

An 'appealing' dusky

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Let's face it: scientists hold more doubts than certainties. Acknowledging those doubts can be a sign of expertise, but this does not remove the doubts.

Scientists can be particularly confused when dealing with taxonomy. To name a group of animals on the basis of common characteristics can be an awkward job. A typical example of this situation is when a scientist tries to classify species that do not fit into any known higher taxonomic level. In such cases scientists can resort to drastic solutions, such as devising a so called 'dustbin taxon'. Generally, organisms grouped into a 'dustbin taxon' have, in fact, no clear natural relationship to one another and the only trait they really have in common is that they just do not fit in anywhere else. Simple as that.

Taxonomic troubles of such kinds are not unusual with marine mammals, and the waters of the Falkland Islands provide us with an interesting example of cetaceans whose taxonomic position is uncertain to say the least. Over the past two years SAERI's Dolphins of the Kelp (DOKE) project has been targeting the community of two species of dolphins inhabiting the coastal waters of this area – Commerson's (*Cephalorhynchus commersonii*) and Peale's (*Lagenorhynchus australis*) dolphins – with the aim of establishing baseline data on their abundance, distribution, natural history, and genetic diversity. What we know about the classification of the Peale's dolphin is that its genus *Lagenorhynchus* is likely an artificial genus and that most species included are probably not closely-related to any of the others. Note that the name *Lagenorhynchus*, from ancient Greek, stands for 'bottle-beak'; although the 'bottle-nose' morphology is a characteristic of this genus, the so-called bottlenose dolphins belong in the genus *Tursiops*. You know, just to avoid confusion.

It is likely that future taxonomic works relying on genetic studies will provide a revision of the genus *Lagenorhynchus* by reassigning the species to, probably, three separate genera; however, the genus includes at present 6 species. *Lagenorhynchus acutus* (Atlantic White-sided dolphin) inhabits cold temperate to subpolar waters of the North Atlantic; *Lagenorhynchus albirostris* (White-beaked dolphin), the most northerly member of the genus, populates cold temperate to subpolar waters of the North Atlantic; 'our' *Lagenorhynchus australis* (Peale's dolphin) is confined to South American waters and is regularly seen around the Falkland Islands; *Lagenorhynchus cruciger* (Hourglass dolphin) is distributed in the higher latitudes of the southern oceans; *Lagenorhynchus obliquidens* (Pacific White-sided dolphin) is found in temperate waters of the North Pacific, and *Lagenorhynchus obscurus* (Dusky dolphin) is widespread throughout the southern hemisphere.

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It is an intriguing fact that Peale’s dolphin is sympatric with the Dusky dolphin for most of its range. It appears that the habitat usages of the two species are slightly different, with Peale’s habitat being more highly associated with protected bays and channels while the Dusky is more generally found in the continental shelf and slope; nonetheless, they are likely to be encountered together. On Thursday the 26th of July, we were out at sea for our winter season survey off Black Point/Kidney Cove (East Falkland). Along with our usual research activities, we were testing a new trick to track the dolphins while shooting underwater videos. For the record, the trick consisted of using a coax antenna cable connected to a cell phone to amplify our Wi-Fi signal while simultaneously recording footage with an action camera (credits for the idea to our colleague PB and YouTube). Back at the office, we checked the new device’s recorded footage of what we had believed had been a group of Peale’s dolphins and... one Dusky dolphin appeared in the video. The two species are often difficult to differentiate at sea, but the ‘improved’ underwater footage illustrated how one individual clearly displayed distinctly different features than the Peale’s that made up the rest of the group (see figures below).



Fig. 1. The Dusky dolphin (first on the left) swimming among the Peale’s.

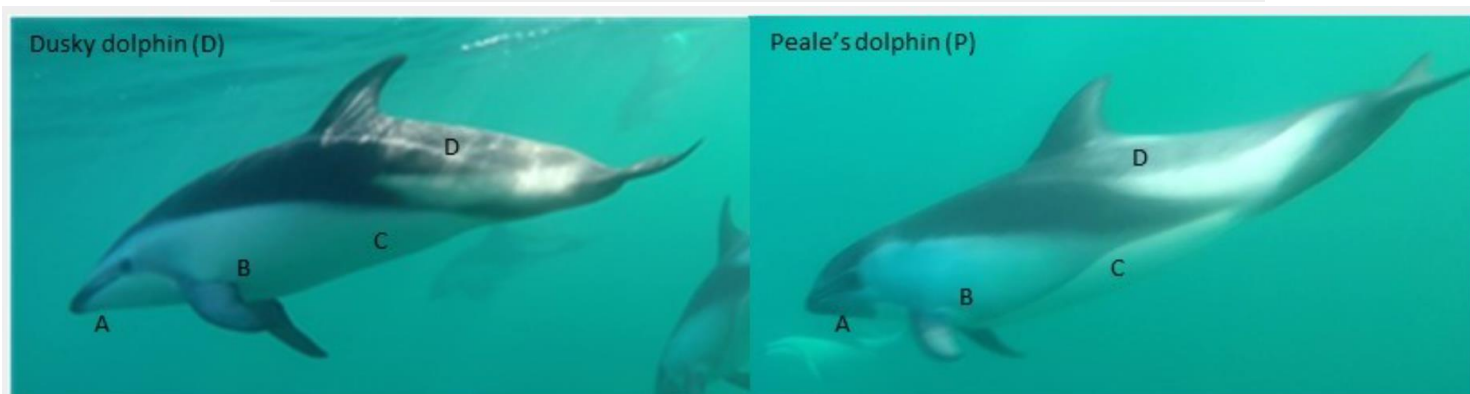


Fig. 2. Features comparison between Dusky dolphin (D, left) and Peale’s dolphin (P, right). A: chin colour (D: white, P: black); B: white armpit patch (D: absent, P: present); C: narrow dark line on lower surface of thoracic patch (D: absent, P: present); D: curved light flank patch (D: double line, P: single line).

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Also visible in the photo, the Dusky individual has a distinctive notch on the fin. That was an additional surprise and was very exciting for us: this individual will be easy to identify from the surface and we now know, by looking for that characteristic notch, that this dolphin has been observed in previous surveys. It's just that in the past we did not realise that that dolphin was actually a different species. We can now perform an additional research step and collect very small samples from the Dusky dolphin for genetic analysis in order to obtain further insights on this individual. Why would a Dusky dolphin be within a population of Peale's? We are open to potential hypotheses: occasional visits in more protected bays, a loner individual adopted by a different species, a hybrid individual born to two different species? The results of the DOKE project on genetics, site fidelity and social structure of the population could shed some light on this amazing sighting. And once again, no certainties are in sight.

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