

## FIRST REPORT ON THE LONG-TERM PRESENCE OF COMMON BOTTLENOSE DOLPHINS (*Tursiops truncatus*) OFF CENTRAL CHILE<sup>1</sup>

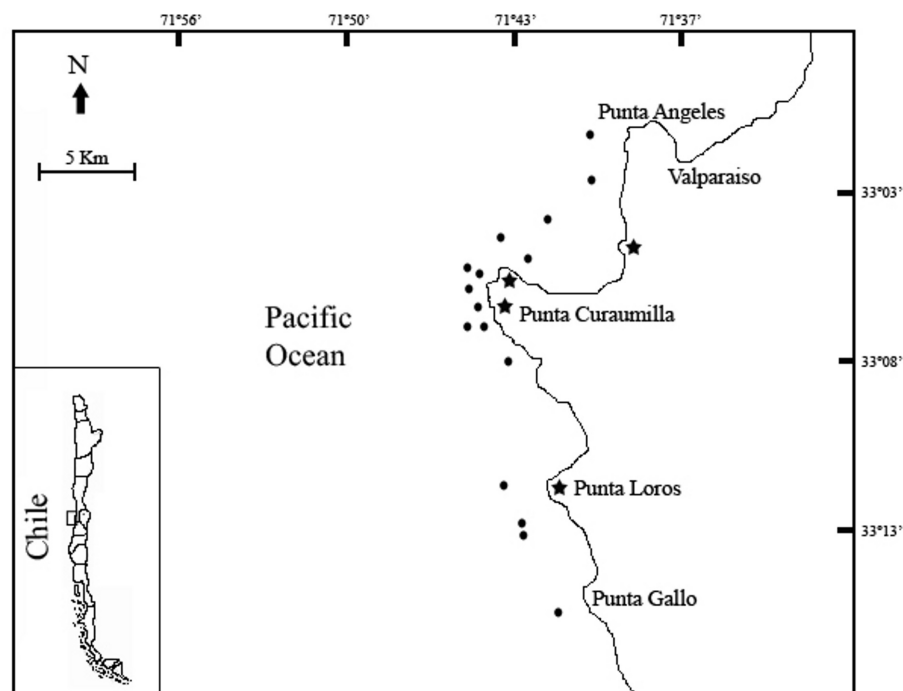
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The common bottlenose dolphin (*Tursiops truncatus*) is distributed in tropical and temperate oceans worldwide. In Chile its presence has been reported from Arica (18°29'S) to Cape Skyring (45°49'S) (Aguayo-Lobo *et al.*, 1998; Aguayo *et al.*, 2003) including San Félix and San Ambrosio Islands, Juan Fernández Archipelago (Gilmore, 1971; Aguayo, 1975), and Sala y Gómez and Pascua (Easter) Islands (Cardenas *et al.*, 1986). Despite this wide range of continuous distribution, long-term reports on the presence of this species are restricted to the Reserva Nacional Pinguino de Humboldt (29°02'S) in the north coast of Chile, where a resident population has been documented (Gonzalez *et al.*, 1989; Gibbons, 1992; Perez *et al.*, 2004<sup>4</sup>; Thomas, 2005). In this note, we make the first report on the long-term presence of common bottlenose dolphins off central Chile.

The study area comprised the waters around Punta Curaumilla, V Region, Chile, and extends from Punta Angeles (33°01'S) to Punta Gallo (33°16'S) (Figure 1). From

November 2004 to September 2006, December 2006 to March 2007 and August 2007 we conducted 51 days of land-based observations and 14 boat-based surveys within the study area. Observations lasted on average 4.86h (SD = 3.1) and were carried out during daylight hours of 07:00 – 20:00 depending on season, visibility and light conditions. Land-based observations were conducted from cliffs located on different vantage points using 16×50 and 7×50 binoculars. Boat-based surveys were conducted parallel to the coastline at a distance from 1 to 8km offshore. Position was recorded using a portable GPS at 10 minute intervals.

When a common bottlenose dolphin group was sighted it was followed until it was lost (group follow protocol) (Mann, 1999). A group of dolphins was defined as any aggregation of one or more animals observed in association, moving in the same direction and usually engaging in the same behavior (Shane, 1990). All the observations were conducted at sea Beaufort state < 3.



**Figure 1.** Study area; (●) initial GPS coordinates of 16 common bottlenose dolphin groups observed during boat-based surveys; (★) location of land-based observations points.

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<sup>4</sup> Pérez, M. J., Thomas, F., Oliva, D. and Moraga, R. (2004) Foto-identificación del delfín nariz de botella, *Tursiops truncatus*, en la Reserva Nacional Pingüino de Humboldt: aplicación y resultados preliminares. Page 179 in Abstracts, XXIV Congreso de Ciencias del Mar, 17-20 May, Coquimbo, Chile.

The survey effort included 315.9h spent in the area, of which 68.4h were of direct observation on the animals. A total of 2636 dolphins in 102 groups were recorded. Dolphins occurred year-round throughout the study area (Figure 1) and were encountered on 81.5% of the surveys. Sightings ranged from 5 to 227 minutes with an average of 40.3 minutes (SD = 42.6). Groups of dolphins followed during boat surveys occurred regularly within two kilometers from shore (73%; n recorded positions=70) and showed movements parallel to the coastline during all observations.

This study represents the first long-term documentation of this species in the nearshore waters of the V Region of Chile and provides evidence of a previously undocumented population of common bottlenose dolphins inhabiting central Chile. Preliminary information on photo-identification (Díaz-Aguirre *et al.*, 2007<sup>5</sup>) suggests that some individuals are present year-round, indicating some degree of fidelity to the study area. Although we have not confirmed using genetic techniques, the distribution and movement pattern of dolphins within the study area suggest that this population probably pertains to the coastal ecotype. However when comparing with other coastal populations (e.g., Wursig and Wursig, 1979; Shane, 1990; Hanson and Defran, 1993; Morteo *et al.*, 2004; Bearzi, 2005), this dolphins apparently use a wide stretch of coastline which could be related with the distribution of their prey and the open characteristics of the environment. Indeed, most of the foraging and feeding behaviors observed during the study period were associated with flocks of Pelicans (*Pelecanus thagus*) and Peruvian Boobies (*Sula variegata*) suggesting that they were feeding on neritic fishes near the surface contrary to what its reported for other coastal populations where dolphins prefers to feed on bottom prey (Scott and Chivers, 1990; Hanson and Defran, 1993; Rossbach and Herzing, 1997; Bearzi, 2005). The long-term presence of this population could be related to the high levels of productivity in the area due to upwelling events off Punta Curaumilla (Johnson *et al.*, 1980; Fonseca and Farias, 1987; Avaria *et al.*, 1989; Silva and Valdenegro, 2003).

Current anthropogenic threats to dolphins inhabiting this region include entanglement in fishing gear, environmental contaminants, and disturbance and collisions with boats. These threats are particularly relevant north of Valparaiso harbor where human population size, coastal development and boat traffic could be of concern. In Chile, the common bottlenose dolphin has been classified as data deficient (Aguayo-Lobo *et al.*, 1998). Therefore, long-term research on this and other populations are of special importance for the

conservation of the species, as well as monitoring the health of their habitat and the ecosystem over long periods of time.

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