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Occurrence and long-term residency of two long-beaked common dolphins, *Delphinus capensis* (Gray 1828), in adjacent small bays on the Chilean central coast

Rolando Bernal[1], Carlos Olavarría[2] and Rodrigo Moraga[3]

[1]*Facultad de Ciencias del Mar, Universidad de Valparaíso, Chile*
[2]*School of Biological Sciences, The University of Auckland, Private Bag 92019, Auckland, New Zealand*
[3] *Fray Montalva 580, Santiago. Chile*

Abstract

From 1991 to 2001 we recorded the presence of two long-beaked common dolphins *Delphinus capensis* in two small bays on the central coast of Chile. This pair was resident in the area for almost ten years, showing long-term fidelity and close association, which is uncommon in this species. The distribution of the species in the Eastern South Pacific is extended south by almost 800 nmi.

Key words: long-beaked common dolphins, *Delphinus capensis*, residency, Chile, Eastern South Pacific.

Introduction

The genus *Delphinus* is represented currently by two species, the short-beaked common dolphin *D. delphis* (Linnaeus, 1758) and the long-beaked common dolphin *D. capensis* (Gray, 1828). The proposed Arabian common dolphin, *Delphinus tropicalis* van Bree, 1971 (Rice, 1998) has been recently suggested as a subspecies of *D. capensis* (Jefferson & Van Waerebeek, 2002).

In the Eastern South Pacific (ESP) both species are distributed. *D. delphis* ranges further south (40°47′S) than *D. capensis* (20°12′S; Aguayo *et al*., 1998*b*). Both species have been recorded near shore, but *D. delphis* generally is found further offshore (*ca*. 900 nmi from coast; Aguayo *et al*., 1998*b*). Although this suggests a wider distribution of *D. delphis* than *D. capensis* in the ESP, the current distribution of both species is not clear since the taxonomic differentiation of the genus *Delphinus* was only resolved recently, and previous records were assigned to the species recognized at that time, *D. delphis*.

Common dolphins are described as a gregarious pelagic species, occurring in groups of hundreds to thousands, although the basic social unit may be less than 30 individuals (Evans, 1994). In the ESP, groups have been recorded as large as 1500 individuals (Aguayo *et al*., 1998*a*). In most of their range, common dolphins are pelagic and their distribution has been related to water temperature and bottom topography (Leatherwood & Reeves, 1983; Evans, 1994).

In this note, we report the presence of a pair of long-beaked common dolphins in two small bays on the central coast of Chile. These animals were resident in the area for almost ten years, showing long-term fidelity and close association, which have been scarcely recorded in this species.

Materials and Methods

Sightings of the pair of dolphins were made from shore using 7×50 binoculars. A 35-mm camera with a 70–300 mm zoom lens and a small-motorized boat were used to photograph the dorsal fins to photo-identify the two individuals (*sensu* Würsig & Würsig, 1977). In 1999, land- and boat-based surveys were conducted to ascertain the species identification of the two dolphins, which so far were identified as *D. delphis*.

Results

Since 1991, two common dolphins have been recorded in two bays, Zapallar (32°33′40″S; 71°27′40″W) and Papudo (32°32′00″S; 71°27′30″W), 8 km apart (Fig. 1). The dolphins were seen in Zapallar Bay from November 1991 to June 1998, and in Papudo Bay from April 1997 to September 2001. Based on the characteristics of their dorsal fins, we were able to recognize each dolphin in all the subsequent visits to the area (Fig. 2). Overall, 214 h distributed over 64 days were spent in the area between November 1991 and September 2001. On nine days, the dolphins were not sighted.

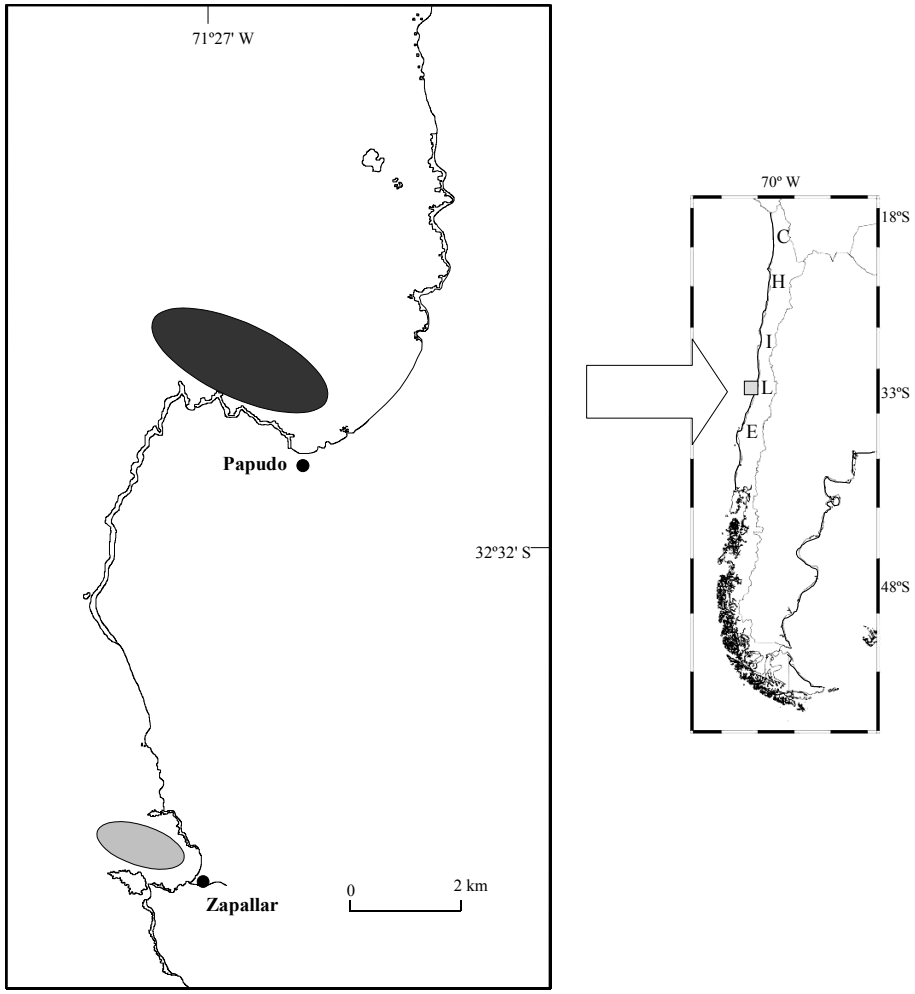

Figure 1. Location of sightings of the pair of long-beaked common dolphins in central Chile. The area were the dolphins were recorded in Zapallar Bay is shown in grey and the area were they were seen in Papudo Bay is shown in black.

Based on photographs, external characteristics (the pigmentation patterns and rostrum morphology), it was possible to ascertain that the species was *D. capensis*. The specific characteristics that allowed species identification as long-beaked common dolphins, following the nomenclature of Heyning & Perrin (1994) were: the flipper stripe angling toward the corner of the mouth fusing with the lip-patch near the gape, and narrowing moderately anterior to the eye; eye-patch not contrasting with the thoracic patch; and the insertion of melon onto the beak is at a less acute angle. As Heyning & Perrin (1994) suggested, some characters may not clearly distinguish the two species. In this instance, the flipper-to-anus stripe was weakly formed, a characteristic that is limited to *D. delphis* or *D. capensis*.

The distribution of the dolphins within the area varied and can be separated into three periods. In the first period, between November 1991 and April 1997, the dolphins occurred exclusively in Zapallar Bay, in an area of 0.25 km^2. Subsequently, they were seen in both Papudo and Zapallar bays for more than a year, from April 1997 to June 1998. The third period started on June 1998 through September 2001, when the dolphins were recorded exclusively at Papudo Bay, in a more extensive area (0.70 km^2). During all sightings, the two dolphins

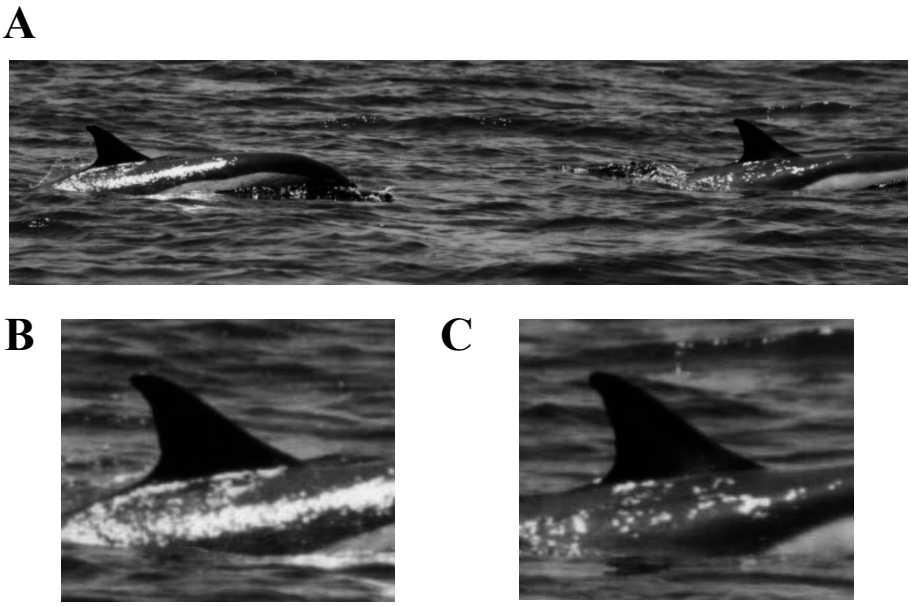

Figure 2. Pair of long-beaked common dolphins (A) photo-identified (B, C) in central Chile.

surfaced with less than 50 m distance from one another, mostly within one or 2 m, breathing and diving in synchrony.

Discussion

Only two reports have previously mentioned resident common dolphins. Guerra *et al*., (1987) reported the presence of two common dolphins in the Bay of Antofagasta (23°40′S; 70°20′W), in northern Chile. The dolphins were sighted for 19 months, between 1980 and 1981. Subsequently, two common dolphins were recorded at Caleta Coloso, 10 km south to Antofagasta, for almost a year. Because photographs were not taken, neither the species nor individual identification was possible. The second report was of three common dolphins (one adult male and an adult female with a calf) recorded at Whitianga, New Zealand for seven years (Doak, 1989). The author did not identify the species, and the published photographs do not allow clear identification. Some photographs, however, do show a long rostrum and acute insertion of the melon (Doak, 1989, Plates 34A, 34B) that suggests they were *D. capensis.*

In the case reported here, the high rate of re-sights during an extended period of time (almost ten years) suggests a high degree of geographic fidelity. Moreover, the close association of the dolphins in almost all the sightings suggests some kind of strong affiliation between them. The long-term residence in a specific location could be related to abundance or availability of food resources. This situation is known to occur off Zapallar and Papudo Bays, an important spawning area for fishes (Bernal *et al*., 1997; Balbontín & Bravo 1999), where two submarine canyons (Vergara, 1996) could facilitate the upwelling of nutrients.

The presence of long-beaked common dolphins had been recorded as far south as northern Chile (Aguayo *et al*., 1998*b*), so this observation extends the current reported distribution in the ESP, by almost 800 nmi.

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During the review of this note the senior author passed away after a long illness. Many times we sat on the rocks of Zapallar and Papudo Bays with Rolando, talking about this pair of dolphins or just observing them. Which in the beginning started as a pleasant entertainment, finally it transformed into a scientific work, as he wished.

A la memoria de Rolando Iván Bernal Deramond (1971–2002).

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