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Redescription of the genus *Manta* with resurrection of *Manta alfredi* (Krefft, 1868) (Chondrichthyes; Myliobatoidei; Mobulidae)

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Abstract

The taxonomic history of the genus *Manta* has been questionable and convoluted, with *Manta* having one of the most extensive generic and species synonymies of any living genus of cartilaginous fish. Having previously been considered a monotypic genus with a single recognized species, *Manta birostris* (Walbaum 1792), new evidence, in the form of morphological and meristic data, confirm that two visually distinct species occur, both with wide ranging distributions through many of the world's oceans. *Manta birostris* stands as the most widely distributed member of the genus, while *Manta alfredi* (Krefft 1868), resurrected herein, represents a smaller, more tropical species. Separation of the two species is based on morphometric measurements and external characters including colouration, dentition, denticle and spine morphology, as well as size at maturity and maximum disc width. The two species of *Manta* are sympatric in some locations and allopatric in other regions. A visual key was constructed which highlights the conspicuous, diagnostic features of the two species using data collected throughout their respective geographical ranges. A third, putative species, referred to here as *Manta sp. cf. birostris*, in the Atlantic may be distinct from *M. birostris*, but further examination of specimens is necessary to clarify the taxonomic status of this variant manta ray. The results of this study will aid in the differentiation of members of this genus both in the field and in preserved specimens. The splitting of this long-standing monospecific genus will help to highlight the specific threats facing the different species of *Manta* (e.g. targeted fishing, bycatch fisheries, boat strikes and habitat degradation) and will ultimately assist in the correct assessment of their respective worldwide conservation status.

Key words: Taxonomy, elasmobranch, diagnostic features, morphology, manta ray, colouration, *Manta birostris*

Introduction

The devil rays (Family Mobulidae, Suborder Myliobatoidei, Order Rajiformes), are currently divided into two distinctive genera, *Mobula* Rafinesque, 1810 and *Manta* Bancroft, 1828. The taxonomic history of the genus *Manta* has been convoluted, with *Manta* having one of the most extensive generic and species synonymies of any living genus of cartilaginous fish. In all there have been 10 generic and 25 specific synonyms with the latter mostly without type specimens (Lamont 1824; Lesueur 1824; Mitchill 1824; Whitley 1936; Beebe and Tee-Van 1941; Fowler 1941; Bigelow and Schroeder 1953). Currently this genus is considered to be monotypic (Eschmeyer *et al.* 1983; Homma *et al.* 1999; Compagno 1999; Clark 2002b; McEachran and Aschliman 2004). *Manta birostris* (Walbaum 1792) is reported to occur circumglobally as far north as Rhode Island and southern California on the United States east and west coasts, Japan, Egypt, and the Azores in the northern hemisphere and as far south as Peru, Uruguay, South Africa and New Zealand in the southern hemisphere.

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