

The Manta Trust

Cooperating Partner to the Convention on the Conservation of Migratory Species (CMS) Memorandum of Understanding on the Conservation of Migratory Sharks (MOS)

Update Report September 2018

This report describes the activities conducted by The Manta Trust and its affiliated projects since Sharks MOS2, February 2016, aiming to support the Signatories with the implementation of the Shark MOS Conservation Plan & Programme of Work 2016 – 2018.

Manta Trust activities support the following objectives:

Objective A: Improving understanding of migratory shark populations through research, monitoring and information exchange

- 1) Ecological research, monitoring and data collection
 - a. Identify priority research, monitoring and training needs, taking into account regional differences
 - b. Endeavour to develop capacity in research, data collection, monitoring and facilitate training in data quality.
 - c. Compile relevant data, improve ecological knowledge and conduct baseline studies on:
 - d. Conduct long-term monitoring of shark populations in order to assess their conservation status and trends.
 - e. Identify and prioritize (with a view to developing conservation measures) critical habitats, seasons, life stages and populations.

We have conducted regular monitoring of the fisheries of all shark and ray species in two key mobulid fishing countries, Sri Lanka and Indonesia, as part of the Manta Trust Global Mobulid Conservation Programme (GMCP). In Sri Lanka, we are collecting data at sites in the north, east, west and south and to date 721 elasmobranch specimens (all sharks and rays) have been recorded over 230 survey days across six main survey sites. These are comprised of 73 species across 25 families: 10 ray families, 14 shark families and 1 chimaera. In Indonesia, we have collected shark and ray fisheries data at a key site in Java, which is currently being analysed through James Cook University, and we are in the process of expanding our research to include a new site in Kalimantan. These studies present important baseline data. In Peru, we have organized two capacity building workshops to train government representatives in species ID, data collection and DNA sampling of mobulid rays using the Manta Trust protocol. We continue to collect long-term baseline data on manta populations in our main project, Maldives, and affiliate projects such as Mexico, New Caledonia and Fiji. This information is used to identify critical habitats, migration routes and individual populations of mobulid rays.

2) Information exchange

- a. Facilitate the timely access to and exchange of information necessary to coordinate conservation and management measures.
- b. Recommend standard methods and set minimum levels of data collection and adopt or develop a recommended set of protocols for research, monitoring, and information exchange.
- c. Determine and, where appropriate, develop the most suitable methods for information dissemination.
- d. Regularly exchange scientific and technical information and expertise among: national governments; scientific institutions; non-governmental organizations and civil society; international organizations; and the private sector. in order to develop and implement best practice approaches to the conservation of sharks and their habitats

Programme of Work Objective: Species Conservation

- Activity 4: Facilitate communication and support Signatories in the identification of regional and local research projects
- Activity 5: When instructed by Signatories to do so, identify or develop suitable conservation projects, partners for implementation and manage Funding Agreements

Through the Manta Trust network we have disseminated the standard protocols for data collection for mobulid rays. We have developed a global ID guide (Guide to Manta and Devil Rays of the World), which includes the most up to date information on individual species, their characteristics and how they can be distinguished from each other. We have co-organised capacity building workshops in Peru, Indonesia and Sri Lanka to drive forward the information exchange on a regional and national level. We organized the first National Elasmobranch Working Group (NEWG) meeting in Sri Lanka. Leading national and international marine scientists, including Dr David Ebert (Lost Sharks/ Pacific Shark Research Center), Debra Abercrombie (Abercrombie & Fish), Rex I. De Silva, Sarah Fowler (Save Our Seas Foundation), Dr Aaron Lobo (India), Moazzam Khan (WWF Pakistan), Prof. Janine Caira (University of Connecticut), and Prof. Kirsten Jensen (University of Kansas) shared their knowledge with regard to shark and ray management and conservation with the Sri Lanka Department of Fisheries and Aquatic Resources (DFAR), National Aquatic Resources Research Development Agency (NARA), and the Department of Wildlife Conservation (DWC). A special focus on bycatch mitigation was included. We also facilitated the 2nd NEWG meeting and domestic workshop in Indonesia, presented the GMCP programme and Manta Trust led the guided discussion session among government representatives to identify priority areas for research and management on a national scale. We supported several CITES Implementation workshops worldwide through either direct training on species and product ID, as well as by providing resource materials. We developed a poster for the easy identification of gill plates, which was launched at a regional South Asian CITES Implementation workshop. Through our work across the network we continue to liaise with governments in 23 countries, providing information on mobulid rays to the relevant authorities.

Objective B: Ensuring that directed and non-directed fisheries for sharks are sustainable

3) Fisheries-related research and data collection

- a. Develop programmes to establish baseline data and facilitate reporting at a species-specific level on: shark catch rates; fishing gear used in shark fisheries; the amount of incidental and directed taking; the amount of waste and discards; size and sex of individuals caught; and fisheries methods that are sustainable and responsible and protect the habitat.

Programme of Work Objectives: Fisheries Management and data collection

- Activity 7: Expand and encourage fisheries-independent research (e.g. historic data on commercially exploited species) to provide additional data for use in the fishery stock assessments and to inform relevant RFMOs
- Activity 8: Promote research focusing on the identification of species-selective fishing gear and bycatch mitigation measures
- Activity 9: Fund and support national and international training courses in : ➤ data collection: shark identification; handling and safe release protocols
- Activity 11: Liaise with CITES, IUCN, TRAFFIC, FAO and other relevant UN bodies to facilitate the implementation of CMS Appendix II and CITES Appendix II listings and raise awareness through regional capacity-building workshops on sustainable harvest and trade, particularly in relation to: NDF, Traceability, Species identification

We have collected regular data on fisheries of sharks in rays in our focus countries, Indonesia and Sri Lanka, since 2016. We also conducted socio-economic surveys with the local communities in Peru, Indonesia and Sri Lanka to understand the motives and characteristics of the fishery, which included CPUE, fishing gear, amount of incidental take and fisheries methods. This information was presented to the governments at national workshops and meetings. We organized and co-funded capacity building workshops on developing NDFs, for instance in Indonesia, which included experts speakers and Manta Trust providing the data we collected on mobulid rays. We provided supporting materials to over a dozen CITES implementation and capacity building workshops related to mobulid rays, and where possible attended in person at these workshops.

4) Ecologically sustainable management of shark populations, including monitoring, control and surveillance

- a. Develop programmes to monitor directed shark fisheries and shark bycatch, including programmes such as vessel monitoring systems, inspections and on-board observer or monitoring programmes.
- b. Encourage relevant bodies to set targets for fish quotas, fishing effort and other restrictions to help achieve sustainable use in line with the best available scientific advice and using the precautionary approach to ensure that all shark catch is within sustainable limits.

5) Bycatch

- a. To the extent practicable, develop and/or use selective gear, devices, and techniques to ensure that the take of sharks in fisheries is sustainable and appropriately managed and that mortality of non-utilized catches is minimized to the greatest extent possible.
- b. Liaise and coordinate with fishing industries, fisheries management organizations, academic institutions and environmental non-governmental organizations (NGOs) to develop and implement incidental capture mitigation mechanisms in national waters and on the high seas, prioritizing work to avoid the capture of protected sharks in accordance with paragraph 13 i of the MoU.

Programme of Work Objective: Bycatch

- Activity 6: Liaise with CMS Bycatch Working Group and participate in CMS bycatch workshops

Current research by Manta Trust affiliates is investigating the visual and electro-sensory systems of mobulid rays, and first trials have been performed by the Manta Trust and their collaborators to reduce bycatch using light-based approaches. These techniques utilize knowledge about elasmobranch sensory systems to deter non-target species from nets, aiming to not affect target species catch. To date, two pilot studies have been conducted in Indonesia with promising results. We also work closely with governments in our affiliated project locations to disseminate information on best practices for releasing mobulid rays that are incidentally caught.

6) 6. Cooperation through RFMOs, RSCAPs and FAO

- a. Develop and implement National Plans of Action for Sharks - NPOA-Sharks - to manage sharks within a State's jurisdictional waters and for the regulation of the activities of States' fleets fishing on the High Seas in accordance with FAO's voluntary International Plan of Action for Sharks - IPOA-Sharks - also taking into account UN General Assembly Resolutions 59/259 and 61/10510.

We are working closely with the Indonesian government to support the implementation of their NPOA Sharks. We presented information at a national shark and ray symposium in Jakarta, and led the guided discussion amongst delegates from government, industry and NGOs to identify gaps in management and research for improving the conservation of mobulid rays. The Manta Trust organised a coordination meeting with key collaborators in Indonesia (Wildlife Conservation Society, Conservation International, Indonesia Manta/Mobula Project and Shawn Heinrichs) to define a shared strategy for mobulid conservation, as part of a 5-year strategic plan for national shark and ray conservation. We also provided information to the IOTC on mobulid rays fishery, their bycatch and best practices in release methods.

- 7) Policy, legislation and law enforcement
 - a. Review domestic policies and laws to address gaps or impediments to the conservation and management of sharks and their habitats.
 - b. Develop and implement strategies that seek to ensure that sharks and shark products entering international trade are harvested and traded in accordance with existing conservation and management measures and applicable regulations including those of CITES and RFMOs.
 - c. Implement and enforce existing fisheries conservation and management measures and trade regulations on shark fisheries through effective monitoring, control and surveillance.
 - d. Implement specific measures where gaps are identified and develop capacity in compliance and law enforcement.

Programme of Work Objectives: Capacity Building

- Activity 52: Identify and review gaps in capacity and training needs of Signatories and compile or develop tailored training materials
 - Activity 53: Assist Signatories with the implementation of the Conservation Plan.
 - Activity 54: Contribute to joint capacity-building workshops with CMS and cooperating partners in Africa, Asia, Oceania and South & Central America & the Caribbean, as requested by the regions
 - Activity 56: Cooperate with relevant scientific bodies (universities, scientists, international institutions)
- 8) Cooperate on law enforcement, including through bilateral/multilateral agreements, and intelligence and information sharing.
 - 9) Economic incentives
 - a. Develop opportunities for alternative livelihoods for and together with local communities.

We were an instrumental part in providing the data that led to the successful listing of devil rays onto CITES Appendix II in 2016. Manta Trust organized the first National Elasmobranch working group meeting in Sri Lanka to review the domestic policy regarding mobulid rays, discuss the issue of mobulid bycatch and exchange information with expert scientists, including Dave Ebert and Debra Abercrombie and Sarah Fowler (see above). We further organized a second NEWG meeting in Indonesia, to support the implementation of national shark policy and the National Plan of Action for sharks. These meetings included participatory mapping and discussions amongst government representatives, scientists and NGOs active in these countries to identify management gaps and future action points. We organized and supported NDF capacity building workshops in a range of Signatory countries, and provide all information collected through our research programmes to the government as resource materials for monitoring and enforcement. In Indonesia and Peru, we work closely with local communities to support their transition away from a dependency on mobulid fishery. In the Savu Sea, Indonesia, a comprehensive programme that includes capacity building through for instance aquaculture and ranger training has been established over the last few years. In Peru, local fishermen have been trained to collect data for the Manta Trust monitoring programme, and additional alternative livelihood opportunities are in the process of being developed. Finally, through a range of workshops we have disseminated the materials for

identifying mobulid rays and their products in trade, which are used by customs officials for compliance and enforcement activities.

Objective C: Ensuring, to the extent practicable, the protection of critical habitats and migratory corridors and critical life stages of sharks

10) Conservation activities

- a. Designate and manage conservation areas, sanctuaries or temporary exclusion zones along migration corridors and in areas of critical habitat, including those on the high seas in cooperation with relevant RFMOs and RSCAPs where appropriate, or take other measures to remove threats to such areas.
- b. Develop, implement and assess spatial and/or seasonal closures of fishing areas to reduce incidental capture of sharks, particularly to protect nursery grounds as well as aggregation areas for mating and pupping.

11) Legislation

- a. Contribute to developing legislation to protect species and their critical habitats and ensure implementation of regulations and policies on national, regional and global scale.

Across the Manta Trust network, our projects continue to investigate manta population ecology, critical habitats and migratory routes through collection non-intrusive data (photo ID and sightings) and tagging activities. In New Caledonia, Maldives and Caribbean Mexico, this information has been used to actively promote the establishment of protected areas around critical manta habitats. The Manta Trust also participated in an expedition to Chagos in order to investigate the local manta population and habitats that may warrant additional protection. In French Polynesia, our project is in the process of analyzing 10 year historic data of manta sightings across various archipelagoes, which will provide vital information for conservation management particular in high tourist areas. In Fiji, the information provided by our project was used to drive forward improved protection for the species.

Objective D: Increasing public awareness of threats to sharks and their habitats, and enhance public participation in conservation activities

12) Awareness raising

- a. Increase knowledge of the ecosystem services provided by sharks and knowledge about sharks in their marine environment.
- b. Raise public awareness of threats to sharks and their habitats.

13) Stakeholder participation

- a. Encourage the participation of the following stakeholders in the implementation of this Conservation Plan:

Programme of Work Objective: Implementation of the MoU

- Activity 50: Undertake outreach activities on the following priority regions: South-East Asia, South America & the Caribbean and West Africa

Objective E: Enhancing national, regional and international cooperation

14) Cooperation among governments

- a. Enhance institutional capacities and competencies in shark identification, management and conservation techniques to generate technical support for the implementation of the Memorandum of Understanding at the national, regional and international level.
- b. Strengthen existing and develop new mechanisms, where required, for cooperation and effective consultations involving stakeholders in research, management among coastal and fishing states, as well as with relevant IGOs and RFMOs and regional seas conventions, at the sub-regional level.
- c. Develop networks, including those for information and data, for cooperative management of shared populations, within or across sub-regions, and, where appropriate, formalize cooperative management arrangements.
- d. Conduct collaborative studies and monitoring in pursuing activities described in objective A and B above where appropriate.

A large focus of the Manta Trust's work has been to enable cooperation and increase public awareness for manta conservation. We now work with project leaders in 23 countries across the globe, and are the largest global platform for manta researchers to combine their knowledge and exchange information related to the species. We recently published a collaborative paper highlighting future research needs for the species, which includes authors from all corners of the world and various backgrounds. We continue to be part of coordination efforts across NGOs to steer forward a unified direction for mobulid ray conservation, and align and complement efforts where possible. We also initiated a number of collaborative studies with manta researchers to start addressing the gaps in research, including how to better mitigate bycatch of mobulid rays. Manta Trust is incredibly active on social media, and we have accumulated a large following through Instagram, facebook and our web presence. Our social media outreach midyear 2018 stood at Facebook: 24,699; Twitter: 13,643; Instagram: 32,820 followers. This enables us to reach a global audience and raise support from the public for our conservation work. We also continue to act locally in all our projects, establishing education and outreach projects such as our new Maldives education programme for girls. Cooperation and awareness are at the core of our charitable mission, and we will continue to build upon these factors in our efforts to protect manta and devil rays in the future.

Annex: The Manta Trust Key Achievements

Objective 1:

To facilitate the effective implementation of existing legislation, work with governments to achieve national level protective measures, and to achieve a listing on CITES Appendix II for the genus *Mobula*.

- Completed and submitted to **IUCN a Red List reassessment review for three key *Mobula* species** (*M. japanica*, *M. tarapacana*, *M. thurstoni*). Currently, IUCN Red List assessments classify *M. tarapacana* as Data Deficient globally and Vulnerable in Southeast Asia. However, the reassessment re-categorised this species as Vulnerable, globally, and Endangered in three of the six ocean regions: Southeast Asia, Eastern Pacific, and Indian Ocean.
- Achieved **national protection of manta rays in Peru** in 2016, one of the key mobulid fishing countries. This achievement resulted from the efforts and awareness campaigns of the Manta Trust, Planeta Océano and WildAid, who are working as a collaborative group to assist the Peruvian government's mobulid ray conservation efforts.
- Drove the proposal to **successfully list the reef manta and mobula rays on the Convention on the Conservation of Migratory Animals (CMS) Appendix I and II**. CMS is the only global convention specialising in the conservation of migratory species, their habitats and migration routes. It is an environmental treaty supported by the United Nations Environment Programme, and provides a global platform for the conservation and sustainable use of migratory animals and their habitats.
- **Drove the creation of the CITES mobula ray proposal**, lobbied governments, participated at the CITES Animals Committee, and achieved sponsorship from the government of Fiji to propose mobula rays for listing at CITES 2016. Through the efforts of the Manta Trust, this proposal became co-sponsored by a record-breaking number of CITES parties (>50 countries), along with a similar number of countries co-sponsoring the silky and thresher shark proposals.
- In collaboration with the IUCN Shark Specialist Group and other mobulid experts, **developed a Global Conservation Strategy for Manta and Devil Rays**. This strategy is in the process of being published as a scientific paper, highlighting the scale of threats to the species including global mobulid fisheries and gill plate trade. It compiles the knowledge and data of the world's mobulid experts and is a vital resource for educating government and policy makers.
- **Organised the 2nd Global Mobulid Symposium session** at the FSBI conference in July 2015. 8 presentations were given during this session on mobulids, 7 of which were by Manta Trust researchers, and 6 papers were submitted to journals.
- **Conducted a series of national workshops and technical training** on mobulid fisheries, gill plate identification and trade monitoring in key mobulid fishing countries (Indonesia, the Philippines, Peru, Sri Lanka and India).

Objective 2:

To extend current research efforts in mobulid rays, improve understanding of key biological aspects of these species' life history, expand the monitoring of mobulid fisheries and support conservation measures.

- **Initiated a mobulid fisheries project in West Africa**, a region from which we are severely lacking data. Gathered data on shark and ray fisheries, including tissue samples for genetic analysis and photographic data from Guinea. Secured funding to expand the project by including more researchers and new monitoring sites in Sierra Leone and Liberia, and incorporating a capacity building and awareness raising workshop on the state of shark and rays in West Africa.
- **Established a manta project in Galapagos**, in collaboration with the Charles Darwin Foundation. Received a grant from the Convention on the Conservation of Migratory Species (CMS) to study the connectivity between the populations of the oceanic manta ray in the Galápagos Islands and coastal Ecuador and Peru.
- The results and data from this project will provide technical advice to the Galápagos National Park to evaluate the effectiveness of the Galápagos Marine Reserve in protecting mobulid rays from targeted fisheries and incidental bycatch, inform management decisions for the reserve, and support the sustainability of manta tourism in the Galápagos Marine Reserve.
- For the government of Palau, **conducted a study on the sustainability and impact of manta tourism** at the main manta viewing site known as German Channel. We also assessed stakeholder perceptions and developed a management plan for this site, which is heavily impacted by a growing tourism industry. The recommendations became part of national legislation to support sustainable tourism in Palau.
- **Continued to collect and source mobulid genetic samples globally and began analysis.** The Manta Trust Global genetic study has now been sent over 700 samples from all 11 mobulid species from multiple geographic locations, and so has access to the largest and most comprehensive mobulid tissue library in the world. The project has prepared and sequenced a pilot library of mobulid DNA using a ddRAD protocol. The resultant genetic data will be used to inform the design of further ddRAD libraries.

Objective 3:

To work directly with communities in three of the world's top mobulid fishing countries, aiming to increase local awareness and education about these species, and support transition towards non- consumptive use of mobulid rays.

- Organised the first meeting of a Philippines Elasmobranch Working Group. The objectives were to unite people working on elasmobranch research and advocacy in the Philippines, to build relationships and to share plans, updates and ideas. The meeting focused on elasmobranch research, conservation and management in the broader context of the Philippines fisheries, and encouraged a creative look at potential conservation and policy options to pursue in the future.
 - Began studying the mobulid fisheries in Tawi Tawi, the southernmost island province of the Philippines and a trade hotspot. Initiated the

education and awareness of local students and communities. Established a partnership with Mindanao State University at Tawi Tawi.

- Conducted lessons in over a dozen local schools in the northern Tumbes Province, teaching children from the ages of 6-12 of the need to conserve Peru's marine environment and mobulid rays.
- Organised an intensive short education course for University students titled "Peru's Marine Environment and Megafauna", which included a manta ray module taught by Manta Trust Associate Directors Josh Stewart and Shawn Heinrichs.
- Engaged with over 800 community members in workshops and outreach in Peru, incorporated 40 high-school students in research and conservation efforts, documented for the first time a manta hunt in Peruvian waters, and subsequently engaged 90 fishermen in manta ecotourism training to provide alternative livelihoods.
- The manta project in Peru employed 5 local staff in conservation including one former fisherman. We completed the creation and launch of the photo identification database for manta rays in Peru, and trained 4 local staff in field monitoring and identification methods.
- The Manta Trust partnered with the Indonesia Mobula Project to expand national outreach and awareness activities, and support fisheries research on mobulid rays. Under this project, a media campaign and educational material were created in Bahasa and in English, targeting various student age groups, and reaching over 350 children in both Tanjung Luar and Labuan Bajo.
- Our Indonesia Manta Project Leader, together with collaborators and partners, initiated the Manta Research and Awareness Programme in Lamakera, the largest traditional manta fishing community in Indonesia. This is a long-term community transition programme working towards generating sustainable alternative livelihoods.

Objective 4:

To raise the general public's awareness and understanding of mobulid rays, the threats these rays face, and the conservation solutions. To provide educational opportunities for students of all ages that will allow them to learn about mobulid rays and ocean conservation more broadly.

- **Developed and implemented a Community and Educational Programme in Baa Atoll, Maldives** that focuses on enhancing the development of local teachers and school children particularly with regards to Marine Biology and Conservation.
- Employed local Maldivian as the Education Officer of the Maldivian Manta Ray Project (MMRP). Presentations have been given to a dozen schools in Baa, throughout the Maldives and to students from Baa Atoll taken on fieldtrips to snorkel with mantas and on coral reefs.
- Officially **launched the Manta Trust PADI Manta Ray Specialty Course** at resorts in the Maldives and prepared to replicate the course in each project location where manta tourism operations exist.

- Initiated a project with WWF and Project AWARE to develop **Best Practice Guidelines for Shark and Ray Tourism**, in collaboration with a scientific advisory group and industry experts. This includes a large outreach and education component towards dive operators, governments and the local community.
- Conducted **15 Manta Expeditions** in four countries and established two new resort bases in 2015.
- Entered into a partnership with the S.E.A. Singapore Aquarium to **develop an automatic manta identification matching software**, and created a new position for a Global ID Database Manager.
- S.E.A. Singapore is actively supporting the Manta Trust's work in Southeast Asia and implemented a manta exhibit corner in the Aquarium, increasing our local outreach as well as our online presence with their audience.
- A **thunderclap social media campaign "Yay4SharksNRays"** was developed to celebrate the CITES implementation in September 2014 and raise awareness for the need to decrease demand in gill plate trade.
- This campaign had a social reach of over 4 million (4,191,974 people), was joined by the United Nations, and shared by numerous organisations such as PEW, WildAid and the IUCN's Red List, successfully raising public awareness for these species' conservation need.