

## **Phocoena dioptrica Lahille, 1912**

English: Spectacled porpoise

German: Brillenschweinswal

Spanish: Marsopa de anteojos

French: Marsouin à lunettes

Family Phocoenidae

### **1. Description**

Most knowledge on the biology and ecology of the spectacled porpoise was obtained from stranded specimens, with less than fifteen confirmed sightings at sea. Published photographs of live animals in their natural environment are also very rare (Sekiguchi et al. 2006).

The spectacled porpoise is highly distinctive with its unusual pigmentation, small head and facial features and the large male dorsal fin. It is a robust animal with a rounded head and beak. The flippers are small and situated well forward. The dorsal fin is broadly triangular and grows much larger and rounded in males than in females. The flukes are small and have rounded tips. Adults are black dorsally, sharply separated from the white belly. Size ranges to 204 cm in females and 224 cm in males and mass to 85 kg in females and 115 kg in males (Goodall, 2002; 2009). Based on observations at sea and new photographs of live animals, a pale saddle around the dorsal fin is apparent (Sekiguchi et al. 2006).

Perrin et al. (2000) described osteological characteristics for specimens from Argentina and other areas of the Southern Hemisphere: tooth counts were 16-26 and 17-23 in the upper and lower jaws, respectively. Total number of vertebrae was 66-70. The rostrum may be relatively smaller in the Auckland Islands than in other regions.

### **2. Distribution**

<http://www.iucnredlist.org/apps/redlist/details/41715/0/rangemap>

*Distribution of Phocoena dioptrica: coastal waters of southeastern South America and offshore islands around Antarctica (Hammond et al. 2008; © IUCN).*

There are records from widely separate locations; some of these may involve strays, or cases of mistaken identity. Records from offshore islands (mostly of dead animals and skulls), hint at a circumpolar distribution and suggest that the range may also include large areas of open sea. It is not known whether these represent isolated populations, or whether they mix with mainland coastal animals by migrating across the open sea (Carwardine, 1995).

According to Goodall (2002, 2009), *P. dioptrica* is circumpolar in cool temperate, sub-Antarctic and low Antarctic waters. It ranges in coastal waters of south-eastern South America, from Santa Catarina in southern Brazil (32°S; Pinedo et al. 2002) south to Tierra del Fuego; Falkland Islands (Islas Malvinas); South Georgia; Iles Kerguelen; Heard Island; Tasmania; Macquarie Island; Auckland Islands; Antipodes Islands (Rice, 1998), South Island, New Zealand (Baker, 1999) and South Australia (Kemper and Hill 2001). The southernmost sighting was at 64°33'S (Goodall, 2009). The suggested circumpolar and offshore distribution

of the species was extended further south than previously thought, into Antarctic waters south of the Antarctic Convergence (Brownell and Clapham, 1999; Van Waerebeek et al, 2004; Sekiguchi et al. 2006).

### 3. Population size

Nothing is known on the abundance of this porpoise (Goodall, 2009; Hammond et al. 2008). It was the most commonly encountered species during preliminary beach surveys undertaken on Tierra del Fuego by R.N.P. Goodall, but once the beaches had been cleared it was exceeded in frequency of occurrence by Commerson's dolphin (Brownell and Clapham, 1999).

### 4. Biology and Behaviour

**Habitat:** *P. dioptrica* is mainly an oceanic species sighted in deep offshore waters. However, some have been sighted in coastal habitat, including in channels and even river estuaries (Goodall, 2009; Jefferson et al. 1993). Spectacled porpoises seem to occur only in cold temperate waters and where recorded, water temperatures associated with sightings ranged from 5.5°C to 9.5°C (Brownell and Clapham, 1999). However, this temperature range has recently be extended to 0.9-10.3 °C, with most of the sightings (52.0%) in waters of 4.9-6.2 °C (Sekiguchi et al. 2006).

**Behaviour:** Spectacled porpoises are very inconspicuous when surfacing (Jefferson et al. 1993). They generally show fast swimming behaviour when approached by a vessel, resembling the swimming behaviour of harbour porpoises (Sekiguchi et al. 2006).

**Schooling:** *P. dioptrica* appears to live mainly alone (most of the strandings and sightings are of solitary animals), but may also live in small groups (Carwardine, 1995; Jefferson et al. 1993). In southern waters, group size was small, averaging 2 animals per group. A total of six cow-calf pairs were observed and all such pairs were accompanied by one or two additional adults, always including a mature male (Sekiguchi et al. 2006).

**Reproduction:** Births appear to occur in the southern spring to summer (Jefferson et al. 1993). Nothing is known on pregnancy rates, interbirth intervals or duration of lactation in this species (Brownell and Clapham, 1999).

**Food:** Based upon its dentition, it is likely that, like other phocoenids, this species feeds upon fish and squid. Records of prey remains are scarce: anchovy (*Engraulis* sp.) and small crustaceans (possibly stomatopods) as well as squid (Brownell and Clapham, 1999; Goodall, 2009).

### 5. Migration

Nothing is known on the seasonal movements, if any, of this species (Brownell and Clapham, 1999; Goodall, 2009). Most sightings were pelagic, but strandings around Tierra del Fuego suggest at least some neritic activity of the species.

## 6. Threats

**Direct catch:** In the past, spectacled porpoises were killed deliberately for food. In Argentina and Chile, spectacled porpoises are taken in gillnets, and they may have been taken deliberately for crab (centolla) bait off southern Chile. The effects of these catches on spectacled porpoise populations are not known (Jefferson et al. 1993).

**Incidental catch:** At least 34 animals were killed incidentally between 1975 and 1990 in coastal gill nets set in Tierra del Fuego, and there was a co-occurrence of strandings and fishing activity in south-eastern Chile, suggesting additional undocumented mortalities from this source. Some mortality of spectacled porpoises was also reported from bottom and mid-water trawls off the coast of Chubut, Argentina (Brownell and Clapham, 1999, and refs. therein). Jefferson and Curry (1994) summarise that the effects of incidental takes on the population are unknown.

Potential threats include also incidental captures in expanding fisheries in the Southern Ocean, especially in areas adjacent to subantarctic islands; disturbance and pollution resulting from coastal and offshore oil and mineral exploration (Argentina); pollution of preferred habitats, leading to accumulation of toxic substances in body tissues (Klinowska 1991; Bannister *et al.* 1996)

## 7. Remarks

Range states:

Argentina; Australia (Macquarie Is., Tasmania); Brazil; Chile; Falkland Islands (Malvinas); French Southern Territories (the) (Kerguelen); Heard Island and McDonald Islands; New Zealand (Antipodean Is.); South Georgia and the South Sandwich Islands; Uruguay

IUCN Status: "Data Deficient" (Hammond et al. 2008). *P. dioptrica* is included in Appendix II of CMS. The species is listed in Appendix II of CITES.

According to Jefferson and Curry (1994), gillnets represent the single most important threat to porpoises as a group, and this may be an example of a "no technical solution problem". They conclude that better documentation of catches and new approaches to dealing with porpoise/gillnet interaction problems are needed in order to prevent the loss of several species and populations. See further recommendations and conclusions on South American stocks in Huckle-Gaete (2000) in Appendix 1.

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