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# Short Note

## Real-Time Record of Entanglement of a Guiana Dolphin (*Sotalia guianensis*) in Recreational Fishing Gear

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In the last decades, the issue of incidental captures of small cetaceans in fishing nets has been examined (see Reeves et al., 2013, for a recent review). Mortality of cetaceans in small-scale artisanal fisheries, particularly coastal gillnet fisheries, has been reported worldwide, including from Mexico, Central America, the Wider Caribbean, and Brazil (Siciliano, 1994; Vidal et al., 1994).

Fishing activity in northern Rio de Janeiro state (NRJ) (~22° S), southeastern Brazil, and its interactions with small cetaceans have been described since the early 1980s (Lodi & Capistrano, 1990). Although a variety of fishing gears have been used in a large area from Atafona to Macaé in NRJ, covering 20,000 km$^2$, gillnets alone are responsible for the accidental capture of small coastal cetaceans (Di Beneditto et al., 1998). The Guiana (*Sotalia guianensis*) and the Franciscana (*Pontoporia blainvillei*) dolphins have been closely linked to incidental captures in gillnets throughout their range (Ott et al., 2002; Crespo et al., 2010). The levels of mortality vary along the coast but are large enough to threaten the conservation status of these two coastal species of cetaceans. Currently, Guiana and Franciscana dolphins are assigned to the status of "Threatened" by the Brazilian Government (Instituto Chico Mendes de Conservação da Biodiversidade [ICMBio], 2011).

We here report on a unique record of a capture of a Guiana dolphin in a recreational beach seine net in NRJ. Notably, fishermen filmed the event in real time as it occurred. On 12 March 2016, residents of Farol de São Thomé (22° 04' S, 041° 05' W) (Figure 1), Campos dos Goytacazes municipality, northern coast of Rio de Janeiro, Brazil, went fishing using a beach seine net

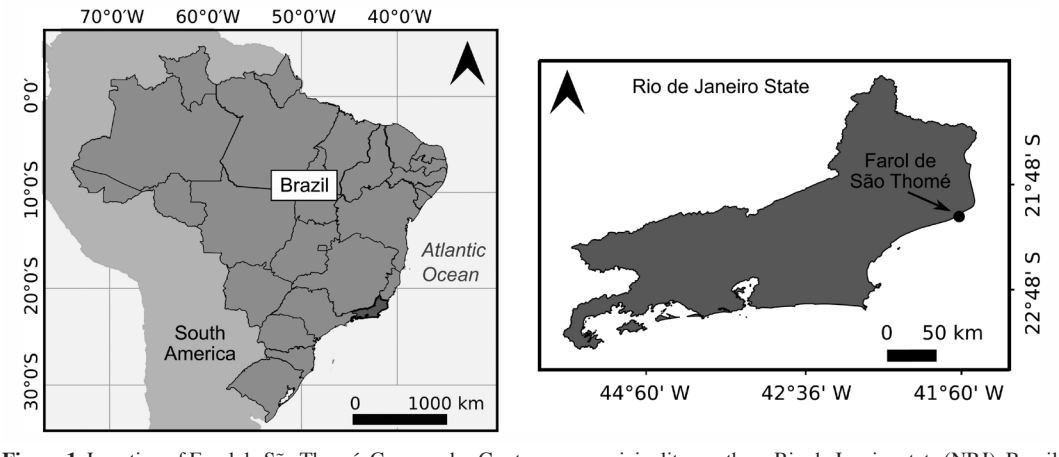


**Figure 1.** Location of Farol de São Thomé, Campos dos Goytacazes municipality, northern Rio de Janeiro state (NRJ), Brazil

equipped with a kite. The kite is attached to the top rope to maintain the vertical orientation of the net in the water, using the powerful prevailing northeastern winds. In the top rope, 12 small floats measuring 8 cm in diameter are attached, and along the bottom rope, 24 lead weights (100 g each) are attached. The net is 60 m in length, 35 × 35 mm mesh size, and equipped with a 25-m rope lifted by a kite. In this case, the event was recorded from 1630 to 1700 h local time (LT). At some point, the fishermen noticed a group of dolphins outside the breaking waves. Suddenly, a dolphin was spotted inside the net (Figure 2A). Fishermen started pulling the net quickly towards the beach. The dolphin was very agitated. In the surf zone, the fishermen tried to get closer and grab the dolphin as it moved into the direction of the top rope (Figure 2B). The waves pushed the dolphin to the sand (Figure 2C) where it was safely released by fishermen. In the end, the dolphin swam away quickly. It was apparently in good condition after the incident. The whole incident lasted only 52 s. A few fish were reportedly caught in the beach seine net on that occasion. Weakfish (Sciaenidae, *Cynoscion* sp.) and Southern kingcroaker (Sciaenidae, *Menticirrhus americanus*), among some other smaller fish, were retrieved.

It is noteworthy that the dolphin entanglement in a beach seine net lasted less than a minute. This incident sheds some light on dolphins entanglement in nets as, in most cases, they result in the sudden drowning of the entangled individual. As usually reported by fishermen in Brazil, the entanglement of a dolphin (or a group of dolphins) occurs in a very short time period and is not immediately perceived (A. P. M. Di Beneditto, pers. obs., September 2003). In this case, five people were actively involved in fishing, looking after the net as it was set in the surf zone. This means they had the chance to immediately spot such a large organism in the net. The footage clearly indicates that the dolphin was very agitated, positioned backside on the sand in the break of the waves and with the rostrum entangled in the net. It was also arching its body continuously and getting more entangled by its rostrum (Figure 2D).

Real-time documentation of unexpected cetacean entanglement in fishing gear is not an easy task. Few records of live entanglement of dolphins are available in the literature. In most cases, whatever the fishing gear, events are reported after the entanglement took place. For instance, three bottlenose dolphin (*Tursiops truncatus*)

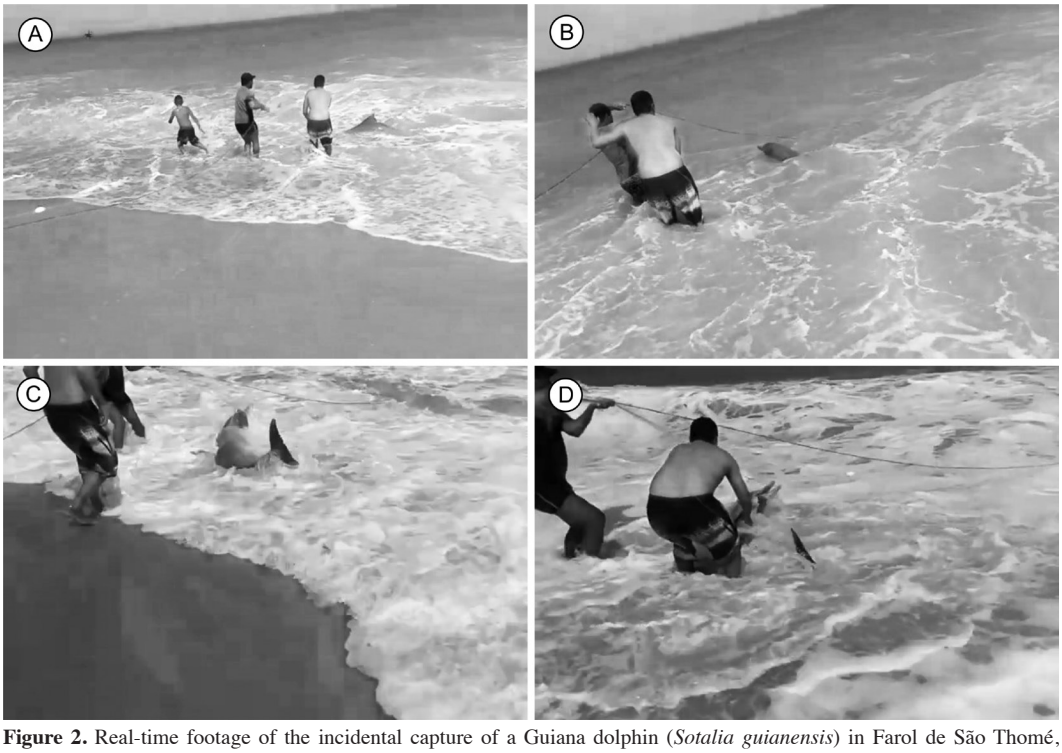


**Figure 2.** Real-time footage of the incidental capture of a Guiana dolphin (*Sotalia guianensis*) in Farol de São Thomé, Campos dos Goytacazes municipality, NRJ, Brazil

entanglements in stop nets and six bottlenose dolphin strandings, each suspected of having been entangled in stop net gear based on injuries noted (lesions) and spatio-temporal overlap with the fishery, were documented along the Atlantic coast of the U.S. (Byrd & Hohn, 2010). Along the coast of Brazil, only Franciscana dolphins were previously reported entangled in beach seine nets (Siciliano, 1994; Bertozzi & Zerbini, 2002). In addition, an unusual capture of a *P. blainvillei* in a commercial pair trawl fishing trip in southern Brazil was documented (Montealegre-Quijano & Ferreira, 2010).

As noted by Reeves et al. (2013), another aspect of bycatch that must be considered is called "cryptic" bycatch—that is, the animals that become entangled in fishing gear and either swim away injured, sometimes with gear still attached, and die even though they are not "caught" or accounted for in bycatch statistics. Reeves et al. consider such events an important component of the bycatch of large whales, but small cetaceans, pinnipeds, and sirenians also sometimes die in nets and drop out during haul-back or escape with serious injuries.

The present contribution could, in different circumstances, fit well into the category of the undetected, unreported (i.e., cryptic) component of bycatch. By its very nature, this is the first report for Guiana dolphin bycaught in a seine net along the coast of Brazil. Indeed, it poses a very important issue related to entanglement of small cetaceans in fishing gear. It can be ephemeral. Within seconds, a dolphin can get trapped and drown in the net, resulting in its almost immediate death. Thus, reporting such events is highly valuable to understanding the causes and possible solutions. Kastelein et al. (1995) reported that small cetaceans may fail to avoid nets because they are not paying attention. They may be resting or distracted by feeding, socializing, or flight. Fishermen from Brazil and Uruguay suggested that entanglements occur because the dolphins do not see the net in the water (Zappes et al., 2014, 2016). It is necessary to understand, and eventually eliminate, the process of small cetacean entanglement in fishing gear (Kastelein et al., 1995). In addition, this note is also a helpful example of a citizen science experience as the people involved were local recreational fishermen who were able to record this unique event on a cell phone.

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