

Conservation of marine mammals in the exclusive economic zone (EEZ) of India

P Dhandapani

Marine Biological Station, Zoological Survey of India, 100, Santhome High Road, Madras - 600 028, India

and

J R B Alfred

Zoological Survey of India, 'M' Block 535, New Alipore, Calcutta - 700 053 India

Marine mammals of Indian coastal and exclusive economic zones are represented by diverse species of cetacea and one species of sirenian. While the coastal waters accommodate the rare cetacean, *Orcaella brevirostris* and the endangered sirenian, *Dugong dugon*, the international waters and the EEZ are dominated by both toothed and baleen plate possessing cetaceans represented by five species of dolphins and twelve species of whales. It is suggested that India, being a non-whaling country, must play a leading role by implementing programmes not only towards protection of marine mammals but also by extending a ten year moratorium for whaling and further by establishing *in situ* conservation programmes for species dwelling along the coastal zone.

Traditionally, all areas beyond territorial seas which extend not more than 12 nautical miles from the shore, were considered as International waters. This being a very narrow strip of coastal belt between the shore and the open sea, has actually restricted the maritime states of gaining the economic benefits from areas further off their territorial waters, thereby encouraging piracy on living and non-living resources by other countries. A demand to rectify this defect for over 14 years resulted in the International Convention of more than 150 states; and on 12th December, 1982, the United Nations convention on the Law of the Sea was opened for signature in Montego Bay, Jamaica to allow all maritime states to harvest the living and non-living resources of their exclusive economic zone (EEZ).

The EEZ and the rights of the maritime states

The UN convention on the law (UNCLOS) of the sea¹ under Article 55 and 57 of its official text, defines the exclusive economic zone EEZ of every coastal state as an area which should not exceed beyond 200 nautical miles from the baseline for its rights and jurisdiction. This Law, under Article 61

to 68, also provides sufficient rights to a maritime state the right to explore and exploit its natural marine resources without the interference of other states. Yet, this does not mean complete freedom to the concerned maritime state to exploit all the migratory endangered species, since the protection of which is an international responsibility. Therefore, Article 65 of the law regulates the exploitation of marine mammals more strictly than the rights provided for the state that governs the EEZ. It adds, that states shall co-operate with a view to the conservation of marine mammals; and in the case of cetaceans in particular, shall work through the appropriate international organization for their conservation, management and study.

Eco-grouping of marine mammals of India

The marine mammals may be grouped under two categories, namely those that live along the coastal zone (which also includes the lagoons and estuaries) and those which dominate the oceanic waters. Among the coastal dwellers, the cetacea group is represented by the snubfin dolphin *Orcaella brevirostris*, black porpoise *Neophocaena phocaenoides*, the bottle nose dolphin *Tursiops*

truncatus aduncus, the humpback dolphin *Stenella longirostris* and the saddle-back dolphin *Delphinus delphis*. The only global representative of sirenian which is exclusively a marine dweller is the sea cow *Dugong dugon*. The oceanic cetaceans recorded in the Indian EEZ are the blue whale *Balaenoptera musculus*, minke whale *Balaenoptera acutorostrata*, fin whale *Balaenoptera physalis*, sei whale *Balaenoptera borealis*, humpback whale *Megaptera noronhaiensis*, black right whale *Eubalaena glacialis*, sperm whale *Physeter macrocephalus*, pigmy sperm whale *Kogia breviceps*, beaked whale *Ziphius cavirostris*, killer whale *Orcinus orca*, risso's dolphin *Grampus griseus*, false killer whale *Pseudorca crassidens* and short-finned pilot whale *Globicephalus macrorhynchus*.

Factors threatening cetaceans

Commercial whaling by some specified countries for the blubber, oil and other whale products is a direct threat on the cetacean population, particularly the large whales. This is strongly condemned by the International Whaling Commission and other nature loving organisations. Still more dangerous is the routine incidental killing of dolphins, porpoises and occasionally whales in the gillnets that are spread over miles and for days in the EEZ of coastal states. While the monofilament gillnets posed problems for smaller cetaceans, the distant water pelagic driftnet fleet are a threat to larger species. This is an example to show as to how the right bestowed upon a country to use its EEZ for natural resource exploitation ends up as a threat to another species of international importance, is a matter that needs careful reconsideration.

Proposed conservation strategy in India

One species of cetacean *Orcaella brevirostris* and one species of sirenian *Dugong dugon* are the only two mammals that are permanent dwellers of the territorial waters. The mode of conservation of these two species is based on the type of niche they occupy and is described as follows:

Orcaella brevirostris, otherwise known as irrawaddy river dolphin or snubfin dolphin, occurs along the coastal zone, backwaters and estuaries of the Orissa coast, east coast of India, and Malay and Indonesian brackishwater systems². A resident

population of this species occurs in the Chilka lake³⁻⁵ while scattered population along the shore at Gahirmatha and estuaries of Mahanadhi delta are also reported⁶. It is sad to note that *O. brevirostris* population has dwindled enormously during the past eight decades due to intentional capture for its oil and accidental death caused by the so called 'wall of death in sea', the gill nets. There are only two ways to prevent unnatural death of this species both in the Chilka lake and in the brackish water zones along the Orissa coast. First, the fishermen should be educated properly not to kill these dolphins for the sake of oil and should be taught to practice the methods of conservation. Secondly, they should also be taught to operate their gill nets with short intervals of casting since prolonged duration of bottom-set gill nets are dangerous for these air breathers which get drowned in their own niche when they get entangled. In order to conserve this species in its own niche, it has been suggested to implement a semi-natural *in situ* conservation method⁷. This involves a procedure of enclosing a 20 km² area of Chilka lake at its maximum depth area (Kalijai) and impounding a population for safe propagation. As the snubfin dolphins are not migrants, the above suggested method should naturally be successful towards conservation of the species.

Sea cow *Dugong dugon*, is a herbivorous species that sustains on seagrasses growing in shallow regions within the euphotic zones. Although air breathers, they are shy hence keep away from foraging in shallow waters during bright sunlight. This species is found in the Gulf of Kutch, the Gulf of Mannar and certain packets of Andaman-Nicobar islands. The meat of dugong is considered to be a delicacy hence is being hunted stealthily by fisherfolk to avoid punishment under Indian Wildlife Act, 1972. Instances have come to the notice of scientists that dugongs are killed either while getting entangled in bottom set gill nets or due to dynamite fishing, an illegal activity that causes not only mortality of the living organisms but also causes irreparable damage to marine environment in the Gulf of Mannar area. Stringent law should be enforced to punish those involved in dynamite fishing and those operating gill nets in shallow waters. Also, operation of trawl nets both by mechanised and non-mechanised

boats on the seagrass beds and in shallow depths should be treated as illegal and non-ecofriendly. It is suspected that the dugongs perform a pattern of local migration both for foraging and also to avoid human interference.

Oceanic species of cetaceans, particularly the large whales, are common heritage of the world and therefore, no country has any right to exploit them even if these oceanic species were to enter their EEZ or territorial waters. It is with this principle in mind the International Whaling Commission, (in 1980), declared the Indian Ocean as a sanctuary for whales and proposed a moratorium on whaling for 1985-86 season. The area of the sanctuary was fixed from 20° to 130°E longitude and 40°S latitude. Later, the southern limits were extended up to 55°S to protect the sperm whales which were migrating to this area for breeding. Presently, all but three countries have accepted a moratorium on whaling from 1986 for a ten year period in Indian Ocean. Being non-

whaling countries, India and its neighbours, can play a vital role in protecting the international interest of implementing this moratorium on whaling not only for ten years (up to 1996) but also can act as a permanent monitoring country towards maintainance of Indian Ocean as a whale sanctuary. It is heartwarming to note that all species of ceataceans are now included in Schedule-I of the Indian Wildlife Protection Act of 1972.

References

- 1 Anonymous, *The law of the sea*, (United Nations, New York) 1983, pp.193.
- 2 Watson L, *Whales of the world*, (Hutchinson, London), 1985, pp.302.
- 3 Annandale N, *Mem Indian Mus*, 5 (1915)166.
- 4 Dhandapani P, *Orcaella brevirostris*, *J Mar Biol Ass India*, 34 (1992) 90.
- 5 Dhandapani P, in *Wetland Ecosystem Series 1: Fauna of Chilka Lake*, 1995, 611.
- 6 James P S B R, Rajagopalan M, Dan S S, Bastian Fernando & Selvaraj V, *J Mar Biol Ass India*, 31 (1984) 28.
- 7 Dhandapani P, *J Bombay Nat Hist Soc*, (in press).