

Cephalorhynchus commersonii (Lacépède, 1804)

English: Commerson's dolphin
German: Commerson-Delphin
Spanish: Delfín de Commerson
French: Dauphin de Commerson

Family Delphinidae

1. Description

Small, blunt-headed chunky dolphins without beak (and therefore often wrongly called porpoises) with rounded, almost paddle-shaped flippers. The dorsal fin is proportionally large and with a rounded, convex trailing edge (Dawson, 2009). Body colour is muted grey on black in the young, often appearing uniform. Later, this grey pales into white in the South American Form (Jefferson et al. 2008).

The head is black, with a white throat. The dorsal area from the fin backward is also black, and a black patch is located on the undersides, linking the flippers, which are also dark. The rest of the body is white apart from a black genital patch. Size ranges to 1.4 m in South America and to 1.7 m in the Kerguelen Islands; the heaviest animal recorded weighed 45 and 86 kg, respectively (Dawson, 2009).

2. Distribution

<http://www.iucnredlist.org/apps/redlist/details/4159/0/rangemap>

Distribution of Cephalorhynchus commersonii: southern South America, including the Falkland/Malvinas Islands, and Kerguelen Islands in the Indian Ocean (Reeves et al. 2008; © IUCN)

There are two populations separated by 130° of longitude, or 8,500 km. The animals at Kerguelen differ markedly from those in South America and merit designation as a separate subspecies (Rice, 1998; Goodall, 1994; Robineau et al. 2007).

C. commersonii commersonii – Falkland Islands / Islas Malvinas and the coastal waters of southern South America. The northernmost reliably documented limit of the South America population is on the Brazilian coast between 31 and 32°S (Pinedo et al. 2002). Range extends south into Drake Passage (61°50'S) as far as the South Shetland Islands, well within the range of *C. eutropia* (Rice, 1998). On the west coast of South America, specimens have been reported from Isla Chiloé, Chile (42°45 'S; Rice, 1998).

C. commersonii kerguelenensis. – Shallow coastal waters around all of the Iles Kerguelen in the southern Indian Ocean (Rice, 1998; Robineau, 2007). No sightings or specimens have yet been reported from islands between South America and Kerguelen, such as Crozet, Heard, Amsterdam or St Paul (Goodall, 1994 and refs. therein). However, de Bruyn et al. (2006) reported sighting of a single specimen over the South African continental shelf in 2004. This is the first record of this species in these waters, over 4000 km from the known distribution limits.

3. Population size

It seems that Commerson's dolphin, despite the impacts it suffers (see below), is probably the most abundant member of the genus *Cephalorhynchus* (Dawson, 2009).

Single dolphins and groups of hundreds of animals have been sighted in the late 1980's and early 1990's from shores along the north coast of Tierra del Fuego. In other areas of Patagonia, concentrations seem to be near towns, probably a reflection of research effort rather than patchy distribution (Goodall, 1994 and refs. therein).

Leatherwood et al. (1988) conducted aerial surveys in the northern Strait of Magellan and estimated a minimum of 3,221 dolphins for that area. However, they did not observe Commerson's dolphins in some areas where they had previously been recorded. When Venegas (1996) estimated the density of Commerson's dolphin during early summer (1989-1990) in the eastern sector of the Strait of Magellan, they estimated a population size of only 718 individuals, which was attributed to methodological factors as well as to the time of year. However, Lescrauwaet et al. (2000) et al. estimated population size in the same sector in summer of 1996 to be 1,206 (95% CI 711 – 2,049) individuals.

Recent aerial surveys suggest that there are approximately 21,000 Commerson's dolphins along the entire South American coast, with 7,000 between 42-48°S and 14,000 in Tierra del Fuego (Pedraza et al., in review).

The status of the population at the Kerguelen Islands is unknown, although Commerson's dolphins are now being reported frequently, owing to recent emphasis on research. By 1985, over 100 sightings were known, and the largest group seen near the edge of the shelf contained about 100 dolphins (Goodall, 1994 and refs. therein; Robineau, 1989).

4. Biology and Behaviour

Habitat: Commerson's dolphins are found in cold in-shore waters on open coasts and in sheltered fjords, bays, harbours and river mouths, and they occasionally enter rivers. The offshore limit of the species range is said to be the 100 m isobath (Reyes, 1991; Carwardine, 1995; Dawson, 2009), however, Pedraza et al. (in rev.) have sighted Commerson's dolphins in water over 1,000 m deep.

Off South America, Commerson's dolphins appear to prefer areas where the continental shelf is wide and flat, the tidal range is great, and temperatures are influenced by the cool Malvinas Current. Water temperatures in areas frequented in these areas range from 4°C to 16°C. Commerson's dolphins are often seen swimming in or at the edge of kelp beds (Reyes, 1991 and refs. therein). Within the Strait of Magellan, they prefer the areas with strongest currents, such as the Primera and Segunda Angostura (First and Second Narrows), where the current can reach or exceed 15 km/hr (Goodall, 1994, Lescrauwaet et al. 2000).

Kerguelen sightings are most common within the Golfe du Morbihan, where human activity is greatest and observation programmes are under way. There, the dolphins inhabit open waters, kelp-ringed coastlines and protected areas between islets (Goodall, 1994). Preferred temperature range around Kerguelen is 1°C to 8°C (Reyes, 1991 and refs. therein).

Reproduction: The breeding season is in the southern spring and summer, September to February (Jefferson et al. 1993). Females bear their first calf at between 6-9 years and

gestation lasts 10-11 months. Males reach sexual maturity at between 5-9 years (Dawson, 2009). Calves were observed between mid-September and mid-March, which suggests that calves are born in the austral spring and early summer (Iniguez and Tossenberger, 2007).

Schooling: Groups are generally small, one to three animals being most common, although the dolphins do some times aggregate into groups of over 100. These are quick, active animals. They are known to ride bow waves and to engage in various types of leaps. Commerson's dolphins often swim upside down (Jefferson et al. 1993; Goodall, 1994; pers. obs.).

Food: Feeding is on various species of fish, squid, and shrimp. In South America, animals taken incidentally in shore nets were coastal feeders on at least 25 food items: mysid shrimp (22.5% of total diet), three species of small fish (20.4%), squid (14.1%), 17 species of other invertebrates, four species of algae, and miscellaneous plant remains. At Kerguelen, specimens taken in January (summer) were found to have been feeding mainly on 15 – 25 cm semipelagic chaenichthyid fish (*Champscephalus gunnari*) and to a lesser extent on coastal benthic notothenids. Pelagic crustaceans (amphipods, hyperiids and euphausiids), benthic crustaceans (*Halicarcinus planatus*), and, in one specimen, numerous annelid tubes and ascidians, were also found in stomachs (Goodall, 1994 and refs. therein). Commerson's dolphins thus appear to be opportunistic, feeding primarily near the bottom (Jefferson et al. 1993; Reyes, 1991; Goodall, 1994; Clarke and Goodall, 1994, Iniguez and Tossenberger, 2007).

5. Migration

South America: There are few data on movements or migrations. Off Patagonia, the abundance of Commerson's dolphins is higher during the colder months (May-December), when schools are larger, than in the warmer months (Coscarella et al. 2003). There, dolphins are seen throughout the year. Further South, fishermen claim that most disappear during the winter to return in November. The dolphins may follow the fish (róbalo, merluza) which move offshore during winter. A low count of Commerson's dolphins in the Strait of Magellan in late autumn may be accounted for by such movements. Certainly the number observed is larger in summer (Goodall, 1994 and refs. therein; Venegas, 1996). The largest documented movements are of about 300 km (Mora et al. 2001).

Kerguelen: Preliminary observations carried out throughout the year indicate that although some dolphins stay, most move out of the Golfe du Morbihan from June to December (winter and spring). Nevertheless, as dolphins were seldom found over the adjacent continental shelf, they may move to other parts of the archipelago (Goodall, 1994 and refs. therein).

6. Threats

Direct catch: In the past, various species of small cetaceans, mainly Commerson's dolphins, have been harpooned and used as bait in the southern king crab ("centolla"; *Lithodes santolla*) fishery in both Argentina and Chile. Because the centolla is overfished in the Magellan region, the fishing effort has shifted to the false king crab, which is exploited principally farther west in the channels where Commerson's dolphins are not found. However, in Argentina the crab fishery operates in the Beagle Channel, which is also Commerson's dolphin habitat. In addition, some animals have been killed for sport (Reyes, 1991 and refs.

therein). Some Commerson's dolphins have been captured live in recent years, and the species appears to have done relatively well in captivity (Jefferson et al. 1993).

Incidental catch: Off southern South America, this is the odontocete species most frequently taken in gill nets, perhaps due to its coastal habits and narrow-band sounds. It is taken most often in fairly large-mesh nets and is apparently able to avoid nets with fine mesh. Although the exact size of the by-catch is unknown, at least 5-30 Commerson's dolphins die each year in nets set perpendicular to the shore in eastern Tierra del Fuego alone. Dolphins are also taken in this type of fishing in the Argentinean provinces north of Tierra del Fuego and in the eastern Strait of Magellan and Bahía Inútil in Chile. A few are taken by trawlers offshore in northern Patagonia (Goodall, 1994 and refs. therein; Crespo et al. 1995), especially pelagic trawls in the anchovies fishery (Crespo et al. 2007). Because the dolphins are used as bait, the fishers have no motive to avoid areas where captures occur and may favour them (Dawson, 2009).

Pollution: Low levels of chlorinated hydrocarbons (DDT, PCB and HCB) were found in blubber of Kerguelen dolphins, confirming the presence of contaminants in oceans far from the main sources of pollution. However, these levels were 10-100 times lower than those of cetaceans in the North Atlantic (Goodal, 1994).

Tourism: Dolphin-watching activities have increased in Patagonia; the number of tourists increased from 532 in 1999 to 2,113 in 2001. Dolphins showed a short-term reaction to the presence of the boat, performing aerial displays which are otherwise rarely seen. (Coscarella et al. 2003).

7. Remarks

Range states (Reeves et al. 2008) :

Antarctica; Argentina; Chile; Falkland Islands (Islas Malvinas); French Southern Territories (Kerguelen)

Cephalorhynchus commersonii is listed in the IUCN Red list as "Data deficient" (Reeves et al. 2008) and it is listed in Appendix II of CITES. The South American population is listed in Appendix II of CMS.

Commerson 's dolphins may have been seriously affected by the illegal take for bait in the crab fishery. It seems that the pressure on this species has been reduced in the late 1980s. However, the incidental mortality in gillnets and other fishing operations continues and now represents the major threat to this dolphin (Reyes, 1991, Dawson, 2009).

Regulations for small cetaceans in Argentina and Chile date back to 1974 and 1977, respectively. Permits are required for any taking, but in practice enforcement applies only to live-captures. In particular, enforcement is difficult in southern Chile, where the characteristics of the area preclude appropriate control. There does not appear to be any legislation protecting small cetaceans in the Falkland/Malvinas Islands, although some proposed conservation areas may protect the habitat. In the case of live-captures, Argentina banned this activity until more information on the species would be available (Reyes, 1991 and ref. therein, Dawson, 2009).

The main reasons for a regional conservation agreement on southern South-American small cetaceans including *C. commersonii* were developed in a CMS-review (Hucke-Gaete, 2000; see Appendix 1).

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