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GROUP SIZE AND DISTRIBUTIONAL RANGE OF THE FRANCISCANA, *PONTOPORIA BLAINVILLEI*

Very little is known about group size in the franciscana, *Pontoporia blainvillei*, a marine species of "river dolphin" endemic to coastal waters of the southwestern Atlantic. Most records of the species have been of stranded or incidentally killed specimens. The franciscana is extremely difficult to observe in the wild, and it is considered to be solitary (Kasuya 1984) or not gregarious (Pinedo *et al.* 1989).

The first sighting of a franciscana aggregation was reported by Castello (personal communication) and Monzón and Corcuera (1991) at Miramar, Buenos Aires Province. Approximately 15 animals, including both adults and calves, were observed swimming beyond the surf zone. Recently, groups of two to six individuals were reported by Bordino and Iñíguez (personal communication). These sightings are the only previous accounts of aggregations.

During an aerial survey carried out on 19 November 1990, a group of 10–15 franciscanas was detected approximately 10 km east of Faro Belén at 1616 (Fig. 1), in Río Negro Province (41°09′S, 63°42′W). The airplane passed several times over the group and, even though only one poor photograph was obtained, the species was clearly identified from external characters. The group was moving southward 300–500 m from the shore and was dispersed, with interanimal distances of 20 m or more. All the animals were seen within an area of 1–2 km. It was not possible to determine if the animals were breathing in a synchronous pattern.

A second sighting was made in the same area of two individuals during an aerial survey of Bahía Rosas (41°10′S, 63°25′W). The dolphins were swimming together 300 m from the shore on 10 February 1995 at 1202.

These herds are very similar to those reported for the baiji (*Lipotes vexillifer*), the species arguably phylogenetically closest to *Pontoporia* (Barnes 1985). The baiji usually is found in small groups of 1–4 individuals, rarely up to 10 (Zhou and Li 1989, Hua *et al.* 1989). The groups reported for the franciscana are very small when compared to those of other species in the same area, such as dusky (*Lagenorhynchus obscurus*) or common (*Delphinus delphis*) dolphins, which sometimes occur in groups of more than 300 (Würsig and Würsig 1980) but which feed mainly on pelagic, schooling and abundant prey such as southern anchovy (*Engraulis anchoita*).

The complete range of the franciscana is not well known. It has been reported in the literature to extend from the mouth of the Doce River (19°30′S), Regencia, Espírito Santo, Brasil (Borobia and Geise 1985) to Península Valdés in Chubut Province, Argentina (42°S; Lahille 1899). Unpublished data (Moreira and Siciliano 1991) suggest that the northern range extends to Itaúnas (18°25′S, 30°42′W) in Espírito Santo, Brasil.

In the case of the southern boundary, Lahille did not base his assertion that

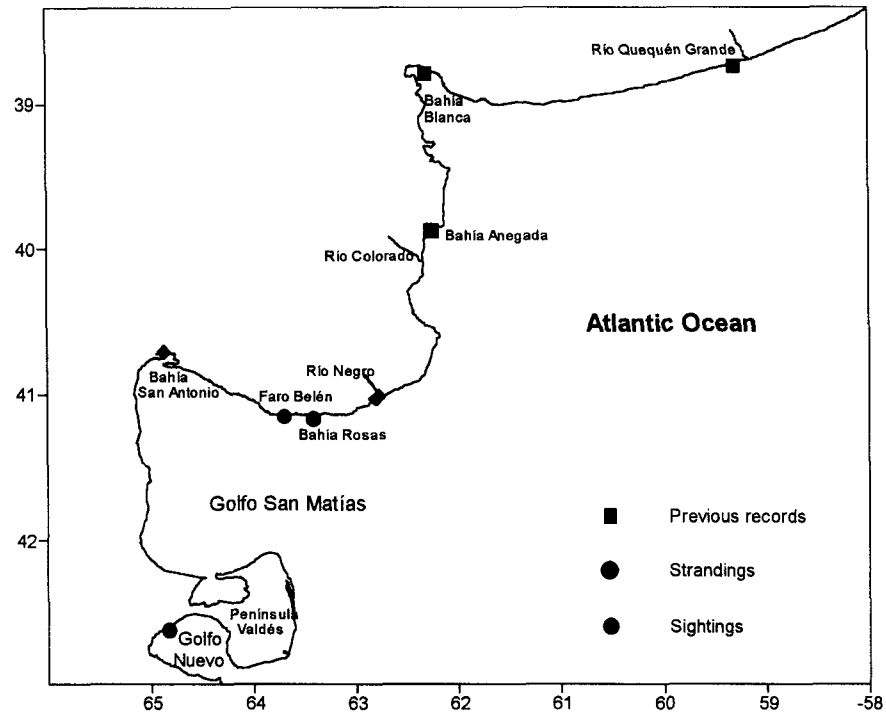

Figure 1. Location area for sightings, strandings, and previous records of franciscana dolphins (*Pontoporia blainvillei*).

the species occurred at Península Valdés on a confirmed specimen or sighting. The southernmost confirmed records (Fig. 1) have been from Río Quequén Grande (Burmeister 1867*a*,*b* in Praderi 1986) and Bahía Blanca (Pérez Macri and Crespo 1989). More recently, franciscanas were recorded at Bahía Anegada (40°10′S, 62°10′W) (P. Bordino and M. Iñiguez, personal communication).

In addition to the sightings recorded on the northern coast of Golfo San Matías (Fig. 1), three stranded franciscanas were collected in recent years. A 99.3-cm specimen entangled in a coastal fishing net near the Río Negro mouth on 7 April 1988 (Paz Barreto, personal communication); a 105-cm specimen was found in the same area on 14 October 1992 (M. Iñíguez, personal communication) and a 137.5-cm female was found alive inside Bahía San Antonio in Golfo San Matías on 22 January 1993, with evident signs of lactation and heavily infested by anisakids.

The franciscana is a coastal marine dolphin, living in water of depth up to 30 m, or to approximately 25–30 nmi offshore (Praderi *et al.* 1989, Pinedo *et al.* 1989, Monzón and Corcuera 1991). Franciscanas have specialized feeding habits, feeding mainly on juvenile sciaenids (Pinedo 1982; Pinedo *et al.* 1989; Pérez Macri, personal communication). This prey specialization may limit the species' range of habitats and group size.

The relatively frequent sightings and strandings off the northern coast of

Golfo San Matías indicate that the range of this dolphin regularly extends this far south. Juvenile white croakers (*Micropogonias furnieri*) and striped weakfish (*Cynoscion striatus*) are common and abundant in the Río Negro mouth zone (L. Curtolo, unpublished data) and neighboring northern shores (Cotrina 1986, Cordo 1986), which could be related to the presence of the franciscana in the area.

The southernmost sighting of the franciscana was of a single individual inside Golfo Nuevo (42°35'S, 64°48'W), close to the coast of Península Valdés, during an aerial survey (Fig. 1). The distinctive long beak, together with the size and color of the individual, permitted positive species identification. This sighting is considered to be unusual, however. The coast of Península Valdés is often surveyed for marine mammals, and, if franciscanas frequently occurred in this area, they certainly would have been observed previously.

The area shown in Figure 1 is a transition zone. The surface circulation of this area of the southwestern Atlantic is dominated by the opposing flows of subtropical and subantarctic water masses. The currents meet along the shelf and turn offshore in an area between 33° and 39.5°S, which causes the mixed characteristics of subtropical and subantarctic water masses (sea surface temperature, ocean color, *etc.*) and organisms (Boltovskoy 1986, Gayoso and Podestá 1996). From southern Brazil to Golfo San Matías, the coastal marine ecosystem is characterized by continental runoffs with high discharge of high-nutrient river flows such as Laguna de los Patos, Río de la Plata, and in the extreme south of the distribution, Río Colorado and Río Negro. Juvenile sciaenids, the most important prey of the franciscana, are typically associated with these continental runoffs and the influence of subtropical shelf waters. Sciaenids do not occur south of Golfo San Matías, where there is no influence of subtropical waters and subantarctic shelf water predominates.

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DENTAL ANOMALIES IN BOTTLENOSE DOLPHINS, *TURSIOPS TRUNCATUS*, FROM THE WEST COAST OF FLORIDA

Dental anomalies are recognized in a wide variety of animals, but there are few reports for marine mammals. Slijper (1962) noted "dental infections in sperm whales and Killers" (*sic*), and Ness (1966) discussed caries in *Inia geoffrensis*, but there is a paucity of information in the literature describing dental aberrations in the bottlenose dolphin, *Tursiops truncatus*. Observations of teeth and jaws from over 200 *Tursiops truncatus* skulls examined at necropsy at Mote Marine Laboratory in Sarasota, Florida, have revealed a number of dental anomalies. The following five cases demonstrate four different anomalies: *amelogenesis imperfecta*, dental caries, tooth impaction, and accessory roots. The teeth of the cases cited were aged by the method suggested by Pierce and Kajimura (1980); they were sectioned longitudinally, etched, stained with haemotoxlyn and eosin, and viewed under reflected light. Mote Marine Laboratory specimen numbers are designated by MML.

Dolphin No. 1 (MML9007) was a 207-cm, dead-stranded, 2-yr-old female. Physical condition indicated the animal to be adequately nourished. Skin marking evidenced possible entanglement in fishing gear, but actual cause of death was not determined. There were 22 teeth in each maxilla and 21 in each row of the mandible. All of the teeth, with the exception of the anterior four teeth in all rows, were devoid of enamel covering. (Fig. 1A, B). Pinkham (1988) described a similar condition in human dentition as *amelogenesis imperfecta*, and Bodecker (1949) referred to it as "peg teeth."

Amelogenesis imperfecta is a malfunction of the enamel-forming cells. When the growth of these cells is interrupted, the normal growth of the enamel is inhibited, which causes the tooth to develop either partially or completely