

DISCOVERY OF TWO NEW COLONIES OF OLROG'S GULL (*Larus atlanticus*) IN THE BAHÍA BLANCA ESTUARY, BUENOS AIRES PROVINCE, ARGENTINA

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ABSTRACT: Olrog's Gull (*Larus atlanticus*) is a larid species endemic to the South Atlantic coast and is considered Vulnerable in Argentina. Its breeding range is restricted to estuarine islands characterized by low elevation above sea level, sparse vegetation, and proximity to crab beds. Nearly the entire breeding population nests in protected areas with varying categories of conservation in Buenos Aires Province. During aerial censuses, conducted on 17 October 2025 to update population estimates, we recorded two new breeding sites of Olrog's Gull in the Bahía Blanca estuary: one at the northeastern tip of Trinidad Island (39°05'S, 61°55'W) and the other at the northeastern tip of Ariadna Island (39°14'S, 61°58'W). Both sites are located within the Bahía Blanca, Bahía Falsa, Bahía Verde Nature Reserve. Apparently Occupied Nests, which provide an estimate of the number of breeding pairs, were counted yielding a total of 26 ± 2 ($n = 7$ photographs) and 22 ± 1 ($n = 4$ photographs), respectively. The colonies are located close to the tidal line and may therefore be vulnerable to substantial habitat alterations caused by severe storms or human activities such as dredging and recreational use. These sectors are currently outside the reserve's strictly protected zone. As a result of this finding, they have been incorporated into the ongoing revision of the reserve's zoning scheme to strengthen effective protection measures during this critical period for the species.

KEYWORDS: aerial census, colony, Bahía Blanca estuary, Olrog's Gull, *Larus atlanticus*, population size

Olrog's Gull (*Larus atlanticus*) is a larid species endemic to the Atlantic coast of South America and can be found during the non-breeding season from southern Argentina to southern Brazil (Yorio et al. 2013). Its breeding range is restricted to estuarine islands, generally shared with the Kelp Gull (*Larus dominicanus*), where it selects sites close to the high-tide line, at relatively low elevations above sea level, with sparse vegetation and in proximity to crab beds (Borboroglu & Yorio 2007). The most recently published population estimates reported only approximately 8,000 breeding pairs (Yorio et al. 2013). This is one of the factors leading to its classification as

Vulnerable in Argentina, Endangered in Uruguay (Azpiroz & Caballero-Sadi 2017), and Near Threatened globally (BirdLife International 2025).

The breeding sites reported for the species are located within Buenos Aires Province, Argentina, in the Bahía Blanca estuary (which contains most of the breeding population) and the Bahía San Blas estuary, and marginally in Chubut Province, Argentina (supporting less than 2% of the breeding population; Yorio et al. 2013). The first comprehensive breeding record of the species was reported in Bahía Anegada, within the San Blas area, where approximately 400

individuals were counted (Devillers 1977). Over the years, 24 sites have been reported as having supported breeding activity at some point (Yorio et al. 2013). Breeding activity is not simultaneously present at all sites; rather, the number of active breeding sites varies annually between six and nine (Yorio et al. 2013). Some colonies have shown continuous activity throughout the monitored years, such as Isla del Puerto, Isla Gaviota, and Islote Arroyo Jabalí Oeste (Yorio et al. 2013). However, other breeding sites are less stable and may change from year to year, allowing for the establishment of new colonies (Yorio et al. 2005, 2013, Petracci et al. 2008), increasing the relevance of the extent of environmental protection measures for potential breeding areas.

Within the Bahía Blanca estuary lies the Bahía Blanca, Bahía Falsa, Bahía Verde Multiple-Use Provincial Nature Reserve (Provincial Law No. 12 101/98), which includes several islands, sandbanks, and surrounding waters, as well as the Islote de la Gaviota Cangrejera Nature Reserve for Fauna and Education (Provincial Law No. 15 362/22). Further south lies the Bahía San Blas Multiple-Use Natural Reserve and Wildlife Refuge (Provincial Law No. 12 788/01). These key areas for biodiversity protection are not only important because they encompass breeding grounds for the species, but also because they protect habitats containing crab beds supporting its principal prey, the Burrowing Crab (*Neohelice granulata*; Delhey et al. 2001a, Herrera et al. 2005, Suárez et al. 2011, Yorio et al. 2013).

To estimate the number of breeding pairs of Olorog's Gull, an aerial census was conducted during the 2025 breeding season in the Bahía Blanca estuary and Bahía San Blas areas.

METHODS

To conduct the census of the Olorog's Gull colonies, we used a Cessna 182 aircraft flying at an altitude of approximately 100 m to survey the Bahía Blanca estuary on 17 October 2025. The flight route was designed to cover areas with previously reported breeding activity as well as sites exhibiting suitable characteristics for breeding. We took photographs of sites where colonies were observed during the flyover.

Photographs were taken using a Sony Alpha 9 II camera equipped with a Sony 24–240 mm zoom lens, capturing each colony from multiple angles. We selected the photographs that were closest to the colony and of the highest quality. From this subset, we performed manual counts using the image-editing

software Inkscape v1.3.2. Values are reported as mean $\pm$ standard error and 95% confidence intervals.

We counted Apparently Occupied Nests (Gregory et al. 2004), hereafter referred to as 'nests' for ease of reading, as an estimate of the number of breeding pairs. In this species, nests may be constructed of plant material or be located directly on sand and gravel, often at high densities (Yorio et al. 2001, 2013, Petracci et al. 2008; Fig. 1). Abandoned nests can be recognized by a central depression (Petracci et al. 2008). Accordingly, a nest was identified as a nesting site if it exhibited the characteristics described above and if it had at least one adult nearby. Adults were only associated with a nest when they displayed an unequivocal incubation posture (i.e., positioned over a depression in the substrate; Figs. 1A & 1B). Nests lacking evidence of occupancy (Fig. 1C) or adults resting without such a posture (Fig. 1D) were assumed to belong to another breeding pair and were not counted as nests.

RESULTS

During the flight conducted over the Bahía Blanca estuary on 17 October 2025, we recorded two new breeding sites of Olorog's Gull: one at the northeastern tip of Trinidad Island, which we named 'Guardaparque Dana Piedrabuena Bank' (39°05'S, 61°55'W), and another at the northeastern tip of Ariadna Island, in an area known as 'Manchín Bank' (39°14'S, 61°58'W; Fig. 2). For the colony near Trinidad Island, we counted a total of 26 ± 2 (24–27) nests ($n = 7$ photographs). For the colony near Ariadna Island, we counted 22 ± 1 (19–25) nests ($n = 4$ photographs). No chicks were observed in the photographs. Regarding the breeding stage at the time of sampling, we observed an average of approximately two eggs per nest in a total of 22 nests in the Islote del Puerto/Olorog's Gull Islet area on 30 September 2025.

DISCUSSION

These results highlight the importance of continuing to monitor the breeding distribution of Olorog's Gull. Breeding stage has been reported to vary among colonies: Suárez et al. (2011) reported incubation occurring between late September and early October in the San Blas area, a period similar to that reported by La Sala et al. (2011) for the Bahía Blanca area. In contrast, Herrera et al. (2005) reported incubation during November in colonies in Chubut Province. Devillers (1977) suggested that breeding asynchrony may also occur within the same area as a consequence

of egg harvesting by local inhabitants. Although this practice is currently believed to persist only illegally at one colony in Bahía San Blas, additional studies are needed to assess its occurrence throughout the breeding range of Olrog's Gull.

The newly identified colonies are located close to the waterline (Fig. 3), with the Ariadna Island colony being particularly exposed and lacking vegetation cover. Consequently, it may be vulnerable to major alterations of emergent estuarine habitats resulting from severe storms (Delhey et al. 2001b, Borboroglu & Yorio 2007, Yorio et al. 2013, Dias et al. 2019, Fiori & Pratolongo 2021). Another reported threat to breeding habitats is the presence of exotic species, such as

Barilla plant (*Soda inermis*), which forms dense cover potentially restricting the availability of nesting sites for Olrog's Gull (Marbán & Zalba 2019).

The discovery of these new breeding areas comes at a time when the management plan of the Bahía Blanca, Bahía Falsa, Bahía Verde Nature Reserve is being revised. Their inclusion in the new zoning scheme would place them within the reserve's strictly protected area, together with the other known colonies, thereby strengthening effective protection measures for key breeding habitats during this critical period for the species.

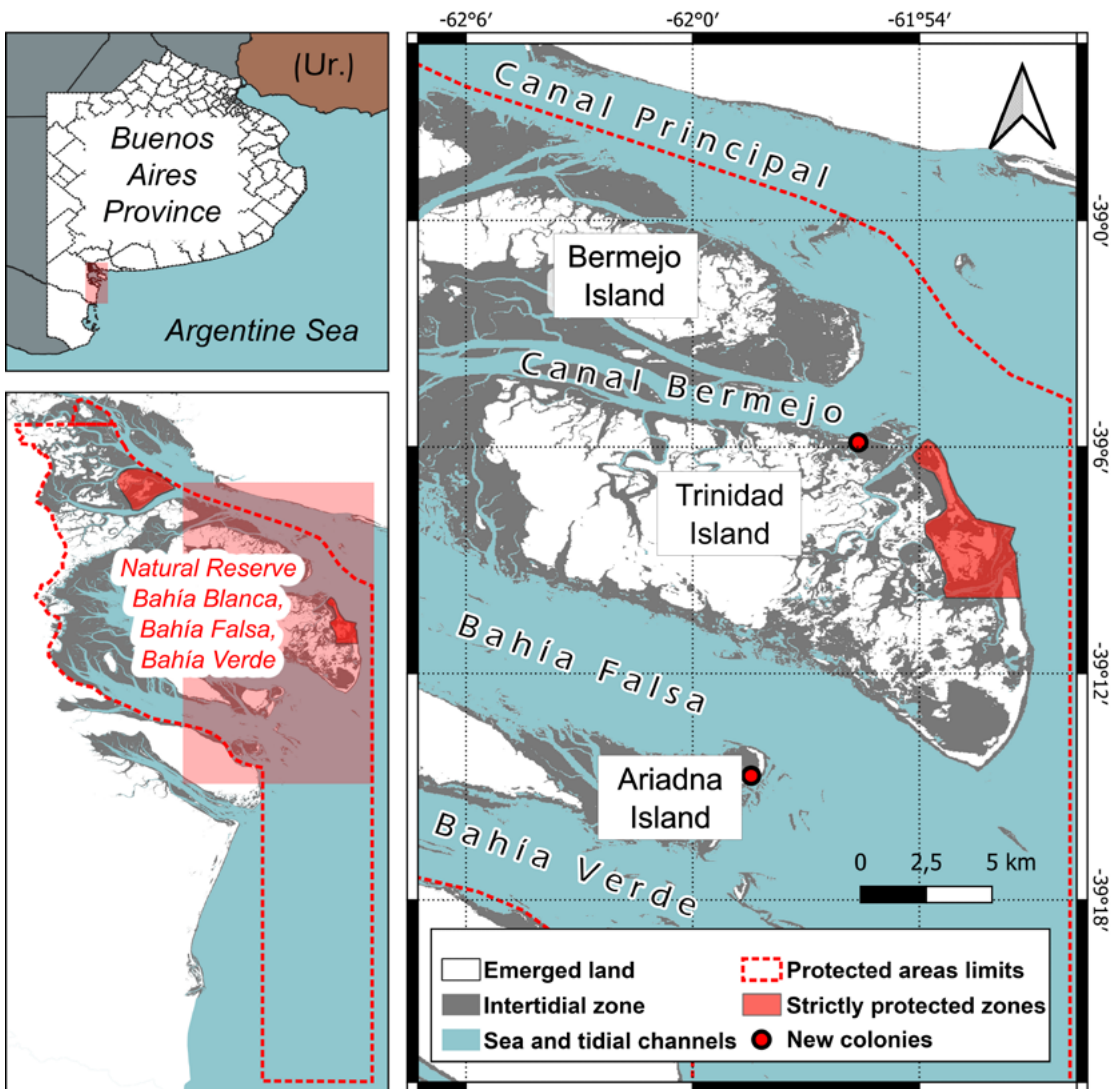


Figure 1. Geographic location of the new Olrog's Gull (*Larus atlanticus*) colonies (red points) recorded in 2025 on Ariadna Island and Trinidad Island, Buenos Aires, Argentina. The red dashed line indicates the reserve boundary, and the red shaded rectangles indicate the area shown in detail in the image on the right (map created using QGIS v3.44.7).



Figure 2. Detail of photographs of nests and adults of Olrog's Gull (*Larus atlanticus*) recorded in the Bahía Blanca estuary (Buenos Aires, Argentina), illustrating the criteria used to identify Apparently Occupied Nests. The upper photographs show examples of active nests. A) A typical active nest with one adult sitting (left) and another standing nearby (right). B) An active nest with an adult in an incubation posture over a central depression, without a conspicuous vegetation rim. C) Inactive nests (not counted): a conspicuous vegetation rim is present, but there is no evidence of activity. D) One sitting adult (bottom) and one standing adult (top), not considered an Apparently Occupied Nest.

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In recognition of her outstanding and long-standing dedication, the islet of Trinidad Island where the new colony was recorded was named 'Guardaparque Dana Piedrabuena' in honor of her legacy in biodiversity conservation. The park ranger service will always

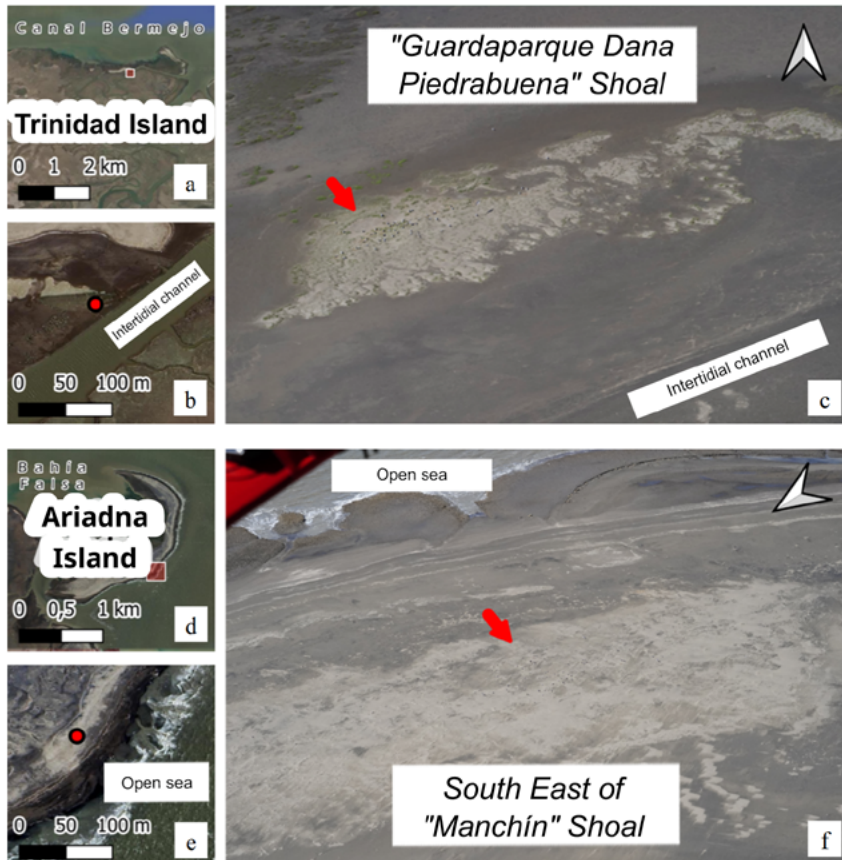


Figure 3. Aerial photographs of the new Olrog's Gull (*Larus atlanticus*) colonies reported on A–C) Trinidad Island and D–F) Ariadna Island (Buenos Aires, Argentina). The reference satellite images on the left (obtained from Google Earth) show the exposure of both colonies to water due to their proximity to the tidal line. The photographs were taken at approximately 11:00 h, when the tide was rising, between low tide at 07:29 h (1.18 m) and high tide at 13:50 h (3.29 m; Servicio de Hidrografía Naval 2025).

remember her valuable contribution to the monitoring of Olrog's Gull during the breeding-season field campaign conducted on Trinidad Island in 2024.

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