

## INCIDENTAL CAPTURE OF A SPINNER DOLPHIN, *STENELLA LONGIROSTRIS* (GRAY, 1828), IN A SHARK GILLNET OFF SOUTHEASTERN BRAZIL<sup>1</sup>

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Incidental captures in fishing operations have been reported in Brazilian waters for at least 22 cetacean species: *Pontoporia blainvillei*, *Sotalia guianensis*, *S. fluviatilis*, *Tursiops truncatus*, *Steno bredanensis*, *Stenella frontalis*, *S. coeruleoalba*, *S. longirostris*, *S. clymene*, *Delphinus* sp., *Pseudorca crassidens*, *Grampus griseus*, *Globicephala melas*, *G. macrorhynchus*, *Orcinus orca*, *Inia geoffrensis*, *Hyperoodon planifrons*, *Kogia sima*, *Physeter macrocephalus*, *Balaenoptera acutorostrata*, *Megaptera novaeangliae* and *Eubalaena australis* (e.g. Pinedo, 1994; Siciliano, 1994; Zerbini and Kotas, 1998; Ott *et al.*, 2002; Moreno *et al.*, 2005). The most common species incidentally caught are the Guiana dolphin (*S. guianensis*), and the franciscana (*P. blainvillei*) (Siciliano, 1994). This evidence suggests that most cetacean species occurring in Brazilian waters are involved in fishing operations, but some of these interactions are still unreported. The present note describes the incidental capture of at least one spinner dolphin (*Stenella longirostris*) in a gillnet set for sharks off the Brazilian southeast coast.

In January 1993, one of the authors (EHD) left Ubatuba (22°53'S, 45°08'W), São Paulo state, onboard a gillnet fishing boat in order to investigate incidental captures of marine turtles. The final destination was the waters off Cabo Frio (23°00'S, 42°01'W), Rio de Janeiro state. The 14m long boat had a 3ton load capacity and 10-12 days of autonomy. Its 12m high by 3900m long gillnet stayed around 12h a day in the water, from sunset to sunrise, in 10 fishing days. The net had a mesh of 24cm between opposite knots. During the trip, the main target species were: hammerhead sharks (*Sphyrna lewini*), mackerel sharks (*Isurus oxyrinchus*), carchariniid sharks (Carcharinidae), manta rays (Myliobatidae), sailfishes (*Istiophorus platypterus*) and mackerels (*Auxis thazard*).

On 21 January 1993, three dolphins were incidentally captured. They were dead when the net was hauled onboard. Their fins were cut off to release them from the net and they were discharged to the sea. Through the analysis of the single photograph available (Figure 1), the captured dolphin was later identified as a spinner dolphin (*S. longirostris*). The main diagnostic characteristics were the relatively long, narrow and dorso-ventrally flattened rostrum; the tripartite color pattern consisting of a dark grey dorsal cape, a lighter

lateral field and light grey ventral field; and a dark stripe passing from the eye forward close to the apex of the melon (see Perrin, 1998). The photographed dolphin measured ca. 190cm in total length, which fits in the range of an adult *S. longirostris* (see Perrin and Gilpatrick, 1994). The capture occurred in waters deeper than 480m, which was the limit of the boat's depth sounder. As no positioning system was available, the exact location where the dolphins were captured is unknown. However, with the help of a nautical chart (DHN 180<sup>4</sup>) and the information gathered on the trip, the capture was estimated to have occurred around 90km from the coast in waters with depths ranging between 600 and 1000m. Based on the fact that the three dolphins were captured in the same fishing set, and considering the highly gregarious behavior of *S. longirostris* (Leatherwood and Reeves, 1983; Perrin, 1998), the two other dolphins might also have been spinner dolphins. However, associations of spinner dolphins with Atlantic spotted dolphins (*S. frontalis*) and pantropical spotted dolphins (*S. attenuata*) have been observed in neighboring waters (Daniel *et al.*, 1992<sup>5</sup>; Zerbini *et al.*, 2004; Siciliano *et al.*, 2006). Thus, no conclusions on the two other captured individuals can be reached. This is the first account of incidental capture of spinner dolphin in a shark gillnet in Brazilian waters. Two years later, another incidental capture of the same species was reported in southern Brazil (30°S), which represented the southernmost record in the South West Atlantic Ocean (see Kotas and Zerbini, 1998).

Except for the Fernando de Noronha Archipelago (03°50'S), where a local population has been the focus of a longitudinal study since the 1990s (e.g. Silva Jr. *et al.*, 2005; 2007), spinner dolphins remain poorly known along its range in the Southwest Atlantic, where it can be found both on the continental shelf as well as beyond the slope (Secchi and Siciliano, 1995; Zerbini *et al.*, 2004; Moreno *et al.*, 2005; Siciliano *et al.*, 2006). Several sightings have been reported in the area between Ubatuba and Cabo Frio (Daniel *et al.*, 1992; Zerbini *et al.*, 2004). This area is strongly influenced by a seasonal upwelling, which turns local coastal and deeper waters into a highly productive zone for fishing purposes, including efforts directed towards sharks in deeper waters (Borzzone *et al.*, 1999).

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<sup>5</sup> Daniel, M. C., Fioretti, M. M. and Rocha, A. R. (1992) *Ocorrência de Stenella longirostris (Cetacea, Delphinidae) na região de Ubatuba, litoral norte do Estado de São Paulo*. Pages 20-22 in *Anales, 3ª Reunión de Trabajo de Especialistas en Mamíferos Acuáticos de América del Sur*, 25-30 July 1988, Montevideo, Uruguay.



**Figure 1.** Adult spinner dolphin (*Stenella longirostris*) incidentally captured in a gillnet set for sharks in southeastern Brazil.

The rising importance of fisheries in the country's economy may explain an increase in fishing effort over the last 15 years (see Pimenta *et al.*, 1993<sup>6</sup>; Tiago *et al.*, 1995; Zerbini and Kotas, 1995; Ávila da Silva *et al.*, 2007). The gregariousness of *S. longirostris* and the increasing gillnet fishing in southeastern Brazil justify a closer monitoring of this fishery, which has a high potential for bycatch.

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