

Manta rays

Manta birostris & *Manta alfredi*

PROPOSAL
#46

Proposed action Listing on CITES Appendix II

Lead proponent Ecuador, Brazil and Colombia



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Overview

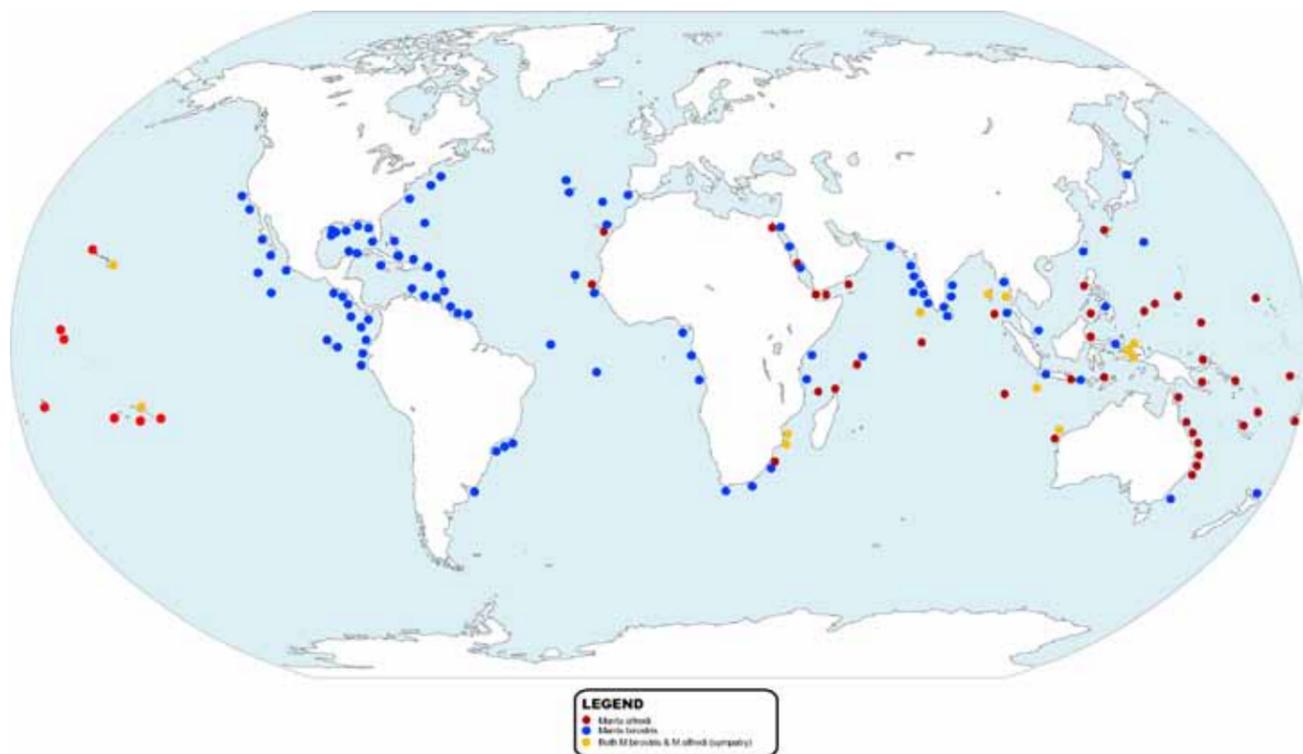
The giant manta (*Manta birostris*) and the reef manta (*Manta alfredi*) are globally threatened, exceptionally vulnerable rays that are facing intensifying fishing pressure in warm waters around the world due primarily to expanding markets for their gill rakers, which are used in traditional Chinese medicine. Unregulated fisheries driven by this demand are depleting manta populations and squandering substantial economic benefits of manta-based tourism. CITES Appendix II listing is warranted to improve manta fisheries and trade data, establish science-based export limits, bolster enforcement of national protections, and complement listing under the Convention for Conservation of Migratory Species.



Distribution

Manta rays occur in tropical, subtropical, and temperate waters of the Atlantic, Indian, and Pacific Oceans, often along productive coasts and offshore islands. The giant manta ray is found in tropical, subtropical and temperate

waters and is more widely distributed than the reef manta, which is limited to the tropics and subtropics. Most manta rays migrate cyclically and fairly predictably across national boundaries.



Global distribution of giant manta *Manta birostris* and reef manta *Manta alfredi*. Source: Marine Megafauna Foundation

Biological Characteristics

Manta rays are among the world's largest fishes, with wing spans that can exceed seven meters. Mantas feed on plankton filtered through pre-branchial appendages known as gill rakers (or gill plates). Manta rays swim relatively slowly and are known to aggregate for feeding and mating.

Manta rays are exceptionally vulnerable to overfishing due to:

- **Late maturity (8–10 years of age for females)**
- **Lengthy gestation (approximately one year)**
- **Few young (usually only one pup every two years)**
- **Long life (at least 20 years for giant mantas; 30 years for reef mantas).**

Scientists have recently estimated the intrinsic rate of population increase for manta rays at 0.029, which puts them well within the lowest productivity category of the UN Food and Agriculture Organization (FAO) guidelines for evaluating the status of commercially exploited aquatic species (rate of population increase of <0.14 and a generation time of >10 years).

Fisheries

Manta rays are used for human consumption and bait, and are increasingly sought for their gill rakers, which are exported to East Asia for use in traditional Chinese medicine. Demand for gill rakers is driving dramatic increases in largely unregulated manta fisheries, particularly in Southeast Asia, India, and East Africa. Manta rays are also taken incidentally as bycatch in various net fisheries. Their large size and tendency to move slowly in predictable aggregations make them easy targets.

Manta ray fishing takes place in many countries, including China, Ghana, India, Indonesia, Mexico, Mozambique, Peru, Philippines, Sri Lanka, Tanzania, and Thailand. FAO landings statistics do not differentiate between manta and devil rays, and are seriously incomplete because most fishing countries do not report their catches. The reported landings (manta and devil ray combined) rose from about 350 metric tons (t) in 1998 to 930t in 2000, decreased to around 100t per year between 2001 and 2003, shot up to more than 4000t in 2008, and then declined again. Studies based on market surveys estimate annual take at 4,652 manta rays. Because of their relatively low value, manta ray carcasses are often discarded at sea after the gill rakers are removed.

International Trade

The gill rakers of manta rays are traded internationally, primarily to China and Singapore, for use in an increasingly popular Asian health tonic. Gill rakers can sell for hundreds of USD/kg in Chinese markets. From surveys of the major markets in Guangzhou, China, researchers recently estimated the annual dried gill raker trade at 21,000kg, equating to 4,652 animals and valued at 5 million USD.

Skins and cartilage from manta rays also enter international trade, but far less frequently and at far lower prices than gill rakers. A small number of manta rays have been traded internationally for display in large, public aquariums.

The vast majority of international trade in manta ray products is unregulated.

Alternative Uses

Interest in manta rays is increasing among divers and snorkelers, leading to significant revenue for communities in the Maldives, Ecuador, Thailand, Mozambique, Yap, Palau, Indonesia, Australia, Mexico, Brazil, and the USA. The

long-term economic benefits from manta tourism outweigh short-term returns from fishing. A study in the Maldives, for example, found that manta ray based activities generate more than 8 million USD per year in combined revenue for the islands. Globally, the annual value of manta-based tourism has been estimated at more than 75 million USD.

Population Status

IUCN classifies both manta species as *Globally Vulnerable*.

Manta populations have not been assessed, but regional subpopulations appear to be generally small (usually fewer than 1,000 individuals), sparsely distributed, and highly fragmented. Interchange between subpopulations is assumed to be low, meaning declines are not likely to be mitigated by immigration. Depletion has been documented in some monitored subpopulations in the Philippines, Indonesia, and Mexico. Fishermen and divers in Mozambique, Madagascar, Sri Lanka, Thailand, and Australia have offered much anecdotal evidence of population declines over the last decade as a result of increased fishing.

Conservation Measures

The retention and/or trade of manta rays is specifically prohibited in regulations adopted by the Maldives, Philippines, Mexico, Brazil, Ecuador, Yap, Australia, New Zealand, the European Union, and Hawaii (USA). Illegal landings have been reported in some of these countries, including the Philippines and Mexico.

The giant manta was listed under Appendix I and Appendix II of the Convention for the Conservation of Migratory Species (CMS) in 2011. These designations signal international recognition of the need for cooperative conservation measures and strict species-specific protections. So far, however, few fishing regulations have resulted from the CMS listing. There are no binding, manta-specific measures under the various Regional Fisheries Management Organizations.



CITES History

Manta rays and the rest of family Mobulidae have been highlighted by the CITES Animals Committee as a “taxonomic group that contains a significant proportion of species subjected to unregulated, unsustainable fishing pressures, leading to severe stock depletion, and whose high value products enter international trade in large numbers.”

Expert Advice

IUCN and TRAFFIC have concluded that the two manta ray species “appear to meet the criteria for inclusion in Appendix II in that regulation of trade may be required to ensure that harvest from the wild is not reducing the population to a level at which its survival might be threatened by harvesting or other influences (*Resolution Conf. (Rev. CoP15) Annex 2a Criterion B*).” TRAFFIC and the CITES Secretariat recommend that this proposal be adopted.



SONIA FORDHAM

TRAFFIC notes that manta gill rakers are also transported under common trade names and in amalgamated shipments with *Mobula* rays *Mobula* spp. (also in family Mobulidae), and that implementation of the listing would require attention due to the nature of the products of the two genera being combined in trade. TRAFFIC therefore recommends a Decision of the Parties “directing the Animals Committee to examine the merits of listing other Devil Rays from the family Mobulidae in the Appendices, including the listing of the *Mobula* Rays *Mobula* spp., due to the difficulties in distinguishing their traded gill rakers from those of Manta Rays.”

The ad hoc Expert Panel convened by FAO to review CITES proposals for marine species was unable to assess the species against the criteria due to lack of data.

Call to action

Listing the manta rays under CITES Appendix II is:

- In line with the listing criteria and the precautionary approach;
- Essential to ensuring that international trade is held to sustainable levels;
- Complementary to national conservation efforts;
- Key to improving data on fisheries and trade; and
- Consistent with several international policy commitments.

Our coalition urges CITES Parties at CoP16 to support:

- **Proposal #46 to list the giant manta (*Manta birostris*) and the reef manta (*Manta alfredi*) on CITES Appendix II; and**
- **A Decision directing the Animals Committee to examine the merits of listing other devil rays from the family Mobulidae, including the *Mobula* Rays *Mobula* spp., in the Appendices.**

References

Information in this fact sheet is based on that in the listing proposal, the associated IUCN/TRAFFIC analyses, the TRAFFIC Recommendations, the 2012 FAO Ad Hoc Expert Panel report, the CITES Secretariat's findings, and:

Marshall, A., Bennett, M.B., Kodja, G., Hinojosa-Alvarez, S., Galvan-Magana, F., Harding, M., Stevens, G. & Kashiwagi, T. 2011. *Manta birostris*. In: IUCN 2011. IUCN Red List of Threatened Species. Version 2011.2. www.iucnredlist.org

Anderson R.C., Adan M.S., Kitchen-Wheeler A. & Stevens G. 2010. Extent and economic value of manta ray watching in Maldives, *Tourism in Marine Environments* 7(1): 15–27

White, W.T., Giles, J., Dharmadi & Potter, I.C., 2006. Data on the bycatch fishery and reproductive biology of mobulid rays (Myliobatiformes) in Indonesia. *Fisheries Research* 82: 65–73

