

## Observations on the rough-toothed dolphin *Steno bredanensis* off Santa Catarina Island, southern Brazilian coast.

<sup>1,2</sup>Paulo André de Carvalho Flores  
<sup>2</sup>Alfredo Ximenez

<sup>1</sup> International Wildlife Coalition/Brasil, C.P. 5087, Florianópolis, SC, 88040-970, Brasil

<sup>2</sup> Laboratório de Mamíferos Aquáticos, Depto de Biologia – CCB, Universidade Federal de Santa Catarina, Florianópolis, SC, 88040-900, Brasil,

### Resumo

O golfinho de dentes rugosos *Steno bredanensis* é uma espécie pelágica de mares e oceanos tropicais e temperados, embora no Brasil sua presença seja frequentemente observada em águas costeiras. Este trabalho apresenta novas informações sobre a espécie para a região da Ilha de Santa Catarina, sul do Brasil. Um encalhe simples, com evidências de morte em rede de pesca, constitui, aparentemente, o primeiro registro de *S. bredanensis* em um sistema lagunar. A possibilidade do uso de técnicas de foto-identificação com a espécie é discutida com base na avistagem de um grupo contendo pelo menos um filhote. Estes registros fornecem suporte a sugestões anteriores sobre os hábitos costeiros de *S. bredanensis* pelo menos em algumas regiões brasileiras.

**Unitermos:** Golfinho de dentes rugosos, *Steno bredanensis*, Ilha de Santa Catarina, encalhe, avistagem.

## Summary

The rough-toothed dolphin *Steno bredanensis* is a pelagic species of tropical and warm temperate oceans and seas, though in Brazil it is frequently observed in coastal waters. This paper presents new information on the species off Santa Catarina Island, southern Brazil. A single stranding at Conceição Lagoon, with evidence of entanglement in fishing gear, provides the apparently first record of *S. bredanensis* in a lagoon system. The feasibility of using photoidentification techniques with the species is discussed based on a sighting of a herd including at least one calf. These records lend support to previous suggestions of the coastal habits of *S. bredanensis* in at least some Brazilian regions.

**Key words:** Rough-toothed dolphin, *Steno bredanensis*, Santa Catarina Island, stranding, sighting.

The rough-toothed dolphin *Steno bredanensis* has a wide distribution in tropical and warm temperate seas around the world, particularly in pelagic waters (Leatherwood and Reeves, 1983). In Brazil, this species also occurs in coastal waters, based on fishery specimens and sightings (Lodi, 1992; Lodi and Capistrano, 1990; Sacchi-Santos et al., 1992; Siciliano, 1993; Hetzel and Lodi, 1993). Although groups of 50 or fewer are common, herds of several hundred have been reported, sometimes associated with other delphinids like pilot whales (*Globicephala melas*), bottlenose (*Tursiops truncatus*), spinner (*Stenella longirostris*) and spotted (*S. frontalis*) dolphins (Perrin and Walker, 1975; Leatherwood and Reeves, 1983) as well as humpback whales (*Megaptera novaengliae*) (Lodi et al., 1991).

This paper reports a stranding of rough-toothed dolphin *S. bredanensis* in a lagoon system in southern Brazil, briefly described earlier by Ximenez and Flores (1992). It also provides information on the first confirmed sighting of this species in coastal waters of Santa Catarina Island, southern Brazil.



On 27 May 1992, a 249-cm adult male rough-toothed dolphin was collected in Ponta das Almas, at Conceição Lagoon, Santa Catarina Island, southern Brazil ( $27^{\circ}36'S$ ,  $48^{\circ}28'W$ ), approximately 5 km from the channel mouth (Figure 1). Conceição lagoon has an area of 19.2 km<sup>2</sup> with a mean depth of 1.7 m (maximum depth = 8.7 m). The complete skeleton of this specimen is deposited and catalogued in the Laboratório de Mamíferos Aquáticos collection at Universidade Federal de Santa Catarina (LAMAQ-UFSC) under number UFSC 1109. Stomach contents were collected and analysed by Emerin (1994), and contained just fragments of one otolith and two supra-occipital bones as well as one crystalline lens, but all these materials were too worn for identification.

The specimen was found stranded during early morning of 26 May 1992, according to the local people, and was in the early stages of decomposition. It had some nets wounds and an approximately 6- to 7-cm diameter wound penetrating the skin, blubber and muscle caused by a perforating/cutting instrument just behind the right pectoral fin (Figure 2). The wounds strongly suggest that the animal got entangled and died in a gillnet. *Steno bredanensis* has been previously reported caught accidentally in gillnets at Santa Catarina Island by Simões-Lopes and Ximenez (1993). Although the skin was peeling off some parts of the body, especially the face, the color pattern was distinguishable, with a dark blue cape on the back, bluish to grayish on the sides, and a white ventral surface from the throat to the genital region. This white extended up to the side and some white circular wounds were present on the flanks. It had dark flukes and flippers and white lips (Figure 2). The animal also had notches and scars on the trailing edge of the dorsal fin.

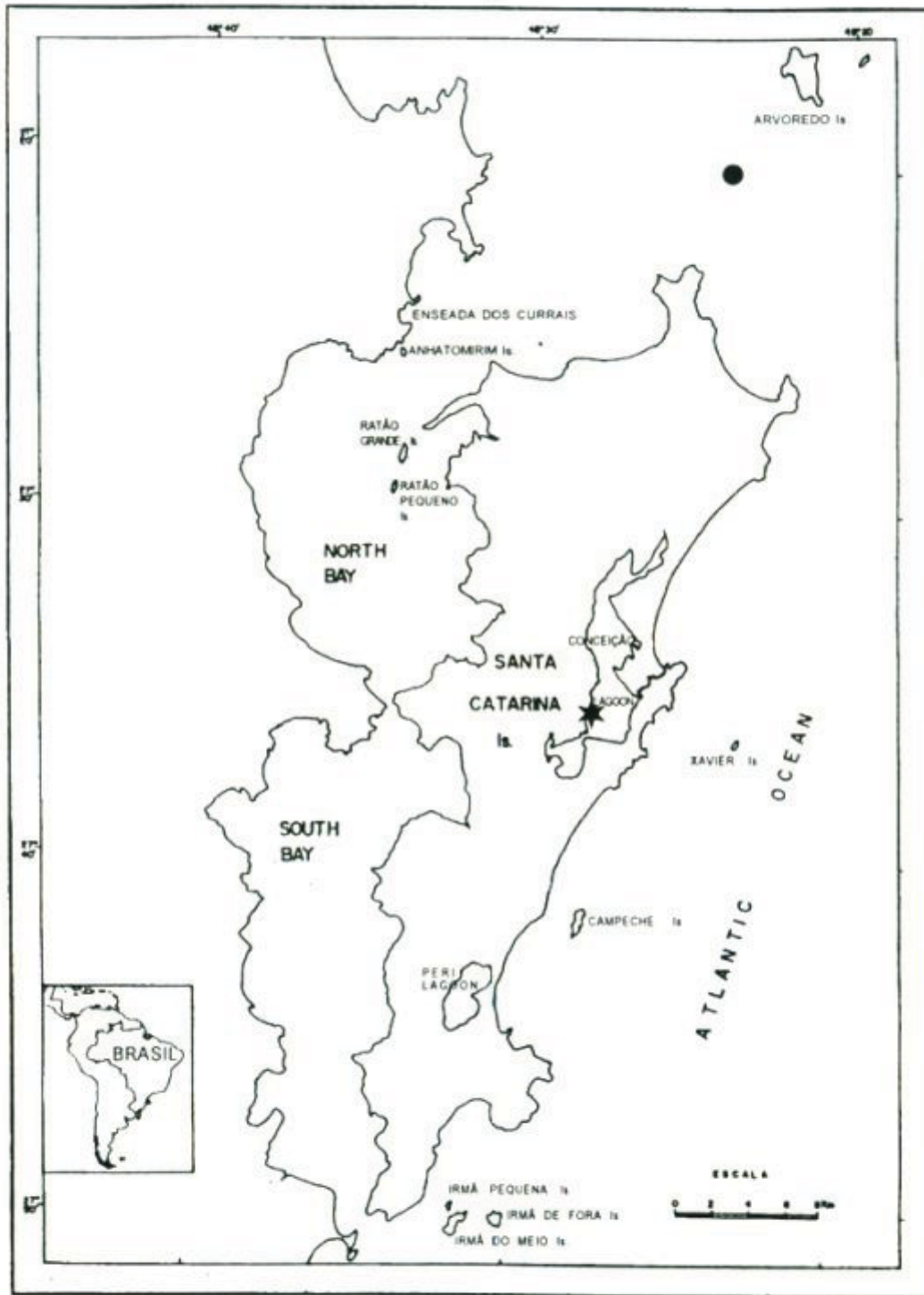


FIGURE 1 - Santa Catarina Island and surrounding waters, southern Brasil, showing the locations of stranding of specimen UFSC 1109 (★) and sighting off Avoredo Island (●).





FIGURE 2 – Specimen of *Steno bredanensis* collected at Conceição Lagoon, Santa Catarina Island, southern Brasil, on 27 March 1992. Arrow indicates a deep wound behind the pectoral fin (Photograph by Paulo A. C. Flores).

Local people reported that on 25 May 1992 a group of three large dolphins with dark backs and grayish to bluish sides was observed entering the channel of the lagoon. The animals stayed about one hour during the mid afternoon (around 1530 h) in the channel, and then entered the lagoon. According to interviews, it is very rare to see dolphins either in the lagoon channel or the lagoon. Although it is not possible to identify the species or individuals with certainty, it is likely that the specimen UFSC 1109 was a member of this group. The almost empty stomach revealed by the necropsy (Emerin, 1994) is consistent with the animal entering the lagoon and not feeding there.

In March 1994, a group of about eight rough-toothed dolphins, including at least one calf and two adults with notches and scars on the dorsal fins (Figure 3), was observed about midday

by oceanographers of the Arvoredo Marine Biological Reserve between Arvoredo Island and the northern tip of Santa Catarina Island ( $\sim 27^{\circ}20' S, 48^{\circ}25' W$ ), in waters about 19 to 21 m deep (Figure 1). The species identification was based on color photographs taken of dolphins which often rode the bow over a period of about 30 minutes. Afterwards, the dolphins moved to southwest, apparently in the direction of the Baía Norte de Santa Catarina. Bow-riding is considered a rare behavior in rough-toothed dolphins (Leatherwood and Reeves, 1983). However, this species has previously been observed bowriding off the Brazilian coast (*e.g.* Pinedo and Castello, 1980; L. Lodi, personal communication).



FIGURE 3 – Two adults with notches and nicks on the dorsal fins and one calf of a herd of rough toothed dolphins *Steno bredanensis* sighted off Arvoredo Island, southern Brasil, in March 1994 (Photograph by Átila Sbruzzi).

To the authors' knowledge, the stranding reported here represents the first record of *S. bredanensis* in a lagoon system. The apparent sightings in the lagoon prior to the stranding and the sighting by the oceanographic team lend support to the



suggestion by Siciliano (1993) and Hetzel and Lodi (1993) that this species has a coastal distribution in some areas of Brazil. The occurrence of marks and scars in specimen UFSC 1109 and in at least two animals sighted off Santa Catarina Island suggests that a photoidentification study of *S. bredanensis* would be feasible. According to reviews by Scott et al., (1990) and Würsig and Jefferson (1990), this species has not been studied with photo-identification techniques. If this species does live coastally off Brazil, it would greatly facilitate the study of a pelagic animal that is normally difficult to observe at sea.

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### References

- Emerin, E.G. 1994. **Contribuição para o conhecimento dos hábitos alimentares de delfinídeos (Mammalia, Cetacea, Odontoceti, Delphinidae) nas proximidades da Ilha de Santa Catarina, Brasil.** Bachelor Thesis, Universidade Federal de Santa Catarina, Florianópolis, Brasil, 45 pp.
- Hetzel, B.; Lodi, L. 1993. **Baleias, botos e golfinhos: Guia de Identificação para o Brasil.** Editora Nova Fronteira, Rio de Janeiro, 279 pp.

- Leatherwood, S.; Reeves, R.R. 1983. **The Sierra Club Handbook of whales and dolphins**. Sierra Club Books, San Francisco, 302 pp.
- Lodi, L. 1992. Epimeletic behavior of free-ranging rough-toothed dolphins, *Steno bredanensis*, from Brazil. **Mar. Mamm. Sci.**, **8** (3): 284-287.
- Lodi, L.; Capistrano, L. 1990. Capturas acidentais de pequenos cetáceos no litoral norte do Rio de Janeiro. **Biotemas**, **3**: 47-65.
- Lodi, L.; Siciliano, S.; Gonchorosky, J. C.; Salles, G. 1991. **Estudo e conservação da baleia jubarte, *Megaptera novaengliae*, no Banco dos Abrolhos, Bahia, Brasil**. Technical Report. IBAMA, WWF-US and CSI, 37 pp.
- Perrin, W.F.; Walker, W.A. 1975. The rough-toothed porpoise, *Steno bredanensis*, in the eastern tropical Pacific. **Journ. Mamm.**, **56**: 905-907.
- Pinedo, M.C.; Castello, H.P. 1980. Primeiros registros dos golfinhos *Stenella coeruleoalba*, *Stenella* cfr. *plagiodon* e *Steno bredanensis* para o sul do Brasil, com notas osteológicas. **Bol. Inst. Ocean.**, São Paulo, **29** (2): 313-317.
- Sacchi-Santos, L.H.; Ott, P.H.; Susin, L.; Mondín-Machado, R.; Moreno, I.B. 1992. Observações sobre o golfinho de dentes rugosos *Steno bredanensis* para o Rio Grande do Sul, Brasil. **Abstracts of the 5ta Reunion de Especialistas en Mamíferos Acuáticos de América del Sur**, Buenos Aires, Argentina, p. 60.
- Scott, M.D.; Wells, R.S.; Irvine, A.B.; Mate, B.R. 1990. Tagging and markings studies on small cetaceans. In: Leatherwood, S. and Reeves, R.R. (eds.). **The Bottlenose Dolphin**. Academic Press, San Diego, p. 489-514.
- Siciliano, S. 1993. Review of the distribution of small cetaceans off Brazil. **Abstracts of the 10th Biennial Conference on the Biology of Marine Mammals**, Galveston, TX, USA, p. 99.



- Simões-Lopes, P. C.; Ximenez, A. 1993. Annotated list of the cetaceans of Santa Catarina coastal waters, southern Brazil. **Biotemas**, 6 (1): 67-92.
- Ximenez, A.; Flores, P.A.C. 1992. Ocorrência do golfinho de dentes rugosos *Steno bredanensis* (Lesson, 1828) na Lagoa da Conceição, Ilha de Santa Catarina, Brasil. Abstracts of the **5<sup>ta</sup> Reunion de Especialistas en Mamíferos Acuáticos de América del Sur**, Buenos Aires, Argentina, p. 71.
- Würsig, B.; Jefferson, T.A. 1990. Methods of photo-identification for small cetaceans. **Rep. Int. Whal. Commn., (Special Issue)** 12: 43-52.