

## **The First Documented Case of Eastern Black Rail (*Laterallus j. jamaicensis*) Breeding in Louisiana, U.S.A**

Authors: Monopoli, Lauren F., Johnson, Erik I., Lueck, Jonathon T., Benson, Thomas J., Woodrey, Mark S., et al.

Source: Waterbirds, 47(2) : 1-5

Published By: The Waterbird Society

URL: <https://doi.org/10.1675/063.047.0204>

---

BioOne Complete (complete.BioOne.org) is a full-text database of 200 subscribed and open-access titles in the biological, ecological, and environmental sciences published by nonprofit societies, associations, museums, institutions, and presses.

Your use of this PDF, the BioOne Complete website, and all posted and associated content indicates your acceptance of BioOne's Terms of Use, available at [www.bioone.org/terms-of-use](http://www.bioone.org/terms-of-use).

Usage of BioOne Complete content is strictly limited to personal, educational, and non - commercial use. Commercial inquiries or rights and permissions requests should be directed to the individual publisher as copyright holder.

---

BioOne sees sustainable scholarly publishing as an inherently collaborative enterprise connecting authors, nonprofit publishers, academic institutions, research libraries, and research funders in the common goal of maximizing access to critical research.

# The First Documented Case of Eastern Black Rail (*Laterallus j. jamaicensis*) Breeding in Louisiana, U.S.A

LAUREN F. MONOPOLI<sup>1,2,3,\*</sup>, ERIK I. JOHNSON<sup>4</sup>, JONATHON T. LUECK<sup>4</sup>, THOMAS J. BENSON<sup>1,3</sup>,  
MARK S. WOODREY<sup>5</sup>, AND AURIEL M. V. FOURNIER<sup>2</sup>

<sup>1</sup>Illinois Natural History Survey, Prairie Research Institute, University of Illinois at Urbana-Champaign,  
Champaign, Illinois, USA

<sup>2</sup>Stephen A. Forbes Biological Station, Illinois Natural History Survey, Prairie Research Institute, University of  
Illinois at Urbana-Champaign, Havana, Illinois, USA

<sup>3</sup>Department of Natural Resources and Environmental Sciences, University of Illinois at Urbana-Champaign,  
Champaign, Illinois, USA

<sup>4</sup>Audubon Delta, National Audubon Society, 3801 Canal St., Suite 400, New Orleans, Louisiana, 70119, USA

<sup>5</sup>Mississippi State University, Coastal Research and Extension Center, Biloxi, Mississippi, USA

\*Corresponding author; E-mail: lfm4@illinois.edu

**Abstract.**—The Eastern Black Rail (*Laterallus jamaicensis jamaicensis*) is a federally threatened marsh bird known for its cryptic nature, making the species difficult to study. In Louisiana, U.S.A., Eastern Black Rails have rarely been documented in the state, especially during the summer, and there have been no confirmed breeding records. This study provides the first evidence of Eastern Black Rail breeding in Louisiana. Using motion activated game cameras, we successfully recorded adults with a chick, aged 5–15 days old, on two separate occasions. In addition, unique vocalizations between adults and the chick were recorded by motion activated game cameras. Few records exist for Eastern Black Rail in Louisiana and only recently was a small year-round population documented in the southwest portion of the state. The findings of this study are critical as they further expand our knowledge on the breeding distribution of Eastern Black Rail along the Gulf of Mexico coast. *Received 12 May 2024, accepted 11 Sep 2024.*

**Key words.**—Breeding status, camera trap, eastern black rail, *Laterallus jamaicensis jamaicensis*, Louisiana  
Waterbirds 47(2): 1–5, 2024

The Eastern Black Rail (*Laterallus j. jamaicensis*) is a wetland-obligate marsh bird (Todd 1977; Eddleman *et al.* 1994; Roach and Barrett 2015; Watts 2016; Haverland 2019; Tolliver *et al.* 2019; U.S. Fish and Wildlife Service 2019; Atlantic Coast Joint Venture 2020) whose range once encompassed much of the US Atlantic and Gulf of Mexico coasts as well as inland areas east of the Rocky Mountains (Allan 1900; Eddleman *et al.* 1994). Widespread habitat loss due to land-use changes, however, led to an estimated 75 to 90% decline in population resulting in the species' current patchy distribution (Hands *et al.* 1989b; Eddleman *et al.* 1994; Watts 2016; Atlantic Coast Joint Venture 2020; U.S. Fish and Wildlife Service 2020). In 2020, the U.S. Fish and Wildlife Service listed Eastern Black Rail as Threatened under the Endangered Species Act (U.S. Fish and Wildlife Service 2020).

Often referred to as a cryptic marsh bird, Eastern Black Rail rarely fly or vocalize and

instead spend much of their time hidden in dense vegetation. This secretive nature makes confirming breeding activity challenging, as nests tend to be well concealed, usually constructed as an open cup or dome, and placed on or near the ground in densely vegetated areas (Eddleman *et al.* 1994; Legare and Eddleman 2001). Past records with confirmed nest or chick observations are therefore limited but point to a breeding range that once included Connecticut, New York, New Jersey, Pennsylvania, Delaware, Virginia, North Carolina, South Carolina, Texas, Florida, Illinois, and Kansas (Allan 1900; Stone 1900; Harlow 1913; Stuart 1920; Post and Enders 1969; Eddleman *et al.* 1994; Watts 2016). In 2023, the only states with confirmed breeding populations of Eastern Black Rail was Texas, Florida, South Carolina, Kansas, and Colorado. (Legare and Eddleman 2001; Kane 2011; Hand *et al.* 2019; Haverland *et al.* 2021; Hargett 2024).

Confirming breeding status of the Eastern Black Rail is complicated further as the

presence of adults during the breeding season is not sufficient evidence of nesting. In South Carolina, for example, Eastern Black Rail had been consistently documented as present during the summer months, but no nest or chick had been observed for over century. It was following a period of camera trapping that researchers successfully documented juvenile Eastern Black Rails as well as key courting behaviors (Hand *et al.* 2019). Other studies have also noted the usefulness of game cameras in monitoring for cryptic species, like rails (Znidarsic 2017).

Along the Gulf Coast, Eastern Black Rails are known residents in Texas and Florida with both states also home to established breeding populations (Legare and Eddleman 2001; Tolliver *et al.* 2019; Haverland *et al.* 2021). Recently, researchers in southwest Louisiana documented a year-round presence of Eastern Black Rails, which suggested the possibility of breeding (Johnson and Lehman 2021). Despite this, however, records of Eastern Black Rail in Louisiana remain sparse with breeding unconfirmed (Watts 2016). The objective of this paper was to determine the breeding status of Eastern Black Rail in Louisiana, USA using targeted and opportunistic deployment of motion-activated game cameras.

## METHODS

### Study Area

Motion-activated game cameras were deployed on privately owned high saltmarsh habitat in Cameron Parish in southwest Louisiana. The site was previously used for cattle ranching during the winter months, but such activity has since stopped. In January 2022, a prescribed fire occurred within the wetland area. The high marsh is infrequently flooded, and rain is one of the major sources of inundation (Enwright *et al.* 2023a, Enwright *et al.* 2023b). The dominant plant species were *Spartina spartinae* and *Spartina patens* with *Baccharis* spp., *Distichlis spicata*, *Iva frutescens*, and *Borrchia frutescens* dispersed throughout the site.

### Motion-activated Game Cameras

To determine the breeding status of Eastern Black Rail in Louisiana, we used 15 motion-activated game cameras (ten Stealth Cam STC-QS20, three Stealth Cam G42 No-Glo Trail Camera, and two Bushnell Prime L20 Low Glow Trail Camera). All game cameras relied on infrared

with little to no visible light, which limited disturbing Eastern Black Rails. In addition, only 3 game cameras were capable of recording audio.

We deployed motion-activated game cameras between 25 May and 7 July 2023. Eastern Black Rails were confirmed present at this site through co-occurring call-broadcast surveys conducted as part of a Gulf-wide research initiative (Stantial *et al.* 2023). Breeding was suspected as *ink*, *churt*, and *grr* calls were recorded. *Churt* and *grr* are both alarm calls likely used in territorial defense (Eddleman *et al.* 1994; Conway 2011). In contrast, *ink* is most often associated with nest defense (Reynard 1972; Eddleman *et al.* 1994; Conway 2011).

Based on the methodology outlined by Hand *et al.* (2019, 2021), motion-activated game cameras were mounted onto metal t-posts and placed 0–1 m from the ground in areas where Eastern Black Rails were frequently heard vocalizing. When deciding on specific camera trap locations, we only considered areas that were favorable for Eastern Black Rail use. Specifically, game cameras were placed underneath or within tunnels created by *Spartina spartinae* (Hand *et al.* 2019). *S. spartinae* is a dense high marsh grass that grows in clumps, forming tunnel-like pathways frequently used by Eastern Black Rails to move throughout the marsh. Because our objective was to document evidence of breeding, this biased approach to camera deployment was necessary as it increased the chances of observing adults and their broods (Hand *et al.* 2019; Hand *et al.* 2021).

Motion-activated game cameras were programmed to record 10 second videos with a 1-minute lag between trigger events. Game cameras that captured Eastern Black Rails were reprogrammed to record for 1-minute with a 5-second lag. By increasing recording time, we aimed to limit the potential of missing broods or behaviors of interest, such as courtship or copulation. The length of time game cameras remained deployed at a given location was dependent on whether an Eastern Black Rail was recorded or not. Generally, motion-activated game cameras were moved to a new area on a weekly basis and over the course of two days. Potential camera trap locations were scouted prior to redeployment and were marked by GPS. However, if an Eastern Black Rail was recorded on video during the first week of deployment, game cameras remained in the area for 2 weeks—or longer—depending on the frequency individuals were recorded. Following a 3-week period, 6 cameras were concentrated to a single area where a pair of Eastern Black Rails were frequently recorded with several videos containing *grr* and *churt* calls. SD cards were collected every 3 days, and all videos were reviewed manually.

The methods presented here are the result of an opportunistic and targeted approach to monitoring Eastern Black Rails using motion-activated game cameras. The co-occurring call-broadcast surveys were an additional benefit, which helped to narrow down camera trap locations to specific areas of interest. Any decisions made were the result of a monthslong effort that helped us achieve our goal of determining the breeding status of Eastern Black Rail in Louisiana.



Figure 1. Photo taken from video that shows an Eastern Black Rail (*Laterallus j. jamaicensis*) chick in the lower right-hand corner. The full video can be found in the appendix. This video was captured on private property in Cameron Parish, Louisiana on 26 June 2023.

## RESULTS

Between 3 June–5 July 2023, adult Eastern Black Rails were captured on video 13 times. The first adult, a presumed female based on the presence of white on the neck, was documented 3 June 2023 and then two more times on 10 June 2023. On the same day, and 11 minutes after the female was recorded, a presumed male based on the much darker neck was captured on a game camera that was 5–10 m away and north of the previous camera. This location, visually captured what is presumably the same two adults seven more times in addition to one audio recording. The video with audio captured a mouse that disturbs an adult offscreen. In response, the adult Eastern Black Rail can be heard *churting*.

The Eastern Black Rail chick was first documented on 26 June 2023. (Fig. 1, Fig. S1). In the video, an adult walked from behind the camera into the field of view and as the individual exited left, a chick appeared from the right. Based on the developmental stages outlined by Hand *et al.* (2021), the chick was 5–15 days old in the video recorded on 26

June. From this, it can be surmised that hatching likely occurred between 12–22 June 2023 thus placing nest initiation in mid-May. On 5 July 2023, 9 days after the previous recording, what could be the same chick was once again captured on the same camera (Fig. S2). This time, the chick was with two adults as they appeared to be foraging by pecking at the ground and/or grasses. Two audio recordings from this moment captured what appears to be the chick and at least one adult vocalizing (Fig. S2, Fig. S3). In the case of the adult, the call is reminiscent of the first two notes of the *kee-kee-do*. Both audio recordings are from a video recorded by a motion-activated game camera.

## DISCUSSION

We provide, for the first time, definitive evidence of Eastern Black Rail breeding in the state of Louisiana. On two separate occasions, and at the same location, we observed a single chick first with one adult, then later with two adults. In addition, audio from a third video captured an adult and chick vocalizing.



Prior to 2017, there were only 18 records of Black Rail in the state of Louisiana (Lowery 1955; Louisiana Ornithological Society 2022). In his assessment on Eastern Black Rail populations, Watts (2016) found only a single report that suggested Eastern Black Rail could breed in Louisiana. According to the record, a recently deceased Eastern Black Rail was found on 4 July 2010 in Vermilion Parish. The recent discovery of a small year-round population of Eastern Black Rail in Cameron Parish, located entirely on private lands, further strengthened the potential for Louisiana to support breeding populations (Johnson and Lehman 2021). The present study provides the first documented evidence of Eastern Black Rail breeding in Louisiana. Given the above information, however, it is possible Louisiana has supported breeding populations of Eastern Black Rail in the past. Though for how long, or how widely, remains unknown.

Southwestern Louisiana, which encompasses Cameron and Vermilion Parish, is a continuation of Texas' coastal prairie (Watts 2016). This is reflected in the plant community, which is dominated by the cordgrass *Spartina spartinae* (Todd 1977; Eddleman *et al.* 1994; Butler *et al.* 2015, Haverland 2019; Tolliver *et al.* 2019). In Texas, researchers found an Eastern Black Rail nest that was constructed entirely of *S. spartinae* (Haverland *et al.* 2021). Additional plant species included sea-ox-eye daisy (*Borrichia frutescens*), key grass (*Monanthochloe littoralis*), saltgrass (*Distichlis spicata*), Carolina wolfberry (*Lycium carolinianum*), glassworts (*Salicornia* spp.), and dodder (*Cuscuta* sp.) (Haverland *et al.* 2021). All these plants, except for dodder, were present in our study area. Similar to Haverland *et al.* (2021), we noted *S. spartinae* as being the dominate plant species near where the chick was recorded. In contrast, however, we found there to be a greater proportion of *Baccharis* spp. than sea-ox-eye daisy.

The life history of Eastern Black Rail remains relatively unknown, especially the Louisiana population. Prior to Johnson and Lehman's (2021) discovery, the only Gulf Coast states with known resident populations of Eastern Black Rail were Texas and Florida (Watts 2016). The findings of this

study, combined with Johnson and Lehman's (2021), The findings of this study, combined with Johnson and Lehman's (2021), expand the winter and breeding range of Eastern Black Rail along the Gulf of Mexico coast. Unfortunately, as high marsh habitat is lost and degraded through major land-use changes (U.S. Fish and Wildlife Service 2019; Atlantic Coast Joint Venture 2020), the continued existence of Eastern Black Rail remains threatened. In Louisiana, much of the Eastern Black Rail breeding habitat is not located on federal or other protected lands (Stevens and Conway 2021). Given this, we must work towards the protection, restoration, and management of Louisiana's wetlands so that we may aid in the conservation and recovery of this elusive and federally threatened marsh bird.

#### ACKNOWLEDGMENTS

This paper is a result of research funded by the National Oceanic and Atmospheric Administration's RESTORE Science Program under award NA19NOS4510195 to Mississippi State University. We are thankful and appreciative of the private landowner for allowing us to work on their property. Thank you to K. Autin, your assistance and dedication to fieldwork (despite the heat and bugs) made this work possible, and T. Sevilla, your communication and survey efforts with Audubon Delta were an invaluable asset to the project. We thank C. Hand for her support in aging the chick and taking the time to answer the many camera trapping questions we had, and C. Kross, M. Ward, and J. Matthews for their feedback and guidance.

#### LITERATURE CITED

- Allan, J. 1900. The Little Black Rail. *Auk* 1: 1–8.
- Atlantic Coast Joint Venture. 2020. Salt Marsh Bird Conservation Plan. Atlantic Coast Joint Venture. [https://www.acjv.org/documents/salt\\_marsh\\_bird\\_plan\\_final\\_web.pdf](https://www.acjv.org/documents/salt_marsh_bird_plan_final_web.pdf).
- Battaglia, L., M. S. Woodrey, M. S., Peterson and K. Dillon. 2012. Wetland Ecosystems of the Northern Gulf Coast. Pages 75–88 in *Wetland Habitats of North America: Ecology and Conservation Concerns*. (D. Batzer & A. Baldwin, Eds.). University of California Press, Berkeley, California, U.S.A.
- Butler, C. J., J. B. Tibbits and J. Wilson. 2015. Assessing Black Rail occupancy and vocalizations along the Texas Gulf Coast. Unpublished report, University of Central Oklahoma, Edmond, Oklahoma, U.S.A.
- Conway, C. J. 2011. Standardized North American marsh bird monitoring protocol. *Waterbirds* 34: 319–346. doi:10.1675/063.034.0307

- Eddleman, W. R., R. E. Flores and M. Legare. 1994. Black Rail (*Laterallus jamaicensis*). V. 2.0. in The Birds of North America (A. F. Poole and F. B. Gill, Eds.). Cornell Lab of Ornithology, Ithaca, New York, U.S.A.
- Enwright, N. M., W. C. Cheney, K. O. Evans, H. R. Thurman, M. S. Woodrey, A. M. V. Fournier, Bauer A. J. Cox, S. Goehring, H. Hill, J. Hondrick, P. Kappes, H. Levy, J. Moon, J. A. Nyman, J. Pitchford, D. Storey, M. Sukiennik and J. Wilson. 2023a. Mapping irregularly flooded wetlands, high marsh, and salt pannes/flats along the northern Gulf of Mexico coast (ver. 2.0, June 2023) [dataset]. U.S. Geological Survey. doi:10.5066/P9MLO26U.
- Enwright, N. M., W. C. Cheney, K. O. Evans, H. R. Thurman, M. S. Woodrey, A. M. V. Fournier, D. B. Gesch, J. L. Pitchford, J. M. Stoker and S. C. Medeiros. 2023b. Elevation-based probabilistic mapping of irregularly flooded wetlands along the northern Gulf of Mexico coast. Remote Sensing of Environment 287:113451. doi:10.1016/j.rse.2023.113451
- Hands, H. M., R. D. Drobney, and M. R. Ryan. 1989. Status of the Black Rail in the northcentral United States. U.S. Fish and Wildlife Service, Twin Cities, Maine, U.S.A.
- Hand, C. E., E. Znidersic and A. K. Tegeler. 2019. First documentation of Eastern Black Rails (*Laterallus jamaicensis jamaicensis*) breeding in South Carolina, USA in more than a century. Waterbirds 42: 237–241. doi:10.1675/063.042.0212
- Hand, C. E., W. Gabel, G. R. Dipetto, R. E. Bonafilia, J. M. Thibault and E. Znidersic. 2021. A window into the breeding ecology and molt of the Eastern Black Rail (*Laterallus jamaicensis jamaicensis*). Waterbirds 44: 207–221. doi:10.1675/063.044.0208
- Harlow, R. C. 1913. Nesting of the Black Rail (*Crexiscus jamaicensis*) in New Jersey. Auk 30: 269. doi:10.2307/4071557
- Hargett, E. 2024. Habitat associations and abundance of Eastern Black Rails in Southeastern Colorado. M.S. Thesis, University of Illinois at Urbana-Champaign, Urbana-Champaign, Illinois, U.S.A
- Haverland, A. A. 2019. Determining the status and distribution of the Eastern Black Rail (*Laterallus jamaicensis*) in coastal Texas. Ph.D. Dissertation, Texas State University, San Marcos, Texas, U.S.A.
- Haverland, A. A., M. C. Green, F. Weckerly, F. and J. K. Wilson. 2021. Eastern Black Rail (*Laterallus jamaicensis jamaicensis*) Home range and habitat use in late winter and early breeding season in Coastal Texas, USA. Waterbirds 44(2). doi:10.1675/063.044.0209
- Johnson, E. I. and J. Lehman. 2021. Status and habitat relationships of the Black Rail (*Laterallus jamaicensis*) in coastal Louisiana. Waterbirds 44: 234–244. doi:10.1675/063.044.0210
- Kane, S. A. 2011. Breeding habitat structure and use by Kansas-occurring Black Rail. M.S. Thesis, Fort Hays State University, Hays, Kansas, U.S.A.
- Legare, M. L. and W. R. Eddleman. 2001. Home range size, nest-site selection and nesting success of Black Rails in Florida. Journal of Field Ornithology 72: 170–177. doi:10.1648/0273-8570-72.1.170
- Louisiana Ornithological Society. 2022. Black Rail (*Laterallus jamaicensis*). Louisiana Birds Record Committee, Louisiana Ornithological Society. <http://losbird.org/lbrc/rblra.html>, accessed 27 January 2023.
- Lowery, G. H. 1955. Louisiana Birds, 1st Edition. Louisiana State University Press, Baton Rouge, Louisiana, U.S.A.
- Post, W. and F. Enders. 1969. Reappearance of the Black Rail on Long Island. Kingbird 19: 189–191.
- Roach, N. S. and K. Barrett. 2015. Managed habitats increase occupancy of Black Rails (*Laterallus jamaicensis*) and may buffer impacts from sea level rise. Wetlands 35: 1065–1076. doi:10.1007/s13157-015-0695-6
- Reynard, G. B. 1972. Vocalizations of the female Black Rail. Cassinia 53: 24–26.
- Stantial, M. L., A. J. Lawson, A. M. V. Fournier, P. J. Kappes, C. S. Kross, M. C. Runge, M. S. Woodrey and J. E. Lyons. 2023. Qualitative value of information provides a transparent and repeatable method for identifying critical uncertainty. Ecological Applications 33(4), e2824 doi:10.1002/esp.2824
- Stone, W. 1900. Breeding of the Little Black Rail (*Porzana jamaicensis*) in New Jersey in 1844 and 1845. Auk 17: 172–172. doi:10.2307/4069168
- Stuart, G. H. 1920. Nesting of the Little Black Rail in Atlantic County, NJ. Auk 37: 292–293.
- Todd, R. L. 1977. Black Rail, Little Black Rail, Black Crake, Farallon Rail (*Laterallus jamaicensis*). Pages 71–83 in Management of Migratory Shore and Upland Game Birds in North America (G. C. Sanderson, Ed.) International Association of Fish and Wildlife Agencies, Washington, D.C., U.S.A.
- Tolliver, J. D., A. A. Moore, M. C. Green and F. W. Weckerly. 2019. Coastal Texas Black Rail population states and survey effort. Journal of Wildlife Management 83: 312–324. doi:10.1002/jwmg.21589
- Stevens, B. S. and C. J. Conway. 2021. Mapping habitat quality and threats for Eastern Black Rails (*Laterallus jamaicensis jamaicensis*). Waterbirds 44: 245–456. doi:10.1675/063.044.0211
- U.S. Fish and Wildlife Service. 2019. Species status assessment report for the Eastern Black Rail (*Laterallus jamaicensis jamaicensis*), Version 1.3. U.S. Department of the Interior, Fish and Wildlife Service, Atlanta, Georgia, U.S.A.
- U.S. Fish and Wildlife Service. 2020. Endangered and Threatened Wildlife and Plants; Threatened Species Status for Eastern Black Rail with a Section 4(d) Rule. Docket No. FWS-R4-ES-2018-0057. South Carolina Ecological Services Field Office, U.S. Department of the Interior, Fish and Wildlife Service, Charleston, South Carolina, U.S.A.
- Watts, B. D. 2016. Status and distribution of the Eastern Black Rail along the Atlantic and Gulf Coasts of North America. The Center for Conservation Biology Technical Report Series CCBTR-16-09. College of William and Mary/Virginia Commonwealth University, Williamsburg, Virginia, U.S.A.
- Znidersic, E. 2017. Camera traps are an effective tool for monitoring Lewin's Rail (*Lewinia pectoralis brachipus*). Waterbirds 40: 417–422. doi:10.1675/063.040.0414