

Severe mutilation on a small whale in longline fishery off the Brazilian coast

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Running head: incidental catch of a baleen whale in longline fishery, Brazil.

Abstract.

We present a note on a recent incidental catch of a small whale in longline fisheries off the Brazilian coast. The entanglement in fishing gear resulted in severe mutilation of a small whale during the beginning of the migration period of balaenopterids off Brazil as well as southern right whales. The incident has much probably caused the death of the whale as the tail fluke was the only part of the carcass found entangled in the longline gear. Although it was not possible to confirm the identification of the whale, it shows a great similarity in shape and size with a small baleen whale. The episode documented here seems to be the very first in its nature involving a small whale entangled in a longline gear off Brazil. As so, it represents, at least, the need for more investigation of the magnitude of such interactions in the Southwest Atlantic Ocean.

Keywords: Small whale; by-catch; fishing activity; southwest Atlantic.

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INTRODUCTION

Interactions between marine mammals and fishing activities involve almost all existing types of gear and frequently result in negative economic, ecological and social consequences. Other remarkable issues resulting from marine mammal-fisheries interactions include the mutilation and mortality of marine mammals by fishermen and damage to and loss of fishing gear (see Gilman *et al.*, 2006 for a review). Marine mammals, seabirds, sea turtles, sharks and other fish may be particularly vulnerable to increased mortality above natural levels because of their life history traits and this can lead to unsustainable levels of removal, affecting biodiversity (Gilman *et al.*, 2003; Croxall *et al.*, 2012).

The interaction between baleen whales with longline fisheries is poorly known worldwide. A few cases involving baleen whales have been documented to date worldwide, including the U.S. East Coast pelagic longline fishery (Garrison, 2007). Even less information in this issue is available in the tropical Atlantic, where most of the whales come to breed and raise their calves.

Taking this premise in consideration, we present a note on a recent incidental catch of a small whale in longline fisheries off the Brazilian coast operated by the Itaipava fleet. The incident resulted in severe mutilation of the whale fluke and much probably caused its immediate death. The tail fluke was the only part of the carcass found entangled in the longline gear.

Information on the Itaipava longline fishery and the incidental capture of a baleen whale

Currently, the Itaipava longliners operate approximately 170 wooden boats measuring from 12m to 16 m. The fishing boats are based in the locality of Itaipava, a district of Itapemirim, southern coast of Espírito Santo state, Brazil. The fisheries is characterized as semi-industrial and operates in a large area, from 10° to 27°S, using both longline and single lines, targeting dolphin fish, tuna and related fishes. Additional information on the Itaipava longline fishery fleet is available in Martins *et al.* (2005) and at <http://www.rspb.org.uk/community/getinvolved/b/albatross/archive/2012/06/20/at-sea-with-the-itaipava-fleet-in-brazil.aspx>

The incidental capture of a small to medium sized baleen whale was documented in April 2011, *ca.* 80 nm south of São Sebastião (23°48',6S – 045°23',9W), off São Paulo state, Brazil (Fig. 1). The longline was set in surface water at 04:30PM in the previous day and recovered at 05:00AM. Total length of the longline was 24 nm and it had one buoy/float every 5 hooks and a high-flyer every 2 nm. Bonito (Scombridae) and mullets (Mugilidae) were used as bait. Targeted fish was swordfish (*Xiphias gladius*) and sharks.

Early in the morning of 29th April 2011, while checking the longline gear it was observed that it had been heavily damaged and most of it was lost. While taking onboard the gear, it was noticed by the fishermen that a fluke of a whale was entangled in the lines. The fluke was loaded onboard by curiosity and some pictures were taken (Fig. 2). Fishermen reported that the fluke was kept onboard for a few hours and lately discarded. The damaged longline gear is shown in Fig 2c. During the interviews it was not reported on the remains of the carcass of the whale, or if it has somehow survived to the entanglement. We presumed that the carcass has sunk or drifted away.

CONSIDERATIONS

The entanglement in fishing gear resulted in severe mutilation of a small whale during the beginning of the migration period of balaenopterids off Brazil (Zerbini *et al.*, 1997) as well as southern right whales (Santos *et al.*, 2001). The fluke measured some 2.0 m in width (tip to tip) and was all dark black in colour in at least one of the surfaces. The shape, pointed edges, the indentation and colour of the fluke could suggest that it belonged to a small balaenopterid, much probably a dwarf minke whale (*Balaenoptera acutorostrata*). The lack of a serrated edge, a distinct indentation in the middle of the fluke and other features excludes the identification as a humpback whale. On the other hand, we can also consider that the entangled small whale was an odontocete, probably a false killer whale by its fluke size and shape. False killer whales are known to get involved with pelagic longline fisheries at lower latitudes in Brazil (Dalla Rosa and Secchi, 2007) and worldwide (Hamer *et al.*, 2012). However, comparing data on measurements of fluke width (tip to tip) in *P. crassidens*, it ranged from 75-85 cm (Kastelein *et al.*, 2000), 81cm (Qian *et al.*, 2008), 96.5cm (Baird *et al.*, 1989) and 1.16m (Zylber and Le Bas, 2002). The specimen presented here had a larger fluke than that reported to false killer whales, reaching approximately 2.0 m in length. This size strongly suggests the identity as a small baleen whale rather than a false killer whale.

Whether it was an accident or the small whale was somehow attracted to the longline is a matter of speculation. Despite such uncertainty in the identification of the whale, the episode documented here seems to be the very first in its nature resulting in the severe mutilation of the peduncle of a small whale entangled in a longline gear off Brazil. As so, it represents, at least, the need for more investigation of the magnitude of such interactions in the Southwest Atlantic Ocean.

ACKNOWLEDGEMENTS

The authors thank Projeto Albatroz and Itaipava local fishermen for collaboration. We also thank H. T. Pinheiro and E. Secchi for early comments on the manuscript.

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Figure 1. Approximate location of the reported incidental capture of a small whale by a longline fishing boat off southeastern Brazil in 29 April 2011.



Fig. 2. A) The fluke of a small whale found entangled in longline gear off south-eastern Brazil in 29 April 2011. B) Note the fresh conditionns of the fluke after its removal form the long-line gear. C) Damaged longline gear removed from the entangled fluke of the small whale.