godwit: 16-17 Jul (1) KSP (LNA, MWA, BHS, SJS). Stilt Sandpiper: 16-31 Jul (1) KSP (MWA, LNA, BHS, SJS). Semipalmated Sandpiper: 16 May (1) KSP (ARH, BHS); 6-31 Jul (4-40) KSP (KHD, LHD). Western Sandpiper: 16 May (1) KSP (ARH, BHS); 18 Jul (3) KSP (KHD, LHD). Sanderling: 19 May (1) KSP (BHS, SJS); 18 Jul (1) KSP (KHD, LHD). American Avocet: 20 Jul (3) KSP (KHD, LHD). Ring-billed Gull: 22 May (22) Cherokee Dam (JAK). Laughing Gull: 2 Jun (1 ad) Nickajack Lake (KHD, LHD). Caspian Tern: 19 May (1) KSP (BHS, SJS). Black Tern: 19 May (6) KSP (BHS, SJS); 20 May (4) KSP (MWA, ARH); 20-21 Jul (1-2) KSP (KHD, LHD). Barn Owl: 16 May (nest with 7 y) Ottway, GNC (*fide* HS); at least 2 pairs near JNB (RLK); present usual site White Pine (JAK). Great Horned Owl: one nest site near Horse Cove (MD, SG).

*Woodpecker-Shrike*: Red-headed Woodpecker: 5 Jul (1) Alcoa (Marcia L. Davis). Red-cockaded Woodpecker: 25 May (2) Catoosa WMA (JWS, DRJ, Kathy Davidson). Willow Flycatcher: 16 May (2) Alcoa Marsh (ARH, BHS); 2 pairs AUS thru 15 Jul (RLK); 14, 18 Jul (1 singing) KSP (KHD, LHD). Horned Lark: usually 10-15 singing during May around farm JEC, then at end of period up to 40 (JAK). Cliff Swallow: during July, 12 nests located on 2 barns near Boone Lake (RLK). Purple Martin: low numbers present at many colonies; 21 Jul (2000) HRA (KHD, LHD). House Wren: 8 July pair at birdhouse, CHA; one individual was present until 17 July at another site in CHA — still no proof of nesting in CHA (Ann Gibson). Swainson's Thrush: 26 May (1) JHC (SG). Cedar Waxwing: 21 Jun (10) MCI (RBW). Loggerhead Shrike: active nest Eastern State WMA, KNC (Paul D. Hartigan); pair through season near LaFollette (JCH).

*Warbler-Sparrow*: Swainson's Warbler: 5 singing birds during June & July in Horse Cove (RL). Blue-winged Warbler: one on Oliver Springs BBS for 4th year (James M. Campbell). Cape May Warbler: 30 May (1) JHC (MD). Blackpoll Warbler: 18 May (1) JHC (SG). Wilson's Warbler: 16 May (1) JHC (SG). Blue Grosbeak: 3-5 pair regular JNB (RLK); 4 singing around farm JEC (JAK). Dickcissel: pair regular JEC (JAK). House Finch: 1 Jul (1) Greeneville (HS); 2-4 birds regular near JNB (RLK); immature birds present at KNX (ARH, RDH, Jim & Betty Mason). Pine Siskin: 30 May (1) KNC (ARH, BHS). Savannah Sparrow: 20 May (2) CHA (JWS). Grasshopper Sparrow: 3-5 singing regular near JNB (RLK). Bachman's Sparrow: 5 May (1) Newport (JAK) — a later check did not reveal the bird. Song Sparrow: continued population increase KNX area, all-time high BBS total for the state was 83 on 14 Jun Lovell BBS (CPN).

*Locations*: AUS—Austin Springs; CHA—Chattanooga; FLL—Fort Loudon Lake; GNC—Greene Co.; HRA—Hiwassee River Area; JEC—Jefferson Co.; JNB—Jonesboro; JNC—Johnson City; KNC—Knox Co.; KSP—Kingston Steam Plant; KNX—Knoxville; MCI—McClelland Island; OKR—Oak Ridge; SAB—Savannah Bay.

KENNETH H. DUBKE AND LILLIAN H. DUBKE, 8139 Roy Lane, Ooltewah 37363.

**EASTERN MOUNTAIN REGION**—Overall, normal rainfall and above average temperatures prevailed throughout the period. During the last week of May, the first week of June and the first 7 days of July this region received 90% of its summer rainfall.

Our region had nesting reports of Yellow-crowned Night Herons again in Elizabethton, Wild Turkeys on Holston Mountain, Alder Flycatchers again on Roan Mountain, along with Cedar Waxwings. Red Crossbills started showing up in the Smokies in early July. One of the more puzzling situations is the very low Purple Martin population.

*Heron-Sandpiper:* Great Blue Heron: last spring sighting 26 May (2) RC (RLK). Yellow-crowned Night Heron: only 1 pair nested this year, last seen 17 July (4) ELI (GDE et al.). Canada Goose: 23 May (2), 20 Jun (3) SHL (RL). Ring-necked Duck: last seen 23 May (1) Townsend (SJS, BHS, ARH). Sharp-shinned Hawk: no reports. Cooper's Hawk: 19 July (1) WatL, 24 July (1) ELI (GDE). Osprey: last spring sighting 16 May (1) WatL (GDE). *WILD TURKEY:* 3 or 4 broods on Holston Mtn. (*vide* U.S. Forest Service). Semipalmated Plover: 31 July (1) RC (RLK). Amer. Woodcock: 18 May (1) ELI (GDE). Spotted Sandpiper: early fall sighting 17 July (1) RC (RLK). Solitary Sandpiper: 1st fall sighting 31 July (2) RC (RLK).

*Dove-Wren:* *RINGED-TURTLE DOVE:* most likely an escaped bird, 29 May (1) Bristol (RL). Black-billed Cuckoo: 16 Jun (1) IMG (SG). Great Horned Owl: 1 to 2 birds regular at SHL (RL et al.). Hairy Woodpecker: no reports. Alder Flycatcher: 1 June thru 9 July (max. 3 males) RM (RLK et al.). Olive-sided Flycatcher: 1 Jun (2 calling) GSMNP, Alum Cave Trail (MWA). Purple Martin: *VERY LOW* numbers, last seen 15 July in ELI (GDE). Common Raven: several imm seen on RM, IM (LHTOS). Red-breasted Nuthatch: returned to higher elevations of RM on Jun 1 after complete absence during past winter and spring (*vide* RLK, EHS). Winter Wren: abundant on RM above 3500' during Jun, Jul (*vide* RLK).

*Kinglet-Sparrow:* Golden-crowned Kinglet: abundant during entire period on RM above 4000' (*vide* RLK, EHS). Cedar Waxwing: abundant throughout period with one nest located on RM on 7 Jul (RLK). Warbling Vireo: 17 May thru end of period (2 pairs nested) WatR (LHTOS). Golden-winged Warbler: 4 to 6 pairs nested at RMSP during period (RLK et al.). Black-throated Blue Warbler: 8 Jul (1 bird at 5800' elevation) RM (EHS). Cerulean Warbler: 22 May (2) IMG (SG, HD). Pine Siskin: 30 May (1) GSMNP, Indian Gap (SJS, BHS, ARH). Red Crossbill: 5 July (8) GSMNP, Indian Gap (CPN, ABS). Grasshopper Sparrow: 2 to 3 pairs present near Bluff City (RL et al.).

*Locations:* ELI—Elizabethton; GSMNP—Great Smoky Mtn. National Park; IMG—Iron Mtn. Gap; RC—Roan Creek; RM—Roan Mtn.; RMSP—Roan Mtn. State Park; SHL—South Holston Lake; WatL—Watauga Lake; WatR—Watauga River (near Eliz).

GLEN D. ELLER, Route #3, Grandview Terrace, Elizabethton 37643.

## OBSERVERS

JCA—Jan C. Alexander	GM—Gina Manning
FJA—Fred J. Alsop, III	FJM—F. Joe McLaughlin
LNA—Laurie N. Armstrong	CPN—Charles P. Nicholson
MWA—Marc W. Armstrong	PSP—Paul S. Pardue
MLB—Michael L. Bierly	WPP—William P. Peeples
CWB—Claude W. Brown	WRP—William Robert Peeples
CHB—Carolyn H. Bullock	ADP—Audrey D. Perry
BBC—Ben B. Coffey, Jr.	DP—David Phillips
LCC—Lula C. Coffey	TDP—T. David Pitts
WGC—William G. Criswell	LDR—Larry D. Ray
MD—Martha Dillenbeck	CDR—Charles D. Rollins
HBD—Helen B. Dinkelspiel	EHS—Edward H. Schell
HHD—Helenhill Dove	ABS—A. Boyd Sharp
KHD—Kenneth H. Dubke	AIS—Arlo I. Smith
LHD—Lillian H. Dubke	NMS—Noreen M. Smith
GDE—Glen D. Eller	HS—Helen Spees
BF—Betty Fowler	VMS—Viet M. Spero
SG—Sally Goodin	MPS—M. Pat Stallings
KAG—Katherine A. Goodpasture	BHS—Barbara H. Stedman
MAG—Mary Ann Guschke	SJS—Stephen J. Stedman
ARH—Audrey R. Hoff	JLS—John L. Stokes
JCH—Joseph C. Howell	JWS—Jowayne Stone
MLJ—M. Louise Jackson	DFV—David F. Vogt
DRJ—Daniel R. Jacobson	MGW—Martha G. Waldron
WKJ—Wesley K. James	BW—Bobby Whittemore
RJ—Russell Jones	WLW—Wendell L. Whittemore
RLK—Richard L. Knight	RBW—R. Bruce Wilkey
JAK—J. Anthony Koella	LHTOS—L. R. Herndon Chapter, TOS
ARL—Allen R. Larrabee	MTOS—Memphis Chapter, TOS
RL—Richard Lewis	NTOS—Nashville Chapter, TOS
DM—Don Manning	TWRA—Tenn. Wildlife Resources Agency

OTHER ABBREVIATIONS: WMA—Wildlife Management Area; BBS—Breeding Bird Survey.

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