

The Andean Flamingo *Phoenicoparrus andinus* (Philippi, 1854) in southern Brazil: is it a vagrant?

Ivo Rohling Ghizoni-Jr.¹ and Vítor de Q. Piacentini²

¹ Caipora Cooperativa para Conservação da Natureza. Avenida Desembargador Vitor Lima, 260/513, Carvoeira, CEP 88040-400, Florianópolis, SC, Brasil. E-mail: ivoghizoni@yahoo.com.br.

² Pós-graduação em Zoologia, Instituto de Biociências, Universidade de São Paulo. Rua do Matão, Travessa 14, 101, CEP 05508-090, São Paulo, SP, Brasil; e Comitê Brasileiro de Registros Ornitológico. E-mail: vitor.piacentini@gmail.com.

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RESUMO: O flamingo-grande-dos-andes *Phoenicoparrus andinus* (Philippi, 1854) em Santa Catarina, sul do Brasil: uma espécie vagante? O flamingo-grande-dos-andes, *Phoenicoparrus andinus*, é considerado vagante no Brasil, havendo escassos registros nos estados do Rio Grande do Sul e Santa Catarina. Novos registros dessa espécie são aqui apresentados para duas localidades no litoral de Santa Catarina: a Lagoa do Camacho (28°37'S, 48°52'W) e a praia do Canto dos Ganchos, Governador Celso Ramos (27°18'S, 48°35'W). Nesta última localidade uma pequena população foi encontrada e acompanhada ao longo de 27 meses (junho de 2008 a agosto de 2010). Nos meses de julho de 2008 e janeiro de 2009 não foram registrados naquela praia, e nos outros meses entre 2 e 32 indivíduos foram observados, tanto em posição de descanso como forrageando. Esses registros corroboram informações de pescadores sobre a aparição de flamingos no Estado. Além desses registros, outros três avistamentos de flamingos não identificados são aqui reportados. Nossos dados sugerem que o flamingo-grande-dos-andes talvez seja um visitante de inverno regular ou mesmo residente no Brasil.

PALAVRAS-CHAVE: flamingo-grande-dos-andes, *Phoenicoparrus andinus*, Santa Catarina.

KEY-WORDS: Andean Flamingo, *Phoenicoparrus andinus*, Santa Catarina.

The Andean Flamingo (*Phoenicoparrus andinus*) is normally found in salt lakes of the Andean *Altiplano*, from 3500-4500 m altitude in Chile, Argentina, Bolivia and Peru (del Hoyo 1992, IUCN 2010). In Brazil, it is rarely seen in the south and considered a vagrant (Sick 1997, CBRO 2009). It is globally classified as vulnerable to extinction due to recent population decline (IUCN 2010).

The Andean Flamingo was first reported in Santa Catarina (SC) and Brazil by Bege and Pauli (1990), who described a dead juvenile bird found in 1989 in Eral Velho and which had been recently banded in Chile (Rosário, 1996). The next record was that of Bornschein and Reinert (1996), who corrected a misidentified specimen that was collected in 1952 in Jaraguá do Sul and housed in the Coração de Jesus Seminary Museum, in Corupá, Santa Catarina. Thus, this became the earliest record for the state. That specimen had been identified by Sick *et al.* (1981) as the Chilean Flamingo (*Phoenicopterus chilensis*), by that time considered a subspecies of the American Flamingo (*P. ruber*; Bornschein and Reinert 1996, Rosário 1996). Additionally, the Andean Flamingo was reported at least once in the more southern state of Rio Grande do Sul (Bencke 2001).

Here, we describe new sightings and behavioral observations of the Andean Flamingo in two locations in the southern Brazilian state of Santa Catarina.

METHODS

This study was carried out at the beach of the Canto dos Ganchos (27°18'S, 48°35'W) in Governador Celso Ramos, and at the Lagoa do Camacho lake (28°37'S, 48°52'W) near Jaguaruna and Laguna, along the southern coast of Santa Catarina (Figures 1 and 2). The former is at the southern portion of the mouth of the Tijucas River. Here, a 10-50 m wide beach (at low tide) is approximately 13 km long and the water bottom is muddy. The area must be reached by boat because the muddy bottom precludes foot traffic. The latter comprises an area of around 25 km² and is connected to the sea by a 30 m wide, 1 km long canal that is intermittent and may be divided into several bodies of water, with sandy-muddy bottoms.

We fortuitously encountered the flamingo at the Lagoa do Camacho, whereas at Governador Celso Ramos it was found during a study prior to development of the area. We visited the latter monthly from June 2008



FIGURE 1: Canto dos Ganchos beach in Governador Celso Ramos, one of the places the Andean Flamingo was recorded. Note the extensive mud beach formed at the intertidal zone and the presence of some flamingos. (Photo by I. R. G.).

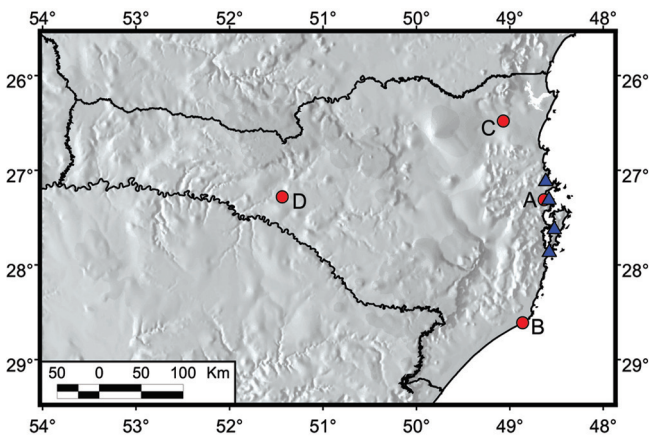


FIGURE 2: Locations where flamingos were seen in Santa Catarina, southern Brazil. Red circles are identified records of *Phoenicoparrus andinus* (A = Canto dos Ganchos; B = Barra do Camacho; C = Jaraguá do Sul; D = Erval Velho). Blue triangles indicated sightings of unidentified flamingos (from North to South: Itapema; Canto dos Ganchos; Island of Santa Catarina, Florianópolis; and Pinheira/Sonho beaches, Palhoça).

– August 2010. We also spoke with local residents about their observations of the birds in the region.

RESULTS

Field records

8 July 2007 – a young, solitary flamingo was seen and photographed as it foraged at Lagoa do Camacho (VQP, Fábio Schunck, Luciano M. Lima and Marco Rego). Due to the novelty, we were uncertain as to which species the individual was until we compared it to museum specimens at the Museu de Zoologia da Universidade de São Paulo (MZUSP), when we identified it as *P. andinus*.

3 June 2008 to 10 August 2010 – A group of 32 birds was found by I. R. G. at Canto dos Ganchos in June 2008 (Figure 3). Every month, with the exceptions of July 2008 and January 2009, flamingos were observed in the same area, with numbers of individuals ranging from 2 (on 14 December 2008) to 32. During most of 2010, only small groups of 9-14 birds were seen, except for the last record, when 20 were seen. Behavior was variable, commonly resting in the typical posture on one leg with the head resting on the body, sometimes foraging, as on 11 May 2009, when the birds were observed feeding from 8:00 to 16:00.

23 July 2009 – One individual was collected at Canto dos Ganchos and is now housed at the Museu de Zoologia da Universidade de São Paulo (MZUSP 84351). This specimen is a non-reproductive male (undeveloped right testicle, left measured 7×3 mm), with an ossified skull and with little fat that branched over the chest and neck, where a small quantity was stored. This individual, as well as others in the group, had sub-adult plumage which lacked the vinaceous tones that are typical of reproductive-aged adults (cf. Johnson *et al.* 1958, del Hoyo 1992). Stomach content was examined but no prey was clearly identifiable (A. Benetti, *pers. com.*).

Information from local residents

Most residents stated that the flamingos were always at Canto dos Ganchos. One resident of 60 years stated that flamingos were always in the region during the southern winter and that, in the past, flocks were larger than they are today. Also, flamingos were not infrequently hunted as food. Another resident, living in the area for 15 years, stated that he often saw the flamingos, occasionally near his house. Residents observed that occasionally the flamingos disappear from the region, but never for long time intervals. Also, residents stated that flamingos



FIGURE 3: Andean Flamingos at Canto dos Ganchos beach, Governador Celso Ramos. (Photo by I. R. G.).

may readily be seen along the entire beach, including the sand bar inlet at the Tijucas River, 10 km away. None of the residents reported having seen reproductive activities. At Camacho, one fisherman affirmed in October 2006 that he often saw flamingos in the winter and it was this observation that lead us to the area in the following winter. We confirmed that the residents clearly recognized the flamingo and were not confusing it with the Roseate Spoonbill (*Platalea ajaja*), which is also seen in these areas.

Other records in Santa Catarina

Ten individuals were seen and photographed (I. R. G.) flying north in the morning of 12 May 2007 (27°36'42"S, 48°31'30"W; Figure 2), in Florianópolis. On 2 February 2009, six were seen at the same location (Ghizoni-Jr. *et al.*, in prep.), but, due to distance, positive identification of species was not possible. Fifty two flamingos (unidentifiable) were seen on 25 May 2009 flying over Itapema, on the Santa Catarina coast (J. Toso, *pers. com.*, Figure 2). Coincidentally, that day, we observed and clearly identified 32 *P. andinus* at Canto dos Ganchos. On 5 May 2010, J. Toso (*pers. com.*) again saw about 50 unspecified flamingos flying north over Itapema. The next day (6 May) at least 14 Andean Flamingos were recorded at Canto dos Ganchos.

DISCUSSION

Considering our observations, the correct identification of many other sightings of flamingos in the region is questionable. If so, then many sightings of *Phoenicopterus chilensis* were in fact *Phoenicoparrus andinus*. For example, on 9 June 2002 a band of 25 flamingos was seen flying over the beaches Pinheira and Sonho, in Palhoça, and another individual was seen on the beach at Canto dos Ganchos on 5 and 7 July 2002 (Efe *et al.* 2002). These flamingos were assumed to be *P. chilensis* due to it being more abundant in the southern Brazil (Antas 1990, Belton 1994). In fact, *Phoenicopterus chilensis* is commonly seen in large groups in the lakes of the state of Rio Grande do Sul, to which it migrates during the austral winter, coming from farther south (Belton 1994). This species is rare in the state of Santa Catarina (Sick *et al.* 1981, Rosário 1996) and the historical record to Santa Catarina Island was suggested to require confirmation (Naka and Rodrigues 2000). Actually, while *Phoenicopterus chilensis* is often cited in Santa Catarina, no record there clearly identified the species. Nonetheless, it is expected in Santa Catarina given the certain records in the states of Rio Grande do Sul, São Paulo and Rio de Janeiro

(Belton 1994, Bencke 2001, Branco *et al.* 2001, Serpa *et al.* 2008).

Phoenicoparrus andinus certainly occurs in other areas when it is not at Tijucas, and several reasons explain why it is most often seen there. Several places (overlooks) are near Tijucas from which observations are easy and a wide area is visible. Elsewhere, the habitat used by *P. andinus* is often inaccessible. It is likely that if similar effort were spent looking for the Andean Flamingo in the appropriate habitat, such as the inlets Daniela (Santa Catarina island,) São Miguel and Biguaçu and the mouth of the Cubatão River in Palhoça, they would be seen more often.

Phoenicoparrus andinus feeds largely on diatoms, especially in the genus *Surirella* (del Hoyo 1992). This genus has not been found in our study area, although diatoms in the same family (Bacillariophyceae) are abundant (Caruso Jr. 2008). Thus, diet is probably not a limiting factor and food abundance may explain why they are such frequent visitors to the intertidal region of the Tijucas inlet. Little use of the area by people may also be associated with flamingo use of the Tijucas inlet, which is also protected from the often very strong southern winds.

Of the four species of flamingos in Brazil, the two *Phoenicoparrus* (*P. andinus*, *P. jamesi*) are considered vagrants (CBRO 2009). Irregular sightings of the Andean flamingo are numerous (del Hoyo 1992) and often seem to be associated with storms. Storms may have been the cause of the sighting of James' Flamingo in northern Brazil (Guilherme *et al.* 2005). Interestingly, in Santa Catarina, all sightings were of young or sub-adults and so they are younger than three years of age (when plumage changes to that of adults, del Hoyo 1992). Most observations (both ours and those of the local people) were also during the southern winter. These considerations suggest that their occurrence in Brazil may be due to juvenile dispersal, which may be more common during the winter, or due to storms.

Thus, while treated as a vagrant in Brazil (CBRO 2009), observations suggest that continued research is necessary to determine the true status of the Andean Flamingo in Brazil. Even if this relatively large group were blown off course, it is doubtful that it could find its way back to its origin. If so, it may begin to breed in its adopted home in Santa Catarina. Regardless, further study will be necessary to establish its residency status. Additionally, if these sightings are the result of a natural range expansion, further study may provide important information for understanding how species become established in new areas. Our study of the Tijucas inlet and Canto dos Ganchos beach continues to follow these birds and search for evidence of adults and reproduction, such as courtship behaviors or nests. Additionally, exploration to find for other locations with the Andean Flamingo will continue.

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