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THE TAXONOMY OF *ORCAELLA* (CETACEA: DELPHINIDAE) AND THE CONSERVATION STATUS OF *O. BREVIROSTRIS* AND *O. HEINSOHNI*

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Taxonomy

1. The genus *Orcaella* formerly contained only one species, the Irrawaddy dolphin *O. brevirostris* (Owen in Gray, 1866), distributed from the tropical/subtropical eastern coast of Australia, through Southeast Asia, to the northwest Bay of Bengal (eastern coast of India). Recently the Irrawaddy dolphins of Australia and the southern coast of New Guinea were split off into a new species, the Australian snubfin dolphin *O. heinsohni* (Beasley, Roberson and Arnold, 2005). The two species are presently recognized by the IUCN (www.IUCNRedList.org) and in the current scientific literature (e.g., Perrin et al., 2008; Robertson and Arnold, 2008), and recognition by the CMS would be appropriate.

2. The two species differ in external morphology, cranial dimensions, and mitochondrial DNA sequence. The snubfin dolphin usually has a higher dorsal fin, lacks a dorsal groove on the head and exhibits a distinct cape in the coloration pattern; the Irrawaddy dolphin has a lower fin and a dorsal groove and lacks the cape. In the skull, the snubfin dolphin has smaller nasal ossicles, narrower mesethmoid plate and larger temporal fossa than the Irrawaddy dolphin, suggesting a greater expression of neoteny in the species (Beasley et al., 2005). In mtDNA sequence (based on a 403 base-pair segment of the control region), there are 16 fixed base-pair differences and one insertion-deletion between the two forms (a 5.9% difference, greater than the differences among many other recognized odontocete species).

3. Both species are restricted to shallow coastal and estuarine waters, with several small populations of the Irrawaddy dolphin in freshwater rivers and lakes. The habitats of the two species on the Sahul Shelf to the south and the Sunda Shelf to the north are separated by deep pelagic waters.

Conservation status

4. *O. brevirostris* (as formerly defined, *sensu lato*) is listed in Appendix II of CMS. This listing in 1991 was motivated primarily by concern about its conservation status in Southeast Asia, affected adversely by habitat degradation, bycatch in fisheries and live capture for display (Reyes, 1990, 1991; Scientific Council of CMS, 1991). The split into two species requires re-evaluation of conservation status and listings in the CMS Appendices.

5. *O. brevirostris* as presently defined (*sensu stricto*) is classified by the IUCN (2008 Red List www.IUCNredlist.org) as Vulnerable (facing a high risk of extinction in the wild – IUCN Species Survival Commission, 2001). Four populations are listed as Critically Endangered in the Red List (facing an extremely high risk of extinction in the wild): Malampaya Sound in the Philippines, Ayeryarwady River in Bangladesh, Mahakam River in Indonesia (East Kalimantan), Mekong River in Laos and Cambodia, and Songkhla Lake in Thailand. Another population, in the brackish Chilika Lake in India, is under consideration for similar listing. This highly endangered status in significant portions of the range of the species would justify listing in Appendix I of CMS.

6. *O. heinsohni* is listed by IUCN as Near Threatened (close to qualifying or likely to qualify for a threatened category in the near future) due to limited range, low densities in surveyed areas, and its continuing vulnerability to bycatch. The assessment carried out in preparation for the 2008 Red List noted that "Rigorous, more extensive surveys are needed to support a reassessment of the species; it may then be found to qualify for listing as Vulnerable or possibly even Endangered" (www.IUCNRedList.org; see also Robertson and Arnold – 2008). This adverse status and the more or less continuous range shared by a number of countries suggests that the species would benefit from cooperative action among the range states, arguably qualifying it for listing in CMS Appendix II.

Range states and migration

7. Range states of *O. brevirostris* (as now defined) include India, Bangladesh, Myanmar, Thailand, Cambodia, Laos, Vietnam, Indonesia, Timor-Leste, Malaysia, Singapore, Brunei and the Philippines. Given the likely continuous range across the boundaries between many of these countries, it is highly probable that the dolphins move between them. Movements between Cambodia and Laos in the Mekong River have been reported (Smith and Jefferson, 2002).

8. Range states of *O. heinsohni* include Australia, Papua New Guinea and Indonesia. The shallow-water habitat of the species is continuous across the narrow Torres Strait between Australia and PNG, and it is highly probable that dolphins move between the waters of the two nations. The range is continuous into the waters of Indonesia (Papua).

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