



## SOUTHERNMOST RECORDS OF *Buteo platypterus* (AVES, ACCIPITRIDAE) DURING WINTER MIGRATION: NEW OBSERVATIONS IN SOUTHERN BRAZIL

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**Abstract:** The Broad-winged Hawk (*Buteo platypterus* (Vieillot, 1823)) (Accipitriformes: Accipitridae) is a migratory bird of prey that winters in Central and South America. This note reports two new records of the species in southern Brazil, which are currently the southernmost records in wintering areas. One of the observations represents the first occurrence for Santa Catarina state and the other is only the second for Rio Grande do Sul state, the first one for the central region of the state. Both observations suggest that this species may be more frequent than expected in southern Brazil and neighbouring countries.

**Keywords:** Broad-winged hawk; Rio Grande do Sul; Santa Catarina; South America.

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The neotropical region harbours 104 species of diurnal raptors (Aves: Cathartiformes, Accipitriformes and Falconiformes), approximately 35% of the raptor species of the world, and many of those species present some kind of migratory movement (Bildstein 2004). Among them, only *Pandion haliaetus* (Osprey), *Ictinia mississippiensis* (Mississippi kite), *Buteo platypterus* (Broad-winged hawk) and *B. swainsoni* (Swainson's hawk) are considered complete migrants, once at least 90% of the individuals of their populations leave the breeding range throughout the non-breeding season (Kerlinger 1989, Bildstein 2004, Bildstein & Zalles 2005). The remaining migratory species are considered partial, irregular or local migrants (Bildstein 2004).

*Buteo platypterus* (Vieillot, 1823) (Accipitriformes: Accipitridae) spends the breeding season (summer) in North America and commonly migrates to Central America and northwestern South America during the non-breeding season,

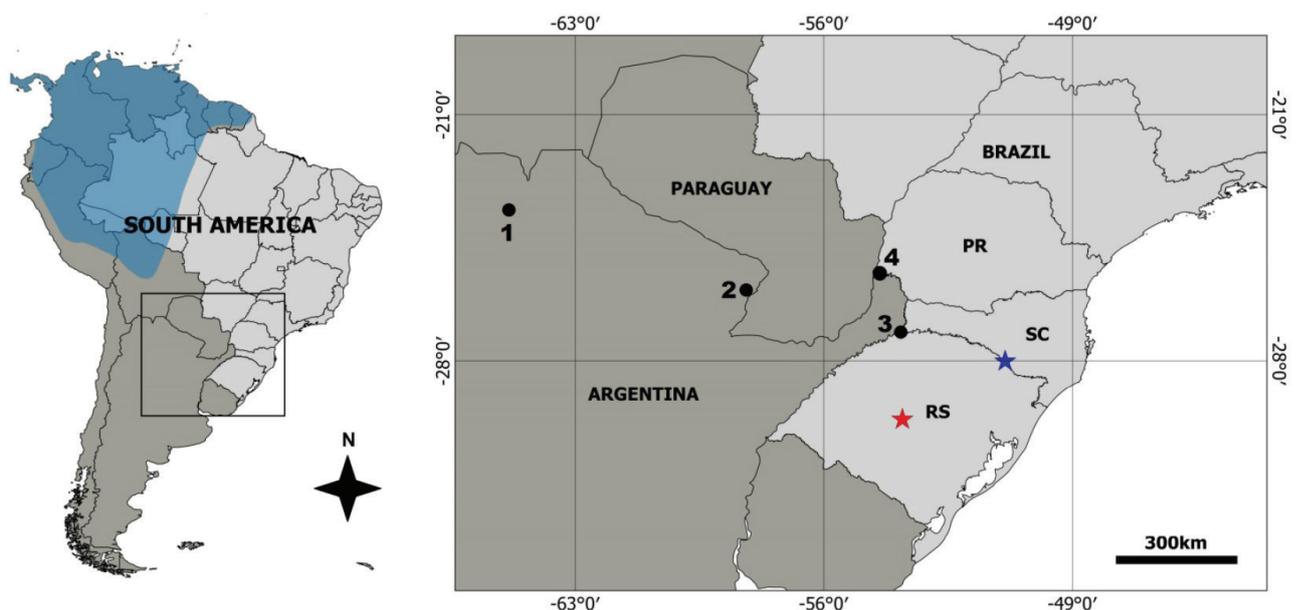
the winter in North America (Ferguson-Lees & Christie 2001, Haines *et al.* 2003). However, this species has been recently recorded further south during the non-breeding season, such as in northern and north-western of Argentina (Roesler & Barnett 2004, Klavins *et al.* 2012) and in Rio Grande do Sul state, southern Brazil (Meller & Bencke 2012). In such events, individuals with both young and adult plumages were observed. To date, these are recognized as the southernmost records of the species in the wintering areas (Meller & Bencke 2012). Here, we present two new observations of the *B. platypterus* for southern Brazil, which represents the species southernmost records and increase the species' winter distribution. Both observations were occasional and made by ornithologists (GW and CMJ) during field works not specifically related to birds of prey. On both occasions the individuals were observed with binoculars (10 x 42 mm) and subsequently photographed for documentation.

Our first record of the *B. platypterus* was on

December 10, 2012, when one individual was observed flying over a slope of *Araucaria* forest in Emílio Eisenfeld Filho Private Reserve (hereafter RPPN-EEF; coordinates 28°00'33" S, 50°53'47" W; datum WGS84; 900 m a.s.l.; Figure 1), municipality of Campo Belo do Sul, Santa Catarina state. The RPPN-EEF comprises 6328.6 ha of continuous forest along the Pelotas river and its tributaries. The vegetation in RPPN-EEF is composed mainly by pristine/old growth *Araucaria* forest and some relicts of Seasonal Deciduous forest. A mosaic of commercial tree plantations (e.g., *Pinus* sp.), natural grasslands and marshes surrounds the reserve. The individual clearly present a *Buteo* shape/silhouette and was identified as a pale-adult of *Buteo platypterus* by the following features: wings mainly white with well-marked dark/black edges; heavily marked brown body; and a broad white central band followed by a broad black band on the tail (Ferguson-Less & Christie 2001; Figure 2). This description resembles the picture "190ax" in the plate "66" presented by Ferguson-Less & Christie (2001). Moreover, these characteristics separate the species from any other *Buteo* shape raptor species that occur in the region. For example, the Short-tailed hawk (*Buteo brachyurus*) present black neck-

sides and never present a marked brown chest or broad bands on the tail (Ferguson-Less & Christie 2001). Other similar species, the Roadside hawk (*Rupornis magnirostris*), present rufous patches on primaries when adult, and thin bands in wings and tail (Ferguson-Less & Christie 2001). Imatures of *R. magnirostris* could present pale underparts but, in contrast, not present a heavy marked chest or wings with well-marked black edges (Ferguson-Less & Christie 2001) such as those shown in Figure 2. The Swainson's hawk (*Buteo swainsoni*), other migratory raptor that could occur in the region, present whitish wings with dark carpal arcs (absents in the Figure 2), tail with very thin bands, and primaries and secondaries are dark when viewed from below (Ferguson-Less & Christie 2001).

The second record was on November 9, 2016, on the BR-158 highway, Santa Maria municipality (close to the border with Itaara municipality), central region of Rio Grande do Sul state (coordinates 29°40'54" S, 53°46'38" W; datum WGS84; 168 m a.s.l.; Figure 1). The locality, although within the Atlantic Forest biome, is in a transition zone between Atlantic Forest and Pampa biomes. An adult individual was perched in an old growth Seasonal Deciduous forest fragment (approx. 1700 ha) surrounded by an urban



**Figure 1.** Southernmost records of *Buteo platypterus* (Aves, Accipitridae) in South America. Highlighted in blue the species regular winter distribution according to BirdLife International (2016). Blue star represent the record in RPPN-EEF (28°00'33" S, 50°53'47" W), municipality of Campo Belo do Sul, Santa Catarina state, southern Brazil. Red star represents the record in BR-158 highway (29°40'54" S, 53°46'38" W), municipality of Santa Maria, Rio Grande do Sul state, southern Brazil. Black circles represent the following records: 1) Roesler & Barnet (2004); 2) Kalvins *et al.* (2012); 3) Meller & Bencke (2012); 4) Pegoraro (2013). Three states of the south of Brazil: PR - Paraná; SC - Santa Catarina; RS - Rio Grande do Sul.



**Figure 2.** *Buteo platypterus* (Aves, Accipitridae) recorded in Campo Belo do Sul, Santa Catarina state, southern Brazil, December 10, 2012. Diagnostic characteristics visible in the photo: *Buteo* shape/silhouette; wings mainly white with well-marked dark/black edges; heavily marked brown body; and a broad white central band followed by a broad black band on the tail. Photo by Guilherme Willrich.



**Figure 3.** *Buteo platypterus* (Aves, Accipitridae) recorded in Santa Maria, Rio Grande do Sul state, southern Brazil, November 09, 2016. Diagnostic characteristics visible in the photo: dark brown back; brown chest (like a bib); white belly with evident dark bars; presence of a malar stripe; tail with a white tip, followed by a broad dark band and a white central band. Photo by Cristian Marcelo Joenck.

matrix (Figure 3). The identification was based on the following characteristics: dark brown back; brown chest (like a bib); white belly with evident dark bars; presence of a malar stripe; black tail with a white tip, followed by a broad dark band and a white central band; dark brown eyes and yellow legs (Ferguson-Less & Christie 2001).

These observations bring new insights into the non-breeding distribution of *B. platypterus*. First, the record in RPPN-EEF is the first mention of the species to Santa Catarina state, while the record in BR-158 is only the second for the Rio Grande do Sul state. Moreover, of the four records of the species to southern Brazil to date (see Figure 1), three were inside large protected areas: Turvo State Park (17.500 ha; Meller & Bancke 2012); Iguaçú National Park (170.000 ha; Pegoraro 2013); RPPN-EEF (6328.6 ha). This fact demonstrates the importance of protecting medium to large areas in the south of Brazil for migratory raptors.

Another important consideration is that we present the first observation of the species to the *Araucaria* forest. *Buteo platypterus* has already been observed in a variety of habitats, such as *Terra Firme* forest (Aguilar 2008), Chaco (Klavins *et al.* 2012), Cerrado (Santos *et al.* 2010), Pantanal (see Meller & Bencke 2012), Seasonal Deciduous forest (Meller & Bencke 2012, this communication) and now in *Araucaria* forest, which demonstrates certain tolerance of the species to use a broad range of habitats during migration. Occurrence in urban parks, forest areas near cities (this communication), second growth forests and forest edges (Stotz *et al.* 1992) also corroborate such tolerance.

Our observations are the southernmost records for the species during winter migration. The record in RPPN-EEF, for example, is 320 km eastern and a degree of latitude southern than the record made by Meller & Bencke (2012). The observation in Santa Maria is approximately 270 km (2.5 degrees of latitude) further south when compared to the record of Meller & Bencke (2012; see Figure 1). Two studies (Klavins *et al.* 2012, Meller & Bencke 2012) discuss the possibility of their observations in high latitudes to be accidental (*i.e.*, vagrancy) or actually an expansion of species' winter distribution, that is "pseudo-vagrancy" (Gilroy & Lees 2003). Vagrancy can include, for example, cases of overshooting, when individuals fail to stop and fly away from their intended destination, sometimes driven

by air flows or absence of suitable habitats for wintering (Gilroy & Lees 2003, Dias *et al.* 2010). However, vagrancy is more common in young and inexperienced individuals (Gilroy & Lees 2003), and most of the southernmost records in wintering areas were from adults. We believe that all the previous observations (Roesler & Barnett 2004: in the years 2000, 2002 and 2003; Klavins *et al.* 2012: in 2010; Meller & Bencke 2012: in 2010; Pegoraro 2013: in 2013) and our own records (in 2012 and 2016) suggest that the species may indeed be expanding its winter distribution southwards, since the species is reaching latitudes between 23 and 29 degrees frequently in the last decades. In this situation, a small number of individuals from a subpopulation could be establishing new wintering areas (Gilroy & Lees 2003). Therefore, to confirm the expansion of the species' winter distribution southward or cases of vagrancy, long term monitoring is desirable for different populations of the species.

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