

## A REVIEW OF SMALL CETACEANS FROM WATERS OFF THE ARABIAN PENINSULA

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### ABSTRACT

Available data on small cetacean species in coastal and offshore waters off peninsula Arabia are reviewed. Species accounts are presented for a total of 16 small cetaceans, including information on the date and source of first records in the region, distribution, stock identity, abundance, external appearance, migrations or local movements, status, incidental takes, directed catches and other threats, ecology, life history and disease/parasites. In addition the origin and present location of all curated specimens are listed. Anecdotal information, such as that obtained from local fishermen and other observers, is also presented.

**KEY WORDS:** Dwarf sperm whale, Cuvier's beaked whale, melon-headed whale, pygmy killer whale, false killer whale, killer whale, short-finned pilot whale, rough-toothed dolphin, Indo-Pacific humpback dolphin, common dolphin, bottlenose dolphin, Risso's dolphin, spotted dolphin, striped dolphin, spinner dolphin, finless porpoise, Arabian Gulf, Gulf of Oman, Arabian Sea, Gulf of Aden, Red Sea.

### INTRODUCTION

Available data on small cetaceans in the Arabian region were reviewed by Leatherwood (1986) and de Silva (1987) as part of general reviews of cetaceans in the wider Indian Ocean. Information on small cetaceans in the region was also collated in a single volume through the Secretariat for the Global Action for the Conservation, Management and Utilisation of Marine Mammals (UNEP) (Beadon, 1991; Chantrapornsyil *et al.*, 1991; Gallagher, 1991; Kruse *et al.*, 1991; Leatherwood *et al.*, 1991; Papastavrou and Salm, 1991; Small and Small, 1991). Other published accounts of small cetaceans are scattered and present data for more specific areas of the Arabian region.

Earlier records are provided by Mahdi and Georg (1969) and Al Robbae (1970; 1971; 1974; 1975) for the western Arabian Gulf, while Pilleri and Gahr (1973-4) report information for the eastern Arabian Gulf. At about the same time, other authors presented records for the Gulf of Oman (Gallagher and van Bree, 1978; van Bree and Gallagher, 1978) and the Red Sea (Peacock, 1978). Evidence that additional early work was in progress in the region is provided by Gallagher (1991) who documented collections of specimens of small cetaceans from Bahrain, United Arab Emirates (UAE) and Oman that date back to 1969. Leatherwood (1986) referred to other early collections of skeletal material from the region in general. Historical whaling records provided further information on small cetaceans (Wray and Martin, 1983).

Many data on small cetaceans of the region come from incidental observations recorded during more general surveys of marine and coastal habitats, particularly along the coast of Oman (Papastavrou and Salm, 1991; Weidleplan, 1992; Salm *et al.*, 1993) and Yemen (Anomynous, 1996). Papastavrou and Salm (1991, p 215) illustrated that the number of records of cetaceans observed by them between November 1984 and May 1988 was considerably higher in the Arabian Sea region than in the Gulf of Oman. They also concluded that the waters off Oman are rich in cetaceans and merit further study. Observations of the first and second authors over the past decade indicate that both conclusions appear to be correct.

Surveys conducted specifically to observe and record cetaceans in the region began in 1973 (Pilleri, 1973). Several surveys were conducted in the region during the early 1980's (Harwood, 1981; Keller *et al.*, 1982; Robineau & Rose, 1984; Alling *et al.*, 1986). These included a survey of small cetaceans, particularly *Sousa chinensis*, in the UAE in 1984 (UAECD). A survey conducted for dugongs (*Dugong dugon*) in the Arabian Gulf and Red Sea in 1989, included documentation of sightings of small cetaceans (Preen, 1989). Results of this survey prompted an investigation of extensive marine mammal mortality in the Arabian Gulf (ROPME, 1986). The well-being of cetaceans in this area was further investigated following the 1992 Gulf War (Henningesen & Constantine, 1992; Robineau & Fiquet, 1994a). More recent survey work in the Arabian Gulf has focussed specifically on small cetaceans (Robineau & Fiquet, 1992; Robineau & Fiquet, 1994b; Robineau & Fiquet, 1996; Baldwin, 1996a,b). Elsewhere in the Arabian region recent surveys have been conducted in both the Gulf of Oman and the Arabian Sea, spanning offshore waters of UAE, Oman and Yemen (Baldwin, 1995, 1997; Ballance *et al.*, 1996). A number of other investigators report specific sightings of small cetaceans in the region (Ross, 1981; Weitkovitz, 1992; Eyre, 1994; Smeenk *et al.*, 1996).

Several general texts on the natural history of the Arabian region refer to cetaceans (e.g. Basson *et al.*, 1977; Sheppard *et al.*, 1992) and many texts on general and specific aspects of small cetaceans make reference to the region's cetacean fauna (Hershkovitz, 1966; Leatherwood & Reeves, 1983; Gilpatrick *et al.*, 1987; Perrin *et al.*, 1987; Perrin, 1990; Miyazaki & Perrin, 1994; Perrin *et al.*, 1994; Perrin & Gilpatrick, 1994; Ross *et al.*, 1994). Additional general texts specifically treat cetaceans of the region (Frazier *et al.*, 1987; Preen, 1987; Baldwin & Salm, 1994; Baldwin, 1995). Recent research has focussed on aspects of small cetacean taxonomy off Oman (Van Waerebeek *et al.*, SC/50/ForInfo.2; Van Waerebeek *et al.*, SC/50/SM3).

## **MATERIALS AND METHODS**

The data reviewed here come from the literature, from records of the Oman Cetacean Database (OMCD) held at the Oman Natural History Museum (ONHM), the United Arab Emirates Cetacean Database (UAECD) held by the Emirates Natural History Group, Abu Dhabi, and from other direct observations of small cetaceans in the region by the authors. The first author holds copies of both cetacean databases mentioned above.

For the purposes of this review, we have defined the Arabian region as coastal and offshore waters of peninsula Arabia, including waters of the Arabian Gulf, Gulf of Oman, Arabian Sea, Gulf of Aden and Red Sea. Data from elsewhere, such as along the African coast of the Red Sea, are included in cases where these are considered relevant or appropriate.

Both at present and historically, research and observation of cetaceans in the region has focussed on particular areas, with most available information on small cetaceans coming from waters off the Sultanate of Oman and the southern shores of the Arabian Gulf, particularly Saudi Arabia and UAE. Population estimates have not been attempted in the region on any cetacean species to our knowledge making assessment of abundance and status difficult or impossible. There are also very few data on which to base assessment of stock identity, incidental takes of small cetaceans and other threats, life history or disease and parasitic infestation. In general, evidence for the deliberate capture of cetaceans is also scant and we believe that this practice is probably restricted in the region to occasional opportunistic hunting. The ecology of most species is also poorly known for the region, and although the following species accounts do not attempt to draw parallels with information collected on conspecifics elsewhere in the world, it is acknowledged that many data may be applicable. The listed curated specimens at the ONHM detailed in each of the following species accounts largely omits those specimens that have yet to be positively identified and the list is therefore incomplete.

## **ABBREVIATIONS USED**

OMCD – Oman Cetacean Database

UAECD – United Arab Emirates Cetacean Database

UAE – United Arab Emirates

ONHM – Oman Natural History Museum

BM – British Museum (Natural History), now known as the Natural History Museum, London

ZMA – Zoological Museum Amsterdam

## SPECIES ACCOUNTS

### Dwarf sperm whale

#### *Kogia simus* Owen, 1866

**Date and source of first record in the Arabian region:** Gallagher and van Bree (1978) report the first discovery of *Kogia simus* in the Arabian region on 27 May 1979. The remains of a single individual were found on a beach at Qurm Nature Reserve (23°37'N, 58°28'E), Sultanate of Oman.

**Distribution:** Records of *K. simus* in the Arabian region are known only for Oman (Chantrapornsyl *et al.*, 1991). These records indicate its presence both in the Gulf of Oman as far north as latitude 24°28'N (Ballance *et al.*, 1996) and in the Arabian Sea as far south as 16°57'N (Papastavrou and Salm, 1991). Reference to the occurrence of *K. simus* in the Arabian Gulf by Robineau and Fiquet (1996) appears to be based on an erroneous figure presented by Chantrapornsyl *et al.* (1991, Fig.1., p.81); data upon which the figure is based (published in the same reference, p.82) do not support the occurrence of this species in the area.

**Stock identity:** No information

**Abundance:** The scarcity of records of *K. simus* in the Arabian region suggests that it is rare here as it is throughout the Indian Ocean (Chantrapornsyl *et al.*, 1991). A single live sighting of this species is reported (Ballance *et al.*, 1996). A further five records of dead animals are documented by Gallagher (1991), Salm *et al.* (1993) and in the Oman Cetacean Database (OMCD). M.A. Al-Barwani reports a single sighting in waters off southern Oman in February 1982 (*in litt.* to R. Gambell, 1982 cited in Leatherwood *et al.*, 1991).

**External appearance:** Insufficient information to determine any features as peculiar to this species in the Arabian region.

**Migrations or local movements:** No information

**Status:** Unknown

**Incidental takes:** Gallagher and van Bree (1978) report that the single individual found at Qurm, Oman, in 1979 had been 'deliberately filleted'. It is presumed that this animal had been caught in a net accidentally.

**Directed catches:** No information

**Other threats:** No information

**Ecology:** No information.

**Life history:** No information.

**Curated specimens:** Four collections from Oman (ONHM 1024, 1139, 1330, ZMA 20.712).

**Disease and parasites:** No information.

**Anecdotal reports:** Two sightings on 17 November 1996 and 27 June 1997 of groups of up to five individuals at 23°34'N, 58°40'E (Bandar Jissah, Gulf of Oman) were reported by the first author (OMCD) as either *K. simus*, *Peponocephala electra* or *Feresa attenuata*. Fishermen report regular sightings of small, unidentified whales 'rafting' at the surface over deep water at Ra's al Hadd, Oman (Ali. A. Al-Kiyumi, *pers. comm.* December 1997). Descriptive verbal reports suggest the possibility that these sightings may represent *K. simus*.

### Cuvier's beaked whale

#### *Ziphius cavirostris* Cuvier, 1823

**Date and source of first record in the Arabian region:** Alling (1986) reports a sighting of two *Ziphius cavirostris* off the coast of Oman (22°15'N, 59°55'E) on 23 January 1982. Gallagher (1991) documents a skull collected from the beach on Masirah Island, Oman in the same year.

**Distribution:** Records of *Z. cavirostris* in the Arabian region are restricted to the coast of Oman. One of these, a partial skull (ONHM 1800) collected from the shores of the Gulf of Oman (23°44'N, 57°50'E), remains to be positively identified. All other records are from the Arabian Sea region of Oman between 22°33'N and 17°30'N (OMCD).

Of the two positive live sightings of *Z. cavirostris* in Oman, the first was in water over 850 metres in depth (Alling, 1986) and the second in deep water of unspecified depth (OMCD).

**Stock identity:** No information.

**Abundance:** Insufficient information. Published accounts (Alling, 1986; Gallagher, 1991, Salm *et al.*, 1993) and records of the OMCD indicate a total of six confirmed records of this species in the region.

**External appearance:** Insufficient information to determine any features peculiar to this species in the Arabian region.

**Migrations or local movements:** No information.

**Status:** Unknown.

**Incidental takes:** No information.

**Directed catches:** No information.

**Other threats:** No information.

**Ecology:** No information.

**Life history:** No information.

**Curated specimens:** Four collections from Oman: Skull with partial skeleton (OHNM 901), two skulls (ONHM 344.14, 1141) and a partial skull (ONHM 1800) that remains to be positively identified.

**Disease and parasites:** No information.

**Anecdotal reports:** No information.

### **Melon-headed whale**

#### ***Peponocephala electra* Gray, 1846**

**Date and source of first record in the Arabian region:** Van Waerebeek *et al.* (SC/50/ForInfo.2.) describe the first positive record of *Peponocephala electra* from the Arabian region based on the identification of a damaged calvaria (ONHM 835) collected at Al Hallaniyah Island (17°31'N, 56°04'E) on 1 November 1982.

**Distribution:** The above record indicates the presence of *P. electra* in the Arabian Sea off the coast of Oman. Leatherwood *et al.*, (1991) attribute a sighting of 36 'blackfish' by R.S. Combs on 13 March 1981 in the Gulf of Oman at 24°02'N, 58°46'E to *P. electra*. However, identification remains unsubstantiated (Van Waerebeek *et al.*, SC/50/ForInfo.2.).

Small and Small (1991) sighted a group of three individuals in the Gulf of Aden off the Somali coast in February 1986.

**Stock identity:** No information.

**Abundance:** No information.

**External appearance:** No information.

**Migrations or local movements:** No information.

**Status:** Unknown.

**Incidental takes:** No information.

**Directed catches:** No information.

**Other threats:** No information.

**Ecology:** No information.

**Life history:** No information.

**Curated specimens:** Collection from Oman: A damaged calvaria (ONHM 835).

**Disease and parasites:** No information.

**Anecdotal reports:** Sightings of two groups of up to five small cetaceans in the Gulf of Oman were reported by the first author (OMCD) on 17 November 1996 and 27 June 1997, identified as either *P. electra*, *K. simus* or *Feresa attenuata*.

### **Pygmy killer whale**

***Feresa attenuata* Gray, 1874**

**Date and source of first record in the Arabian region:** The first apparent record of *Feresa attenuata* in the Arabian region is a sighting of 38 individuals by S.P. Weston on 31 March 1980 at 16°16'N, 54°11'E off the coast of Yemen, Gulf of Aden (Leatherwood *et al.*, 1991).

**Distribution:** Alling (1986) reports 3 sightings of *F. attenuata*, including three individuals sighted in the Gulf of Aden (12°13'N, 44°15'E), two in the Arabian Sea off the coast of Oman (19°17'N, 58°11'E) and three in the Gulf of Oman (23°24'N, 58°59'E). These sightings and that by S.P. Weston (Leatherwood *et al.*, 1991) indicate the presence of this species in the Arabian Sea. Harwood (1980) tentatively identifies a sighting of two *F. attenuata* at approximately 23°N, 59°E in the Gulf of Oman in November 1980, a record that is later cited as a positive identification by numerous authors (e.g. Leatherwood, 1986; Leatherwood *et al.*, 1991). Salm *et al.* (1993) document skeletal material from the Arabian Sea coast of Oman (18°59'N, 57°49'E) which they identify as possibly belonging to *F. attenuata*. This identification has not been substantiated.

Ballance *et al.* (1996) sighted a herd of approximately 15 *F. attenuata* in waters south of Socotra Island at 11°17'N, 54°05'E.

**Stock identity:** No information.

**Abundance:** Insufficient information (see above).

**External appearance:** No information.

**Migrations or local movements:** No information.

**Status:** Unknown.

**Incidental takes:** No information.

**Directed catches:** No information.

**Other threats:** No information.

**Ecology:** No information.

**Life history:** No information.

**Curated specimens:** One possible collection from Oman: Vertebrae and ribs (ONHM 1043), which have yet to be positively identified.

**Disease and parasites:** No information.

**Anecdotal reports:** Sightings of 2 groups of up to 5 small cetaceans in the Gulf of Oman were reported by the first author (OMCD) on 17 November 1996 and 27 June 1997, identified as either *F. attenuata*, *P. electra* or *K. simus*.

## False killer whale

### *Pseudorca crassidens* Owen, 1846

**Date and source of first record in the Arabian region:** The first records of *Pseudorca crassidens* in the Arabian region are of two sightings of groups of 20 and 30 individuals off the coast of Oman on 16 January 1961 (Morzer Bruyns, 1969, cited in Leatherwood *et al.*, 1991).

**Distribution:** *P. crassidens* is widely distributed in the Arabian region. Al Robbae (1971; 1974) details early records in the eastern Arabian Gulf based on skeletal material collected near Kuwait in 1964. Other records in the Arabian Gulf are sparse. A sighting of over 40 animals in the northwestern Arabian Gulf (28°00'N, 49°06'E) in March 1966 is reported by Morzer Bruyns (cited in Leatherwood *et al.*, 1991). The UAE Cetacean Database (UAECD) lists one dead individual from a beach in Abu Dhabi, UAE in 1980, and a single record of one mandible of this species, collected by the first author in March 1995 from Murawah Island, Abu Dhabi (24°28'N, 53°23'E). *P. crassidens* is known in the extreme northern Gulf of Oman from Leatherwood (1986) who reports a skull collected at Khasab, Musandam (Oman) and from a sighting of a group of 100 individuals in May 1996 at 26°19'N, 56°20'E (OMCD). This species has also been recorded off the Gulf of Oman coast of the UAE (Baldwin, 1995) and other records (Gallagher, 1991; OMCD) in Oman suggest that it is relatively widespread in both the Gulf of Oman and Arabian Sea.

The distribution of this species apparently continues into the Red Sea, where it has been recorded in several locations (Alling *et al.*, 1982; Alling, 1986; Frazier *et al.*, 1987) including the Gulf of Aqaba (Beadon *et al.*, 1991).

**Stock identity:** No information.

**Abundance:** Records of *P. crassidens* in Oman from January 1961 to date number 37, of which 20 are live sightings of groups numbering between eight and 100 individuals (OMCD). There are relatively few records from elsewhere in Arabian waters. The UAECD lists four confirmed records for the UAE, including two in the Arabian Gulf. Other records for the Arabian Gulf include the 40 individuals mentioned above sighted at 28°00'N, 49°06'E (Leatherwood *et al.*, 1991) and a limited, but undetermined, number of records for the Red Sea (Alling *et al.*, 1982; Alling, 1986; Frazier *et al.*, 1987; Beadon *et al.*, 1991). Groups of *P. crassidens* in the Red Sea are reported by Alling *et al.* (1982) and Frazier *et al.* (1987) as comprising 11 and 25 individuals respectively.

Leatherwood *et al.*, (1991) postulate that *P. crassidens* is probably more abundant in pelagic equatorial regions of the Indian Ocean than the number of records suggests. Anecdotal reports of the common occurrence of this species in offshore waters of Oman and the fact that most sightings of this species in Oman involve relatively brief encounters with fast moving animals which then head seaward (OMCD) support this view. However, during the course of a survey (Ballance *et al.*, 1996) conducted in March-July, 1995 covering a total of 9,784 linear kilometres in the northern and southern Indian Ocean, *P. crassidens* was sighted on only seven occasions, none of which were located in Arabian waters as defined by the current paper.

**External appearance:** Insufficient information to determine any features peculiar to this species in the Arabian region.

**Migrations or local movements:** No information.

**Status:** Unknown.

**Incidental takes:** One record of a dead animal at Ra's Madrasah (19°00'N, 57°50'E), Arabian Sea coast, Oman, was thought to have been accidentally drowned in a fishing net (OMCD).

**Directed catches:** *P. crassidens* may formerly have been hunted for its ivory in the Arabian Sea (Morzer-Bruyns, 1971, cited in Leatherwood *et al.*, 1991). There is no evidence to suggest current directed catches of this species.

**Other threats:** No information.

**Ecology:** This species is known to feed on yellowfin tuna (*Thunnus albacares*) in the Gulf of Oman, evidenced by direct observations of feeding individuals (OMCD).

**Life history:** It is likely that *P. crassidens* is a breeding resident off Oman. Baldwin and Salm (1994) describe an observation of a possible birth of this species in the Gulf of Oman in May and there is one record of a calf stranded live in the Gulf of Oman at 22°56'N, 58°36'E in August. The stranding resulted in mortality and the

length and weight of the calf were measured at 1.6 metres and 35 kilograms respectively (OMCD). Juveniles of this species measuring approximately 2-3 metres in length have been sighted in the Gulf of Oman in May and October (OMCD), in the Arabian Sea (at 19°01'N, 57°55'E) in November (Baldwin, 1997) and in the Red Sea (Alling *et al.*, 1982).

**Curated specimens:** One collection from Kuwait: Kuwait Natural History Museum (NHMK, ESUC)(Al Robbae, 1974). Collections from Oman: Skulls (BM 72-809, 1980.795, ZMA 21.168, 21.186, ONHM 1044, 1023, 64, 728.2, 1044, 1023, 2234, 2413, 2596, 2642); partial skulls (ONHM 834, 1014); and a complete mounted skeleton (ONHM 689).

**Disease and parasites:** No information.

**Anecdotal reports:** Fishermen near Muscat, Oman, claim that this species is relatively frequently seen in offshore waters of the Gulf of Oman, particularly between the months of October and February and usually in association with tuna.

### **Killer whale**

#### ***Orcinus orca* Linnaeus, 1758**

**Date and source of first record in the Arabian region:** The earliest record of *Orcinus orca* in the Arabian Region is of a sighting of eight individuals by J.N. Duckworth on 30 January 1980 at 21°06'N, 59°41'E off the Arabian Sea coast of Oman (Leatherwood *et al.*, 1991).

**Distribution:** The few records off the coast of Oman show that *O. orca* is distributed widely in the Gulf of Oman and Arabian Sea, with northerly records near Muscat (23°40'N) in the Gulf of Oman and records in the Arabian Sea as far south as 16°55'N (Baldwin, 1997).

Frazier *et al.*, (1987) report that this species is occasionally seen in the Red Sea, particularly in summer months, and that it has also been recorded in the Gulf of Aden. Other records from the Gulf of Aden include one large male observed in April 1982 and other unspecified observations of this species, both in the Gulf of Aden and the Arabian Sea (Leatherwood, 1986).

A sighting of six individuals by G.A. Lancaster at 27°30'N, 56°10'E on 8 March 1980 is the only published, albeit unsubstantiated, record of *O. orca* in the Arabian Gulf (Leatherwood *et al.*, 1991).

**Stock identity:** No information.

**Abundance:** The scarcity of records of *O. orca* in the Arabian region makes estimates of abundance impossible. Most records are known for the coast of Oman. The OMCD lists eight positive records, including seven live sightings and one stranding. Group size for live sightings varies between one and eight individuals.

**External appearance:** Insufficient information to determine any features peculiar to this species in the Arabian region.

**Migrations or local movements:** No information.

**Status:** Unknown.

**Incidental takes:** No information.

**Directed catches:** No information.

**Other threats:** No information.

**Ecology:** No information.

**Life history:** No information.

**Curated specimens:** Collection from Oman: A skull and nearly complete skeleton (ONHM 2739) collected from Ra's Mirbat, Dhofar, southern Oman.

**Disease and parasites:** No information.

**Anecdotal reports:** Military pilots flying regularly over Arabian Gulf waters of UAE claim occasional sightings of killer whales in offshore waters (Baldwin, 1995).

#### **Pilot whale**

##### ***Globicephala* sp.**

**Date and source of first record in the Arabian region:** The occurrence of *Globicephala* in the region of Arabia as defined by this paper is not confirmed despite numerous claims of records (e.g. Leatherwood, 1986; Leatherwood *et al.*, 1991). However, positive sightings, supported by photographs, have been recorded between February and November 1986 in the extreme east of the Gulf of Aden around the Horn of Africa (Small and Small, 1991).

**Distribution:** Leatherwood *et al.* (1991) report 19 records of *Globicephala macrorhynchus* in the Arabian region, including sightings in the Red Sea, Arabian Sea, Gulf of Oman and the entrance to the Arabian Gulf, and specimens from the coast of Oman. Specimens from Oman are based on identifications, which Gallagher (1991) questions and which have since been positively identified by K. Van Waerebeek (May 1996) as *P. crassidens* (OMCD). The sighting records between July 1978 and April 1986 presented by Leatherwood *et al.* (1991) therefore represent the only records of this species in the Arabian region. 11 of the 14 sightings originate from 10 different sources as part of a 'Dolphin Survey Project' about which no further information is presented. Of the three remaining records, two are cited in Leatherwood (1986) as A. Collet, *pers. comm.* and one originates from Ross (1981) who reports that pilot whales 'have been sighted at Ra's Al Hadd', in Oman, although no other information is provided. Further evidence to support these sighting records in Leatherwood (1986) and Leatherwood *et al.* (1991) is required to enable positive identification of this species in the Arabian region.

**Stock identity:** No information.

**Abundance:** Possible sightings of *Globicephala* as detailed above include groups comprising 1-12 individuals. Small and Small (1991) report groups of 25 or more individuals off the coast of Somalia in the Gulf of Aden.

**External appearance:** No information.

**Migrations or local movements:** No information.

**Status:** Unknown.

**Incidental takes:** No information.

**Directed catches:** No information.

**Other threats:** No information.

**Ecology:** No information.

**Life history:** No information.

**Curated specimens:** None confirmed. Specimens listed as ?*G. macrorhynchus* reported by Gallagher (1991) have since been identified as *P. crassidens* (K. Van Waerebeek, May 1996, OMCD).

**Disease and parasites:** No information.

**Anecdotal reports:** The records referred to above in Small and Small (1991) are complimented by additional reports of this species in the Gulf of Aden (Frazier *et al.*, 1987). Expatriates resident in Muscat, Oman and Abu Dhabi, UAE occasionally report possible sightings of *Globicephala/Pseudorca* at sea, illustrating the possibility of confusion.

#### **Rough-toothed dolphin**

##### ***Steno bredanensis* Lesson, 1828**

**Date and source of first record in the Arabian region:** Early records of *Steno bredanensis* include unsupported accounts by Hershkovitz (1966) and Miyazaki & Perrin (1994) of sightings in the Gulf of Aden (Van Waerebeek *et al.*, SC/50/ForInfo.2). The first authenticated records are of sightings of two groups of *S.*

*bredanensis* off the coast of Oman (22°44'N, 59°54'E and 23°16'N, 59°04'E) in July 1995 (Ballance *et al.*, 1996).

**Distribution:** The 1995 record referred to above indicates the occurrence of *S. bredanensis* in the Gulf of Oman. The presence of this species in the Arabian Sea is evidenced by a calvaria from Ra's Madrasah, Oman (19°00'N, 57°50'E) (Van Waerebeek *et al.*, SC/50/ForInfo.2). This species' distribution may continue south throughout the Arabian Sea and into the Gulf of Aden and Red Sea, as evidenced by sightings off the southern shores of Socotra (e.g. at 11°57'N, 54°07'E) in May 1995 (Ballance *et al.*, 1996), records of this species in the Gulf of Aden and Red Sea (Frazier *et al.*, 1987) and the possible sightings of Hershkovitz (1966) and Miyazaki & Perrin (1994) in the Gulf of Aden, referred to above. Frazier *et al.* (1987) report that in the Red Sea, rough-toothed dolphins 'may be found in quite shallow waters amidst coral reefs and islands.'

**Stock identity:** No information.

**Abundance:** (Ballance *et al.*, 1996) recorded groups of between four and 12 individuals off the coast of Oman and larger groups of up to 60 individuals near the island of Socotra (e.g. at 11°57'N, 54°07'E).

**External appearance:** No information.

**Migrations or local movements:** No information.

**Status:** Unknown.

**Incidental takes:** No information.

**Directed catches:** No information.

**Other threats:** No information.

**Ecology:** No information.

**Life history:** No information.

**Curated specimens:** Collections from Oman: A heavily worn calvaria (ONHM 880) and a pair of mandibles at the Marine Science and Fisheries Centre, Ministry of Agriculture and Fisheries (Van Waerebeek *et al.*, SC/50/ForInfo.2).

**Disease and parasites:** No information.

**Anecdotal reports:** No information.

### **Indo-Pacific humpbacked dolphin** *Sousa chinensis* Osbeck, 1765

**Date and source of first record in the Arabian region:** *Sousa chinensis* was first identified (as *S. plumbea*) in the Arabian region from a skull collected in March 1948 from Karaman Island, Red Sea by D. Thompson. The specimen is curated at the British Museum (BM 1948.3.13.1) (Leatherwood, 1986).

**Distribution:** The range of *S. chinensis* in the Arabian region includes much of the Arabian Gulf, Arabian Sea and Red Sea. In the Arabian Gulf, records confirm its presence in Iraqi waters (Al Robbae, 1974), coastal and offshore waters of Bahrain (e.g. Gallagher, 1991) Saudi Arabia (e.g. Robineau and Fiquet, 1996), Kuwait (de Silva, 1987), Qatar (Leatherwood, 1985) UAE (e.g. Preen, 1989; Baldwin, 1995) and in Musandam, Oman (Pilleri and Gihir, 1973; Baldwin and Salm, 1994; OMCD).

This species' distribution extends only into coastal waters of the northern extreme of the Gulf of Oman in Musandam as far south as 26°07'N, 56°23'E and then apparently does not occur between this point and Ra's Al Hadd (22°30'N 59°49'E), which marks the boundary between the Gulf of Oman and the Arabian Sea (Salm *et al.*, 1993; Baldwin and Salm, 1994). The range of *Sousa* appears to be continuous along the Arabian Sea coast of Oman (Baldwin and Salm, 1994). Evidence that the distribution of *Sousa* continues south into Yemen is provided by records from Gulf of Aden shores (e.g. Leatherwood, 1986). In the Red Sea, *Sousa* is documented along the Arabian coast by de Silva (1987) and Leatherwood (1986). Other evidence of *Sousa* indicates its occurrence in the Gulf of Suez (Beadon, 1991), near Djibouti (Alling *et al.*, 1982) and along the coast of Somalia (Small and Small, 1991).

**Stock identity:** It is unclear whether the apparent discontinuous distribution of *S. chinensis* between populations in the Arabian Gulf and extreme north of the Gulf of Oman and populations in the Arabian Sea results from the influence of recent human population expansion and associated development or has an ecological basis. The possibility remains that *S. chinensis* in different areas, for example populations in the Arabian Gulf, Gulf of Oman, Arabian Sea and Red Sea, represent discreet populations. Salm *et al.* (1993) suggest two discrete populations in Oman, one in the Arabian Gulf and extreme north of the Gulf of Oman and one in the Arabian Sea.

**Abundance:** Records of this species from Oman (OMCD) number 173, making it the second most commonly recorded species of cetacean in the Sultanate after *Delphinus* spp. (181). However, of the 173 records a relatively high proportion (98) are of dead animals. Individuals recorded here since the first record in January 1973 total 832, including 738 individuals sighted live. *S. chinensis* generally occurs in small groups (1-20, average 9.8) along the Oman coast (OMCD). However, on the Arabian Sea coast of Oman, where this species appears to be particularly abundant, groups of 30 individuals or more have been sighted on seven occasions, including records of a group of over 50 individuals and a group of 100 individuals in November (OMCD). The latter may have been an aggregation of several groups, possibly involved in breeding (R. Salm, *in litt.* to R. Baldwin, 19 March 1998).

The UAECD catalogues 83 records of *S. chinensis* dating from 1983 to August 1995. Of these only 4 are records of dead animals. Individuals sighted total 549, of which 545 are of individuals sighted live. The largest groups encountered in UAE waters (Abu Dhabi) comprise 30-32 individuals.

Records of *S. chinensis* further west in the Arabian Gulf include 12 skulls collected from Bahrain between February 1969 and April 1974 by M. D. Gallagher (1991) and 50 sightings of groups of 1-15 individuals near Jubail between December 1991 and April 1993 (Robineau and Fiquet, 1996).

Preen (1989) reports 25 positive sightings of *Sousa* in groups of 1-17 individuals during aerial surveys in the Arabian Gulf between 1985 and 1987 conducted for the purpose of surveying for dugongs (*Dugong dugon*). The majority of these sightings were in nearshore waters of Saudi Arabia, Bahrain and Qatar, despite the surveys also covering most of the coast of the UAE.

Additional quantitative records of this species in the region are documented by Pilleri and Gühr (1973) who witnessed a total of 18 individuals off the southern Iranian coast in the Gulf of Oman.

There appear to be no published data on the abundance of *S. chinensis* in the Red Sea, although Frazier *et al.* (1987, p306) suggest that it is 'present in small numbers throughout the Red Sea and Gulf of Suez'.

**External appearance:** Although treated here as *S. chinensis*, populations of *Sousa* in the Arabian region resemble more closely the description of *S. plumbea* in Ross *et al.* (1994). Robineau and Fiquet (1996) provide descriptions of *Sousa* from the Arabian Gulf coast of Saudi Arabia. Photographs of *Sousa* from the Gulf of Oman and the Arabian Gulf appear in Baldwin and Salm (1994) and Baldwin (1995) respectively.

**Migrations or local movements:** Repeated sightings in certain areas suggest that groups of this species are resident in relatively discrete areas, for example in the Arabian Gulf near Merawah Island, UAE (24°28'N, 53°23'E) and in Khor Ash Shamm, Oman (26°11'N, 56°18'E), in the Arabian Sea near Shannah, Oman (20°47'N, 58°46'E), near Salalah, Oman (17°00'N, 54°10'E) and near Mughsayl, Oman (16°52'N, 53°49'E) (R. Baldwin, *pers. obs*) and in the Arabian Gulf off Jubail, Saudi Arabia (approximately 27°05'N, 49°35'E) (Robineau and Fiquet, 1996).

**Status:** Unknown.

**Incidental takes:** Gallagher (1991) suggests that *S. chinensis* and other cetacean species may suffer incidental capture and drowning in fishing nets in Oman. Butchered individuals discovered on beaches in Oman (Papastavrou and Salm, 1991) may have been incidentally captured in fishing nets, or may have been intentionally caught. The OMCD lists one dead individual as having been drowned by a fishing net on the basis that it was discovered entangled in a net on the beach. Other records include dead animals on beaches in the vicinity of fishing boats. It is likely, given the abundance of set and lost or discarded fishing nets in shallow coastal waters of Oman (Salm, 1992) that this coastal species suffers some mortality as a result of entanglement and drowning.

A single *S. chinensis* was caught in a purse seine net in the Gulf of Suez, Red Sea, in January 1981 and released (Beadon, 1991).

**Directed catches:** *Sousa* was reportedly hunted in former years in the Arabian Gulf and Red Sea (Ross *et al.*, 1994). Leatherwood and Reeves (1983) suggest that hunting additionally took place in the Arabian Sea. However, neither publication points to evidence upon which these statements are based. Alling (1983) mentions a limited dolphin fishery off Masirah Island in the Arabian Sea, without mentioning species. Gallagher (1991), Papastavrou and Salm (1991) and Baldwin and Salm (1994) all suggest a limited directed catch of cetaceans in Oman, based on observations of butchered animals (including *S. chinensis*) and interviews with fishermen from Masirah Island and the Halaaniyat Islands. The continued hunting of dolphins in Oman using small, motorised boats and hand held harpoons (Ali A. Al-Kiyumi, *pers. comm.* December 1997), may affect this species.

An individual caught by fishermen in Kuwait is reported by de Silva (1987). Whether this animal was deliberately or incidentally caught is not stated.

**Other threats:** Predisposed to a coastal habitat (Ross *et al.*, 1994), *S. chinensis* suffers from coastal and offshore development in the Arabian region leading to habitat loss and degradation. Pollution and boat traffic, particularly in the Arabian Gulf (Baldwin, 1995) also threaten this species. Gallagher (1991) suggests that poisoning caused by toxins originating from phytoplankton associated with 'red tides' may have caused the death of eight individuals found near Duqm (approximately 19°40'N, 57°42'E) on the Arabian Sea coast of Oman in April 1990.

**Ecology:** *S. chinensis* has been observed feeding in shallow waters in the Arabian Gulf, individuals herding fishes of unknown identity onto exposed sand banks and apparently deliberately beaching in order to seize their prey (Baldwin, 1995). Fish otoliths collected from the stomach of an adult individual found on Merawah Island (24°28'N 53°23'E), Abu Dhabi and now at the Centre for Dolphin Studies, Port Elizabeth, South Africa, have yet to be identified (Baldwin and Cockcroft, unpublished information). Salm (*pers. comm.*, 1991) suggests that *S. chinensis* in Oman may feed on sciaenid fishes.

Throughout most of its worldwide range, *Sousa* generally occurs in small groups of up to 25 individuals (Ross *et al.*, 1994). The large groups seen in the Arabian Gulf and Arabian Sea may indicate differences in social behaviour between populations here and those elsewhere in the world.

**Life history:** Observations of mating and adults with calves in the months of April and May are listed in the UAECD. The OMCD lists sightings of calves during the same 2 months and a report of a dead animal found on 25 March 1991 at 20°44'N, 58°47'E that measured 1.1 metres in length, the teeth of which had not yet erupted.

**Curated specimens:** 13 Collections from Bahrain, Arabian Gulf: (BM 1970.1505, 1970.1506, 1970.1507, 1970.1508, 1970.1509, 1970.1510, 1973.1748, 1984.1758, 1984.1759, 1984.1761, 1984.1762, 1984.1763, 1984.1768) (Gallagher, 1991; Robineau and Fiquet, 1996). One collection from Qatar, Arabian Gulf: Museum of Comparative Zoology, USA (MC47000) (Leatherwood, 1986). There is no mention of curation of the 4 specimens collected near Jubail, Saudi Arabia documented by Robineau and Fiquet (1996).

Collections from Oman: Partial/complete skeleton with skull (ONHM 1049); skulls (ONHM 439, 523, 524, 525, 526, 683, 684, 1015, 1016, 1017, 1020, 1022, 1045, 1047, 1050, 1222, 1483, 1516, 1558, 1559, 1560, 1564, 1571, 1572, 1662, 1679, 1911, 1918, 1972, 1973, 2482, 2631, 2632, 2633, 2635, 2677, ZMA 20.721, 20.725, 20.726, 20.727, 20.728, 20.736, 20.737, 20.738, 20.899, 21.431, 21.437, 21.450, 21.451); skull and left mandible (ONHM 1017); skull and one mandible (ONHM 1557); right mandible (ONHM 1045); one calvaria (KVW-3035) at the Peruvian Centre for Cetacean Research, Lima.

Collections from the Red Sea: A calvaria from the Gulf of Aden (BM 1955.2.23.1); a skull from the Suez Canal (BM 1924 {or 1929}.9.11.1); and three skulls from the Red Sea (BM 1948.3.13.1; -1962.2.19.1; -1962.7.19.1) (Leatherwood, 1986).

**Disease and parasites:** No information

**Anecdotal reports:** Fishermen from Oman and the UAE have offered observations concerning the abundance and distribution of this species. However, the apparent inability in some cases to distinguish between species makes such anecdotal information unreliable. Both *S. chinensis* and *Tursiops truncatus* are locally known in Oman and UAE as 'Dukhs' or 'Thos'.

### **Common dolphin *Delphinus* spp.**

**Date and source of first record in the Arabian region:** The first record of *Delphinus* in the Arabian region is reported to be of a skull collected by Petty officer Wright before 1965 (Leatherwood, 1986) and deposited at the

British Museum (1965.12.17.1). Skeletal material from the Gulf of Aden shores of British Somaliland was collected in 1949 (Leatherwood, 1986).

**Distribution:** *Delphinus* is widely distributed in the Arabian region. Records from the Arabian Gulf indicate its occurrence off Saudi Arabia (Robineau and Fiquet, 1996), UAE (Gallagher, 1991; Baldwin, 1995), the Gulf of Oman and Arabian Sea (e.g. Gallagher, 1991; Papastavrou and Salm, 1991; Baldwin and Salm, 1994; Anonymous, 1996; Ballance *et al.*, 1996) and the Red Sea (e.g. Alling, 1986; Leatherwood, 1986).

**Stock identity:** The taxonomic status of *Delphinus* is unresolved. Three forms *D. delphis*, *D. tropicalis* and *D. capensis* have been named from the region (van Bree, 1971; Heyning and Perrin, 1994; Robineau and Rose, 1984; Robineau and Fiquet, 1996; Smeenk *et al.*, 1996). Van Bree (1971) first designated common dolphins with a very long snout and a high tooth count as *Delphinus tropicalis*, a status reviewed by van Bree and Gallagher (1978). Smeenk *et al.* (1996) referred to sightings of common dolphins in the Red Sea as *Delphinus cf. tropicalis*. Robineau and Fiquet (1996) suggest that all common dolphins in the Persian Gulf may be identified with the *tropicalis* form. All sightings of common dolphin by Ballance *et al.* (1996) off Oman were of animals with a long rostrum, which they refer to as *D. cf. tropicalis*.

**Abundance:** *Delphinus* appears to be abundant in the Arabian region. The OMCD list *Delphinus* as the most frequently occurring cetacean in Oman with a total of 181 records. Individuals recorded since the first record in August 1978 total over 12,500 of which 58 are records of dead individuals. Analysis of group size is complicated by regular records of this species in mixed groups with *Stenella longirostris*. However, group size of *Delphinus* alone range widely from a minimum of two individuals to a maximum of 1,700, with an approximate average of 130. Salm *et al.* (1993) report that *Delphinus* regularly occurs in nearshore waters in the Sultanate, with larger groups of over 100 further offshore. Surveying in offshore waters of Oman, Ballance *et al.* (1996) recorded a minimum group size for *Delphinus* as 15 up to a maximum of 1,700, with best estimates averaging 221 individuals per group (n=16). It is interesting to note that all sightings of *Delphinus* during the course of this survey (March-July 1995) covering a total of 9,784 linear kilometres in the northern and southern Indian Ocean, were recorded off the Sultanate of Oman between latitudes 18°28'N and 22°90'N, despite the linear survey distance in these waters representing just 13.1% (1,280 kilometres) of the total.

The UAEDC lists only 10 records of *Delphinus*, all of which are of dead individuals. Three of these appear in Gallagher (1991), the remaining seven were all collected along the coast of Abu Dhabi (Baldwin, 1995). In Saudi Arabian coastal waters of the Arabian Gulf, Robineau and Fiquet (1996) encountered *Delphinus* more frequently (n=12) than any other cetacean species during a study in March 1993 at Abu Ali Island (approximately 27°20'N, 49°40'E). Group size in this case consisted of 2-60 individuals. Additional sightings of *Delphinus* were recorded in small numbers (1-6 individuals per sighting) by Robineau and Fiquet (1996) near Jubail (approximately 27°02'N, 49°40'E) in April, June, July and August.

Anne Collet (Musée Océanographique, *pers. comm.* in Leatherwood, 1986) provided data from the Red Sea. These records from September 1981 and May 1982 indicate a total of four sightings of *Delphinus*, groups varying in number from 20-100. Sightings were generally made between 16°10'N 41°04'E and 21°55'N 38°25'E.

Additional records of *Delphinus* are provided by Alling (1986) and Smeenk *et al.* (1996), who document sightings in the Red Sea and off the coast of Oman.

**External appearance:** *Delphinus* in the Arabian Gulf is described by Robineau and Fiquet (1996), including details on external morphology, pigmentation and osteology. Baldwin and Salm (1994) describe *Delphinus* for the Sultanate of Oman. Both authors present photographs.

**Migrations or local movements:** Large herds of *Delphinus*, often associated with *Stenella longirostris* are sighted frequently around Muscat, Oman. Their movements in this local area are presumed to be associated with feeding.

**Status:** Unknown.

**Incidental takes:** Probable incidental capture of *Delphinus* in fishing nets (evidenced by scars and burns) is documented for five individuals on the Arabian Sea coast of Oman in January 1989 (Salm, 1991) and for one individual in the Arabian Gulf on the Island of Merawah (24°28'N, 53°23'E), Abu Dhabi in March 1995 (UAEDC). Gallagher (1991), Papastavrou and Salm (1991) and Salm *et al.* (1993) suggest that this species may suffer from incidental capture in fishing nets.

**Directed catches:** The consumption of dolphin flesh in Oman in historic times is evidenced by the results of archaeological investigation (dated 5,000 b.p.) at Ra's al Hadd (approximately 22°30'N, 58°50'E), in Oman,

which includes *Delphinus* sp., *Stenella ?longirostris* and possibly other species (Christine Mosseri-Marlio *in litt.* to R. Baldwin, 8 March, 1998). The practice of hunting dolphins in this area apparently continues today. Ali A. Al-Kiyumi (*pers. comm.*, December 1997) describes active hunting of dolphins using small, motorised boats and hand held harpoons. Papastavrou and Salm (1991) and Salm *et al.* (1993) suggest that the remains of butchered common dolphins found in Oman indicate the possibility of deliberate capture of this species.

**Other threats:** Gallagher (1991) suggests that poisoning caused by toxins originating from phytoplankton associated with 'red tides' may have caused the death of seven *Delphinus* found near Duqm (approximately 19°40'N, 57°42'E) on the Arabian Sea coast of Oman in April 1990. Other threats include boat traffic, pollution and habitat loss or degradation, the latter especially in the Arabian Gulf.

**Ecology:** No Information

**Life history:** *Delphinus* calves have been sighted off Oman in January, May and April (Gulf of Oman) and in May, November and December (Arabian Sea) (OMCD) and in the Red Sea in January (Alling, 1986).

**Curated specimens:** Collections from the UAE: Skulls (BM 1973.108, 1973.1746, 1981.711, ZMA 16.995) (Gallagher, 1991; Leatherwood, 1986); skull deposited at the Sharjah Natural History Museum (UAECD).

Collections from Oman: Skulls with partial or complete skeleton (ONHM 471, 1389, 1988, 2572); skulls (ONHM 428, 429, 478, 496, 564, 659, 836, 839, 840, 863, 873, 1137, 1140, 1204, 1386, 1390, 1391, 1392, 1393, 1394, 1395, 1479, 1490, 1499, 1502, 1518, 1562, 1678, 2106.06, 2604, 2676, ZMA 20.318, 20.319, 20.321, 20.322, 20.898, 21.169, 06419, BM 72.807, 72.808, 1965.12.17.1); and other skeletal remains (ONHM 1563, 1565, 1566, 1567, 1568, 1570).

Collections from the Gulf of Aden: Skull from Djibouti and two skulls from Berbera, Somaliland (Museum National d'Histoire Naturelle, France {1981-161} and BM 1949.7.15.4, 1954.9.9.2) respectively.

**Disease and parasites:** No information.

**Anecdotal reports:** Fishermen claim that common dolphins are relatively common in offshore waters of Abu Dhabi, where they are known locally as 'Abu Salama'.

### **Bottlenose dolphin**

#### ***Tursiops truncatus* Montagu, 1821**

**Date and source of first record in the Arabian region:** The first record of *Tursiops truncatus* in the Arabian region is of a specimen collected by E. Ruppell from the Red Sea in 1833 (Leatherwood, 1986).

**Distribution:** The genus *Tursiops* is widely distributed in Arabian seas, occurring from the westernmost shores of the Arabian Gulf (Al Robbae, 1974) to at least as far east as Khawr Khuwayr, UAE (Gallagher, 1991), throughout the Gulf of Oman and Arabian Sea (e.g. Salm *et al.*, 1993) and extending through the Red Sea (Alling *et al.*, 1982; Alling, 1986; Frazier *et al.*, 1987), to the Gulfs of Suez and Aqaba (Beadon, 1991). The lack of published records from areas of the Arabian region, such as parts of the Arabian Sea (e.g. coast of Yemen), is probably due to a comparative lack of observer effort in these areas, rather than a reflection of discontinuity in distribution.

**Stock identity:** Until a world-wide review is completed, the taxonomic status of *Tursiops* spp. is best considered provisional. Three bottlenose dolphin specimens from the Red Sea have been treated as nominal species (see Hershkovitz, 1966): *Tursiops aduncus* Ehrenberg, 1832, *Delphinus hamatus* Wiegmann, 1841 and *Delphinus abusalam* Ruppell, 1842. Irrespective of whether they deserve specific or subspecific status, indications are that two distinct bottlenose dolphins exist in the western Indian Ocean (e.g. Ross, 1977; Robineau and Rose, 1984), represented by the robust form *T. truncatus*, and *T. aduncus*, more slender, with a longer snout and frequent ventral spotting. Both forms seem to occur in the Red Sea, the Gulf of Aden and the Persian Gulf, while only *T. truncatus* was mentioned from Oman (Robineau and Rose, 1984; Robineau and Fiquet, 1994). However, detailed comparative studies with adequate samples will be required to determine *Tursiops* stock identities in waters of Arabia.

Cytochrome B genetic analysis suggest that the nominal species *Tursiops aduncus* is a separate species from *T. truncatus* and is not even a sister taxon of the latter (LeDuc and Curry, 1996).

**Abundance:** *Tursiops* appears to be relatively abundant in the Arabian region. Records from Oman (OMCD) number 160, of which 49 are of dead animals. Only *Delphinus* spp. (181) and *S. chinensis* (173) have been

recorded more frequently in Oman. Individuals of *Tursiops* recorded in Oman since the first record in July 1977 total over 4,500 (OMCD). Salm *et al.* (1993) suggest that this species, although widespread, generally occurs in small groups of between 10 and 20 individuals. However, Ballance *et al.* (1996) report groups of up to 750 individuals and both published accounts (e.g. Alling *et al.*, 1982; Leatherwood, 1986; Salm *et al.*, 1993; Ballance *et al.*, 1996) and the OMCD indicate that of the 110 recorded sightings of *Tursiops* in Oman, 41% comprise sightings of groups of over 20 individuals and 10% comprise sightings of groups of over 100 individuals. Ballance *et al.* (1996) provide an indication of the relative abundance of *Tursiops truncatus* off Oman. During the course of a 92 day Indian Ocean cetacean survey between March and July 1995, a total of 41 sightings of this species were recorded, 26 (63%) of which were sighted in Omani waters, despite searching in this area representing a linear distance of 1,280 kilometres (13.1%) out of a total of 9,784 kilometres.

*T. truncatus* also appears to be relatively abundant in the Arabian Gulf. Numbers of records of this species in the UAEDC are the higher than any other cetacean species recorded, totalling 135. Of these, 43 are records of dead animals found on beaches. For records of sightings in which group size is estimated, an average of 10 individuals and a maximum of 35 is indicated. Individuals sighted since the first record of the UAEDC in 1985 total 402. Additional quantitative records of *Tursiops* in the Arabian Gulf include approximately 35 individuals sighted in January 1973 (Pilleri and Gühr, 1973-74). During an aerial survey for Dugongs in the Arabian Gulf waters of Saudi Arabia, Bahrain, Qatar and UAE between 1985 and 1987, Preen (1989) recorded 26 positive sightings of bottlenose dolphins, in groups of between 1-30 individuals. Robineau and Fiquet (1996) report sightings of a total of 82 individuals near Jubail (approximately 27°02'N, 49°40'E), Saudi Arabia, between 25-30 March 1993. The same study examined a total of 11 dead individuals, the majority of which were found on the nearby Abu Ali Island.

In the Red Sea, Alling *et al.* (1982) document five sightings of *Tursiops* in 1981/2. Average group size for four of these sightings was nine. Beadon (1991) reports bottlenose dolphins as 'common' in the Gulf of Suez during observation and capture of this and other species in 1980-81. Groups of apparently resident individuals were observed. The number of groups/sightings is not documented, but group size is estimated by Beadon (1991) as 20 individuals. Larger groups of up to 200 individuals were also encountered. Other *Tursiops* sighted by Beadon included a single individual and groups of six and 10 individuals near Ra's Muhammad. Frazier *et al.* (1987) claim records of 'small numbers' of *Tursiops* throughout the Red Sea.

**External appearance:** *Tursiops* in the Arabian Gulf is described by Baldwin (1995) and Robineau and Fiquet (1996), the latter also providing detailed measurements of collected specimens. Baldwin and Salm (1994) describe *T. truncatus* for the Sultanate of Oman, and Beadon (1991) provides details of the external appearance of *Tursiops* in the Red Sea regions of the Gulf of Aqaba and the Gulf of Suez. Most notable among these descriptions is that of Beadon (1991) who describes two forms of *Tursiops*, one reaching a maximum length of 2.2 metres, the other apparently reaching lengths of over 4 metres. A single adult male measured in October 1980 at 3.9 metres was reportedly the smallest member of a group of six dolphins. *Tursiops* in the Arabian Gulf are known to reach lengths of 2.3 metres (UAEDC) and rarely exceed three metres in length in the Gulf of Oman and Arabian Sea (Baldwin and Salm, 1994).

**Migrations or local movements:** Beadon (1991) suggests residence status for several groups of bottlenose dolphins near Ra's Muhammad, Red Sea. Numerous other areas in the Arabian region appear to support resident groups of this species, such as Merawah Island (24°28'N, 53°23'E), Abu Dhabi (R. Baldwin, *pers. obs.* January – September, 1995) and the Daymaniyat Islands (23°51'N, 58°06'E) in the Gulf of Oman (R. Salm, *pers. comm.* 1990).

**Status:** Insufficient information.

**Incidental takes:** *Tursiops* suffer incidental mortality from drowning in fishing nets in the Arabian Gulf and along the coast of Oman (OMCD and UAEDC), and probably the Red Sea. The extent of this incidental take is not known.

**Directed catches:** Alling (1983) and Papastavrou and Salm (1991) suggest a limited directed catch of cetaceans in Oman, based on observations of butchered animals and interviews with fishermen from Masirah Island and the Halaaniyat Islands. Butchered animals on beaches include *T. truncatus* and other species, but it is unclear whether these are the result of directed or incidental catches. Dolphin flesh is apparently used as shark bait (Papastavrou and Salm, 1991). The hunting of dolphins in Oman using small, motorised boats and hand held harpoons (Ali A. Al-Kiyumi, *pers. comm.*, December 1997), may affect this species.

**Other threats:** Preen (1989) suggests a possible cause of apparent mass mortality involving an estimated 500 dolphins, including *Tursiops*, in the Arabian Gulf in 1986 to be linked with a 'red tide'. Other possible threats include pollution, boat traffic and, in the case of nearshore animals, habitat loss.

**Ecology:** Examination of the stomach content of a single adult male *Tursiops* from Abu Dhabi revealed a diet of cuttlefish (*Sepia* sp.) and several species of unidentified fishes (Baldwin, 1995). Robineau and Fiquet (1996) examined a single male *Tursiops* (juvenile) from the Arabian Gulf coast of Saudi Arabia. The oesophagus contained a fish of the genus *Platycephalus* (27 centimetres in length) and a species of Labridae (23 centimetres in length). Salm (1991) observed *Tursiops* apparently feeding on mackerel along the Arabian Sea coast of Oman.

**Life history:** Little is known of the reproductive rates of *Tursiops* in Arabia. The OMCD and UAECD indicate sightings of calves or 'young' in Oman in April, August, September and November and in the UAE in April, May and June. Mating behaviour has been witnessed in Oman in May and in the UAE in April.

High mortality of dolphins is reported along southern shores of the Arabian Gulf by Preen (1989), who counted over 500 individual dolphins on the shoreline during a six week aerial survey in Sept/Oct 1986. Many of these dolphins seen are tentatively identified as *Tursiops*. Baldwin (1995) reports the remains of 28 *Tursiops* found in April 1995, on seven kilometres of continuous shoreline on an offshore island in Abu Dhabi waters. The remains of 28 individuals were also found on a single beach at Ra's Nuss (17°15'N, 55°15'E) in Oman on 14 April 1988, which Papastavrou and Salm (1991) suggest were the result of a mass stranding. However, bottlenose dolphins very rarely mass strand and the cause of death may more likely have been related to fisheries practises.

**Curated specimens:** Collections from Bahrain (BM 1970.1511, 1970.1512, 1984.1756, 1984.1757, 1984.1760, 1984.1764) and from UAE (BM 1973.1747, 1973.1751) (Gallagher, 1991). Additional collections from the Arabian Gulf: A mandible (BM 1970.1508) and a skeleton in the private collection of G. Pilleri (T-559) (Leatherwood, 1986).

Collections from Oman: Complete skeletons (ONHM 1028, BM1888.10.24.4, 888.10.24.3); Skull and lower jaw (ONHM 1018); Skulls (ONHM 183, 880, 835, 1018, 1019, 1028, 1046, 1048, 1006, BM 1980.793, 1980.789, 1980.874, ZMA20.090, 20.328, 20.328, 20.329, 21.173, 21.434, 21.452, Z06426); Other skeletal material (ONHM 1019); Mandible (BM 1980.790); skull at the University of Tubingen (DE-4); skull and partial skeleton (ONHM 658).

Collections from the Red Sea: Skull (Senckenberg Museum, USNM# -ST02271); skull and a skull and incomplete skeleton at the Forschungsinstitut Naturmuseum, Senckenberg (SMF 1522, 4337) (Leatherwood, 1986).

**Disease and parasites:** Robineau and Fiquet (1996) report unidentified trematodes in the nasal passages and brain of a stranded individual near Jubail, Saudi Arabia as a probable cause of death.

**Anecdotal reports:** Fishermen from Oman and the UAE have offered observations concerning the abundance and distribution of bottlenose dolphins. However, the apparent inability in some cases to distinguish between species can make such anecdotal information unreliable. Both *Tursiops* and *Sousa* are locally known in Oman and UAE as 'Dukhs' or 'Thos'.

### **Risso's dolphin**

#### ***Grampus griseus* Cuvier, 1812**

**Date and source of first record in the Arabian region:** A. S. G. Jayakar deposited two skeletons of young *Grampus griseus* collected in Oman in 1891 at the British Museum (Leatherwood, 1986).

**Distribution:** *G. griseus* appears to be widely distributed in Arabian waters, where it most commonly occurs in waters depths greater than 100 metres (Alling, 1986; Kruse *et al.*, 1991; OMCD and UAECD). Records listed in the UAECD indicate that it occurs at least as far north as 25°14.8'N in the Gulf of Oman. This distribution continues south throughout the Gulf of Oman (Salm *et al.*, 1993; Gallagher, 1991; Balance *et al.*, 1996; OMCD), into the Arabian Sea (Alling, 1986; Ballance *et al.*, 1996; Baldwin, 1997; OMCD) and the Gulf of Aden (Kruse *et al.*, 1991). According to Frazier *et al.* (1987) *Grampus* is distributed throughout the Red Sea, including the Gulf of Aqaba (Beadon, 1991).

Kruse *et al.* (1991) indicate (Figure 1, p68) the recorded distribution of *G. griseus* in the Arabian region to include the Arabian Gulf. This record is apparently based on a sighting near Bahrain. No specific citing for this record is provided and it remains unconfirmed.

**Stock identity:** No information.

**Abundance:** *G. griseus* appears to be relatively common in some parts of the Arabian region. Despite relatively limited offshore survey effort, information of the OMCD indicates a total of 58 records of this species in Omani waters, including 43 live sightings and 15 records of dead individuals. Group size of live animals varied between 2-500, with an average of 50. This average figure is higher than that reported by Kruse *et al.* (1991) for the Indian Ocean, who calculated an average of 17 individuals per group (n=36) and noted that this was lower than the estimated world-wide average of 30 per group.

During the course of a survey (Ballance *et al.*, 1996) conducted in March-July, 1995 covering a total of 9,784 linear kilometres in the northern and southern Indian Ocean, 32 (65.3%) out of a total of 49 sightings of *G. griseus* were recorded off the Sultanate of Oman between latitudes 18°95'N and 24°73'N, despite the linear survey distance in these waters representing just 13.1% (1,280 kilometres) of the total. However, this proportion of the survey also represents the majority of time spent in 'coastal' waters as opposed to open ocean, adding further evidence to support the apparent habitat preference of *G. griseus* for waters seaward of the continental shelf, particularly where steep bathygraphic features occur (Kruse *et al.*, 1991).

The UAECD lists just six positive records of *G. griseus* in the Gulf of Oman, in groups of between 2-15 individuals. All sightings were recorded during a single survey in July 1995 (Baldwin, 1995).

Frazier *et al.* (1987) suggest that *G. griseus* is 'not uncommon throughout the Red Sea', and that herds usually number less than 12 individuals. In pelagic waters of the Gulf of Aqaba Beadon (1991) reports that Risso's dolphins were encountered 'once or twice a week' in the Straits of Tiran and 'daily' around Tiran Island during boat-based searches for cetaceans on an unspecified number of days between 15 September 1980 and 1 September 1981. Group size of this species was estimated to average 30-40 individuals, with a maximum of 100 individuals per group. Small and Small (1991) report five positive sightings *G. griseus* from the Somali coast of the Gulf of Aden in groups of between 3-30 individuals.

**External appearance:** Insufficient information to determine any features peculiar to this species in the Arabian region.

**Migrations or local movements:** Limited evidence in the form of repeat sightings in the same location in the Red Sea (approximately 29°00'N, 34°30'E, near Tiran Island, Gulf of Aqaba) (Beadon, 1991) and near Bandar Jissah, Gulf of Oman (23°34'N, 58°40'E) (OMCD) suggests that *G. griseus* may frequent specific locations.

**Status:** Unknown.

**Incidental takes:** One young animal captured in shark fishing net off the coast of Dhofar, Arabian Sea, Oman in November 1997 (OMCD).

**Directed catches:** No information.

**Other threats:** The OMCD lists one individual killed by a boat propeller near Muscat (23°36'N, 58°36'E) in August, 1987. The complete skeleton and two casts of this individual are displayed in ONHM.

**Ecology:** Groups of *G. griseus* have been observed in the Gulf of Oman diving for ten minutes or more in areas of deep water 100-1200 metres, possibly feeding (UAECD and OMCD).

**Life history:** An individual less than 1 metre in length is recorded for the month of May in the Gulf of Oman at 23°34'N, 58°40'E (OMCD).

**Curated specimens:** Collections from Oman: Skeletons (BM 1891.2.5.4, 1891.2.5.5, ONHM 1669, 1699); skulls (ZMA 20.316, 20.713, 21.185, Z06425, BM1980.523, 1980.794, OHMN 1503, 15, 1503, 1729, 1987, 2429, 2700, 2705); partial skull (ONHM 11). Gallagher (1991) documents a third skull of this species from Oman curated at the British Museum (reference collection number not provided) and a skull stored at Sultan Qaboos University. Skeletal remains of a calf stranded near Muscat on 30 August 1987, are stored at the Marine Science and Fisheries Centre, previously erroneously assigned (Papastavrou and Salm, 1991, Fig. 2B) to the false killer whale.

Collections from the Red Sea: A calvaria collected near Port Sudan (BM1924.9.20.1) (Leatherwood, 1986).

**Disease and parasites:** No information.

**Anecdotal reports:** No information.

## Spotted dolphin

### *Stenella attenuata* Gray, 1846

**Date and source of first record in the Arabian region:** The first record of *Stenella attenuata* in the Arabian region is of a skull collected by M.D. Gallagher near Saham, Gulf of Oman, Oman on 12 March 1973 and curated at the British Museum (BM 1973.1749) (Gallagher, 1991).

**Distribution:** *S. attenuata* is widely distributed in the Arabian region. It is known from the Arabian Gulf from a skull collected in Umm al Qaywayn, UAE (25°35'N, 55°33'E) in August 1973 (Gallagher, 1991). A second skull, possibly belonging to this species was collected in March 1995 on Merawah Island, UAE (24°28'N, 53°23'E) (UAECD).

Records from the Gulf of Oman include three skulls collected between March 1973 and January 1980 (Gallagher, 1991) and three sightings near Muscat, Oman at 23°39'N, 58°37'E in May 1993 (Baldwin and Salm, 1994).

In the Arabian Sea, Ballance *et al.* (1996) sighted *S. attenuata* on 3 separate occasions off the coast of Oman in May 1995. Ross (1981) makes vague reference to a 'large number of spotted spinner dolphins' observed near Masirah Island, Oman in 1977.

The distribution of this species probably continues into the Gulf of Aden where Alling (1986) reports a single sighting at 12°24'N, 44°33'E on 30 December 1982. Small and Small (1991) report 41 records of *S. attenuata* off the coast of Somalia, over 30 of which were in the Gulf of Aden.

Frazier *et al.* (1987) indicate that *S. attenuata* occurs in the Gulf of Aqaba and 'is likely' to occur further south in the Red Sea. Leatherwood & Reeves (1983) and Perrin *et al.* (1987) also state that this species occurs in the Red Sea. Beadon (1991) records the distribution of *S. attenuata* as 'pelagic regions of the Gulf of Aqaba'.

**Stock identity:** No information.

**Abundance:** The area of most abundance of this species in the Arabian region appears to be the Red Sea. Frazier *et al.* (1987) suggest that it is probably the most common dolphin in the Red Sea, with normal group sizes of 1-50 individuals, reaching a maximum of up to 200. During boat-based searches for cetaceans in the Gulfs of Aqaba and Suez between 15 September 1980 and 1 September 1981, Beadon (1991, p112) reports that *S. attenuata* was 'by far the most abundant and frequently encountered' cetacean, including groups of over 300 individuals.

*S. attenuata* is evidently also relatively abundant in the Gulf of Aden. Small and Small (1991) report 41 groups of between 2-2000 individuals off the coast of Somalia, including the Gulf of Aden sighted between September 1985 and May 1987.

There are relatively few records of *S. attenuata* from Oman. Alling (1986) reports one sighting off the Oman coast without providing details. Records listed in the OMCD (referred to by Baldwin & Salm, 1994) include three sightings of this species in groups of 40-60 individuals. Ballance *et al.* (1996) sighted *S. attenuata* three times off Oman with best estimates of group size between 175 and 800 individuals.

The single positive record of *S. attenuata* in the Arabian Gulf referred to above (Gallagher, 1991) suggests that this species is less abundant in this region of Arabia.

**External appearance:** Baldwin and Salm (1994) provide a basic description of this species in Oman. Photographs of *S. attenuata* in the Red Sea appear in Beadon (1991).

**Migrations or local movements:** No information.

**Status:** Unknown.

**Incidental takes:** No information.

**Directed catches:** No information.

**Other threats:** No information.

**Ecology:** No information.

**Life history:** No information.

**Curated specimens:** Collections from UAE: Skull (BM 1973.1750). Collections from Oman: Skulls (BM 1973.1749, 1980.792, ZMA 21.005) (Gallagher, 1991).

**Disease and parasites:** No information.

**Anecdotal reports:** No information.

### **Striped dolphin**

***Stenella coeruleoalba* Meyen, 1833**

**Date and source of first record in the Arabian region:** Gallagher (1991) reports the first record of *Stenella coeruleoalba* in the Arabian region provided by a skull found near As Suwayq, Gulf of Oman, Oman on 26 November 1977.

**Distribution:** The distribution of *S. coeruleoalba* in the Arabian region is unclear. The most northerly record is that quoted above (Gallagher, 1991) at 23°52'N, 57°22'E. An additional record for Oman is provided by Gallagher (1991), who reports a skull collected from Ra's al Hadd (22°32'N, 59°47'E), the boundary between the Gulf of Oman and Arabian Sea.

The above two records represent the only records north of the Gulf of Aden. Alling (1986) did not record this species in the NW Indian Ocean and reports of this species in the region by Perrin *et al.* (1994) could not be traced to their original sources. Additional records that require verification include occasional sightings in the southern Red Sea (J. Gordon, C. Smeenk, *pers. comm.* cited in Frazier *et al.*, 1987).

Ballance *et al.* (1996) report sightings of this species off the south shores of Socotra Island (e.g. 11°47'N, 54°53'E) and a single sighting in an offshore region of the Arabian Sea (15°45'N, 61°50'E).

**Stock identity:** No information.

**Abundance:** Ballance *et al.*, (1996) report groups of up to 200 individuals for the sightings referred to above. No other data on abundance of this species in the Arabian region are available.

**External appearance:** No information.

**Migrations or local movements:** No information.

**Status:** Unknown.

**Incidental takes:** No information.

**Directed catches:** No information.

**Other threats:** No information.

**Ecology:** No information.

**Life history:** No information.

**Curated specimens:** Collections from Oman: Skulls (BM 1980.788, ZMA 21.440) (Gallagher, 1991).

**Disease and parasites:** No information.

**Anecdotal reports:** No information.

### **Spinner dolphin**

***Stenella longirostris* Gray, 1828**

**Date and source of first record in the Arabian region:** The first record of *Stenella longirostris* in Oman is of a skull from Masirah Island collected by T.D. Rogers in December 1975 and curated at the British Museum (BM 1980.873).

**Distribution:** Recent records of *S. longirostris* from the Arabian Gulf are limited to those reported by Baldwin (1995), provided by skulls collected on Merawah Island, Abu Dhabi, UAE (24°28'N, 53°23'E). However, Morzer Bruyns (1971) considered this species to be common here: "this dolphin will always be seen on any voyage to the Persian Gulf, concentrations of thousands have been observed around Ras Fartak and on either side of Strait Hormez". He further named Kuwait as range state.

Records of this species in the Gulf of Oman suggest that it is distributed in coastal waters between the Daymaniyat Islands (23°51'N, 58°06'E) and Sur (22°33'N, 59°40'E) and in offshore waters of the same general area (Baldwin and Salm, 1994; Ballance *et al.*, 1997; OMCD). Records from the Arabian Sea are fewer in number, but indicate a distribution extending from Masirah Island, Oman (20°30'N, 58°50'E) (Gallagher, 1991) to Socotra, Yemen (e.g. 11°47'N, 54°53'E) (Ballance *et al.*, 1997). Evidence for the occurrence of *Stenella longirostris* in the Gulf of Aden and Red Sea is reviewed by Gilpatrick *et al.* (1987) and provided by numerous sightings between 1980-81 (Robineau and Rose, 1984), skeletal material (Leatherwood, 1986), frequent sightings in the southern Red Sea (J. Gordon, C. Smeenk, pers. comm. cited in Frazier *et al.*, 1987) and sightings of three groups in the eastern Gulf of Aden on 3 July 1993 (Eyre, 1994). Small and Small (1991) commonly recorded this species off the coast of Somalia between 1985-87.

**Stock identity:** The stock identity of *S. longirostris* in Arabian waters is far from understood. Perrin (1990) names and describes three subspecies, one of which is the pantropical spinner dolphin *S. l. longirostris* from the world's tropical oceans, including the Arabian region. This is the form generally reported in the region (e.g. Ballance *et al.*, 1996). However, Van Waerebeek *et al.* (SC/50/SM3) present preliminary information on a possible stock affinities for two colour morphs seen in the Gulf of Oman, Oman.

**Abundance:** In Oman, *S. longirostris* appears to be relatively abundant. Published records (e.g. Harwood, 1980; Leatherwood, 1986; Gallagher, 1991; Salm *et al.*, 1993; Baldwin and Salm, 1994; Ballance *et al.*, 1997) and those listed in the OMCD total 143. The vast majority of these are of live sightings in the Gulf of Oman. Individuals sighted totals over 21,000. The likelihood that many of these represent sightings of the same groups of individuals is considered to be high as groups are commonly sighted in the same areas near Muscat, Gulf of Oman (23°35'N, 58°38'E). Group size of *S. longirostris* in Oman varies between 1-1,800 with an average of 216 (OMCD).

There is little available information on the abundance of *S. longirostris* in either the Arabian Gulf or Red Sea regions of Arabia. However, Small and Small (1991) report over 30 sightings of spinner dolphins (*Stenella* sp.) in the Gulf of Aden between September 1985 and May 1987.

**External appearance:** Baldwin and Salm (1994) describe *S. longirostris* in the Sultanate of Oman and present photographs. Van Waerebeek *et al.* (SC/50/SM3) provide more detailed descriptions of this species in the Gulf of Oman.

**Migrations or local movements:** Large herds of up to 1,000 *S. longirostris* (sometimes mixed with *Delphinus*) near Muscat, Gulf of Oman, appear to frequently travel parallel to shore at a distance of between two and six kilometres offshore, a local movement presumed to be associated with feeding (OMCD).

**Status:** Unknown

**Incidental takes:** Evidence from dead animals that have suffered rope burns and have external scars possibly caused by fishing nets (Salm *et al.*, 1993) suggests that fishing activities are responsible for some mortality of this species. A skull possibly belonging to this species was found at 24°27'N, 53°21'E on the dump of a fishing village in Abu Dhabi, UAE in 1995 (UAECD).

**Directed catches:** The historical consumption of dolphin flesh in Oman is evidenced by the results of archaeological investigation (dated 5,000 b.p.) at Ra's al Hadd in Oman, which includes *Stenella ?longirostris*, *Delphinus* sp. and possibly other species (Christine Mosseri-Marlio *in litt.* to R. Baldwin, 8 March, 1998). The OMCD lists a single butchered *S. longirostris* found on a beach along the Arabian Sea coast of Oman. The practice of hunting dolphins in this area apparently continues today. Ali A. Al-Kiyumi (*pers. comm.*, December 1997) describes active hunting of dolphins using small, motorised boats and hand held harpoons.

**Other threats:** Unknown

**Ecology:** This species is well known in Oman for its association with tuna (Baldwin and Salm, 1994), with which it is known to feed. Prey species, however, have yet to be documented.

**Life history:** Calves of *S. longirostris* have been observed in the Gulf of Oman with greatest frequency in May,

April and June. Calves have also been seen in the same areas in the months of August and September (OMCD). Small and Small (1991) report young spinner dolphins (*Stenella* sp.) off the coast of Somalia in the months of March and April. Alling (1986) reports *S. longirostris* calves off the coasts of Oman, India and Sri Lanka between the months of January and March.

**Curated specimens:** Collections from Oman: Partial/complete skeletons, including skulls (ONHM 659, 1021, 1735, 1736, 2121); skulls (ONHM 1410, 2106.01, 2106.02, 2106.03, 2106.04, 2717, BM 1980.872, 1980.873, 1980.791, ZMA 20.320, 20.317, 20.724, 21.443, 21.447, 23.539); and other material marked *Stenella ?longirostris*, including one ramus (ONHM 1179) and one skull (ONHM 1728).). Additionally, there is one skull with partial/complete skeleton of this species stored at Sultan Qaboos University, Oman. The collection at the ONHM also includes a cast of a spinner dolphin.

Collections from Red Sea and Gulf of Aden: Skull from Mersa Alam on the Red Sea coast of Egypt, curated at the 'Field Museum of Natural History' (105019) and a skeleton from Djibouti, Gulf of Aden, at the Museum National d'Histoire Naturelle (1981-159) (Robineau and Rose, 1983; Leatherwood, 1986).

**Disease and parasites:** Insufficient information. Baldwin and Salm (1994) report small ectoparasites, bright red in colour, on this species. Commensals include at least one unidentified species of remora (Baldwin, 1995).

**Anecdotal reports:** SCUBA divers occasionally report sightings of spinner dolphins approximately 10 kilometres offshore from Dubai, UAE. Photographs of this species (held by the first author) allegedly taken in the Arabian Gulf off the Musandam Peninsula provide additional evidence of this species' occurrence in Arabian Gulf waters. Visitors to a fish market in Quriyat, Gulf of Oman, in 1993 reported two spinner dolphins caught by hook and line by local fishermen targetting tuna (R. Baldwin, unpublished information).

### **Finless porpoise**

#### ***Neophocaena phocaenoides* Cuvier, 1829**

**Date and source of first record in the Arabian region:** The first record of *Neophocaena phocaenoides* in the Arabian Gulf is of a sighting reported by Pilleri (1973) in the northern part of the Straits of Hormuz near Qishm Island, Iran. Gallagher (1991) reports that the first collected specimen of the species was obtained on 7 March 1976 from Bahrain Island.

**Distribution:** *N. phocaenoides* appears to be restricted in its distribution in Arabia to the Arabian Gulf. No records are confirmed for the Gulf of Oman. Early records on 2 May 1974 and 15 April 1975 from Iraq territorial waters (Al Robbae, 1975) point to its occurrence in the extreme west of the Arabian Gulf. The most easterly record along the southern shores of the Arabian Gulf is of a specimen collected in 1996 from Jebel Ali, Dubai, United Arab Emirates (25°06'N 55°10'E) and deposited at the Sharjah Natural History Museum, UAE, where it remains (UAECD). Other records are known from Saudi Arabia (Preen, 1989; Robineau and Fiquet, 1996), Bahrain (Preen, 1989; Gallagher, 1991) and Abu Dhabi, UAE (Baldwin, 1995).

Reference to the occurrence of this species in the Arabian Sea by Sheppard *et al.* (1992) cannot be substantiated and appears to be erroneous.

**Stock identity:** Insufficient information. Records of this species from the northern coast of the Arabian Gulf appear to be restricted to an early sighting of a single animal (Pilleri, 1973). This sighting is the only known indication for a possible continuous distribution of the Arabian Gulf population of this species with more easterly populations from Pakistan and India.

**Abundance:** *N. phocaenoides* appears to be extremely rare in Arabia. Positive records of this species dating from 1973 comprise sightings and specimens of a total of 18 individuals (Pilleri, 1973; Al Robbae, 1975; Preen, 1989; Robineau and Fiquet, 1996; Gallagher, 1991; Baldwin, 1995; UAECD). Records of live sightings are of single individuals or pairs (Pilleri, 1973; Preen, 1989).

**External appearance:** Insufficient information to determine any features peculiar to this species in the Arabian region.

**Migrations or local movements:** No information.

**Status:** Unknown. Probably declining due to rapid coastal development.

**Incidental takes:** Passive entrapment in artisanal fishing nets is a likely cause of death of individuals in the UAE as examination of one specimen revealed scars apparently caused by fishing nets (Baldwin, 1995).

**Directed catches:** No information.

**Other threats:** Habitat degradation and loss, pollution, boat traffic.

**Ecology:** No information. A single juvenile (teeth had not erupted) measuring 106 centimetres, found on Merawah Island (24°28'N, 53°23'E), Abu Dhabi, on 13 March 1995 had an empty stomach (Baldwin, 1995).

**Life history:** Insufficient information. A juvenile of this species measuring 75 centimetres was found on 31 January 1992 (Robineau and Fiquet, 1996). A single juvenile (above) was found on Merawah Island, Abu Dhabi on 13 March 1995 (Baldwin, 1995).

**Curated specimens:** Collections from Bahrain: Skull (ZMA 20.292) (Gallagher, 1991). Collections from Saudi Arabia: Complete specimen deposited at the Saudi Arabian National Museum of Natural History (Robineau and Fiquet, 1996). Collections from UAE: Complete specimen from UAE at the Sharjah Natural History Museum, UAE (UAECD).

**Disease and parasites:** No information

**Anecdotal reports:** Fishermen in Abu Dhabi claim that the finless porpoise, known locally as 'Fa'ima', was once more common. Females reportedly enter shallow waters (<1 metre depth) to give birth (Baldwin, 1995).

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