The Migrant

A Quarterly Journal
Devoted To Tennessee Birds

Published by
The Tennessee
Ornithological
Society

SEPTEMBER 2023
Vol. 94, No. 3

THE MIGRANT
A QUARTERLY JOURNAL OF ORNITHOLOGY
Published by

THE TENNESSEE ORNITHOLOGICAL SOCIETY
The TOS is a non-profit, educational, scientific and conservation organization.

The TOS website can be found at: www.tnbirds.org

Send subscriptions & address changes to:
Tennessee Ornithological Society, 5886 Wilshire Drive, Nashville, TN 37215
Printed by: Russell Printing Options, 1800 Grand Ave., Knoxville, TN 37916
 — ISSN 0026-3575575

THE MIGRANT

Published by the Tennessee Ornithological Society
to Record and Encourage the Study of Birds in Tennessee
Issued in March, June, September and December

VOL. 94 SEPTEMBER 2023 NO. 3

The Migrant 94(3): 49-61, 2023

THE RED-TAILED HAWK IN TENNESSEE

Mark A. Greene
Trenton, Tennessee

The Red-tailed Hawk (*Buteo jamaicensis*) is one of the most familiar and well-known raptor species in the state of Tennessee, the United States, and in all of North America, possibly second only to our national bird, the Bald Eagle (*Haliaeetus leucocephalus*) in familiarity. Both Robinson (1990) and Somershoe and Sloan (2015) list it as a fairly common permanent resident in Tennessee. Although the species is a permanent resident in the state, there is a noticeable influx of birds that occurs in the fall, beginning in October. These birds that arrive to spend the winter normally depart by early April. There are two age classes, adult and first year. The species has up to sixteen subspecies recognized by various Red-tailed Hawk experts (Preston and Bean 2009). Within each subspecies there are various color morphs (races), making the Red-tailed Hawk the most variable and polymorphic of all North American raptor species (Liguori 2004). In this article I will explore the four recognized subspecies that occur in Tennessee and discuss color morphs and plumage characteristics of each.

Eastern Red-tailed Hawk (*B. j. borealis*)

The Eastern Red-tailed Hawk is by far the most common subspecies that occurs within the state and is the only subspecies that breeds here. Locally breeding adults are non-migratory (Nicholson 1997). The Eastern subspecies is monotypic and occurs in only light morph plumage. Typical adults have lightly marked underwings, whitish throats, and brick red tails that have little, or no banding save for a black sub-terminal band. Most adults are pale below with a darker belly band, dark wing tips and dark edging to the flight feathers. First year birds are typically lightly marked underneath with light throats and brownish belly bands. The head is generally lighter than adults and the tail is light brown or tan with narrow darker bands. On both adults and first year birds the dark patagial bar on the leading edge of the wing is obvious and diagnostic. During the colder months, beginning in October, we get an influx of Eastern Red-tailed Hawks, from the states and Canadian provinces to our north which arrive in Tennessee to spend the winter. Eastern Red-tailed Hawks from the most northern parts of their range are often more heavily marked below than our typical resident birds are.

Figure 1. A "classic" adult Eastern Red-tailed Hawk with a pale throat, minimal belly band, light brown head, and unbanded red tail. Gibson County, 5 February 2021. Photo by Mark A. Greene.

Figure 2. Adult Eastern Red-tailed Hawk showing the dark eye and "classic" unbanded red tail. This individual even lacks a black subterminal band. Lake County, 18 August 2020. Photo by Mark A. Greene.

Figure 3. First year juvenile Eastern Red-tailed Hawk showing pale head and banded light reddish-brown tail. Shelby County, 4 March 2023. Photo by Tricia Vesely.

Northern Red-tailed Hawk (*B. j. abieticola*)

The Northern Red-tailed Hawk is the next most numerous subspecies that occurs within the state but is one that is least known by most birders. This subspecies is a winter resident in the state. It is uncommon in West Tennessee, becoming rarer as you go east in the state. Wintering birds often return to the same areas each fall. Part of the reason that this subspecies is not more well known by many birders is that it has become a widely accepted subspecies in recent years (Liguori and Sullivan 2014). Some experts still classify these birds as heavily marked Eastern Red-tails (Wheeler 2003) but that reasoning has lost some traction in recent years as our understanding of these birds has grown. In the past, light morph Red-tailed Hawks with heavily marked underparts that arrive in Tennessee during migration and winter have been called Western Red-tailed Hawks (*B. J. calurus*), but further research reveals that these individuals are actually Northern Red-tailed Hawks instead. W. E. Clyde Todd first described the *abieticola* subspecies in "A Northern Race of Red-tailed Hawk" (1950). He noted that the differences from the Eastern Red-tailed Hawk were a dark throat, more richly colored underparts, and a heavier belly band. The underparts are also generally more heavily streaked, upperparts darker colored, and patagial marks are darker and thicker. Dickerman and Parks (1987) also noted that the belly band generally has "bold, heavy, dusky to black streaking" which differs from both *borealis* and *calurus*. First year light morph *abieticola* are similar to *borealis* but are typically more heavily marked on the belly and underwings. It is also now believed by many raptor experts that this subspecies is polytypic and that there are also dark and intermediate (rufous) morph *abieticola* (Liguori *et al.* 2020). The reasoning for this is that throughout the range of the Western (*calurus*) Red-tailed Hawk, dark and intermediate (rufous) morph *calurus* make up only about 15% of the population (HawkWatch International). In Tennessee and throughout the Eastern

United States what we once thought to be light-morph Western Red-tailed Hawks (*calurus*) in migration and during the winter have turned out to be Northern Red-tailed Hawks (*abieticola*). In fact, the author could not find one single photograph of a light-morph *calurus* from Tennessee in the Macaulay online library of photos submitted to eBird. In contrast, there are numerous photos of dark and intermediate (rufous) morph, non-Harlan's, Red-tailed Hawks from Tennessee there. In polytypic Red-tailed Hawk subspecies light-morphs are much more numerous than dark-morphs, yet we see no light morph *calurus* in Tennessee. Based on that fact, it would then make sense then that these dark morph birds are not *calurus.* Extensive research is now being done by the Red-tailed Hawk Project in the way of banding and GPS tagging of dark morph Red-tailed Hawks in the Eastern, Central, and Southeastern United States to help unravel this mystery.

For the purpose of this article, the author will consider dark and intermediate (rufous) morph, non-Harlan's, Red-tailed Hawks in Tennessee to be dark *abieticola*. Most of the dark birds seen in Tennessee in the winter months are dark intermediate morph (also called rufous morph) and have an upper breast that is dark rufous in color when seen in good light. The belly below is blackish. True dark morphs are rarely seen in Tennessee and are a uniform dark chocolate brown on the breast and belly band.

Figure 4. Perched adult light morph Northern Red-tailed Hawk with a mostly dark throat, rufous-washed upper breast, and dark, heavy belly band. Gibson County, 24 February 2022. Photo by Mark A. Greene.

Figure 5. In-flight shot of same bird as in Figure 4 showing thick, dark patagial bars; rufous-washed, streaked breast; dark, blobby belly band, and thick subterminal band on the tail. Gibson County, 11 December 2020. Photo by Steve Yarbrough.

Figure 6. In-flight shot of a first-year light morph juvenile Northern Red-tailed Hawk showing heavily marked underparts and underwings and a streaked throat. Crockett County, 23 November 2020. Photo by Mark A. Greene.

Figure 7. Adult dark intermediate (rufous) morph Northern Red-tailed Hawk showing the rufous colored upper breast and darker belly. This bird has returned to the same general area for several consecutive winters. Gibson County, 17 December 2020. Photo by Mark A. Greene.

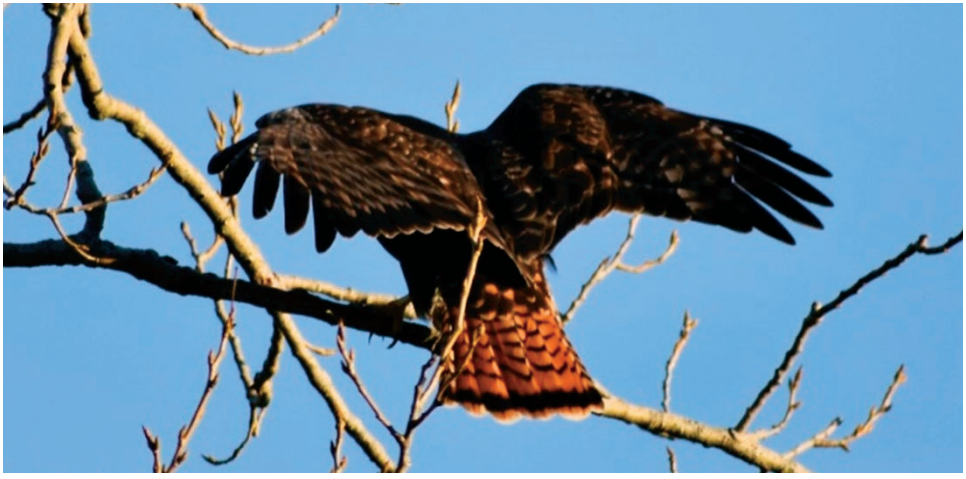


Figure 8. Same bird as in Figure 7 showing banded red tail with a thick subterminal band. Gibson County, 19 December 2022. Photo by Mark A. Greene.

Figure 9. Adult dark intermediate (rufous) morph Northern Red-tailed Hawk. Lake County, 16 March 2023. Photo by Mark A. Greene.

Figure 10. First year juvenile dark morph Northern Red-tailed Hawk with brownish banded tail and light eyes. Lake County, 22 November 2021. Photo by Mark A. Greene.

Harlan's Red-tailed Hawk (*B. j. harlani*)

The Harlan's Red-tailed Hawk is a rare winter resident in the Western Coastal Plain Region and an accidental winter visitor in the rest of the state. Harlan's are known to return to the same general wintering locations year after year. This subspecies is the most variable in plumage of all the subspecies with birds ranging from a ghostly white to completely black below (Liguori and Sullivan 2018). The majority of dark-morph birds have some white mottling on the breast, and these are sometimes called intermediate morphs or dark intermediate morphs depending on the amount of mottling (Wheeler 2003). Adult birds are identified by their overall cold color tones (blacker than brown) and uniquely mottled tail pattern – typically whitish, grayish, brownish, or blackish mottled, but some may show a varying amount of red. A small percentage of dark adults show a full or partial black-and-white banded tail (Clark 2009), though these birds might be intergrades with other subspecies. Most adult birds lack banding in the primaries and secondaries. First year juvenile dark morph birds range from streaked to solid dark below, have banded outer primaries, and the tail tips show a "spiked" look (Liguori and Sullivan 2018). Primaries and upper wing coverts have black and white spangling.

Light-morph Harlan's make up 8-12% of all Harlan's (Liguori and Sullivan 2010). Light-morph Harlan's are identified by snow-white body plumage lacking warm, buffy tones; dark, "blobby" belly markings; a white throat and supercilium; and lightly marked underwing coverts. The head generally lacks the golden-brown hue of other light subspecies and may be white or streaked with white on the crown (Liguori and Sullivan 2010). They are most likely to be confused with lighter Eastern Red-tailed Hawks and Krider's Red-tailed Hawks (*B. j. kriderii*). First-year light-morph Harlan's have white wing panels and extensive white mottling along the upper wing coverts (Liguori and Sullivan 2018).

Figure 11. Adult dark intermediate-morph Harlan's Red-tailed Hawk showing dark body with white feathering on breast and grayish-white mottled tail. Dyer County, 14 March 2021. Photo by Mark A. Greene.

Figure 12. Adult intermediate-morph Harlan's Red-tailed Hawk showing extensive white feathering on an otherwise blackish body. This is a young adult bird that still has light eyes. Lake County, 21 February 2023. Photo by Mark A. Greene.

Figure 13. Juvenile intermediate morph Harlan's Red-tailed Hawk showing white mottling on dark body, wing primaries banded to the tip, wavy bands on the tail, and a "spiked" look to tail feathers. Shelby County, 28 November 2023. Photo by Tricia Vesely.

Figure 14. Perched adult intermediate morph Harlan's Red-tailed Hawk showing dark body plumage, white throat, and white mottling on breast. Gibson County, 15 March 2022. Photo by Mark A. Greene.

Figure 15. A very cryptic looking adult light morph Harlan's Red-tailed Hawk. On first glance this bird might be confused with an Eastern Red-tailed Hawk but note the overall cold tone of the bird (generally blacker and whiter in overall color, lacking warm tones), the dark blobby belly band, streaked crown, and mottling in the tail. This bird has returned to the same area to winter for several years. Gibson County, 20 December 2021. Photo by Mark A. Greene.

Figure 16. Flight shot of same bird in Figure 14. Note classic Harlan's gray-white tail with mottling, dark, "blobby" belly band, overall cold tones, and streaked crown. Gibson County, 10 November 2020. Photo by Mark A. Greene.

Figure 17. Juvenile light morph Harlan's Red-tailed Hawk showing overall cold tones, dark blobby belly band, a streaked crown, and noticeably light head. Lake County, 26 January 2022. Photo by Mark A. Greene.

Krider's Red-tailed Hawk (*B. j. kriderii*)

The Krider's Red-tailed Hawk is a rare winter resident in the Western Coastal Plain Region and accidental elsewhere in the state. Much like other subspecies that winter in Tennessee, many Krider's are known to return to the same general areas each fall to spend the winter. The Krider's is a very pale subspecies (only occurring as a light morph) with an almost absence of markings below except for small, darker wrist commas and faint patagial bars which are often rufous tinged in color. Krider's are mostly white headed, usually with a distinct darker malar. (Liguori and Sullivan 2010). The tail is usually white, especially on the basal half, normally with a dark subterminal band. The upper wing usually shows extensive white mottling. Juveniles are very similar in plumage, although frequently even paler, especially on the head, but have narrow dark bands on the tail. The taxonomic status of this subspecies is still unclear, with some authorities treating it as a full subspecies (AOU 1957) and others treating it as an extremely pale form of *B. j. borealis* (Wheeler 2003). Whatever its true classification, it is a distinctive population, and for the purposes of this article it will be treated as such. Many Krider's have plumage characteristics that are somewhat intermediate, and these are likely intergrades with other subspecies that still have several prominent Krider's field marks.

Figure 18. Adult Krider's Red-tailed Hawk showing minimal belly band, white throat, extensive white on head, and white mottling on upper wing. Obion County, 3 November 2021. Photo by Mark A. Greene.

Figure 19. Dorsal view of same bird from Figure 18, showing extensive white in the tail and white mottling on the upper wings. Obion County, 21 January 2021. Photo by Mark A. Greene.

Figure 20. Adult Krider's Red-tailed Hawk in flight showing absent belly band, faint patagial bars, white throat, and extensive white on head with a dark malar. Obion County, 10 March 2023. Photo by Mark A. Greene.

Figure 21. Juvenile Krider's Red-tailed Hawk in flight showing extensive overall paleness, minimal belly band, faint patagial bars, whitish head, and throat. Fulton County, KY (just north of the TN state line), 3 November 2023. Photo by Mark A. Greene.

Figure 22. Dorsal view of the same juvenile bird as Figure 21 showing whitish head, extensive white in the tail, and white mottling on upper wings and back. Fulton County, KY (just north of the TN state line), 3 November 2023. Photo by Mark A. Greene.

Intergrading

The ranges of Red-tailed Hawk subspecies overlap in many areas and in these areas interbreeding between subspecies is common and produces a variety of intergrades. Many simply cannot be classified (Lish 2015), and this is especially true for juveniles. Intergrades may show the phenotypic characteristics of more than one subspecies or may be more general in appearance not showing strong traits of any one subspecies. Some may check several boxes for one specific subspecies but not enough to categorize them completely as such. Figure 23 and 24 show some examples of this. Caution should always be exercised when identifying Red-tailed Hawks to subspecies but with experience and careful consideration many can be categorized to the subspecies level.

For reporting on websites such as eBird, observers may report Red-tailed Hawks to the subspecies level if they are confident of their identification. It is always advisable to simply report the bird as a Red-tailed Hawk species if not certain of the subspecies. More experienced observers may report intergrades that show stronger characteristics of one particular subspecies as that subspecies, even if the bird shows some characteristics of intergrading (Brian Sullivan, pers. comm.). For example, the birds in both Figure 23 and 24 were reported on ebird as *harlani*.

Figure 23. This adult Red-tailed Hawk shows many of the characteristics of a light morph Harlan's Red-tailed Hawk (cold tones, white around the eyes, dark blobby belly band, streaked crown) but the tail is red and banded and shows no mottling typical of the Harlan's subspecies. I suspect that this bird is a *harlani* that has intergraded with another subspecies, perhaps *abieticola*. Crockett County, 26 October 2021. Photo by Mark A. Greene.

Figure 24. At first glance this dark morph Red-tailed Hawk might be passed off as a dark morph Northern Red-tailed Hawk (*abieticola*), but note the extensive white in the tail not normally seen in that subspecies. That feature plus the general lack of warm tones on this bird seem to indicate that this bird is a *harlani* that has intergraded with *abieticola* or possibly *calurus*. Obion County, 16 March 2021. Photo by Mark A. Greene.

ACKNOWLEDGMENT

I wish to thank David Pitts, Bob Ford, and Michael Todd for helpful comments during the writing of this manuscript. I want to thank Tricia Vesely and Steve Yarbrough for the use of their photos. Thanks also go to Mike Borle, Shane Brown, Gail Bruckner, Bonnie Cleaver, Bryce Robinson, Cathy Sheeter, and Brian Sullivan for their contributions in broadening my understanding of Red-tailed Hawk subspecies by their comments on social media platforms, and personal communications. I also owe a big debt of gratitude to the late Jeff R. Wilson who sparked my interest in these majestic raptors by encouraging me to "look closely at every Red-tailed Hawk" during the winter months.

LITERATURE CITED

American Ornithologists' Union (AOU). 1957. Check-list of North American Birds, 5th edition. Lord Baltimore Press, Baltimore.

Clark, William S. 2009. Extreme variation in the tails of adult Harlan's Hawks. Birding 41:30-36.

Dickerman, R. W. and K. C. Parkes. 1987. Subspecies of the Red-tailed Hawk in the Northeast. Kingbird 37:57-64.

eBird. https://www.ebird.org. Accessed 21 March 2023.

HawkWatch International. https://hawkwatch.org/learn/factsheets/item/104-redtailed-hawk. Accessed 23 March 2023.

Liguori, Jerry. 2004. Dark Red-tailed Hawks. Birding 36:500-506.

Liguori, Jerry and B. Sullivan. 2010. A study of Krider's Red-tailed Hawk. Birding 42:38-45.

Liguori, Jerry and B. Sullivan. 2010. Comparison of Harlan's with Western and Eastern Red-tailed Hawks. Birding 42:30-37.

Liguori, Jerry and B. Sullivan. 2014. Northern Red-tailed Hawk (*Buteo jamacaicensis abieticola*) revisited. North American Birds 67:374-383.

Liguori, Jerry and B. Sullivan. 2018. HawkWatch International, Inc. *Raptor ID*. (Vers. 1.0.6). [Mobile app]. App Store. <https://apps.apple.com/us/app/raptor-id/id1033944000> Liguori, Jerry, J. L. Watson, F. Nicoletti, and D. Oleyear. 2020. In-hand Guide to Diurnal North American Raptors. HawkWatch International, Inc.

Lish, Jim. 2015. Winter's Hawk: Red-tails on the Southern Plains. University of Oklahoma Press, Norman, OK.

Macaulay Library. https://www.macaulaylibrary.org. Accessed 23 March 2023.

Nicholson, C. P. 1997. Atlas of the Breeding Birds of Tennessee. University of Tennessee Press, Knoxville, TN.

Preston, C. R., and R. D. Beane. 2009. Red-tailed Hawk (*Buteo jamaicensis*), in A. Poole, ed. The Birds of North America Online. Cornell Laboratory of Ornithology, Ithaca <https://birdsoftheworld.org/bow/species/rethaw/cur/introduction>

Red-tailed Hawk Project. https://redtailedhawkproject.org. Accessed 22 March 2023.

Robinson. J. C. 1990. An Annotated Checklist of the Birds of Tennessee. University of Tennessee Press, Knoxville, TN.

Somershoe, S. G. and C. A. Sloan. 2015. Birds of Tennessee: A New Annotated Checklist. Privately published.

Todd, W. E. C. 1950. A northern race of Red-tailed Hawk. Annals of the Carnegie Museum (Pittsburgh) 31:289-296.

Wheeler, Brian K. 2003. Raptors of Western North America. Princeton University Press, Princeton NJ.

LARK SPARROW BREEDING SEASON STATUS IN WEST TENNESSEE

Bob Ford
Brownsville, Tennessee

Elanah Schmitz
Starkville, Mississippi

Lark Sparrows (*Chondestes grammacus*) are among the largest sparrows in North America, with a boldly patterned head and a large, uniquely shaped dark tail with white corners (Figure 1). Their breeding range includes much of the prairies and mountains in the central and western United States. The eastern edge of the range occurs at the Cumberland Plateau and Appalachian Mountains in the eastern United States (Sibley 2000). However, Lark Sparrows are not evenly distributed across their ranges. Detailed breeding distribution maps define the Lark Sparrow as a "rare and irregular breeder" east of the Mississippi Alluvial Plain (Martin and Parrish 2000, https://science.ebird.org/en/status-and-trends/species/larspa/abundance-map?week=1).

Lark Sparrows occur during the breeding season in middle and west Tennessee. Middle Tennessee has been considered the "stronghold" for this species in the state, where cedar glades and barrens provide the preferred nesting habitat (McNair 2000, Nicholson 1997). In west Tennessee Lark Sparrows occur in "modest numbers" (Somershoe and Sloan 2015) and often nest in early successional stages of natural communities that are in transition to forest.

The Tennessee Wildlife Resources Agency lists Lark Sparrow as a Species of Greatest Conservation Need in the state (Tennessee Wildlife Action Plan Team 2015), which warrants this review of the species' breeding season population status and trends in west Tennessee. McNair (2000) provided an overview of Lark Sparrow population status state-wide in Tennessee through 2000. In this paper, we use Breeding Bird Survey (BBS) data, eBird records, and personal observations to provide a status assessment of Lark Sparrow breeding season distribution and abundance in west Tennessee from 2000 – 2019.

METHODS

We examined BBS results to assess changes in Lark Sparrow occurrence in west Tennessee from 2000 through 2019. eBird data were used to better understand distribution in west Tennessee from 2015 through 2019. We reviewed Lark Sparrow observations published in the spring reports and summer reports of The Season in *The Migrant*, as well as previously unreported anecdotal observations. These provided additional insight into possible or confirmed nesting at various locations. We analyzed BBS results from northwest Alabama, northern Mississippi, and western Kentucky to determine the distribution of nesting season Lark Sparrows nearby. For the purposes of this paper, we defined west Tennessee as the 21 counties from the Tennessee River west to the Mississippi River, which includes the Western Highland Rim, the Southeastern Plains and Hills, the Loess Hills and Bluffs, and the Mississippi Alluvial Valley physiographic areas.

Figure 1. Photo by Mark Greene.

RESULTS

Lark Sparrows occurred on 5 of 12 BBS routes in west Tennessee between 2000 and 2019 (Appendix 1). Lark Sparrows did not occur on any of the west Tennessee routes between 1985 and 2000; the first records occurred in 2001 and 2002 on the Mansfield, Silerton, and Tibbs BBS routes. One or more individuals were present on at least one BBS route for 18 of the 20 years analyzed. The Brownsville BBS route (Loess Plains ecoregion, Haywood County) had the highest total number; a total of 18 individuals were present during 10 of the 17 years this BBS route was surveyed (59% of the years the route was completed). On the Brownsville BBS route, at least one and up to five individuals were observed in 8 of the 10 years when Lark Sparrows were present. On the Mansfield BBS route (Western Highland Rim, Henry County) 16 individuals were present during 8 of the 12 years this route was surveyed (67% of the years the route was completed). On the Tibbs BBS route (Loess Plains, Haywood County), 9 individuals were recorded, however, the route was not surveyed between 2010 and 2016. Lark Sparrow occurred on 70% of the years the Tibbs route was completed (North American Breeding Bird Survey Data Manager's website (usgs.gov)).

Between 2000 and 2019, Lark Sparrow occurrence was documented in the spring reports and summer reports for the Coastal Plain compilation of The Season report of *The Migrant*. Most reports were of fewer than three birds ranging from one to three locations across west Tennessee (Knight 2002). In 2015, Mark Greene reported ten birds at eight locations in Gibson County (Knight 2015). In subsequent years, one or two birds were reported at each of "several sites" and remained through the season in Gibson County (Knight 2017) Confirmed nesting observations were also recorded in The Season report, including a bird carrying nest material in Lake County in 2000 (Knight 2000).

eBird records provided insight into the distribution of Lark Sparrows in west Tennessee during June and July from 2015 – 2019 (Table 1). We examined only the last five years of our 20-year time frame to show the recent status of the species across west Tennessee. Lark

Sparrows occurred during June or July in 10 of 21 west Tennessee counties. The highest number of Lark Sparrows occurred in Gibson County. One eBird list in Hardin County included 12 Lark Sparrows in 2019. Most counties had fewer than 10 birds recorded on eBird lists over the five-year time frame. Most observations averaged 1 or 2 birds per list. In 2019 in Gibson County, Lark Sparrow pairs were observed at eight different locations and individual singing males were present at other locations (fide Mark Greene).

We examined BBS route data from northwest Alabama, northern Mississippi, and western Kentucky to determine if Lark Sparrows had a similar pattern of establishing breeding season populations in these adjacent states. We did not detect a similar pattern in other states. In northwest Alabama, Lark Sparrows have been present consistently in counties near the Tennessee River. The number of Lark Sparrows increase in north central Alabama (5 BBS routes, most consistently on Wheeler Dam BBS and Courtland BBS routes). These areas are more similar to middle Tennessee habitats than west Tennessee (North American Breeding Bird Survey Data Manager's website (usgs.gov)).

In western Kentucky, Lark Sparrows occurred on two BBS routes. Two individuals occurred on the Lovelaceville BBS route in 2018 but no other year between 2000-2019. On the Shiloh BBS route, the species occurred on routes for five years between 2000-2019. In north Mississippi, Lark Sparrows were present only on the Tupelo BBS route. They were present each year between 2015 and 2018, although the route was not surveyed consistently during the period analyzed.

DISCUSSION

During the Tennessee Breeding Bird Atlas (1986 – 1991) Lark Sparrows were documented in four west Tennessee counties, and nesting was confirmed in three of those counties (Nicholson 1997). McNair (1997, 2000) provided comprehensive reviews of the species'

Table 1. eBird records 2015 -2019 for west Tennessee, by number of birds recorded on number of trips (in parentheses) by year.

	2015	2016	2017	2018	2019	TOTAL
Gibson	7 (4)	8 (5)	20 (10)	14 (10)	19 (7)	68 (36)
Hardin	-	3 (1)	-	6 (6)	12 (1)	21 (8)
Crockett	1 (1)	3 (2)	2 (1)	2 (2)	2 (1)	9 (7)
Haywood	2 (1)	-	3 (1)	3 (2)	-	8 (4)
Fayette	1 (1)	-	-	4 (2)	-	5 (3)
Henry	-	4 (1)	-	-	-	4 (1)
Dyer	-	-	-	-	1 (1)	1 (1)
Madison	-	-	-	1 (1)	-	1 (1)
Shelby	-	-	-	-	1 (1)	1 (1)
TOTAL	11 (7)	18 (9)	24 (12)	30 (12)	35 (15)	

population status across Tennessee until 2000, including west Tennessee. A state-wide paucity of nest season records between 1992 and 2000 caused McNair to declare Lark Sparrows as "rare and local". Currently, Lark Sparrow population status in the state is considered as "locally common or locally uncommon" (Tennessee Wildlife Action Plan Team 2015). All of the data sets we examined for this study indicate that Lark Sparrow observations began to occur more regularly in west Tennessee between 2000 and 2005 and the number of birds remained consistent or increased locally in west Tennessee through 2019.

Range-wide, Lark Sparrows populations declined by 32% between 1970 and 2014. The estimated population is around 11 million birds, and the species is not considered a high conservation priority nationally (Rosenberg et al. 2016). Tennessee, however, lists Lark Sparrow as a Species of Greatest Conservation Need. States prioritize species of greatest conservation need based on many criteria. For example, states include species within their state boundaries that are especially vulnerable to extirpation or have declining populations in portions of the state (Tennessee State Wildlife Action Plan Team 2015).

Lark Sparrow nesting habitat is typically open areas with scattered thickets of shrubs that may include a few scattered trees; examples include cultivated habitats, abandoned orchards, livestock pastures, and fallow fields with brushy edges (Martin and Parrish 2000). In west Tennessee, nesting habitats also include early successional habitat transitioning from old field into forest. As a result, birds may not be at the same location annually but may be nearby. For example, on the Brownsville BBS route Lark Sparrows occurred frequently but were present at different route stops over the years.

Gibson, Haywood, Crockett, Henry, and Hardin Counties appear to be areas where Lark Sparrows are consistent or increasing in west Tennessee. The population status and trends of west Tennessee's Lark Sparrows can continue to be monitored with BBS, eBird, and personal observations which document pairs of birds, nests, and fledglings. Observers providing additional observations from new areas as well as probable or positive nesting evidence (such as the use of Breeding Bird Atlas codes, see Nicholson 2000) would add greatly to the knowledge base of Lark Sparrow status in west Tennessee.

ACKNOWLEDGMENT

We thank David Pitts, David Hanni, and Michael Collins for their thoughtful reviews which greatly improved the manuscript. We thank Mark Greene for his contributions of his field notes and anecdotal information which provided additional insight into the status of Lark Sparow, especially for Gibson County. We also thank all the volunteers who run BBS routes and contribute data using eBird or through The Season report in *The Migrant;* those data are invaluable to track and understand the population and status of birds.

LITERATURE CITED

Knight, R.L. 2002. The summer season: Western coastal plain region. The Migrant 73:112.

Knight, R.L. 2015. The spring season: Western coastal plain region. The Migrant 86:100.

Knight, R.L.. 2017. The spring season: Western coastal plain region. The Migrant 89:105.

Knight, R.L.. 2000. The spring season: Western coastal plain region. The Migrant 71:88.

Martin, J.W., and J.R. Parrish. 2000. Lark Sparrow (*Chondestes grammacus*). In The Birds of North America, No. 488 (A. Poole and F. Gill, eds). The Birds of North America, Inc. Philadelphia, PA. and Parrish 2000.

McNair, D.B. 1997. Lark Sparrow. pp 344-345 in Atlas of the Breeding Birds of Tennessee (C.P. Nicholson, ed.). The University of Tennessee Press, Knoxville TN.

McNair, D.B. 2000. Summary of historical breeding and breeding season records of the Lark Sparrow in Tennessee. The Migrant 71:73-78.

Nicholson, C.P. 1997. Atlas of the Breeding Birds of Tennessee. The University of Tennessee Press, Knoxville TN.

Rosenberg K.V., J. A. Kennedy, R. Dettmers, R.P. Ford, D. Reynolds, J.D. Alexander, C.J. Beardmore, P.J. Blancher, R.E. Bogart, G.S. Butcher, A.F. Camfield, A. Couturier, D.W. Demarest, W.E. Easton, J.J. Giocomo, R.H. Keller, A.E. Mini, A.O. Panjabi, D.N. Pashley, T.D. Rich, J.M. Ruth, H. Stabins, J. Stanton, T. Will. 2016. Partners in Flight Landbird Conservation Plan: 2016 Revision for Canada and Continental United States. Partners in Flight Science Committee. 119 pp.

Tennessee State Wildlife Action Plan Team. 2015. Tennessee State Wildlife Action Plan 2015. Tennessee Wildlife Resources Agency, Nashville, TN.

Sibley, D.A. 2000. The Sibley Guide to Birds. Alferd A. Knopf, New York.

Somershoe, S. G. and C. A. Sloan. 2015. Birds of Tennessee: A New Annotated Checklist. Privately published.

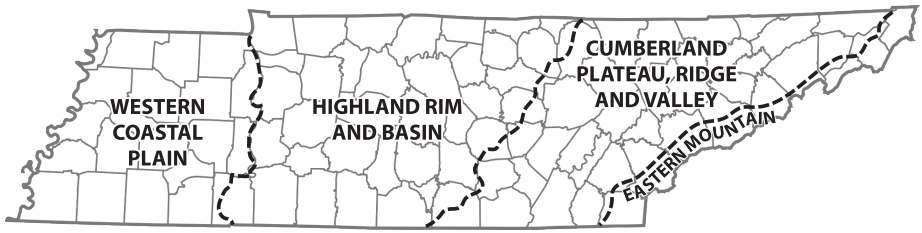
Appendix 1. Breeding Bird Survy route results for Lark Sparrow in west Tennessee, 2000-2019.

	Year							
Route	**2000**	**2001**	**2002**	**2003**	**2004**	**2005**	**2006**	**2007**
004 - Brownsville BBS, Haywood Co	0	-	0	0	0	1	1	-
008 - Mansfield BBS, Henry Co	-	1	1	2	4	1	0	2
005 - Tibbs BBS, Haywood Co	0	0	1	0	0	0	2	0
006 - Whiteville BBS, Hardeman Co	0	0	0	0	0	0	0	0
010 - Silerton BBS, Chester Co	0	0	1	0	0	0	0	0
TOTAL	0	1	3	2	4	1		2

	Year							
Route	**2008**	**2009**	**2010**	**2011**	**2012**	**2013**	**2014**	**2015**
004 - Brownsville BBS, Haywood Co	1	-	2	2	5	0	1	2
008 - Mansfield BBS, Henry Co	-	1	0	-	-	4	0	-
005 - Tibbs BBS, Haywood Co	3	0	-	-	-	-	-	-
006 - Whiteville BBS, Hardeman Co	0	0	0	0	1	0	0	0
010 - Silerton BBS, Chester Co	0	0	0	0	0	0	0	0
TOTAL	4	1	2	2	6	4	1	2

	Year				
Route	**2016**	**2017**	**2018**	**2019**	**TOTAL**
004 - Brownsville BBS, Haywood Co	1	0	0	2	18
008 - Mansfield BBS, Henry Co	-	-	-	0	16
005 - Tibbs BBS, Haywood Co	-	0	2	1	9
006 - Whiteville BBS, Hardeman Co	0	0	0	0	1
010 - Silerton BBS, Chester Co	0	0	0	0	1
TOTAL	1	0	2	3	

THE SUMMER SEASON



Graham Gerdeman, Editor

1 June – 31 July 2023

It was a cool summer in Tennessee with temperatures statewide averaging around a single degree Fahrenheit lower than the historical mean. The month of June was particularly cool, especially in the eastern half of the state, with temperatures averaging one to four degrees lower than the 30-year mean. A few counties in the mountains recorded average temperatures as much as six degrees cooler than normal. Temperatures in July were very close to historical averages. Precipitation was light in June, especially in the west and extreme northeast of the state. At the end of June, more than half of the state was either abnormally dry or in moderate drought conditions according to the U.S. Drought Monitor. Heavy rainfall in July brought much-needed relief to most of the region. Some areas of the Cumberland Plateau received as much as five inches of rain in the third week of the month. Notably missed in this rain system was the extreme northwest of the state. Lake, Obion, Dyer, and Weakley counties remained in moderate drought conditions at the end of July.

Rarities observed included Mottled Ducks, Roseate Spoonbills in three different locations, Tricolored Heron, Cave Swallow, Ruff, a Western Kingbird in Rutherford County, and many Limpkins.

Regional Editors:
Western Coastal Plain: Dick D. Preston, Munford, TN.
Highland Rim and Basin: Graham Gerdeman, Nashville, TN
Cumberland Plateau/Ridge and Valley: Bruce Dralle, Chattanooga, TN
Eastern Mountain: Vacant

STANDARD ABBREVIATIONS

ad - adult
au - audio recording
ba - banded
Co - County
ers - earliest reported sighting
et al. - and others
fide - reported by
im - immature
lrs - latest reported sighting
max - maximum count
m.ob. - many observers
Mtn - Mountain
NWR - National Wildlife Refuge
ph - photograph
SNA - State Natural Area
SP - State Park
WMA - Wildlife Management Area
yg - young

Locations: SBP - "Snow Bunting Peninsula" on Old Hickory Lake, Davidson Co; DRU - Duck River Unit of TN NWR, Humphreys Co; Ensley - Ensley Bottoms, including the EARTH Complex and TVA Lake, southwest Shelby Co; Lock 3 - Old Hickory Lake, Sumner Co; LBL - Land Between the Lakes National Recreation Area.

Black-bellied Whistling Duck: Successful breeding this season documented in Hornbeak, Obion Co with a pair of adults and brood of at least 12 downy young 13 Jun (ph, MAG). Other locations outside Shelby Co, where the species is expected, include a second record for Hamilton Co (2) Standifer Gap Marsh 20 Jun (ph, TRU, m.ob.). Flyovers were recorded three times in Paris, Henry Co (3) 13 Jun, (1) 16 Jun, and (2) 15 Jul (all sightings, RWh); Lincoln Co (3) 24 Jun Fowler Rd Irrigation Pond likely represents a first county record (AF); Gibson Co (2) on the same pond 22 Jun / 1 Jul (MAG); Bradley Co (4) 29 Jul (ph, DN, RDH).

Snow Goose: Sumner Co (1) Drake's Creek vicinity 10 / 15 Jun (ph, TLo) rare summer observation.

Blue-winged Teal: Sumner Co (1) a male at the Drake's Creek Volleyball complex 14 Jun (ph, TLo); Davidson Co (1) female Crooked Branch Park 1 Jul (ph, GG); Humphreys Co (2) male and female pair DRU 12,13, 22 Jun (ph, DR, AF, RS), solo drake 28 Jun, 14 Jul (ph, DR).

Northern Shoveler: Shelby Co (1) reported throughout the summer at Ensley - only record in the state. 25 Jul (ph, TV, DDP) and 28 Jul (AF) were the latest reports.

Gadwall: Humphreys Co (3) as many as three birds reported throughout the season, DRU from 5 Jun–26 Jul (RS, AT, m.ob.); Shelby Co (1) hen reported from 7–28 Jul (ph, CRu, m.ob.); Hamilton Co (1) Standifer Gap Marsh (TL, m.ob.).

American Wigeon: Humphreys Co (1) single drake seen multiple times from 5 Jun–30 Jul (ph, RS, m.ob.); Anderson Co (1) drake also seen Eagle Bend Fish Hatchery 22 Jun (ph, CE).

MOTTLED DUCK: Humphreys Co (2) continuing from 31 May and reported four times from 1–17 Jun (ph, RS, VS, AF, BDo); Obion Co (1) Mockingbird Hills Lake 26 Jul (ph, MAG).

Redhead: Hawkins Co (1) a drake on John Sevier Lake 5 Jun–13 Jul summer record (ph, SH).

Ring-necked Duck: Hamblen Co (1) single drake passed the summer at the water treatment plant on Hwy 160, last reported in molt 30 Jul (RDH, DM); Roane Co (1) another male reported Lakeshore Park 16 Jun (ph, RSv); Rhea Co (2) male and female pair reported on Watts Bar Lake 20 Jun (ph, RSh, DSh).

Common Merganser: There were many reports across the eastern mountains as this species continues to expand its breeding range in TN. Notable records include an apparent first summer record in Carter Co (7) Watauga River 2 Jun (ph, RDu); Anderson Co (2) Clinch River 26 Jul (PP); Hawkins Co (11) Two adult females with young, Powell River (PG), (4) Upper Clinch River 16 Jun (ph, SH), and (1) along the same stretch of river 15 Jul (RDH, DM). Blount Co (43) Townsend was a high count (ph, AL) and appears to be the second highest count in the state during the breeding season.

Horned Grebe: Davidson Co (1) Anderson Road Recreation Area 18 Jul (ph, SC); Sullivan Co (1) South Holston Lake on the same day 18 Jul (MSa fide RLK). There are fewer than 10 summer records in the state.

White-winged Dove: Marshall Co (2) returning to feeders 14 Jun where they were also present in 2023 (KS); Davidson Co (2) seen and heard at Bells Bend Park 29 Jun (ph, au, LB); Rutherford Co (1) coming to a feeder 30 Jun (ph, CS); Shelby Co had several sightings of individual birds with (2) Mud Island as a max count 28 Jul (ph, AF).

Ruby-throated Hummingbird: Stewart Co (187) birds caught and banded 19 Jul (CR) max count.

Limpkin: The season continued the historic northern irruption of this species, kicking things off in Lake Co (3) with THREE individuals reported at Green Island Ditch, Reelfoot Lake with photos on both Facebook and iNaturalist (ph, CG); Polk Co (1) Spring Creek Rd (ph, CJ); Roane Co (1) Heritage Greenway 25 Jun (ph, RHu, RK), and (1) TVA Wetland Viewing Area 15 Jul (ph, HN); Davidson Co (1) Radnor Lake the site of the state's first in 1961. The hotspot got its second record 3–4 Jul (ph, MB, m.ob.). Washington Co (1) first record for northeast TN seen 17 Jul (ph, DRo fide RLK); Humphreys Co (1) DRU 17 Jul (CF) and 26 Jul (ph, DR); Anderson Co (1) Eagle Bend Fish Hatchery (ph, JDJ, m.ob.); Bradley Co (1) 23 Jul (ph, SWa, RSm); Blount Co (1) long-staying bird at the Maryville-Alcoa Greenway was reported 17–31 Jul (ph, AA, m.ob.).

Sandhill Crane: Always rare in summer, there were two reports. Lincoln Co (1) heard from Don Davidson Park 27 Jun (JB); Bledsoe Co (2) two injured birds continuing in the area from spring reported 14 Jul (ph, RSh, DSh).

American Avocet: Anderson Co (1) Eagle Bend Fish Hatchery 27 Jun (ph, CE); Shelby Co (1) at Ensley 10 Jul (ph, DR) and (8) Ensley 29 Jul (ph, PJP, RP).

Semipalmated Plover: Anderson Co (1) Eagle Bend Fish Hatchery (ph, CE); Humphreys Co (26) late spring flock DRU 1/5 Jun (RS, VS).

Piping Plover: Lake Co (1) scanned from Tiptonville Bar 21 Jul (MAG, DR).

Short-billed Dowitcher: Anderson Co (1) Eagle Bend Fish Hatchery 10 Jul (ph, CE).

Wilson's Phalarope: Humphreys Co (1) DRU 7 Jul (RMG, WL) new early fall date for the state; Shelby Co (1) Ensley 28 Jul (ph, SD)

Spotted Sandpiper: Humphreys Co (8) DRU 14 Jul (DR) notable max count.

Willet: Humphreys Co (1) DRU18 Jun (RS); Sullivan Co (2) South Holston Lake 29 Jun (MSa fide RLK); Sevier Co (1) Douglas Lake 27 Jun (PRE).

Ruff: Humphreys Co (1) DRU 1 Jun was an overdue county first (ph, VS, RS)

Stilt Sandpiper: Anderson Co (1) Eagle Bend Fish Hatchery on 2 Jun notable late spring date and one of only a handful of state records in June (ph, lrs, CE).

Buff-breasted Sandpiper: Anderson Co (1) Eagle Bend Fish Hatchery 31 notable early fall date (ph, lrs, JDa, TDa, m.ob.). There are only 5 or 6 July records in the state. This appears to be the first in east Tennessee.

Sanderling: Lake Co (4) Tiptonville Landing 21 Jul (DR).

Dunlin: Humphreys Co (1) DRU 1 Jun notable late spring date (lrs, RS, VS).

Least Sandpiper: Shelby Co (3750) Ensley 12 Jul notably high count (max, CRu).

Bonaparte's Gull: Humphreys Co (1) DRU, reported sporadically from 1 Jun – 30 Jul (VS, RS, m.ob.).

Common Loon: Davidson Co (2) Percy Priest Lake 23/26 Jul (ph, AF, m.ob.) notable high count for summer. Several other single birds were reported around the state.

Anhinga: Shelby Co (25) nesting colony Eagle Lake Meeman-Shelby Forest SP (JH); Humphreys Co (3) three males reported DRU, 12/22 Jun and 2 Jul highest counts (ph, DR, RS, m.ob.), Dyer Co (3) Bogota WMA 1 Jul (ph, KB).

Neotropic Cormorant: Humphreys Co (3) max count at DRU 12 Jun (ph, DR); Dyer Co (1) Bogota WMA 28 Jun (ph, MAG).

Little Blue Heron: Humphreys Co (60) DRU highest count of the season for the state 30 Jul (RS). Smaller numbers of 1–4 birds reported from eight counties.

Tricolored Heron: Shelby Co (1) juvenile bird Ensley 26 Jul (ph, RP).

Snowy Egret: Humphreys Co (53) DRU seasonal high count 7 Jul (RS) from the known rookery there; Coffee Co (1) Hillsboro Hwy Pond 24 Jul (SNM); Blount Co (1) juvenile bird Old Lowes Ferry Rd Stilt Pond seen from 26–31 Jul (ph, TN, m.ob.); Loudon Co (1) reported 30 Jul (KSe).

White Ibis: Blount Co (1) Kyker Bottoms Refuge on Jun 1 (ph, KF); Humphreys Co (1) DRU on 31 Jul (AF).

Roseate Spoonbill: Humphreys Co (4) reported DRU 28 Jun (ph, DR, m.ob.) subsequently increased to as many as (6) birds seen throughout the season, last reported 31 Jul (AF); Fayette Co (1) at a roadside pond in Moscow from 25–27 Jul (ph, ER, m.ob.); Hawkins Co (1) near Burem Bridge John Sevier Lake 13 Jul (ph, SH) presumably the same bird reported 21–23 Jul at the same location (ph, SH, TB, m.ob.); Hamilton Co (1) juvenile Baylor School 28 Jul (BH, ph, LT, m.ob.).

Swallow-tailed Kite: Sevier Co (1) 8 Jul notably early Fall record (ph, AY); Wilson Co (1) Fall Creek Duck Marsh 29 Jul appears to be second county record (ph, RN); Sequatchie Co (1) returning to the traditional Fall congregating area in Sequatchie Valley 31 Jul (RSh, DSh, ph, KD).

Mississippi Kite: Davidson (1) Shelby Bottoms Park 11 Jun (ph, AC) increasingly common species throughout the state, yet still a rare find in Nashville.

Yellow-bellied Sapsucker: As many as (2) were reported throughout the season from 2 Jun – 3 Jul in Carter Co in traditional high elevation breeding grounds on Roan Mtn (ph, TK, JS, m.ob.). Also Unicoi Co (1) Iron Mtn Gap 3 Jun (BPo, JPo); Johnson Co (1) on 8 Jul (PJ).

Olive-sided Flycatcher: Weakley Co (1) Mansfield on 9 Jun notably late spring date (ph, MAG, RS).

Western Kingbird: Williamson Co (1) on Lytle Creek Rd 30 Jun (ph, RM) persisted until last reported 11 Jul (MO), delighting many area birders; Shelby Co (18) including seven recent fledglings max for the season in the species stronghold on President's Island 4 Jul (ph, PJP).

Bell's Vireo: Dyer Co (3) Thorny Cypress WMA 5 Jun (BDo); Stewart Co (2) known breeding habitat Ft. Campbell Jun (DM fide GG); Shelby Co (3) as many as three throughout the season Silicon Ranch Solar Farm in Shelby Farms Park, being first reported in May. A recent fledgling was photographed there 3 Jul (ph, PJP). Shelby Co (1) singing male in Collierville 26 Jun (au, RH) last reported 10 Jul (RH); Lake Co (2) Tumbleweed WMA 5 Jul (ph, MAG); Montgomery Co (2) known breeding habitat Ft. Campbell 25 Jul (DM fide GG).

Purple Martin: Davidson Co (100,000) max reported downtown roost near the Schermerhorn Symphony Center 25 Jul (ph, GG, m.ob.). Actual numbers are likely higher, perhaps significantly so; a much smaller gathering Rutherford Co (700) Fate Sanders Marina 23–26 Jul (ph, Max, JV) may be one of many staging areas by birds which then join the large roost downtown. Of interesting note, early morning radar signatures monitored by Nashville observers indicated another very large roost of probable Purple Martins in the Tullahoma area; however, these birds have been underreported on eBird or elsewhere (GG).

Golden-crowned Kinglet: Sevier Co (26) GSMNP Charlie's Bunion Trail notable summer count (RK, EH).

Sedge Wren: Montgomery Co (5) Ft. Campbell 25 Jul (DM fide GG), indicating likely breeding success.

Hermit Thrush: Sevier Co (9) max GSMNP Charlie's Bunion Trail 13 Jul (au, DD); Carter Co (5) max, throughout the season Roan Mtn (RLK, m.ob.); Unicoi Co (2) throughout season Unaka Mtn (JM, m.ob.).

Red Crossbill: Carter Co (13) max Roan Mtn on 27 Jun (RRK, RLK, m.ob.); Sevier Co (15) GSMNP - Newfound Gap 28 Jun (EDe); Montgomery Co (1) Ft. Campbell on 1 Jun notable summer record away from the eastern mountains (DM fide GG).

Bachman's Sparrow: Montgomery Co (1) and Stewart Co (1) both on restricted areas of Ft. Campbell 15 Jun (DM fide GG).

Lark Sparrow: Monroe Co (1) Tellico Lake WMA notable summer record for east TN 21 Jul (ph, CB).

White-throated Sparrow: Shelby Co (1) apparently over summering UT Health Science Center in Memphis 11 Jul (LH); Davidson Co (1) 20 Jul (ph, NS).

Henslow's Sparrow: Humphreys Co (9) private farm on 1 Jun (ph, RS, VS); Montgomery Co (18) historic breeding area Ft. Campbell1 Jun (DM fide GG, max); Stewart Co (6) also Ft. Campbell 15 Jun (DM fide GG, max).

Bobolink: Hamilton Co (1) Red Bank Central Park 16 Jun (DMK); Johnson Co (1) Big Dry Run Rd 4 Jul (RC).

Yellow-rumped Warbler: Carter Co (3) max count where 1–3 birds observed throughout the season Roan Mtn (RLK fide GG); Sevier Co (3) recorded singing on territory GSMNP - Clingman's Dome 17 Jun (au, JDB).

Scarlet Tanager: Shelby Co (1) 10 Jun (DL) and 25 Jun (CRu) Meeman-Shelby Forest SP. The species is a rare breeder in the county.

Painted Bunting: Humphreys Co (1) adult male at DRU notable record away from Shelby Co first record for Humphreys (RS).

OBSERVERS

AA – Annaliese Ashley
CB – Christie Bass
KB – Kyle Bess
MB – Matthew Bowling
JB – Jay Brasher
TB – Tammy Bright
LB – Lise Brown
AC – Andrew Cameron
SC – Sharon Cardin
RC – Robert Cowan
JDa – James Davis
TDa – Tara Davis
JDB – Jonathan DeBalko
EDe –Emilia Deino
SD – Sophie Dismukes
BDo – Brad Dowd
DD – Diana Doyle
KD – Kent DuBois
AD – Ariel Dunham
MD – Marjorie Dunham
RDu – Ray Dunkelberg
PRE – Peter R. Engler
CE – Chuck Estes
CF – Clayton Ferrell
AF – Avery Fish
KF – Kelly Fox
GG – Graham Gerdeman
CG – Colton Gittermann
PG – Paul Grabes
MAG – Mark A. Greene
EH – Emily Hall
RH – Rob Harbin
RHu – Robert Hunt
JH – Jeffrey Hill
BH – Ben Holt
RDH – Ron D. Hoff
SH – Susan Hubley
CJ – Chris Johnson
JDJ – J.D. Johnson
PJ – Peter Jones
RKe – Rob Keefe
RLK – Richard L. Knight
RK – Roger Kroodsma
RRK – Roy R. Knispel
TK – Toby Koosman
TL – Tim Lenz
WL – Walker Lincoln
DL – Douglas Logan
TLo – Tim Loyd
AL – Andrew Lydeard
RM – Ronald Manley
RMG – Roy McGraw
SNM – Susan N. McWhirter
DM – Dollyann Myers
RN – Robin Nation
HN – Holly Nelson
DN – Denise Neuendorf
TN – Ted Nichols
MO – Mike O'Malley
JM – Joe McGuinness
PP – Pat Phillips
BPo – Brookie Potter
JPo – Jean Potter
DDP – Dick Preston
RP – Ryan Pudwell
PJP – P.J. Pulliam
ER – Eric Ray
DR – Daniel Redwine
DRo – Dave Robinson
CR – Cyndi Routledge
SR – Steve Routledge
CRu – Cameron Rutt
TRu – Tim Russell
MSa – Mike Sanders
JS – Judy Sawyer
KSe – Katie Sellers
DSh – Debbie Shannon
RSh – Roi Shannon
RSv – Ron Shrieve
KS – Kathy Smith
RSm – Ronda Smith
NS – Nathan Snell
RS – Ruben Stoll
VS – Victor Stoll
CS – Carole Swann
LT – Luke Thompson
AT – Alan Troyer
TV – Tricia Vesely
SWa – Sean Walters
RWh – Robert Wheat
AY – Austin Young

INSTRUCTIONS TO AUTHORS

The Migrant records observations and studies of birds in Tennessee and adjacent areas.

SUBMISSIONS: The manuscript should be submitted electronically to Bob Ford at editorthemigrant@gmail.com. Submission of hard copies is optional. If so desired the original and two copies of the manuscript should be sent to the: Editor: Bob Ford, 808 Hatchie, Brownsville, TN 38012. Manuscripts that have been published in other journals should not be submitted.

MATERIAL: The subject matter should relate to some phase of Tennessee ornithology. It should be original, factual, concise and scientifically accurate.

STYLE: Both articles and short notes are solicited; recent issues of *The Migrant* should be used as a guide in the preparation of manuscripts. Where more detail is needed, reference should be made to *Scientific Style and Format*, eighth edition, by the Council of Science Editors, councilscienceeditors.org.

COPY: Manuscripts should be double-spaced with adequate margins for editorial notations and emailed in Word.docx. Tables and figures should be prepared in a separate file with appropriate headings; see *Scientific Style and Format* for examples of appropriate form for tables. Photographs intended for reproduction should be at least 300 dpi or sharp with good contrast on glossy white paper. Weights, measurements, and distances should be in metric units. Dates should be in "continental" form (e.g., 16 March 1997). Use the 24-hour clock (e.g., 0500 or 1900).

NOMENCLATURE: The scientific name of a species should be given after the first use of the full common name in the text. The scientific name should be italicized and in parentheses. Names should follow the *A. O. U. Check-list of North American Birds* (seventh edition, 1998, or supplements).

TITLE: The title should be concise, specific and descriptive.

ABSTRACT: Manuscripts of five or more pages should include an abstract. The abstract should be less then 5% of the length of the manuscript. It should include a brief explanation of why the research was done, the major results, and why the results are important.

LITERATURE CITED: List all literature citations in a "Literature Cited" section at the end of the text. Text citations should include the author and year.

IDENTIFICATION: Manuscripts including reports of rare or unusual species or of species at atypical times should include: date and time, light and weather conditions, exact location, habitat, optical equipment, distance, behavior of bird, comparison with other similar species, characteristic markings, experience of observer, other observers verifying the identification and reference works consulted.

REPRINTS: Reprints are available to authors on request. Billing to authors will be through the TOS treasurer. Request for reprints must be made well in advance of printing.

SEASON REPORTS: Observations that are to be considered for publication in "The Season" should be mailed to the appropriate Regional Compiler. Consult a recent issue of *The Migrant* for the name and address of the compiler.

CONTENTS