

Short Communication: First record of an anomalously pigmented Peale's dolphin off Southern Patagonia

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ABSTRACT

This study reports the first record of an anomalously white Peale's dolphin (*Cephalorhynchus australis*) in Southern Patagonia, Argentina. The individual was documented during systematic land-based surveys at 48°58'03"S, 67°29'42"W and identified using photo-identification techniques. Morphological and pigmentation characteristics are consistent with leucism rather than albinism. The dolphin, likely a juvenile, was observed in association with conspecifics, exhibiting coordinated behaviors such as patrolling and foraging. Anomalous pigmentation in cetaceans may involve ecological and physiological constraints, including increased predation risk, impaired thermoregulation, and altered social interactions. This record contributes to the limited knowledge of pigmentation anomalies in small cetaceans.

KEYWORDS: PEALE'S DOLPHIN; LEUCISM; COLOURATION; PHOTO-ID; SOUTH AMERICA

INTRODUCTION

Peale's dolphins (*Cephalorhynchus australis*)² (Peale, 1848) inhabit the shelf waters off southern South America, ranging from Valparaíso, Chile (33°S) south to Cape Horn (56°S) and along the Patagonian Shelf to northern Patagonia (38°S), including the Islas Malvinas (Falkland Islands) (Goodall *et al.*, 1997a; Brownell *et al.*, 1999; Cipriano 2018; Heinrich and Dellabianca, 2019; de Haro *et al.*, 2025). Peale's dolphins inhabit two types of coastlines. In Tierra del Fuego and southern Chile, they frequent the deep channels and fjords (Goodall *et al.*, 1997a; Zamorano-Abramson *et al.*, 2010). In the Southwest Atlantic, Peale's dolphins inhabit the exposed coast over the continental shelf out to the 200 m isobath several tens of km offshore (Goodall *et al.*, 1997a; Dellabianca *et al.*, 2016). In the southern portion of the distribution, both in Argentina and Chile, Peale's dolphins are strongly associated with coastal kelp beds (*Macrocystis pyrifera*; de Haro & Iñiguez, 1997; Goodall *et al.*, 1997a; Lescrauwaet, 1997; Viddi & Lescrauwaet, 2005; Viddi *et al.*, 2011; de Haro *et al.*, 2025). Dolphins are resident in nearshore waters throughout the year, but some also range widely alongshore (Heinrich & Dellabianca, 2019).

C. australis has a robust body. The typical appearance of the species has a double black eye ring extending forward onto the snout, a black cape with a faint saddle of flecked gray, a large lateral grayish-white patch flecked with darker gray and darker ventral margin to this patch, delimiting it sharply from the white belly. On each flank there is a curved whitish-gray patch extending up from the vent and narrowing to a point that ends below or just ahead of the dorsal fin, while the posterior ends curve up and almost meet just below the apex of the tail stock. The beak is short and inconspicuous; the dorsal fin is tall and smoothly rounded at the tip (Goodall *et al.*, 1997b).

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² The Peale's dolphin has been classified as *Cephalorhynchus australis* since 2025, replacing *Lagenorhynchus australis* (Galatius *et al.*, 2025).

Mammalian colour is almost entirely the result of presence or absence of the pigment melanin in the skin, hair and eyes (Fertl *et al.*, 2004). Hypo-pigmented (anomalously white) individuals are often presumed to be true albinos; however, body pigmentation patterns should not be the only criterion for diagnosing albinism. Leucism refers to animals characterised by partial absence of pigmentation, but the eyes are still pigmented (in contrast to albinism) and differs from piebaldism in which only a few areas of the body present low levels of pigmentation (Fertl & Rosel, 2018).

We present the first record of an all-white Peale's dolphin off Southern Patagonia, Argentina.

MATERIALS & METHODS

This event was recorded as part of the systematic land-based cetacean surveys conducted in the Parque Interjurisdiccional Marino Makenke (PIMM) and nearby. The study area is about 40 km of coastal waters and extends from 48°57'46"S, 67°29'31"W to the northern sector of the PIMM from 49°14'56"S, 67°36'47"W (Fig. 1). It contains cliffs which range between 12 m to 80 m high, sand dunes (< 3 m high), coastal strands and beaches of gravel and sand no more than 200 m wide. Most of the shoals are covered at high tide or are shallowly submerged and extend up to 100 m offshore (APN and province of Santa Cruz, 2021). The annual mean tidal amplitude in the area is enormous, approaching 6 m (*Servicio de Hidrografía Naval*).³ *Macrocystis pyrifera* forests represent one of the largest biomasses of marine flora within the PIMM, with a concentration in the north of the PIMM (Romanello & Boraso de Zaixso, 1993).

Data collected during each survey included cetacean group size and species composition, behaviour and geographic position. Observations were obtained only in good weather conditions (Beaufort Sea State of 3 or less). In addition, digital photographs of all individuals were taken using a Nikon D850 with a 70–400 mm lens. Individual dolphins were identified daily from photographs using unique natural markings, such as nicks and notches along the dorsal fin, as well as tooth marks, scratches, scars and skin lesions, along the dorsal fin and peduncle (Würsig & Würsig, 1977; Würsig & Jefferson, 1990).

RESULTS & DISCUSSION

On 10 January 2026, an all-white Peale's dolphin was sighted in a group of three individuals in shallow waters off Santa Cruz province, Argentina, from a land-based observation point (48°58'03"S/ 67°29'42"W; Fig. 1).

The individual had an overall whitish-pink colouration and exhibited diffuse pigmentation differentiation consistent with the species' characteristic pigmentation pattern. All edges of the dorsal fin had a faint pink colouration, with small, yellowish patches distributed along its base. On the fin surface, there was a groove parallel to the leading edge, extending from the centre to the tip. A lateral tilt to the left can be observed at the apex. On the left side, in the posterior region of the fin, immediately anterior to the posterior insertion point, a conspicuous spot is visible. Meanwhile, below the base of the fin, two other less visible spots are observed, parallel to one another (Fig. 2). On the right side, the dorsal fin had three spots arranged vertically, parallel to the trailing edge, with the two upper spots closer together and more evident than the third, located near the base. The posterior edge of the dorsal caudal peduncle, visible on both sides, had a series of rectangle-shaped yellowish scars: on the left side, below these scars, faint pink spots of irregular shape were observed, and immediately below this series, on the left side and toward its distal end, there was a line extending perpendicularly to the longitudinal axis of the body. In the anterior dorsal portion, near the blowhole, diffuse pinkish patches with yellowish tones were observed (Fig. 3).

The individual was catalogued as DASJ60 in the Fundación Cethus Peale's dolphin photo-ID catalogue of PIMM and nearby observations. The individual was seen together with two other individuals with the characteristic colour pattern of the species. Unfortunately, they could not be individually identified at that time. The group was moving repeatedly back and forth (patrolling) at approximately 200 m offshore. The encounter with the dolphins lasted 10 minutes.

³ <https://www.hidro.gov.ar/>

On 15 January 2026, the same individual was sighted for 40 minutes with two other Peale's dolphins, identified as DASJ39 and DASJ43, patrolling and foraging on submerged wave-cut platform. The directional changes, increased surface speed and repeated tail-slapping may have been carried out to effectively herd prey, as these coordinated movements have been interpreted as cooperative foraging for this species (Iñíguez Bessega *et al.*, in prep.).

A total number of 199 pictures of this individual were analysed. We could not confirm with absolute certainty the presence of a 'pink' eye, but this feature is not decisive in defining an albino. The 'pink' eye is characteristic of one type of albinism (tyrosinase-negative oculocutaneous albinism), when iris translucency produces this form of the disorder (Kinnear *et al.*, 1985). After analysing the photos, it was concluded that DASJ60 is a juvenile less than two years old. DASJ39 was sighted again on 20 January; DASJ43 and DASJ60 were not.

A comprehensive review on anomalous pigmentation in neotropical mammals found that it is especially common in cetaceans (Abreu *et al.*, 2013). While cetaceans are not a highly colourful taxonomic group, Perrin (2002) suggested that colouration patterns observed in whales, dolphins and porpoises still presumably have both function and adaptative value(s).

Anomalous white cetaceans had been recorded in over 20 cetacean species (Fertl *et al.*, 1999; Tsutsui *et al.*, 2001; Fertl *et al.* 2004; de Boer 2010; Abreu *et al.* 2013; Cremer *et al.*, 2014; Fertl & Rosel, 2018; Pérez-Puig *et al.*, 2019; Lindner, 2023). Little is known about the costs associated with this unusual colour pattern. Viability of such individuals may be compromised by various factors, such as hampered thermoregulation, lack of counter-shading that leaves them vulnerable to predators or more conspicuous to prey, increased exposure of their skin and eyes to the sun and associated pathologies (sensory or nervous defects, anemia, low fertility and higher disease susceptibility) (Hain & Leatherwood, 1982; Fertl & Rosel, 2018; Robinson & Haskins, 2013; dos Santos *et al.*, 2016). Thermoregulation could be an important factor to consider in the survival of DASJ60,

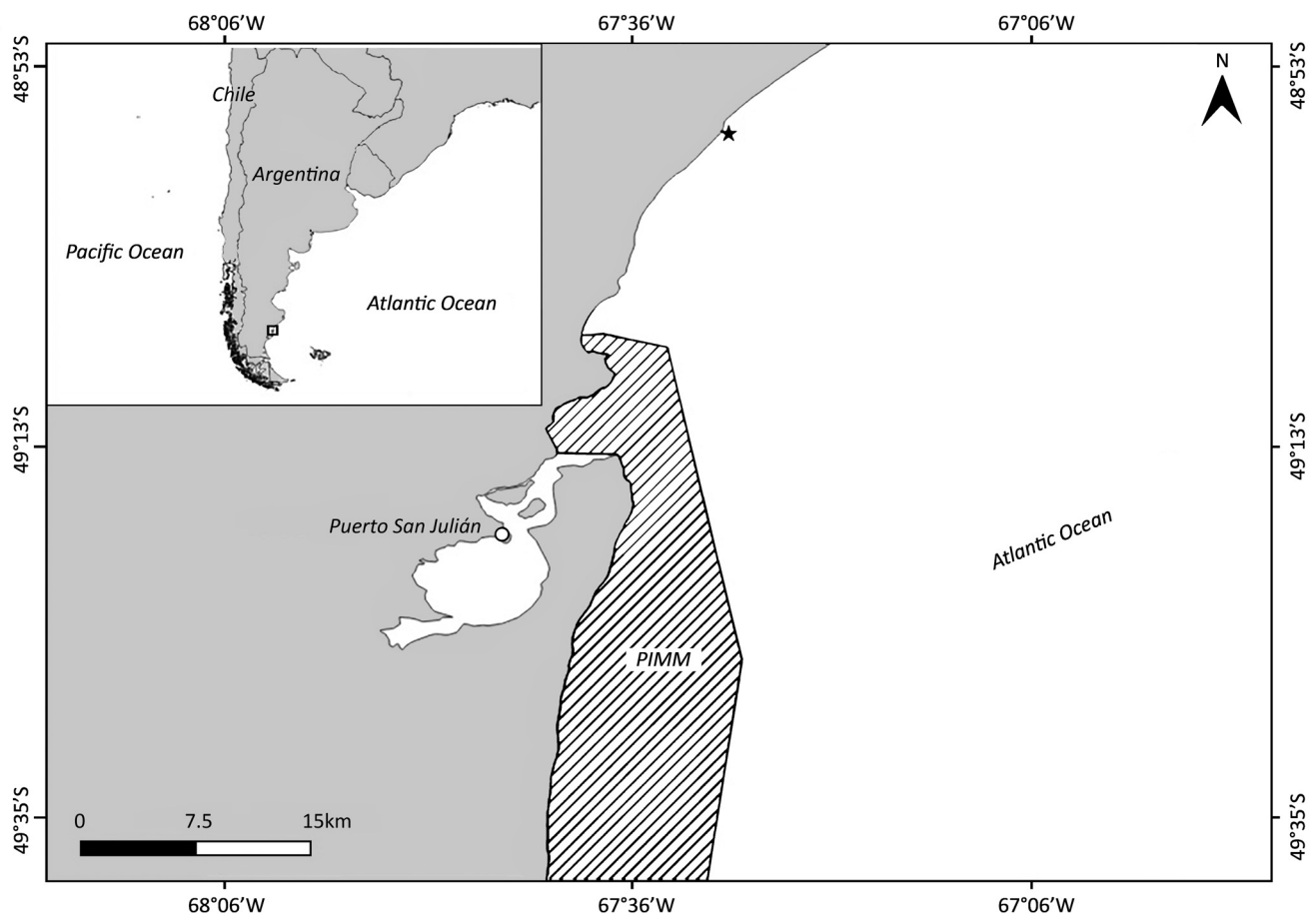


Figure 1. Location where the white Peale's dolphin was recorded (*), showing the Parque Interjurisdiccional Marino Makenke (PIMM).



Figure 2. Leucistic Peale's dolphin (DASJ60) off southern Patagonia, Argentina.



Figure 3. Abnormal white colouration of a leucistic Peale's dolphin (DASJ60) and a Peale's dolphin with normal colouration side by side.

given that the sea surface temperature in the region is around 14°C in summer and 5°C in winter (Sar *et al.*, 2018). Furthermore, both sharks and orcas have been recorded in the area where it was observed, and both are potential predators (APN y provincia de Santa Cruz, 2021; Hevia *et al.*, 2022).

The colour pattern of cetaceans plays a key role in various respects. A detailed analysis of the functional significance of colouration across all cetacean species was carried out by Caro *et al.* (2011). That study highlighted

the importance of counter-shading in cetaceans which may serve as a means of concealing themselves from prey, while white markings on the body may be related to the capture of fish, squid and krill. These highly visible white patches may disorient the prey or force them to cluster together, making them easier to catch. Peale's dolphins feed on demersal and bottom fishes, octopus and squid species, and do so in their coastal habitat over the continental shelf and amongst kelp beds (Iñíguez & de Haro, 1994; Riccialdelli *et al.*, 2010; Durante *et al.* 2021; Durante *et al.*, 2026) and sometimes in very shallow areas (waters less than 1 m deep over tidally-submerged reefs [Iñíguez Bessega *et al.*, in prep.]). The white individual's efficiency in capturing prey in such shallow waters may be impaired. On the two days it was observed, it was never seen swimming in shallow waters less than 1 m. On the other hand, prominent markings are associated with group life, fast swimming and the display of surface behaviours, such as leaping or tail slapping, suggesting that they play a role in intraspecific communication (Caro *et al.*, 2011). *C. australis* exhibit all these characteristics (Goodall *et al.*, 1997; de Haro & Iñíguez, 1997; Iñíguez Bessega *et al.*, in prep.). As mentioned above, the social behaviour of this white specimen could also be affected, which could potentially lead to an increased degree of dependence, possibly on individuals related to it. Recent studies of the genetics of Peale's dolphins suggest strong population structure, characterised by high site fidelity and low gene flow between sub-populations (Duranter *et al.*, 2026).

The present sighting provides the first record of an anomalously white Peale's dolphin. These observations suggest that the observed pigmentation patterns are consistent with leucism rather than albinism, although we cannot draw any definitive conclusions based on just two records. Future observations of this individual could provide greater long-term insight into the effects caused by this anomalous colour pattern in cetaceans. Repeated surveys of the PIMM are ongoing and expected to continue annually over the next decade.

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