WWF Position on the Impact of Fisheries on Oceanic Sharks and Rays

THE ISSUES

Up to 100 million sharks are killed annually by a wide range of fisheries (Worm et al. 2013), and some populations have declined by more than 95 per cent as a result of overfishing (Dulvy et al. 2014, Tremblay-Boyer et. al. 2018). The seriousness of the situation was recognized 20 years ago with the release of the United Nations Food and Agriculture Organization (FAO) International Plan of Action for Sharks. However, this did not have the necessary impact in most of the top 20 shark fishing countries, and population declines largely continued unabated (Davidson et al. 2016).

The decline of sharks is a contributing factor to the deterioration of our ocean, and symptomatic of a much wider marine overexploitation issue. Sharks show an ancient and highly biodiverse lineage, and were until recently common in all but the deepest and coldest waters. The vast majority are predators with a wide variety of ecological niches and, like other fishes, are an integral part of ocean ecosystems, requiring conservation in order to be able to fulfil their ecological roles and contribute to ocean health.

Insufficient species-specific data (fisheries or fisheries-independent) continues to thwart efforts to manage sharks and rays. The minimum 5 per cent observer coverage of vessels required in the tuna regional fisheries management organizations (tuna RFMOs)[1] remains far lower than what is required to provide representative fisheries data of the whole fishery. This hinders science-based management of sharks and rays, as well as tuna, and effectively prevents any meaningful monitoring and compliance. Inadequate monitoring of the catches of small-scale vessels in exclusive economic zones (EEZs) is also an issue in many countries, and exacerbated in cases where the catch of oceanic sharks and rays by coastal artisanal fleets is greater than by industrial vessels.

Categorizing catches of oceanic sharks as “bycatch” by the tuna RFMOs masks the fact that these include targeted fisheries for sharks and rays, and that sharks are often valuable secondary catch in longline and gill net fisheries. Oceanic sharks and rays have received far less attention than tuna, with data collection and management measures

[1] Inter-American Tropical Tuna Commission (IATTC), International Commission for the Conservation of Atlantic Tunas (ICCAT), Indian Ocean Tuna Commission (IOTC), and Western and Central Pacific Fisheries Commission (WCPFC)

typically being too little, too late.[2] In fact, none of the species whose catch is now prohibited by the tuna RFMOs due to dramatic population declines (e.g. 95 per cent decline in oceanic whitetip shark) previously had any catch limit at all.

Even today, there are no catch limits for pelagic elasmobranchs[3] except for the total allowable catch limits for blue sharks in the North and South Atlantic adopted by ICCAT in 2019. No stock assessments have been undertaken for most oceanic sharks and rays in each of the tuna RFMOs. Indeed, IATTC and IOTC have not yet undertaken robust stock assessments for any sharks and rays, primarily due to insufficient fisheries data.

Largely as a result of overexploitation, 16 out of 31 oceanic shark and ray species are now either critically endangered (three species) or endangered (13 species) according to the IUCN Red List. These include species that used to be wide-ranging and among the most abundant, notably the critically endangered oceanic whitetip shark (*Carcharhinus longimanus*).

A recent Nature paper on oceanic sharks and rays (Pacoureau et al. 2021) documented the declines in populations and increased extinction risk of these species due to overfishing. The authors found that the global abundance of 18 species of oceanic sharks and rays had declined by 71 per cent since 1970 owing to an 18-fold increase in relative fishing pressure.

The role of fisheries in driving the declines is consistent with an increasing proportion of populations and species that have been assessed to be overfished over time (21 per cent). Some six out of eight assessed species, and more than half of the populations (nine of 15), are below the biomass or abundance levels that could produce the maximum sustainable yield. The paper notes that species classified as critically endangered or endangered cannot support fisheries, and that strict prohibitions on landings and other measures to reduce fishing mortality are urgently needed to avert population collapses and rebuild populations.

Nevertheless, bans on landings and retention are unlikely to be sufficient in themselves because prohibited species will continue to be caught inadvertently, and some will die as a result. The fact that overfishing for the oceanic whitetip is ongoing, in spite of the official catch and retention ban that has been in place since 2011 at WCPFC and 2013 at IOTC, points to the contracting parties' inability to manage fishing mortality of this species. This has partially been addressed by a growing focus on catch mitigation and safe handling and release by tuna RFMOs for sharks and rays, but accurate assessments of fishing mortality for prohibited species remain scarce.

Global concern over the ongoing declines in sharks and rays, and the lack of sustainability in the international trade in their products, is evident through the listing of 23 species of oceanic sharks and rays on CITES Appendix II by 183 parties to CITES. While the CITES parties are mostly the same states as tuna RFMOs' contracting parties, tuna RFMOs have given scant attention to the requirements of CITES to date, and none has undertaken a regional Non-Detriment Finding (NDF) to show that catches and trade in these species are legal and sustainable.

WHY IT MATTERS

Sharks evolved around 400 million years ago, and have outlived dinosaurs. The 1,200+ species play many key roles in marine ecosystems. They do not simply dwell in the ocean, they shape it – making them indispensable to ocean health and the well-being of millions of people across the globe. Beyond their intrinsic value, oceanic sharks and rays are important for food, human livelihoods, tourism, and their ecological roles.

[2] One aspect of this is that national legislation in line with a new tuna RFMO management measure can take many years to be put in place.
[3] Elasmobranchs refers to sharks and rays.

Recent research is starting to highlight the importance of large marine fishes, such as sharks and rays, in planetary-scale processes, notably through carbon sequestration when their carcasses sink into the deep after death. The inhibition of this process by fishing for these vertebrates is estimated to have resulted in a major increase in atmospheric emissions (Mariani et al. 2020).[4] Conversely, rebuilding stocks of oceanic sharks and rays, tuna and billfish, and fishing them sustainably, represents an important nature-based solution to climate change by reactivating a natural carbon pump through an increase of carcass deadfall.

In spite of the importance of sharks and rays for our ocean and people, in just the past 50 years overfishing has decimated populations of more than 150 species, with the first shark species declared "probably extinct" in late 2020 (IUCN Red List 2020). As populations are reduced to mere fractions of their former size, these animals are no longer able to fulfil their ecological roles and coastal communities in many countries suffer as a result too.

There is a narrow window of opportunity that we must seize now if we are to prevent these ancient species from becoming extinct locally or even globally.

WWF POSITION

Increasing Observer Coverage Key to Overcoming Data Deficiencies and IUU Fishing

WWF and 12 other leading environmental non-governmental organizations focused on global tuna conservation and united under the NGO Tuna Forum have called on the tuna RFMOs to require scientific observer coverage on all industrial tuna fishing vessels through human and/or electronic means.[5]

Remote electronic monitoring with cameras increasingly presents a cost-effective and low-risk solution to support the work of human observers, including on smaller vessels not suitable for accommodating human observers.

Implementing Recovery Plans as Enshrined Within International Fisheries, Biodiversity and Sustainable Development Frameworks

The FAO Code of Conduct for Responsible Fisheries clause 7.6.10 states that "regional fisheries management organizations and arrangements, in the framework of their respective competences, should introduce measures for depleted resources and those resources threatened with depletion that facilitate the sustained recovery of such stocks".[6]

Additionally, the Convention for Biological Diversity Aichi Target 6 states, "By 2020, all fish and invertebrate stocks and aquatic plants are managed and harvested sustainably, legally and applying ecosystem-based approaches, so that overfishing is avoided, recovery plans and measures are in place for all depleted species …",[7] and SDG 14.4 "By 2020, effectively regulate harvesting and end overfishing, illegal, unreported and unregulated fishing and destructive fishing practices and implement science-based management plans, in order to restore fish stocks in the shortest time feasible, at least to levels that can produce maximum sustainable yield as determined by their biological characteristics." Neither Aichi Target 6 nor SDG 14.4 were achieved.

[4] That is an increase of 0.73 billion metric tons of CO2 (GtCO2) in the atmosphere since 1950.
[5] NGO Tuna Forum. Observer Call to Action. 2019. https://ngotunaforum.org/observer-coverage-call-to-action/
[6] FAO. FAO Code of Conduct for Responsible Fisheries. 1995. http://www.fao.org/fishery/code/en
[7] Full details on the CBD Aichi Target 6 of the Strategic Plan for Biodiversity 2011-2020 can be found here: https://www.cbd.int/sp/targets/rationale/target-6/

WWF STATEMENT

WWF believes urgent action is required to reduce the risk of further overfishing or extinction to oceanic sharks and rays through new efforts to prevent regional extinctions in the short term. In the longer term, such actions should allow oceanic sharks and rays to start fulfilling their ecosystem functions again and maximize their value to humankind.

WWF calls on the contracting parties of the four tuna RFMOs – who have a disproportionately large role to play in safeguarding the health of oceanic sharks and rays – to recognize that existing management measures have been insufficient to prevent major declines in oceanic sharks and rays. We urge these parties to meet their international biodiversity and sustainable development commitments through the following, in addition to existing management arrangements:

- Increase scientific / independent observer coverage to 100 per cent to include all industrial vessels by 2030, and for other fishing vessels[8] to 10 per cent by 2024, and 15 per cent by 2026.
- Introduce recovery plans for all species of globally critically endangered oceanic sharks and rays by 2023, and endangered oceanic sharks and rays by 2026.[9] Recognizing that the extent of overfishing will differ among the four areas of management under the tuna RFMOs, a reasonable exception would be if a regional stock assessment demonstrated that the stock is healthy and overfishing is not occurring.
- Develop specific plans to minimize interactions between fishing gear and sharks and rays to reduce fishing mortality through science-based spatial or temporal restrictions and better management of fish aggregating devices.
- Support research on the application and management of spatial protection to reduce mortality of sharks and rays, and identification of critical areas (e.g. aggregation and nursery areas).
- Introduce measures that will reduce shark and ray mortality if interactions with fishing gear do occur, such as prohibiting wire leaders and shark lines in longline fisheries and other catch mitigation techniques, and minimum standards for safe handling and release.
- Implement “fins naturally attached” policy as the only method to ensure both proper catch accounting as well as compliance with shark retention measures.
- Formulate National Plans of Action – Sharks where they do not yet exist, and update them where five or more years have passed since their formulation as per the FAO’s International Plan of Action – Sharks, and Regional Plans of Action e.g. the EU Community Plan of Action for the Conservation and Management of Sharks. Include policy and management to control mortality on fisheries that catch oceanic sharks and rays.
- Develop and share approaches across tuna RFMOs to evaluate the implementation and effectiveness of bycatch conservation management measures, including accurate estimates of post-release mortality.
- Require tuna RFMOs to conduct regional CITES NDFs for the areas within their jurisdiction for transboundary oceanic shark and ray species listed on CITES App. II where the intention of contracting parties is to fish and trade their products legally and sustainably, and agree protocols for authorizing national CITES exports based on these NDFs.
- Enforce the UN international moratorium prohibiting drift nets (46/215) longer than 2.5 km operating in the high seas.
- Increase the financial resources available to the tuna RFMOs in order to be able to achieve the above.

[8] Defined as vessels below 24m length, but excluding artisanal vessels such as undecked vessels and/ or with a crew of 2 or less for the purposes of determining observer participation.
[9] The introduction of recovery plans will increase alignment with the FAO Code of Conduct for Responsible Fisheries.

LIST OF CRITICALLY ENDANGERED AND ENDANGERED OCEANIC SHARK AND RAY SPECIES

(Species as in Pacoureau et.al. 2021)

No.	Scientific Name	Common Name	IUCN Red List Status	CITES Listing (listing date)
1	*Carcharhinus longimanus*	Oceanic whitetip shark	Critically Endangered	Appendix II (2013)
2	*Sphyrna lewini*	Scalloped hammerhead	Critically Endangered	Appendix II (2013)
3	*Sphyrna mokarran*	Great hammerhead	Critically Endangered	Appendix II (2013)
4	*Alopias pelagicus*	Pelagic thresher	Endangered	Appendix II (2016)
5	*Carcharhinus obscurus*	Dusky shark	Endangered	Not listed
6	*Cetorhinus maximus*	Basking shark	Endangered	Appendix II (2002)
7	*Isurus oxyrinchus*	Shortfin mako	Endangered	Appendix II (2019)
8	*Isurus paucus*	Longfin mako	Endangered	Appendix II (2019)
9	*Mobula birostris*	Giant manta ray	Endangered	Appendix II (2013)
10	*Mobula eregoodoo*	Longhorned pygmy devilray	Endangered	Appendix II (2016)
11	*Mobula hypostoma*	Atlantic devilray	Endangered	Appendix II (2016)
12	*Mobula kuhlii*	Shortfin devilray	Endangered	Appendix II (2016)
13	*Mobula mobular*	Giant devilray	Endangered	Appendix II (2016)
14	*Mobula tarapacana*	Sicklefin devilray	Endangered	Appendix II (2016)
15	*Mobula thurstoni*	Bentfin devilray	Endangered	Appendix II (2016)
16	*Rhincodon typus*	Whale shark	Endangered	Appendix II (2002)

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For more information

Dr. Andy Cornish
Leader, Sharks: Restoring the Balance, WWF
andycornish@wwf.org.hk

Magda Nieduzak
Senior Communications Officer, Sharks: Restoring the Balance, WWF
mnieduzak@wwf.org.hk