

Getting to know you: Identification of pygmy killer whales (*Feresa attenuata*) and melon-headed whales (*Peponocephala electra*) under challenging conditions

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ABSTRACT

Melon-headed whale (*Peponocephala electra*) and Pygmy killer whale (*Feresa attenuata*) are very poorly known species and are often confused with each other. We examined in detail Figure 3 in MARIGO and GIFFONI (2010) who reported that two melon-headed whales were taken in a surface driftnet about 90 nm off Santos, Brazil. We concluded they were in fact pygmy killer whales and explain our reasoning. To aid in future identifications, we illustrate and describe some of the main differences between these two species of small cetaceans. The incident reported by MARIGO and GIFFONI (2010) might represent the 'tip of the iceberg' regarding the incidental catches of cetaceans by pelagic drift nets off Brazil. Offshore driftnetting operating along the south-southeastern coast of Brazil may threaten pygmy killer whales.

Descriptors: Identification, *Feresa attenuata*, *Peponocephala electra*, difficult conditions.

RESUMO

A orca-pigmeia (*Feresa attenuata*) era conhecida por poucos registros há não mais que 60 anos atrás, mas, apesar do número de registros ter crescido recentemente em todos os oceanos tropicais, *F. attenuata* é ainda considerada uma espécie pouco estudada. No Brasil, mesmo em base a um pequeno número de registros, presume-se sua distribuição como pelágica. Neste trabalho discutimos o registro de captura acidental de duas 'blackfish' (*F. attenuata* e *Peponocephala electra*) na costa norte de São Paulo, publicado na Figura 3 em MARIGO and GIFFONI (2010) e propomos a correção da identificação desses espécimes. A correta identificação dos três exemplares como orca-pigmeia coloca uma intrigante questão sobre a conservação dessa espécie no Atlântico Sul tropical. As operações de pesca com redes de deriva ao longo da costa sul-sudeste do Brasil podem ameaçar *F. attenuata*, espécie naturalmente rara. É recomendado o efetivo monitoramento da frota pesqueira, tendo em vista a necessidade de se avaliar a magnitude dessas capturas.

Descritores: Identificação, *Feresa attenuata*, *Peponocephala electra*, condições difíceis.

The pygmy killer whale (*Feresa attenuata*) was known from only a handful of records less than 60 years ago (YAMADA, 1954). Although records have increased worldwide in tropical oceans, even now it is still considered a very poorly known species (DONAHUE; PERRYMAN, 2009; MCSWEENEY et al., 2009). Mass strandings, usually in small numbers, are known from South Africa, Hawaii, Florida, Taiwan, Texas, British Virgin Islands and Cabo Verde (see review by BROWNELL et al., 2009; LÓPEZ-SUÁREZ et al. 2012). In Brazil, a few stranding

and sighting records are known (ZERBINI; SANTOS, 1997; SICILIANO et al., 2007; MOURA et al., 2010) from the Southwest Tropical Atlantic, but the small number of records supports the view that it is a pelagic species. This makes any record of particular interest, whether from an individual or mass stranding or an individual killed in a fishery interaction. Previous records off Brazil are usually associated with oligotrophic waters, where *F. attenuata* shares morphological and, apparently, ecological features with melon-headed whales (*Peponocephala electra*).

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Similarity in body size, behaviour, and supposed habitat preferences has caused confusion in field identification between those two species. Even false killer whales (*Pseudorca crassidens*) were once misidentified as pygmy killer whales off Ecuador (CASTRO, 2004, corrected by BAIRD, 2010). Not surprisingly, these three similar offshore species are all referred to as ‘blackfish’ by fishermen in the Caribbean, and ‘canjerão’ (or ‘canjeirão’) off Atafona, southeastern Brazil.

Here, we discuss a recent incidental catch of three ‘blackfish’ off the coast of northern São Paulo State, Brazil, and propose a correction of the identification of these specimens. MARIGO and GIFFONI (2010) reported on the incidental capture of one pygmy killer whale and two melon-headed whales by the Ubatuba-based pelagic fleet while operating surface driftnets some 90 nm off Santos. According to the authors, three of those ‘black animals’ were captured in the same set during the first trip on November 2005, close to the Merluza Gas Platform, in Santos Basin, southeastern Brazil (24°43’S-44°33’W). They reported that only ‘one animal actually died ... and the other two (*P. electra*, Figure 3) were released alive’. The caption of Figure 3 in MARIGO and GIFFONI (2010), stated: ‘The “black dolphins” accidentally captured in the same set during the first trip in November 2005. The net holds two specimens of *P. electra* and one *F. attenuata* is already in the boat’.

After careful examination of their Figure 3, we determined that the two specimens in the nets were pygmy killer whales and not melon-headed whales as they reported. As pointed out by BAIRD (2010), the distinctive features of these two species are: (a) *Peponocephala* generally only have white on the lips (except in some very large individuals), while *Feresa* often have white areas around the lips and extending on to the head around the mouth; (b) the head shape in *Feresa* tends to be more bulbous, except in large adults, while *Peponocephala* do not have a very bulbous head shape; and (c) *Feresa* have rounded pectoral flippers while *Peponocephala* have acutely pointed flipper tips. These three characters are easily recognized in the colour photograph in MARIGO and GIFFONI (2010): the two whales have light areas on the front of the head, chest and belly, bulbous heads, and rounded pectoral flippers. The greyish patch on the chest of the smaller dolphin, shown in their Figure 3, is conspicuous and can be seen on a pygmy killer whale landed in India (JEYABASKARAN et al., 2011). Another important feature is the distinctive groove on the belly

which begins anterior to the umbilicus and ends at the anus, as observed in CHANTRAPORNSYL (1996). All five of these morphological differences between the two species were overlooked and may have contributed to the misidentification of these dolphins as melon-headed whales by MARIGO and GIFFONI (2010). Figures 1-8 provide some photographs of these characters which distinguish between *P. electra* and *F. attenuata*.



Figure 1. Lateral view of the head of a melon-headed whale (*Peponocephala electra*) April 1987 from Piracanga Beach, Itacaré, Bahia, Brazil. Note the melon-shaped outline of the head. Photo S. Siciliano.



Figure 2. Lateral view of the head and anterior body of a female pygmy killer whale (*Feresa attenuata*) April 1994 Vera Cruz Beach, Mongaguá, São Paulo, Brazil. Note white areas around the lips and extending on to the front of the head. Photo courtesy M.C. de O. Santos and A. Zerbini.

The corrected identification of these specimens as pygmy killer whales poses an intriguing question about the conservation aspects of this population in the Southwest Atlantic. ZERBINI and KOTAS (1998) and SANTOS and DITT (2009) have reported on the incidental catches of large baleen whales, sperm, dwarf sperm and delphinids (*Stenella* spp.) in the pelagic drift nets operating off



Figure 3. Dorsal view of the head of a melon-headed whale (*Peponocephala electra*) April 1987 Piracanga Beach, Itacaré, Bahia, Brazil. Note the triangular shape in comparison to *F. attenuata*. Photo S. Siciliano.



Figure 6. Dorsal body view of a pygmy killer whale (*Feresa attenuata*) April 1994 Vera Cruz Beach, Mongaguá, São Paulo, Brazil. Note the rounded pointed flipper tip. Photo courtesy M.C. de O. Santos and A. Zerbin.



Figure 4. Head view of a pygmy killer whale (*Feresa attenuata*) April 1994 Vera Cruz Beach, Mongaguá, São Paulo, Brazil. Note the bulbous head in comparison to *P. electra*. Photo courtesy M.C. de O. Santos and A. Zerbin.



Figure 7. Lateral view of the right flipper of a melon-headed whale (*Peponocephala electra*) April 1987 Piracanga Beach, Itacaré, Bahia, Brazil. Note the acutely pointed flipper tip. Photo S. Siciliano.



Figure 5. Ventral view of the body of a melon-headed whale (*Peponocephala electra*) April 1987 Piracanga Beach, Itacaré, Bahia, Brazil. Note the acutely pointed flipper tip. Photo S. Siciliano.



Figure 8. Ventral view of pygmy killer whale (*Feresa attenuata*) April 1994 Vera Cruz Beach, Mongaguá, São Paulo, Brazil. Note the rounded flipper tip and the distinctive ventral groove which runs from around a mid-point between the flippers to the urinogenital groove. Photo courtesy M.C. de O. Santos and A. Zerbin.

Ubatuba and Itajaí. The incident reported by MARIGO and GIFFONI (2010) might represent the 'tip of the iceberg' regarding the incidental catches of cetaceans by pelagic drift nets off Brazil. Offshore driftnetting operating along the south-southeastern coast of Brazil may threaten the pygmy killer whale, a naturally rare dolphin species. We strongly recommend long-term monitoring of the Ubatuba gillnet fishing fleet to evaluate the magnitude of incidental captures. In addition, offshore surveys are needed to determine the abundance of small cetaceans in the waters southeast of Brazil.

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