

Cephalorhynchus heavisidii (Gray, 1828)

English: Heaviside's dolphin

German: Heaviside-Delphin

Spanish: Delfín del cabo

French: Céphalorhynque du Cap

Family Delphinidae

1. Description

All dolphins of the genus are small, blunt-headed and chunky. Because they don't have a beak, they are often wrongly called porpoises. Their flippers are rounded and almost paddle-shaped. The dorsal fin is proportionally large and triangular (Dawson, 2009). The fore half of the body is uniformly grey, with the dorsal cape, fin, flanks and keel being dark blue-black. A similarly-coloured stripe runs from the blowhole to the cape. The flippers and eye patch are the same colour.

The underside is white, with white 'armpits' behind the flippers and a rhombus shape on the chest. A finger-shaped patch extends from the belly along each flank. Adults grow to around 1.74 m long and weigh around 75 kg (Dawson, 2009).

2. Distribution

<http://www.iucnredlist.org/apps/redlist/details/4161/0/rangemap>

Distribution of Cephalorhynchus heavisidii (Reeves et al. 2008): cold coastal waters from central Namibia to southern South Africa; © IUCN.

Heaviside's dolphins range in close inshore waters of southwestern Africa, from northern Namibia (17°09'S) south to Cape Point in Cape Province (34°21'S) (Rice, 1998; Dawson, 2009). The range is restricted and fairly sparsely populated throughout. *C. heavisidii* occurs only along approximately 1,600km of shoreline (Carwardine, 1995). There are no authenticated sightings or beach-cast specimens of the species east of Cape Point, and this seems to mark the southern and eastern limit of distribution. The northern limit is less well defined, as records extend along the entire west coast of South Africa and Namibia. As the cetacean fauna of Angola is very poorly known, it is uncertain how much farther north the distribution of Heaviside's dolphin might extend (Best and Abernethy, 1994).

3. Population size

No reasonable estimate is possible from the available data. Griffin and Loutit (1988, in Best and Abernethy, 1994) stated that Heaviside's dolphins are the cetaceans most frequently seen in the northern part of their range, off the Namibian coast. In the southern portion of the range, within a coastal area from Cape Town to 390 km north west, 6,345 animals (95% CI = 3,573-11,267) have recently been estimated (Elwen et al. 2009).

4. Biology and Behaviour

Habitat: As other species in the genus, it is a coastal, shallow water animal (Jefferson et al. 1993; Reyes, 1991). Dolphins fitted with satellite transmitters varied in their use of the inshore areas from 39.5% to 94.7% of transmission days (38-51 total) (Elwen et al. 2009). It is mostly seen within 8–10-km of shore and in water less than 100 m deep. Surveys within 8 km of the coast have shown low population densities of around 5 sightings per 160 km; sightings dropped dramatically further offshore, and no animals were seen in water deeper than 200 m. *C. heavisidii* seems to be associated with the cold, northward-flowing Benguela Current. Some populations may be resident year-round (Carwardine, 1995; Reyes, 1991; Rice and Saayman, 1984). Heaviside's dolphins have been found within a wide range of surface temperatures (9-19°C), but most sightings (87.2%) were in water of 9-15°C (Best and Abernethy, 1994).

Behaviour: Little is known about the behaviour of this species. It is generally undemonstrative and appears to be shy. Reactions to vessels vary, but it is known to approach a range of boats and to bow-ride and wake-ride; some animals have been seen "escorting" small vessels for several hours at a time. Limited observations suggest that at least some groups have restricted home ranges and probably do not stray far from these areas (Carwardine, 1995).

Schooling: Heaviside's dolphins are usually found in small groups of from one to 10 animals, with two being the most common number. Mean group size for 149 confirmed sightings made on scientific cruises was 3.2 animals. On some occasions two groups can be found in close association, and it is possible that amalgamation into larger groups may occur occasionally; the sighting of 30 animals may represent such an occasion (Best and Abernethy, 1994 and refs. therein).

Food: Stomach contents are available from 17 animals and included a minimum total of 4,928 identifiable food items. Demersal fish such as hake (*Merluccius capensis*) and kingklip (*Genypterus capensis*) formed 49% and octopods 22% by weight of the organisms identified, while gobies (*Suffitogobius bibarbatus*) and squid (*Loligo rejnaudi*) were also important components. Heaviside's dolphin seems to feed on bottom-dwelling organisms, demersal species that may migrate off the bottom (even to the surface) at night, and pelagic species that can be found from the surface to near the sea floor on the continental shelf (Best and Abernethy, 1994 and refs. therein).

5. Migration

Movements of this species are not well known. Repeated sightings of individually recognisable specimens (including a pure white animal) over a long period indicate that certain groups may be resident in some areas (Reyes, 1991 and refs. therein). However, Best and Abernethy (1994) concluded "whether Heaviside's dolphins reside year-round in particular areas is an open question". An immature male *C. heavisidii* marked with a spaghetti tag was recaptured about 85 nautical miles north of the marking position. Although little can be deduced from a single incident, this record suggests a relatively small amount of overall movement over a 17-month period (Best and Abernethy, 1994 and refs. therein), and a relatively wide home range, which may easily extend across international boundaries.

Home-range estimates ranged from 302 to 1,028 km² (90% isopleths). Although the distance from shore and depth at which individual dolphins moved varied greatly, all dolphins showed

a strong onshore-offshore diurnal movement pattern, generally being closest inshore between 0600 h and noon, and farthest offshore between 1500 h and 0500 h. This pattern is assumed to be related to the movements of their principal prey, juvenile shallow-water hake (*Merluccius capensis*), which migrates into the upper water column at night. Movements inshore may be associated with rest, socializing, and predator avoidance (Elwen et al. 2006).

6. Threats

Direct catch: Although fully protected legally, directed takes with hand-thrown harpoons or guns of about 100 dolphins per year, including Heavisides dolphin and two other species, have been reported (Reyes, 1991 and refs. therein).

Incidental catch: Some Heaviside's dolphins become entangled in a variety of inshore fishing nets off South Africa and Namibia each year (Carwardine, 1995). Estimated total kills of dolphins in 7,013 sets off Namibia in 1983 were 67 (*C. heavisidii* and *Lagenorhynchus obscurus* combined), whereas 57 were killed in South Africa. Other reported sources of incidental mortality were set nets in waters close to the shore of Namibia, although data on catch rates and mortality are lacking. There are unconfirmed reports of specimens taken in a bottom trawl fishery, but a drift net shark fishery does not seem to pose a threat to the dolphin population (Reyes, 1991 and refs. therein). Heaviside's dolphins are also known to be caught accidentally in beach-seine nets. Up to seven dolphins have been reported to be entrapped and beached during one net haul, and although it is likely that many of the animals landed in this fishery are returned to the sea alive, some mortality may occur (Best and Abernethy, 1994).

Although presently probably able to sustain mortality following interactions with commercial fishing gear, Heaviside's dolphins may become negatively impacted should fishing activities increase (Peddemors, 1999; Dawson, 2009).

Deliberate culls: None reported (Reyes, 1991).

Habitat degradation: Taking into account the relatively small home range of the species and its restricted distribution in coastal waters, pollution and boat traffic may be causes for concern (Reyes, 1991).

7. Remarks

Range states: Angola; Namibia; South Africa (Northern Cape Province, Western Cape Province) (Reeves et al. 2008).

C. heavisidii is included in Appendix II of the CMS. The species is listed as "Data Deficient" by the IUCN (Reeves et al. 2008) . The species is listed in Appendix II of CITES.

Information on distribution and abundance is urgently needed. More information on the nature and extent of catches is required to assess the status of this species (Reyes, 1991). For Namibia, such data is currently being gathered through the Namibian Dolphin Project (Elwen, pers. comm.).

Heaviside's dolphin is protected within the 200-mile Exclusive Fishery Zone (EFZ) of South Africa, where all delphinids are protected under the Sea Fisheries Act of 1973. Similar protection is given In Namibia's 12-mile EFZ. Permits were formerly given for the operation of set netting off the Namibian coast but this has been prohibited by the Government since

1986. The main threats to the species are incidental mortality in several fishing operations, possibly pollution and boat traffic, and development of fisheries in the region (Reyes, 1991 and refs. therein).

Although its range is restricted to a small part of the south-western African coast, observations by Rice and Saayman (1989) show that relatively large groups are present regularly in waters involving the national boundaries of Namibia and South Africa, the two known Range States (Reyes, 1991 and refs. therein).

Further information is needed on probable distribution of the species in Angola, whose status as a Range State needs further consideration.

More research emphasis should in future also be placed on possible detrimental interactions due to overfishing of prey stocks. Increased commercial fishing pressure will inevitably also increase interactions between the fishery and Heaviside's dolphins, which are considered to be vulnerable (Peddemors, 1999).

8. Sources

- Best PB, Abernethy RB (1994) Heaviside's dolphin – *Cephalorhynchus heavisidii* (Gray, 1828). In: Hand-book of marine mammals (Ridgway SH, Harrison SR, eds.) Vol. 5: The first book of dolphins. Academic Press, London, pp. 289-310.
- Carwardine M (1995) Whales, dolphins and porpoises. Dorling Kindersley, London, UK, 257 pp.
- Dawson SM (2009) *Cephalorhynchus* dolphins. In: Encyclopedia of marine mammals (Perrin WF, Würsig B, Thewissen JGM, eds.) Academic Press, Amsterdam, pp. 191-196.
- Elwen S, Meyer MA, Best PB, Kotze PGH, Thornton M, Swanson S (2006) Range and movements of female heaviside's dolphins (*Cephalorhynchus heavisidii*), as determined by satellite-linked telemetry. J Mammal 87: 866-877
- Elwen SH, Reeb D, Thornton M, Best PB (2009) A population estimate of Heaviside's dolphins, *Cephalorhynchus heavisidii*, at the southern end of their range. Mar Mamm Sci 25: 107-124
- Jefferson TA, Leatherwood S, Webber MA (1993) FAO Species identification guide. Marine mammals of the world. UNEP/FAO, Rome, 320 pp.
- Peddemors VM (1999) Delphinids of southern Africa: A review of their distribution, status and life history. J Cetacean Res Manage 1: 157-165.
- Reyes JC (1991) The conservation of small cetaceans: a review. Report prepared for the Secretariat of the Convention on the Conservation of Migratory Species of Wild Animals. UNEP / CMS Secretariat, Bonn.
- Reeves RR, Crespo EA, Dans Jefferson TA, Karczmarski L, Laidre K, O'Corry-Crowe G, Pedraza S, Rojas-Bracho L, Secchi ER, Slooten E, Smith BD, Wang JY, Zhou K (2008) *Cephalorhynchus heavisidii*. In: IUCN 2009. IUCN Red List of Threatened Species. Version 2009.2. <www.iucnredlist.org>.
- Rice DW (1998) Marine mammals of the world: systematics and distribution. Society for Marine Mammalogy Spec Publ 4, Lawrence, KS. USA.
- Rice FH, Saayman GS (1984) Movements and behaviour of Heaviside's dolphins (*Cephalorhynchus heavisidii*) off the western coasts of southern Africa. Invest Cetacea 16: 49-63.

© Boris Culik (2010) Odontocetes. The toothed whales: “*Cephalorhynchus heavisidii*”.

UNEP/CMS Secretariat, Bonn, Germany.

http://www.cms.int/reports/small_cetaceans/index.htm

© Illustrations by Maurizio Würtz, Artescienza.

© Maps by IUCN.