ANARTIA

Publicación del Museo de Biología de la Universidad del Zulia
ISSN 1315-642X (impresa) / ISSN 2665-0347 (digital)

Anartia, 30 (junio 2020): 67-71

Extending the breeding range: Killdeer nesting in coastal northern South America

Ampliando el rango reproductivo: anidación del playero gritón en la costa norte de Suramérica

Francisco J. Contreras[1], Vanessa G. Salas[2], Juan C. Fernández-Ordóñez[3] & Adrián Naveda-Rodríguez[4]

[1]*Programa de Ciencias Ambientales, Universidad Nacional Experimental Francisco de Miranda (UNEFM), Santa Ana de Coro, estado Falcón, Venezuela.*

[2]*Centro de Investigaciones en Ecología y Zonas Áridas, Universidad Nacional Experimental Francisco de Miranda (UNEFM), Santa Ana de Coro, estado Falcón, Venezuela.*

[3]*Fundación Científica ARA MACAO. Apartado 94, 2201 San Carlos, estado Cojedes, Venezuela.*

[4]*Department of Wildlife, Fisheries and Aquaculture, Mississippi State University, Mississippi State, MS 39762, USA.*

Correspondence: F. Contreras: geogfranciscocontreras@gmail.com

(Received: 17-06-2020 / Accepted: 09-07-2020 / On line: 31-07-2020)

ABSTRACT

We provide the first evidence of Killdeer (*Charadrius vociferus*) as a resident species in coastal Northern South America. Our observations correspond to 17 sightings and one breeding record of Killdeer in the non-breeding range of northwestern Venezuela during the breeding seasons of 2019 and 2020.

Keywords: *Charadrius vociferus*, Falcon state, non-breeding range, Venezuela, wintering ground.

RESUMEN

Se muestra la primera evidencia del playero gritón (*Charadrius vociferus*) como una especie residente en la costa norte de Suramérica. Nuestras observaciones se basan en 17 avistamientos y un registro reproductivo en el noreste de Venezuela durante la temporada de anidación 2019 y 2020, el cual se encuentra fuera del área de anidación conocida previamente para la especie.

Palabras clave: áreas de invernada, *Charadrius vociferus*, distribución no-reproductiva, estado Falcón, Venezuela.

The Killdeer (*Charadrius vociferus* Linnaeus, 1758), a least concern plover of the family Charadriidae, has a disjunct distribution in the Americas with three recognized subspecies (Jackson & Jackson 2020). *C. vociferus vociferus* is a partial migrant distributed in North America (breeding range) and northern South America and the Caribbean (non-breeding range), whereas *C. vociferus peruvianus* and *C. vociferus ternominatus* are residents in western South America (Ecuador, Peru and northwestern Chile), and the Greater Antilles, respectively (Restall *et al.* 2006, Conklin 2019, Schulenberg *et al.* 2019). Although the distribution of Killdeer subspecies is apparently well defined, molecular analyses suggest that this species was more abundant and widely distributed before the glacial period than today (Küpper & dos Remedios 2019).

The nominal subspecies is considered rare and vagrant in northern South America, particularly in Trinidad & Tobago, and Venezuela (Hilty 2003, Restall *et al.* 2006, Kenefick *et al.* 2019). Between 1945 and 2018 there have been 12 occurrence records in nine localities of four coastal

and one Andean states of Venezuela, all but one occurring during the boreal winter months (Fig. 1, Table 1; Friedman & Smith 1950, Hilty 2003, eBird 2020). This species is considered a partial migrant (Conklin 2019); therefore, it is not unusual recording it during the breeding season (March to September, Jackson & Jackson 2020) in northern South America non-breeding grounds as observed in Colombia and Morrocoy National Park in Venezuela (eBird 2020). Here, we report 17 sightings and one breeding record of Killdeer in northwestern Venezuela during the breeding seasons of 2019 and 2020.

Between April 2019 and June 2020, we conducted monthly ornithological surveys in a 1-km transect located in Sabana Larga, Colina County, Falcón State, Venezuela (11°26' N, 69°35' W, 10 m asl). Land cover in our transect corresponds to a matrix of urban and highly disturbed xeric vegetation with temporary ponds of wastewater. On April 4, 2019 we photographed one adult Killdeer (Fig. 2A) that was foraging and performing short distance flights; subsequently, between May 2019 and March 2020 we recorded up to three adults simultaneously with the same behavior. In April and May 2020 two adults were observed performing distraction displays. On June 6 and 12, 2020 we observed five individuals (two adults, three juveniles, Fig. 2B-C), and we found an unhatched egg that was still protected by the distraction displays of the adults (Fig. 2D). The egg was laid on bare sandy soil, close (*ca.* 20 cm) to a shoreline purslane (*Sesuvium portulacastrum* L.). Birds, egg and distraction displays were consistent with previous descriptions for this species (Gochfeld 1984, Restall *et al.* 2006, Marchant *et al.* 2010, Chávez-Villavicencio *et al.* 2015).

Our monthly records, gathered for more than one year, constitute the first evidence of Killdeer as a resident species in Venezuela, and the second nesting record known for the species in northern South America. The Killdeer nest in Venezuela was located *ca*. 132 km SSE from a breeding pair in Bubali, Noord, Aruba (Prins *et al*. 2009), and *ca*. 860 km NE from a successful nest located at 2500 m. above sea level in Cundinamarca, Colombia (Castro-Vargas *et al*. 2019). Whether these nesting records belong to any of the three recognized subspecies remains unknown. In either case, these findings suggest that this species could be extending its breeding range (Küpper & dos Remedios 2019).

The reasons for extending the breeding range or returning to a former range cannot be answered on the basis of three records. However, we speculate that climate change, resource availability, and/or competition could be influencing the decision of some individuals to remain on their previous non-breeding grounds throughout the year. Killdeer population density seems to be regulated by space competition and resource stability during the breeding season (Jackson & Jackson 2020). Finding areas with no

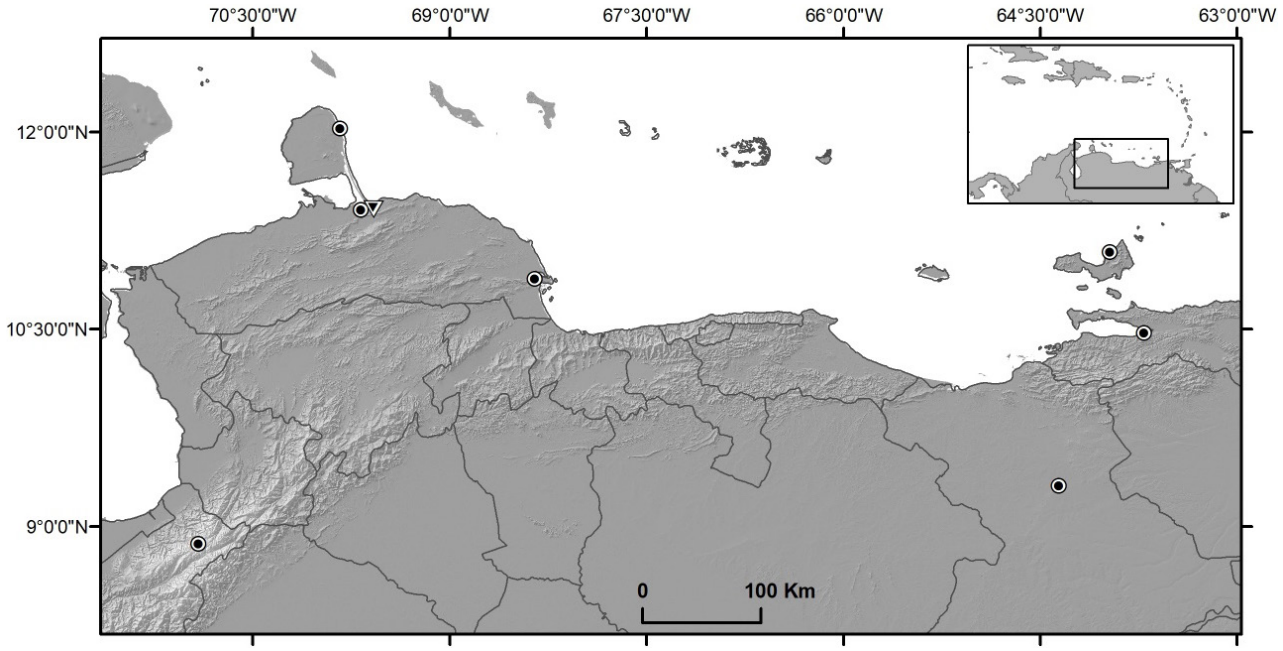

Figure 1. Occurrence records of Killdeer (*Charadrius vociferus*) in Venezuela. Black circles correspond to 12 records during the boreal winters of 1949-2019. Black triangle corresponds to 17 monthly records during the breeding and nonbreeding seasons of 2019 and 2020 and which are described here.

Table 1. Historical and contemporary occurrence records of Killdeer (*Charadrius vociferus*) in Venezuela.

Locality	Date	Observation	Reference
Cantaura, Anzoátegui	January 1949	1 individual	Friedman & Smith (1950)
Chichiriviche, Falcón	2 February 1989	1 individual	eBird (2020)
	30 December 2001	1 individual	
	26 November 2003	1 individual	
Coro, Falcón	17 March 1981	2 individual	Hilty (2003)
Cotúa, Sucre	27 November 1945	1 individual	Hilty (2003)
El Supí, Falcón	26 February 2010	1 individual	eBird (2020)
Juan Griego, Nueva Esparta	26 December 2019	1 individual	eBird (2020)
Los Tanquecitos, Falcón	13 February 1980	1 individual	Hilty (2003)
Morrocoy National Park, Falcón	31 August 2000	1 individual	eBird (2020)
	15 October 2011	1 individual	
Páramo de Mucuchíes, Mérida	11 November 1949	1 individual	Hilty (2003)
Sabana Larga, Falcón	4 April 2019	1 adult	This study
	5 May 2019	2 adults	
	6 June 2019	2 adults	
	6 July 2019	2 adults	
	7 August 2019	3 adults	
	6 September 2019	3 adults	
	5 October 2019	3 adults	
	9 November 2019	2 adults	
	23 November 2019	3 adults	
	5 December 2019	2 adults	
	2 January 2020	3 adults	
	5 February 2020	3 adults	
	5 March 2020	3 adults	
	12 April 2020	2 adults	
	9 May 2020	2 adults	
	17 May 2020	2 adults	
	9 June 2020	2 adults, 3 juveniles, 1 egg	

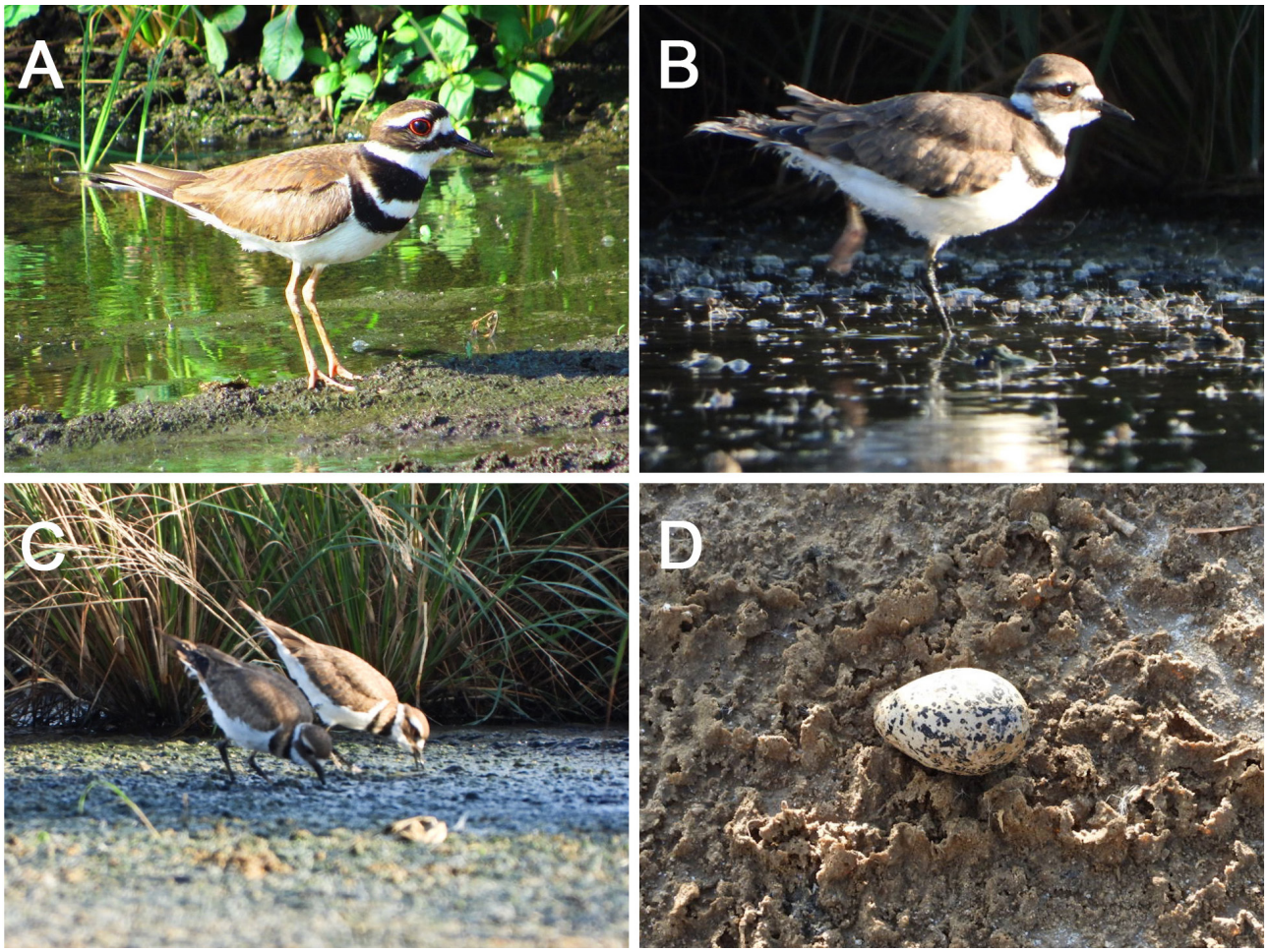

Figure 2. Photographic evidence of adult, juveniles and eggs of Killdeer during the breeding season of 2019 and 2020 in northwestern Venezuela. Picture A: adult recorded on April 4, 2019. Pictures B to D: juveniles and egg recorded on June 9, 2020.

intraspecific competition and year-round stable weather and food resources, such as northern South America, could explain why some individuals from a migrant population are not returning to their former breeding grounds.

Killdeers and their distraction displays during breeding are conspicuous; thus, it is unlikely that this species had gone undetected as a breeder in Venezuela. As suggested by Nol (2019), "Plover researchers are encouraged to always report the stage of the annual cycle of their study period, especially in studies reporting distributions of partial migrants or sedentary species." We extend this recommendation to birdwatchers whose observations of species natural history reported in their lists are highly valuable to our understanding of bird biology.

ACKNOWLEDGEMENTS

We thank Rómulo García for his assistance during field surveys. We are also grateful to two anonymous referees for helpful assistance revising an early version of this report.

REFERENCES

Castro-Vargas, L. F., D. Ortega & Y. Cruz. 2019. *Birds of Ecoparque Sabana – Parque Jaime Duque. Tocancipá, Cundinamarca, Colombia. Field Museum Field Guide 1111*. URL: https://fieldguides.fieldmuseum.org/sites/default/files/rapid-color-guides-pdfs/1111_colombia_birds_of_ecoparque_sabana.pdf

Chávez-Villavicencio, C., C. Zöckler, E. Tabilo & J. Burmeister. 2015. Registro de actividad reproductiva de *Charadrius vociferus* (Linnaeus, 1758, Chorlo Gritón) en el humedal de Paraíso, Huacho. The Biologist 13(2): 443–445.

Conklin, J. R. 2019. Evolutionary and ecological flexibility in migration of *Charadrius* Plovers. pp. 149–182. *In*: Colwell, M. A. & S. M.Haig (eds.). *The population ecology and conservation of* Charadrius *Plovers. Studies in Avian Biology* 52. Boca Raton, FL: CRC Press.

eBird. 2020. eBird: *An online database of bird distribution and abundance*. Audubon and Cornell Lab of Ornithology, Ithaca, USA. URL: http://www.ebird.org. (accessed on June 2020).

Friedman, H. & F. D. Smith. 1950. A contribution to the ornithology of northeastern Venezuela. *Proceedings of the U.S. Nature Museum* 100: 411–538.

Gochfeld, M. 1984. Antipredator behavior: aggressive and distraction displays of shorebirds. pp. 289–377. *In*: Burger, J. & B. L. Olla (eds.). *Behavior of marine animals*. Vol. 5. New York: Plenum Press.

Hilty, S. L. 2003. *Birds of Venezuela*. Princeton, NJ: Princeton University Press, 776 pp. + 67 pls.

Jackson, B. J. & J. A. Jackson. 2020. Killdeer (*Charadrius vociferus*), version 1.0. *In*: Poole, A. F. & F. B. Gill (eds.). *Birds of the World*. Ithaca, NY: Cornell Lab of Ornithology. URL: https://doi.org/10.2173/bow.killde.01

Kenefick, M., R. Restall & F. Hayes. 2019. *Birds of Trinidad & Tobago*. 3rd ed. Helm Field Guides. London: Bloomsbury Publishing Plc., 272 pp. + 115 color pls.

Küpper, C. & N. dos Remedios. 2019. Defining species and populations. pp. 17–43. *In*: Colwell. M. A. & S. M. Haig (eds.). *The population ecology and conservation of* Charadrius Plovers. *Studies in Avian Biology* 52. Boca Raton, FL: CRC Press.

Marchant, J., P. Hayman & T. Prater. 2010. *Shorebirds*. Helm Identification Guides. London: Bloomsbury Publishing, 352 pp.

Nol, E. 2019. Nonbreeding ecology. pp. 185–215. *In*: Colwell, M. A. & S. M. Haig (eds.). *The population ecology and conservation of* Charadrius *Plovers. Studies in Avian Biology* 52. Boca Raton, FL: CRC Press.

Prins, T. G., J. H. Reuter, A. O. Debrot, J. Wattel & V. Nijman. 2009. Checklist of the birds of Aruba, Curaçao and Bonaire, South Caribbean. *Ardea* 97(2): 137–268.

Restall, R., C. Rodner & M. Lentino. 2006. *Birds of Northern South America*. Vol. 2: An Identification Guide. London: Christopher Helm, 656 pp.

Schulenberg, T. S., M. J. Iliff, S. M. Billerman, B. L. Sullivan, C. L. Wood & T. A. Fredericks. 2019. *The Clements checklist of birds of the World, 2019 Update*. Document on line. URL: https://www.birds.cornell.edu/ (accessed on June 2019).