

Using natural cape pigmentation patterns for the photo-identification of rough-toothed dolphins (*Steno bredanensis*).

Uso de la pigmentación natural de la capa oscura lateral de los delfines de dientes rugosos (*Steno bredanensis*) para su foto-identificación.

Utilisation de la pigmentation naturelle de la cape sombre latérale des Sténos rostrés (*Steno bredanensis*) pour leur photo-identification.

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ABSTRACT

Identifying individuals within a population is key for estimating population sizes, trends, as well as understanding survival and mortality rates, reproductive success, social structure, movements and migration patterns. It is also essential for assessing the impact of environmental changes and developing species management and conservation strategies. Photo-identification (photo-ID) is a non-invasive method used extensively in cetacean research.

This study introduces a new method for identifying individual rough-toothed dolphins (*Steno bredanensis*) based on their unique and natural dark cape pigmentation patterns above the flank. The reliability of this method is demonstrated using the *S.bredanensis* photo-ID catalogue from the Marine Mammal Observatory of Guadeloupe Archipelago (OMMAG) including over 2,000 photos and 28 individually identifiable rough-toothed dolphins.

Five identified individuals rephotographed from 2007 to 2023 were selected: Antenne2, Eden, Camille, Jordane and Tétine (names from OMMAG catalogue). The pigmentation patterns of the dark cape were analysed in 200 photographs. The distribution of these patterns was described among the five selected rough-toothed dolphins and compared using a commonly defined reference study area located above the flank of the cetacean, a body part that is usually captured in photo-IDs. Moreover, identifiers such as flank marks and dorsal fin shapes were used to confirm individual identifications over time.

This study confirms that dark cape pigmentation patterns are distinct among individuals, congenital and permanent over time, with photo-recaptures spanning over 10 years. This new photo-ID method should be widely considered for rough-toothed dolphin populations and provides valuable information for inter-catalogue comparisons.

KEYWORDS: Rough-toothed dolphins, *Steno bredanensis*, photo-identification, pigmentation patterns .

Note: This presentation is being submitted for peer review publication under the collaborative partnership between the **Gulf and Caribbean Fisheries Institute (GCFI)** and the **Gulf Caribbean Research Partnership (GCR)**.