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Briefing Document for the CMS Scientific Council on the Need for an International  
Initiative For Marine Mammal Research and Conservation in South Asia

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**Goal**

The goal of this document is to highlight the needs for marine mammal research and conservation in South Asia (range states: Myanmar, Bangladesh, India, Sri Lanka, Maldives, and Pakistan) and to propose the development of a capacity building and policy initiative to address these needs.

**Background<sup>1</sup>**

In recent years tremendous progress has been made in our knowledge of marine mammals in Southeast Asia. A landmark event was the Workshop on the Biology and Conservation of Small Cetaceans and Dugongs of Southeast Asia, Dumaguete, 27-30 June 1995 (Perrin *et al.* 1996). Subsequent to the workshop a large number of scientific papers were published on the status of marine mammals in the region (see papers in Smith and Perrin 1997; Jefferson and Smith 2002; also Dolar and Perrin 1996; Rudolph *et al.* 1997; Chantrapornsyi *et al.* 1998; Andersen and Kinze 1999; Yang *et al.* 1999). Further evidence of the recent advancement of marine mammal research in Southeast Asia includes the more than 30 papers presented at the Second International Conference on Marine Mammals of Southeast Asia, Dumaguete 22-23 July 2002 (sponsored by CMS), mostly by local scientists, many of whom were new to the field since the first meeting in 1995.

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<sup>1</sup> Much of the information on cetaceans in this section was taken from Reeves *et al.* (in press).

Unfortunately little comparable progress has been made in our knowledge of marine mammals in South Asia, or on developing the capacity of local researchers to address issues related to their conservation. Perhaps due to the perception that Ganges and Indus river dolphins (*Platanista gangetica gangetica* and *P. g. minor*, respectively) were at a higher risk compared coastal cetaceans or dugongs, almost all international support for marine mammal research and conservation has gone to address the needs of these animals (see Smith and Reeves 2000, and other papers in Reeves *et al.* 2000). Strong anecdotal evidence suggests, however, that serious threats also face coastal cetaceans and dugongs in South Asia, and that these are extensive and increasing in magnitude. Meanwhile, basic knowledge is severely lacking on even such basic information as what species occur in coastal waters or how threatening factors, such as deliberate killing, fishery bycatch and habitat degradation, vary from one area to another. Furthermore, there is almost no information available on offshore fisheries interactions (bycatch and predation) with cetaceans, although this is believed to be an increasing problem. An issue of increasing concern, but which we have virtually no knowledge about for the Indian Ocean, is the conflict between longline fisheries and cetaceans, particularly sperm whales (*Physeter macrocephalus*), killer whales (*Orcinus orca*), and false killer whales (*Pseudorca crassidens*) (see Sivasubramaniam 1964; Reeves *et al.* in press). This lack of information inhibits any rational attempt to prioritize conservation efforts according to the needs of species and populations or the prospects for successful mitigation of threats.

In India, national programs encourage expansion of marine fisheries to feed the country's human population, while large numbers of cetaceans die in gillnets (Mohan 1994). Recent newspaper articles indicate that bottlenose dolphins (probably *Tursiops aduncus*), and possibly Indo-Pacific hump-backed dolphins (*Sousa chinensis*), are also being deliberately killed along the coast of Andhra Pradesh because they are perceived as competitors for diminishing fish resources. Directed and incidental killing of cetaceans may be especially common along the east coast of India near major population centers (e.g., Calcutta and Madras), where the demand for fish and fishing employment is high. This coastline, at least as far south as Vishakhapatnam, includes the western-most range of the Irrawaddy dolphin (Stacey and Leatherwood 1997), a species that is particularly vulnerable to gillnet entanglement because of its affinity for estuarine waters where fishing pressure is most intense.

Little information is available on marine cetaceans in the waters of Pakistan, although Indo-Pacific hump-backed dolphins and finless porpoises were reported to be common in the Indus delta in the 1970s (Pilleri and Gühr 1972; Pilleri and Pilleri 1979). Recent reports indicate that the abundance of finless porpoises (*Neophocaena phocaenoides*) has declined dramatically, but that hump-backed dolphins are still seen occasionally. Local declines in cetacean abundance are thought to have occurred as a result of increased ship traffic and intensive fishing (Ahmad 1994; Roberts 1977). The ecology of the delta is threatened by freshwater abstraction upstream in the Indus, which has reduced incoming flows by more than 90%. This has caused increased erosion, pollution, and saltwater intrusion, thereby threatening the viability of estuarine habitat. The delta is located close to Karachi, Pakistan's largest port, and is heavily fished by shrimp trawlers and gillnetters (Majid 1988).

Large numbers of cetaceans have been killed in directed hunts and by entanglement in fishing gear in Sri Lanka (Leatherwood and Reeves 1989; Leatherwood 1994). A recent survey of fish landing sites in southeastern Sri Lanka recorded 14 cetacean species, dominated by spinner dolphins. A large proportion of the animals had been harpooned, and it appeared that deliberate hunting was increasing (Ilangakoon 1997). Although cetaceans were afforded legal protection at the national level in 1993, there is almost no enforcement (A. Ilangakoon, pers. comm.).

The status of dugongs in South Asia is virtually unknown but the little information that is available indicates striking declines in their numbers and widespread destruction of their seagrass bed habitat (see Marsh *et al.* 2002). Key areas where remnant populations are believed to still remain are in the

Andaman and Nicobar Islands, Palk Strait, Gulf of Manmar, and Gulf of Kutch. The viability of these populations is particularly precarious due to their probable demographic isolation. For example, to mix with other animals, dugongs from the Gulf of Kutch would need to swim more than 1,500 km to the closest known other population in the Arabian Gulf or the Gulf of Mannar (Marsh *et al.* 2002).

Despite evidence of extensive threats to marine mammal populations in the region, there are some reasons for cautious optimism. During a 20-day at-sea survey around the Maldives, Ballance *et al.* (2001), recorded 267 sightings of 16 species of dolphins and whales and concluded that the abundance and diversity of cetaceans in the region was “remarkable.” During a 9-day at-sea survey along the northern coast of Myanmar, Smith *et al.* (1997a), recorded four cetacean species, including Indo-Pacific bottlenose dolphins (*T. aduncus*), Irrawaddy dolphins (*Orcaella brevirostris*), spinner dolphins (*Stenella longirostris*, probably *roseiventris*, the dwarf form), and the pygmy form of Bryde’s whale (*Balaenoptera edeni*). They also noted that sighting rates in these waters were substantially higher than those recorded during a similar survey conducted along the coast of Vietnam (see Smith *et al.* 1997b). Farther north, Smith *et al.* (2001) found Irrawaddy dolphins occurring along the southern coast of Bangladesh. More recently the same authors (unpublished) found fairly large numbers of Irrawaddy and Ganges river dolphins present in the Bangladesh side of the Sundarbans Delta (minimum estimate 236 and 134 individuals, respectively – best estimates, pending additional analyses, will probably be close to double these numbers).

These findings indicate that, at least for some areas of South Asia, there probably still remain sufficient numbers of cetaceans for timely conservation efforts to be successful. Reinforcing this optimism is the fact that the Indian Ocean is the only major ocean basin worldwide where fish catches have been increasing, whereas those in the Pacific, Atlantic and Mediterranean have declined by more than 50% (FAO 1995, 1998, 2000). However, a shift in fishing effort by distant water fleets into the Indian Ocean from other regions is believed to be occurring, following the growing demand for large migratory fishes and the depletion of these stocks in other ocean basins (Tsamenyi and Woodhill, 1999). While FAO data suggests that there are still probably adequate fish stocks to support healthy cetacean populations, it also points towards the importance of ensuring that catches are sustainable – including those of marine mammals, whether these are directed or incidental.

### **Proposed Initiative**

The proposed initiative is envisioned as a cooperative project among CMS, the Whale and Dolphin Conservation Society (WDCS) and the Wildlife Conservation Society (WCS). If there is interest from CMS in furthering the initiative, WDCS and WCS will collaborate to develop a detailed proposal with the following objectives:

1. providing training courses for South Asian scientists and conservationists on marine mammal research techniques appropriate for developing countries (i.e., recognizing that economy and simplicity will be primary considerations for sustainable research and monitoring);
2. convening a workshop to review the distribution, abundance, population structure, habitat status, directed catches, bycatches, and research and conservation needs of marine mammals in South Asia;
3. and developing a preliminary draft Agreement on Small Cetaceans and Dugongs of South Asia (modeled on the ACCOBAMS Agreement).

The training program would be modeled on the Intensive Training Course on Marine Mammal Research Techniques for Scientists in South and Southeast Asia, 11-20 February 2002, Phuket,

Thailand (see Manopawitr and Smith 2002) and supported by the publication and distribution of a handbook covering the topic. A preliminary draft of this handbook (Smith *et al.* 2002) was prepared for the Phuket training course and is available from the WCS Thailand Country Program upon request.

The proposed workshop would be the culminating event of this initiative and aim to provide a strong basis for sustainable progress on marine mammal research and conservation in South Asia. This would be accomplished by:

1. establishing baseline information on the current status of marine mammals in the region;
2. identifying critical research requirements and conservation measures needed to protect threatened species and populations;
3. developing regionally appropriate techniques for monitoring populations and mortality and for mitigating identified threats;
4. creating a technical support network for scientists and conservationists involved with marine mammal conservation; and
5. developing the basis for a regional agreement to address cetacean and dugong conservation issues under the auspices of CMS.

We intend to solicit the input and encourage the involvement of local scientists, conservationists and government officials for the developing this initiative. During the next several months, WDCS and WCS will be involved with implementing cetacean research and education projects in India, Bangladesh, and Myanmar. This will give us an opportunity to identify appropriate persons from these countries to become involved with formulating the proposal and implementing its activities. Also, as Asia Coordinator for the IUCN Species Survival Commission Cetacean Specialist Group, Brian Smith will be able to draw upon the international expertise of this group, including members from most of the South Asian range states.

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