New record of leucism in Brown Booby (*Sula leucogaster*) on the Brazilian Coast

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Local fishermen have played a crucial role in contributing to our understanding of species occurrences, aiding in unraveling distribution patterns and ecological insights, and directly participating in the conservation of marine biodiversity (Baraza, 2008; Michail et al., 2023). This study unveils the documentation of leucism in *Sula leucogaster* (Boddaert, 1783) on the São Paulo coast, Brazil, facilitated by the collaborative efforts with fishermen.

Leucism, a well-documented color abnormality in birds, can significantly impact individual survival (Cook et al., 2012). Its occurrence is ascribed to genetic mutations or expressions influencing melanin production (Torres & Franke, 2008). While total albinism encompasses the absence of pigment not only in feathers but also in the iris, beak, and legs, leucism entails the absence of these pigments in a specific body part (Sibley, 2011). Leucism has been observed in various seabirds, including brown pelicans in Costa Rica (Vargas-Masís & Arguedas-Rodríguez, 2014). Leucism in *S. leucogaster* individuals in the Gulf of California have been reported once, with such cases considered rare within the Sulidae family. Additionally, Harrison (1983) documented an albino individual, and Nelson (1979) reported albinism in other congeneric species.

In Rio de Janeiro, Coelho & Alves (1991) reported a case of albinism in *S. leucogaster*, marking the first record in Brazil. Nevertheless, Gonçalves et al. (2008) classified this case as leucism, mistakenly categorized as albinism. This classification error arises from the presence of melanin in other parts of the animal, such as the eyes. Hence, we present the first record of leucism in the Brown Booby at the coast of São Paulo, a discovery shared by a local fisherman while gill net fishing near the Moela Island in February 2024, in the municipality of Guarujá (Figure 1). The leucistic individual, observed feeding with other *S. leucogaster* individuals near the fishing vessel (Figure 2), is described as a recurring presence in the area according to the fisherman.

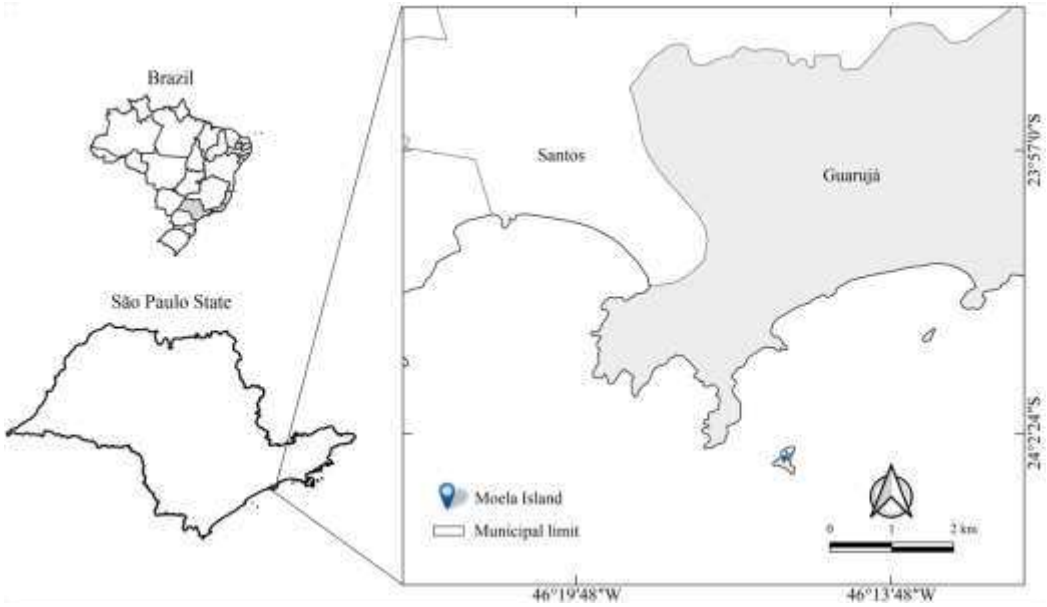


Figure 1. Site where the leucistic individual of *S. leucogaster* was observed on Moela Island, Guarujá, SP, Brazil.

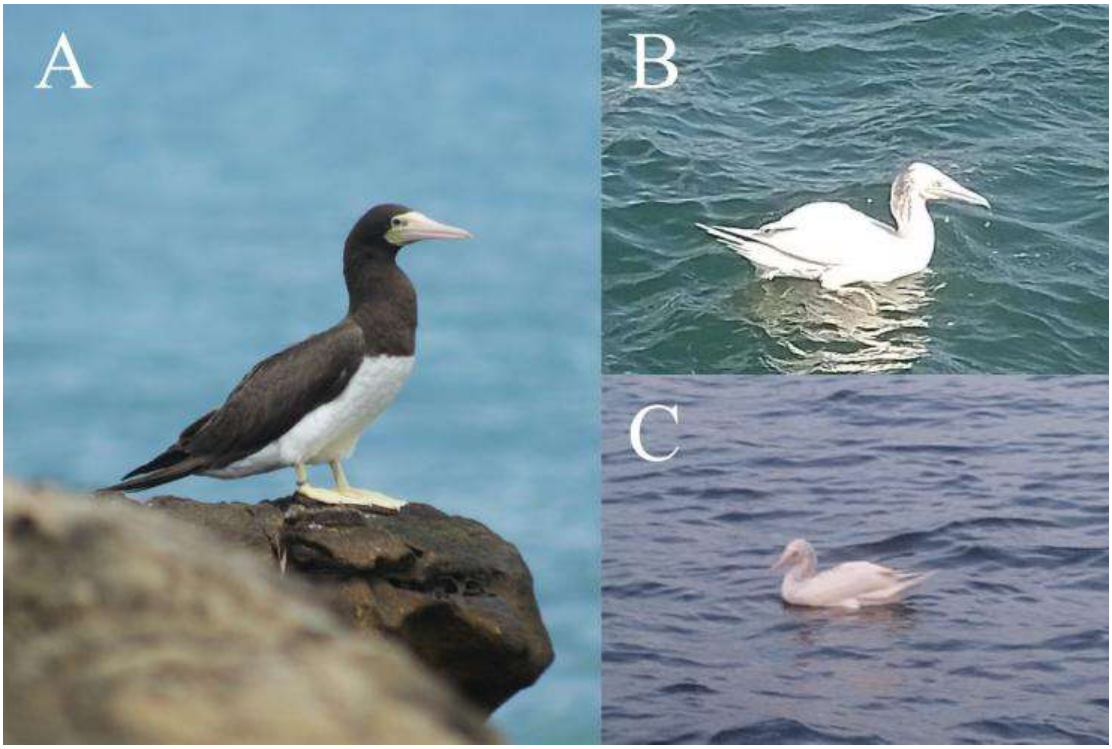


Figure 2. Photographs taken of an individual *S. leucogaster* with standard coloration by the author Rodrigo Passos (A) and photographs of the leucistic individual taken by local fisherman (B and C), on Moela Island, Guarujá, SP, Brazil.

While leucistic birds often experience heightened harassment from conspecifics (Withgott & McMahon, 1993), they also face increased vulnerability to predation, potentially resulting in a diminished survival rate (Collins, 2003). Contrary to this, some studies have found no discernible differences in the life span and reproductive success of leucistic individuals (Bensch et al., 2000).

Coelho & Alves (1991) observed an individual from *S. leucogaster* classified as albino still actively soliciting food, displaying puppy-like behavior and vocalization typically exhibited only until approximately six months of age. They proposed that the distinctive plumage might have served as a deceptive cue for the parents, who continued to provide nourishment even beyond the usual weaning period.

In the case of the Peruvian pelican, records of leucism indicate that local fishermen favored the leucistic individual when providing food, potentially enhancing its chances of survival (Torres & Franke, 2008). This observation corroborates with the scenario presented here, where the leucistic Brown Booby is frequently reported in close proximity to the fishing vessel and the fisherman. Such instances of color anomalies are essential in expanding our knowledge and data concerning their frequency and distribution within the species, as well as their potential implications for individual survival.

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