A Great Frigatebird Fregata minor at Fernando de Noronha archipelago, equatorial Atlantic Ocean

Authors: Silva e Silva, Robson, and Carlos, Caio J.

Source: Bulletin of the British Ornithologists' Club, 139(4) : 333-337

Published By: British Ornithologists' Club

URL: https://doi.org/10.25226/bboc.v139i4.2019.a6

A Great Frigatebird *Fregata minor* at Fernando de Noronha archipelago, equatorial Atlantic Ocean

by Robson Silva e Silva & Caio J. Carlos

Received 10 July 2019; revised 18 October 2019; published 16 December 2019

http://zoobank.org/urn:lsid:zoobank.org:pub:F85CD6B5-2BF8-4608-A1C9-9805DB833509

Summary.—We report a documented record of a Great Frigatebird *Fregata minor* at Fernando de Noronha, 360 km off the coast of northeast Brazil in the equatorial Atlantic. We presume that the bird at Fernando de Noronha originated from Trindade Island, *c*.1,800 km to the south, since it is the species' nearest breeding site, and we hypothesise that it moved with the south-east trade winds towards the north-east Brazilian coast.

Four frigatebird species nest on Atlantic Ocean islands: Ascension Frigatebird *Fregata aquila*, Magnificent Frigatebird *F. magnificens*, Great Frigatebird *F. minor* and Lesser Frigatebird *F. ariel*. Whereas Magnificent Frigatebird has a broad breeding distribution, in the Atlantic each of the other species nests on a single island / archipelago (Orta *et al*. 2019a,b,c). The Atlantic populations of Great and Lesser Frigatebirds, respectively referred to as *F. m. nicolli* and *F. a. trinitatis*, are currently restricted to Trindade (Carlos 2009, Mancini *et al*. 2016, Olson 2017), an island of volcanic origin 1,140 km off south-east Brazil (Alves

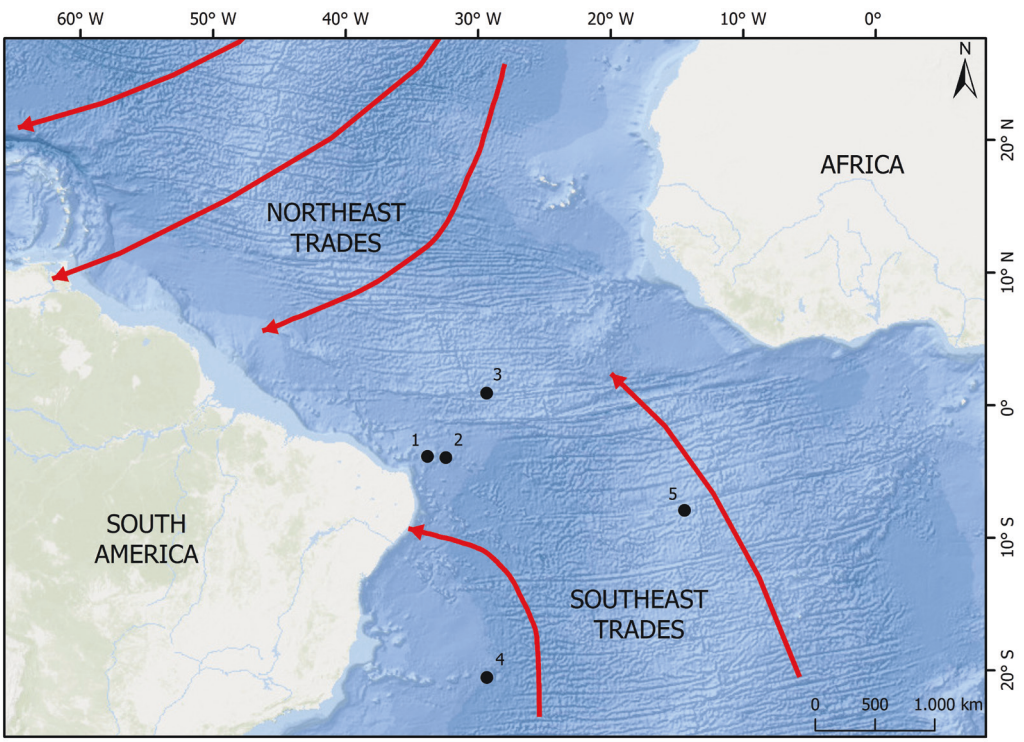

Figure 1. Tropical oceanic islands in the South Atlantic: (1) Rocas Atoll, (2) Fernando de Noronha archipelago, (3) São Pedro e São Paulo archipelago, (4) Trindade and Martim Vaz archipelago, and (5) Ascension Island.

ISSN-2513-9894 (Online)

1998; Fig. 1). However, fossil remains attributed to both taxa have been found on St Helena (Olson 1975, 2017), 1,580 km east of Trindade. Elsewhere, Great and Lesser Frigatebirds breed on tropical and subtropical islands in the Indian and Pacific Oceans (Orta *et al.* 2019b,c).

The at-sea ranges of frigatebirds breeding on Trindade are poorly understood. Available observations are from around Trindade itself and nearby Martim Vaz archipelago (e.g. Murphy 1915, Olson 1981, Antas 1991, Fonseca-Neto 2004, Mancini *et al*. 2016, Port *et al*. 2016). There is a possible sighting of an adult female Great Frigatebird from Mar del Plata, Argentina, in January 2007 (López-Lanús & López-Lanús 2011), *c*.3,300 km south-west of Trindade, perhaps indicating that the species may wander far from its only Atlantic breeding site.

Juvenile and immature Great Frigatebirds exhibit a series of plumages with rusty and white on head and breast, and white underparts, decreasing progressively before they achieve adult coloration. Adult males are mostly brownish black, whereas females have some white below (Harrison 1983, Valle *et al*. 2006, Orta *et al*. 2019c).

Here, we present a documented record of a Great Frigatebird at Fernando de Noronha, a volcanic archipelago 360 km off north-east Brazil in the equatorial Atlantic (Fig. 1). The archipelago consists of a main island, and 20 islands and islets (Silva e Silva 2008).

Between 1999 and 2008, RSS visited Fernando de Noronha almost annually to study its birds. Visits lasted 10–23 days and smaller islands were accessed by motorboat (Silva e Silva 2008). On 7 March 2008, RSS & P. T. Felipe, an inspector with the Brazilian federal protected areas agency (ICMBio), disembarked at 'Pontal da Macaxeira' (03°48'30"S, 32°22'49"W), on Ilha da Rata to ring the seabirds nesting there: Magnificent Frigatebird, Masked Booby *Sula dactylatra* and Red-footed Booby *S. sula* (Silva e Silva 2008). The next day, near a colony of Magnificent Frigatebirds on the island's east side, a juvenile, rusty-headed frigatebird was observed being chased and grasped by other frigatebirds (Fig. 2).

The frigatebird in question had a pale blue bill with yellowish tip, white head and neck with tawny-washed throat, cheeks, forehead and nape, blackish-brown upperparts with pale-barred wing-coverts, a complete, blackish-brown breast-band, a white, egg-shaped belly patch with its narrow end turned rearwards, and blackish underwings (Fig. 2). This plumage is like that described for first-year Great Frigatebird (Harrison 1983, Walbridge *et al*. 2003, James 2004).

The most useful characters for distinguishing frigatebird species are the presence of any tawny or rufous on head and neck and the extent and shape of white markings below (Harrison 1983, James 2004). Juvenile Greater and Lesser Frigatebirds have a rusty or cinnamon head that fades to whitish with age, whereas juvenile Ascension and Magnificent Frigatebirds both possess an all-white head (Harrison 1983, Walbridge *et al*. 2003, James 2004). The white belly patch of juvenile Great Frigatebird is rounded anteriorly, so that the posterior margin of the dark breast-band is concave. In juvenile Lesser Frigatebird, the white belly patch is triangular with a rounded, narrow tip pointing towards the tail and straight base bordering the dark breast-band. Furthermore, juvenile Lesser Frigatebird always has axillary spurs, which are long, narrow, and originate from the anterior corners of the triangular belly patch. Great Frigatebird occasionally has small axillary spurs, but these distinctly originate behind the anterior margin of the belly patch and breast-band (James 2004).

In contrast to the limited published information on the at-sea distribution of Atlantic Great Frigatebirds, their counterparts in the Indian Ocean are better studied. For example, satellite-tracked Great Frigatebirds from Europa Island in the Mozambique Channel make

ISSN-2513-9894 (Online)

Figure 2. First-year juvenile Great Frigatebird *Fregata minor*, Fernando de Noronha archipelago, Brazil, 7 March 2008, below being chased by a juvenile Magnificent Frigatebird *F. magnificens*; note the tawny wash to the head and neck, complete dark breast-band, and the egg-shaped white belly patch (Robson Silva e Silva)

ISSN-2513-9894 (Online)

long-distance, clockwise loops around the Indian Ocean, taking advantage of the trade winds (Weimerskirch *et al*. 2016).

In the Atlantic, the north-east trade winds blow from subtropical latitudes (*c*.30°N) towards the north-east coast of South America and the Caribbean. South-east trade winds blow from *c*.30°S, along the coast of Africa, then across the Atlantic to the equatorial South American coast (Longhurst & Pauly 1987; Fig. 1). We presume that the juvenile Great Frigatebird at Fernando de Noronha originated from Trindade, *c*.1,800 km to the south, as it is the nearest breeding site. Then, we hypothesise that it moved downwind in the south-east trades to the north-east Brazilian coast. Recently, a satellite-tracked juvenile Ascension Frigatebird from Boatswainbird islet, moved north-west to Brazilian waters within less than 100 nautical miles (190 km) of Fernando de Noronha and the São Pedro e São Paulo archipelago (Williams *et al*. 2017). Ascension lies at *c*.8ºS, in the path of the south-east trade winds; therefore, we interpret the record reported by Williams *et al*. (2017) as indirect evidence for our hypothesis.

The Great Frigatebird population on Trindade has undergone severe decline and is estimated at just a few individuals (Mancini *et al*. 2016). It is difficult know whether Trindade Great Frigatebirds regularly move to equatorial latitudes. Nevertheless, the possible sighting in Argentina (López-Lanús & López-Lanús 2011), as well as the record reported herein, indicate that Trindade Great Frigatebirds possibly undertake long-distance movements, as their counterparts do in the Indian Ocean. Therefore, observers should pay attention to frigatebirds in equatorial and subtropical Atlantic waters to eliminate the possibility of wandering by this species.

Acknowledgements

We thank the personnel of the Fernando de Noronha National Park, especially Josivan Rabelo da Silva and Policarpo Tertuliano Felipe, for their unwavering support during field work. CJC is supported by a post-doctoral fellowship from the Coordenação de Aperfeiçoamento de Pessoal de Nível Superior (CAPES), Brazil.

References:

Alves, R. J. V. 1998. *Ilha da Trindade & Arquipélago Martin Vaz: um ensaio geobotânico*. Serviço de Documentação da Marinha, Rio de Janeiro.

Antas, P. T. Z. 1991. Status and conservation of seabirds breeding in Brazilian waters. Pp. 141–158 *in* Croxall, J. P. (ed.) *Seabird status and conservation: a supplement*. International Council for Bird Preservation, Cambridge, UK.

Carlos, C. J. 2009. Seabird diversity in Brazil: a review. *Sea Swallow* 58: 17–46.

Fonseca-Neto, P. 2004. Aves marinhas da ilha Trindade. Pp. 119–146 *in* Branco, J. O. (ed.) *Aves marinhas insulares brasileiras: bioecologia e conservação*. Ed. UNIVALI, Itajaí.

Harrison, P. 1983. *Seabirds: an identification guide*. Houghton Mifflin, Boston.

James, D. J. 2004. Identification of Christmas Island, Great, and Lesser Frigatebirds. *BirdingASIA* 1: 22–38.

Longhurst, A. R. & Pauly, D. 1987. *Ecology of tropical oceans*. Academic Press, San Diego.

López-Lanús, B. & López-Lanús, M. B. 2011. Revisión de registros del género *Fregata* en Uruguay y la Argentina y posible observación de *Fregata minor* em la costa bonaerense. *Nótulas Faunísticas* 73: 1–7.

Mancini, P. L., Serafini, P. P. & Bugoni, L. 2016. Breeding seabird populations in Brazilian oceanic islands: historical review, update and a call for census standardization. *Rev. Bras. Orn*. 24: 94–115.

Murphy, R. C. 1915. The bird life of Trinidad [*sic*] Islet. *Auk* 32: 332–348.

Olson, S. L. 1975. Paleornithology of St. Helena Island, South Atlantic Ocean. *Smiths. Contrib. Paleobiol*. 23: 1–49.

Olson, S. L. 1981. Natural history of vertebrates on the Brazilian islands of the mid South Atlantic. *Natl. Geogr. Soc. Res. Rep*. 13: 481–492.

Olson, S. L. 2017 Species rank for the Critically Endangered Atlantic Lesser Frigatebird (*Fregata trinitatis*). *Wilson J. Orn*. 129: 661–675.

Orta, J., Christie, D. A., Garcia, E. F. J. & Boesman, P. 2019a. Magnificent Frigatebird (*Fregata magnificens*). *In* del Hoyo, J., Elliott, A., Sargatal, J., Christie, D. A. & de Juana, E. (eds.) *Handbook of the birds of the world Alive*. Lynx Edicions, Barcelona (retrieved from https://www.hbw.com/node/52669 on 8 October 2019).

ISSN-2513-9894 (Online)

Orta, J., Garcia, E. F. J., Kirwan, G. M., Boesman, P. & Sharpe, C. J. 2019b. Lesser Frigatebird (*Fregata ariel*). *In* del Hoyo, J., Elliott, A., Sargatal, J., Christie, D. A. & de Juana, E. (eds.) *Handbook of the birds of the world Alive*. Lynx Edicions, Barcelona (retrieved from https://www.hbw.com/node/52671 on 8 October 2019).

Orta, J., Kirwan, G. M., Garcia, E. F. J. & Boesman, P. 2019c. Great Frigatebird (*Fregata minor*). *In* del Hoyo, J., Elliott, A., Sargatal, J., Christie, D. A. & de Juana, E. (eds.) *Handbook of the birds of the world Alive*. Lynx Edicions, Barcelona (retrieved from https://www.hbw.com/node/52670 on 8 October 2019).

Port, D., Branco, J. O., Alvarez, C. E. & Fisch, F. 2016. Observations on endangered frigatebirds (*Fregata ariel trinitatis* and *F. minor nicolli*, Suliformes: Fregatidae) at Trindade Island, Brazil. *Pan-Amer. J. Aquatic Sci.* 11: 87–92.

Silva e Silva, R. 2008. *Aves de Fernando de Noronha*. Avis Brasilis, Vinhedo.

Valle, C. A., De Vries, T. & Hernandez, C. 2006. Plumage and sexual maturation in the Great Frigatebird *Fregata minor* in the Galapagos Islands. *Mar. Orn*. 34: 51–59

Walbridge, G., Small, B. & McGowan, R. 2003. From the Rarities Committee's files: Ascension Frigatebird on Tiree – new to the Western Palearctic. *Brit. Birds* 96: 58–63.

Weimerskirch, H., Bishop, C., Jeanniard-du-Dot, T., Prudor, A. & Sachs, G. 2016. Frigatebirds track atmospheric conditions over months-long transoceanic flights. *Nature* 353: 74–77.

Williams, S. M., Weber, S. B., Oppel, S., Leat, E. H. K., Sommerfeld, J., Godley, B. J., Weber, N. & Broderick, A. C. 2017. Satellite telemetry reveals the first record of the Ascension Frigatebird (*Fregata aquila*) for the Americas. *Wilson J. Orn*. 129: 600–604.

Addresses: Robson Silva e Silva, Rua Amaral Gurgel, 63/51, CEP 11035-120, Santos, SP, Brazil, e-mail: rsilvaesilva@uol.com.br. Caio J. Carlos, Universidade Federal do Rio Grande do Sul, Instituto de Biociências, Departamento de Zoologia, Av. Bento Gonçalves, 9500, CEP 91501-970, Porto Alegre, RS, Brazil, e-mail: macronectes1@yahoo.co.uk

ISSN-2513-9894 (Online)