

## Range extension for the long-beaked common dolphin (*Delphinus capensis*) to the Colombian Caribbean

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### ABSTRACT

We report on four recent sightings of long-beaked common dolphins (*Delphinus capensis*) from coastal waters off the lower Guajira Peninsula (~11°N, 73°W), northern Colombia. Two of the sightings were made in February 2010 by marine wildlife observers aboard a seismic vessel and the other two were made in May 2012 during dedicated small-scale coastal surveys. Average group size was estimated at ~50-60 animals, including adults, juveniles and calves. These sightings extend the known distributional range of the species into the southwestern Caribbean. The nearest population, the putative ‘Venezuelan Stock’, inhabits the central/eastern coast of northern Venezuela some 700-800km to the east. Although the coastal waters of the remote Guajira Peninsula have remained largely unexplored, the occurrence of long-beaked common dolphins in this region is not unexpected, as it is known for persistent year-round upwelling, the typical habitat occupied by the species worldwide. Therefore we speculate these sightings belong to a local population rather than to vagrants from the east. Based on the favourable conditions for the species in this region, together with a known stranding record from western Venezuela near the Colombian border, we tentatively propose a ‘Guajiran Stock’ of long-beaked common dolphins separated from the ‘Venezuelan Stock’ by warm-water outflow from the Gulf of Venezuela. However, until further survey work is conducted we do not rule out a more or less continuous distribution for the species extending from northern Colombia to eastern Venezuela.

KEYWORDS: LONG-BEAKED COMMON DOLPHIN; COLOMBIA; CARIBBEAN SEA; DISTRIBUTION; MONITORING

### INTRODUCTION

Information about marine biodiversity in Caribbean waters of Colombia is relatively extensive for most taxa (Díaz and Acero, 2003; INVMAR, 2010; Miloslavich *et al.*, 2011). This is however not the case for cetaceans, for which most of the knowledge comes from isolated sighting and stranding reports and occasional short-term studies conducted near urban centres. Critical evaluations of the existing information by Vidal (1990) and by Flórez-González and Capella (1995) confirm the presence of 12 cetacean species in these waters, distributed in four families: Delphinidae (*Globicephala macrorhynchus*, *Grampus griseus*, *Sotalia guianensis*, *Stenella attenuata*, *Stenella frontalis*, *Steno bredanensis*, *Tursiops truncatus*), Balaenopteridae (*Balaenoptera edeni*, *Balaenoptera physalus*, *Megaptera novaengliae*), Physeteridae (*Kogia breviceps*) and Ziphiidae (*Ziphius cavirostris*). Since then three more species have been added: the striped dolphin (*Stenella coeruleoalba*), the sperm whale (*Physeter macrocephalus*) and the false killer whale (*Pseudorca crassidens*) (Pardo and Palacios, 2006; Fraija *et al.*, 2009; Pardo *et al.* 2009a; b). However, vast stretches of the country’s coastal waters remain largely unexplored and several

more species are expected to occur based on their global distribution range or their presence in waters of neighbouring countries (Cuervo-Díaz *et al.*, 1986).

Here we report on four recent sightings of long-beaked common dolphins (*Delphinus capensis*) from coastal waters of northern Colombia that represent a new species record for the country. These sightings also extend the known distributional range of the species from the southeastern to the southwestern Caribbean. Although we recognize that the taxonomy of long-beaked common dolphins is unresolved and that the western Atlantic stocks may later be assigned to another species (Natoli *et al.*, 2006; Estevez and Oviedo, 2007), we follow Jefferson *et al.* (2009) and the currently accepted IWC taxonomy in tentatively referring to the animals reported in this paper as *D. capensis*.

## METHODS

From August 2008 to March 2010 marine wildlife observers aboard seismic vessels collected cetacean sightings in nine oil exploration blocks off the central and northern Caribbean coast of Colombia. Observation was conducted from the bridge of the vessels during 12 hours of daylight using the eye naked and with 7x50mm binoculars.

In a separate effort, from May to July 2012 small-scale coastal surveys to document marine wildlife are being conducted out of Mingueo, municipality of Dibulla, Guajira Department, northern Colombia (~11°N, 73°W). These surveys use a 6m long wooden boat with a 40hp outboard engine to search for cetaceans during morning (7:00am – 12:00pm) and afternoon (2:00pm – 5:30 pm) trips. Departing from the mouth of the Cañas River, these trips cover the stretch of coast between Ancho River to the west and the Port of Brisa to the east. The routes followed are not systematic; depending on weather conditions trips search ten to twelve miles into open sea in different directions. Observations are conducted from the bow of the boat.

## RESULTS

Two sightings of long-beaked common dolphins (*Delphinus capensis*) were made from the seismic vessel in one of the oil exploration blocks off the lower Guajira Peninsula, on 19 and 25 February 2010 (Fig. 1). Other species seen while surveying this block included pantropical spotted dolphins (*Stenella attenuata*), spinner dolphins (*S. longirostris*), striped dolphins (*S. coeruleoalba*), Atlantic spotted dolphins (*S. frontalis*) and common bottlenose dolphins (*Tursiops truncatus*).

Two additional long-beaked common dolphin sightings were made during the dedicated small-scale surveys, on 9 and 17 May 2012 (Fig. 1). Other species seen so far during these surveys include the Atlantic spotted dolphin and the common bottlenose dolphin.

We identified the species in these four sightings as long-beaked common dolphins based on good photographs (Fig. 2) showing the following diagnostic features: a long rostrum and a somewhat flattened melon, a contrasting colouration consisting of a dark cape over crisscrossing light patches on the thorax and tail stock forming an ‘hourglass’ pattern on the flanks, and a complex system of stripes originating in the chin and gape and running toward the eye, flipper and anus (Jefferson *et al.*, 2008; 2009). These animals also had a duller and more indistinct colouration than is typical of the short-beaked common dolphin (*D. delphis*), which does not occur in the Caribbean Sea (Jefferson *et al.*, 2009).

Exact group size counts were not made but the observers reported an overall group size ranging between about 50 and 60 animals in all sightings, including adults, juveniles and calves.

## DISCUSSION

Recent survey work in a previously unexplored area of the Colombian Caribbean in 2010 and 2012 has yielded four sightings of the long-beaked common dolphin, a new species record for the country. These sightings also extend the known distributional range of the species to the southwestern Caribbean. The nearest population of long-beaked common dolphins inhabits the Cariaco Basin off the central/eastern coast of northern Venezuela (Jefferson *et al.*, 2009), some 700-800km to the east of the area surveyed in this study.

The global distribution of long-beaked common dolphins largely coincides with temperate and tropical coastal areas influenced by wind-driven upwelling (Jefferson *et al.*, 2009). In this respect, the occurrence of long-beaked common

dolphins off the Guajira Peninsula is not unexpected, as the area is known for persistent upwelling year-round (Gordon, 1967; Corredor, 1979; Andrade and Barton, 2005; Lonin *et al.*, 2010). Although the entire northern coast of South America along the Caribbean is subject to this process (Curl, 1960; Gordon, 1967), wind intensity peaks over the Araya and Paria peninsulae in eastern Venezuela and over the Paraguaná and Guajira peninsulae in western Venezuela and northern Colombia, respectively, leading to large areas along the coast with colder water and higher primary productivity (Müller-Karger and Aparicio, 1994).

On the west side of the Guajira Peninsula the combination of cool, upwelled waters and a wide continental shelf result in a very productive ecosystem (INVEMAR, 2010). Therefore we speculate that the long-beaked common dolphin sightings reported in this paper belong to a local population rather than to vagrants from the ‘Venezuelan Stock’ proposed by Jefferson *et al.* (2009). Based on the favourable conditions for the species in this region, together with a known stranding from western Venezuela near the Colombian border (11°07′08.7″N, 71°47′33.9″W) in 2002 (Ramírez Carroz and González-Fernández, 2004), we tentatively propose a ‘Guajiran Stock’ of long-beaked common dolphins as the most plausible population identity for these dolphins (Fig. 1). This stock would be separated from the Venezuelan Stock by outflow of warm water from Lake Maracaibo and the Gulf of Venezuela. An alternative to these disjointed stocks for the species in the Caribbean is a more or less continuous distribution extending from eastern Venezuela to northern Colombia, and this possibility cannot be ruled out until further survey work is conducted.

The recent efforts to document cetaceans in Colombian waters respond to proposed economic development initiatives including oil and gas drilling and industrial port building. Due to the potential negative effects of these activities on marine wildlife the Government now requires mitigation practices, including the placement of observers aboard seismic vessels. The data collected through these efforts are already advancing our knowledge of the biodiversity of coastal and pelagic marine mammals in Colombia. The next step will be to obtain information about the status of the populations most likely to be adversely affected by these activities and to implement appropriate management and conservation measures.

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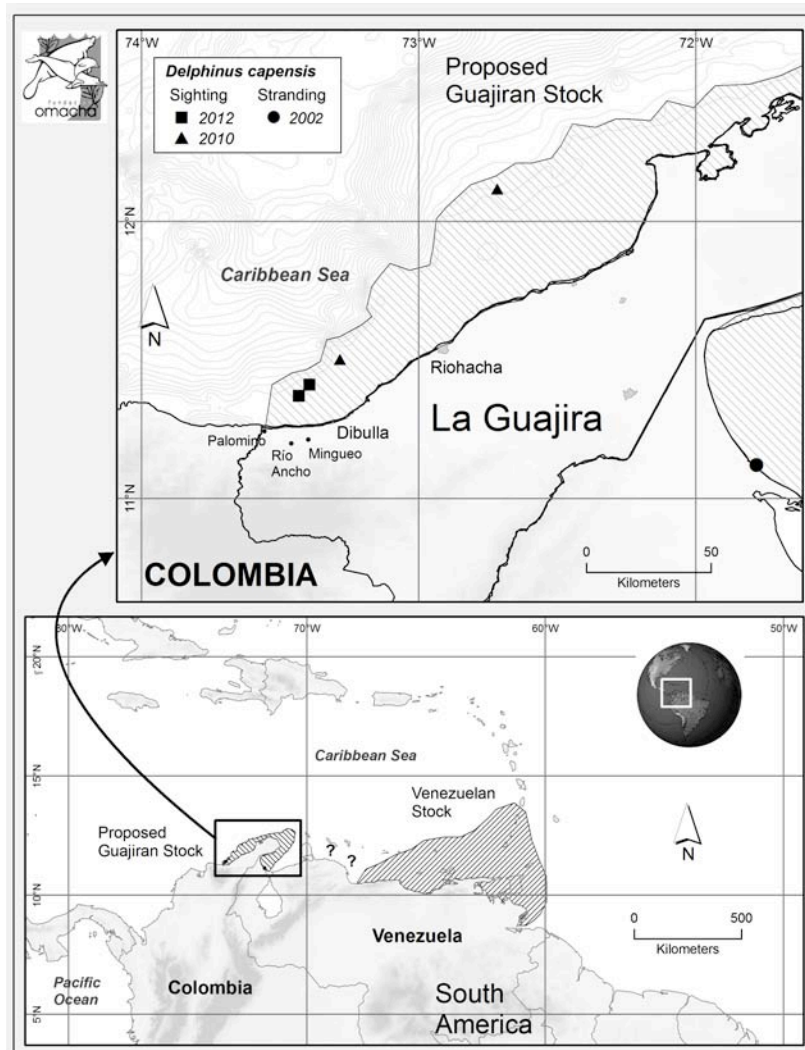


Figure 1. Long-beaked common dolphins (*Delphinus capensis*) in Colombian Caribbean waters. The upper map shows the locations of the four sightings made in 2010 and 2012 off the lower Guajira Peninsula, northern Colombia (solid triangles and squares, respectively). The location of the 2002 stranding in western Venezuela reported by Ramírez Carroz and González-Fernández (2004) is also plotted (solid circle). The lower map shows the Caribbean region with schematic polygons (hatched areas) illustrating the distribution of the putative ‘Venezuelan Stock’ in the southeastern Caribbean proposed by Jefferson *et al.* (2009) and the distribution of the ‘Guajiran Stock’ tentatively proposed in this paper for the southwestern Caribbean. The delineation of the latter was based on oceanographic considerations and extends roughly from the coastline to the 200m isobath. An alternative interpretation is a more-or-less continuous distribution for the species, extending from eastern Venezuela to northern Colombia, indicated by question marks.



Figure 2. Photographs of long-beaked common dolphins (*Delphinus capensis*) taken on 9 and 17 May 2012 off the lower Guajira Peninsula near Mingueo, municipality of Dibulla, northern Colombia. The diagnostic external morphology and colouration pattern of the species are evident in all images. Although the pattern is rather muted, note how the tan-coloured thoracic patch is interrupted by a secondary dark stripe that runs forward and upward from the eye-to-anus stripe.