

Megaptera novaeangliae

NOT EVALUATED NE	DATA DEFICIENT DD	LEAST CONCERN LC	NEAR THREATENED NT	VULNERABLE VU	<ENDANGERED> EN
CRITICALLY ENDANGERED CR	EXTINCT IN THE WILD EW	EXTINCT EX			

Taxonomy

Kingdom Phylum **Class** **Order** **Family**
ANIMALIACHORDATAMAMMALIACETARTIODACTYLABALAEPTERIDAE

Scientific Name: *Megaptera novaeangliae*

Species Authority

Common Name/s:

English – Humpback Whale

Assessment Information

Red List Category & Criteria:

Endangered D [ver 3.1](#)

Year Assessed:

2008

Assessor/s

Minton, G., Collins, T., Pomilla, C., Findlay, K.P.,
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Evaluator/s:

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Justification:

This subpopulation is geographically, demographically and genetically isolated, with a unique year-round residency in sub-tropical waters of the Arabian Sea. The original size of the subpopulation is unknown. However, the current abundance estimate off the coast of Oman, based on photo-identification, while potentially an underestimate, is 82 animals (95% CI 60-111). The basis for an Endangered listing is that the subpopulation is geographically distinct and plausibly contains fewer than 250 mature individuals. According to Taylor *et al.* (2007) a total abundance of just over 400 individuals would be required in order for the proportion of mature individuals (62%) to reach 250. Even if the Arabian Sea humpback whale population estimate were biased downward, it is highly unlikely that the total abundance would exceed 400.

Geographic Range

The humpback whale is a cosmopolitan species found in all of the major oceans (Clapham and Mead 1999). All known subpopulations, with the exception of the subpopulation in the Arabian Sea, migrate between breeding grounds in tropical waters and feeding grounds in productive temperate or polar waters.

Nineteenth century whalers and observers on 20th century merchant vessels documented the presence of humpback whales in the Arabian Sea (e.g., Brown 1957, Slijper *et al.* 1964, Wray and Martin 1980, Reeves *et al.* 1991). Data from illegal Soviet whaling operations (Yukhov 1969, Mikhalev 1997, Mikhalev 2000) include records of sightings or whales captured off the coasts of Yemen, Southern Oman, Iran, Pakistan and India. These locations are well within the northern hemisphere, but there are no feasible migration routes to any of the North Atlantic or North Pacific feeding grounds used by other humpback whales in the northern hemisphere. Given other genetic and demographic information (see below), it is assumed that the humpback whales of the Arabian Sea are an isolated remnant population with a historical connection to the southern hemisphere.

Range Description:

Research efforts during the past thirty years have confirmed the continued presence of humpback whales off the Gulf of Oman and Arabian Sea coasts of Oman, but only limited incidental observations of the species have been recorded for the rest of the reported range. Two humpback strandings are known from the Persian Gulf (Gervais 1883, Al-Robaee 1974). Two strandings and one sighting of a mother-calf pair have been recorded for the Arabian Sea coast of Iran (G. Braulik pers. comm.). A small number of strandings have been documented from the west coast of India and from Pakistan (Mathew 1948, Mörzer Bruyns cited in Slijper *et al.* 1964, Ahmed 1988, Lal Mohan 1992, Sathasivam 2000). All records of strandings and sightings from Sri Lanka are from the western and north-western side of the island (Winn *et al.* 1980; Whitehead 1985; Ilangakoon 2002, 2006). Three confirmed sightings of mother-calf pairs in the Maldives may represent vagrants from a southern hemisphere population or the southernmost extent of the Arabian Sea population (Anderson 2005 and pers comm.). A single sighting off the west coast of Saudi Arabia indicates that individuals from this population may stray into the Red Sea (Baldwin *et al.* 1999).

Native:

Countries: India; Iran, Islamic Republic of; Iraq; Kuwait; Oman; Pakistan; Sri Lanka; United Arab Emirates; Yemen

Presence uncertain:

Bahrain; Maldives; Qatar; Saudi Arabia

FAO Marine Native:

Fishing Areas: Indian Ocean – western

Population

Soviet whaling data, observations from merchant vessels and recent research (primarily along the coast of Oman) collectively include records from every month of the year and indicate that there is a resident population in the western Arabian Sea (Brown 1957, Slijper *et al.* 1964, Mikhalev 1997, Minton *et al.* in press). Re-sightings of photographically identified individuals off the coast of Oman in early autumn and late spring provide further evidence of year-round residency (Minton *et al.* in press).

Examination of stomach contents and fetuses from the 238 humpback whales taken during Soviet whaling operations in the Arabian Sea in 1965-66 indicated that both breeding and feeding were taking place off the coasts of Oman and Pakistan, consistent with a northern hemisphere cycle (Mikhalev 1997, Mikhalev 2000). A formal comparison of photo-identification catalogues from Oman, Madagascar, the Comoros Islands and Zanzibar yielded no photographic matches between Oman and any other region of the Indian Ocean. Fluke pigmentation pattern frequencies differed significantly between the Oman animals and those from other areas (Minton 2004, Minton *et al.* in press) and initial analysis of song indicates significant differences between Oman and other regions (C. Clark pers comm.).

Population: Genetic analysis of tissues sampled from live and beach-cast humpback whales off the coast of Oman also provides evidence for a discrete Arabian Sea subpopulation. Although this subpopulation clearly originated from the larger Southern Hemisphere population, analyses of maternally inherited mitochondrial (mt) DNA and nuclear microsatellites confirm genetic differentiation from Southern Hemisphere populations including Madagascar, the Comoros Islands and Mozambique, and lack of current exchange with these neighbouring areas (Pomilla *et al.* 2006, Rosenbaum *et al.* 2006). These conclusions were reached with the congruent support of several analytical approaches including: searches for shared or private haplotypes, measures of population differentiation (*F*-statistics), Bayesian individual clustering and maximum likelihood estimates of migration rates. These results are even more striking in light of the fact that similar levels of distinctiveness have not been shown elsewhere in the Southern Hemisphere (Pomilla *et al.* 2006, Rosenbaum *et al.* 2006, Olavarria *et al.* 2007).

Of 85 sexually mature females examined in the Soviet catch, 39 (45.9%) were pregnant, and the size range (140-375 cm, mean 232 cm) of 36 examined fetuses indicated calving commencing in December, with a peak in February. Mikhalev (2000) suggested a 3-4 month mating season lasting from January to May, coincident with that of other Northern Hemisphere

populations. Females with calves have been observed on the Arabian Sea coast of Oman between the months of November and February, with recent observations of likely neonates limited to the Halaniyat Islands in February 2000 (Minton *et al.* in press).

Mark-recapture studies using three different pairings of tail fluke photographs collected in Oman in two main research areas over a period of four and a half years yielded a population estimate of 82 individuals (95% CI 60-111). However, sample sizes are small, and there are various sources of possible negative bias, including insufficient spatial and temporal coverage of the population's suspected range (Minton *et al.* in press).

Population Trend: ? Unknown

Habitat and Ecology

The southwest monsoon system in the Arabian Sea drives one of the five largest upwelling systems in the world (Burkill 1999). During the peak monsoon months of July and August sea-surface temperatures drop to 16-17°C (Sheppard *et al.* 1992, Wilson 2000). High nutrient levels in the upwelling systems result in phytoplankton blooms and high productivity, with highest levels recorded on the Arabian Sea coast of Oman (Savidge *et al.* 1990). This productivity is believed to supply the food that permits whales to reside year-round in the tropical Arabian Sea (Reeves *et al.* 1991, Papastavrou and Van Waerebeek 1997).

Habitat and Ecology:

Sightings of humpback whales off Oman include observations of defecation and feeding (Minton *et al.* in press). Over 50% of 190 whales examined in the November 1966 Soviet catch had full or half-full stomachs. Euphausiids, of unknown species, were the primary prey item in the northeastern part of the Arabian Sea, while small fish from the *Scomber* and *Sardinella* families were more prominent off the coast of Oman (Mikhalev 2000).

Systems: Marine

Threats

Major Threat(s): Humpback whales are well-known to be susceptible to entanglement in fishing gear (Volgenau *et al.* 1995, Johnson *et al.* 2005). A total of nine humpback whale entanglements in fishing gear have been recorded off the coast of Oman. Eight of these animals were freed, another was observed swimming but trailing gear (Minton *et al.* in press). Analysis of scarring on the caudal peduncle region of photographically identified humpback whales in Oman indicates that between 30-40% are likely to have been involved in entanglements with fishing gear (Minton *et al.* in press). Fishing effort off

the coast of Oman and in other parts of the Arabian Sea is increasing (Ministry of Agriculture and Fisheries 2002, Ministry of National Economy 2003, FAO 2007) and drifting and set gillnets as well as traps are already widely used (Stengel and Al Harthy 2002).

The Arabian Sea humpback whale population is small, and any human-induced mortality, especially of females, must be a concern.

Conservation Actions

Humpback whales have been legally protected from commercial whaling in the southern hemisphere since 1963, and the Arabian Sea region has always been a closed area to commercial whaling under the International Convention for the Regulation of Whaling. However, humpback whales were taken from the region illegally by Soviet pelagic operations in 1965 and 1966. The hunting of any cetacean species is prohibited by law in Oman. At the species level, the humpback whale is listed in Appendix I of both CITES and CMS. The Arabian Sea is also part of the International Whaling Commission's Indian Ocean Sanctuary.

Conservation Actions:

The potential for successful conservation of humpback whales in the region is considered to be high, provided that range state governments are made aware of this population's precarious status. The countries of the Arabian region are generally affluent and in a good position to implement marine conservation measures for humpback whales in addition to those already initiated for other taxa, such as sea turtles. A coordinated series of marine protected areas, combined with species-specific protection measures, could greatly enhance the long-term prospects for humpback whales in the region.

Citation:

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