First record of a leucistic striped dolphin (*Stenella coeruleoalba*) in the southern Bay of Biscay

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In the animal kingdom, specifically in vertebrates, a coloration anomalies in ectoderm derived tissue is explained by a lack or excess of melanin in the organism (Slominski *et al*. 2004 ; Fertl *et al*. 2004 ; Camargo *et al*. 2014 ; Fleck *et al*. 2016). For the former, leucism refers to the animals with a partial or total absence of pigmentation but with no eye colour abnormality, contrary to albinoism and their distinct red eye colouration. The later results in melanism, animals with an increase of black pigmentation (Fertl & Losel, 2009 ; Alves *et al*. 2017).

This spectrum of anomalous skin colouration can be explained by different hypotheses documented across various species such as pollution in birds (Moller, 1993 ; Møller & Mousseau, 2001), a decrease in habitat quality in geese (Owen & Skimming, 1992) and food in voles (Peles *et al.* 1995).

However, concerning the case of leucism and melanism in cetaceans, a lack of knowledge does not allow for any hypothesis on its origins.

Hauser-Davis *et al* (2020) reported a total of 14 records on confirmed dolphin leucism cases from literature and for different species. These cases were all sighted in the northern hemisphere except for one in southeastern Brazilian waters (Cardoso *et al.* 2019). Most reports were on the harbour porpoise (Keener *et al.* 2011 ; Tonay *et al.* 2012 ; Robinson and Haskins 2013 ; Kopaliani *et al.* 2017 ; Gil *et al.* 2019), the bottlenose dolphin (Perez-Puig *et al.* 2019), the common dolphin (Kopaliani *et al.* 2017 ; Alves *et al*. 2017), the Atlantic spotted dolphin (dos Santos *et al.* 2016) and the Risso's dolphin (Funasaka *et al.* 2017).

Further leucism cases have been reported for other cetaceans such as the orca (Renner & Bell, 2008) and the humpback whale (Forestell *et al.* 2001) respectively in Alaska and Australian waters.

On the Basque coast between Hendaye and the Capbreton canyon, an individual dolphin anomalously white were observed twice in August 2021 and May 2022.

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This observation occurred during a survey organised by a professional whale watching company, Explore Océan, in partnership with a participative science association, Objectif Sciences International, with a team of scientific experts.

In August, this individual was in a mixed group of common and striped dolphins. Due to this mixing and the lack of photos of both sides of the animal, it wasn't possible to determine the species of the leucite individual (Image 1).

Image 1: White dolphin sighted in August 2021

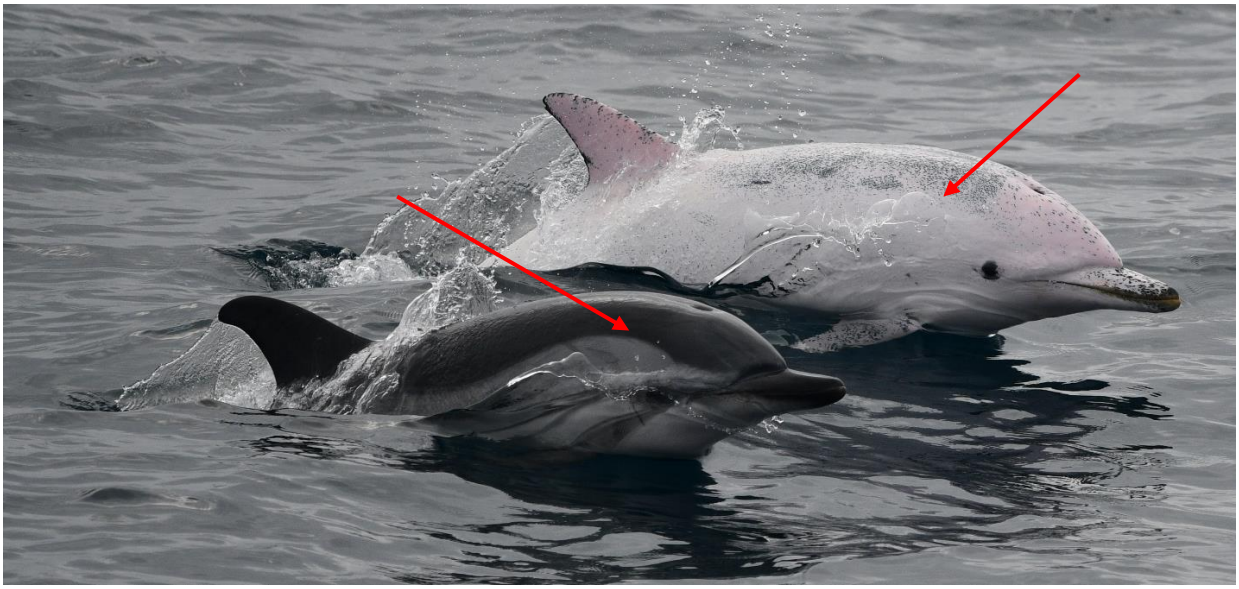

Image 2: White dolphin sighted in May 2022

The second observation in 2022 has recently uncovered new clues to determine the species of this individual.

Firstly, the individual was sighted with a group of striped dolphins.

Secondly, and visible in the photo above, a light stripe, called a 'spinal blaze', beginning just above the eye and running horizontally along the body before curving upwards under the dorsal fin until it fades away is visible on the right side of the dolphin behind the head (red arrows).
This stripe sits in between 2 patches of skin on the flank and dorsal surface, which are speckled with small patches of pigmentation similar in colour to the dark blue of the same dorsal surface on the head of the dolphin next to it. However, the spinal blaze itself notably lacks this speckled patchwork and is consistent with the lighter grey colouration of the spinal blaze of the second dolphin in this image.
This spinal blaze is a key characteristic of this species and is commonly used in its identification (Image 2).

Finally, dorsal fin ID allows us to conclude that this is the same individual sighted in 2021 and 2022 (Image 3 and 4).

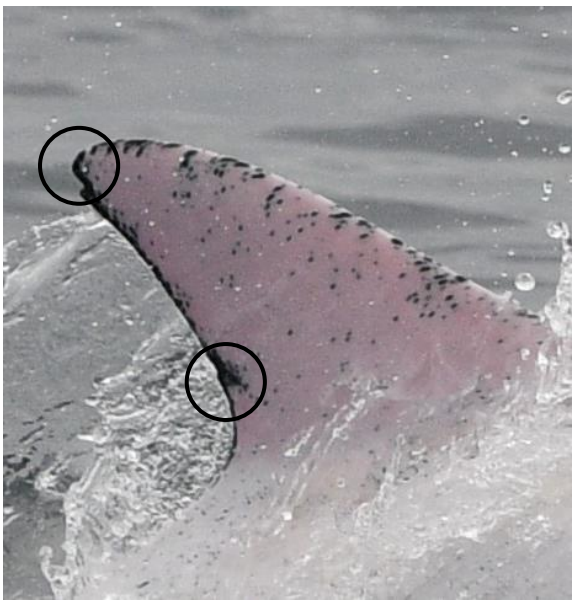

Image 3: Dorsal fin of the white dolphin in May 2022

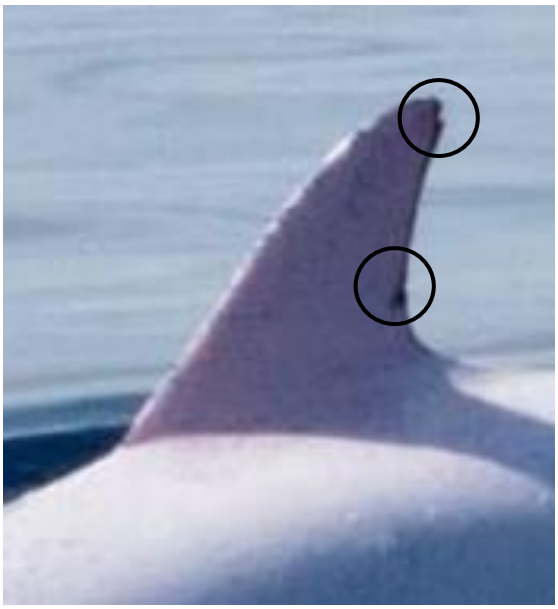

Image 4: Dorsal fin of the white dolphin in August 2021

Very little is known about the abundance of cetaceans with severe depigmentation and the factors associated with this anomaly such as their

visibility to predators, reproductive capacity, thermoregulatory limitations and survival rates (Fertl & Rosel 2002; Fertl et al. 2004).

This lack of knowledge and reports on the subject highlight the importance of participative sciences at sea to survey marine mammals in order to develop an extensive database that can thus better evaluate this anomy among cetaceans.

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