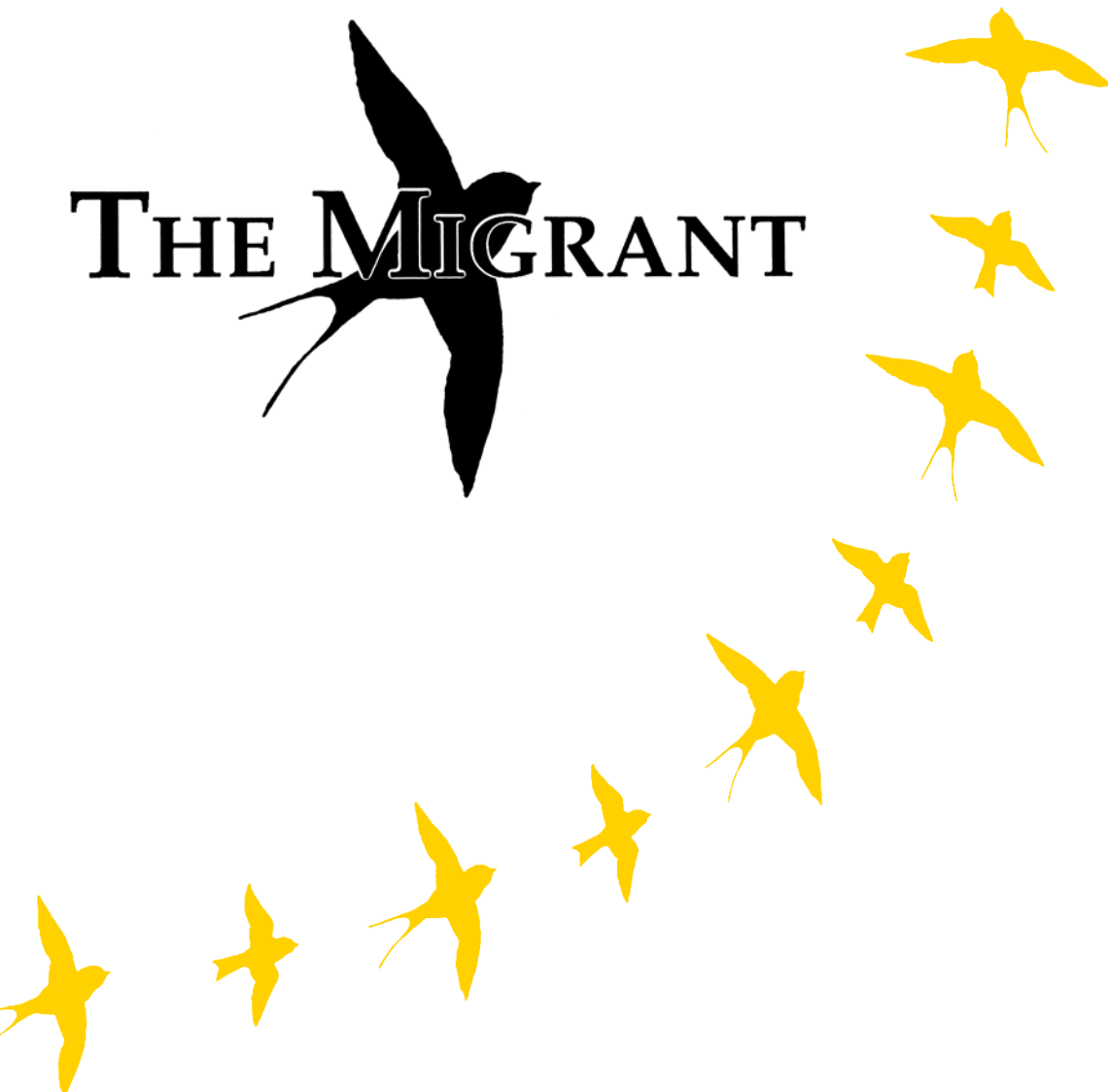




THE MIGRANT

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PRELIMINARY APPLICATION OF BAROMETRIC GEOLOCATORS ON A RECENTLY DISCOVERED BREEDING POPULATION OF CERULEAN WARBLERS (*Setophaga cerulea*)

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ABSTRACT

In this pilot study, we assessed the feasibility and constraints of deploying a novel barometric geolocator on a small passerine, the Cerulean Warbler (*Setophaga cerulea*), within a recently discovered breeding population in Tennessee. During the 2025 breeding season, surveys identified 47 breeding individuals within a protected property exceeding 4,000 ha, representing one of the largest known populations in the southeastern United States. We captured 11 individuals using mist nets and applied barometric geolocators to two males that met the current minimum body mass requirement (≥ 10.0 g). The remaining individuals did not meet this threshold, highlighting a key limitation for implementing emerging tracking technologies on small-bodied passerines. This represents the first documented application of barometric pressure tags on Cerulean Warblers. A 20% return rate was observed among previously banded individuals, and tagged individuals resumed normal feeding and territorial behaviors shortly after release. Other behavioral observations, including intra- and intersexual interactions, were recorded concurrently and are reported to provide information on deployment conditions and suggest behavioral patterns. Our findings emphasize the practical challenges of geolocation in small passerines and the need for empirical, species-specific evaluations of device feasibility. This study provides methodological insight relevant to future tracking research on Cerulean Warblers and to the continued development and application of light-level geolocation technologies for other small avian species.

INTRODUCTION

The Cerulean Warbler (*Setophaga cerulea*) has exhibited one of the most significant declines of any neotropical songbird in the United States (Boves and Buehler 2012), with pop-

ulation totals steadily decreasing since the late 1900s (Buehler et al. 2020). The species is currently listed as a National Species of Conservation Concern by the U.S. Fish and Wildlife Service (USFWS 2006), Near Threatened by the IUCN Red List of Threatened Species (BirdLife International 2021) and Endangered in Canada (COSEWIC 2010). Revising conservation status and synthesizing population trends for this species has been challenging due to limitations in available research technology, as well as political and industrial influences on adaptive land management. Topics of interest regarding this species' apparent sensitivity to landscape-level changes in habitat (e.g., Boves and Buehler 2012), breeding and post-fledging behavior (Buehler et al. 2008), wintering ground mortality and necessities (e.g., Newell et al. 2014), and movement ecology (e.g., Raybuck et al. 2017) have thus been understudied.

One recent advancement that is helping to answer these questions is the use of light-level geolocators. These devices use the position of the sun to approximate an animal's latitude and longitude as it travels. However, previous attempts to deploy geolocators on *Setophaga* warblers weighing less than 10 g have been shown to reduce return rates in some species (Raybuck et al. 2017), producing various complications and hesitations when attempting tracking research on similar species. Improvements in light-level geolocation technologies have allowed these research methods to be implemented successfully on other small passerines, including species closely related to Cerulean Warblers (Macey et al. 2025). Subject species receive back-mounted barometric geolocators, which not only gather light data, but are also fitted with atmospheric pressure sensors that record barometer, temperature, humidity, and acceleration, permitting in-depth archival documentation of passerine movement (Fox 2021).

The pilot project leveraged an opportunity offered by a novel barometric geolocating unit to investigate Cerulean Warbler movement, habitat use, reproduction, and feeding behavior. In 2024, a relatively large breeding population of Cerulean Warblers was discovered within the 4,047+ ha protected property managed by the Appalachian Conservation Institute (hereafter ACI) in Tennessee. After the discovery, five male warblers were banded that year. A preliminary population inventory was conducted in spring 2025, showing that the cerulean occupancy within the ACI property constituted one of the largest known breeding populations of Cerulean Warblers in the southeastern United States (Nareff et al. 2019).

METHODS

Study sites

The research was conducted within the ACI property in the South Cumberland Mountains of Marion County, Tennessee (Fig. 1). I spent time and effort primarily on the most accessible subpopulation occupying viable habitat along a northeast-facing slope within the Little Sequatchie Cove (colloquially Coppinger Cove). This area consisted of roughly 3 km of contiguous breeding territories that were documented and used for mist net placement and barometric geolocator application (Fig. 2).

The auditory and observational surveys from the breeding season of 2025 yielded additional insight into cerulean occupancy within the ACI property, quantifying a total of 47 breeding individuals (Langevin and Bauman 2025). The data collection was restricted by difficult terrain, weather conditions (~300% wetter than average May), and limited time

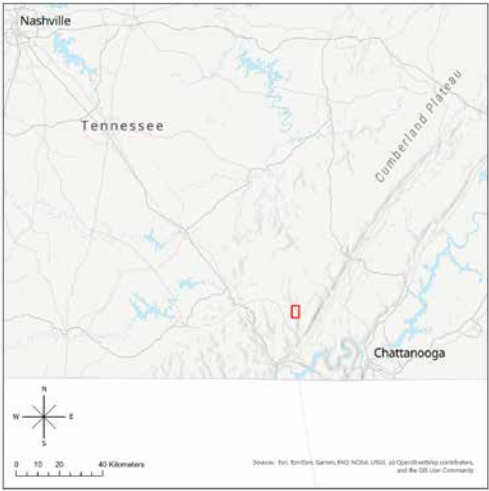


Figure 1. Location of the study site (red square) in Tennessee, managed by the Appalachian Conservation Institute.

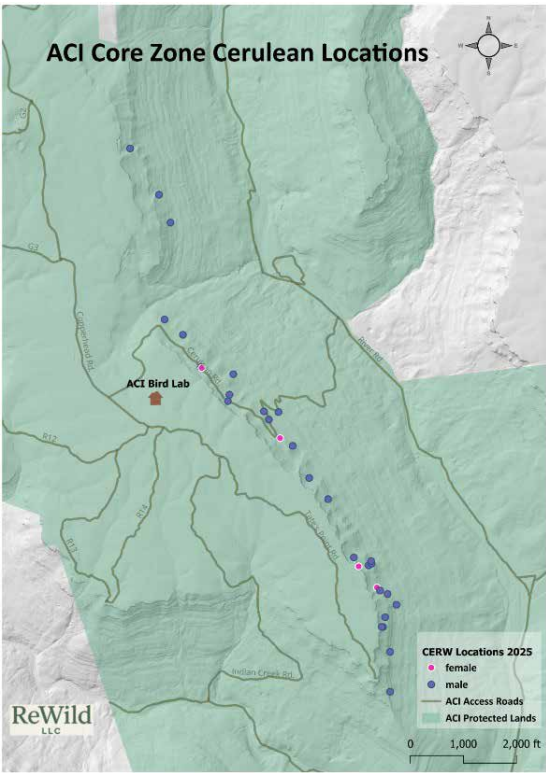


Figure 2. Locations of male and female Cerulean Warblers (*Setophaga cerulea*) preliminary occupancy survey conducted by ReWild LLC, contracted through ACI.

in the field. However, using this preliminary total, ~30% of breeding individuals have been successfully banded and documented by the team at ACI in two breeding seasons.

Field methods

From 20 May to 17 June 2025, Cerulean Warblers were captured in mist nets (12 m x 2.4 m, 30 mm mesh) placed within confirmed breeding territories. Occupied territories were associated with canopy gaps, which assisted with net placement as canopy gaps were documented with our GIS models. Most documented territories could not be reached by vehicle, and access to most territories required intense terrain navigation, interfering with targeting efforts. Net placement was most effective when situated near and parallel to escarpment peaks (<10 m from bluff line) or along steep road switchbacks. This location was probably related primarily to predatory avoidance and clutch protection, as territorial individuals were documented coming into the understory with greater frequency when the emergent layer or upper canopy position could be reoccupied readily. Up to three nets were deployed simultaneously and playback devices (JBL and FoxPro speakers) were used to entice territorial males towards net locations. Occasionally, we incorporated a 3D-printed decoy of an adult male into the attraction attempt, with variable results (Fig. 3). Playback was administered for 10 minutes on and 5 minutes off during hours of peak activity (~sunrise to 10:00 AM ET) to reduce the risk of fatigue in respondent individuals. I observed cerulean activity via binoculars of varying magnification (8x42 - 12x50), and I used professional photography and videography equipment (Nikon d850, Nikkor 200-500mm lens) for additional documentation and analyses.

Upon capture, the mass of each bird to the nearest 0.1 g was recorded and aluminum leg bands were promptly applied. In addition, a black or red color band was placed on the opposite leg to distinguish control individuals (black) from experimental individuals (red), allowing for future observational identification in the field. Initially five individuals



Figure 3. 3D-printed male Cerulean Warbler (*Setophaga cerulea*) decoy.

were designated as controls and five others as experimental; however, the lack of qualifying experimental birds led to additional control designations. Leg-loop harnesses were then attached (Rappole and Tipton 1991) using Stretch Magic™ (Pepperell Braiding Company, Pepperell, Massachusetts, USA) to qualifying males for the back mount fit barometric geolocators (Intigeo-DARK30Z9-DIP Environmental Data Logger), as recapture rates were deemed too inconsistent for use on qualifying females (Raybuck et al. 2022). Geolocators could not be applied to an individual if the harness mass exceeded 3% of the total body mass, and each device weighed approximately 0.3 g, meaning the subject male had to weigh ≥ 10.0 g to qualify for the harness. Additionally, various biometrics (wing chord, tail length, plumage score, fat score, molt limit, etc.) were recorded on all captured individuals for appropriate aging, sexing, and body condition indexing. Tagged individuals were monitored until they returned to healthy feeding and territorial behaviors, approximately 10 minutes after release. These birds continued to be monitored visually and acoustically for the remainder of the breeding season, and no signs of behavioral obstruction or other potentially negative impacts caused by the devices were observed. All data gathered by the barometric geolocator is archival; therefore, each deployed device is to be retrieved the following breeding season for proper analysis.

RESULTS AND DISCUSSION

Of 11 Cerulean Warblers captured in 2025, only two met the 10.0 g weight requirement for barometric geolocator application, prohibiting a desirable sample size. The average mass of captured individuals was 9.26 g (Fig. 4). This pilot project represented the first attempt at tagging Cerulean Warblers with this novel barometric geolocation device. Since the discovery of this population in 2024, 16 individuals (15 males, 1 female) have been captured, with these two receiving geolocators. Two of the males caught in 2025 were returning individuals from the 2024 season, indicating a $\geq 20\%$ return rate. This data implies that the ACI

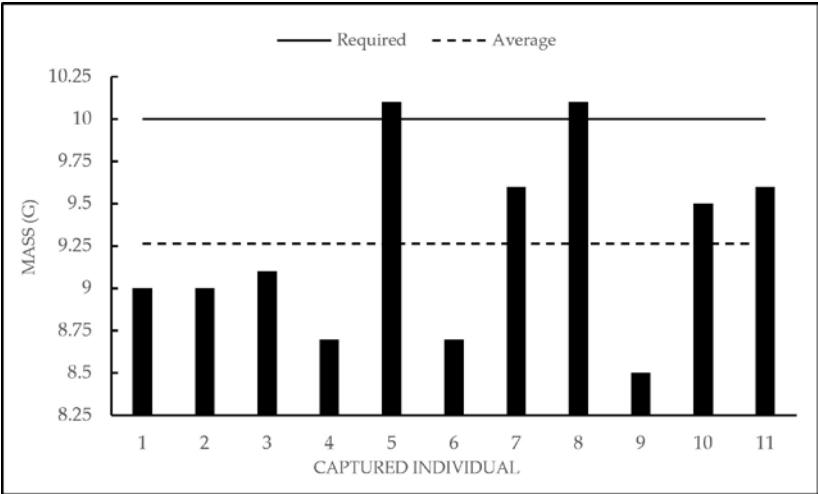


Figure 4. Recorded Cerulean Warbler (*Setophaga cerulea*) body mass per captured individual compared to the minimum required weight for barometric geolocator application. Average value of body mass (n = 11) is also shown.

population is likely a source population, contrasting with proximate sites that have demonstrated properties of sink populations (Carpenter et al. 2011), further heightening the importance of continued research on this population. Future targeted research will provide a more comprehensive understanding of the return rates and breeding success exhibited by the individuals on the ACI property. Moreover, reducing the minimum permissible weight should be considered for future application of these devices on Cerulean Warblers to ensure adequate data collection.

Many questions still surround the breeding biology of Cerulean Warblers, and intriguing behavior regarding mating systems and post-fledging movement were observed while conducting this study. In two distinct family groups, multiple males were recorded feeding the recently fledged young of a single female, suggesting an atypical mating system such as polygynandry, polyandry, or cooperative breeding. Although the species is generally considered socially monogamous, bigamy and polygyny have been suggested in multiple populations. Little documentation exists supporting additional alternate mating systems; however, two males were seen feeding nestlings at the same nest in Ohio (Buehler et al. 2020), similar to observations in the ACI property. Additional information pertaining to the intricacies of cerulean sexual behavior remains crucial in understanding breeding requirements and conservation necessities. Regarding post-fledging movement, multiple family groups were observed moving to higher elevations, contrasting other data and speculations about the post-breeding movement of family groups, particularly recently fledged young, on the Cumberland Plateau. Generally, however, little is known about the post-fledging movement, behavior, and parental care of Cerulean Warblers (Boves and Buehler 2012). Therefore, retrieving archival information provided by the geolocators will assist in attaining a better understanding of post-breeding dispersal.

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I want to extend my sincere gratitude to the staff of the Appalachian Conservation Institute, including Rick Huffines, Quentin Miller, and the dedicated field technicians who supported this pilot project, as well as to David Aborn of the University of Tennessee Chattanooga, whose contributions to the discussion, planning, and fund-sourcing portions of this project were essential. Funds were provided through grants and private donations to the Institute, which enabled excellent staffing, provision of field equipment, off-road vehicles, and other resources deemed essential to the research conducted. All birds were captured, handled, documented, banded, and tagged under the requisite federal and state permits. No individual or organization required reviewal or approval of the contents of this document prior to its submission and publication.

LITERATURE CITED

- BirdLife International. 2021. *Setophaga cerulea*. The IUCN Red List of Threatened Species 2021: e.T22721740A174436982.
- Boves, TJ and DA Buehler. 2012. Breeding biology, behavior, and ecology of *Setophaga cerulea* in the Cumberland Mountains, Tennessee. *Southeastern Naturalist* 11:319-330.
- Buehler, DA, JJ Giocomo, J Jones, PB Hamel, CM Rogers, TA Beachy, DW Varble, CP Nicholson, KL Roth, J Barg, RJ Robertson, JR Robb, and K Islam. 2008. Cerulean Warbler reproduction, survival, and models of population decline. *The Journal of Wildlife Management* 72:646-653.
- Buehler, DA, PB Hamel, and TJ Boves. 2020. Cerulean Warbler (*Setophaga cerulea*), Version 1.0. Birds of the World.
- Carpenter, JP, Y Wang, C Schweitzer, and PB Hamel. 2011. Avian community and microhabitat associations of Cerulean Warblers in Alabama. *The Wilson Journal of Ornithology* 123:206-217.
- COSEWIC. 2010. COSEWIC assessment and status report on the Cerulean Warbler (*Dendroica cerulea*) in Canada. Committee on the Status of Endangered Wildlife in Canada, Ottawa.
- Fox, JW. 2021. Intigeo series geolocator. Migrate Technology, Cambridge.
- Langevin, A and C Bauman. 2025. Cerulean Warbler preliminary population and habitat study. Unpublished report. ReWild LLC, Birmingham, Alabama.
- Macey, JN, KR Collins, MD Gamble, N Grigsby, NM Raginski, JM Kunberger, DS Finn, MR Colon, S Carrasco, and AM Long. 2025. Examining the potential impacts of geolocators on a small migratory songbird, the Golden-cheeked Warbler: results from a multi-year study. *Avian Conservation and Ecology* 20, Article 12.
- Nareff, GE, PB Wood, DJ Brown, T Fearer, JL Larkin, and WM Ford. 2019. Cerulean Warbler (*Setophaga cerulea*) response to operational silviculture in the central Appalachian region. *Forest Ecology and Management* 448:409-423.
- Newell, FL, T-A Beachy, AD Rodewald, CG Rengifo, IJ Ausprey, and PG Rodewald. 2014. Foraging behavior of Cerulean Warblers during the breeding and non-breeding seasons: evidence for the breeding currency hypothesis. *Journal of Field Ornithology* 85:310-320.
- Rappole, JH and AR Tipton. 1991. New harness design for attachment of radio transmitters to small passerines. *Journal of Field Ornithology* 62:335-337.
- Raybuck, DW, JL Larkin, SH Stoleson, and TJ Boves. 2017. Mixed effect of geolocators on reproduction and survival of Cerulean Warblers, a canopy-dwelling, long-distance migrant. *The Condor* 119:289-297.
- Raybuck, DW, TJ Boves, SH Stoleson, JL Larkin, NJ Bayly, LP Bulluck, GA George, KG Slankard, LJ Kearns, S Petzinger, JJ Cox, and DA Buehler. 2022. Cerulean Warblers exhibit parallel migration patterns and multiple migratory stopovers within the Central American Isthmus. *Ornithological Applications* 124:1-18.
- USFWS. 2006. Endangered and threatened wildlife and plants; 12-month finding on a petition to list the Cerulean Warbler (*Dendroica cerulea*) as threatened with critical habitat. *Federal Register* 71:70717-70733.

ROUND TABLE NOTE

CROSS-SPECIES FEEDING OF PILEATED WOODPECKER NESTLINGS BY EUROPEAN STARLING – In Cedars of Lebanon State Park (Wilson County, TN), a pair of Pileated Woodpeckers (*Dryocopus pileatus*) established a cavity nest in a wooden light pole. This pole is at the edge of a lawn and contains several old cavities, approximately 9 m above ground. The woodpeckers were first spotted on the pole on 29 March 2025 (eBird checklist S221528755), and copulation was observed on 12 April 2025 (S225028046). The woodpeckers occupied the cavity afterwards and occasionally were fighting with a European Starling (*Sturnus vulgaris*) over the cavity. By 22 May 2025, the adult woodpeckers were feeding three nestlings (S241201323).



Figure 1. Male European Starling feeding a beetle to a Pileated Woodpecker nestling on 29 May 2025 in Cedars of Lebanon State Park (Wilson County, TN). Photo by R. Nation.

Between 29-31 May 2025, a male starling (evidenced by blue at base of bill) was observed feeding a beetle and caterpillar to the nestlings a few times during our visits at approximately once per hour (Figure 1). The starling would feed the woodpecker nestlings from outside the cavity, but other times, it would enter the cavity and stay inside for up to about 10 seconds presumably feeding the nestlings (S244156511, S244658893, S245176065, S245017119). During 4 hours of observations on 31 May 2025, no woodpeckers were seen or heard while the starlings were feeding the nestlings, which appeared at the cavity entrance every 1-1.5 minutes and occasionally made several loud calls (S245176065). The woodpeckers were not present at the cavity on 2 June and 4 June 2025; apparently by these dates the nestlings had fledged. However, two adult starlings left the cavity in consecutive order on the latter date.

Interspecific feeding has been documented in 107 bird species worldwide (Shy 1982, Harmáčková 2021). European Starlings have been observed feeding young of Downy Woodpecker (*Dryobates pubescens*), Hairy Woodpecker (*Leuconotopicus villosus*), Red-bellied Woodpecker (*Melanerpes carolinus*), and Northern Flicker (*Colaptes auratus*) (Prescott 1971, Qualls 1998, Burbridge 2018, Janus and Gow 2021); the sex of the starlings in these studies was not mentioned. No previous observations have been reported for Pileated Woodpeckers, and thus, this is the first report for this species. Young of North American members of the Picidae have been fed by Gray Catbird (*Dumetella carolinensis*), Eastern Screech Owl (*Megascops asio*), Mountain Chickadee (*Poecile gambeli*), and Northern House Wren (*Troglodytes aedon*), and by other members of the same family (Shy 1982, Harmáčková 2021). The cause(s) of this behavior are unknown, but it is generally associated with males attracted to the calls of nestlings in nearby nests of another species (Harmáčková 2021).

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LITERATURE CITED

- Burbridge, G. 2018. European Starling pair feeds a juvenile Downy Woodpecker. *Ontario Birds* 36:170-173.
- Harmáčková, L. 2021. Interspecific feeding in birds: A short overview. *Acta Ornithologica* 56:1-14.
- Janus, D and EA Gow. 2021. Interspecific parental care by a European Starling (*Sturnus vulgaris*) at the nest of a Hairy Woodpecker (*Dryobates villosus*). *The Wilson Journal of Ornithology* 133:348-354.
- Prescott, KW. 1971. Unusual activity of starlings at Yellow-shafted Flicker nest. *Wilson Bulletin* 83:195-196.
- Qualls, B. 1998. European Starling "helper" at late season Red-bellied Woodpecker nest. *Mississippi Kite* 28:26-28.
- Shy, MM. 1982. Interspecific feeding among birds: a review. *Journal of Field Ornithology* 53:370-393.

THE SUMMER SEASON

Graham Gerdeman, Editor

June 1 – July 31, 2025



Figure 1. The first-ever documented hybridization of Eastern Kingbird x Scissor-tailed Flycatcher was found in Washington County, Tennessee during summer 2025. This picture shows the hybrid characteristics of the two young birds with an adult Scissor-tailed Flycatcher and convinced eBird to add the taxon to their checklist. The back of the bird on the left is darker than expected for a Scissor-tailed Flycatcher, while the bird on the right shows the characteristic cleft tail and thin white outer rectrices of a young Scissor-tailed Flycatcher. Photo taken on 27 July 2025 ©Daniel Huffine.

The summer was a hot one, with temperatures averaging 1–4°F above normal across the state. The second half of July saw numerous high temperature records broken, with Nashville tying its hottest July in 152 years of keeping records. Rainfall was sporadic. Parts of southeast TN received more than three times their normal rainfall in June. A few areas in the eastern ridge and valley remained quite dry, but the state ended summer largely free of drought conditions (Tennessee Climate Office 2025).

Rarities this season included Brown Booby, Inca Dove, and Tricolored Heron. Other notable mentions include breeding records of Common Merganser in Middle TN, a surge in Anhinga sightings across the state, an unprecedented summer record of Orange-crowned Warbler in the Memphis area, and perhaps the most noteworthy: a first-ever documented hybridization of Eastern Kingbird x Scissor-tailed Flycatcher in Washington Co. (Fig. 1).

Sightings are extracted from eBird (2021; with assistance from Tim Lenz), submissions from regional compilers, the tn-birds listserv, and when necessary, verified social media posts or iNaturalist. Comments on historical records rely on Somershoe and Sloan (2015), archives of the tn-birds listserv as well as subsequent eBird records and submissions to the Tennessee Bird Records Committee (TBRC). Capitalized species records below indicate species requiring TBRC review. Inclusion in this report does not imply that all records have been officially accepted.

STANDARD ABBREVIATIONS

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

Black-bellied Whistling Duck: Reported from 11 counties across the state, with Shelby Co (178) being the high count from Ensley 25 Jul (Ryan Pudwell). The species was confirmed to be nesting in a nest box at DRU, Humphreys Co. for the first time 6 Jun (Clayton Ferrell *fide* Graham Gerdeman).

Fulvous Whistling Duck: Shelby Co (5) at Ensley 21 Jul (ph. Todd Green) with 1–2 birds reported from 15 Jun (ph. PJ Pulliam) until 2 Aug (Alan Troyer, m.ob.).

Snow Goose: Shelby Co (1) at a neighborhood lake 5 Jun (Mila Kedz) and Roane Co (1) at Rockwood Marina 12 Jun (ph. Caleb Beasley) were late, possibly injured.

Greater White-fronted Goose: Monroe Co (1) injured bird with Canada Geese 10 & 15 Jun (ph. Christie Mann, Julie Moore, Charles Rogers); Shelby Co (1) at Ensley 22–26 Jul (ph. Randy Winstead, m.ob.).

Blue-winged Teal: Davidson Co (2) at SBP 29 Jun (Tim Loyd) were likely late migrants, rather than spending the summer, as they were not subsequently reported. Reports from Hardin Co (2) at Savannah Bottoms 13 Jul (ph. Alan Troyer), Obion Co (1) at Mockingbird Lake 20 Jul (Alan Troyer, Ruben Stoll), and Maury Co (1) at Mt. Pleasant Water Treatment Plant 21 Jul (Ruben Stoll, Victor Stoll, Oben Friksen) appeared to be summer residents.

Gadwall: Humphreys Co (2) reported throughout the summer at DRU (m.ob.).

Ring-necked Duck: There were July reports from Haywood Co (1) at Hatchie NWR 19–31 Jul (ph. Graham Gerdeman, m.ob.); Humphreys Co (1) at DRU all summer 1 Jun–30 Jul (ph. Ruben Stoll, Daniel Redwine, m.ob.); Obion Co (1) at Reelfoot NWR 20 Jul (ph. Ruben Stoll, Alan Troyer); and Maury Co (2) at Mount Pleasant Water Treatment Plant 21 Jul (Ruben Stoll, Victor Stoll, Oben Friksen).

Greater Scaup: Marion Co (1) over-summered at Nickajack Dam, reported 15 Jun & 28 Jul (ph. Roi Shannon, Deb Shannon).

Lesser Scaup: Marion Co (1) over-summered at Nickajack Dam, reported 15 Jun & 28 Jul (ph. Roi Shannon, Deb Shannon); Humphreys Co (1) at DRU 8 Jul (ph. Daniel Redwine).

Common Merganser: Smith Co (9) on the Caney Fork River at the I-40 Caney Fork Rest Area 21 Jun (ph. Cameron Archer) and (10) in the same location 23 Jun (ph. Alan Troyer, Ruben Stoll) likely indicate a first breeding record on the Caney Fork; White Co (6) on the Caney Fork River roughly 40 miles away (in a straight line) south of Bridgestone/Firestone WMA 4 Jul (ph. Will Schibig) were quite likely a different family unit. Blount Co (18) was the highest count in the expected Townsend area 20, 28, & 30 Jun (max. Lisa Falk, Chris Agee, Mich Coker).

Ruddy Duck: Shelby Co (1) adult male at Shelby Farms Park–Hyde Lake 9 Jun (ph. PJ Pulliam) and (1) female-type in the same location 13 Jul (ph. Ryan Pudwell, Adrian Hall); also (1) female-type at Mud Island 13 Jul (ph. Ruben Stoll). A regular summer resident in Shelby Co during the '90s, the species has only been seen sporadically in summer in more recent years.

Northern Bobwhite: White Co (35) at Bridgestone/Firestone WMA during a survey 24 Jun (ph. max. Connor Gardner) was a promising number, and the third highest count in eBird in the state in the past decade.

INCA DOVE: Shelby Co (1) at Ensley 7 & 9 Jun (ph. PJ Pulliam, Rob Simbeck, Cliff Van-Nostrand) represents only the eighth state record.

White-winged Dove: Maury Co (1) at a residential feeder 1–2 Jun (ph. Regina Allen); Shelby Co (6) was the highest count at the suspected known breeding location on Mud Island 1 Jun (ph. max. Daniel Redwine, Alan Troyer, Ruben Stoll, Victor Stoll).

Black-billed Cuckoo: Knox Co (1) at Seven Islands State Birding Park 1–2 Jun (Laura Tappan, Maria Crowe, Terry Crowe); Shelby Co (1) at Ensley 1 Jun (Daniel Redwine, Ruben Stoll, Victor Stoll, Alan Troyer); Sullivan Co (1) 30 Jun (Jerry Bevins).

King Rail: Humphreys Co (1) heard calling at DRU 1 & 19 Jun (Alan Troyer, Matthew Palmeri, m.ob.).

Common Gallinule: Shelby Co (2) at Ensley 1 Jun (ph. Alan Troyer, Daniel Redwine, Victor Stoll, Ruben Stoll); White Co (1) at Gum Springs 2–8 Jun (ph. Roi Shannon, Deb Shannon, m.ob.); Roane Co (1) at Emory Bend Wetland 5–8 Jul (Chuck Estes, Michael Ryon).

Black-necked Stilt: Shelby Co (140) at Ensley 13 Jul (max. Ruben Stoll) was the most reported.

American Avocet: Shelby Co (1) at Ensley 20–26 Jul (ph. PJ Pulliam, Adrian Hall, m.ob.); Blount Co (2) at a private farm pond 26 Jul (ph. Stacy Scheidt); Carter Co (1) at Watauga Lake 2 Jul (Joe McGuinness *vide* Rick L. Knight).

Black-bellied Plover: Shelby Co (1) at Maynard C. Stiles Water Treatment Plant 14 Jun (ph. PJ Pulliam).

Upland Sandpiper: Dyer Co (1) at Bogota WMA 22 Jul (Mark Greene); Humphreys Co (1) at DRU 26 Jul (Wade Baker, Nolan Walker, Ruben Stoll).

Long-billed Dowitcher: Coffee Co (2) at Hillsboro Hwy pond 20 Jul (ph. Roi Shannon, Deb Shannon); Shelby Co (1–2) reported 13–27 Jul (Larry Chitwood, PJ Pulliam, m.ob.).

Wilson's Phalarope: Shelby Co (2) was the most at Ensley 20–22 Jul (PJ Pulliam, Adrian Hall, ph. Randy Winstead) where at least one was reported 17–31 Jul (m.ob.).

Willet: Shelby Co (3) was the most at Ensley 26 Jul (ph. Tricia Vesely, m.ob.), where at least one was reported 21–26 Jul (m.ob.); Humphreys Co (1) at DRU 12 Jul (ph. Ruben Stoll); Grainger Co (1) at Condry Bend Rd 26 Jul (ph. Dallas Harrell, Jason Cole).

Ruddy Turnstone: Humphreys Co (1) adult at DRU 26 Jul (ph. Ruben Stoll, Wade Baker, Nolan Walker).

Dunlin: Humphreys Co (1) at DRU 7 Jun (ph. Alan Troyer, Chuck Estes, m.ob.) was late, and reportedly had an injured leg.

Least Sandpiper: Shelby Co (300) at Ensley 14 Jul (max. Avery Fish) was the highest.

Laughing Gull: DeKalb Co (1) at Edgar Evins SP 5 Jun (Holly Taylor, Mark Taylor).

American Herring Gull: DeKalb Co (1) at Edgar Evins SP 5 Jun (Holly Taylor, Mark Taylor).

Least Tern: Dickson Co (1) at a pond in Vanleer 6 Jun (Victor Stoll) was an apparent first for the county; Humphreys Co (3) was the most at DRU 26 July (Ruben Stoll, Wade Baker, Nolan Walker). Single birds were also reported at DRU 7 Jun (Chuck Estes) and from Tie Landing 3 Jun (Ruben Stoll, Victor Stoll). All other records were from the expected counties along the MS River.

Caspian Tern: Sevier Co (1) in Sevierville 14 Jun (Jackson Medeiros) was an uncommon record in the mountains.

Common Tern: Hamilton Co (1) at Harrison Bay SP 19 Jul (Tim Lenz) was a rare sighting in mid-July.

Horned Grebe: Hawkins Co (1) possibly over-summering at Cherokee Lake 18 Jul (ph.

Susan Hubley, Michael Hubley); Sullivan Co (2) in breeding plumage at South Holston Lake 15 Jul (Pete Range *vide* Rick L. Knight).

Common Loon: Lingering subadult birds were reported from three counties: Hardin Co (1) at Pickwick Lake 3 Jul (ph. Mark Greene); Knox Co (1) at Concord Park 1–11 Jul (ph. Kristen Smith, m.ob.); Anderson Co (2) at Melton Lake Park 28 July (ph. Kelly Roy).

Wood Stork: Humphreys Co (2) at DRU 10–15 Jun (ph. Sue Bradley, m.ob.); Blount Co (1) at Kyker Bottoms Refuge 13 Jul (ph. Evan Kidd).

BROWN BOOBY: Haywood Co (1) adult bird at Hatchie NWR–O’Neal Lake 18 Jul–3 Aug (ph. Joel Fryer, m.ob.) stuck around for several weeks to the delight of birders across the state (Fig. 2). It appears to be the tenth state record.



Figure 2. Apparently the tenth state record of a Brown Booby was seen by many observers at O’Neal Lake, Haywood County, Tennessee between 18 July and 3 August 2025. Photo taken on 19 July 2025 ©Graham Gerdeman.

Anhinga: There were reports from 10 counties, mostly in the west, representing a fairly dramatic increase in statewide summer records. Sullivan Co (2) soaring near Middlebrook Lake 15 Jul (Adrianna Nelson) was a rare record from the extreme northeast of the state and a county first; Meigs Co (1) at Hiwassee Refuge 18–21 Jul (ph. Eli Harris, Tim Lenz, m.ob.) was also an apparent county first. Humphreys Co (15) was the highest count at DRU 30 Jul (max. Ruben Stoll), where breeding has been documented for several years in a row. Also reported from Dyer Co (2) at Bogota WMA 4 Jun (ph. Mark Greene) and (1) nearby 17 Jun (ph. Mark Greene); Carroll Co (1) at Hwy 22 Cattail Marsh 7 Jun (ph. Alan Troyer);

Obion Co (2) at Reelfoot WMA–Grassy Island Unit 20 Jul (ph. Alan Troyer, Ruben Stoll); Haywood Co (1) at Hatchie NWR–O’Neal Lake 20 Jul (ph. Avery Fish, Isaac Brown, m.ob.); Tipton Co (1) in Munford 29 Jun (Katherine Markley); Shelby Co (8) was the most from Ensley 19 Jun (PJ Pulliam), Hardin Co (1) at White Oak WMA 19 Jul (ph. Alan Troyer, Ruben Stoll) was an apparent second county record; Hamilton Co (1) at Volkswagen Wetland 1 Jun (ph. Jackie McDonald), (1) at Standifer Gap Marsh 22 Jun (Tim Russell, ph. Tim Lenz, m.ob.), and (1) at Brainerd Levee 9 Jul (Bruce Dralle) were possibly all the same individual adult male.

Neotropic Cormorant: Humphreys Co (10) at the DRU rookery 1 Jun (max. Daniel Redwine, Alan Troyer, Ruben Stoll, Victor Stoll) was the highest count; Rutherford Co (1) at J. Percy Priest WMA–Field Trial Area 6 Jun (ph. Avery Fish); Haywood Co (1) at Hatchie NWR–O’Neal Lake 26 Jul (ph. Patrick Higgins, Adrienne Bolton, Judy Dorsey); Marion Co (1) at Bennett Lake Boat Ramp 28 Jul (ph. Avery Fish).

White Ibis: Shelby Co (1) juvenile bird at Ensley 16 Jun (Cliff VanNostrand); Haywood Co (1) adult at Hatchie NWR–O’Neal Lake 26 Jul (ph. Patrick Higgins); Humphreys Co (1) juvenile at DRU 30 Jul (Ruben Stoll).

Glossy Ibis: Shelby Co (3) at Ensley 6 Jun (ph. Larry Chitwood, m.ob.).

White-faced Ibis: Shelby Co (2) at Ensley 6 Jun (ph. Conner Robinson, Allen Trently), where one was observed 3–23 Jun (m.ob.).

Glossy/White-faced Ibis: Shelby Co (1) *Plegadis* ibis was also seen at Ensley 27 Jun (Douglas Logan) but was not identified to species.

Roseate Spoonbill: Shelby Co (1) flyover at Gardener Road 4 Jul (Bryan Barger); Hardin Co (3) at Savannah Bottoms 13–14 Jul (ph. Alan Troyer, Ruben Stoll); Humphreys Co (1) at DRU 25 Jun–12 Jul (ph. Mary Ganaway, Sue Bradley, m.ob.); Rhea Co (1–2) at Cedar Point Park 27 Jun–16 Jul (ph. Patti Niswonger, m.ob.) (Fig. 3) and (1) at Little Richland Pond 12–13 and 20 Jul (ph. Tim Lenz, Andrew Burgess, m.ob.), which was likely one of the same birds from the previous location.

Least Bittern: Hardin Co (11) at White Oak WMA 19 Jul (ph. Ruben Stoll, Alan Troyer) was an exceptional count and the highest reported statewide since 2011. There were also reports of smaller numbers in expected habitat from Hawkins, Blount, Hamilton, Putnam, Carroll, Henry, Lake, and Shelby Cos.

Little Blue Heron: Humphreys Co (250) estimated at DRU 26 Jul (max. Wade Baker, Nolan Walker, Ruben Stoll) was the highest, and the highest statewide count reported in eBird since 2011.

Tricolored Heron: Hamilton Co (1) reported on a utility wire on Shallowford Rd 1 Jun (Kent DuBois) was likely the same individual from Standifer Gap Marsh in late May; Hum-



Figure 3. Two Roseate Spoonbills were present in Rhea County, Tennessee between 27 June and 16 July 2025. Photo taken on 1 July 2025 ©Robert Hunt.

phreys Co (1) continued from May at DRU and was seen from Tie Landing 3 Jun (Ruben Stoll, Victor Stoll) and again from the refuge (presumed to be the same individual) 28–29 Jun (ph. Daniel Redwine, m.ob.).

Snowy Egret: Humphreys Co (225) estimated at DRU 26 Jul (max. Wade Baker, Nolan Walker, Ruben Stoll) was the highest statewide estimate since 2012, and the third highest ever.

Brown Pelican: Rutherford Co (1) in the area of Fall Creek Recreation Area 31 Jul (ph. Isaac Brown, Avery Fish, m.ob.).

Mississippi Kite: Reported from 38 counties as this species continues to expand its presence in the state, including five counties in East TN: Carter Co (1) flying over Patton-Simmons Cemetery 7 Jun (ph. Tammy Bright, Jerry Bevins, Roy Knispel) was a rare, but increasing, sighting in the far northeast mountains; Knox Co (1) at a Knoxville area Home Depot 15 July (Phill Henry, Lis Henry); Bradley Co (1) on Candies Lane 19 Jul (Judy Smith); Marion Co (1) along Pryor Ridge Rd 5 Jun (Patrick Higgins) and (2) at private property in the same locale 11 Jun (ph. Patrick Higgins); Grundy Co (2) at Monteagle Assembly 20 Jun (Richard Candler). Additionally reported from 13 Cos in Middle TN and 20 in West TN. Shelby Co (100) estimated at Riverwood Lake 9 Jun (max. Ryan Pudwell) was the most reported.

Yellow-bellied Sapsucker: Carter Co (1) at Cherokee NF–Twin Springs 13 Jul (Tim Swain) was the only summer report of this local high elevation breeder.

Peregrine Falcon: Henry Co (1) on the Paris Landing bridge 26 Jul (Dave Haenni), a nesting location in past years, was the only report outside of the eastern mountains.

Olive-sided Flycatcher: Humphreys Co (1) late spring migrant at DRU 1 Jun (Daniel Redwine, Alan Troyer, Ruben Stoll, Victor Stoll).

Western Kingbird: Lake Co (4) at Robinson Bayou, including two adults feeding two young near a nest established a first nesting record in NW TN 22 Jul (Don Blunk, ph. Mark Greene), where 1–2 adults had been seen 13, 16, & 20 Jul (ph. Ruben Stoll, Mark Greene, Alan Troyer); Fayette Co (2) in the Piperton area 28 Jul (Mila Kedz); Shelby Co (8) was the most reported from Ensley 9, 13, and 22 Jul (ph. Tricia Vesely, m.ob.).

Eastern Kingbird x Scissor-tailed Flycatcher (hybrid): Washington Co (4) nestlings were documented in the nest of a female Scissor-tailed Flycatcher and male Eastern Kingbird 29 Jun (Rick L. Knight *fide* Graham Gerdeman, ph. Daniel Huffine, m.ob.) (Fig. 1). The young were fed by both parents and fledged 12–13 Jul (Rick L. Knight *fide* Graham Gerdeman, ph. Daniel Huffine), and they were documented in the vicinity until at least 27 Jul (ph. Daniel Huffine, m.ob.). This was the first recorded hybridization of these species.

Scissor-tailed Flycatcher: Rare in the far NE, Washington Co (1) in the location of the previous year's first county record continued through the season, producing the first documented hybrid clutch with an Eastern Kingbird (Rick L. Knight *fide* Graham Gerdeman, ph. Daniel Huffine, m.ob.).

Bell's Vireo: Lake Co (4) was the most at Tumbleweed WMA 13 Jun (Mark Greene), where 1–4 were reported 4–13 Jun (Mark Greene, Anna Chess, Brianna Saylor); Dyer Co (2) at Thorny Cypress WMA 12 Jun (au. Roy McGraw, Walker Lincoln) and (1) on 13 Jul (ph. au. Ruben Stoll); Montgomery Co (2–3) on Ft. Campbell 17–18 Jul (Daniel Moss *fide* Graham Gerdeman); Stewart Co (4) on Ft. Campbell 24 Jun (Daniel Moss *fide* Graham Gerdeman).

Brown Creeper: Wilson Co (1) report from Lebanon 7 Jun (Emily Tallo) was quite late for middle TN.

Bachman's Sparrow: Montgomery Co (6) two adults and four chicks in an active nest on Ft. Campbell 2, 5, and 10 Jun (ph. Daniel Moss *fide* Graham Gerdeman).

Grasshopper Sparrow: Davidson Co (4) including possible juveniles at the BNA Drive Airport pullout 2 and 5 Jul (ph. Nathan Snell) indicated a likely rare (these days) Nashville breeding record where individual birds were reported throughout the season 2 Jun–28 Jul (Nathan Snell, m.ob.).

White-throated Sparrow: Montgomery Co (1) apparently trapped in a Clarksville Lowe's store 19–21 Jun (ph. Stanley York, Mike O'Malley) was an odd and unfortunate summer record; Cheatham Co (1) in Kingston Springs 9 Jul (ph. Asher Richardson) was also a rare mid-summer find.

Nelson's Sparrow: Humphreys Co (1) at DRU 1 Jun (Daniel Redwine, Ruben Stoll, Victor Stoll, Alan Troyer).

Henslow's Sparrow: Benton Co (1–2) at Big Sandy River Prairie off and on 1 Jun–27 Jul (au. Daniel Redwine, m.ob.); Stewart Co (19) on Ft. Campbell 24 Jun (max. Daniel Moss *vide* Graham Gerdeman); Montgomery Co (18) on Ft. Campbell 17 Jul (Daniel Moss *vide* Graham Gerdeman); Gibson Co (1) singing bird continuing from spring in Mt. Orange 4 Jun (au. Mark Greene); White Co (5) was the highest count at Bridgestone/Firestone WMA 5 Jul (Mark Brown).

Savannah Sparrow: Shelby Co (1) at Maynard C. Stiles Water Treatment Plant 27 Jul (ph. PJ Pulliam); Davidson Co (1) at BNA Drive Pullout 30 Jul (ph. Nathan Snell) were both rare late summer records.

Bobolink: Bradley Co (1) at Black Fox Farms 9 Jun (Hannah Willis) was quite late.

Orange-crowned Warbler: Shelby Co (1) singing at H.W. Cox Park on 21 Jun (au. Rob Harbin) was extraordinarily late and the first summer record in TN. There are, in fact, no other summer eBird records in the entire southeastern US!

Rose-breasted Grosbeak: Davidson Co (1) coming to a feeder 12–13 Jun (ph. Paige O'Neal) was the first June record for the county; Shelby Co (1) in a Memphis backyard 1 Jun (Micaela Watts) was also late.

LITERATURE CITED

- eBird. 2021. eBird: An online database of bird distribution and abundance [web application]. Cornell Lab of Ornithology, Ithaca, New York. Available: <http://www.ebird.org> (Accessed: Aug 2026).
- Somershoe, SG and CA Sloan. 2015. Birds of Tennessee: a new annotated checklist. CreateSpace Independent Publishing Platform, Scotts Valley, California.
- Tennessee Climate Office. 2025. Tennessee Climate Office Monthly Report. East Tennessee State University, Johnson City, Tennessee. Available: <https://dc.etsu.edu/tn-climate-monthly-reports> (Accessed: Aug 2026).

INSTRUCTIONS TO AUTHORS

The Migrant records observations and studies of birds in Tennessee and adjacent areas. Articles and short notes are solicited; they should be original, factual, concise and scientifically accurate.

SUBMISSIONS: Manuscripts should be submitted electronically to Dr. Jeffrey Walck at jeffrey.walck@mtsu.edu. If a manuscript cannot be submitted electronically, send a hard copy to: Dr. Jeffrey Walck, Department of Biology, Middle Tennessee State University, Murfreesboro, TN 37132. Manuscripts that have been published in other journals should not be submitted.

PREPARATION: Consult recent issues of *The Migrant* for guidance on format and style. The manuscript, as a Word document, should be double-spaced with adequate margins. Tables, each with a legend and row and column headers, and figure legends should follow the main text of the manuscript. Figures and photographs should be submitted as separate files, such as jpg; 72–100 dpi is acceptable. Weights, measurements, and distances should be in metric units, and dates 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.S. Check-list of North American Birds.

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

ABSTRACT: Manuscripts of five or more pages should include an abstract, being 200 words or fewer. 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 main text of the manuscript. Text citations should include the author and year.

IDENTIFICATION: Manuscripts reporting rare or unusual species or 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.

SEASON REPORTS: Observations considered for publication in “The Season” should be emailed to the Season Editor, Graham Gerdeman at grahamgerdeman@gmail.com.

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