



# First records of *Calidris canutus* Linnaeus, 1758 (Charadriiformes, Scolopacidae) and *Trogon surrucura* Vieillot, 1817 (Trogoniformes, Trogonidae) for Entre Ríos province (Argentina), and noteworthy reports of other birds in protected areas

Juan A. Sarquis,<sup>1</sup> Julián Alonso,<sup>2</sup> Alejandro R. Giraudo,<sup>1,3</sup> Alfredo Berduc<sup>4</sup>

**1** Instituto Nacional de Limnología (CONICET, UNL), Ciudad Universitaria, Pje. el Pozo s/n, 3000, Santa Fe, Argentina. **2** Administración Parques Nacionales (APN), Parque Nacional Pre Delta e Islas de Santa Fe, Diamante, Entre Ríos, Argentina. **3** Universidad Nacional del Litoral, Facultad de Humanidades y Ciencias, Ciudad Universitaria, Pje. el Pozo s/n, 3000, Santa Fe, Argentina. **4** Reserva Provincial de Uso Múltiple “Parque Escolar Rural Enrique Berduc”, Ruta Nacional Núm. 12, km 23½, 3118, La Picada, Entre Ríos, Argentina.

**Corresponding author:** Juan A. Sarquis, [juanres.sarquis@gmail.com](mailto:juanres.sarquis@gmail.com)

## Abstract

We recorded 2 new bird species in Entre Ríos province, Argentina: *Calidris canutus* (Linnaeus, 1758) and *Trogon surrucura* Vieillot, 1817. In addition, we present 25 noteworthy records for bird species in El Palmar National Park, Pre Delta National Park, and other parts of the province.

## Key words

Protected areas; Mesopotamic Region; range extension; new bird records; conservation.

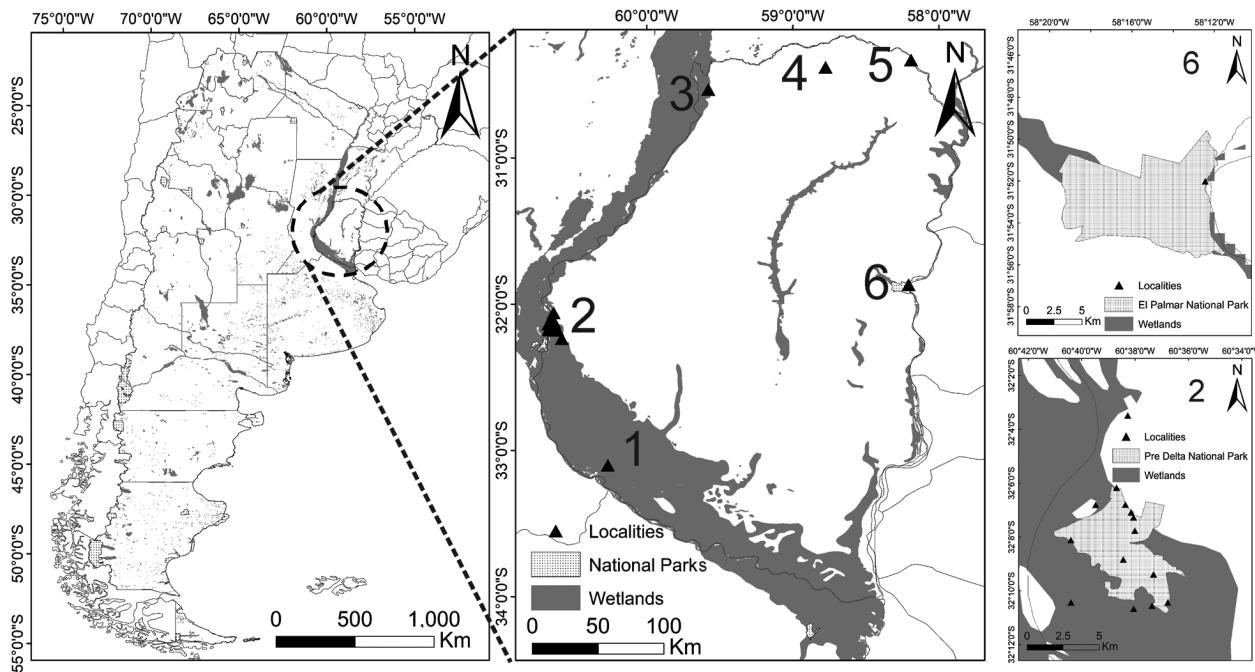
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## Introduction

In Entre Ríos province, Argentina, the advance of the agricultural frontier and increasing urbanization have left few remaining natural habitats, with varying degrees of modification (Brown et al. 2006). Protected areas (PAs) play an important role in maintaining regional biodiversity (Arzamendia and Giraudo 2004). In this context, it is important to establish PAs using scientific criteria based on gradients in species richness, ecosystem representativeness, areas of endemism, and biodiversity hotspots (Richardson and Whittaker 2010, Arzamendia and Giraudo 2012). Several works have been published on the birds of Entre Ríos (e.g. Freiberg 1943, Beltzer

1980, Salvador et al. 1985, Abadie 1988, 1993, Camperi 1992, De la Peña 1996, 1997, 2012, Beltzer et al. 2006). Additionally, lists of bird species have been published for the 2 national parks (NP) in the province: Pre Delta NP (Alonso 2008) and El Palmar NP (Marateo et al. 2009). These inventories, however, were made with limited territorial and methodological planning, as is the case for most of the Neotropical region (Bini et al. 2006). As a result, inventories of bird species in Entre Ríos and PAs within the province are still incomplete. Consequently, taxonomic and biogeographic studies continue to present changes in the composition and distribution of the avifauna of Entre Ríos (e.g. Areta et al. 2004, Bodrati



**Figure 1.** Study area showing localities with records of species (black triangles): (1) Records of *D. autumnalis* and *D. oryzivorus* in Irupé Island, Victoria department; (2) Records of *D. autumnalis*, *S. melanotos*, *A. bahamensis*, *C. major*, *A. nigricollis*, *A. cajaneus*, *P. maculatus*, *F. armillata*, *P. dominica*, *C. modestus*, *N. semicollaris*, *I. plumbea*, *P. unicinctus*, *C. trochilirostris*, *S. maluroides*, *P. sclateri*, *T. rubrigastra*, *C. platensis*, *P. bonariensis*, *C. speciosum*, *S. ruficollis*, *S. palustris* and the new species for Entre Ríos *Trogon surrucura* in Pre Delta National Park, Diamante department; (3) Records of *S. griseicapillus*, *C. speciosum* and *S. leucoptera* in Curuzú Chalí Island, littoral of the Paraná River, La Paz department; (4) Records of *D. autumnalis* in San José de Feliciano, Guayquiraró River, Feliciano department; (5) Records of *S. maluroides* in camping of the Tunas Stream, Feliciano department; and (6) Records of a new species for Entre Ríos *Calidris canutus* in El Palmar National Park, Colón department.

and Sierra 2008, Aves Argentinas 2009, Alvarado and La Grotteria 2011, Passafaro 2012, Fernández Guaraz 2013, Cantador 2014, Reales et al. 2015). In fact, the total number of bird species present in the province is not yet known. Decisions on biodiversity conservation must be made considering the distribution of species (Brooks et al. 2006). Therefore, as part of a continuous effort and in the framework of a project that aims to assess the effectiveness of PAs for bird conservation, we present records of 2 new bird species for Entre Ríos province and noteworthy records of other birds, mainly in PAs.

## Methods

The Entre Ríos province has an area of 78.781 km<sup>2</sup> and its extreme points are: -30.1547, -58.6539 to the north; -34.041944, -58.6367 to the south; -31.9928, -60.7225 to the east, and -30.9331, -57.8086 to the west (Fig. 1; datum WGS84). It is limited to the north by the Guayquiraró River, the Basualdo Creek, the Mocoretá River, and the Las Tunas Stream, to the south and west by the Paraná River, and to the east by the Uruguay River (Beltzer et al. 2006). Entre Ríos encompasses 3 biogeographical provinces: Paranaense (dominated by subtropical forest and riparian forest), Espinal (savannas, grasslands, temperate dry forests, and shrublands) and Pampean (mostly grasslands) (Cabrera 1976).

Data was recorded at different times and locations in the last 25 years (from 1991 to 2015) and collected in the national parks and gap areas as part of a project to

define priority areas for the conservation of birds in Entre Ríos (Table 1). The goal was to produce an inventory of the avifauna of the province, focusing on threatened and poorly known birds. We reviewed the data from different lists (Freiberg 1943, Beltzer 1980, Salvador et al. 1985, Abadie 1988, 1993, Camperi 1992, De la Peña 1996, 1997, 2012, Beltzer et al. 2006, Alonso 2008, Marateo et al. 2009) to determine which species were not recorded previously in PAs. The taxonomy and nomenclature of the birds in the study follows the classification of the South American Checklist Committee (Remsen et al. 2017).

## Results

### New records (Fig. 1).

***Calidris canutus*** (Linnaeus, 1758). Argentina, Entre Ríos, Colón, El Palmar National Park, on the sand banks of the littoral of the Uruguay River (-31.8670, -58.2075), recorded by Alejandro Giraudo, on 15 October 1991, photographed 1 individual (Figs 2–6).

***Trogon surrucura*** Vieillot, 1817. Argentina, Entre Ríos, Diamante, Pre Delta National Park, in the visitation area of the park (-32.1028, -60.6447), recorded by Julian Alonso, on 19–20 October, photographed 1 adult male (Figs 7–8).

**Identification.** Birds were recorded visually or aurally, with the assistance of binoculars, tape recorders, and cameras (whenever possible). We identified species using field guides and taxonomic keys (Olrog 1959, 1968,

**Table 1.** List of 25 noteworthy bird species observed in different localities of Entre Ríos, including the nearest locality in Entre Ríos province with a record of the species.

Family/species	Locality	Date	Evidence and brief diagnosis*	Coordinates	Nearest locality
<b>Anatidae</b>					
* <i>Dendrocygna autumnalis</i> (Linnaeus, 1758)	A) Las Palometas Stream, PDNP. B) Irupé Lagoon, PDNP. C) Las Piedras Lagoon, PDNP. D) San José de Feliciano.	A) 10-X-2009 B) 25-X-2009, 8-XI-2009 C) 9-XI-2010 D) 10-XI-2015	A) Eight individuals observed. B) One individual observed with D. viduata; 14 individuals observed. C) One pair observed. D) Four individuals observed. Identified by: White wing band; black rump and belly. 10 individuals observed in flight. Identified by: Head and neck white, speckled with black; black upperparts and caruncle; white underparts. A + B) One pair observed. Identified by: White face and throat, bill with red base.	A) -32.1739, -60.6129 B) -32.1181, -60.6379 C) -32.1740, -60.6131 D) -30.3591, -58.7728	A + B + C) Ceibas, Islas del Ibicuy, Entre Ríos, 257 km from PDNP (De la Peña 2012). D) New record for San José de Feliciano, Entre Ríos. Paso Telégrafo, La Paz, 90 km from San José de Feliciano (De la Peña 2012).
* <i>Sarkidiomis melanotos</i> (Hering & Herring, 1907)	Lagunas trail, Diamante.	19-IV-2011	10 individuals observed in flight. Identified by: Head and neck white, speckled with black; black upperparts and caruncle; white underparts. A + B) One pair observed. Identified by: White face and throat, bill with red base.	-32.1181, -60.6358	Anegadizo de Paraná, Entre Ríos, 45 km from Lagunas trail (specimen in Museo de Ciencias Naturales y Antropológicas "Profesor Antonio Serrano", N° MAS-Or 891).
* <i>Anas bahamensis</i> Linnaeus, 1758	A) Las Piedras Lake, PDNP? B) Irupé Lake, PDNP?	A) VIII-2009 B) 8-IX-2009		A) -32.1740, -60.6131 B) -32.1134, -60.6579	Las Cuevas, Diamante, Entre Ríos, 35 km from the new localities (De la Peña 2012).
<b>Cuculidae</b>					
* <i>Crotophaga major</i> Gmelin, 1788	Las Palometas Stream, PDNP.	17-II-2014	One individual observed. Identified by: Bluer than <i>Crotophaga ani</i> ; very long violaceous tail; olivaceous-white iris.	-32.1739, -60.6129	Colón, Entre Ríos, 290 km from Las Palometas Stream, PDNP (Millet et al. 1985).
<b>Trochilidae</b>					
* <i>Anthracothorax nigricollis</i> (Vieillot, 1817)	Las Palometas Stream, PDNP.	23-III-2012	One female observed. Identified by: White underparts with longitudinal black band; tail less purple than the male and with small white tip.	-32.1739, -60.6129	Islas del Ibicuy, Entre Ríos, 250 km from Las Palometas Stream, PDNP (Areeta et al. 2004).
<b>Aramidae</b>					
* <i>Aramides cajaneus</i> (Statius Muller, 1776)	Colonia de Salud Mental, Diamante.	7-IX-2007	Observed and heard. Identified by: Smaller, with breast more rufous than <i>Aramides ypecaha</i> ; head and neck gray.	-32.0581, -60.6379	Parque Escolar Enrique Berduc, La Picada, Entre Ríos, 65 km from Colonia Salud Mental, Diamante (Mancini 2011).
<b>Rallidae</b>					
* <i>Pardirallus maculatus</i> (Boddart, 1783)	A) Curutú Stream, PDNP. B) Irupé Lagoon, PDNP C) Las Palometas Stream, PDNP.	A) 20-IV-2008 B) VI-2008 C) 20-11-2010	A) Observed nesting. B + C) Observed. Identified by: Blackish underparts, streaked and barred white; pale bill with red basal spot. One individual observed. Identified by: Yellow bill and frontal shield separated by red spot; red garter on thighs.	A) -32.1295, -60.6335 B) -32.1134, -60.6579 C) -32.1739, -60.6129	Paraná, Entre Ríos, 45 km from Irupé Lagoon, PDNP (specimen in Museo de Ciencias Naturales y Antropológicas "Profesor Antonio Serrano", N° MAS-Or 4588).
* <i>Fulica armillata</i> Vieillot, 1817	Irupé Lagoon, PDNP.	23-VI-2008	-32.1134, -60.6579	Paraná, Entre Ríos, 45 km from Irupé Lagoon, PDNP (specimen in Museo de Ciencias Naturales y Antropológicas "Profesor Antonio Serrano", N° MAS-Or 4588).	
<b>Charadriidae</b>					
* <i>Pluvialis dominica</i> (Müller, 1776)	El Várillal Lagoon, PDNP.	17-X-2007	One pair observed. Identified by: White eyebrow; slight wingband; pectoral streaking; rest of underparts white. Two individuals observed. Identified by: Uniform brown upperparts and breast; conspicuous white eyebrow.	-32.1212, -60.6343	Parque Escolar Enrique Berduc, La Picada, Entre Ríos, 65 km from El Várillal Lagoon, PDNP (Mancini 2011).
* <i>Chandrius modestus</i> Lichtenstein, 1823	Totalal Lagoon, PDNP.	7-VII-2008	-32.1777, -60.6342	Ceibas, Islas del Ibicuy, Entre Ríos, 257 km from Totalal Lagoon, PDNP (De la Peña 2012).	
<b>Rstratulidae</b>					
* <i>Nyctiphrynus semicallians</i> (Vieillot, 1816)	A, B) Las Mangas Stream, PDNP. C) El Várillal Lagoon, PDNP. D) Curutú Stream, PDNP.	A) IX-2007 B) 12-X-2007 C) 25-VI-2008 D) During 2011	A + B + C) Observed D) Observed throughout the year; nest on the ground with 2 eggs attended by a pair on XI 2011. Identified by: white spots on wings; buffy "W" on back; long green bill with curved tip.	A, B) -32.1565, -60.6218 C) -32.1212, -60.6343 D) -32.1294, -60.6335	Paraná, Entre Ríos, 45 km from PDNP (specimen in Museo de Ciencias Naturales y Antropológicas "Profesor Antonio Serrano", N° MAS-Or 2443, collected in 1926).
<b>Accipitridae</b>					
* <i>(Cinclus) plumbea</i> (Gmelin, 1788)	Azotea Stream, PDNP.	4-II-2010	Flock observed in flight. Identified by: Gray; pale head; rufous primaries; tail black with two white bands.	-32.1028, -60.6449	El Palmer National Park, Entre Ríos, 267 km from Azotea Stream, PDNP (Marateo et al. 2009).

Table 1. Continued.

Family/species	Locality	Date	Evidence and brief diagnosis <sup>1</sup>	Coordinates	Nearest locality
* <i>Parabuteo unicinctus</i> (Temminck, 1824)	A) Seisos Stream, PDNP. B) Paraje La Jaula, PDNP.	2-VII-2008 and 25-X-2008 C) 27-X-2008; 16-VII-2009	A + B) Observed Identified by Rufous underwing coverts with a white stripe; rufous thighs; long tail black with a white tip and base.	A) -32.1565, -60.6218 B) -32.1181, -60.6358	Las Cuevas, Diamante, Entre Ríos, 35 km from the new localities (De la Peña 2012).
<b>Furnariidae</b>				-30.5307, -59.5788	† The southernmost record in Argentina. Malabriga Stream, Santa Fe, 150 km from Cunuzú Chali Island (De la Peña 2011).
<i>Sittacornis griseicapillus</i> (Temminck, 1821)	Curuzú Chali Island, littoral of the Paraná River, La Paz.	I-1-1997	Seen and heard.	A) -32.1181, -60.63578	Parque Escuela Rural Enrique Berduc, La Picada, Entre Ríos, 65 km from PDNP (Mancini 2011).
* <i>Campylorhynchus trochilirostris</i> Lichtenstein, 1823	A) Paraje La Jaula, PDNP. B) Sacacalzones Stream, PDNP. C) Tortugas Stream, PDNP.	A) XI- and XII-2008, 18-X-2009 B) X- and XI-2008 C) 6-IV-2009	A) Observed and photographed. B) Observed and heard. C) Observed.	B) -32.24334, -60.64419 C) -32.17594, -60.62282	
* <i>Spartonoica maluroides</i> (D'Orbigny & alfreney, 1837)	A) El Varillal Lagoon, PDNP. B) Sacacalzones Stream, PDNP. C) Tunas Stream, Feliciano.	A) 9-17-IV-2008 B) 13-V-2012 C) 14-XI-2015	A) Identified by Extremely long and thin, very curved reddish bill; rufous body. B) Observed and heard. C) Observed and heard.	A) -32.1212, -60.63429 B) -32.2433, -60.64419 C) -30.3306, -58.1935	A + B) Victoria Island, Entre Ríos, 70 km from PDNP (Di Giacomo et al. 2007). C) Sant'Elena, Entre Ríos, 180 km from PDNP (specimen in Museo Argentino de Ciencias Naturales N° 43496).
<b>Tyrannidae</b>				A) -32.1565, -60.6218	First record in Entre Ríos was in El Palmar National Park, 267 km from PDNP (Marateo et al. 2009).
* <i>Pseudocolopteryx sclateri</i> (Oustalet, 1892)	A) Seibo Stream, PDNP. B) El Varillal Lagoon, PDNP. C) Curití Stream, PDNP.	A) 24-I-2008 B) 9-IV-2008 C) IV-2008	A) One pair observed. B + C) Observed.	B) -32.1212, -60.6343 C) -32.1295, -60.6335	
* <i>Tachuris rubrigastra</i> (Vieillot, 1817)	A) Curutí Stream, PDNP. B) Curuy Lagoon, PDNP. C) El Varillal Lagoon, PDNP.	A) 17-VI-2008 B) 28-II-2011 C) 19-IV-2012	A) Identified by Erectile black crest streaked yellow; whitish eyebrow; conspicuous yellow edging to blackish coverts. B + C) Observed.	A) -32.1295, -60.6335 B) -32.1285, -60.6340 C) -32.1212, -60.6343	Paraná, Entre Ríos, 45 km from PDNP (specimen in Museo de Ciencias Naturales y Antropológicas "Profesor Antonio Serrano", N° MAS-Or 4311).
<b>Trochilidae</b>				-32.1212, -60.6343	El Palmar National Park, Entre Ríos, 267 km from El Varillal, PDNP (Marateo et al. 2009).
* <i>Cithaeron platensis</i> (Latham, 1790)	El Varillal Lagoon, PDNP.	30-X-2009	One individual observed. Identified by Black and whitish dorsal streaking; orange legs; cinnamon rump.		
<b>Thraupidae</b>					
* <i>Pineiroidea bonariensis</i> (Gmelin, 1789)	A) Entrance of the PDNP. B) Paraje La Jaula, Diamante.	A) 1-IV-2009; I-II- III-2010-2011 B) 19-IV-2009	A + B) Observed. Identified by Violaceous sky-blue hood; orange rump and breast.	A) -32.1133, -60.6394 B) -32.1181, -60.6358	Las Cuevas, Diamante, Entre Ríos, 35 km from PDNP (specimen in Museo de Ciencias Naturales y Antropológicas "Profesor Antonio Serrano", N° MAS-Or 1038).
<i>Coniostruth speciosum</i> (Temminck, 1824)	A) Island Curuzú Chali, littoral of the Paraná River, La Paz. B) Margin of the Tortugas Stream, PDNP.	A) I-II-1997 B) III-2008	A) Seen and heard. B) Lone male atop <i>Tessaria integrifolia</i> . Identified by Gray sky-blue back and rufous undertail coverts.	A) -30.5307, -59.5788 B) -32.1759, -60.6228	† The southernmost record in Entre Ríos province. Salto Grande Reservoir, Entre Ríos, 276 km from the Tortugas Stream, PDNP (Bonomi et al. 2017).
<i>Sporophila leucopétra</i> (Vieillot, 1817)	Curuzú Chali Island, littoral of the Paraná River, La Paz, Entre Ríos.	I-1-1997	Seen and heard. Identified by: White underparts; conspicuous white wingband; dark orange bill.	-30.5307, -59.5788	† The southernmost record. Romang, Santa Fe, 110 km from Curuzú Chali Island (De la Peña 1996).
* <i>Sporophila ruficollis</i> Cabanis, 1851	A) Seibo Stream, PDNP. B) Paraje La Jaula.	A) 24-II-2008 B) V-2008	A + B) Observed. Identified by: Ample black bib; rest of underparts and rump rufous.	A) -32.1565, -60.6218 B) -32.1181, -60.6358	Las Cuevas, Diamante, Entre Ríos, 35 km from the new localities (De la Peña 2012).
* <i>Sporophila palustris</i> Barrows, 1883	A) Entrance of the PDNP. B) Paraje La Jaula. C) Azotea Stream, PDNP.	A) IV-2012 B) V-2012 C) 10-X-2006	A + B + C) Observed. Identified by: Plumbeous back; ample white bib; rufous rump and underparts.	A) -32.1133, -60.6394 B) -32.1181, -60.6358 C) -32.1028, -60.6449	Las Cuevas, Diamante, Entre Ríos, 35 km from the new localities (De la Peña 2012).
<b>Icteridae</b>					
<i>Dolichonyx oryzivorus</i> (Linnaeus, 1758)	Irupé Island, Victoria, Entre Ríos.	I-2013	171 individuals observed. Identified by: Streaked upperparts and flanks; line on black crown, long eyebrow and underparts buffy.	-33.1562, -60.2991	Estancia la Catalina, Entre Ríos, 60 km from Irupé Island (Marino et al. 2013).

<sup>1</sup> First record for Pre Delta National Park (PDNP).<sup>2</sup> Identification guides and taxonomic keys used for diagnosis: Orog (1959, 1968, 1979); Canaveti et al. (2001); Rodríguez-Mata et al. (2006); Narosky and Yzurieta (2010).<sup>3</sup> Species that do not present other records in Entre Ríos province.



**Figures 2–6.** Photographs of *Calidris canutus* (Linnaeus, 1758) taken on the beaches of El Palmar National Park, Colón, Entre Ríos, Argentina.

1979, Canaveri et al. 2001, Rodríguez-Mata et al. 2006, Narosky and Yzurieta 2010). We used external morphological characters such as the color of different body parts to compare and determine species.

#### Scolopacidae

##### *Calidris canutus* (Linnaeus, 1758)

This species can be distinguished from other *Calidris* (especially *C. alba*) by the following characteristics: larger size (23–25 cm) than *C. alba* (17 cm), making it the largest *Calidris* to inhabit Argentina; fairly thick, black bill; barred flanks and rump (Figs 2–6); and greenish legs (this characteristic cannot be observed in Figs 2–6). Moreover, *C. canutus* is gray in color, with an ash-gray back (Figs 2–6), and is more robust than *C. alba* (Canaveri et al. 2001, Rodríguez-Mata et al. 2006, Narosky and Yzurieta 2010).

#### Trogonidae

##### *Trogon surrucura* Vieillot, 1817

The male of this species can be distinguished by its metallic blue hood and breast, black cheeks and throat, and dark green back, while the rest of the underparts are red and the undertail is white (Figs 7–8) (Narosky and Yzurieta 2010). This latter character was observed, but it is not distinguishable in the photographs. The most similar species in Argentina is *T. curucui* (Linnaeus, 1766), but it is found only in the Yungas region (northern Argentina, in the provinces of Tucumán, Salta, and Jujuy) and in eastern in Formosa province (Olrog 1979, Narosky and Yzurieta 2010). In addition, *T. curucui* presents black and white barring in the outer rectrices and the undertail (Olrog 1968, 1979).

#### Discussion

*Calidris canutus* and *Trogon surrucura* are both new to the avifauna of Entre Ríos (Freiberg 1943, De la Peña 1996, 2012, Beltzer 2006).



**Figures 7–8.** Photographs of *Trogon surrucura* Vieillot, 1817 taken in the visitation area of the Pre Delta National Park, Diamante, Entre Ríos, Argentina.

The new record of *Trogon surrucura* significantly increases the distribution range of this species. This species inhabits the central and southern parts of Brazil (states of Rio de Janeiro, Minas Gerais, Goiás, São Paulo, Mato Grosso do Sul, Paraná, Santa Catarina, and Rio Grande do Sul), and eastern Paraguay, while in Argentina it is present in Misiones, northern Corrientes, eastern Formosa and Chaco, and northern Santa Fe. This observation represents the southernmost record of this species, 390 km south of its previously known distribution in Argentina (Ramsar Site Jaaukanigás, Reconquista, Santa Fe) (Giraudo et al. 2008) and 650 km southwest from Cerro Largo, Uruguay (Claramunt and Cuello 2013).

*Calidris canutus* breeds in the Arctic region of North America and Asia and spends the non-breeding period in more southern latitudes of the Northern Hemisphere and in the Southern Hemisphere. *Calidris canutus* is found almost exclusively in marine coasts, although there are records in inland water environments (Piersma et al. 1996). For example, *C. canutus* was recorded in the continental Lagoons of Melincué and El Cristal, in the neighboring province of Santa Fe (Rozzatti and Mosso 1997, Blanco et al. 2001, Romano et al. 2005). This subspecies is found in southern South America (*C. canutus rufa*) migrates long distances, from the arctic tundra to Tierra del Fuego, making a few stops on its journey south (Piersma et al. 1996). It can be found on the marine coasts of southern South America during the non-breeding period (especially in Las Lomas Bay and San Sebastián, in Tierra del Fuego). In the southern autumn, it can also be found on the Uruguayan, Argentinean, and southern Brazilian coasts during its migration to the north (Piersma et al. 1996).

Additionally, we also obtained new records for 25 poorly known species in the Pre Delta NP and El Palmar NP and other locations in the province (Table 1) (Freiberg 1943, De la Peña 1996, 2012, Beltzer et al. 2006, Alonso 2008, Marateo et al. 2009). Seven of these species are categorized as Vulnerable (*Charadrius modestus*, *Spartonoica maluroides*, and *Sporophila ruficollis*), Endangered (*Calidris canutus* and *Sporophila palustris*) and Threatened (*Sarkidiornis melanotos* and *Dolichonyx oryzivorus*) according to the national list of threatened birds of Argentina (López-Lanús et al. 2008). For Entre

Ríos, Freiberg (1943) indicates a total of 301 species and De la Peña (1997) a total of 333, although the latter indicates a total of 261 species 16 years later, considering only his empirical data (De la Peña 2012). On the other hand, Beltzer et al. (2006) present a total of 291 species in the province. We remark that the total number of bird species in Entre Ríos is still uncertain. According to the data from 25 years of our own field sampling, literature research with reliable data and the review of 7 museum collections, the total number of bird species that inhabit Entre Ríos province probably surpasses 350 species, including the new data herein. The new records presented in this study are a contribution to the knowledge of the distribution of birds in Entre Ríos. We confirmed the presence of 22 bird species in the national parks, which were not recorded before in any protected area in the province.

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## Authors' Contributions

JA, JAS, AG, and AB collected the data; JA, JAS, and AG, wrote the text; and JAS and AG made the descriptive analysis.

## References

- Abadie E (1988) Observaciones sobre aves del sur de Entre Ríos. Nuestras Aves 15: 9–10.
- Abadie E (1993) Aves nuevas o pocos comunes de Entre Ríos. Nuestras Aves 29: 31–33.
- Alonso J (2008) Inventario de las Aves del Parque Nacional Pre Delta. Administración de Parques Nacionales, Buenos Aires, 96 pp.
- Alvarado H, La Grotteria J (2011) Expansión del picapalo colorado (*Campylorhamphus trochilirostris*) hasta el límite austral del bosque en galería sobre el Río Paraná en la provincia de Entre Ríos. EcoRegistros revista 1: 12–15.
- Areta JI, Bodrati A, Grilli P (2004) Primeros registros del picaflor viente negro (*Anthracothorax nigricollis*) en la provincia de Entre Ríos, Argentina. Nuestras Aves 48: 20–21.
- Arzamendia V, Giraudo AR (2004) Usando patrones de biodiversidad para la evaluación y diseño de áreas protegidas: las serpientes de la provincia de Santa Fe (Argentina) como ejemplo. Revista Chilena de Historia Natural 77 (2): 335–348. <https://doi.org/10.4067/S0716-078X2004000200011>
- Arzamendia V, Giraudo AR (2012) A panbiogeographical model to prioritize areas for conservation along large rivers. Diversity and Distributions 18 (2): 168–179. <http://doi.org/10.1111/j.1472-4642.2011.00829.x>
- Aves Argentinas (2009) Lista de las Aves de la Estancia y Reserva "El Potrero de San Lorenzo". Aves Argentinas/AOP, Buenos Aires, 40 pp.
- Beltzer AH (1980) Contribución al conocimiento de las aves de Entre Ríos. Clave para la identificación de lechuzas (Strigiformes: Tytonidae y Strigidae). Revista de la Asociación De Ciencias Naturales del Litoral 1 (11): 85–91. <https://doi.org/10.14409/natura.v1i11.3372>
- Beltzer AH, Collins PA, Quiroga MA (2006) Atlas Ornitológico de la Provincia de Entre Ríos. Asociación de Ciencias Naturales del Litoral, Instituto Nacional De Limnología, CERIDE-CONICET, Serie Climax, Santa Fe, Argentina, 230 pp.
- Bini LM, Diniz-Filho JAF, Rangel TFLVB, Bastos RP, Pinto MP (2006) Challenging Wallacean and Linnean shortfalls: knowledge gradients and conservation planning in a biodiversity hotspot. Diversity and Distributions 12 (5): 475–482. <https://doi.org/10.1111/j.1366-9516.2006.00286.x>
- Blanco DE, Carbonell M (2001) El Censo Neotropical de Aves Acuáticas. Los primeros 10 años: 1990-1999. Wetlands International, Buenos Aires, Argentina & Ducks Unlimited, Memphis, USA, 190 pp.
- Bodrati A, Sierra E (2008) Nuevos aportes sobre la colonización austral del pepitero verdoso (*Saltator similis*) en las Provincias de Buenos Aires y Entre Ríos, Argentina. Nuestras Aves 53: 29–30.
- Bonomi G, Dri H, Berterame G, Berón G (2017) Primer registro de Saí Común (*Conirostrum speciosum*) para la provincia de Entre Ríos, Argentina. EcoRegistros Revista 7: 5–7.
- Brooks TM, Mittermeier RA, da Fonseca GAB, Gerlach J, Hoffmann M, Lamoreux JF, Mittermeier CG, Pilgrim JD, Rodrigues ASL (2006) Global biodiversity conservation priorities. Science 313 (5783): 58–61. <https://doi.org/10.1126/science.1127609>
- Brown A, Martínez Ortiz U, Acerbi M, Corcuera J (2006) La situación ambiental argentina 2005. Fundación Vida Silvestre, Buenos Aires, 587 pp.
- Cabrera AL (1976) Regiones Fitogeográficas Argentinas. Enciclopedia Argentina. Agricultura y Jardinería Tomo 2, 2nda edición, Acme, Buenos Aires, 85 pp.
- Camperi AR (1992) Estudio de una colección de aves de la provincia de Entre Ríos. Hornero 13 (3): 225–229.
- Canaveri P, Castro G, Sallaberry M, Naranjo LG (2001) Guía de los chorlos y playeros de la región Neotropical. American Bird Conservancy, WWF-US, Humedales para las Américas y Manomet Conservation Scienicie, Asociación Calidris, Santiago de Cali, Colombia, 141 pp.
- Cantador P (2014) Primer registro de burrito pico rojo (*Neocrex erythrops*) para la provincia de Entre Ríos. EcoRegistros Revista 4: 1–3.
- Claramunt S, Cuello J (2013) La presencia histórica de dos aves selváticas en Uruguay, *Odontophorus capueira* (Galliformes) y *Trogon surrucura* (Trogoniformes): consideraciones sobre la desaparición de los bosques primarios en Uruguay y su efecto sobre la avifauna. Comunicaciones Zoológicas, Museo Nacional de Historia Natural 13 (205): 1–10.
- De la Peña MR (1996) Nuevos registros o aves poco citadas para las provincias de Santa Fe y Entre Ríos, Argentina. Hornero 14 (3): 87–89.
- De la Peña MR (1997) Lista y distribución de las aves de Santa Fe y Entre Ríos. 1era edición. Lola, Buenos Aires, 126 pp.
- De la Peña MR (2011) Atlas ornitológico de la Provincia de Santa Fe. 1era edición. Ediciones Biológica, Santa Fe, Argentina, 500 pp.
- De la Peña MR (2012) Distribución y citas de aves de Entre Ríos. Ediciones Biológica Serie Naturaleza, Conservación y Sociedad N° 6. Santa Fe, Argentina, 206 pp.
- Di Giacomo AS, Francesco MV de, Coconier EG (2007) Áreas importantes para la conservación de las aves en Argentina. Sitios prioritarios para la conservación de la biodiversidad. Temas de Naturaleza y Conservación 5, Aves Argentinas/Asociación Ornitológica del Plata, Buenos Aires, 514 pp.
- Fernández Guaraz JL (2013) Nuevos registros de cuclillo pico amarillo (*Coccyzus americanus*) para la provincia de Entre Ríos, Argentina.

- EcoRegistros Revista 3: 33–35.
- Freiberg MA (1943) Enumeración sistemática de las aves de Entre Ríos y lista de ejemplares representados en el Museo de Entre Ríos. Memorias del Museo de Entre Ríos Zoología 77: 1–110.
- Giraudo A, Fandiño B, Arzamendia V, Bellini G (2008) Aves nuevas o poco conocidas de Santa Fe (Argentina), incluyendo los Sitios Ramsar Jaaukanigás y Melincué. Natura Neotropicalis 1 (39): 89–99.
- López-Lanús B, Grilli P, Coconier EG, Di Giacomo A, Banchs R (2008) Categorización de las aves de la Argentina según su estado de conservación. Informe de Aves Argentinas /AOP y Secretaría de Ambiente y Desarrollo Sustentable, Buenos Aires, 64 pp.
- Mancini JA (2011) Inventario de las aves Del Parque Escolar Rural Enrique Berduc. Secretaría de Turismo de La Provincia de Entre Ríos, Entre Ríos, Argentina, 47 pp.
- Marateo G, Povedano H, Alonso J, (2009) Inventario de las aves del Parque Nacional El Palmar, Argentina. Cotinga 31: 47–60.
- Marino GD, Miñarro F, Zaccagnini ME, López-Lanús B (2013) Páramos y sabanas del cono sur de Sudamérica: iniciativas para su conservación en la Argentina. Temas de Naturaleza y Conservación, Monografía de Aves Argentinas N°9, Aves Argentinas/AOP, Fundación Vida Silvestre Argentina e Instituto Nacional de Tecnología Agropecuaria, Buenos Aires, 576 pp.
- Milat J, Moschione F, Klimaitis J (1985) Azor Variado, Tachuri Coludo y Anó Grande en Entre Ríos. Nuestras Aves 6: 6–7.
- Narosky T, Yzurieta D (2010) Aves de Argentina y Uruguay: Guía de Identificación. 16va Edición Total, Editorial Vazquez Mazzini, Buenos Aires, 427 pp.
- Olrug CC (1959) Las aves argentinas. Una guía de campo. Instituto Miguel Lillo, Tucumán, Argentina, 345 pp.
- Olrug CC (1968) Las aves sudamericanas. Una guía de campo. Tomo I (Pinguinos-Pájaros Carpinteros). Instituto Miguel Lillo, Tucumán, Argentina, 508 pp.
- Olrug CC (1979) Nueva lista de la avifauna argentina. Opera Lilloana 27: 1–324.
- Passafaro S (2012) Primeros registros de Saíra dorada (*Hemithraupis guira*) para la provincia de Entre Ríos. EcoRegistros 2: 11–13.
- Piersma T, Van Gils JA, Wiersma P (1996) Family Scolopacidae (sandpipers, snipes and phalaropes). In: del Hoyo J, Elliott A, Sargatal J (Eds) Handbook of the Birds of the World, Vol. 3: Hoatzin to Auks. Lynx Edicions, Barcelona, 444–533.
- Reales F, Prevedel L, Savor G, Tessore S (2015) Primeros registros del Cerquero de Collar (*Arremon flavirostris*) en la provincia de Entre Ríos, Argentina. EcoRegistros 5: 12–14.
- Remsen JVJ, Cadena CD, Jaramillo A, Nores M, Pacheco JF, Pérez-Emán J, Robbins MB, Stiles FG, Stotz DF, Zimmer KJ (2017) A classification of the bird species of South America. <http://www.museum.lsu.edu/~Remsen/SACCBaseline.html>. Accessed on: 09-03-2017.
- Richardson DM, Whittaker RJ (2010) Conservation biogeography—foundations, concepts and challenges. Diversity and Distributions 16 (3): 313–320. <https://doi.org/10.1111/j.1472-4642.2010.00660.x>
- Rodríguez-Mata J, Erize F, Rumboll M (2006) Aves de Sudamérica: Guía de campo Collins. Letemendia, Buenos Aires, 384 pp.
- Romano M, Barberis I, Pagano F, Maidagan J (2005) Seasonal and interannual variation in waterbird abundance and species composition in the Melincué saline lake, Argentina. European journal of Wildlife Research 51 (1): 1–13. <https://doi.org/10.1007/s10344-005-0078-z>
- Rozzatti JC, Mossو E (1997) Sistema provincial de áreas naturales protegidas de Santa Fe. Gobierno de la Provincia de Santa Fe, Administración de Parques Nacionales, Edición de la Cooperadora de la Estación Zoológica Experimental de, Santa Fe, Argentina, 174 pp.
- Salvador S, Narosky T, Salvador L (1985) Colonia de Nidificación en Entre Ríos. Nuestras Aves 7: 11–13.