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Research Note

First record of a pygmy sperm whale (*Kogia breviceps*, Blainville, 1838) stranding along the coast of Viti Levu, Fiji

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Abstract. On 18 July 2020, a small whale was found stranded along the eastern shoreline of Viti Levu, Fiji. The whale died two days later despite efforts to refloat and guide it out to sea. Morphometric measurements and photo identification confirm it to be an adult male pygmy sperm whale, *Kogia breviceps* (Blanville, 1838). This specimen acts as the first confirmed record of the species in Fiji.

Keywords: Cetacean, marine mammals, Pacific Island countries, pygmy sperm whale, whale stranding.

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Introduction

The pygmy sperm whale, *Kogia breviceps*, is considered a species of Least Concern on the IUCN Red List of Threatened Species, with inadequate information on population distribution, size and trends (Kiszka and Braulik 2020). The species is also listed in the Convention on International Trade in Endangered Species of Wild Fauna and Flora: Appendix II (UNEP-WCMC 2014), but does not appear in the Convention of Migratory Species.

It is one of two extant species within the family Kogiidae, the other being the dwarf sperm whale, *Kogia sima*. The adults of both species are generally counter-shaded with a greyish-brown complexion on the dorsal side and a light grey to white complexion on the ventral side (Baird 2005; McAlpine 2018). A light-coloured, crescent-shaped mark on the side of the head between the eye and the pectoral fin gives the impression of a false gill (Baird 2005; McAlpine 2018). Additionally, these whales are described to have the shortest rostrum among living cetaceans, and have a very delicate ventrally placed lower mandible with thin, sharp teeth (McAlpine 2018).

Although both species of Kogia are similar in appearance, there are distinct morphological characteristics which are useful for identification; in particular, are differences in size, teeth placement, and dorsal fin shape and placement. *Kogia breviceps* is generally larger; reaching a maximum size of approximately 4.3 m in length and a weight of over 400 kg. In contrast, *K. sima* is much smaller and can reach a maximum size of approximately 2.7 m in length and a weight of around 280 kg (Jefferson *et al.* 1993; McAlpine 2018). The general lack of teeth in the upper jaw (although in rare instances 1–2 pairs has been reported) is also a key identifying feature of *K. breviceps*. In *K. sima* three pairs of teeth in the upper jaw are commonly reported (McAlpine 2018). Finally, the placement and shape of the dorsal fin also vary between the two species. For *K. breviceps* the distance between snout and anterior end of the hook-like dorsal fin is greater than 50%, where the dorsal fin is located behind the midpoint of the total length (TL), in contrast to the dwarf sperm whale whose dorsal fin is much closer to the snout and has a triangular shape (Jefferson *et al.* 1993; McAlpine 2018).

Although both species of Kogia are cosmopolitan in temperate and tropical waters, they are rarely observed at sea, due to their shallow profile while at the surface and long dive times (Cardona-Maldonado and Mignucci-Giannoni 1999; Marten 2000). Consequently, the data availability and records of these whales are generally a result of strandings along coasts of the Atlantic, Indian and in the Pacific Oceans (Baird 2005).

There are limited Kogia occurrence records within the Pacific Islands countries and territories. A regional cetacean occurrence review by Miller (2007) confirmed sightings of *K. sima* in Samoa, and an unidentified Kogia species in Guam, New Caledonia, Northern Mariana Islands and Papua New Guinea. Additionally, there are confirmed sighting and stranding records of both species in New Caledonia and French Polynesia; as well as preserved specimen records of *K. breviceps* from the Solomon Islands and *K. sima* from Guam and Papua New Guinea (GBIF 2021).

At present, only unconfirmed sightings of Kogia exist for Fiji (Miller 2007; Batibasaga and Sharma-Gounder 2011; Miller *et al.* 2016). In this paper, we document the first confirmed occurrence of *K. breviceps* in Fiji from stranding and present information on the morphometrics of the stranded individual.

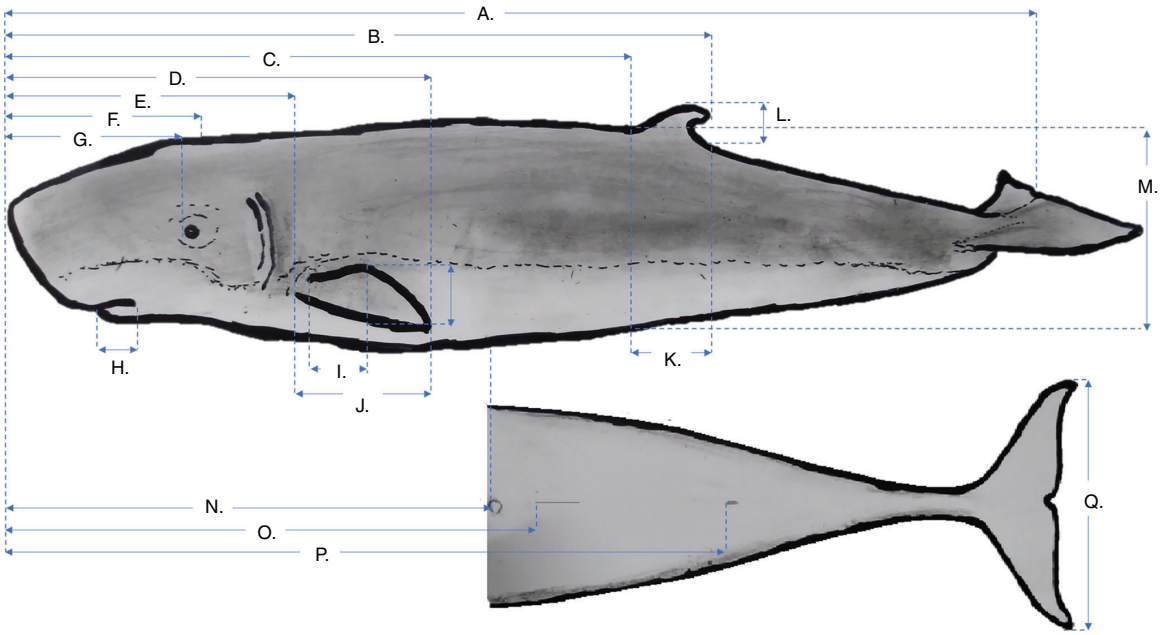

Fig. 1. Sketch of the stranded *K. breviceps* depicting the Morphometric measurements made. Refer to Table 1 for measurements.

Method

The whale stranding of *K. breviceps* was first brought to public awareness via a Facebook post, and researchers from The University of the South Pacific (USP) travelled to the site of the stranding at the Natovi Inter-Island Landing. The stranding site is a busy domestic passenger and cargo ferry port located approximately 50 km north-east of Fiji's capital, Suva City. Interviews were conducted with the local community to obtain details pertaining to the stranding. Geographical data and morphometric measurements were recorded. Attempts to retrieve the carcass for cataloguing was unsuccessful due to the remoteness of the area.

Results and discussion

On 18 July 2020 during low tide, a small cetacean was found trapped in the mouth of a stream at Natovi. Local villagers provided the cetacean with shade while attempting to refloat and guide it to deeper waters at high tide. Although the cetacean did swim away, it was later found in the same area. A further rescue attempt of the whale by locals proved futile, as on-site observers reported the whale to be 'too weak' and kept 'washing back' into the shallow waters. On 20 July 2020 upon the arrival of the university researchers, the cetacean was found to have died. It was found (17.6755°S, 178.5834°E) lying on its right side less than 20 m from shore, on a mudflat adjacent to the Landing that extends to approximately 150 m from shore. The carcass was approximately 20 m from the mouth of the stream where it was initially sighted and approximately 300 m south-west from the Landing.

An external examination of the cetacean, in particular, the shape of the head and position of the lower jaw suggested it to be a species of Kogia. More detailed measurements (Fig. 1; Table 1) and a later comparison to literature (Jefferson *et al.* 1993, Willis and Baird 1998; McAlpine 2018) revealed the whale to be an adult *K. breviceps.* Positive identification based on key features of this specimen included the lack of teeth in the upper jaw, and 14 pairs of teeth in the lower jaw; a relatively small (<5% of TL) and curved dorsal fin located behind the mid-point of the total length (3.4 m). Examination of the genital aperture indicated that the whale was a male; indicated by the position of the genital opening skewed towards the umbilicus.

Given the lack of expertise and experience with whale necropsies, no detailed necropsy was conducted. However, the carcass was dissected to check gut content. The gut was not filled

Table 1. Morphometric measurements of a male *K. breviceps* stranded at Natovi, Fiji

Refer to Fig. 1 for visual reference of the morphometric measurements

Measured	Length (cm)
A. Snout to Fluke Notch	317
B. Snout to tip of dorsal fin	194
C. Snout to origin of dorsal fin	164
D. Snout to tip of pectoral fin	126
E. Snout to origin of pectoral fin	82
F. Snout to blowhole	43
G. Snout to eye	40
H. Length of jaw	28
I. Posterior length of pectoral fin	15
J. Anterior length of pectoral fin	43
K. Length of dorsal fin	40
L. Height of dorsal fin	13
M. Girth at origin of pectoral fin	178
N. Snout to umbilicus	136
O. Snout to genital aperture	146
P. Snout to anus	236
Q. Fluke tip to tip	75
Blowhole length (not pictured)	8

and there was no sign of plastic ingestion; however, a vast number of parasites were found in the stomach, lungs and embedded in the gastrointestinal tissue, Anisakis *sp.* (Nematoda/Chromadorea/Rhabditida) and Monorygma *sp.* (Platyhelminthes/Cestoda/Phyllobothridea) were most notable. Externally, no major injuries were noted, although the body was riddled with minor abrasions and scratches that may have resulted from the stranding and refloating attempts.

Although this is the first confirmed record of occurrence and stranding of *K. breviceps* in Fiji, there may likely have been others that went unnoticed. This may be the result of widespread nature and inaccessibility to many coastlines and islands that have left many cetacean strandings unreported or unattended, coupled with the lack of an openly accessible stranding records network and database. Social media, however, is contributing to present-day sightings, as shown in this case. For example, a similar unsubstantiated event occurred on 8 April 2020, after a tropical cyclone, whereby photographs of a washed-up cetacean on Malolo Island in the Mamanuca Island group were circulated on Facebook. Inspection of the photographs by researchers from the USP, with support from a Facebook forum community called Cetal Fauna, determined that the species was possibly a Longman's beaked whale, *Indopacetus pacificus* (Longman, 1926), which has previously not been confirmed in Fijian waters.

Conflict of interest

The authors declare no conflicts of interest.

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