



## RECORD OF SHIP-ASSISTED DISPLACEMENT OF *Chionis albus* (GMELIN, 1789) (AVES: CHIONIDAE) FROM ANTARCTICA TO SOUTH AMERICA

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**Abstract:** Seabirds can use merchant, research and/or fishery vessels as a refuge to avoid extreme environmental conditions at sea during their migration seasons. Here we report the visualization of six individuals of the Snowy Sheathbill (*Chionis albus*; Charadriiformes, Chionidae) landed on a ship for about twenty-three hours in the Drake Passage, during its displacement from the South Shetland Islands, Antarctica, to Tierra del Fuego, confirming ship-assisted displacement by this species during its migration route.

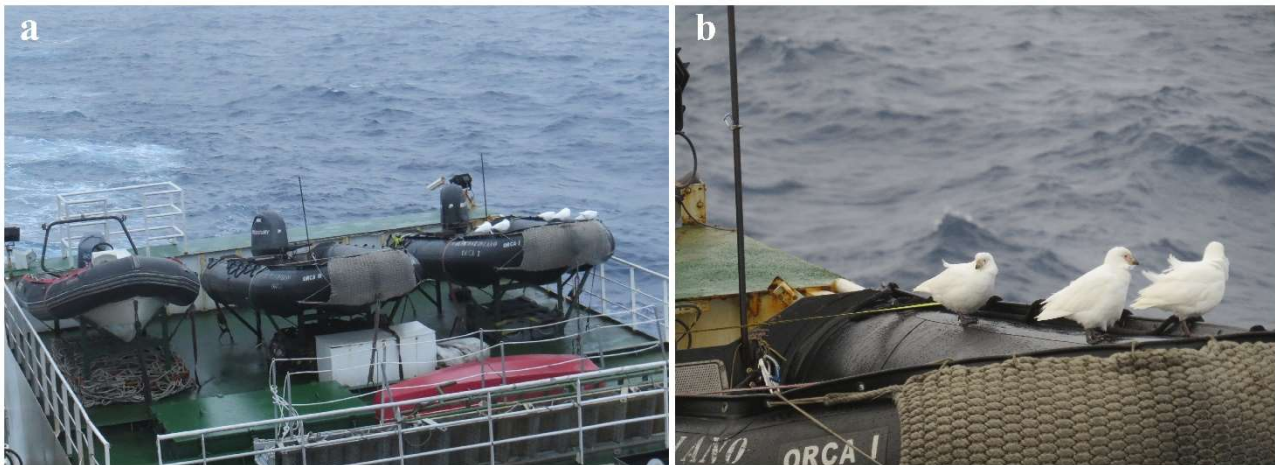
**Keywords:** Drake Passage; seabird; Snowy Sheathbill; vagrant.

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The opportunistic use of vessels by birds for landing during their at-sea displacement is a well-known behavior, although there are few studies reporting such events (Durand 1961, Nisbet 1963, Durand 1972, Elkins 1979, Burger 1996). Following fishing vessels is considered a common behavior by seabirds, since many species are known to forage on fishery discards, which provides them effortless feeding resources (Tasker *et al.* 2000, Bartumeus *et al.* 2010, Benemann *et al.* 2016). However, the presence of ships at sea may influence the spatial distribution of some vagrant bird species (Couve & Vidal 2003, Lees & Gilroy 2014), with cases reporting specimens found far from their known occurrence sites associated with those vessels (Gryz *et al.* 2015). These birds may follow ships for a short period of time, as well as for long periods, up to months of duration (Elkins 1979). In such cases, it is assumed that some species may use vessels for landing and resting

when, at sea, they face severe environmental conditions (Nunes *et al.* 2015).

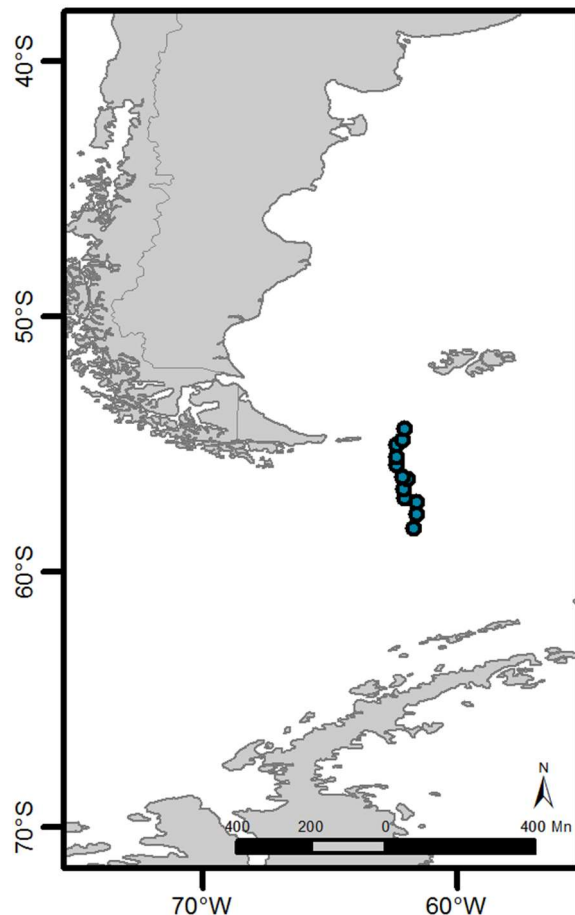
The Snowy Sheathbill (*Chionis albus*; Charadriiformes, Chionidae), is a coastal Antarctic bird, which breeds during the austral summer in the South Georgia, South Orkneys and South Shetland Archipelagos, and along the coast of the Antarctic Peninsula (Birdlife International 2017). During the austral winter, the species migrates northward to the Falkland Islands/Ilhas Malvinas, Tierra del Fuego and Patagonia (Couve & Vidal 2003, Shirihai 2008, Birdlife International 2017), with some individuals reaching further north, to the coast of Brazil, state of Rio Grande do Sul, Santa Catarina, Paraná and Pernambuco (Vooren & Chiaradia 1990, Soares & Schiefler 1995, Fonseca *et al.* 2000, Telino *et al.* 2001, Dias *et al.* 2010, Girardi & Carrano 2015). Most of records occurred in Rio Grande do Sul at Lagoa do Peixe, Mostarda municipality; Lagoa dos Patos, São José do Norte



**Figure 1.** (a) First observation of the six *Chionis albus* (Charadriiformes, Chionidae) landed on an inflatable boat at the stern of the ship, aboard the Polar Ship Almirante Maximiano; and (b) Second observation of the *C. albus* group during its displacement from the South Shetland Islands, Antarctica, to the vicinity of the Falklands Islands. (Photos: Antônio Brum).

municipality, and Praia do Cassino, Rio Grande municipality (Dias *et al.* 2010). Additionally, there are records of this species in South Africa and Europe (Couve & Vidal 2003). Since the Snowy Sheathbill is known to be a vagrant bird, it is assumed that this species may have reached such areas, far away from their breeding grounds and migration routes, through the assistance of ships (Lees & Gilroy 2014).

This communication describes the record of Snowy Sheathbill observed landed on a ship traveling South-North, in Drake Passage. The first visualization, on March 21, 2015, at 08:40 h, we observed for the first time a group of six individuals landed on an inflatable boat at the stern of the ship, aboard the Polar Ship Almirante Maximiano (Figure 1). During this first visualization the visibility was low (< 300 m), the air temperature was 4.8°C, and the sea surface temperature was 3°C. The sea was lightly shaken (force six on the Beaufort scale), and the atmospheric pressure was 1001 mmHG. In the observations made in the afternoon, at the distance of 120 nautical miles from Ilha de Los Estados (56°26'16"S; 62°16'76"W) (Figure 2), the ship was traveling at a speed of 9 nautical miles/hour, and the six Snowy Sheathbill individuals were still landed on the inflatable boat. The visibility was about 900 m, the sea was still lightly shaken (force six on the Beaufort scale), and



**Figure 2.** Distance traveled by the Polar Ship Almirante Maximiano, from the South Shetland Islands, Antarctica, to Southern South America, to Southern South America, while the six *Chionis albus* (Charadriiformes, Chionidae) were observed landed on the ship. Each dot represents one census.

the atmospheric pressure was 1004 mmHg. At nightfall, the group was observed still landed on the boat, until the last observation at 22:00 h. The next day, at the first observation at 08:00 h, all six individuals had left the ship, which was in the vicinity of the Falklands Islands/Ilhas Malvinas (53°41'24"S; 62° 24'41"W). The Snowy Sheathbill group of individuals remained on the ship for about twenty-three hours along the Drake Passage, having traveled 227 nautical miles.

It is also known that ship-assisted displacement may be a gateway to invasive species to arrive and colonize new distribution areas. In Brazil there are reported cases of invasive species which have been introduced to the country territory through ship-assistance, for example, the Pied Crow (*Corvus albus*; Passeriformes, Corvidae), which may have expanded its distribution area to Brazil probably through ships arriving from Africa (Fontoura *et al.* 2013). The dissemination of studies reporting ship-assisted displacement of birds becomes important since such events may lead to the introduction, and possibly to the colonization of new sites by these species, influencing their geographic distribution patterns due to human activities.

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