



Scientific Note

Incidental catch of a franciscana dolphin *Pontoporia blainvillei* (Cetacea, Pontoporiidae) in a pair trawl off southern Brazil

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Abstract. The first bycatch record of a franciscana dolphin *Pontoporia blainvillei* in a pair trawl off Southern Brazil is documented. The incidental catches of this species in gillnets are common, but the level of interaction of the species with trawl fishery is unknown.

Key words: Small cetacean, marine mammal, bycatch, fisheries, conservation.

Resumo. Captura incidental de uma toninha *Pontoporia blainvillei* (Cetacea, Pontoporiidae) num arrasto de parelha no sul do Brasil. Documenta-se o primeiro registro de captura incidental de uma toninha *Pontoporia blainvillei* num arrasto de parelha no sul do Brasil. Capturas incidentais dessa espécie em redes de emalhar são comuns, mas o nível de interação com a pesca de arrasto é desconhecido.

Palavras chave: Pequeno cetáceo, mamífero marinho, captura incidental, pesca, conservação.

The franciscana dolphin *Pontoporia blainvillei* (Gervais & D’Orbigny 1844) is an endemic species of the Southwest Atlantic, found in coastal waters generally at depths less than 35 m from Espírito Santo in Brazil to Chubut in Argentina (Bordino *et al.* 2002). Fishing is an important economic activity throughout the species distribution range (Haimovici *et al.* 1997, Lasta *et al.* 2001). The most common fishing gears operated in that area are gillnets, otter trawl, pair trawl and beach seine (Haimovici *et al.* 1997, Lasta *et al.* 2001).

Interactions between dolphins and commercial fisheries have been widely documented (Northridge 1991, Crespo *et al.* 1994, Fertl & Leatherwood 1997, Dans *et al.* 2003). Incidental catches in gillnets represent the main operational interaction between *P. blainvillei* and fisheries and are responsible for the mortality of few hundreds up to more than a thousand individuals each year along the species distribution range (Secchi *et al.* 1997, Pinedo & Polacheck 1999, Kinas 2002, Ott *et al.* 2002, Di Benedetto 2003), especially off Rio Grande do Sul, southern Brazil (Secchi *et al.* 2004). Franciscana mortality due to entanglement in

gillnets has been considered by far the greatest threat to the species (Secchi & Wang 2002), and is a matter of great concern regarding the species long term viability (Kinas 2002). Although several dolphin species are captured each year in trawling fisheries worldwide (Fertl & Leatherwood 1997), franciscana bycatch in this fishery seems uncommon (Secchi *et al.* 2003) with only a few documented records off Argentine coastal waters (Cappozzo *et al.* 2007).

On 17 July 2008 a franciscana dolphin was incidentally caught during a commercial pair trawl fishing trip in Southern Brazil. The two 21m long boats were 250m apart, towing a 100m long net with the mouth approximately 50m wide and 3m high. Trawls lasted five hours and were conducted continuously during the twelve days of the fishing trip, totaling about five fishing operation per day. The franciscana was caught during an afternoon (14:00 – 19:00) haul between 32°57’S, 52°31’W and 33°09’S, 52°29’W, in a depth ranging from 15 to 20m (Fig. 1). The specimen was 101cm long. The dolphin was fresh and no cuts or wounds were observed, indicating that probably the animal had died by drowning in the net (Fig. 2).

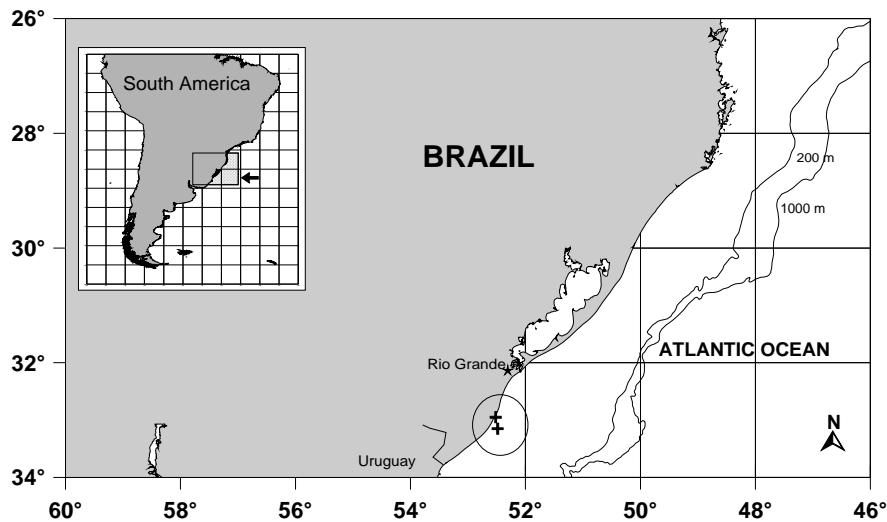


Figure 1. Location of the pair trawl set in which one specimen of Franciscana dolphin *Pontoporia blainvillei* was caught in Southern Brazil.



Figure 2. Franciscana dolphin *Pontoporia blainvillei* incidentally caught by pair-trawlers in Southern Brazil. The scale is 30cm long.

Differences between the high yearly number of franciscana dolphins incidentally caught in gillnets (e.g. Secchi *et al.* 2004), in comparison with the scarce records on trawling nets, can be due to operational differences between these two fishing methods. Gillnets are used mostly in coastal waters below 30 m depth (Secchi *et al.* 1997, Boffo & Reis 2003), which are the main habitat of franciscana dolphins (Bordino *et al.* 2002, Danilewicz *et al.* 2009), while trawl nets are operated mostly beyond

that isobath (Klippel *et al.* 2005). Furthermore, gillnets catch fish passively and silently, whereas trawl nets catch fish by actively towing the nets over the fish school (Sainsbury 1996). A noise is generated during the trawling operation (vessel engine, winches, doors and the trawl net being drawn along the sea bed, etc) which might alerts the dolphins which can swim faster than the towing speed.

However, the reason of the incidental catch

is unknown. It could be due to the fact that a young juvenile could not have associated the noise of the pair trawl to a danger. Also, although less likely, the fact that this animal could have been caught in gillnet, discarded to the sea and caught again by the trawl net, should not be overlooked. Some animals are caught in gillnets and do not present any net marks (Secchi, *pers. comm.*).

This note documents the first record of incidental catch of *P. blainvillei* in the trawl fishery off Brazil. It does not necessarily mean that the frequency of such events is low because scientific observers go onboard trawling vessels only very occasionally in southern Brazil. In order to better understand the level of interaction between pair trawl (and other trawling vessels) and franciscanas in Brazil, the establishment of an onboard observer program is recommended.

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References

- Boffo, M.S. & Reis, E.G. 2003. Atividade pesqueira da frota de media escala no extremo sul do Brasil. **Atlântica, Rio Grande**, 25(2): 171-178.
- Bordino, P., Siciliano, S., Bastida, R. & Cremer, M. 2002. Report of the working group on distribution and behavior of the franciscana dolphin (*Pontoporia blainvillei*) in the Western South Atlantic. **Latin American Journal of Aquatic Mammals**, 1(1): 21-23.
- Cappozzo, H.L., Negri, M.F., Pérez, F.H., Albareda, D., Monzón, F. & Corcuera, J.F. 2007. Incidental mortality of franciscana dolphin (*Pontoporia blainvillei*) in Argentina. **Latin American Journal of Aquatic Mammals**, 6(2).
- Crespo, E.A., Corcuera, J.F. & López Cazorla, A. 1994. Interactions between marine mammals and fisheries in some coastal fishing areas of Argentina. **Reports of the International Whaling Commission**, 15: 269-281.
- Danilewicz, D., Secchi, E.R., Ott, P.H., Moreno, I.B., Bassoi, M. & Borges-Martins, M. 2009. Habitat use patterns of franciscana dolphins (*Pontoporia blainvillei*) off southern Brazil in relation to water depth. **Journal of the Marine Biological Association of the United Kingdom**, 89(5): 943-949.
- Dans, S.L., Alonso, M.K., Pedraza, S.N. & Crespo, E.A. 2003. Incidental catch of dolphins in trawling fisheries off Patagonia, Argentina: can population persist? **Ecological Applications**, 13(3): 754-762.
- Di Benedetto, A.P.M. 2003. Interactions between gillnet fisheries and small cetaceans in northern Rio de Janeiro, Brazil: 2001 - 2002. **Latin American Journal of Aquatic Mammals**, 2(2): 79-86.
- Fertl, D. & Leatherwood, S. 1997. Cetacean interaction with trawls: a preliminary review. **Journal of Northwest Atlantic Fishery Science**, 22: 219-248.
- Haimovici, M., Castello, J.P. & Vooren, C.M. 1997. Fisheries. Chapter 9, Pp. 183 – 196. In: Seeliger, U., Odebrecht, C. & Castello, J.P. (Eds.). **Subtropical convergence environments: the coast and sea in the Southwestern Atlantic**. Springer, Berlin.
- Kinas, P.G. 2002. The impact of incidental kills by gill nets on the franciscana dolphin (*Pontoporia blainvillei*) in Southern Brazil. **Bulletin of Marine Science**, 70(2): 409-421.
- Klippel, S., Vooren, C.M., Lamónaca, A.F. & Peres, M.B. 2005. A pesca industrial no sul do Brasil. Chapter 10, Pp. 135 – 177. In: Vooren, C.M. & Klippel, S. (Eds.). **Ações para a conservação de tubarões e raias no sul do Brasil**. Igaré, Porto Alegre.
- Lasta, C.A., Ruarte, C.O. & Carozza, C.R. 2001. Flota costera argentina: antecedentes y situación actual. Pp. 89-106. In: Bertolotti, M.I., Verazay, A.G. & Akselman, R. (Eds.). **El Mar Argentino y sus Recursos Pesqueros. Tomo 3. Evolución de la flota pesquera argentina, artes de pesca y dispositivos selectivos**. INIDEP, Mar del Plata.
- Northridge, S.P. 1991. An updated world review of interactions between marine mammals and fisheries. **FAO Fisheries Technical Paper**, 251 (Suppl. 1), 219 p.
- Ott, P.H., Secchi, E.R., Moreno, I.B., Danilewicz, D., Crespo, E.A., Bordino, P., Ramos, R., Di Benedetto, A.P., Bertozzi, C., Bastida, R., Zanelatto, R., Perez, J. & Kinas, P.G. 2002. Report of the working group on fishery interactions of the franciscana dolphin (*Pontoporia blainvillei*) in the Western South Atlantic. **Latin American Journal of Aquatic Mammals**, 1(1): 55-64.
- Pinedo, M.C. & Polacheck, T. 1999. Trends in franciscana (*Pontoporia blainvillei*) stranding rates in Rio Grande do Sul, Southern Brazil (1979-1998). **Journal of Cetacean Research and Management**, 1(2): 179-189.

- Sainsbury, J.C. 1996. **Commercial fishing methods. An introduction to vessels and gears.** Third Edition. Fishing News Books. Oxford. 359 p.
- Schmidt-Nielsen, K. 2002. **Fisiologia animal. Adaptação e meio ambiente.** Livraria Santos Editora Comp. Imp. Ltda, São Paulo, Brazil.
- Secchi, E.R., Zerbini, A.N., Bassoi, M., Dalla Rosa, L., Möller, L.M. & Rocha-Campos, C.C. 1997. Mortality of franciscanas, *Pontoporia blainvillei*, in coastal gillnetting in southern Brazil: 1994-1995. **Reports of the International Whaling Commission**, 47: 653-658.
- Secchi, E.R. & Wang, J.Y. 2002. Assessment of the conservation status of a franciscana (*Pontoporia blainvillei*) stock in the Management Area III following the IUCN Red List Process. **Latin American Journal of Aquatic Mammals**, 1(1): 183-190.
- Secchi, E.R., Ott, P.H. & Danilewicz, D.S. 2003. Effects of fishing by-catch and conservation status of the franciscana dolphin, *Pontoporia blainvillei*. Pp. 174-191. *In*: Gales, N., Hindell, M. & Kirkwood, R. (Eds.). **Marine Mammals: Fisheries, Tourism and Management Issues.** CSIRO Publishing, Australia, 460 p.
- Secchi, E.R., Kinas, P.G. & Muelbert, M. 2004. Incidental catches of Franciscana in coastal gillnet fisheries in the Franciscana Management Area III: period 1999-2000. **Latin American Journal of Aquatic Mammals**, 3(1): 61-68.

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