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WESTERN CENTRAL ATLANTIC FISHERY COMMISSION

Report of the

FIRST MEETING OF THE WECAFC/OSPESCA/CRFM/CITES/CFMC WORKING GROUP ON SHARK CONSERVATION AND MANAGEMENT

Barbados, 17–19 October 2017

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FOOD AND AGRICULTURE ORGANIZATION OF THE UNITED NATIONS
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PREPARATION OF THIS DOCUMENT

This is the report of the First meeting of the WECAFC/OSPESCA/CRFM/CITES/CFMC working group on shark conservation and management, organized by the Secretariat of the Western Central Atlantic Fishery Commission (WECAFC) of the Food and Agriculture Organization of the United Nations (FAO) at the United Nations House in Barbados on 17-19 October 2017.

The meeting was co-hosted by FAO and the Government of Barbados and convened by Mr Mauro Gongora (Belize). Technical coordination and facilitation for the workshop was provided by Mr Raymon van Anrooy, Secretary of WECAFC, Mr Kim Friedman, senior fisheries resources officer (FAO) and Irene Kingma and Ramon Bonfil, FAO consultants. Administrative and logistical support was provided by FAO/WECAFC, and coordinated by Ms Sonya Thompson.

The workshop was made possible thanks to financial support from the National Oceanic and Atmospheric Administration (NOAA) of the United States of America. The meeting also received support from Global Environment Facility (GEF) funded projects (Sustainable Management of Bycatch in Latin America and Caribbean Trawl Fisheries (REBYC II LAC) Project, Caribbean Billfish Project (under the Common Oceans ABNJ Ocean Partnerships Project) and the Caribbean and North Brazil Shelf Large Marine Ecosystems (CLME+) Project.

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ABSTRACT

The First meeting of the WECAFC/OSPESCA/CRFM/CITES/CFMC working group on shark conservation and management was held in Barbados on 17-19 October 2017. The meeting brought together more than 30 shark fisheries experts, conservationists, marine biologists and fisheries officers from 15 WECAFC members, regional fisheries bodies, fisheries technical advisory institutions, non-governmental organizations, and other relevant stakeholders.

The experts at the meeting recognized the decline in various shark and ray stocks in the Caribbean region, as well as the need to conserve the threatened species among them. The joint Working Group stressed the importance of harmonizing conservation and management measures with various international and regional conventions for the protection of these often-migratory species, as well as with measures by regional fisheries management bodies in the Atlantic. The fisheries experts recommended amongst others that the countries in the region should prohibit the removal of shark fins at sea and require that all sharks be landed with their fins naturally attached through the point of first landing of the sharks. Moreover, the experts recommended the prohibition of targeted fisheries for iconic species such as whale sharks, sawfishes and manta rays. Incidental catches of these species should be promptly released unharmed and alive, to the extent possible. The experts worked on a regional shark stocks and fisheries status assessment and a Regional Plan of Action for the conservation and management of sharks and rays in the WECAFC area. This RPOA-Sharks will incorporate regional collaboration on shark research, data collection and sharing, capacity building, harmonized management and conservation measures, enforcement and monitoring, and public awareness.

The First Meeting of the Joint Working Group was made possible with support from the National Oceanic and Atmospheric Administration (NOAA) of the United States of America. The meeting also received support from Global Environment Facility (GEF) funded projects (Sustainable Management of Bycatch in Latin America and Caribbean Trawl Fisheries (REBYC II LAC) Project, Caribbean Billfish Project (under the Common Oceans ABNJ Ocean Partnerships Project) and the Caribbean and North Brazil Shelf Large Marine Ecosystems (CLME+) Project)).

CONTENTS

ABBREVIATIONS AND ACRONYMS

ABNJ	Areas Beyond National Jurisdiction
CITES	Convention on International Trade in Endangered Species of Wild Fauna and Flora
CFMC	Caribbean Fishery Management Council
CMS	Convention on Migratory Species
CLME+	Caribbean and North Brazil shelf Large Marine Ecosystem
CPUE	catch per unit of effort
CRFM	Caribbean Regional Fisheries Mechanism
DEVCO	Directorate-General for International Cooperation and Development (EU)
FAO	Food and Agriculture Organization
FIRMS	Fisheries and Resources Monitoring System
GEF	Global Environmental Facility
IATTC	Inter-American Tropical Tuna Commission
ICCAT	International Commission for the Conservation of Atlantic Tunas
IUCN	International Union for Conservation of Nature
IUU	illegal, unreported and unregulated
NOAA	National Oceanic and Atmospheric Administration (USA)
NGO	non-governmental organization
OSPESCA	Organización del Sector Pesquero y Acuícola del Istmo Centroamericano (Central American Fisheries and Aquaculture Organization)
RFB	regional fishery body
RFMO	regional fisheries management organization
SEDAR	SouthEast Data, Assessment, and Review (NOAA)
SPAW	Protocol Concerning Specially Protected Areas and Wildlife
t-RFMO	tuna Regional Fisheries Management Organization
UN	United Nations
USD	United States Dollar
WECAFC	Western Central Atlantic Fishery Commission

INTRODUCTION

1. The WECAFC/OSPESCA/CRFM/CITES/CFMC Working Group on shark conservation and management (WG) was established by the 15th session of WECAFC, which was held in Trinidad and Tobago in 2014, on specific request of the member countries. The adopted programme of work of WECAFC included an activity (3.12) on Improved management and conservation of sharks. The Commission requested the WG to support the development of at least two national plans and a Regional Plan of Action for the management and conservation of sharks (RPOA-Sharks).
2. In the period 2014-2015 the WECAFC Secretariat mobilized resources to carry out the work requested by the Commission and supported the development of a Caribbean Sharks and Rays identification guide, as well as sharks and rays assessments and the development of National Plans of Action (NPOA-sharks) in Antigua and Barbuda and Barbados. Moreover, some support was provided to Trinidad and Tobago to increase awareness on shark stocks and the need for improved management and conservation of those species listed in the appendices of the Convention on International Trade in Endangered Species of Wild Fauna and Flora (CITES). The National Oceanic and Atmospheric Administration (NOAA) of the United States of America kindly agreed in 2016 to support the 1st meeting of the WG through Trust Fund project "Conservation and Management of Sharks and Rays in the Wider Caribbean Region".
3. The Trust Fund project aimed to: 1) collect and share appropriate catch and effort data for use in the Wider Caribbean Region sharks and rays population assessment; 2) increase awareness and understanding of shark status, conservation and management among fisheries sector stakeholders of the WECAFC member states; and 3) prepare a draft RPOA for WECAFC endorsement. The funding provided facilitated the assessment, drafting process of the RPOA and the 1st meeting of the WG.
4. The purpose of the 1st meeting of the WG was to contribute to the conservation, responsible management and sustainable use of sharks and rays in the Caribbean region, with a particular focus on conservation of those species that are listed under CITES Appendix II.
5. The main aims of this 1st meeting of the Working Group were to:
    - Share data and information on shark and ray stocks, fisheries, conservation and management among the WECAFC member countries.
    - Create awareness and build capacity on international agreements and measures for sharks and rays conservation among key stakeholders in the Caribbean region.
    - Discuss, review and finalize a draft regional assessment report of stocks and management of sharks and rays in national waters of WECAFC member states based on the criteria outlined in the FAO's IPOA-Sharks.
    - Discuss, review and finalize (if feasible) a draft Regional Plan of Action for the Conservation and Management of Sharks in the WECAFC Area.
    - Update the draft TORs and draft Work Plan of the Working Group.
    - Prepare (as necessary) WECAFC Recommendations on sharks and rays conservation and management.

OPENING OF THE MEETING

6. The meeting was co-hosted by the Secretariat of WECAFC and the Fisheries Division of the Government of Barbados, at the United Nations House in Barbados. Welcome remarks were delivered by Mr Lionel Reynal, Chairperson of WECAFC, who referred to the establishment process of the WG, its Terms of Reference (TORs) and the support provided by NOAA. Mr Reynal mentioned that over the last 50 years the conservation status of cartilaginous fishes has become one of the major concerns over our oceans. Most of these species are slow growing, have long gestation

periods and very low fecundity. Due to their position as high-level and top predators in the ecosystems where they live, they tend to have small population sizes. All of these characteristics mean that shark populations grow very slowly and thus cannot recover rapidly when they are subjected to long-term, heavy fishery exploitation. He then referred to their low value in terms of contribution to food security, the complex nature of their fisheries (multi-specific, multiple gears and fleets) and the difficulties in taxonomic identification of sharks and rays at the species level.

7. Mr Christopher Parker, senior biologist of the Barbados' Fisheries Division, welcomed the participants on behalf of the Government of Barbados. He mentioned the importance of regional collaboration in shark conservation and management, the joint efforts of FAO, the Barbados Union of Fisherfolk Unions (BARNUFO) and the Fisheries Division to carry out a shark assessment in the waters of Barbados and develop a National Plan of Action on sharks. He referred to reduction in shark catches in Barbados and that awareness raising among fishers to increase shark identification at the species level is ongoing, supported by posters at the landing sites.

8. Ms Vyjayanthi Lopez, FAO Representative for Barbados, officially opened the meeting. She welcomed the participants and referred to the partnership and collaboration between the Organization of Fisheries and Aquaculture for Central America (OSPESCA), the Caribbean Reginal Fisheries Mechanism (CRFM), the Caribbean Fisheries Management Council (CFMC) of the U.S. Department of Commerce, CITES and WECAFC. She mentioned the important role of the WG and that sharks play an important role in maintaining the balance of marine ecosystems. Aside from contributing to the ecological sustainability of marine life, sharks also contribute to social and economic sustainability. However, due to their life-history characteristics, many species are vulnerable to the pressures of overfishing and have experienced rapid population decline. Illegal, Unreported and Unregulated (IUU) fishing, overfishing of the species consumed by sharks and polluted habitats in some cases contribute to further decline of shark stocks in the region. She further brought to the attention of the meeting that about 18 years ago, in 1999, the Member Countries of the FAO's Committee on Fisheries (COFI) recognized the dire situation that various shark stocks were in and that global action was needed. COFI developed and adopted the International Plan of Action for the Conservation and Management of Sharks (IPOA–Sharks). This plan recommends that FAO Member Countries adopt a National Plan of Action for the Conservation and Management of Sharks (NPOA-Sharks) if their vessels carry out directed fisheries for sharks or if they regularly catch sharks in non-directed fisheries activities, such as is the case in various Caribbean island countries. She finalized her opening speech by thanking the experts, partners and resource partners for contributing to the meeting and wished the meeting to be fruitful for the management and conservation of sharks in the Caribbean.

ATTENDANCE

9. Representatives of the following States attended the meeting: Antigua and Barbuda, Barbados, Belize, Brazil, Cuba, Dominican Republic, European Union, France, Guyana, Netherlands, Nicaragua, Panama, Suriname, Trinidad and Tobago, and the United States of America. Representatives of the following organizations were present: CRFM, CITES, OSPESCA, WWF, the University of the West Indies (UWI), Dalhousie University, and FAO/WECAFC. A list of all participants and observers can be found in Appendix II.

ELECTION OF CHAIRPERSONS AND RAPPORTEURS

10. The WG elected Mr Lionel Reynal (WECAFC chairperson), Mr Manuel Perez (OSPESCA) and Mr Mauro Gongora (Belize/WG convener) as co-chairpersons. Mr Raymon van Anrooy acted a rapporteur, supported by Mr Kim Friedman (FAO), and Ms Irene Kingma and Mr Ramon Bonfil (FAO consultants).

11. Mr Mauro Gongora, convener, introduced the WG and participants introduced themselves.

ADOPTION OF THE AGENDA

12. The agenda was adopted without changes and is available in Appendix I.

SUMMARY OF WECAFC SHARK ACTIVITIES

13. Mr Raymon van Anrooy, WECAFC Secretary, presented a summary of WECAFC and FAO activities on shark fisheries and management in recent years. He started with an introduction of the Western Central Atlantic Fishery Commission (WECAFC), describing its mandate, the area it covered and its membership. He highlighted the declining trend in total fish landings noted within Area 31 (Western Central Atlantic) from 1985 to now. The total fish landings per year declined in that period from 2.5 million tonnes per year in the mid-1980s to around 1.4 million tonnes in recent years. He added that Area 31 is one of the top five most overexploited fisheries regions in the world. He then referred to the outcomes of WECAFC 16 (Guadeloupe 2016), the 11 joint (technical) working groups and the formalized Interim Coordination Mechanism for Sustainable Fisheries under which CRFM, OSPESCA and WECAFC collaborate.

14. Mr van Anrooy then gave information on the activities of the WECAFC Secretariat in relation to activity 3.12 of the WECAFC Programme of Work, which relates to shark management and conservation. These activities included the drafting of TORs for the WG, mobilizing resources for NPOAs and RPOA, as well as for the WG meeting and identification of potential WG expert members.

15. Other activities included:

- The development of the Identification guide to common sharks and rays in the Caribbean, which is available at: www.fao.org/publications/card/en/c/0c784a13-6696-4180-a768-bee7f6976467/
- The preparation of a poster on sharks and rays in the waters of Barbados, which is available at: www.fao.org/documents/card/en/c/329b3c2c-fdaa-4300-b115-e81789f21963/
- Display of shark conservation at AGROFEST 2016 in Barbados.
- Support of shark assessments (BRUV research) and development of the NPOA-Sharks in Antigua and Barbuda, Barbados and Trinidad and Tobago.
- Seek NOAA support for the WG meeting + RPOA development through project "Conservation and Management of Sharks and Rays in the Wider Caribbean Region".

16. He finalized the summary presentation by reminding the WG of the meeting objectives and the Commission's expected outputs from the 1st meeting.

SHARKS AND RAYS DEVELOPMENTS AT CITES

17. Mr Daniel Kachelriess, Marine Species Officer at the CITES Secretariat, presented (via video) the latest developments at CITES in terms of sharks and rays discussions and listings. He mentioned that CITES is a multilateral agreement that operates through an intergovernmental process, which combines wildlife and trade themes within a legally binding instrument, working towards achieving conservation and sustainable use objectives by setting common procedural mechanisms. CITES currently has 183 Parties and regulates the international trade of 36 000+ listed species. This includes live or dead specimens, as well as their parts and derivatives. He discussed CITES' objectives and noted that species regulated under CITES are divided amongst three Appendices:

- Appendix I includes species that are endangered and does not allow for commercial trade.
- Appendix II includes species that are not yet endangered, but may become so unless trade is regulated.
- Appendix III includes species that are protected in at least one country, which has asked other CITES Parties for assistance in controlling the trade.

18. He noted that additions to Appendix III can be done unilaterally, while inclusion into Appendix I or II requires a decision by the Conference of the Parties, which takes place every three years. Ninety-seven percent of species are listed on Appendix II, which means trade is allowed as long as it is sustainable, legal and traceable.

19. Mr Kachelriess then discussed the history of shark listings at CITES. The first sharks and rays were listed under CITES in the early 2000s. Apart from sawfishes that were gradually all listed on Appendix I, starting at CoP14 in 2007, other shark species were all listed on CITES Appendix II. 2013 was a game-changer, as Parties decided to put several commercially-exploited shark species under CITES Appendix II controls, greatly increasing the interface between CITES and the fishery sector, which in many countries may not have had experience with implementing CITES provisions. CoP17 continued adding all species of Devil rays, *Mobula* spp. as well as Thresher and Silky Sharks to Appendix II. The *Mobula* listing entered into force 4 April 2017, the Silky and Thresher shark listings on 4 October 2017.

20. The procedures for preparation of Non-Detriment Findings (NDFs), the meaning of "introductions from the Sea" and the purpose of reviews of significant trade, were then explained. The collaboration between the CITES Secretariat and FAO in various projects and studies was also discussed. Reference was made also to a meeting in March 2017 with experts from FAO and RFMOs that had been key partners in implementing the various activities, to allow for exchange of views on successes and lessons learned from joint activities in the 2013-2016 project and to plan for new joint activities. The role of the FAO expert panel in reviewing proposals for CITES listings was explained as well. He finalized his presentation by referring to the 69th CITES Standing Committee, 27 November- 1 December 2017 and the sources of data and information on shark listings that are available.

21. The discussion that followed the presentation touched upon the roles of FAO, WECAFC and CITES in the conservation and management of shark fisheries. The mandates of the three institutions were clarified. Some participants considered that certain CITES decisions are being used by the USA and the EU as barriers to trade in sharks and shark products. It was noted that the Harmonized System (HS) codes for sharks, to identify the exact species in the trade, are used insufficiently or incorrectly. Efforts made by FAO to have more species-specific HS codes for trade in sharks inserted in the HS have not been successful recently.

22. The limited availability of species-specific data was discussed and it was noted that without the data it will be impossible to manage the resources properly. ICCAT requirements for shark data were discussed and it was mentioned that if WECAFC becomes an RFMO the members will have to get their data collection systems in order to comply with its management measures as well. The limited capacity of Caribbean Small Island Developing States (SIDS) to collect all data and information required under various international agreements was discussed as well.

23. It was noted that few countries in the region have prepared Non-Detriment Findings (NDFs) for sharks in recent years and that guidelines for the preparation of NDFs are available on the CITES website.

SHARKS AND RAYS FISHERIES STATUS AND MANAGEMENT IN CRFM MEMBER STATES

24. Ms Maren Headley, CRFM Secretariat, made a presentation on the status of sharks and rays fisheries in the CRFM member states. She noted that CRFM is an intergovernmental organization. Its mission is to promote and facilitate the responsible utilization of the region's fisheries and other aquatic resources for the economic and social benefits of the current and future population of the region. The three organs of CRFM are: i) the CRFM Secretariat; ii) the Fisheries Forum; and iii) the Ministerial Council. CRFM Working groups on various resources meet during the Scientific Meeting and provide technical advice to the Fisheries Forum. The CRFM Working Group with relevance to sharks is the "Pelagic Fisheries Working Group."

25. Together, CRFM Member States have accounted for an average of 7 percent of the total shark landings over the past 30 years in the WECAFC area. The majority of landings reported by the CRFM Member States are under the aggregated category of Sharks, rays, skates nei etc. nei. Historically, Guyana, Trinidad and Tobago, Suriname and Belize are the countries with the highest landings (>50 t) whereas, Antigua and Barbuda, Grenada, St. Lucia, Barbados and St. Vincent and the Grenadines, report landings below 50t. Regional initiatives to address shark conservation and management include: the Castries Declaration on Illegal, Unreported and Unregulated (IUU) fishing; the CRFM-OSPESCA Joint Action Plan and the associated Memorandum of Understanding; the Agreement Establishing the Caribbean Community Common Fisheries Policy; the MOU for Interim Coordination on Sustainable Fisheries; and the Regional Working Group on IUU Fishing.

26. Identified ways forward for shark conservation and management in the CRFM member states include: catch limits; reduction of by-catch; MCS of IUU fishing; finning bans; stock assessment; species specific data collection and training in species identification; prohibitions on catch (particularly of threatened species); habitat and spatial protection; and implementation of the EAF and the precautionary approach.

27. Following this presentation various CRFM member country experts mentioned the difficulties they encounter identifying sharks and rays by species and that capacity building of fishers and data collectors on this subject is essential. It was noted that bycatch reduction opportunities of sharks in the context of small-scale fisheries is limited. Experiences of some countries to reduce bycatch of sharks in trap fisheries and in trawling were shared.

SHARKS AND RAYS FISHERIES STATUS AND MANAGEMENT IN OSPESCA MEMBER STATES

28. Mr Manuel Perez Moreno on behalf of OSPESCA belonging to the Central America Integration System (SICA) presented on the status and management of shark and rays fisheries in OSPESCA member states. He provided an OSPESCA overview describing its role, area of influence, institutional arrangements and, in particular, on the regional governance model, which provides for the opportunity of issuing binding resolutions by the Ministerial Council according to the Tegucigalpa protocol. At present, there are eight binding resolutions, of which two are related with a comprehensive shark finning ban and the protection of whale sharks in all OSPESCA member states.

29. In the Caribbean region, shark fisheries are of less importance than in the Pacific Ocean, with Costa Rica and Panama as the most important countries in terms of landings and fleet size. In general, there are small-scale coastal fisheries and high seas industrial fisheries that either target sharks or have the species caught as by-catch. This depends on the type of fishing fleet and the countries involved. Sharks are used for local consumption (the meat) and fins are exported. Up to date, 83 species of shark and rays have been reported in this sub-region in the commercial landings.

30. Shark finning is prohibited and whale sharks are protected by OSPESCA regulations. In addition, Honduras and the Dominican Republic have totally banned all types of shark fisheries in their waters.

31. OSPESCA has promoted several regional initiatives on shark fisheries management. Between 2005 and 2008 all countries prepared national plans of action (NPOA- sharks), with three countries formally adopting them. In 2008 a regional shark working group was created. In 2009, regional pilot data collection and biological sampling programmes were implemented. From 2012 onwards, data collections forms (landings and biological sampling), with support from the Inter-American Tropical Tuna Commission (IATTC), have been harmonized, and a capacity building programme on CITES non-detriment findings procedures for sharks listed in Appendix II, with U.S. Department of the Interior support, has been implemented.

32. Mr Perez also mentioned that some challenges are faced because Caribbean and Pacific fisheries have different issues and priorities. In addition, only limited shark research has been carried out with different catch and effort data quality levels and coverage among the countries. Shark stock assessments are a critical need, as well as to apply a standard definition of the different fishing fleets (artisanal, small scale, industrial). The national and the regional plans of actions have been partially implemented. In general terms, the same management, research and control constraints found in shark fisheries are also found in other fisheries in the region (e.g. queen conch, spiny lobster, billfish).

33. Working Group members recognized that OSPESCA regulations seem to be effective in the member countries and that the WECAFC recommendations should largely follow the same measures. A discussion took place about the research and investigation capacity of various institutions to collect the necessary information for shark management and conservation. Difference in approaches by IATTC, ICCAT, OSPESCA, NEAFC and other institutions were also discussed.

SHARKS AND RAYS FISHERIES STATUS AND MANAGEMENT IN SELECTED WECAFC MEMBER STATES

34. Ms Aracely Hernandez (Cuba), made a presentation on shark fisheries and management in Cuba. She presented catch data for sharks and rays, as well as research carried out since the 1990s. She described the development process and approval of the 2015 National Plan of Action of the Conservation and Management Chondrichthyes in the Republic of Cuba. She also showed the guidelines to identify the shark and ray species that are more common in national fisheries in Cuba. A project with the title "Towards the sustainable management of shark and ray fisheries in Cuba¨ was described as well as related training and research activities on species identification. Regulations in place that prohibit shark finning were presented. Finally, ongoing biological research was mentioned that should inform management and conservation measures, such as minimum sizes, seasonal closures, protected areas for birthing or nursery sites and modification of fishing gears.

35. Mr Ian Horsford (Antigua and Barbuda) made a presentation titled "Antigua and Barbuda: Sharks and Rays Fisheries Status and Management Regime". The presentation discussed several initiatives taken to improve knowledge of sharks and rays resources in Antigua and Barbuda waters to improve the conservation and management regime. The presentation noted the artisanal nature of the fisheries with capture production in the range of 30 metric tonnes (live weight) and valued at US$145 000. It was highlighted that revenue from non-consumptive use (e.g., ecotourism interactions with Southern stingrays – US$1.0 million) exceeded capture production revenues. Synopses of two shark fisheries assessment studies carried out with FAO support were also presented. A stakeholder survey of fishers and recreational dive operators indicated that 56.6 percent of respondents felt that shark abundance was either increasing or stable whilst a baited remote underwater video survey yielded comparable results to Bahamas and Cayman Islands with respect to relatively high abundance of three ecologically key species (*Carcharhinus perezi, Ginglymostoma cirratum and Dasyatis americana*). Both studies concluded there was significant potential for expanding the shark ecotourism industry. With respect to the legislative and management regime, it was highlighted there was a need for legislation to address bycatch and ecotourism interactions (safety, user rights, animal welfare, etc.) along with national regulations to prohibit "shark finning" at sea. The latter was however not considered a problem currently in Antigua and Barbuda. Participants were also updated that the NPOA-sharks drafted in 2015 was currently under consideration at the ministerial level. In terms of a way forward, it was highlighted that research was critical towards quantifying key fisheries metrics (age/size at maturity, abundance, diversity, etc.), as well as identifying best practices for ecotourism interactions and options for mitigating bycatch. The issue of food safety regarding large predators (i.e., bioaccumulation of heavy metals) was also raised. Public-private partnerships (e.g., tourism-fisheries) with respect to funding were seen as a mechanism to achieve the aforementioned management/research goals.

36. Ms Cheri McCarty (USA) presented on U.S. Atlantic Federal shark management. She gave a summary of the Federal statute, the Magnuson-Stevens Fishery Conservation and Management Act, which provides NOAA Fisheries the authority to manage Atlantic sharks in Federal waters. She also summarized other relevant domestic statutes that must be complied with when promulgating regulations. Ms McCarty explained that the United States has been managing its Atlantic shark fisheries since 1993 through various regulations such as size limits, permit requirements, retention limits, and size limits. The United States also prepared a National Plan of Action for sharks in 2001 and revised it in 2012. She concluded her presentation discussing the status of some of the U.S. Atlantic shark stocks. NOAA Fisheries manages 46 Atlantic shark stocks and stock assessments are done through SEDAR – the SouthEast Data, Assessment, and Review. Ms McCarty explained that although the U.S. Atlantic shark stocks are healthy overall, there are 5 stocks of sharks that are both overfished and overfishing is occurring; 3 stocks that are overfished; and 2 that are experiencing overfishing. The Magnuson-Stevens Fishery Conservation and Management Act requires annual catch limits (ACLs) to end and prevent overfishing. It also requires the development of a rebuilding plan when a stock is determined to be overfished.

37. Mr Stamatios Varsamos (EU DG Mare) made a presentation on Conservation and management of sharks in the European Union. He described the emotional aspects related to sharks and the main threats to sharks in European waters. He provided global catch data, information on the international legal framework that governs shark fisheries and conservation and the scientific advisory process applied in the EU. Information was also provided on the status of stocks and catches of coastal, pelagic and deep-sea sharks in the EU waters as well as in the Atlantic. The EU action plan on sharks was detailed, the shark finning ban since 2003, the fins-attached policy since 2013, and the implementation of the external dimension of the Common Fisheries Policy of the European Union. At the end of the presentation Mr Varsamos described what the EU sees as the way forward with shark and ray management and conservation in the WECAFC area, which includes: the determination of key shark species/stocks, assessment of conservation status, collaboration with relevant organizations, identification of key priorities and optimizing limited resources, to foster cooperation between fisheries and environmental administrations and to determine funding needs and funding sources.

38. Ms Gelare Nader (Netherlands) from the Dutch ministry of Economic Affairs in The Hague, gave a presentation about the shark sanctuaries in the Caribbean islands of the Netherlands around the two islands of Bonaire and Saba, and the policy challenges associated with the establishment of these sanctuaries. In her presentation she talked about the shark action plan of the Netherlands and the international and Caribbean shark strategy of the Netherlands. She addressed the importance of shark conservation for the islands, hence a separate strategy for this region. In Bonaire and Saba the local governments had acquired knowledge about the added value that these species could have for the islands, and initiated the establishment of this sanctuary. While the sanctuary was being set up for the protection and management of the sharks, the fishermen informed the authorities that sharks were seen as a nuisance for fishermen for many years and contribute to loss of catch and damage to traps and fishing gears. As the authorities bundled the available information, different stakeholders came together and new cooperation was established, leading to constructive solutions for helping the fishermen while managing and protecting the sharks. At the time being the Netherlands is working with the islands and setting up two pilot projects in the shark sanctuaries to reduce shark bycatch using circle hooks and traps designed to reduce bycatch and damage to traps. There are other challenges that could not all be anticipated at the beginning of this road. Shark meat as a local food is one of the points that need to obtain special attention when developing a tailored policy for small islands, as different islands have different cultures and needs. Last but not least Ms Nader touched on monitoring and control as one of the challenges that remain when dealing with management policies of species with little market value, such as sharks in the Caribbean islands of the Netherlands.

39. Ms Daniele Bachew (Trinidad and Tobago) made a presentation on the shark fisheries status and development of an NPOA for Trinidad and Tobago. She described the multispecies and multigear fishery, in which from the over 2000 vessels only 18 directly target sharks. The species most caught are Brazilian sharpnose (*Rhizoprionodon lalandii*), Caribbean sharpnose (*R. porosus*), Smalleye smoothhound (*Mustellus higmani*), Dusky smothhound (*M. cannis*), and immature hammerheads, particularly the scalloped hammerhead (*Sphyrna lewini*). Fishers acknowledged in recent years a change largely qualified as a decrease in the abundance, size and species composition of the sharks in the landings over the years attributed mainly to overfishing, drilling and other associated activities of the oil and gas sector, pollution and trawling. Reference was made also to the fisheries legislative process in Trinidad and Tobago and the efforts to update the legislation. Attention was also given to the importance of data collection aspects, as well the need for monitoring. The latter is an obligation under the UN Fish Stocks Agreement. The presentation ended with the following recommendations: Management of sharks must consider alternatives to sustaining livelihoods with respect to any loss of earnings by fishers who target sharks; limited data to conduct assessments of the major species requires updates; financial and human resources need to be made available or Trinidad and Tobago will only be able to react to external pressures directed at shark management and conservation, instead of being an active participant in contributing to assessments and influencing management positions and outcomes; and stock assessment parameters, which were compiled in 1992, should be updated to obtain more current appreciation of the status of knowledge about the resources.

40. The presentations by the WECAFC members led to WG discussions on a range of issues, including: inconsistencies in shark age determination methods used (underestimation of age), NPOA-Sharks approval processes at national level, traceability of shark products in the value chain, MSC certification of trawl fisheries and the bycatch of sharks in these fisheries, the Barcelona convention, developing regulations that are not punishing for fishers, the need to link environmental and fisheries legislation for shark conservation, the importance and economic impacts of shark tourism, the need for periodic review of IPOAs an RPOAs, and CMS and ICCAT shark related conservation and management measures.

OUTCOMES OF THE REGIONAL SHARKS AND RAYS STOCKS, FISHERIES AND MANAGEMENT ASSESSMENT

41. Ms Irene Kingma presented the draft assessment that she prepared for the RPOA-sharks. The report was based on a questionnaire to WECAFC members and a literature review. The assessment is split into four sections: Species and Stocks, Fisheries and Trade, Perception and Education and Management. The presentation gave an overview of each of these elements and highlighted where there were still data gaps. The section on species and stocks was split into stock assessment information from recognized sources (ICCAT, SEDAR and published data) and the conservation status based on the IUCN red list assessment. The fisheries overview focused on the catch data for FAO area 31 which shows that sharks catches have been going down over the year to approximately 20 000 tonnes for the whole region in 2015. Shark catches are predominantly a bycatch in other fisheries for other nations with only a handful of countries reporting directed shark fisheries. The final version of the assessment will have an overview of the catch information available per country. Apart from trade in meat, shark products are not commonly sold by the countries that responded to the questionnaire.

42. She mentioned further that when asked about perception of sharks, the respondents in the survey stated that overall people still fear sharks and do not necessarily see a value in sharks for either their role in the ecosystem or their value in trade. There is no correlation between the fear for sharks and the presence or absence of education on sharks in the country. The section on management was split into international, regional and national. International management focused on treaties (including CITES and the CMS) and on RFMOs (particularly ICCAT). Regional management focused on the shark legislation and management measures agreed in SPAW and OSPESCA. For national level management the existing NPOA's for the region were listed. The concluding slide gave an overview of the outstanding questions on data and management.

43. WG participants commented on the assessment outcome, provided additional information and mentioned that they would provide additional information to the FAO consultant within two weeks after the meeting to enable her to finalize the assessment. The question was raised if ICCAT would be able to take on shark fisheries management under its mandate, considering the shark stocks and fisheries are much wider than those fished currently by ICCAT managed tuna fleets. It was noted that the IUCN conservation status of various shark species differs from fisheries stock assessments by various RFMOs. The objectives of a fisheries stock assessment are very different from an IUCN conservation status assessment. The updated regional shark assessment can be found in Appendix III. It was noted that not all participants were in a position to endorse the findings of this assessment due to the lack of time, data and agreed methodology.

GLOBAL PROGRAMME FOR CONSERVATION AND MANAGEMENT OF SHARKS STOCKS AND FISHERIES

44. The Senior Fisheries Resources Officer with responsibility for CITES issues and also the focal point for Biodiversity and SIDS at FAO's Fisheries and Aquaculture Department, Mr Kim Friedman, presented the WECAFC meeting delegates a talk that highlighted the role of FAO in regards to the extra-ordinary management of 'protected' species. This offered a viewpoint of why and how species are designated as threatened or endangered, and the requirement and delivery of fisheries management implementation to deal with these stocks – to overcome the provisions required for trading in for example, CITES listed species. Mr Friedman offered a range of international evidence from FAO studies that assess the successes and challenges of operating in this changing management paradigm. Mr Friedman also gave some history of how commercially traded sharks and rays have come under trade regulations, especially since 2013, and the repercussions on legality and recording of catches and trade. To conclude, Mr Friedman looked forward to 2018 to 2020, and questions of which countries and regions FAO will be focusing assistance to progress shark and rays management in the upcoming FAO biennium.

45. The role and functioning of the FAO expert panel that reviews proposals for CITES listing was discussed by the WG and it was mentioned that FAO sends out requests to its members to provide background information for the process.

CARIBBEAN REGIONAL PLAN OF ACTION FOR CONSERVATION AND MANAGEMENT OF SHARKS AND RAYS - RPOA-SHARKS

46. Mr Ramón Bonfil (FAO consultant) gave a presentation of the draft RPOA-sharks, as prepared by him and shared with the WG before the meeting. As an introduction, he explained the reasons behind the need for shark conservation, mentioned the main initiatives in this area, and highlighted FAO's International Plan of Action for the Conservation and Management of sharks as the genesis of the RPOA-sharks. He then explained the particular characteristics of sharks and their fisheries that make their management complex. This was followed by a list of the objectives of the RPOA-sharks and a brief summary of the current situation of sharks and their fisheries in the WECAFC region. The core of the RPOA-sharks was a list of nine proposed key lines of action: Research; Fisheries data collection (Monitoring); Region-wide cooperation and data sharing; Capacity building; Management measures; Surveillance and enforcement; Dissemination, public awareness and environmental education; Financing; and Review, update and evaluation. His presentation then detailed proposed specific actions under each of these lines, including the main objective and the specific goals each action would aim towards, the indicator that could be used to evaluate progress under each action, and the proposed timeframe for implementation.

47. A detailed discussion of the draft RPOA sharks followed this presentation, during which a large number of useful suggestions were made by various participants. The mandate of ICCAT with regards to the management of bycatch of sharks in tuna fisheries was clarified and the current role of WECAFC to promote harmonized and voluntary measures for shark management and conservation in the region that encompass a mandate wider than that of ICCAT, as it is not limited to bycatch and/or pelagic sharks, was emphasized. All of these comments helped improve the RPOA-sharks.

48. The experts agreed to provide their comments on the draft RPOA before mid-November, to enable the consultant to finish his task. The USA kindly agreed to further work on the draft RPOA in early 2018, together with the WG convener and other WG members, in order to have a version ready for final review and adoption by WECAFC 17.

TORS AND DRAFT WORK PLAN OF THE WORKING GROUP

49. The WG convener, Mr Mauro Gongora, presented the updated draft Terms of Reference (TORs) and draft Work Plan 2018-2020 of the WG. Both documents were amended as necessary by the WG and are made available in Appendices D and E respectively. The WG members were requested to share the workplan with their colleagues and take initiative to contribute to the implementation of the work plan.

REGIONAL RECOMMENDATIONS ON SHARKS AND RAYS CONSERVATION AND MANAGEMENT

50. A set of draft WECAFC Recommendations on sharks and rays conservation and management, as prepared by the secretariat, FAO and convener before the meeting and shared in English and Spanish, were presented by Mr Van Anrooy, WECAFC Secretary. Three draft recommendations were presented:

    - On the fisheries management and conservation of sharks and rays in the WECAFC area
    - On the removal of fins of sharks on board and bycatch reduction by vessels fishing in the WECAFC area
    - On applying a precautionary approach to fisheries of threatened species of sharks and rays in the WECAFC area

51. Reference was made to the decisions at WECAFC 15 in 2014 which defined for the purpose of clarity and in line with best practices, the use of WECAFC Resolutions and Recommendations. Both conform to the WECAFC objective to promote the effective conservation, management and development of the living marine resources in the WECAFC area and address common problems of fisheries management and development faced by Members, and are legally non-binding.

    - WECAFC Recommendations promote harmonized sub-regional or regional fisheries conservation, management and development, establish regional measures, and endorse fisheries management plans for sub-regional or regional implementation.
    - WECAFC Resolutions encourage all stakeholders in the WECAFC area to implement or support implementation of sub-regional, regional or international voluntary or binding instruments related to fisheries, or address other issues of common interest.

52. It was recalled that recommendations would be needed in view of the downward trend in stocks of various sharks and rays species in the region and the unsustainable fishing practices and IUU fishing of sharks and rays that are continuing. National level measures alone are inadequate to make a significant impact on stocks in the region as a whole. WECAFC recommendations would facilitate harmonization of conservation and management approaches, and enforcement of national level fishing regulations and measures, to increase impact. Moreover, they would support follow-up and increase application/implementation of ICCAT and neighbouring RFMO measures, as well as CITES decisions, SPAW and FAO IPOA. Reference was made to ICCAT Recommendations [09-07] on thresher sharks (Family Alopiidae), [10-06] on shortfin mako sharks (*Isurus oxyrinchus*), [10-07] on oceanic whitetip sharks (*Carcharhinus longimanus*), [10-08] on hammerhead sharks (Family Sphyrnidae except *S. tiburo*), and [11-08] on silky sharks (*Carcharhinus falciformis*), as well as the 1999 International Plan of Action – sharks. It was stressed that WECAFC Recommendations are generally issued by the Commission to support compliance with WECAFC conservation and management measures. Until RFMO establishment these recommendations will be non-binding/ voluntary.

53. It was then explained that there is no need to re-invent the wheel and that current best- practices of other RFMOs/RFBs can form the basis for the WECAFC shark recommendations, such as: GFCM recommendation (GFCM/36/2013/3); ICCAT recommendations (04/10, 09/07, 10/06, 10/07, 10/08); and NEAFC recommendation (10/2015). The recommendations for discussion further include points raised by NEAFC secretariat, incorporate latest info from CITES and SPAW. The process of drafting, review, sub-regional and regional endorsement of the recommendations was clarified as well. The meeting agreed to go through the draft recommendation paragraph by paragraph to address the main points from a technical point of view and finalize them for review by the WECAFC Scientific Advisory Group (SAG), CRFM and OSPESCA and final review and endorsement by WECAFC 17 in 2018.

54. The draft recommendations were finalized from a technical perspective by the WG and it was agreed to forward them to the SAG for further review. The WG technically endorsed recommendations can be found in Appendix VI.

55. During the discussion of the draft conservation and management recommendations, the United States expressed support for the measures in principle, but noted they were unable to support the draft recommendations at the working group meeting since they were premature and linked to documents that were not yet complete, such as the Regional Plan of Action. The United States stated they would provide in-line edits to the recommendations intersessionally, in particular to align them with existing efforts in the region. The United States reiterated they would not block consensus on forwarding the recommendations to the SAG, but also reserved its position.

ANY OTHER MATTERS

56. On request of the WG Mr van Anrooy made a short presentation on a joint CRFM/EU DevCo, FAO/WECAFC/FIRMS project proposal with the title “Fisheries information technology innovations for resource management and climate change adaptation in the Caribbean (FIT4CC). This project is under development within the WECAFC Fisheries Data and Statistics Working Group and has been endorsed by the CRFM Ministerial Council. It is finalized by FAO for official submission to EU DevCO and the CARIFORUM Secretariat in early 2018, and would support also capacity building for data and information collection and analysis for shark fisheries management and conservation in the region.

57. The WG members showed great interest in this project and looked forward to its implementation.

58. The WG was made aware that IATTC offers scholarships for persons studying sharks and for shark data collection in the Pacific.

CLOSURE OF THE MEETING

59. Mr Lionel Reynal, WECAFC Chairperson, and Mauro Gongora, WG Convener, thanked FAO and the WECAFC Secretariat for the organization of the 1st meeting of the WG, and NOAA for having supported this 1st meeting. They thanked the WECAFC Secretary, who is departing from the region, for his support to the WG, and wished him success in his future endeavours. They thanked all the experts for their active participation in the meeting and wished everyone a safe return home.

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APPENDIX II – AGENDA

Tuesday 17 October 2017

Morning session

09.00 Registration of participants

09.15 Opening of the session

09.45 Introduction of delegates

10.00 Introduction of the Working Group – Convener: Mauro Gongora

10.15 Election of the Chairpersons and rapporteurs

10.20 Adoption of the agenda and arrangements for the Working Group

10.30 Coffee Break

10.45 Summary of FAO-WECAFC work on Sharks – Raymon van Anrooy (WECAFC)

11.00 Sharks and Rays developments at CITES – Daniel Kachelries (CITES) -via skype

11.30 Sharks and rays fisheries status and management in CRFM member states (Maren Headley, CRFM)

12.00 Lunch Break

Afternoon session

13.00 Sharks and rays fisheries status and management in OSPESCA member states (Manuel Perez, OSPESCA)

13.30 Sharks and rays fisheries status and management in selected WECAFC member states.

- Cuba
- Antigua and Barbuda
- United States of America
- European Union

15.00 Shark fisheries: status and development of an NPOA for Trinidad and Tobago (Danielle Bachew, Trinidad and Tobago)

15.15 The shark sanctuary in the Carribean Netherlands: challenges and way ahead (Gelare Nader, The Netherlands)

15.30 Coffee Break

15.45 Outcomes of the regional sharks and rays stocks, fisheries and management assessment assessment (Irene Kingma, FAO consultant)

16.30 Plenary discussion on the outcomes of the assessment – provision of comments and inputs for finalizing of the assessment report

17.00 End of the first day of the meeting

Wednesday 18 October 2017

Morning session

09.00 Retrospective and forward facing view of the global program for conservation and management of sharks stocks and fisheries (IPOA-sharks, CITES, CMS and FAO-Member Countries work on sharks and rays (Kim Friedman, FAO)

09.45 Presentation of the draft Caribbean Regional Plan of Action for sharks and rays conservation and management - RPOA-Sharks (Ramon Bonfil, FAO consultant)

10.30 Coffee Break

11.00 Plenary discussion on the draft RPOA

12.00 Lunch Break

Afternoon session

13.00 Working Group discussions on parts of the draft RPOA

15.30 Coffee Break

16.00 Presentation of Working Groups findings and recommendations

17.00 End of the second day of the meeting

Thursday 19 October 2017

Morning session

09.00 Presentation of the updated TORs and draft Work Plan of the Working Group (Mauro Gongora, Working Group Convener) followed by plenary discussion

10.00 Plenary discussion on key aspects of the draft RPOA-Sharks

10.30 Coffee Break

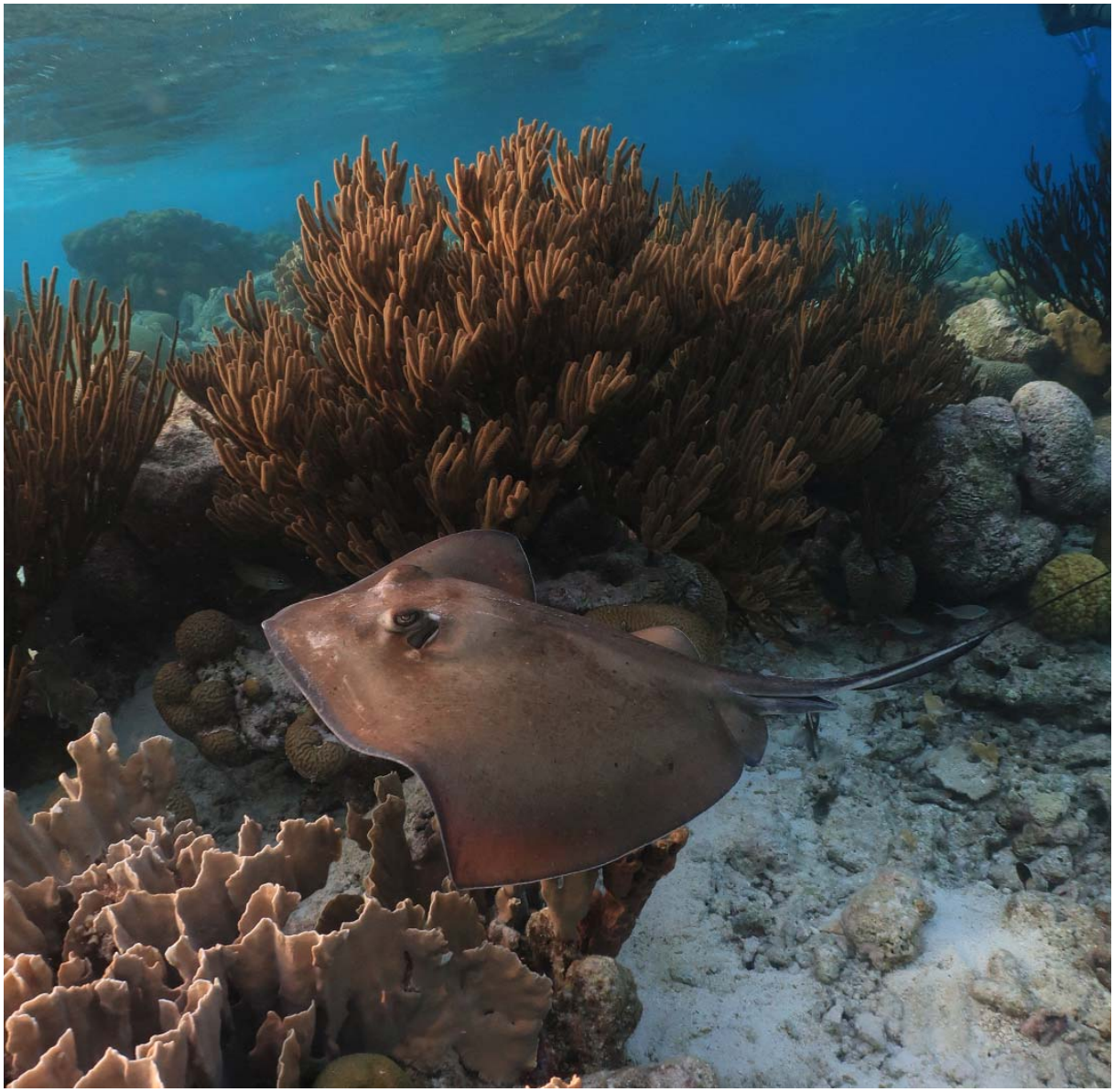
11.00 Presentation of a draft WECAFC Recommendation on sharks and rays conservation and management (Raymon van Anrooy, WECAFC) followed by plenary discussion

11.30 Any other matters

11.45 Date and Place of the next steps

12.00 Closure of the meeting

APPENDIX III – ASSESSMENT REPORT ON SHARK AND RAYS IN THE WIDER CARIBBEAN REGION



Overview of stock status, fisheries, catches and management for the Western Central Atlantic Fishery Commission (WECAFC)

November 2017

Report prepared by Irene Kingma - FAO consultant

CONTENTS

SCOPE

AREA

The area of competence of the Western Central Atlantic Fishery Commission (WECAFC) is some 18 million km^2 and includes all marine waters of the Western Central Atlantic (FAO Area 31) and the northern part of Area 41 (Southwest Atlantic). For comparison, the size of the area of competence of WECAFC is larger than the land area of the USA and Brazil combined. Some 51 percent percent of the mandate area is area beyond national jurisdiction (ABNJ) and 89 percent of the waters are over 400 meters in depth. The WECAFC mandate area borders with the North Atlantic Fishery Organization (NAFO) in the north, the Northeast Atlantic Fishery Commission (NEAFC) in the north east and the Fishery Commission for the Eastern Central Atlantic (CECAF) in the east. Moreover, within the WECAFC mandate area the Caribbean Regional Fisheries Mechanism (CRFM) and the Organization for Fisheries and Aquaculture of Central America (OSPESCA) are active. WECAFC is collaborating with CRFM and OSPESCA in the Interim Coordination Mechanism (ICM) for sustainable fisheries and operates jointly with these organizations a range of working groups, including the regional Working Group on Shark Conservation and Management. The WECAFC also collaborates with the International Commission for the Conservation of Atlantic Tunas (ICCAT) in terms of improving fisheries governance in the ABNJ of the Atlantic Ocean and capacity building of member states on this subject.

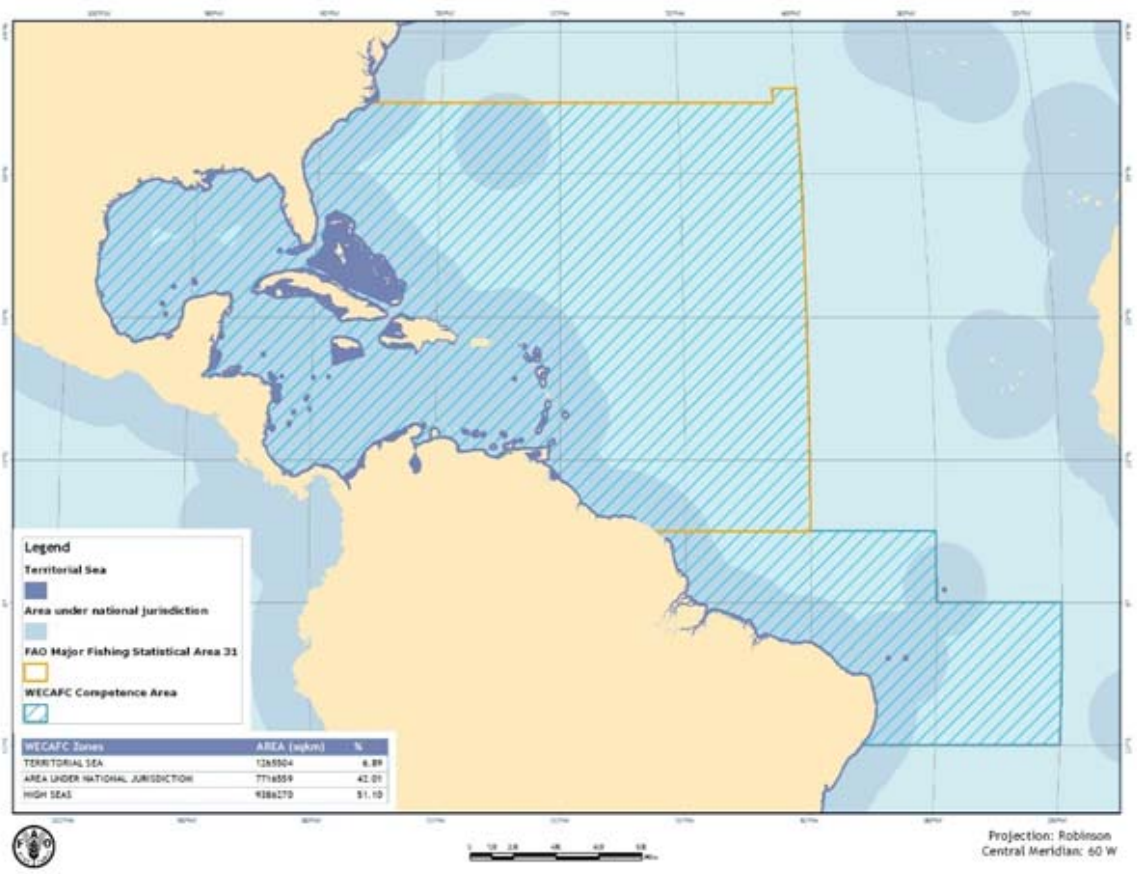


Figure 1, WECAFC area map

Membership is open to coastal States whose territories are situated wholly or partly within the area of the Commission or States whose vessels engage in fishing in the area of competence of the Commission that notify in writing to the Director-General of the Organization of their desire to be considered as members of the Commission.

The current members of WECAFC are: Antigua and Barbuda, Bahamas, Barbados, Belize, Brazil, Colombia, Costa Rica, Cuba, Dominica, Dominican Republic, European Union, France, Grenada, Guatemala, Guinea, Guyana, Haiti, Honduras, Jamaica, Japan, Mexico, Netherlands, Nicaragua, Panama, Republic of Korea, Saint Kitts and Nevis, Saint Lucia, Saint Vincent/Grenadines, Spain, Suriname, Trinidad and Tobago, United Kingdom, United States of America, Bolivarian Republic of Venezuela.

ASSESMENT INFORMATION

All WECAFC members were asked to fill out a survey on shark fisheries, management and the perception of the people about sharks in their countries, as well as a questionnaire on the national fisheries. The focus of the survey was on nations with a known fishery or bycatch of elasmobranchs. On the 31st of October 16 countries had filled in the survey, and 12 countries had completed the questionnaire. This assessment was based on the information provided through the survey responses, additional information provided by the respondents via e-mail, information available in FAO's FishStatJ database and a literature review of specific information available about the fisheries in the region.

On 17-19 October 2017 a meeting of the joint WECAFC/CITES/OSPESCACRFM/CFMC Working Group on shark conservation and management was held in Barbados to discuss, amongst others, the draft assessment and a draft Regional Plan of Action for Sharks for the WECAFC area. Participants from 15 member states as well as observers from 5 non-governmental organizations participated in the 3 day meeting.

ACRONYMS AND ABBREVIATIONS

CITES – Convention on International Trade in Endangered Species of Wild Fauna and Flora

CMS – Convention on the Conservation of Migratory Species of Wild Animals

CPUE – Catch per unit effort

EEZ – Exclusive Economic Zone

FAD – Fish aggregating device

FAO – Food and Agriculture Organization of the United Nations

FMP – Fishery Management Plan

IATTC – Inter-American Tropical Tuna Commission

ICCAT – International Commission for the Conservation of Atlantic Tunas

IUCN – International Union for Conservation of Nature

MPA – Marine Protected Area

NOAA – National Oceanic and Atmospheric Administration (USA)

NPOA – National Plan of Action for the Conservation and Management of Sharks

RFMO – Regional Fisheries Management Organization

SSG – Shark Specialist Group of the IUCN Species Survival Commission of the IUCN

SHARK – Unless specified otherwise in this report, 'sharks' are defined as all species in the class *Chondrichthyans* and include sharks, skates, rays and chimaeras

TAC – Total allowable catch

SPECIES

The Western Central Atlantic supports 153 species of chondrichthyans from 35 families, comprising 20 families of sharks (85 species), 13 families of batoids (64 species), and 2 families of chimaeras (4 species). A full overview of species can be found in Annex 1 of this report.

STOCK STATUS

There is limited information available on the status of shark stocks in the WECAFC area. Historically these species where not deemed economically important and there was little incentive to collect data on population sizes or other demographics. There is however consensus that sharks in the region exhibited a strong decline in the past decades. *Baum et.al* modeled in 2003 that the shark population in the whole of the North Atlantic have declined with as much as 90 percent for specific populations due to overfishing.

NOAA STOCK ASSESMENTS & STOCK STATUS REVIEWS

The United States through the National Oceanic and Atmospheric Administration (NOAA) is the only WECAFC member that carried out stock assessments and stock status reviews for elasmobranch within (part of) the WECAFC area.

For Manta and Mobula rays a global assessment and management strategy was published in 2016. The researchers found that even though there was some management in the area and fishing mortality was low, the extremely low fecundity and slow growth of manta and mobula rays made them highly vulnerable to over exploitation. This study also served as input for a status review on manta rays conducted by NOAA to assess if the status of Giant Manta Ray (*Manta birostris)* warranted listing under the US Endangered Species Act.

Another NOAA status review was carried out for Scalloped hammerhead (*Spyhrna lewini*) in 2013. This was a stock assessment from 2009 that was used for the main land (excluding the US Virgin Islands and Puerto Rico). It concluded that the USA, Brazil and Mexico all had had large catches of scalloped hammerhead, but that USA and Mexico had curtailed these. While the population of this species in the Western Central Atlantic had decreased with up to 83 percent it was not at risk of extirpation. The population along the US coast and in the Gulf of Mexico was increasing, however the southern part of the population was considered severely depleted.

Six shark species' stocks in the South Atlantic and Gulf of Mexico where assessed by the SouthEast Data, Assessment, and Review (SEDAR). The Gulf Smooth hound (*Mustelus sinusmexicanus*), Dusky shark (*Carcharhinus obscurus*) Atlantic Smooth Dogfish Shark (*Mustelus canis*), Atlantic Sharpnose (*Rhizoprinodon terraenovae*). Blacktip shark (*Carcharhinus limbatus*) and Bonnethead (*Sphyrna tiburo*) were assessed between 2012 and 2015. Gulf Smoothhound, Atlantic sharpnose, Blacktip shark and Bonnethead were assessed as being exploited within sustainable limits. For Atlantic Smooth dogfish insufficient information was available to make an assessment and the population was deemed to be a species complex together with Florida dogfish. Dusky shark was found to have been severely overexploited in the past and stocks were in need of rebuilding.

ICCAT ASSESSMENTS

The International Commission for the Conservation of Atlantic Tuna (ICCAT) is tasked with the management of pelagic, oceanic and highly migratory shark species caught in the pelagic fleets operating in its area. The Sharks Working Group of ICCAT is responsible for providing the scientific advice on pelagic, oceanic and highly migratory shark species that are caught in association with ICCAT

fisheries. Full assessments are carried out for three species: porbeagle (*Lamna nasus,* not present n WECAFC area) blue shark (*Prionace glauca*) and shortfin mako shark (*Isurus oxyrinchus*). Scientific advice is also provided for bigeye thresher (*Alopias superciliosus*), both species of thresher (*Alopias vulpinus & Alopias supercyllos*); silky shark (*Carcharhinus falciformis*); oceanic whitetip shark (*Carcharhinus longimanus*); dusky shark (*Carcharhinus obscurus*); sandbar shark (*Carcharhinus plumbeus*); night shark (*Carcharhinus signatus*); tiger shark (*Galeocerdo cuvier*); longfin mako (*Isurus paucus*); pelagic stingray (*Pteroplatytrigon violacea*); scalloped hammerhead (*Sphyrna lewini*); great hammerhead (*Sphyrna mokarran*); Smooth hammerhead (*Sphyrna zygaena*).

The mako shark was first assessed in 2012 and the assessment was updated 2017. Where the 2012 assessment concluded that mako shark was not overfished this was not the conclusion of 2017. The latest conclusion is that the North Atlantic population is being overfished. A 70-80 percent reduction in fishing would be needed to halt the decline, and that even if all fishing for the species halted directly the chance of it's recovering to sustainable levels (Bmsy-level) by 2040 is only 54 percent. For the southern population there is not enough data available to run a robust model. The researchers advise increasing the research and data collection effort for this stock and do indicate there is a probability that this stock continues to experience overfishing.

The assessment of blue shark stems from 2015 and this study concluded that both the Northern and Southern blue shark stocks did not experience overfishing. They noted here as well that the information on the Southern stocks is limited compared to the Northern stocks and that they could not rule out this stock would be overfished in the near future. The assessment for blue shark will be updated in 2021.

The porbeagle was last assessed in 2009 and an assessment is planned for 2019, together with ICES (International Council for the Exploration of the Sea).

Ecological risk assessments undertaken by ICCAT for eleven pelagic sharks in 2008 found that all these species where susceptible to overfishing due to their slow life cycle. It further indicated that the bigeye thresher has the lowest productivity and highest vulnerability to fishing pressure, followed by the mako shark and the oceanic white tip shark. This assessment was updated in 2011 and based on new information silky shark was now deemed the species most at risk.

ICCAT acknowledges that most of the other species are data-limited species and recommends starting biological projects and data collection in order to provide better advice in the future. Several ICCAT Recommendations support this and request that research should be implemented on those other shark species, specifically in the cases of hammerheads and thresher sharks.

OTHER ASSESMENT AND INFORMATION

In recent years increased interest in shark management and conservation has sparked an increase in the need for data to be available and new studies are carried out.

In 2017 an assessment was published for whale shark (*Rhincodon typus)* in the Western Central Atlantic using photo identification. This study showed clear annual migration patterns and strong inter-annual site fidelity for individual sharks in the Northern Caribbean.

Several studies have been conducted on both Sawfish species, aimed at finding the last pockets of these species in the Wider Caribbean region and to facilitate conservation of these species.

The Dutch government commissioned a report on the status of fish stocks and fisheries around the Dutch Caribbean islands of Bonaire, Saba and Statia. The study found few commercial shark landings on these islands, but there was a substantial bycatch of nurse sharks in the spiny lobster traps of the island of Saba.

A global shark research project was launched in the summer 2015, with a multi-institutional team conducting surveys of sharks, rays, and other types of marine life on coral reefs using baited remote underwater video surveys (BRUVs). It surveys more than 216 reefs found in four regions: the Western Atlantic, the Indian Ocean, the Coral Triangle, and the Pacific Ocean. Each reef will be sampled with 50 individual BRUV deployments. The data will be stored in a global, open-access shark and ray survey database that can be used to prioritize research needs and management and conservation. Activities in the WECAFC area are ongoing.

Image: BRUV deployments in the WECAFC area per (oct 201) (● finished, ● planned)

CONSERVATION STATUS

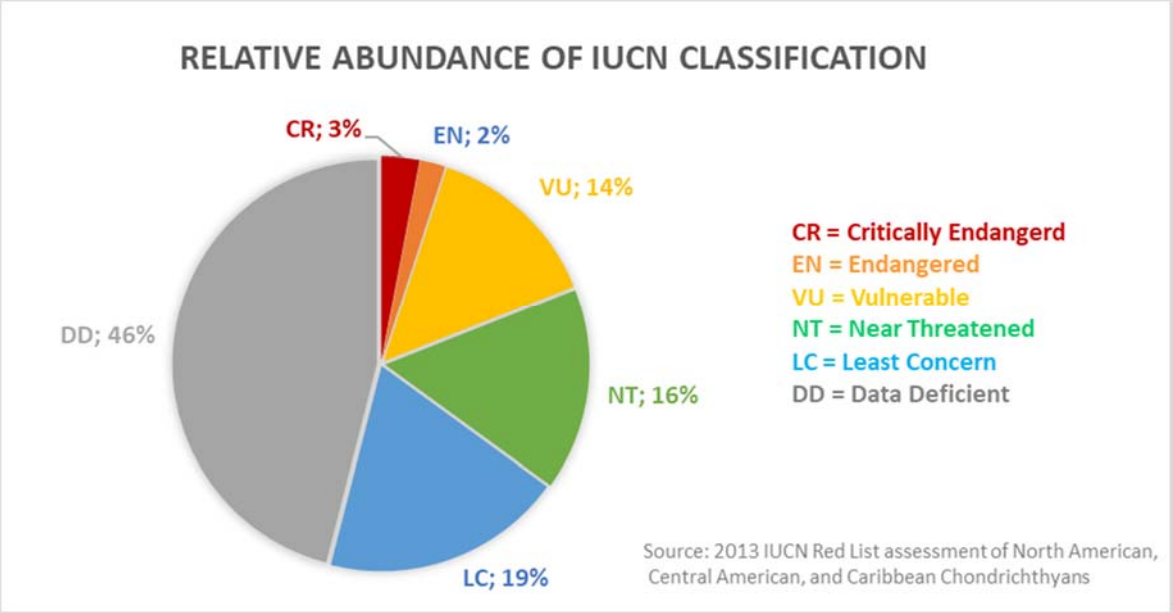
The IUCN Red List of Threatened Species is one of the most well-known objective assessment systems for classifying the status of plants, animals, and other organisms threatened with extinction. The International Union for Conservation of Nature (IUCN) unveiled this assessment system in 1994. It contains explicit criteria and categories to classify the conservation status of individual species on the basis of their probability of extinction by cladding them in 1 of 8 categories (Extinct, Extinct in the wild, Critically Endangered, Endangered, Vulnerable, Near Threatened, Least Concern and Data Deficient). Though originally developed for mammals and birds living on land the list has expanded over the years to include more and more species and groups. In 2012 an assessment of sharks was published for the first time.

Red list assessments for sharks are conducted by the IUCN's Shark Specialist Group. Their most recent report on the condrichtians in the WECAFC area stems from 2013 (report on the conservation status of North American, Central American, and Caribbean Chondrichthyans; Kyna, *et al.*, 2013). The report gives a classification of the conservation status of the sharks, batoids and chimera in the region. In their assessments 1 species of shark and 3 batoids species are Critically Endangered (CR), 3 sharks species and 1 batoid are endangered (EN) in the region and 17 shark species and 5 batoids are vulnerable (VU) (Table 1).

Species	Common name	Global Red List category	Specific for Western Central Atlantic	CITES Status
SHARKS				
Isogomphodon oxyrhynchus	Daggernose Shark	CR		
Sphyrna lewini	Scalloped Hammerhead	EN	Subpopulation: EN	
Sphyrna mokarran	Great Hammerhead	EN		Appendix II
Squalus acanthias	Spiny Dogfish	VU		
Centrophorus granulosus	Gulper Shark	VU	Region: DD	
Rhincodon typus	Whale Shark	VU		Appendix II
Carcharias taurus	Sand Tiger	VU		
Odontaspis ferox	Smalltooth Sand Tiger	VU		
Alopias superciliosus	Bigeye Thresher Shark	VU	Region: EN	Appendix II

Species	Common name	Global Red List category	Specific for Western Central Atlantic	CITES Status
Alopias vulpinus	Common Thresher Shark	VU	Region: VU;	Appendix II
Carcharodon carcharias	Great White Shark	VU		Appendix I
Cetorhinus maximus	Basking Shark	VU		Appendix I
Isurus oxyrinchus	Shortfin Mako	VU		
Isurus paucus	Longfin Mako	VU		
Carcharhinus longimanus	Oceanic Whitetip Shark	VU	Region: CR	
Carcharhinus obscurus	Dusky Shark	VU	Subpopulation; EN	
Carcharhinus plumbeus	Sandbar Shark	VU		
Carcharhinus signatus	Night Shark	VU		
Sphyrna tudes	Smalleye Hammerhead	VU		Appendix II
Sphyrna zygaena	Smooth Hammerhead	VU		Appendix II
BATOIDS				
Pristis pectinata	Smalltooth Sawfish	CR		Appendix I
Pristis perotteti	Largetooth Sawfish	CR		Appendix I
Narcine bancroftii	Caribbean Electric Ray	CR		
Malacoraja senta	Smooth Skate	EN		
Diplobatis colombiensis	Colombian Electric Ray	VU		
Diplobatis guamachensis	Brownband Numbfish	VU		
Diplobatis pictus	Painted Electric Ray	VU		
Gymnura altavela	Spiny Butterfly Ray	VU		
Manta birostris	Giant Manta Ray	VU		Appendix II

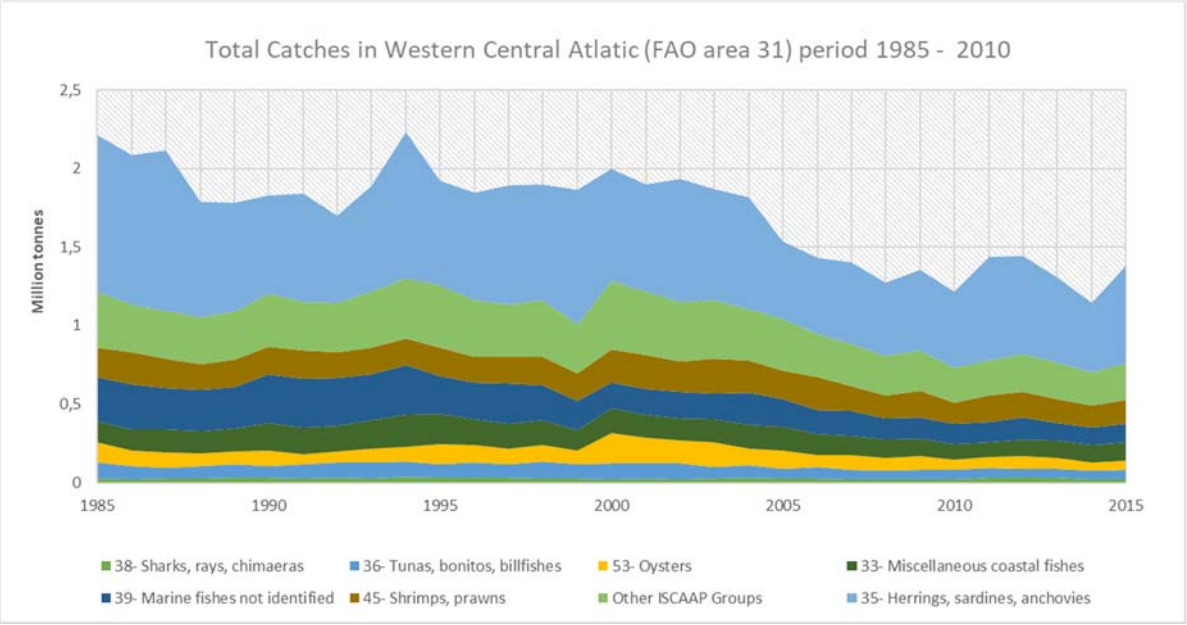
The IUCN-Shark Specialist Group classifies 46 percent of the shark species in the area as data deficient and emphasizes that increasing efforts in data collection is one of the main priorities for the region.



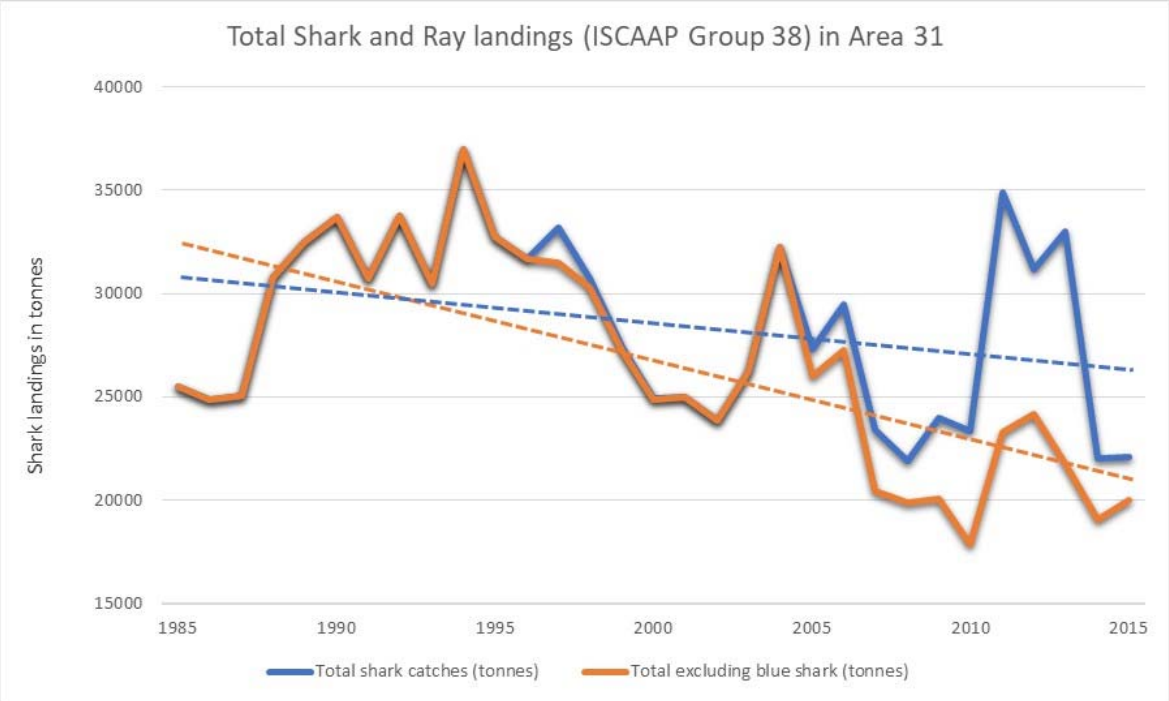
FISHERIES AND CATCHES

The countries fishing in the Western Central Atlantic (area 31) have an active fishing fleet with a wide variety of métiers and target species. The majority of fishing vessels used can be classified as small scale, coastal fisheries, but many nations have pelagic fisheries and other large-scale fisheries as well. Coastal fisheries tend to fish in coral reef habitats or in river outlets along the South American coast. Several countries also practice deep sea fisheries, mainly line fisheries for large bony fish and lobster fisheries with traps is common as well.

For FAO Major Fishing Area 31 the largest part of capture fisheries production consists of small pelagics, like gulf menhaden and sardines. Other commercially important species are spiny lobster, queen conch, prawns and tuna.



Only limited data are available on shark catches in the area. Few countries report species specific landings, most group them as sharks nei[1] and rays nei. Shark landings in the Western Central Atlantic have gradually decreased since the mid 1990's with the exception of the period from 2009 to 2013 when a dedicated fishery for blue sharks was catching significant numbers in the area. These catches were mainly from Spanish and Belize flagged longline vessels. The reduction of the catches could be a result of reduced fishing effort, operators moving on to other species, depletion of the stocks or a multitude of factors.



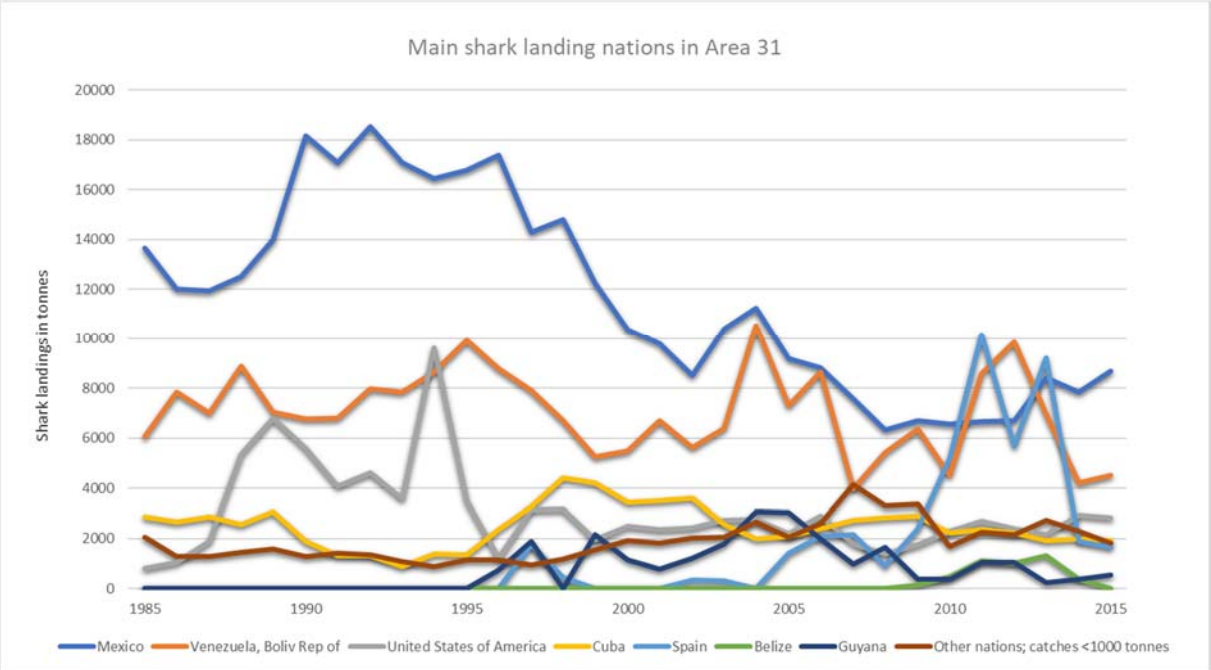
In the years 2011 to 2013 Spanish vessels reported landings of over 11 000 tonnes of blue shark from Area 31, accounting for a third of all shark catches in the region for those years. If these blue shark catches are disregarded the negative trend in shark catches is more profound. In 2010 Spanish large scale vessels started a longline fishery for blue shark in the area. There is growing concern about the sustainability of this fishery, which is managed under ICCAT.

It needs to be noted here that due to the particular life history of sharks with slow growth, low fecundity and long gestation even small catches can have a major impact on some stocks. Especially for species with a small distribution range a limited extraction can have serious negative effects on the stock.

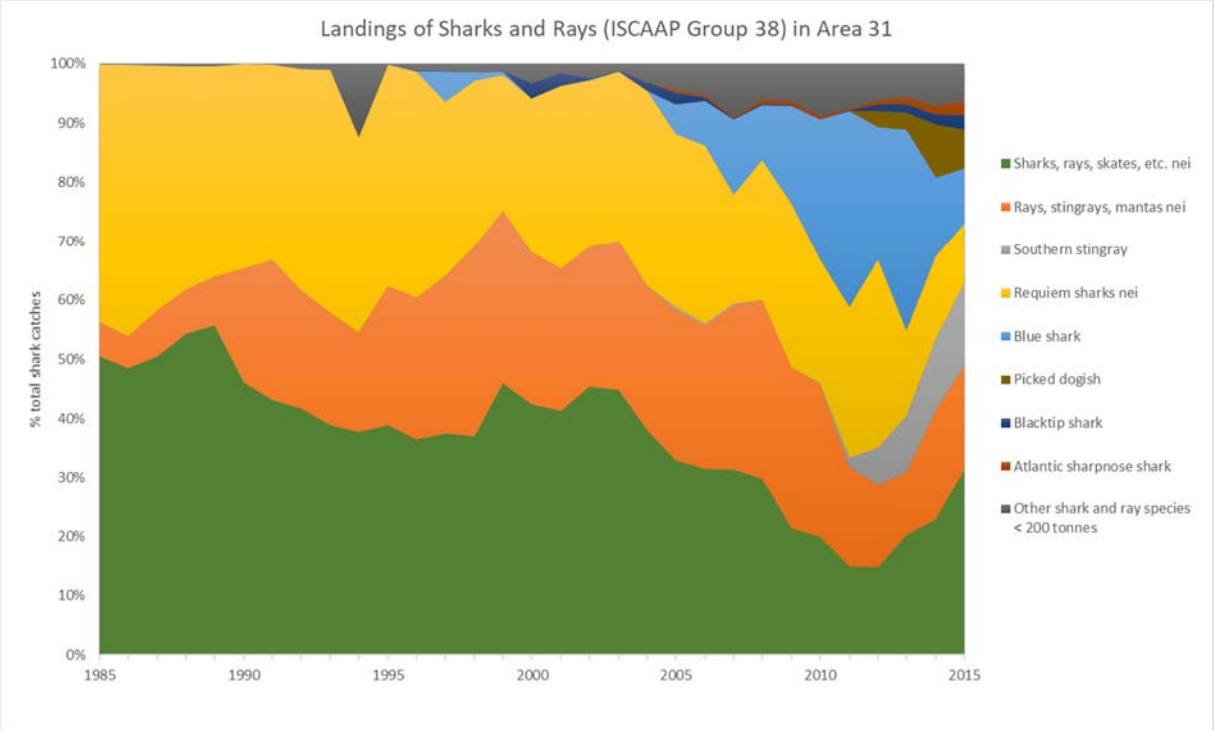
A few countries account for the majority of shark catches in the area. Traditionally Mexico had the largest catches of sharks. While the shark landings by Mexico have dropped considerably in the last decade the country is still one of the major shark catching nations in the region. Over one-third of Mexico's catches consists of southern stingray. As stated above Spain became a major shark finish nation in the region from 2009 onwards but has reduced its effort in recent years. Belize shark harvests have reduced since it adopted strict management policies for its longline fleet and the specific targeting of sharks seems to have seized.

[1] Nei = not elsewhere included, and is used to group species that are not individually identified

It has been suggested in various WECAFC meetings that currently reported shark landings by Suriname, Guyana and Trinidad and Tobago are a significant underestimation. Sampling of local fish markets in these countries and trade information available through CITES supports this statement, although time series are limited as commercially traded shark species where only listed in recent years.



In recent years species specific reporting of shark and ray landings has increased, but the short time series make it impossible to make species-level statements on trends based on the limited species-specific data available.



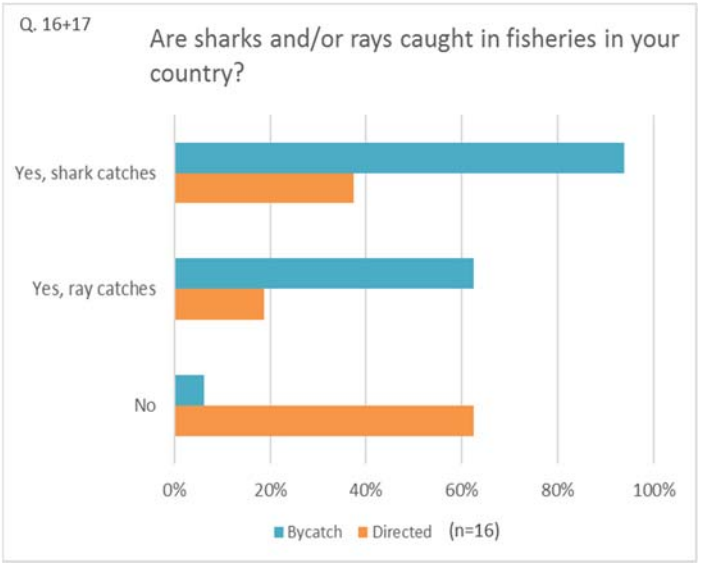
In the WECAFC area most shark mortality occurs as bycatch in other fisheries. The table below presents an overview of the most common fisheries by habitat, outlining what shark (by) catch occur in the various fisheries.

Habitat	Fishery category	Description	Shark catches & bycatches
Pelagic waters	Small coastal pelagic fishery	Near shore fishery targeting small fish living in the water column directly above continental shelves near the shoreline through netting	Bycatch of shark species associated with the target species
	Small offshore pelagic fishery	Mainly targeting medium sized fish (generally tuna and tuna like species) living in the open waters using seining, netting, line fishing and trawling	Bycatch of shark species associated with the target species
	Large offshore pelagic fishery - nets	Trawl and seine fisheries targeting small schooling fish (herring, anchovies etc.) & seining for tuna.	Bycatch of shark species associated with the target species
	Large offshore pelagic fishery – long line	Longline fisheries targeting large fish species like tuna, swordfish, marlin and shark	Targeted shark fisheries for larger pelagic species (blue, blacktip, short fin mako shark etc. Common bycatch of sharks associated with the bycatch species
	Recreational fisheries for large pelagic species	Game fishing in coastal waters for large pelagics, mainly billfishes, dolphinfish, wahoo and tuna.	Bycatch in fishery for billfish In some cases, catch and release is practiced. US has shark tournaments where catch is landed
Coral reefs	Shallow shelf and reef finfish fishery	Line and spear fisheries for species living on or over coral reefs or associated with coral reefs	Bycatch of reef associated shark species in line fishery. Reports of bycatch of Caribbean reef, nurse, hammerhead and tiger shark.
	Shallow shelf and reef lobster fishery	Spear fishery or trap fishery	Incidental bycatch of elasmobranchs in traps No bycatch in spear fishery
The continental slope & deep water	Shelf and deep slope fishery	Trap and pot fisheries for lobsters and for deep water snappers and groupers.	Bycatch of nurse sharks reported in traps and lines, incidental bycatch of deep water shark species

Habitat	Fishery category	Description	Shark catches & bycatches
		Line fishery for snapper and grouper	
Seafloor habitat – soft substrate demersal	Shrimp fishery	Trawling and netting for shrimp in inshore and demersal areas	Bycatch of coastal elasmobranchs in nets. Many endangered batoid species are (potentially) caught as bycatch in these fisheries.
Seafloor habitat – soft substrate demersal	Conch fishery & Echinoderm fishery	Specialized dive fishery for queen conch, white sea urchin and sea cucumber	No bycatch

INFORMATION ON CATCHES FROM SURVEY

An on-line survey was conducted among the WECAFC membership on "data collection and fisheries structure for the Regional Plan of Action for Sharks in the wider Caribbean region" in the period August -October 2017. The number of member countries that responded to the survey was limited, with only 16 countries completing the survey questionnaire or part of the survey[2].



Six countries reported directed fishery for sharks (Antigua, US, Belize, Panama, Cuba and Barbados). The USA and Cuba reported a directed fishery for rays. Types of fisheries described are diverse, ranging from pelagic longline operations to small scale coastal rod and reel fisheries.

All countries apart from Belize reported bycatch of sharks in their fisheries. Many countries reported bycatch in coastal artisanal fisheries (hook & lines, traps, set nets & beach seines). Some countries reported also bycatch in long line fisheries and in deep water fisheries for lobster and red fish (traps).

Belize and the USA only allow landings of sharks and rays if the operator is licensed for shark fisheries. The Cuban state fisheries landings (accounting for 62 percent of total national fisheries production) consist for 3.7 percent of sharks and 10.7 percent of rays.

Most respondents could not provide information on the number of people employed in shark fisheries. Only the countries operating a permit system (USA and Belize) have some data on the number of individuals employed in the shark fishing industry.

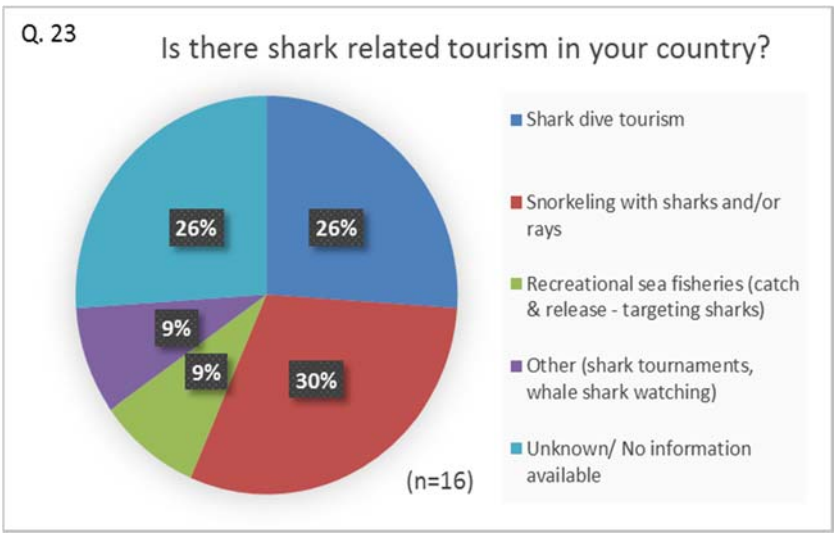
[2] The Q number in the figure(s) refers to the original questions in the survey.

With regards to activities of foreign vessels in their EEZ only Grenada indicated that that there are foreign fleets active in its waters fishing illegally for sharks. All other respondents indicated that there was either no activity or they were unaware of any IUU fishing activity taking place in shark fisheries.

Details on shark catch production information by country are provided in Annex 2.

RECREATIONAL FISHERIES AND ECOTOURISM

The recreational catch of sharks is not well quantified due to the inherent difficulties of monitoring recreational fisheries. In most countries in the WECAFC area recreational fishery for sharks is limited, with anglers preferring billfish as large gamefish and popular consumption species like tuna and mahi mahi. The USA does have an extensive recreational shark fishery in Caribbean waters. The game fishing sector of the US records some data gathered through fishing tournaments. US recreational fishing in the Caribbean is managed through a licensing system and bag limits for certain species. Species listed on the Endangered Species Act, when accidentally caught, must be released immediately, with minimal injury, and without removing it from the water.



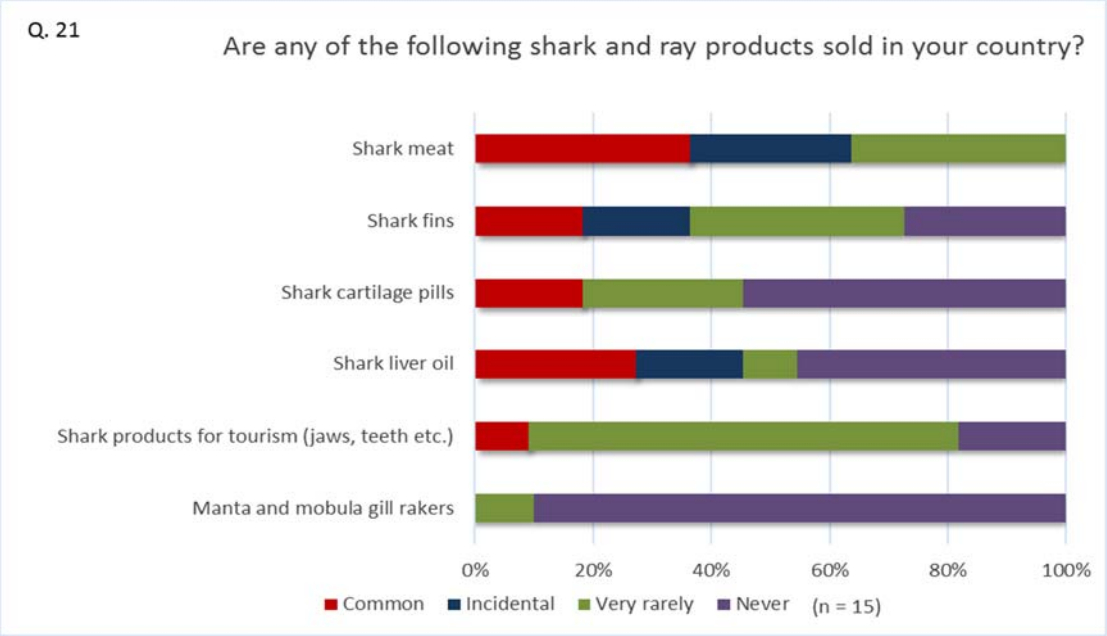
There are also some large shark fishing tournaments in the US where in order for the catch to be eligible for the competition the animal has to be brought to land for weighing.

Some countries reported that sharks and rays can prove highly attractive for ecotourism in places where such activities can be developed. Examples of shark ecotourism include whale shark watching/ snorkeling, cage diving with great white sharks, diving with tiger sharks and hammerheads, snorkeling with nurse sharks and rays etc. A study from 2010 on the socio-economic impacts of shark and ray tourism listed 376 shark tourism operations in 29 countries. Stingray city in the Cayman Islands is one of the most popular attractions in the Caribbean attracting up to 20 000 visitors each year and has 100+ southern stingrays visiting the site. Stingray City generates annually some US$1.75 million in revenue from tourism. A similar tourist attraction, although smaller in size, is active in Antigua and Barbuda.

Although ecotourism is sometimes hailed as an alternative to shark fisheries, as the revenue is potentially higher, this is often only the case at a meta level with the profits of the operation going to a few commercial enterprises and not to the local population.

TRADE

The countries that responded to the survey demonstrated that sharks are mainly harvested for their meat. Other important shark products reported are shark fins, cartilage pills and shark liver oil. The harvest of sharks for shark teeth and shark jaws for tourist markets is rather limited. The trade in manta and mobula gill rakers that has seen a large increase in the past years in Asia does not appear to have reached the region (yet).



SHARK FINS

Shark fins are among of the most expensive fishery products in the world. They are used to prepare shark fin soup and have a traditional and virtually exclusive market among Chinese ethnic groups established in different parts of the world. The shark fins are of little interest to other people. The fins of a shark can be roughly separated into two quality grades. The higher quality fins are the pectoral fins, the lower part of the tail and the main dorsal fin; lower quality fins are the second dorsal fin, ventral fins and the anal fin. Species that have featured strongly in the international shark fin trade include blue, dusky, hammerhead, long fin mako, oceanic whitetip and sandbar sharks. The type of cut is also of influence on the quality (clean cut preferred).

Though the main suppliers of the Hong Kong fin market come from Asia, Africa and Europe, the U.S. also has a stable (if small) trade in fins. Mexico has in the past traded substantial amounts of fins. These where shipped to Asia through the USA. Usually these were of low-quality cut and vulnerable to spoilage. However, because of their abundance and the low cost of transport, they were imported by China in large volumes. Costa Rica, Ecuador, El Salvador, Guatemala, Nicaragua, Panama and Trinidad and Tobago have in the past all been identified as suppliers of shark fins.

Four countries provided prices for sharks, the average of this was $20,37 per lb (ex-vessel). The high price of shark fins in comparison to the meat has led to the practice of shark finning where the fins of the shark are cut off and the rest of the carcass is discarded. This is a highly unsustainable fishing practice as 95 percent of the animal is wasted. Increased awareness and public pressure has led to many nations and RFMO’s adopting legislation banning shark finning.

SHARK MEAT

Shark meat and ray wings are traded and sold throughout the region, although there are large differences between nations in the extend of the trade. Prices for shark meat tend to be quite low as the strong taste and the high liver content of the meat makes it less appealing to many. The price of shark meat is reported to be between USD 0,88 and USD 4,- per lb.

Shark meat traditionally has been prepared in coastal communities all over the world. In the Caribbean it is reported as a traditional dish, for example Kari Kari in the leeward Dutch Caribbean islands and bake ‘n shark in Trinidad and Tobago.

A genetic study conducted in 2016 on the island of St Martin found that shark was often used as a substitute for other fish in restaurants in tourist districts. Shark steaks were sold as sword fish or cut up as fish and chips or used in salt fish. The samples collected during the study contained CITES listed species like silky shark, hammerhead shark and oceanic white tip shark, which have never been seen locally. It would be important to expand this research to other countries in the region to measure the size of this type of fishery products labelling fraud.

SHARK LIVER OIL

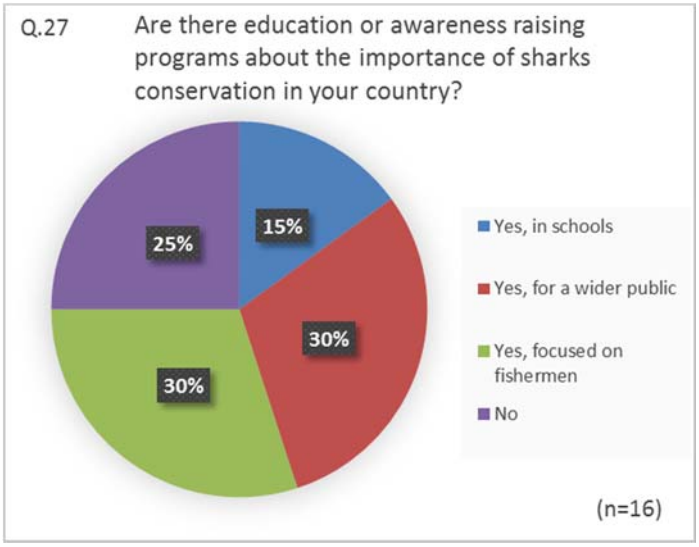
Sharks do not have swim bladders; therefore, they rely mainly on their oil rich liver for buoyancy. Deep water sharks are frequently targeted for oil, because their livers contain more oil. However, oil can be extracted from any shark. Therefore, it can also be a lucrative way to get oil from incidental bycatch of coastal shark species. Shark liver oil is in some countries traditionally believed to be a cure for many ails. On an industrial scale, the oil has been used for lamp fuel, in cosmetics, as a lubricant, and as a supplement as it contains a lot of vitamin A and omega-3 fatty acids. Traditionally, it has also been used to treat respiratory and digestive issues.

SHARK TEETH & JAWS

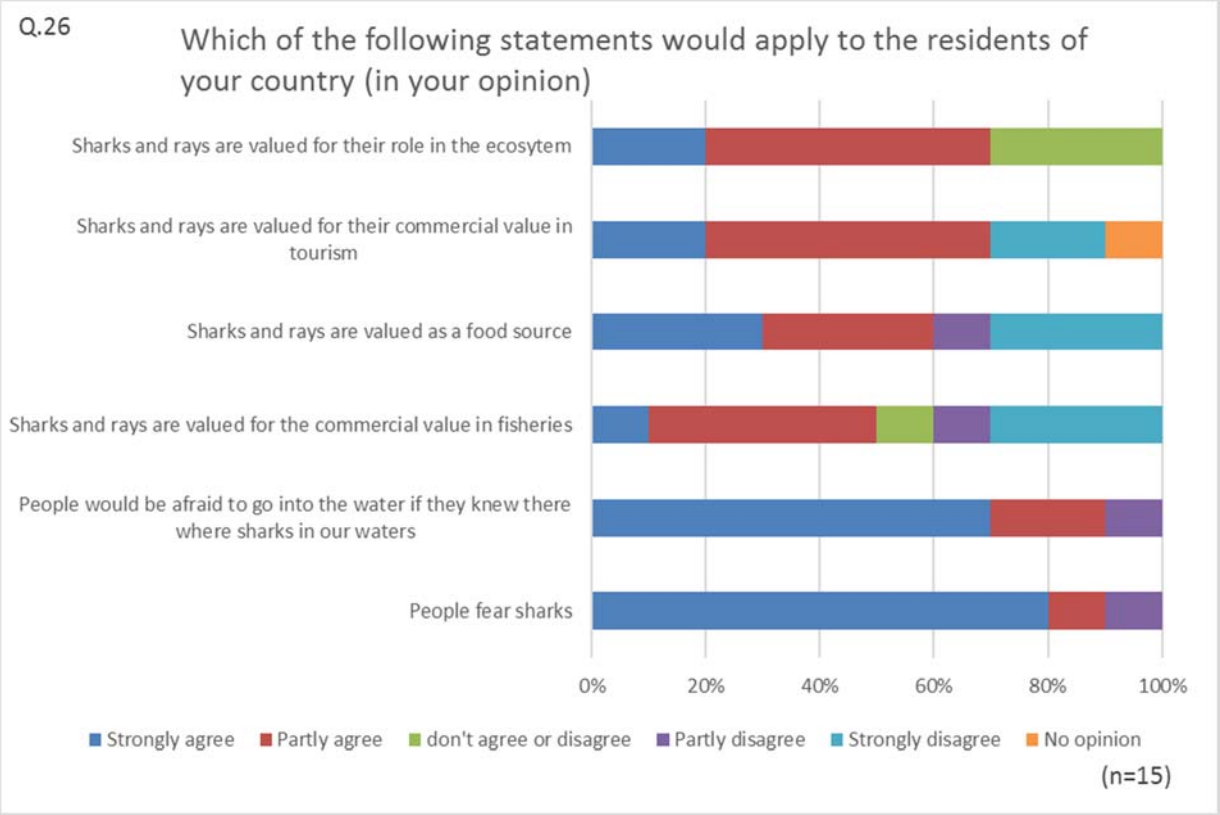
Although it is not likely that sharks are directly targeted for their jaws and teeth, these are cleaned and sold often as by-product to tourists in many places throughout the Caribbean as curiosity and used in jewelry. No country collects specific data on this use and information on sales prices is not available either.

EDUCATION & PERCEPTION

An important part of any shark management strategy is conservation. For conservation to succeed it must address the fact that public feelings about sharks swimming in the middle of the ocean are different than public perceptions about sharks swimming along local beaches.



Local shark populations often receive less conservation support, which impacts the larger conversations about shark conservation. In recent years, in a number of countries in the region, educational programs have started to improve the knowledge about sharks. There was no correlation between the presence or absence of an education program and a better perception of sharks, but it could be interesting to see if this improves over time.



INTERNATIONAL MANAGEMENT

The international community has repeatedly expressed its support for conservation and management of sharks at the U.N. General Assembly (UNGA). Shark issues have been on the UNGA agenda since 2000 when the UNGA noted in resolution 55/8 its approval of the IPOA-SHARKS. In 2012, in resolution 67/79, the UNGA highlighted the Sharks MOU under CMS and encouraged states to participate in the initiative. In the latest resolution 71/123, UNGA recognized the economic, cultural, and ecological importance of sharks, and again called upon states to adopt the IPOA-SHARKS measures either individually or through regional fisheries bodies, take action to restrict or prohibit shark harvesting solely for fins, become signatories to the Sharks MOU and cooperate in establishing non-detrimental findings for transboundary species as required under CITES. Although non-binding, UNGA resolutions reinforce the importance of the documents to be discussed next. Annex 4 gives a full overview the WECAFC signatories to all treaties and fora relevant to shark conservation and management.

IPOA-SHARKS

Widespread concern over the limited management of shark fisheries and the impact that expanding catches have on shark populations led to the adoption and endorsement of the Food and Agriculture Organization of the United Nations (FAO) International Plan of Action for the Conservation and Management of Sharks (IPOA–SHARKS) in 1999.

The IPOA-Sharks is a voluntary international instrument, developed within the framework of the 1995 FAO Code of Conduct for Responsible Fisheries, that guides nations in taking positive action on the conservation and management of sharks and their long-term sustainable use. Its aim is to ensure the conservation and management of sharks and their long-term sustainable use, with emphasis on improving species-specific catch and landings data collection, and the monitoring and management of shark fisheries. The Code sets out principles and international standards of behavior for responsible fishing practices to enable effective conservation and management of living aquatic organisms while

considering impacts on the ecosystem and biodiversity. The IPOA-Sharks recommends that FAO member states 'should adopt a national plan of action for the conservation and management of shark stocks (NPOA-Sharks), if their vessels conduct directed fisheries for sharks or if their vessels regularly catch sharks in non-directed fisheries'. Additionally, the IPOA-Sharks recommends that states that implement a NPOA-Sharks should regularly, at least every four years, assess its implementation for the purpose of identifying cost-effective strategies for increasing its effectiveness.'

To assist countries in implementing the IPOA-Sharks the FAO developed a dedicated set of technical guidelines for the conservation and management of sharks. The guidelines provide general advice and a framework for development and implementation of national level shark assessment and management consistent with the IPOA-Sharks, including the preparation of shark assessment reports.

CITES

The Convention on International Trade in Endangered Species of Wild Fauna and Flora (CITES) provides a legal framework to monitor and control the international trade in species that are overexploited by such trade; it is one of the most effective agreements in regulating natural resource use (Fowler and Cavanagh 2005). Animals and plants threatened with extinction are listed in Appendix I, essentially banning international trade in these species or their parts. Appendix II is reserved for species that could become threatened if trade is not controlled; trade in these species is closely monitored and allowed only after exporting countries provide evidence that such trade is not detrimental to populations of the species in the wild. In 2017, 183 countries were Party to CITES, including all Caribbean, North American, and Central American countries except for Haiti (CITES 2017a).

The first shark species listed under CITES – Whale Shark (*Rhincodon typus*) and Basking Shark (*Cetorhinus maximus*) – were added to Appendix II at the Conference of the Parties (CoP) in 2002, whereas Great White Sharks (*Carcharodon carcharias*) were listed on Appendix II at the 2004 CoP. All but one species of sawfish (family Pristidae) were listed on Appendix I in 2007 (Freshwater Sawfish *Pristis microdon* was listed in Appendix II) (CITES 2011b).

Seven proposals to include shark species in CITES Appendix II were submitted for consideration at the 16th CoP in 2013. Oceanic whitetip shark (*Carcharhinus longimanus*), Scalloped hammerhead shark, Great hammerhead shark and Smooth hammerhead shark (*Sphyrna lewini, S. mokarran and S. zygaena*) Porbeagle shark (*Lamna nasus*) were adopted with an annotation for an 18-month delay in entering into force of the listing to enable Parties to resolve related technical and administrative issues. Also adopted was a proposal to include all manta rays (Manta spp) in Appendix II and a proposal to transfer *Pristis microdon* (freshwater sawfish) from Appendix II to Appendix I.

An additional four shark species and all devil rays were included in Appendix II of CITES at the 17th Meeting of the Conference of the Parties (CoP17, Johannesburg) in 2016. These were: Silky shark (*Carcharhinus falciformis*), Thresher sharks (*Alopias* spp. – 3 species), Devil rays (*Mobula* spp.)

THE MEANING OF A CITES LISTING

CITES works by subjecting international trade in specimens of selected species to certain controls. All import, export, re-export and introduction from the sea of species covered by the Convention has to be authorized through a licensing system. Each Party to the Convention must designate one or more Management Authorities in charge of administering that licensing system and one or more Scientific Authorities to advise them on the effects of trade on the status of the species.

The species covered by CITES are listed in three Appendices, according to the degree of protection they need:

Appendix-I specimens

- An import permit issued by the Management Authority of the State of import is required. This may be issued only if the specimen is not to be used for primarily commercial purposes and if the import will be for purposes that are not detrimental to the survival of the species. In the case of a live animal or plant, the Scientific Authority must be satisfied that the proposed recipient is suitably equipped to house and care for it.
- An export permit or re-export certificate issued by the Management Authority of the State of export or re-export is also required.

  An export permit may be issued only if the specimen was legally obtained; the trade will not be detrimental to the survival of the species; and an import permit has already been issued.

  A re-export certificate may be issued only if the specimen was imported in accordance with the provisions of the Convention and, in the case of a live animal or plant, if an import permit has been issued.

  In the case of a live animal or plant, it must be prepared and shipped to minimize any risk of injury, damage to health or cruel treatment.

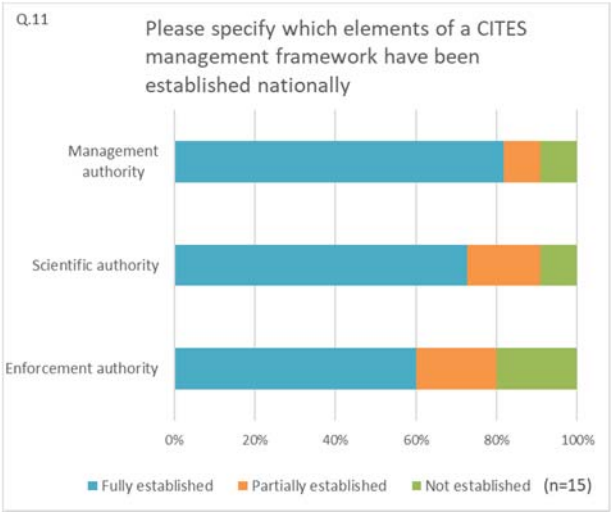
Appendix-II specimens

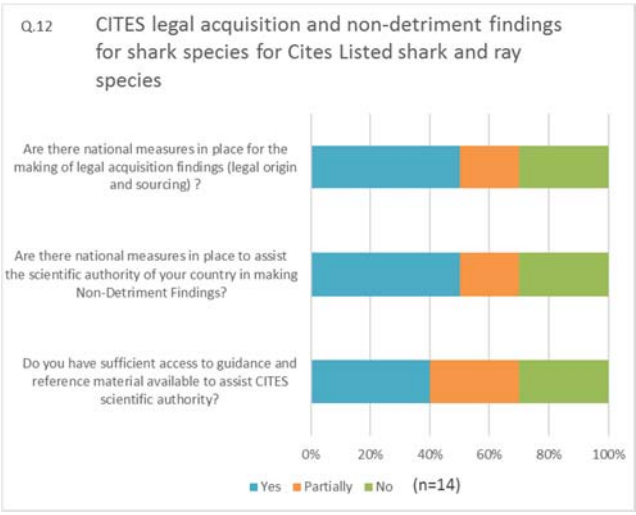
- An export permit or re-export certificate issued by the Management Authority of the State of export or re-export is required.
- An export permit may be issued only if the specimen was legally obtained and if the export will not be detrimental to the survival of the species.
- A re-export certificate may be issued only if the specimen was imported in accordance with the Convention. In the case of a live animal or plant, it must be prepared and shipped to minimize any risk of injury, damage to health or cruel treatment.

No import permit is needed unless required by national law.

For sharks it is also important to note that if a specimen is introduced from the sea, the rules on transport depend on the registration country of the vessel and the charter state, for more information see CITES Conf. 14.6 (Rev. CoP16).

CITES IMPLEMENTION INFORMATION FROM THE SURVEY





Most countries that responded to the survey indicated that they are party to CITES that they have complied with the legal requirement to establish a management framework to anchor CITES listings in national legislation. However, half the respondents indicated that they do not have adequate capacity to implement the trade measures for the listed species.

CMS

The Convention on Migratory Species (the full name is the Convention on the Conservation of Migratory Species of Wild Animals) is an environmental treaty under the aegis of the United Nations Environment Programme (UNEP). The CMS provides a global platform for the conservation and sustainable use of migratory animals and their habitats. CMS brings together the States through which migratory animals pass, the Range States, and lays the legal foundation for internationally coordinated conservation measures throughout a migratory range. The WECAFC members Cuba, Costa Rica, EU, Dominican Republic, Brazil, Panama and Honduras are members.

CMS Appendix I - include migratory species threatened with extinction. Signatory states are asked to protect these animals, conserve or restore the habitats in which they live, remove obstacles to migration and control other factors that might endanger them. It is prohibited for any Range State to catch these species.

CMS Appendix II - includes migratory species with an unfavorable conservation status or those that would significantly benefit from international co-operation. Range States have to enter into auxiliary agreements with each other to protect these species.

An overview of the species listed under the convention can be found here.

CMS MOU SHARKS

The Memorandum of Understanding (MOU) on the Conservation of Migratory Sharks was the first global instrument for the conservation of migratory species of sharks negotiated under the auspice of CMS. It was first adopted in 2010 and now has 39 signatories supporting is objectives. The MOU is a non-binding international instrument. It aims to achieve and maintain a favorable conservation status for migratory sharks based on the best available scientific information and taking into account the socio-economic value of these species for the people in various countries.

The objectives of the CMS shark Conservation Plan are listed in Annex III of the MoU and include:

- Improving the understanding of migratory shark populations through research, monitoring and information exchange
- Ensuring that directed and non-directed fisheries for sharks are sustainable
- Ensuring to the extent practicable the protection of critical habitats and migratory corridors and critical life stages of sharks
- Increasing public awareness of threats to sharks and their habitats, and enhance public participation in conservation activities
- Enhancing national, regional and international cooperation

  In pursuing activities described under these objectives, Signatories should endeavor to cooperate through regional fisheries management organizations (RFMOs), the FAO, Regional Seas Conventions (RSCs) and biodiversity-related Multilateral Environmental Agreements (MEAs).

In 2016 the Sharks MoU set up an Advisory committee and a Conservation Working group to assist signatories in the implementation of the MoU. In this role the shark MoU is a facilitating body to assist signatories in implementing measures associated with the CMS listings.

RESPONSIBILITIES OF A SIGNATORY

New signatories should designate a Focal Point who will be in charge of the communication among Signatories and for the coordination of implementation measures and activities under the MOU.

- Signatories should strive to adopt, implement and enforce such legal, regulatory and administrative measures as may be appropriate to conserve migratory sharks and their habitats, in a spirit of consensus, cooperation and mutual support, and to the extent that resources permit.
- Signatories should endeavor to coordinate their efforts; to cooperate in emergency situations requiring concerted international action; to take appropriate measures for the recovery of shark populations; to exchange information, and to cooperate with a view to assisting each other to implement the Sharks MOU, particularly in the areas of research and monitoring.
- Signatories should report on the implementation of the MOU at each Meeting of the Signatories.

Financial contributions to the MOU are voluntary, which gives signatories the flexibility to make a voluntary contribution when they have the capacity to do so. Voluntary financial and/or in-kind contributions are important for the on-going operations under the Sharks MOU as these are the only sources of funding.

REGIONAL MANAGEMENT

ICCAT

International Commission for the Conservation of Atlantic Tunas (ICCAT) contracting parties and cooperating non-contracting parties include the following WECAFC members: U.S, Japan, Brazil, Rep of Korea, Venezuela, Rep of Guinee, UK (overseas territories), EU, Mexico, Belize, Trinidad & Tobago, Panama, Barbados, Grenada, Guatemala, St. Vincent & the Grenadines, Curacao, Guyana, Suriname and Honduras.

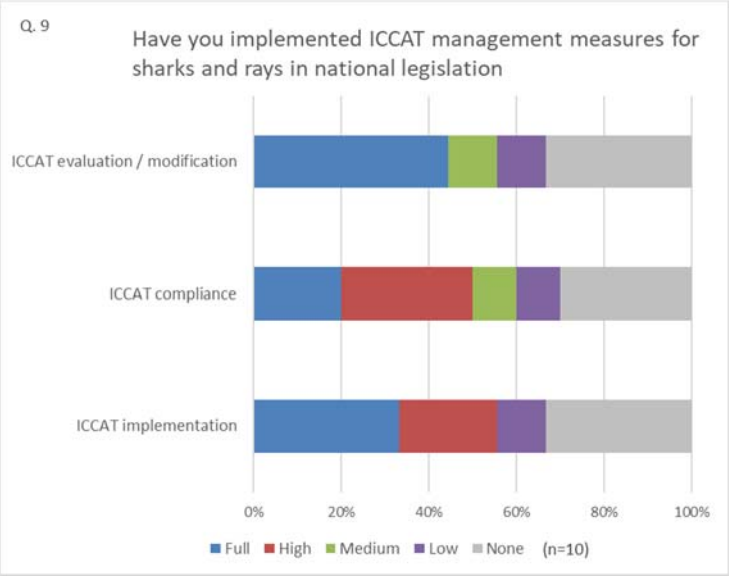
In 2004, ICCAT became the first RFMO to ban shark finning; the rule sets forth a 5 percent limit on the fin-to-carcass weight ratio for enforcement. The same binding 'Recommendation' mandates Contracting Parties, and Cooperating Non-Contracting Parties, Entities or Fishing Entities (CPCs) to report annual catch (Task I) and catch-effort data (Task II) for sharks, and encourages release of live sharks, full utilization of retained sharks, research to identify ways to make fishing gear more selective, and the identification of shark nursery areas (ICCAT 2004).

A 2005 ICCAT Recommendation called on CPCs to reduce fishing mortality for North Atlantic Shortfin Mako (*Isurus oxyrinchus*) (ICCAT 2005) and a 2007 ICCAT Recommendation reiterated this call and imposed a similar requirement for Porbeagles (*Lamna nasus*) (ICCAT 2007). ICCAT has, however, not adopted any specific limits to ensure such reductions. In 2009, ICCAT adopted a Recommendation prohibiting (for all CPCs except Mexico) the retention, transshipment, landing, storage, and sale of Bigeye Thresher Sharks (*Alopias superciliosus*), based on an ecological risk assessment (ERA) that indicated this species was the most vulnerable to ICCAT fisheries (ICCAT 2009). In 2010, Mexico ended its exception to the ICCAT Bigeye Thresher Shark measure, and ICCAT adopted the same prohibitions for Oceanic Whitetip Sharks (*Carcharhinus longimanus*) (ICCAT 2010a).

A 2010 ICCAT prohibition on retaining hammerhead sharks (family *Sphyrnidae* with the exception of the Bonnethead Shark - *Sphyrna tiburo*) included exemptions for developing CPCs, while encouraging

those countries to report data and to prevent increased catches and international trade in hammerheads (ICCAT 2010b). Also in 2010, after the failure of several U.S. and European Union initiatives to set ICCAT Shortfin Mako catch limits, ICCAT CPCs agreed that Shortfin Mako would become a prohibited species in 2013 for CPCs not reporting catch data on the species (ICCAT 2010c). In 2011, prompted by an updated ERA that ranked the Silky Shark (*C. falciformis*) as the most vulnerable shark species with respect to ICCAT fisheries, ICCAT Parties adopted a Recommendation prohibiting the retention, transshipment, and landing (but not sale) of Silky Sharks; the measure exempts developing countries with the same conditions set forth in the hammerhead measure in terms of reporting and improving shark data (ICCAT 2011b). In 2014 the recommendations on mako shark were further strengthened (ICCAT 2014-06) by calling on CPS's to increase their catch reporting and data collection effort aimed at enabling a full stock assessment (the assessment was carried out in 2017). For Blue shark (*Prionace glauca)* a recommendation was first adopted in 2016, which sets out a clear time path for CPCs to improve data collection and research and gives the option for setting catch limits after 2017 if catches prove higher than the long-term average over the period 2011-2015 (ICCAT 2016-12).

ICCAT IMPLEMENTATION



Though many countries in the Caribbean are CPC's to ICCAT only a few indicate they have fully implemented ICCAT measures in national legislation. Countries with high or fully implemented legislation in line with the ICCAT recommendations tend to be the countries with large scale pelagic fleets (USA, EU, Belize, and Surinam). Other countries indicated a lower level of implementation and compliance.

OSPESCA

The Organization of the Fisheries and Aquaculture Sector of the Central American Isthmus (Organización del Sector Pesquero y Acuícola del Istmo Centroamericano, OSPESCA) OSPESCA aims at promoting coordinated and sustainable development of fishing and aquaculture, in the framework of the Central American integration process (SICA), defining, approving and implementing policies, strategies, programmes and regional projects on fisheries and aquaculture. This is a legally binding framework and its members are Belize, Costa Rica, Dominican Republic, El Salvador, Guatemala, Honduras, Nicaragua, and Panama.

In 2011 OSPESCA adopted measures on shark finning and for the management of whale sharks.

- Regional Regulation OSP-05-11 which prohibits the practice of shark finning and establishes regional management measures for the sustainable use of sharks, which contributes to finning eradication.
- Regional Regulation OSP-07-2014 which strengthens the sustainability of the Whale Shark species (Rhincodon typus) by adopting management measures by the SICA Member States.

SPAW

The Protocol Concerning Specially Protected Areas and Wildlife (the SPAW Protocol), adopted in 2000, is the only binding tool for cross-border wildlife protection in the Wider Caribbean region. It is one of three Protocols to the Cartagena Convention—the other two deal with cooperation to combat oil spills, adopted in 1983, and land-based marine pollution, adopted in 1999. The Cartagena Convention is the only legally binding environmental treaty for the wider Caribbean area. The Convention and its Protocols constitute a legal commitment by the participating governments to protect, develop and manage their common waters individually or jointly

The objective of the Protocol is to protect rare and fragile ecosystems and habitats, thereby protecting the endangered and threatened species residing therein. The Caribbean Regional Co-ordinating Unit pursues this objective by assisting with the establishment and proper management of protected areas, by promoting sustainable management (and use) of species to prevent their endangerment and by providing assistance to the governments of the region in conserving their coastal ecosystems.

The protocol deals with area protection for unique and/or fragile habitats and has three annexes that deal with species-specific protection. Annex I only concerns plants, Annex II lists animal species that should not be commercially exploited, and annex III is meant for vulnerable plant or animal species that need to be managed to prevent further depletion. In March 2017 Small Tooth Sawfish was listed on Appendix II and Whale sharks, Oceanic Whitetip Shark, Hammerhead Sharks and Manta Rays were added to Appendix III of the protocol.

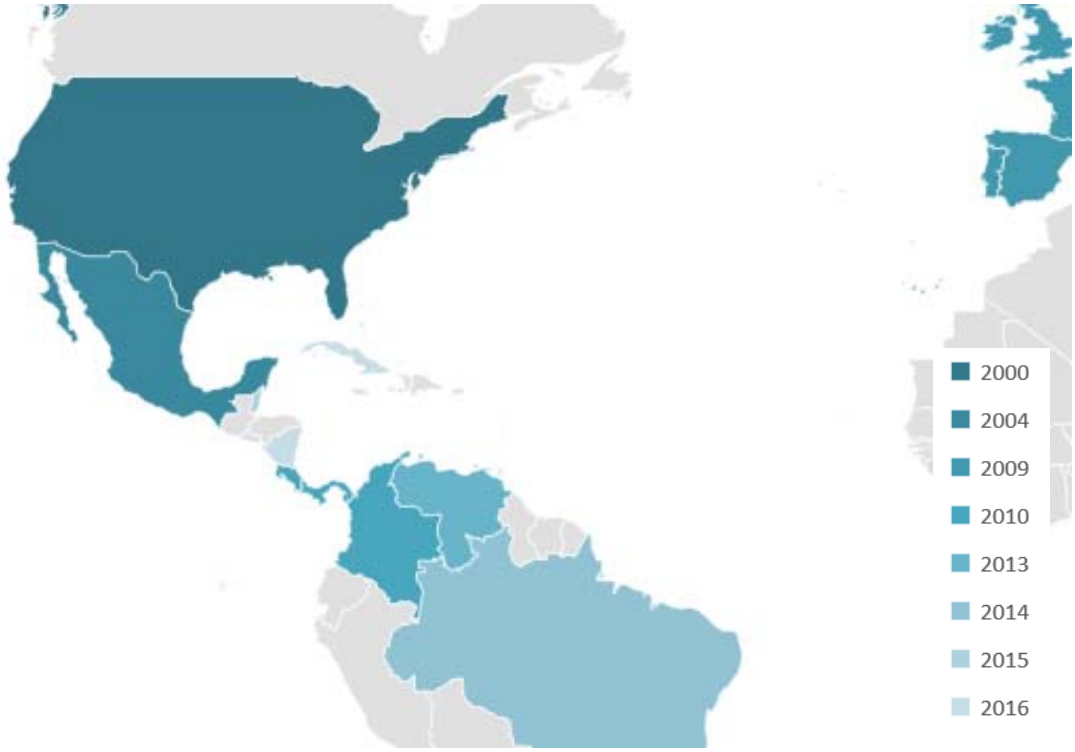
Contrary to the IPOA-Sharks SPAW is a legally binding agreement. By ratifying the protocol countries commit themselves to imbedding the protection under SPAW in their national legislation.

WECAFC members that have ratified the SPAW protocol include: The Bahamas, Barbados, Belize, Colombia, Cuba, Dominican Republic, France, Grenada, Netherlands, Panama, St. Lucia, St. Vincent and the Grenadines, Trinidad and Tobago, USA, and Venezuela.

NATIONAL MANAGEMENT

NATIONAL PLANS OF ACTION

To date 10 countries in the WECAFC area have a National Plan of Action for Sharks (Antigua & Barbuda, Belize, Brazil, Colombia, Costa Rica, Cuba, Mexico, Panama, Venezuela and The United States. Other WECAFC-members, such as the Republic of Korea, Japan, the EU (Spain, France, UK and Netherlands) also have Plans of Action, but these do not contain measures or actions relevant to the WECAFC area. Barbados has drafted a plan that is yet to be adopted. Annex 3 gives an overview of the NPOA -shark status in the region.



SHARK FINNING BANS

One of the main priorities in shark management and conservation world-wide in the past 2 decades has been the prohibition of shark finning. Many countries have now adopted finning bans in their waters. These can be in the form of an obligation to land all sharks with fins (naturally) attached or through a fin to carcass ration for fins and bodies. Most RFMOs have adopted a fin-to-carcass requirement, except NAFO and NEAFC, which have adopted a fins naturally-attached requirement.

SPATIAL MANAGEMENT MEASURES – SHARK SANCTUARIES & MARINE RESERVES

In the past year there has been a surge in the establishment of shark sanctuaries and large Marine Protected Areas (MPAs) around the globe. Sanctuary designations typically prohibit the commercial fishing of all sharks, the retention of sharks caught as bycatch, and restricts the possession, trade, and sale of sharks and shark products within a country's exclusive economic zone (EEZ). In the WECAFC area The Bahamas, Honduras, The British Virgin Islands and the Dutch Caribbean islands of Saba, Bonaire and St. Martin designated shark sanctuaries with most other countries having some form of marine reserves established in their waters.

The establishment of large MPAs and shark sanctuaries has far outpaced research on their ecological effectiveness. Reviews and commentaries have highlighted both the potential benefits of large MPAs and skepticism of their utility.

Some studies have found that smaller-scale MPAs have benefited certain inshore shark species. For example, Caribbean Reef Sharks (*Carcharhinus perezi)* exhibits high site fidelity at Glover's Reef Marine Reserve, Belize and has had a stable population within this area for more than a decade, which suggests that marine reserves can be an effective conservation tool for reef-associated shark species. The spatial patterns of residency and site fidelity of Tiger Sharks (*Galeocerdo cuvier)* within the Galapagos Marine Reserve suggest that the presence of a predictable source of prey and suitable habitats could reduce the spatial extent of this large shark, which is highly migratory in other parts of its range.

However spatial management approaches often have limited benefits for highly mobile and migratory species, even in systems with semi-isolated coral reefs, smaller species with strong site attachment are likely to gain more protection from MPAs than larger, wider-ranging predators. This is also likely to vary during ontogeny and with increasing reef isolation. For wide ranging migratory species, spatial protection alone is unlikely to be an effective strategy. The high individual variability in residency and large-scale connectivity of some shark species creates additional challenges for their management across multiple jurisdictions. Other alternative measures (e.g., limited allocation of fishing licenses, reduction of total allowable catch, size or bag limits, restricted take or protection of high risk species, gear modifications, bycatch reduction devices, or better reporting mechanisms) are needed to improve the protection and sustainability of populations in conjunction with Marine Protected Areas.

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ANNEX 1 -SHARK SPECIES OF THE WECAFC AREA

Species	Common name	Regional occurrence[1]	Global Red List category	Subpopulation and/or regional Red List category (if applicable)
SHARKS				
Isogomphodon oxyrhynchus	Daggernose Shark	Atl	CR	
Sphyrna lewini	Scalloped Hammerhead	Atl; Pac	EN	NW & W Central Atlantic (Sub.): EN
Sphyrna mokarran	Great Hammerhead	Atl; Pac	EN	
Squalus acanthias	Spiny Dogfish	Atl	VU	
Centrophorus granulosus	Gulper Shark	Atl	VU	W Atlantic (Reg.): DD
Rhincodon typus	Whale Shark	Atl; Pac	VU	
Carcharias taurus	Sand Tiger	Atl	VU	
Odontaspis ferox	Smalltooth Sand Tiger	Atl; Pac	VU	
Alopias superciliosus	Bigeye Thresher Shark	Atl; Pac	VU	W Central Atlantic (Reg.): EN
Alopias vulpinus	Common Thresher Shark	Atl; Pac	VU	W Central Atlantic (Reg.): VU;
Carcharodon carcharias	Great White Shark	Atl; Pac	VU	
Cetorhinus maximus	Basking Shark	Atl; Pac	VU	
Isurus oxyrinchus	Shortfin Mako	Atl; Pac	VU	
Isurus paucus	Longfin Mako	Atl; Pac	VU	
Carcharhinus longimanus	Oceanic Whitetip Shark	Atl; Pac	VU	W Central Atlantic (Reg.): CR
Carcharhinus obscurus	Dusky Shark	Atl; Pac	VU	W Central Atlantic (Sub.); EN
Carcharhinus plumbeus	Sandbar Shark	Atl	VU	
Carcharhinus signatus	Night Shark	Atl	VU	
Sphyrna tudes	Smalleye Hammerhead	Atl	VU	
Sphyrna zygaena	Smooth Hammerhead	Atl; Pac	VU	
Heptranchias perlo	Sharpnose Sevengill Shark	Atl	NT	
Hexanchus griseus	Bluntnose Sixgill Shark	Atl; Pac	NT	
Centrophorus acus	Needle Dogfish	Atl	NT	W Central Atlantic (Sub.): DD
Centrophorus niaukang	Taiwan Gulper Shark	Atl	NT	
Centroscymnus coelolepis	Portuguese Dogfish	Atl	NT	
Mustelus canis	Dusky Smoothhound	Atl	NT	
Carcharhinus acronotus	Blacknose Shark	Atl	NT	
Carcharhinus brevipinna	Spinner Shark	Atl	NT	NW Atlantic (Sub.): VU
Carcharhinus falciformis	Silky Shark	Atl; Pac	NT	NW & W Central Atlantic (Reg.): DD
Carcharhinus galapagensis	Galapagos Shark	Atl; Pac	NT	
Carcharhinus leucas	Bull Shark	Atl; Pac	NT	
Carcharhinus limbatus	Blacktip Shark	Atl; Pac	NT	NW Atlantic (Sub.): VU
Carcharhinus perezi	Caribbean Reef Shark	Atl	NT	
Galeocerdo cuvier	Tiger Shark	Atl; Pac	NT	

Species	Common name	Regional occurrence[1]	Global Red List category	Subpopulation and/or regional Red List category (if applicable)
Negaprion brevirostris	Lemon Shark	Atl; Pac	NT	
Prionace glauca	Blue Shark	Atl; Pac	NT	
Etmopterus bigelowi	Blurred Smooth Lanternshark	Atl	LC	
Etmopterus hillianus	Caribbean Lanternshark	Atl	LC	
Etmopterus pusillus	Smooth Lanternshark	Atl	LC	
Etmopterus robinsi	West Indian Lanternshark	Atl	LC	
Etmopterus schultzi	Fringefin Lanternshark	Atl	LC	
Etmopterus virens	Green Lanternshark	Atl	LC	
Centroscymnus owstoni	Roughskin Dogfish	Atl	LC	
Isistius brasiliensis	Cookiecutter Shark	Atl; Pac	LC	
Squaliolus laticaudus	Spined Pygmy Shark	Atl	LC	
Galeus arae	Roughtail Catshark	Atl	LC	
Schroederichthys maculatus	Narrowtail Catshark	Atl	LC	
Scyliorhinus boa	Boa Catshark	Atl	LC	
Scyliorhinus retifer	Chain Catshark	Atl	LC	
Scyliorhinus torrei	Dwarf Catshark	Atl	LC	
Mustelus higmani	Smalleye Smoothhound	Atl	LC	
Carcharhinus isodon	Finetooth Shark	Atl	LC	U.S. Atlantic & Gulf of Mexico (Sub.):
Rhizoprionodon porosus	Caribbean Sharpnose Shark	Atl	LC	
Rhizoprionodon terraenovae	Atlantic Sharpnose Shark	Atl	LC	
Sphyrna tiburo	Bonnethead Shark	Atl; Pac	LC	
Hexanchus nakamurai	Bigeye Sixgill Shark	Atl	DD	
Cirrhigaleus asper	Roughskin Spurdog	Atl	DD	
Squalus cubensis	Cuban Dogfish	Atl	DD	
Squalus mitsukurii	Shortspine Spurdog	Atl	DD	
Centrophorus tessellatus	Mosaic Gulper Shark	Atl	DD	
Etmopterus bullisi	Lined Lanternshark	Atl	DD	
Etmopterus carteri	Cylindrical Lanternshark	Atl	DD	
Etmopterus perryi	Dwarf Lanternshark	Atl	DD	
Oxynotus caribbaeus	Caribbean Roughshark	Atl	DD	
Zameus squamulosus	Velvet Dogfish	Atl	DD	
Pristiophorus schroederi	Bahamas Sawshark	Atl	DD	
Squatina dumeril	Atlantic Angel Shark	Atl	DD	
Ginglymostoma cirratum	Nurse Shark	Atl; Pac	DD	W Atlantic (Sub.): NT;
Odontaspis noronhai	Bigeye Sand Tiger	Atl	DD	
Apristurus canutus	Hoary Catshark	Atl	DD	
Apristurus laurussonii	Iceland Catshark	Atl	DD	
Apristurus parvipinnis	Smallfin Catshark	Atl	DD	
Apristurus riveri	Broadgill Catshark	Atl	DD	
Galeus antillensis	Antilles Catshark	Atl	DD	
Galeus cadenati	Longfin Sawtail Catshark	Atl	DD	
Galeus springeri	Springer's Sawtail Catshark	Atl	DD	

Species	Common name	Regional occurrence[1]	Global Red List category	Subpopulation and/or regional Red List category (if applicable)
Parmaturus campechiensis	Campeche Catshark	Atl	DD	
Scyliorhinus hesperius	Whitesaddled Catshark	Atl	DD	
Scyliorhinus meadi	Blotched Catshark	Atl	DD	
Eridacnis barbouri	Cuban Ribbontail Catshark	Atl	DD	
Mustelus minicanis	Venezuelan Dwarf Smoothhound	Atl	DD	
Mustelus norrisi	Narrowfin Smoothhound	Atl	DD	
Mustelus sinusmexicanus	Gulf of Mexico Smoothhound	Atl	DD	
Carcharhinus altimus	Bignose Shark	Atl; Pac	DD	NW Atlantic (Reg.): NT
Carcharhinus porosus	Smalltail Shark	Atl; Pac	DD	
Rhizoprionodon lalandii	Brazilian Sharpnose Shark	Atl	DD	
Sphyrna media	Scoophead Shark	Atl; Pac	DD	

ANNEX 2 – SPECIFIC FISHERIES/CATCH INFO

Country	Reported catches 2014 -2015 (in tonnes for area 31	Stock assessment / survey	Fisheries info	Commercial info	Recreational / Ecotourism info
ANTIGUA & BARABUDA	Sharks & rays 2014: 33 -2015: 32	BRUV survey carried out Fishermen questionnaire part of NPOA	Mainly small-scale artisanal, targeting sharks occasionally using drum line ("shark barrel"); less than 10 vessels specifically target sharks. Bycatch mainly from trap and gill net fisheries; mainly nurse and Caribbean reef shark.		1 activity mentioned: Over 20.000 people visit 'stingray city' ecotourism site each year.
BARBADOS	Sharks & rays 2014: 12 – 2015:13		Directed fishery using: Palangue lines set from shore or within 1 mile from shore Many are caught as incidental catch in the island's longline fishery.	Shark meat, liver oil and cartilage oils are commonly sold. Fins and products for tourism are very rarely sold. Avg. price for shark meat: $1.50-$2.50	
BELIZE	Total sharks3: 2014: 94 – 2015:5 Blue shark: 2014: 393 – 2015: 4 Mako shark: 2014: 1 – 2015: 1		Targeted species for Belize longline fleet blue shark, mako shark in the Atlantic 76 fisher folks were issued shark fishing licences in 2016 - Gill nets (6 inches and greater in mesh size) and long lines (circle hooks No.12 and 14) are used for fishing. - Black tip, Caribbean sharp nose, Caribbean reef, tiger, Great hammerhead, Bull, Mako, Bonnethead. - Small-scale fishery with limited entry (Annual renewal of licenses require submission of catch data as requested by Fisheries Department) Shark meat, fins and liver oil are incidentally sold	Shark meat, fins and liver oil are incidentally sold	Diving and snorkeling with sharks and/or rays
BRAZIL	No reported catches in area 31				
COLOMBIA	Smooth hound: 2014: 0 2015: 3				
COSTA RICA	107 – 107 Silky shark: 2014: 71 2015: 71				

Country	Reported catches 2014 -2015 (in tonnes for area 31	Stock assessment / survey	Fisheries info	Commercial info	Recreational / Ecotourism info
CUBA	Sharks: 2014: 547 – 2015: 530 Rays: 2014: 1456 – 2015: 1410	NPOA (2016) contains report based on fisheries info and fishermen's survey	State commercial fishing, is developed by fishing companies of the state that have vessels of more than 10 tons of gross registration with a limited level of mechanization in fishing operations and processing of catches. Currently there are less than 20 active boats in this fishery. The fishing gears used are gillnet and longline (mainly bottom), depending on the target species and the fishing operation area. Fish catches account for 62% of the national catches of all resources, of which sharks represent 3.9% and rays 10.6%. In the last five years, an average of 539.9 tonnes of sharks and 1500 tonnes of rays have been caught. G. cirratum, C. perezi, C. obscurus, Aetobatus narinari, Dasyatis americana, D. say, D. guttata, D. sabina, G. cuvier, C. leucas, C. signatus, Hexachus griseus, H. nakamurai, Sphyrna lewini, Sphyrna mokarran, Rhizoprionodon porosus, R. terraenovae, C. acronotus, C. plumbeus, C. longimanus, are the most common		
FRENCH ANTILLES	Martinique Sharks: 2014: 23 – 2015:22 Rays: 2014: 5 – 2015: 5	Sharks/rays landings monitoring are ongoing process in Guadeloupe (data on species fished and their frequency in catches, fishing gears and areas related, if it's targeted or bycatch, selling price ...). Fishermen survey have been made in Guadeloupe and Martinique in 2015-2016 (data on number of individual catched by species in the past 12 months, fishing gears and areas related, fishermen's perception of the state of sharks/rays populations...).	bycatch/accidental catch levels probably largely exceed targeted catch. Traps (Ginglymostoma cirratum), set nets (Ginglymostoma cirratum, Galeocerdo cuvier, Sphyrna spp, Hypanus americanus) Trolling lines and surface longlines (Isurus oxyrinchus, Carcharhinus longimanus, Carcharhinus falciformis) Bottom longlines (Hexanchidae and Centrophoridae)	Shark meat, liver oil, cartilage pills and shark products for tourism are commonly sold. Shark fins are rarely sold on these islands. Avg price for shark meat is $3-$4 per lb	Survey on recreational fishing are planed in all French West Indies for 2018.

Country	Reported catches 2014 -2015 (in tonnes for area 31	Stock assessment / survey	Fisheries info	Commercial info	Recreational / Ecotourism info
GRENADA	Sharks & rays: 2014: 15 – 2015:15		sharks caught incidentally in most gears (hook & line, set nets, beach seines)	Avg price of shark mets is <$1	none
GUYANA	Sharks & rays: 2014: 399 – 2015:569		Artisanal: (Gillnets, Cadell, fyke nets) Industrial (trawl) Semi industrial: (handlines and Traps) Tuna: Longline	Shark meat and fins are commonly sold, shark products for tourism are very rarely sold Guyana exports shark skins to China Avg meat price: $2.5 Fins: $25-$30 Other products: $5	
JAMAICA	No shark catches reported in area 31	Sharks are not part of fisheries data collections		Shark meat and fins are very rarely sold	Snorkeling with sharks and/or rays
MEXICO	All: 7830 – 8690 Largest amount of single species: Southern stingray 2014: 2641 - 2015: 3170	NPOA (2014) contains an assessment section on the fisheries	In the Atlantic (Gulf oF Mexico & Caribbean Sea) an artisanal coastal, demersal and pelagic fleet targeting shark (main catches of the order Carcharhiniformes) though long line and rays though netting and long linings (Dasyatis Americana most important catch)		
NICARAGUA	Sharks & rays: 2014: 216 – 2015: 232 Rays 2014: 144 - 2015: 124		The snapper, dorado and *cabrilla* fisheries have an impact on rays and sharks as incidental fishing. This fishery is purely artisanal and is mainly carried out by boats smaller than 12 meters in length. The gear used in this fishery are longlines, hand lines and gillnets	Shark meat and fins are commonly sold, liver oil is incidentally sold Shark meat avg: $1 per lb Ray wings avg: $0.75 per lb Shark fins: $18 per lb	
PANAMA	Blue shark: 153 - ? Black tip shark: 6 - ? Short fin mako : 7 - ?	survey of this fleet expected for 2018.	in the artisanal fleet (trasmallo & handline) hammerhead sharks are bycaught most often. Longline fleet has blue shark bycatch. There are foreign flagged vessels active in the EEZ, for this fleet the bycatch of sharks in minimal less than .5 percent of total catch.	Shark fins are incidentally sold; all other shark products are rarely sold	Whale shark watching / snorkeling

Country	Reported catches 2014 -2015 (in tonnes for area 31	Stock assessment / survey	Fisheries info	Commercial info	Recreational / Ecotourism info
ST. VINCENT & THE GRENADINES	Sharks and rays: 2014: 1 – 2015: 1 Nurse shark 2014:5 – 2015: 5 Short fin mako: 2014: 4 – 2015: 2			Shark meat is commonly sold; shark products for tourism are very rarely sold. Avg. price of meat: $2.50 per lb	
SURINAME	Blue shark: 2014: 337 – 2015: 195 Blacktip shark: 2014: 46 Rays: No data		Bycatch of rays in fisheries in estuaries (shrimp trawling, netting, fyk nets, drift nets and seines). Large scale pelagic long line fishery has bycatch of sharks, blue shark and blacktip shark	Shark fins are commonly sold, shark meat and shark oil are rarely sold.	
THE NETHERLANDS (BONAIRE, SABA, STATIA)	No catches reports in area 31	Survey of landings completed in 2016	Bycatch in line fishery on Bonaire (nurse shark, Caribbean reef shark) Bycatch in lobster traps on Saba (nurse shark)	Shark meat and liver oil are incidentally sold, cartilage pills and tourism items are rarely sold	There is shark dive and snorkeling tourism
VENEZUELA	Sharks: 2217 -2341 Rays: 2009 – 2184 Largest amount of single species: Blue shark: 2014: 113, 2015: 129		Large scale pelagic Longline fleet has directed shark fishery focused on fin trad. Fleet is active in the "corridor of the Venezuelan oceanic islands", and waters of international jurisdiction of French Guiana and Suriname. Artisanal direct fleet consists of long line fisheries, line fisheries, trammel nets and drop line fisheries (300 – 1200m depth). This fleet tends to fish closer to shore in Venezuelan waters		
UNITED STATES	2941 – 2847 Most frequently caught species Picked dogfish: 2014:1963 – 2015:1450 Blacktip shark: 2014:319 2015: 538		Directed: The commercial shark fishery consist of federally permitted vessels (223 direct and 271 incidental permit holders) and state water permitted vessels. Primary gears used are bottom long line and gillnets, highest landings for Blacktip, Atlantic sharpnose, bull and	Shark meat, fins, liver oil, cartilage pills and shark products for tourism are all commonly sold. There is no information on the sales of gill rakers.	The US has dedicated dive and snorkeling toruism for sharks In recreational fishery there are over 20.500 permitted HMS anglers

Country	Reported catches 2014 -2015 (in tonnes for area 31	Stock assessment / survey	Fisheries info	Commercial info	Recreational / Ecotourism info
	Atlantic sharpnose shark: 2014: 126 2015: 246 Bull shark: 2014:131 - 2015:191		shortfin mako. Small commercial research fishery on sandbar sharks, Bycatch: Sharks are caught as bycatch in most of the U.S. commercial and recreational fisheries. Landings are only allowed if the has a permit	Prices: Meat : $0.88 per lb Fins: $8.46 per lb Oil: $8.46 per lb	and 3600 charter vessels authorized to fish for atlantic tuna, swordfish, billfish and sharks, mainly using rod & reel. Some shark species are catch and release only (hammerhead, sawfish) US has a substantial recreational harvest of sharks, in shark tournaments the animals are killed and brought to shore.

ANNEX 3 – WECAFC MEMBERS WITH A NPOA-SHARKS

Country	NPOA	Adopted	Management goals	Specific measures	Timeline	Imbedded in national legislation	Control & Enforcement	Finning ban
ANTIGUA & BARABUDA	2015	YES	Contains log frame on obtaining clear objectives regarding: Fisheries research, monitoring, responsible fishing practice, governance & legislation, Participation and Communication &Education	Overview of possible measures per focus area	NO	Partly		
BARBADOS	2016 (Draft)	NO						
BELIZE	2015	YES	Sets out clear legal requirements for its fleet: only 75 high seas vessels shall be permitted and only those engaged in long line fisheries can obtain a permit to harvest sharks	List specific measures for the longline fleet	No, but indicates that all measures are to take effect of immediately	YES, fully		
BRAZIL	2014	Yes	Objectives for minimizing fisheries impact on elasmobranchs, improving legal framework, extending and strengthening marine protected areas containing essential shark habitat; educating fishermen; advocating sustainable elasmobranch management booth in Brazil and in other nations.	Table with specific measures per objective. Outlining the desired product/outcome and responsible stakeholder	Fives exact date when each action should be concluded		Has objectives on control and enforcement	1998, Sharks must be landed with corresponding fins. Fins must not weigh more than 5% of the total weight of the carcass. All carcasses and fins must be unloaded and weighed and the weights reported to authorities. Minimum size of capture is 60cm TL

Country	NPOA	Adopted	Management goals	Specific measures	Timeline	Imbedded in national legislation	Control & Enforcement	Finning ban
COLOMBIA	2010	Yes	Objectives for data collection, fisheries management, legislation, education, monitoring & control & evaluation	Overview of global tasks for each focus area with some specific tasks for stakeholders (managers)	Gives priorities for short, medium and long term			2007, Fins naturally attached rule
COSTA RICA	2010	Yes	Objectives for: Sustainable fisheries management & protection of vulnerable habitat, scientific research, coordination between stakeholders & international cooperation, improving & strengthening existing legislation	Table with specific measures per objective. Outlining the desired product/outcome and responsible stakeholder	Gives priorities for short, medium and long term		Has section dedicated to C&E in the plan, no information on actual situation	2006, Fins naturally attached rule
CUBA	2016	Yes	Objectives for data collection & monitoring, sustainable fisheries management, control, education, ecotourism	Lists activities and tasks for stakeholders	Gives priorities for short, medium and long term			
MEXICO	2004	Yes	Objectives for sustainable fisheries, protecting of vulnerable habitat & species, bycatch reduction, data collection, scientific research and communication / information sharing	Describes what would be needed for each of the elements to be successful	No		Has section dedicated to C&E in the plan, no information on actual situation	2007, Shark finning is prohibited. Shark fins must not be landed unless the bodies are on board the vessel.
NICARAGUA								
PANAMA	?	Currently updating to 2017	?	?		Partly		

Country	NPOA	Adopted	Management goals	Specific measures	Timeline	Imbedded in national legislation	Control & Enforcement	Finning ban
VENEZUELA	2013	Yes	Objectives sustainable fisheries of both targeted and non-targeted fishery; protection of vulnerable habitat & species; improve stock assessment/data collection; improve ID-skills; reduce shark discards; encourage full utilization of catches			Partly, embedded in legislation on the conservation and sustainable use of fishery resources		
UNITED STATES	Original 2000, updated in 2014	Yes	Exact wording from the IPOA		Yes	Fully embedded in national legislation, USA advocates for shark management in international for a (ICCAT, IATTC etc.)	Review published in 2014, outlining progress in national management, research and international management	Finning has been prohibited in Federal waters since 2000. Since 2008, sharks caught in the Atlantic and Gulf of Mexico have been required to be landed with their fins-naturally attached. In 2011,the Shark Conservation Act required all other sharks in the United States to be landed with their fins naturally-attached

ANNEX 4 - INTERNATIONAL AND REGIONAL SHARK PROTECTION AND MANAGEMENT

State	WECAFC	CITES	ICCAT	CMS	CMS MoU sharks	SPAW signatory	SPAW Ratified
Antigua and Barbuda	X	X		x		X	
Aruba		X				X	
Bahamas	X	X					X
Barbados	X	X	X			X	X
Belize	X	X	X	X			
Brazil	X	X	X	X	X		
Colombia	X	X	X		X	X	X
Costa Rica	X	X	X	X	X		
Cuba	X	X	X	X		X	X
Curacao		X	X				
Dominica	X	X					
Dominican Republic	X	X		X		X	X
(European Union)	X	X		X			
France	X	X		X		X	X
Grenada	X	X	X				
Guatemala	X	X				X	
Guyana	X	X	X				
Haiti	X						
Honduras	X	X	X	X			
Jamaica	X	X				X	
Japan	X	X	X				
Mexico	X	X	X			X	X
Netherlands	X	X	X	X	X	X	X
Nicaragua	X	X					
Panama	X	X	X	X		X	X
Rep of Guinee	X	X				X	X
Rep of Korea	X	X	X				

State	WECAFC	CITES	ICCAT	CMS	CMS MoU sharks	SPAW signatory	SPAW Ratified
Saint Lucia	X	X				X	X
Spain	X	X	X				
St. Kitts and Nevis	X	X					
St. Martin (Nl side)	X	X					
St. Vincent and the Grenadines	X	X	X			X	X
Suriname	X	X	X				
Trinidad and Tobago	X	X	X			X	X
United Kingdom	X	X	X	X		X	
United States of America	X	X	X		X	X	X
Venezuela	X	X	X			X	X

APPENDIX IV - UPDATED TORS OF THE WORKING GROUP

1. ROLE OF THE WORKING GROUP

More than 150 species of sharks and rays are present within the WECAFC region. There is currently limited information regarding their stocks and more needs to be done to protect and manage shark and ray populations. This Working Group, with the support of FAO, WECAFC Secretariat, CFMC, CRFM and OSPESCA, will provide, among others, a platform for supporting the conservation and sustainble management of shark fisheries in the Wider Caribbean region. Until an RPOA is adopted, the actions of the Working Group will be guided by the guidelines laid out in the FAO IPOA-Sharks. Sharks are a transboundary resource and as such, the TORs may apply at regional and/or national levels as appropriate.

1.1 Scope

The scope of the working group is to provide advice on the management and conservation of sharks in the Wider Caribbean Region. This includes the development of national and regional plans of action in order to regulate target and bycatch fisheries, as well as manage existing populations within the region.

1.2 The goal of the Working Group

The objective of the Working Group is to provide a basis for the conservation and sustainable management of shark populations in WECAFC member countries. In pursuing this goal, the Working Group will be supporting the members in fulfilling the national and regional responsibilities for the conservation and management of sharks as specified by WECAFC.

1.3 Terms of Reference (TOR)

Specifically, the Working Group will:

(a) Facilitate the sharing of available data and information on shark and ray stocks within the Wider Caribbean Region;
(b) Provide support to the development National POAs for member states and the Regional POA;
(c) Provide technical inputs to support the implementation of actions as defined in the RPOA.
(d) Develop and implement a biennial work plan that will be monitored and evaluated;
(e) Establish communication between the members of the working group, and between the working group and interested parties including the private sector;

The TOR may be amended as required by the members at the level of the WECAFC, following each two-year period coinciding with the meetings of the WECAFC

1.4 Mode of Operation

1.4.1 Role of Countries

The members of the working group will play a leading role in its activities through the following activities and commitments:

- Participate in agreed activities of the working group, and ensure the participation of appropriate experts;
- Promote the implementation, at the National level, the work identified in the WECAFC endorsed work plan (as appropriate);
- Assist with mobilization of resources for the activities of the Working Group;
- Provide assistance and facilitate the organization of Working Group meetings in the languages of the Commission (to the extent possible);
- Host working group meetings on a rotational basis.

1.4.2 Roles of the FAO/WECAFC Secretariat

To coordinate activities of the Working Group, among WECAFC and Non-WECAFC Members, at the wider regional level;

- To assist with convening of meetings of the Working Group;
- To liaise with other Regional Fishery Bodies (RFBs) active in the Wider Caribbean Region and neighbouring areas will be involved as much as possible in the work of the group; these RFBs include amongst others OSPESCA, CRFM, CFMC, ICCAT, NAFO, NEAFC and CECAF.
- To coordinate the formulation and adoption of recommendations by the Working Group so as to facilitate the decision-making process at the level of WECAFC Area 31.

1.4.3 Roles of other Subregional organizations (e.g. CFMC, CRFM, OSPESCA)

Subregional organisations have an important role to play in assisting their member countries to participate fully in the activities of the working group by:

- Providing technical assistance and support;
- Facilitating procurement of funding when possible;
- Co-coordinating the activities of the working group;
- Facilitating the decision-making process at the Subregional level.

1.4.4 Election and role of Convener of the Working Group

The Working Group shall elect a Convener from among its Members to serve over the two-year period.

The first task of the convener will be to seek for experts among the WECAFC Members on sharks and rays, their fisheries and conservation. The convener should also contact potential partner organizations and solicit their interest to join in this Working Group.

1.5 Communication

A mechanism for on-going communication among working group members (Video conference, Skype and email), is essential to ensure that the work of the group is sustained between meetings. It must include all working group members.

The successful functioning of the working group also requires that each member country and organization/ agency identify a national node or focal point through which communications will be directed. The outputs of the working group will be communicated through working group reports to WECAFC, OSPESCA, CFMC, CRFM, and national fishery administrations via the WECAFC Secretariat.

1.6 Working Group meetings

The working group should meet physically at a minimum once every two years. Meetings should use cost effective accommodations and institutional facilities and where possible take advantage of other meetings in the region. Meetings shall be chaired by the Convener of the Working Group. The reports of the meetings will be formally submitted to OSPESCA, WECAFC, CFMC and CRFM.

APPENDIX V - WORK PLAN OF THE WORKING GROUP

WECAFC/CITES/OSPESCA/CRFM/CFMC Working Group on Shark Conservation and Management in the Caribbean Region (WGSCM)

The joint Working Group intends to carry out the following activities over the period 2018 - 2020:

Activity	Timeframe	Responsible
Finalization, publication and dissemination of the Report of the WGSCM held in Barbados 17 – 19 October, 2017	December 2017	FAO WECAFC Secretariat with inputs from meeting participants
Provide technical and scientific advice to national governments and WECAFC Commission	January 2018 – December 2020	WGSCM members
Inform/Report to the: • 8th meeting of the WECAFC Scientific Advisory Group (SAG), November 2017. • 17th session of WECAFC in 2018	As deadlines for reporting require	WECAFC Secretariat, WGSCM convener and FAO
Finalization, publication and dissemination of the Regional Plan of Action for the Conservation and management of sharks and rays in the WECAFC area	November - 2017 – June 2018	Inputs to be send to Ramon Bonfil by 30 October and by 7 November the updated draft RPOA will be shared with the WG again for further review. Members, including the USA, are looking for providing assistance to finalize the RPOA. A final draft of the RPOA will have to be ready by 15 January 2018 for review by the ICM. WECAFC/CITES/OSPESCA/CRFM/CFMC with support from WGSCM, to be adopted through the Interim Coordination Mechanism for sustainable fisheries (Fisheries ICM) process.

Activity	Timeframe	Responsible
Shark fisheries management and conservation recommendations finalization and advisory support provision upon request	November 2017 – January 2019	The recommendations will pass through the Fisheries ICM process (CRFM, OSPESCA, WECAFC) for review before adoption by WECAFC 17
Organize and execute in WECAFC member countries training workshops for preparation of National Plans of Action for Conservation and Management of Sharks and Rays	January 2018 – December 2020	WECAFC Secretariat/CITES/FAO with support from WGSCM
Organize and execute shark and fins identification training workshop in selected WECAFC member countries	June - October 2018	WECAFC Secretariat/CITES/FAO with support from WGSCM
Prepare for WECAFC Regional Shark Stock Assessments: • Training in stock assessment for WG Countries • Carry out planned selected stock assessments	July 2018 onwards	WECAFC/FAO/CITES/CRFM/ OSPESCA/CFMC with technical support from WGSCM and funding from regional and international shark conservation organizations
Increase collaboration with other partners (RFMOs) and other organizations (CITES, CMS, SPAW) on shark conservation and management	January 2018 onwards	WGSCM supported by Shark Conservation Organizations through WECAFC and partners

APPENDIX VI - RECOMMENDATIONS FOR CONSIDERATION BY WECAFC

Recommendation - WECAFC/17/2018/6

"ON THE FISHERIES MANAGEMENT AND CONSERVATION OF SHARKS AND RAYS IN THE WECAFC AREA"

The Western Central Atlantic Fishery Commission (WECAFC):

RECALLING that the objective of the Commission is to promote the effective conservation, management and development of the living marine resources within the area of competence of the Commission, in accordance with the FAO Code of Conduct for Responsible Fisheries, and to address common problems of fisheries management and development faced by members of the Commission;

RECALLING that the FAO Committee on Fisheries in 1999 adopted an International Plan of Action for the Conservation and the Management of Sharks, which calls on States, within the framework of their respective competencies and consistent with international law, to cooperate through regional fisheries organizations with a view to ensuring the sustainability of shark stocks as well as to adopt and implement National Plans of Action for the conservation and management of sharks;

MINDFUL of the fact that fish belonging to the taxon Elasmobranchii, which includes sharks, skates, rays and similar species are generally very vulnerable to overexploitation due to their life-cycle characteristics, and that scientific knowledge indicates that some stocks of sharks and rays in the Atlantic Ocean are under threat.

RECOGNIZING the sharks and rays management and conservation measures taken already by other regional fisheries bodies with a mandate in the Atlantic Ocean, such as the International Commission For The Conservation of Atlantic Tunas (ICCAT), North East Atlantic Fisheries Commission (NEAFC) and the Northwest Atlantic Fisheries Organization (NAFO), and the major efforts made by a range of WECAFC members towards sharks and rays conservation;

FURTHER RECOGNIZING the shark and ray related trade decisions by the Convention on International Trade in Endangered Species of Flora and Fauna (CITES), and listing of various species in the CITES Appendices, as well as in those of the Protocol Concerning Specially Protected Areas and Wildlife (SPAW Protocol), and the Convention on Conservation of Migratory Species (CMS);

NOTING the importance of harmonizing conservation and management measures with other international and regional conventions for the sustainable management and conservation of these shark and ray species;

CONSIDERING the agreed Programmes of Work of WECAFC 15 - 16 (2014-2017), which included activities such as the development of Shark-NPOAs by members as well as the participatory assessment of sharks and rays stocks and the development of a Regional Plan of Action for the conservation and management of sharks and rays (RPOA-Sharks);

RECALLING the outcomes of the 1st meeting of the WECAFC/CITES/OSPESCA/CRFM/CFMC Working Group on Shark Conservation and Management, which was held in Barbados on 17-19 October 2017;

PENDING the delivery of additional information by the Working Group, CRFM Annual Scientific Meeting and the WECAFC Scientific Advisory Group (SAG);

ADOPTS in conformity with Article 6 of the WECAFC Revised Statutes this RECOMMENDATION that:

1. Members of WECAFC implement the endorsed "Regional Plan of Action for the Conservation and Management of Sharks and Rays in the WECAFC Area" as appropriate, and report from 2019 onwards, through the WECAFC Secretariat, on progress with the implementation of the plan to the WECAFC sessions.
2. Members of WECAFC prepare their NPOAs-Sharks in line with the IPOA-Sharks, in support of more effective conservation and management of sharks and rays in general. and ensuring implementation of measures agreed by WECAFC.
3. Members of WECAFC that are non-contracting parties to ICCAT provide their estimates of landings and of live and dead discards of sharks mentioned under paragraph 3, and all other available data including observer data, annually to WECAFC, as appropriate, such that the data can be provided to ICCAT as part of their data collection, to support the stock assessment process.
4. Members of WECAFC, where possible, undertake research to identify ways to make fishing gears more selective with the aim to reducing by-catches of sharks.
5. Members of WECAFC, where possible, conduct research on key biological/ ecological parameters, life history and behavioural traits, migration patterns, as well as on the identification of potential mating, pupping and nursery grounds of the most common shark species in the WECAFC area.
6. The Working Group on WECAFC/CITES/OSPESCA/CRFM/CFMC Working Group on Shark Conservation and Management continues to collect, generate and share data and information on shark and rays resources and their fisheries for the bi-annual meeting. The Working Group will include in its workplan the review of the stock status of the main commercially targeted sharks and rays stocks, as well as progress made with the implementation of the RPOA-sharks, and report on these matters to the Scientific Advisory Group (SAG).

Draft Recommendation - WECAFC/17/2018/7

"ON THE REMOVAL OF FINS OF SHARKS ON BOARD BY VESSELS FISHING IN THE WECAFC AREA"

The Western Central Atlantic Fishery Commission (WECAFC):

RECALLING that the objective of the Commission is to promote the effective conservation, management and development of the living marine resources within the area of competence of the Commission, in accordance with the FAO Code of Conduct for Responsible Fisheries, and to address common problems of fisheries management and development faced by members of the Commission;

RECALLING the objective of the "Regional Plan of Action for the Conservation and Management of Sharks and Rays in the WECAFC Area", which is to ensure the conservation and management of relevant sharks and rays and their long-term sustainable use in the WECAFC area;

NOTING that shark finning is an exceptionally wasteful practice and undermines the goal of full utilization set forth in the FAO International Plan of Action (IPOA) for the Conservation and Management of Sharks;

RECOGNIZING that very few WECAFC members have shark fisheries management plans and NPOAs in place that would facilitate stock assessments, research and knowledge increase and that the undertaking of these assessments is seriously hampered by the constraints to shark identification and leads to underreporting due to the practice of shark finning [meaning the removal of fins at sea and discarding of carcasses of sharks];

NOTING that shark finning has been prohibited by most Regional Fisheries Bodies and that on-board shark fin removal has been banned by the North East Atlantic Fisheries Commission (NEAFC) and the Northwest Atlantic Fisheries Organization (NAFO), OSPESCA, as well as several WECAFC members individually, and that it is important to harmonize shark conservation measures and employ best practices to achieve an impact for these often pelagic, highly migratory species;

STRESSING that prohibiting the removal of shark fins on-board vessels and requiring that all sharks are landed with fins still naturally attached has long been widely recognized by MCS experts, as the most reliable and cost-effective method for enforcing finning bans;

PENDING the delivery of additional information by the WECAFC/CITES/ OSPESCA/CRFM/CFMC Working Group on Shark Conservation and Management and the WECAFC Scientific Advisory Group (SAG);

ADOPTS in conformity with Article 6 of the WECAFC Revised Statutes a RECOMMENDATION that:

1. WECAFC members prohibit the removal of shark fins at sea and require that all sharks be landed with their fins naturally attached through the point of first landing of the sharks.
2. WECAFC members prohibit the retention on board, transhipment, landing and selling of shark fins harvested in contravention of this measure.

3. Without prejudice to paragraph 1 of this Recommendation, in order to facilitate on-board storage, shark fins may be partially cut from the body and folded against the carcass, but shall not be removed from the carcass before the first landing.

4. In fisheries that are not directed at sharks, WECAFC members encourage to the extent possible the release of live sharks that are caught incidentally and are not used for food and/or subsistence, using proper handling techniques, while ensuring safety of the crew.

Draft Recommendation - WECAFC/17/2018/8

"ON APPLYING A PRECAUTIONARY APPROACH TO FISHING OF THREATENED SPECIES OF SHARKS AND RAYS IN THE WECAFC AREA"

The Western Central Atlantic Fishery Commission (WECAFC):

RECALLING that the objective of the Commission is to promote the effective conservation, management and development of the living marine resources within the area of competence of the Commission, in accordance with the FAO Code of Conduct for Responsible Fisheries, and to address common problems of fisheries management and development faced by members of the Commission;

RECOGNIZING that fisheries management according to the precautionary approach exercises prudent foresight to avoid unacceptable or undesirable situations, taking into account that changes in fisheries systems are only slowly reversible, difficult to control, not well understood, and subject to change in the environment and human values[3];

FURTHER RECOGNIZING that operational interpretations of precautionary fisheries management will depend on the context. Different interpretation may be appropriate depending on the scale of the fishing operations (artisanal or small-scale fisheries vs. highly capitalized and technologically advanced fisheries) and on the state of the exploited system (early stages of exploitation versus systems in a state of obvious overexploitation);

MINDFUL of the shark conservation measures adopted by the International Commission for the Conservation of Atlantic Tunas (ICCAT), the North East Atlantic Fisheries Commission (NEAFC) the Northwest Atlantic Fisheries Organization (NAFO) and many other Regional Fisheries Bodies, as well as many WECAFC members individually, and that it is important to harmonize shark conservation measures in order to achieve an impact for these often pelagic, migratory species;

FURTHER MINDFUL of the insertion of a range of shark and ray species in the appendices of the Protocol Concerning Specially Protected Areas and Wildlife (SPAW), the Convention on International Trade in Endangered Species (CITES), and the Convention on Conservation of Migratory Species (CMS), which respectively promote the protection and recovery of these species, regulate the international trade in these species, and aim to conserve migratory species;

NOTING that the International Union for the Conservation of Nature (IUCN) through its Shark Specialist Group has determined that roughly one-quarter of the world's shark and ray species are threatened with extinction (i.e. those listed as Critically Endangered, Endangered and Vulnerable on the IUCN Red List), owing primarily to overfishing;

PENDING the delivery of additional information by the WECAFC/CITES/ OSPESCA/CRFM/CFMC Working Group on Shark Conservation and Management and the WECAFC Scientific Advisory Group (SAG);

[3] Text from the "Precautionary approach to capture fisheries and species introductions", FAO Technical Guidelines for Responsible Fisheries. No. 2. Rome, FAO. 1996. 54p.

ADOPTS in conformity with Article 6 of the WECAFC Revised Statutes this RECOMMENDATION that:

1. WECAFC members prohibit vessels flying their flag from directed fishing of the following list of shark and ray species:

Common name	Scientific name	Supporting reason
Daggernose Shark	*Isogomphodon oxyrhynchus*	Critically Endangered globally
Whale Shark	*Rhincodon typus*	Endangered globally and protected in several WECAFC member states; valuable for ecotourism; listed on CMS Appendix II, and SPAW Protocol Annex III
Smalltooth sawfish	*Pristis pectinata*	Critically Endangered globally and protected in several WECAFC member states; listed on CMS Appendix I, and SPAW Protocol Annex II
Largetooth sawfish	*Pristis pristis*	Critically Endangered globally and protected in several WECAFC member states; listed on CMS Appendix I
Caribbean Electric Ray	*Narcine bancroftii*	Critically Endangered globally
Giant Manta Ray	*Mobula birostris*	Vulnerable globally and protected in several WECAFC member states; valuable for ecotourism; listed on CMS Appendix I, and SPAW Protocol Annex III.

2. WECAFC members ensure that incidental catches of the species listed in paragraph 1 are promptly released unharmed and alive, to the extent possible.
3. Specimens of shark and ray species as listed in paragraph 1 cannot be retained on board, transshipped, landed, transferred, stored, sold, displayed or offered for sale.
4. WECAFC members restrict vessels flying their flag from directed fishing of the following list of shark and ray species:

Common name	Scientific name	Supporting reason
Oceanic whitetip shark	*Carcharhinus longimanus*	Critically Endangered in Western North Atlantic; prohibited under ICCAT; listed on SPAW Protocol Annex III.
Hammerhead sharks	Family *Sphyrnidae* (except *Sphyrna tiburo*)	*Sphyrna lewini* and *S. mokarran* are Endangered globally; *S. zygaena* is Vulnerable globally; Family except for bonnethead *(S. tiburo)* prohibited under ICCAT; *Sphyrna lewini, S. mokarran* and *S. zygaena* are listed on the SPAW Protocol; *S. lewini and S. mokarran* are listed on CMS Appendix II
Silky Shark	*Carcharhinus falciformis*	Prohibited under ICCAT; listed on CMS Appendix II
Bigeye thresher shark	*Alopias superciliosus*	Globally Vulnerable; prohibited under ICCAT; listed on CMS Appendix II;

5. WECAFC members are encouraged to integrate the conservation measures under the paragraphs above within their national level legislation, and enforce these measures within waters under their national jurisdiction;
6. WECAFC members collect and submit to WECAFC and the Secretariat of the SPAW Protocol, as necessary, all available data and information on the species listed in paragraphs 1 and 4, in support of further assessment of the resource status of these species.

APPENDIX VII - RPOA – SHARKS

FINAL DRAFT REGIONAL PLAN OF ACTION FOR THE CONSERVATION AND MANAGEMENT OF SHARKS AND RAYS IN THE WECAFC AREA

Sharks being landed by a Guatemalan fishing boat. Photo R. Bonfil

prepared by:

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CONTENTS

LIST OF ACRONYMS AND ABBREVIATIONS

CCCFP – Caribbean Community Common Fisheries Policy

CITES – Convention on International Trade in Endangered Species of Flora and Fauna

CLME – Caribbean Large Marine Ecosystem

CR – Critically Endangered (a classification of the IUCN Red List of Threatened Species)

CRFM – Caribbean Regional Fishery Mechanism

DD – Data Deficient (a classification of the IUCN Red List of Threatened Species)

DWFN – distant water fishing nations

EN – Endangered (a classification of the IUCN Red List of Threatened Species)

FAO – Food and Agriculture Organization of the United Nations

GEF – Global Environment Facility

IPOA-sharks – International Plan of Action for the Conservation and Management of Sharks

IUCN – International Union for Conservation of Nature

IUU – Illegal, unreported and unregulated (fishing)

LC – Least Concern (a classification of the IUCN Red List of Threatened Species)

MCS – monitoring, control and surveillance

MEA – multilateral environmental agreement

MSC – Marine Stewardship Council

NE – Not Evaluated (a classification of the IUCN Red List of Threatened Species)

NOAA – National Oceanic and Atmospheric Administration

NPOA-sharks – National Plan of Action for the Conservation and Management of Sharks

NT – Near Threatened (a classification of the IUCN Red List of Threatened Species)

OSPESCA – Central American Fisheries and Aquaculture Organization

PSMA – Port States Measures Agreement (FAO)

RFB – regional fishery body

RPOA-sharks – Regional Plan of Action for the Conservation and Management of Sharks

SAG – Scientific Advisory Group

SLC – Subregional Office for the Caribbean (FAO)

UNFSA – United Nations Fish Stocks Agreement (UN)

VMS – Vessel Monitoring System

VU – Vulnerable (a classification of the IUCN Red List of Threatened Species)

WECAFC – Western Central Atlantic Fishery Commission

INTRODUCTION

SHARK CONSERVATION: A PRESSING GLOBAL PROBLEM

Over the last 40-50 years, the conservation status of cartilaginous fishes (the Chondrichthyans: sharks, skates, rays and chimeras) has become, little by little, one of the major concerns over our oceans' biodiversity, the health of aquatic ecosystems, and the sustainability of fisheries. Although sharks (the term sharks as used here includes sharks, skates, rays and chimaeras) have been utilized here and there in moderate quantities by many coastal cultures throughout the history of humankind, they were first heavily fished globally during WWII in order to supply fighting troops with vitamin A – extracted from their oily livers – as a food supplement. The end of WWII provided a brief respite to many shark populations, but as the world's human population and its economy started to accelerate their growth, the demand for food, the need for jobs, and even the economic wealth of some nations started to exert an ever-increasing pressure on fishery resources. Sharks, though long considered low-value fishery resources, did not escape this trend, and as decades passed by, the expansion of fleets of industrialized distant water fishing nations (DWFN), the development of coastal fisheries around the developing world, and the economic boom of the Chinese economy, all meant that shark populations experienced a surge in exploitation around the world.

Historically, due to the low value of shark meat, most targeted shark fisheries and the important shark bycatch in non-target fisheries remained unchecked. Several cases of boom-and-bust shark fisheries occurred and by the 1970s scientists started raising the alarm over the sustainability of shark fisheries. At the same time, shark fisheries started to expand in many countries partially fuelled by the increased demand for shark fins in China, which was experiencing unprecedented economic growth. Soon, even fishers that never cared about sharks, would harvest them opportunistically or through directed fisheries in order to sell their valuable fins, which could fetch over $100 USD per kilo. During the early 1990s the first efforts towards the conservation of sharks took form with the establishment of the IUCN's Shark Specialist Group. However, the world's shark catch kept growing without halt until 2004, when the all-time maximum of reported shark catches reached over 900,000 t according to the Food and Agriculture Organization of the United Nations (FAO). Since then, a steady decline in shark catches has been recorded for the first time in global history, reaching a 20 percent decline from peak capture production in 2009.

The cartilaginous fishes are considered nowadays one of the vertebrate groups most threatened with extinction in the world. Overall, ¼ of the 1041 species of chondrichthyans evaluated by the IUCN are threatened with extinction. Almost half of the species have insufficient information to evaluate their conservation status given the characteristic lack of historical information about their fisheries or the size of their populations, or even their specific life history characteristics. This means that in all likelihood, the total of threatened cartilaginous fish species is even larger the currently known.

The fragility of sharks to sustain heavy fishing for protracted periods stems from their biological and ecological traits. Most of them are slow growing, have long gestation periods, have very low fecundity when compared with egg-laying bony fishes and marine invertebrates, and due to their position as high-level and top predators in the ecosystems where they live, tend to have small population sizes as compared to prey species. All of these characteristics mean that shark populations grow very slowly and thus cannot recover rapidly from significant losses in abundance such when subjected to long-term

heavy fishery exploitation. The life histories of sharks together with the socio-economic factors explained above mean that shark fisheries must be managed even more carefully than most other fisheries if their sustainability is to be guaranteed.

INITIATIVES FOR SHARK CONSERVATION AND FAO'S INTERNATIONAL PLAN OF ACTION FOR THE CONSERVATION AND MANAGEMENT OF SHARKS

International concern over the fate of shark populations worldwide began with the evaluation of the conservation status of all known shark species by the IUCN Shark Specialist Group in the early 1990s, a task that took over 14 years to be completed. Other conservation initiatives such as regional agreements listing a few charismatic shark and ray species like the great white shark (*Carcharodon carcharias*), the basking shark (*Cetorhinus maximus*), the whale shark (*Rhincodon typus*), and the giant manta rays (*Mobula birostris* and *M. alfredi*) as protected in specific waters, began to appear in the late 1990s and early 2000s. Examples of these are the Convention on the Conservation of Migratory Species of Wild Animals, the Barcelona Convention for the Protection of the Marine Environment and the Coastal Region of the Mediterranean, as well as national level protection in some countries' EEZs for some species. However, efforts towards addressing the conservation and management of shark populations took its strongest form when FAO, recognizing the need for special levels of management, launched its International Plan of Action for the Conservation and Management of Sharks (IPOA-sharks) in 1998.

The IPOA-sharks was born as a response to concerns over expanding fisheries for sharks and the potential negative impacts on shark populations. FAO organized on request of its members an expert consultation to develop guidelines leading to such a Plan of Action and a Technical Working Group on the Conservation and Management of Sharks, which was held in Tokyo during April 23-27, 1998. The IPOA-sharks was adopted by the member nations of the Committee on Fisheries (COFI) of FAO in February 1999 and endorsed by the FAO Council in Rome in June 1999. The IPOA-sharks includes 31 paragraphs and 2 appendices and has the objective to ensure the conservation and management of sharks and their long-term sustainable use. It applies to all species of chondrichthyans and all types of catches, whether directed, by-catch, commercial or recreational, as well as to Coastal States where sharks are caught and flag States where vessels entitled to fly their flags catch sharks on the high seas. Despite the voluntary nature of the IPOA-sharks, FAO encourages nations to adopt it and to develop their own National Plan of Action for the Conservation and Management of Sharks (NPOA-sharks). Up to date, a total of 44 countries have finalized their NPOA-Sharks and 12 others are in the process of preparation their NPOAs. The IPOA-sharks proposes a structure and contents for the NPOA-sharks (including the description of the current state of shark stocks and fisheries as well as a framework, objectives and strategies for the management of sharks), stresses the use of the precautionary approach for the management of shark fisheries, and suggests that a Shark Assessment Report (SAR) is prepared concurrently with the development of the NPOA-sharks.

Moreover, the IPOA-sharks, recognizing that many sharks are highly migratory and part of transboundary stocks, calls for the preparation of Regional Plans of Action for the Conservation and Management of Sharks (RPOA-sharks) whenever this seems appropriate. To date, a few RPOA-sharks have been prepared (i.e. the RPOA-sharks for the Pacific Islands, the RPOA-sharks for the Permanent Commission for the South Pacific, and the RPOA-sharks for Central America) and are proof of the will for cooperation between neighbouring nations to ensure the sustainability of shark stocks.

DEVELOPMENT OF THE WECAFC RPOA-SHARKS

The Western Central Atlantic Fishery Commission (WECAFC) is a regional fisheries organization established under the auspices of FAO in 1973 (Fig. 1). Its objective is to promote the effective conservation, management and development of the living marine resources of the area of competence of the Commission, in accordance with the FAO Code of Conduct for Responsible Fisheries, and address common problems of fisheries management and development faced by members of the Commission.

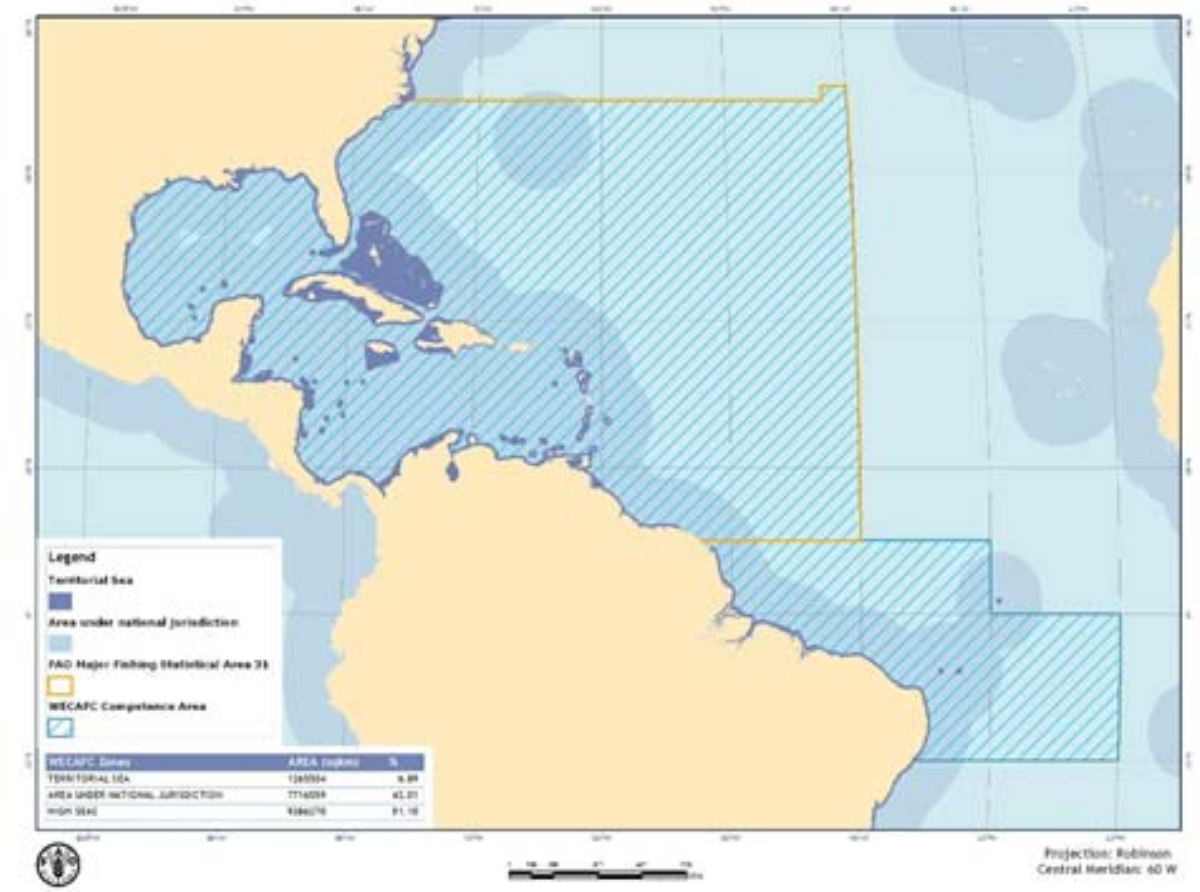

Figure 1. WECAFC boundaries and area

The work of the Commission is guided by the following three principles:

1) promote the application of the provisions of the FAO Code of Conduct on Responsible Fisheries and its related instruments, including the precautionary approach and the ecosystem approach to fisheries management;
2) ensure adequate attention to small-scale, artisanal and subsistence fisheries; and
3) coordinate and cooperate closely with other relevant international organizations on matters of common interest.

The purpose of WECAFC is to facilitate the coordination of research; to encourage education and training; to assist Member Governments in establishing rational policies; and to promote the rational management of resources of interest to two or more countries. The Commission has a management advisory function, but no regulatory powers. It includes 34 members: Antigua and Barbuda, Bahamas, Barbados, Belize, Brazil, Colombia, Costa Rica, Cuba, Dominica, Dominican Republic, France, European Community, Grenada, Guatemala, Guinea, Guyana, Haiti, Honduras, Jamaica, Japan, Korea

(Rep. of), Mexico, Netherlands, Nicaragua, Panama, Saint Kitts and Nevis, Saint Lucia, Saint Vincent and the Grenadines, Spain, Suriname, Trinidad and Tobago, United Kingdom, United States, and Venezuela.

The joint WECAFC/CITES/OSPESCA/CRFM/CFMC Working Group on Shark Conservation and Management was established by the 15th session of WECAFC held in Port of Spain, Trinidad and Tobago on 26-28 March 2014 on specific request of the members. The adopted program of work of the Commission included an activity (3.12) on "Improved management and conservation of sharks". The Commission requested the Working Group under this activity to support the development of at least 2 national plans and a regional plan of action for the management and conservation of sharks.

In the period 2014-2015 the WECAFC Secretariat mobilized resources to carry out the work on shark fisheries and management as requested by the Commission and supported the development of a Caribbean Sharks and Rays identification guide, as well as sharks and rays assessments and the development of NPOA-sharks in Antigua and Barbuda, and Barbados. Moreover, some support was provided to Trinidad and Tobago to increase awareness on shark stocks and the need for improved management and conservation of those species listed in the CITES annexes. In 2016 the National Oceanic and Atmospheric Administration (NOAA) of the USA Department of Commerce awarded a grant to WECAFC in fulfilment of the Secretariat's proposal titled "Conservation and Management of Sharks and Rays in the Wider Caribbean Region".

A regional assessment of shark and ray fisheries and related management and conservation was carried out in the period July – October 2017, and a draft RPOA-Sharks was prepared by regional experts for discussion at the 1st meeting of the Working Group held in the period 17-19 October 2017 in Barbados. This RPOA was prepared taking into consideration several documents directly germane to its development as well as others that could offer examples or additional ideas. These documents are listed in Appendix I. Following the discussion by the Working Group, and incorporating the observations, inputs and comments received, this [draft] RPOA will be undergoing a further review and endorsement process. The review process will include the Interim Coordination Mechanism (ICM) for sustainable Fisheries of CRFM, OSPESCA and WECAFC, as well as discussion by the WECAFC Scientific Advisory Group (SAG). Final review and endorsement is expected to take place at the 17th session of WECAFC, which is scheduled for the 2nd semester of 2018.

It should also be duly noted that the development of any shark plan must not be seen as the end in itself but rather as a tool to achieve better management and conservation outcomes for sharks and rays. Moreover, all countries in the region have to develop their SARs and NPOAs. The current RPOA is not a substitute for the individual NPOAs, but facilitates collaboration on sharks and rays research, data collection and harmonization of necessary management measures throughout the region.

CONSIDERATIONS ABOUT SHARK FISHERIES AND THEIR MANAGEMENT

Shark fisheries pose particular challenges to management and conservation. To begin with, most shark species are very slow to recover from overexploitation due to their biological and ecological traits (see first section). They also tend to have a closer stock-recruitment relationship than other species, which means that at low abundances they cannot produce large recruitments. In addition to this, in many parts of the world, chiefly in tropical countries, these fisheries are complex in their nature (multi-specific, multiple gears and fleets) and this complexity translates into difficulties for research and management.

The number of shark species caught in the fisheries tends to be high, they tend to be fished in various fisheries with several kinds of fishing gears, sometimes as a target species, others as a welcomed bycatch that is either commercialized or used locally as food, and sometimes as unwanted and discarded bycatch. Most of these shark and ray fisheries tend to be multi-species in their nature, with up to a dozen or more sharks and rays species found in the catches of a single fleet.

Studying these complex systems requires a significant amount of human and financial resources, which many times are difficult to garner. Generating the baseline information about the key life history traits of so many species is an enormous task. The derivation of key fishery parameters, such as the selectivity of a multitude of gears for each of the several species that occur in the catches, is also a challenge. This makes it difficult to compare data from different fishing practices to get harmonized signals on the sustainability of stocks. Difficulties in taxonomic identification of sharks and rays to species level, also complicates assessments, because many species are very similar to the untrained eye and are therefore sometimes incorrectly identified, or recorded under more generic or grouped classifications. Because of this, obtaining species specific data on landings and discards, and reporting this information to researchers and managers is not as simple as with more easily identifiable species such as tunas, snook, or shrimps.

For all the reasons described above, sharks are generally given extraordinary rather than functional management (FAO, 2000), as managers of shark fisheries need to respond to a confluence of pressures from fisheries (increased and expanding global fishing capacity) and changes in marine environments (pollution and climate change) and markets (demand from a growing and more affluent consumer base).

OBJECTIVES OF THE WECAFC RPOA-SHARKS

Alignment with the IPOA-sharks implies that the overall objective of this RPOA is to ensure the conservation and management of sharks and rays and their long-term sustainable use in the WECAFC area. The purpose of the RPOA is to encourage sustainability of shark and ray fisheries in the region, to ensure the long-term provision of the economic, social and environmental benefits that productive and sustainable shark resources provide people [coastal communities] and the environment.

Specific objectives are:

A. Identify the fishery assets, their condition, pressures and current management responses;

B. Propose regional shark fisheries management and conservation [policy, tools and actions] that could be adopted by member nations in order to ensure productive and sustainable shark and ray fisheries, based on the principles of the Code of Conduct for Responsible Fisheries, including the Ecosystem Approach to Fisheries, and the Precautionary Approach to Fisheries Management;

C. Stimulate the establishment of region-wide common approaches to management: e.g. harmonized governance measures, fisheries monitoring; methodologies for data collection and its management, surveillance and enforcement;

D. Foster regional capacity building, cooperation and knowledge sharing;

E. Promote increased public and stakeholder awareness about shark and ray management and conservation in the region.

CURRENT SITUATION OF SHARK FISHERIES IN THE WECAFC AREA

Out of the 34 members of WECAFC, thirteen (or 38 percent) have prepared their NPOA-sharks[4]. These countries are: Antigua and Barbuda, Belize, Brazil, Colombia, Costa Rica, Cuba, European Community, Japan, Korea (Rep. of), Mexico, United Kingdom, United States, and Venezuela. In addition to this, there is an RPOA-sharks for Central America, developed and endorsed by the OSPESCA membership. Not all of these countries have adopted their NPOAs through national legislation yet.

DESCRIPTION OF THE FISHERIES

The members of the WECAFC have active fishing fleets with a wide variety of métiers and target species. The majority of vessels fishing in the WECAFC area can be classified as small scale, coastal fisheries, but many nations have pelagic and large-scale fisheries as well. Coastal fisheries tend to fish on coral reef habitat or in river outlets and estuaries along the South American coast for example. Several nations also practice Deepwater fisheries, mainly line fisheries for larger bony fish and trapping for lobster.

For FAO Major Fishing Area 31 the largest part of capture fisheries production consists of small pelagics, like gulf menhaden and sardines. Other commercially important species are spiny lobster, queen conch, prawns and tuna. Only limited data is available on shark catches in the area. Few nations report species specific landings, most group them as sharks nei[5] and rays nei. Shark landings in the Western Central Atlantic have gradually decreased since the mid 1990's with the exception of the period from 2009 to 2013 when a dedicated fishery for blue sharks was catching significant numbers in the area.

A few countries account for the majority of shark landings in the area. Traditionally Mexico had the largest catches of sharks and even though this has dropped considerably in the last decade the country is still one of the major shark catching nations in the region. Over one-third of Mexico's catches consists of southern stingray. Spain became a major shark finish nation in the region from 2009 onwards, but has reduced its effort in recent years. Belize shark harvests have reduced since it adopted strict management policies for its longline fleet and the specific targeting of sharks seems to have seized.

In the WECAFC area most shark mortality occurs as bycatch in other fisheries. Six countries reported directed fishery for sharks (Antigua, US, Belize, Panama, Cuba and Barbados). The USA and Cuba reported a directed fishery for rays. Types of fisheries described are diverse, ranging from pelagic longline operations to small scale and recreational coastal rod and reel fisheries.

All countries in the WECAFC area, apart from Belize, reported bycatch of sharks in their fisheries. Many countries reported bycatch in coastal artisanal fisheries (hook & lines, traps, set nets & beach seines). Some countries reported also bycatch in long line fisheries and in deep water fisheries for lobster and red fish (traps).

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[4] Technically the plan from the European Community is an RPOA-sharks, not an NPOA-sharks.

[5] Nei = not elsewhere included, and is used to group species that are not individually identified

Belize and the USA only allow landings for sharks and rays if the operator is licensed for shark fisheries. The Cuban state fisheries landings (accounting for 62 percent of total national fisheries production) consist for 3.7 percent of sharks and 10.7 percent of rays.

MAIN ELASMOBRANCH SPECIES IN THE WECAFC AREA

There are at least 54 shark and 28 ray species in the WECAFC area that can be found in the fisheries or that are of particular conservation concern (Appendix II), a larger list of all species occurring in the area is beyond the scope of this document as many of them do not appear in the catches.

Some species of sharks and rays are at risk due to the demand for their parts and products in international trade. CITES Parties agreed to include several species in the CITES Appendices. Five species of sawfish (*Pristis clavata, Pristis microdon, Pristis pectinata, Pristis pristis, and Pristis zijsron*) are listed in Appendix I of CITES while 12 shark (*Cetorhinus maximus, Rhincodon typus, Carcharodon carcharias, Lamna nasus, Carcharhinus longimanus, Sphyrna lewini, Sphyrna mokarran, Sphyrna zygaena, Alopias pelagicus, Alopias superciliosus, Alopias vulpinus and Carcharhinus falciformis*) and 11 ray species (*Manta alfredi, Manta birostris, Mobula eregoodootenkee, Mobula hypostoma, Mobula japanica, Mobula kuhlii, Mobula mobular, Mobula munkiana, Mobula rochebrunei, Mobula tarapacana* and *Mobula thurstoni*) are listed in Appendix II of CITES. From this set of species, two sawfishes, 10 shark and 3 ray species can be found in the area (see appendix II).

The IUCN Red List of Threatened Species classifies species according to their conservation status. Assessments are carried out by recognized specialists in each species group following a specific set of criteria to determine their relative risk of extinction. IUCN conservation status classifications are specific and not necessarily equivalent to those determined by other groups or institutions. According to the IUCN, a total of 23 sharks and 9 rays from those found in the region (39 percent of the species) are considered threatened either globally or in the region (25.6 percent VU, 7.3 percent EN, 6.1 percent CR), 23.2 percent are NT, 25.6 percent are DD, 1.2 percent are NE, and only 11 percent are LC (see acronyms section above for details).

It is alarming that the percentage of threatened species in the region surpasses by far the global figure for threatened elasmobranchs (23.9 percent). In addition, the lower proportion of LC species in the region when compared to the global figure (23.2 percent) is another cause for concern. All the above signals that efforts for conservation and management of sharks in the WECAFC area need to be accelerated and expanded in order to overcome current trends.

CAPACITY FOR MCS

TBD

RESEARCH

TBD

STATUS OF STOCKS

There is limited information available on the status of shark stocks in the WECAFC area. Historically these species where not deemed economically important and there was little incentive to collect data on population sizes or other demographics. There is however consensus that sharks in the region exhibited

a strong decline in the past decades. Baum et.al modeled in 2003 that the shark population in the whole of the North Atlantic have declined with as much as 90 percent for specific populations due to overfishing.

The United States through the National Oceanic and Atmospheric Administration (NOAA) is the only WECAFC member to have carried out stock assessments and stock status reviews for elasmobranch within (part of) their range in the WECAFC area. Six shark species' stocks in the South Atlantic and Gulf of Mexico where assessed by the SouthEast Data, Assessment, and Review (SEDAR). The Gulf Smooth hound (*Mustelus sinusmexicanus*), Dusky shark (*Carcharhinus obscurus*) Atlantic Smooth Dogfish Shark (*Mustelus canis*), Atlantic Sharpnose (*Rhizoprinodon terraenovae*). Blacktip shark (*Carcharhinus limbatus*) and Bonnethead (*Sphyrna tiburo*) were *assessed* between 2012 and 2015. Gulf Smoothhound, Atlantic sharpnose, Blacktip shark and Bonnethead were assessed as being exploited within sustainable limits. For Atlantic Smooth dogfish to little information was available to make an assessment and the population was deemed to be a species complex together with Florida dogfish. Dusky shark was found to have been severely overexploited in the past and stocks were in need of rebuilding.

NOAA also carried out 2 status reviews as part of an application for listing on the Endangered species list. One was for all mobulids the other for scalloped hammerhead sharks (*Spyhrna lewini*).

CURRENT MANAGEMENT MEASURES FOR SHARKS

As stated above, widespread concern over the lack of management of shark fisheries and the impact that expanding catches have on shark populations led to the adoption and endorsement of the Food and Agriculture Organization of the United Nations (FAO) International Plan of Action for the Conservation and Management of Sharks (IPOA–SHARKS) in 1999. Thirteen WECAFC members have since developed National Plans of Action for the Conservation and Management of Sharks with varying levels of implementation and monitoring.

In addition, there are a number of global and regional treaties and agreements that aim to regulate fisheries for sharks and/or protect and conserve depleted species, these are:

Global

1) The Convention in Trade of Endangered Species (CITES)
2) Convention on Migratory Species (CMS)
3) CMS Memorandum of Understanding on the Conservation on Migratory Sharks (MOU Sharks)

Regional

1) International Commission for the Conservation of Atlantic Tunas (ICCAT)
2) Organización del Sector Pesquero y Acuícola del Istmo Centroamericano (OSPESCA)
3) The Protocol Concerning Specially Protected Areas and Wildlife (the SPAW Protocol)

A detailed overview of these management tools can be found in the assessment report accompanying this Regional Plan of Action.

LINES OF ACTION FOR THE CONSERVATION AND MANAGEMENT OF SHARK FISHERIES IN THE WECAFC AREA

A total of 9 main lines of action have been identified for the WECAFC area:

A. Research
B. Fisheries data collection (Monitoring)
C. Region-wide cooperation and data sharing
D. Capacity building
E. Management measures
F. Surveillance and enforcement
G. Dissemination, public awareness and environmental education
H. Financing
I. Review, update and evaluation

A. RESEARCH

One of the first research activities that should be undertaken is to define a list of the shark species that will be the focus of the activities outlined in the RPOA-sharks. This list should ideally consider the most important species in the region's fisheries as well as all endangered species that occur in WECAFC and those in need of NDFs for CITES purposes. It should also be made explicit that the list is not static and can be updated on a periodic basis.

The products of basic research about the life cycles of sharks (age, growth and reproductive parameters) are key inputs into the large majority of stock assessment methods. Countries in the region should strive to begin this kind of research focusing on the most important species in their catches. Without this information, formal stock assessments will never be available and this would prevent the sound management of the resources.

Other key areas of research include the investigation of seasonality and routes of migratory species, defining which shark stocks are shared and by which countries, in order to better guide joint management, and the identification and mapping of the birthing and nursery grounds of the key species. An important additional area of research is the reduction of mortality through, for example, bycatch reduction devices in trawl fisheries, utilization of circle hooks to reduce shark mortality in longline fisheries, and other gear modifications to minimize unwanted shark catches in fisheries that target other species.

Fishery-independent abundance indices for the main shark species is another important area of research that needs to be initiated as early as possible at the national, sub-regional and regional level and be maintained yearly on a permanent basis. Such indices are essential to fine-tune stock assessment models and decrease the uncertainty in their results. Fishery-independent abundance indices could be built either through traditional methods such as research fishing or through modern technologies, like baited remote underwater video (BRUVs) networks.

Last but not least, it is urgent to initiate research into alternative methods for fisheries evaluation that could provide interim management measures while the data needed for data-hungry formal stock assessment methods can be implemented. Ecological Risk Assessment (ERA) also known as Productivity-Susceptibility Analysis (PSA), and demographic modeling are examples of methods that

can be used to prioritize which species require more attention and perhaps preventive management measures than others. Indices of stock abundance, such as catch curves, can also provide a preliminary idea of the status of stocks.

B. FISHERIES DATA COLLECTION (MONITORING)

There is an urgent need to obtain accurate estimates of the total catch (landed, released, and discarded at sea) in all commercial and recreational fisheries that catch sharks whether directed to them or as bycatch. More importantly, these estimates must be broken down to the species level. This implies that proper training and tools (identification guides) must be provided to enumerators that will gather this essential type of information.

Parallel to this, it is imperative to obtain statistics of the effort exerted in each fishery to obtain the shark catches mentioned above. Proper measures of effort for each type of fishery are extremely important to render the data useful for stock assessment. For example, days fishing is not a good measure of effort, but length and soaking time of the nets is a much better measurement of the effort in a gillnet fishery. Similarly, the introduction of Fish Aggregating Devices (FADs) in the region is causing hyperstability in catch per unit effort (CPUE) information, due to fish gathering around FADs and being less abundant elsewhere, and as a consequence fishery towards depletion continues. Traditional CPUE data is thus of lesser value in assessing the status of the stocks and innovative measures are required in stock assessments. Accurate and detailed information about catch and effort is as important as the biological parameters mentioned above for stock assessment models. Without either of these data, only coarse management measures can be applied and this might compromise the conservation of the stocks and the future of the fisheries.

Considering the above, data collection programs should be implemented as an urgent priority. These need to be properly staffed and provided with adequate facilities, equipment, training and supervision. This implies that member nations will need to invest financially in order to achieve this urgent task. Establishing stakeholder partnerships with NGO's and fishers' organizations and use of co-management structures could also be an additional way to implement proper fisheries data collection and analysis.

C. REGION-WIDE COOPERATION AND DATA SHARING

A system for the sharing of biological and fisheries information in the region needs to be implemented. This system could be coordinated and housed by an existing regional organization, like the Gulf and Caribbean Fisheries Institute (GCFI) or for instance within the WECAFC-FIRMS[6] partnership and use species, whole/gutted/beheaded in kilos; total effort by fishery; measurements in fork length or inter-dorsal length in cm; sex, pregnancy & number of pups). This is a requirement so that the shared information is not only compatible and unified, but meets strict scientific standards. The taking of different parameters or measures in different ways using different units, by each country is to be avoided.

On the other hand, the need for regional cooperation and data sharing means that the joint Working Group on Sharks needs to have a stronger and more active role in the region. Obvious duties for this

[6] Fisheries Resources Monitoring System

group could be, among others, the coordination of activities as well as the review and monitoring of progress in the implementation of the RPOA.

At the same time, this system must ensure the confidentiality of the information, such that the names of fishing vessels, captains and companies remain unknown, and specially making sure that the information on fishing grounds will not be shared with unauthorized groups outside of the scientific and management personnel.

Given that most if not all stocks of sharks in the WECAFC area are shared by at least two countries if not more, preparing stock assessments and making management decisions must be done at a regional or sub-regional level. It would be meaningless for one country to use good stock assessment models, but generate only information on part of the stock, instead of information that encompasses the entire stock. Similarly, it is of limited use to apply strong science-based management decisions to the shark fisheries in one country when neighbouring countries that share the same stocks are not in tune with those management measures or apply no management at all.

Already established regional databases. Such a system should allow all authorized fisheries researchers (marine biologists, stock assessment scientists, gear technology experts and social and economic scientists) and managers to access the information in order to carry out the necessary scientific studies that will support management decision-making processes. A similar approach has already been implemented by OSPESCA with the aid of IATTC and could be used as a model.

Prior to this, countries in the region need to cooperate to agree on minimum data to be taken and to develop a common methodological framework so that the same information, measurements and data are taken by each nation in a standard manner and using the same level of detail (i.e. landings data by).

D. CAPACITY BUILDING

There is an urgent and strong need to train fisheries enumerators, stakeholder partners, supervisors, researchers and even managers in the species identification of sharks and rays. This task should be the first step and basis for improved data gathering of fisheries' catches by species. This could be achieved through the organization of workshops led by specialists in shark identification in parallel with the widespread distribution of adequate identification guides such as the one recently prepared by FAO for the region.

In addition to species identification, training in statistically-sound catch and effort data collection needs to be organized. A census of all catch and effort in a fishery is an extremely costly and nearly impossible task to achieve, specially for small-scale fisheries which are often disperse and land their catches in many locations. Thus, adequate data collection programs that acquire the information through sampling campaigns are often the only viable solution. Training in the design and application of such data collection and analysis programs is a capacity building priority for the region.

Key scientists in the region need to be trained in modern stock assessment methodologies, the evaluation of the impacts of ecosystem changes and even in the proper preparation of peer-reviewed publications that validate the science supporting management decisions. This training should include methods that can provide preliminary management alternatives in data-scarce situations (see Research section, above) as well as formal stock assessment methods, and like all training mentioned above, should be a permanent and on-going activity.

Another important area of attention is institutional capacity building. There must be institutional arrangements at the local, sub-national, national, sub-regional and regional levels that guarantee the long-term conservation and sustainable use of shark resources. These include policy, legal, and institutional frameworks, arrangements and recurrent activities, designed to ensure the goals of the RPOA-sharks will be achieved.

The integration of capacity building activities for sharks and rays data collection and analysis, stock assessment and socio-economic studies on shark and ray fisheries, within larger fisheries development and management programmes and those related to climate change adaptation in the fisheries sector is important. Opportunities provided by projects and programmes targeting other fisheries and private and civil society sector initiatives in data collection and dissemination, as well as best practice conservation measures, can be tapped into as well.

E. MANAGEMENT MEASURES

One of the first actions required in the WECAFC area is to encourage that all states comply with the IPOA-sharks and finish their SARs and NPOAs within the next 3 years. This step would be a long way to paving the road towards improved management and conservation of sharks and rays in the region.

There are several management measures that could be implemented without the need for stock assessments based on well-known unhealthy fishing practices or the situation of extinction risk of some shark species. These include, among others, fishing bans for protected species, finning bans, and bans on fishing in shark or ray pupping and nursery areas.

A prohibition of shark finning tied with a regulation that all sharks must be landed with the fins at least partially attached in a natural manner in all fisheries by all nations in the region, would be one of the first and easiest management measures to be implemented by all member nations. A management recommendation or some type of resolution, although non-binding at this stage, from WECAFC to members in this sense would be very useful.

The prohibition to either catch, keep on board, land, and commercialize species already known to be under considerable threat of extinction and protected by some international conventions is another way to promote shark conservation in the region. Candidate species to be prohibited in all countries of the region are listed below:

Common name	Scientific name	Supporting reason
Oceanic whitetip shark	*Carcharhinus longimanus*	Critically Endangered Western North Atlantic
Daggernose Shark	*Isogomphodon oxyrhynchus*	Critically Endangered globally
Scalloped Hammerhead shark	*Sphyrna lewini*	Endangered globally and in Western North Atlantic
Common name	**Scientific name**	**Supporting reason**
Great Hammerhead shark	*Sphyrna mokarran*	Endangered globally
Whale Shark	*Rhincodon typus*	Vulnerable globally and already protected in several member nations; more valuable alive for ecotourism
Smalltooth sawfish	*Pristis pectinata*	Critically Endangered globally

Largetooth sawfish	*Pristis pristis*	Critically Endangered globally
Caribbean Electric Ray	*Narcine bancroftii*	Critically Endangered globally
Smooth Skate	*Malacoraja senta*	Endangered globally
Giant Manta Ray	*Manta birostris*	Vulnerable globally and already protected in several member nations; more valuable alive for ecotourism

The formulation of interim management measures - while the information needed for formal stock assessment methods is accumulated (minimum of 15-20 years) - is an utmost priority in the region. After decades of exploitation shark stocks are surely not near a virgin state and likely many are below standard benchmark goals such as the abundance for maximum sustainable yield.

In this sense, WECAFC could recommend to member nations to limit their catches of the following species due to the state of the populations in the region and nationally adopt and implement the ICCAT recommendations designed to reduce their catches in the region: shortfin mako (*Isurus oxyrinchus*), longfin mako (*Isurus paucus*), silky shark (*Carcharhinus falciformis*), big eye thresher shark (*Alopias superciliosus*), and smooth hammerhead shark (*Sphyrna zygaena*).

Measures based on the precautionary approach to fisheries management need to be implemented as soon as possible. These could include, but do not need to be restricted to, closed seasons for shark fishing during times when most species give birth (typically during May-August), establishment of minimum sizes for some species specially targeted at preventing the capture of new-born and early juveniles while they live in coastal nursery areas, and the prohibition of using wire traces in longline and hook and line fisheries.

Observer programs for industrialized fisheries (longliners, shrimp trawlers) are to be implemented both as a way to acquire basic information about catches and discards of sharks and to underpin compliance with management measures.

Another very successful way to foster conservation and management of sharks and rays is to promote the conversion of fishing operations into ecotourism operations. In fact, there are many successful examples in the Caribbean of thriving shark scuba diving or snorkelling operations that pour hundreds of thousands to millions of dollars into local economies. Some examples include bull shark, whale shark and giant manta ray observation in Quintana Roo, Mexico, great hammerhead, Caribbean reef, tiger, lemon, oceanic white tip, bull and other sharks in Bahamas, whale sharks in Belize, and sting rays in the Cayman Islands.

Finally, management measures for bycatch reduction and a mandate for the full utilization of kept catches of sharks across the region could help reduce shark mortality, specially if sharks caught as bycatch are returned to the sea alive. While promoting full utilization of sharks might render minute benefits for reducing their exploitation, the full utilization of sharks would be a very useful way to improve income of fishers and make fisheries more economically efficient. Full utilization could augment opportunities for further employment in the form of hide processing, liver oil production, manufacturing of souvenirs, and the production of fish meal from offal.

F. SURVEILLANCE AND ENFORCEMENT

The best management measures, without any kind of surveillance, compliance-checking, and enforcement through the application of penalties for infringements, are rendered ineffective to exert any change in the *status quo* and improve the state of the stocks. Therefore, adequate and efficient systems for surveillance and enforcement must be available for shark fisheries. This implies that countries in the region develop sufficient surveillance and enforcement systems that are properly staffed, trained, equipped, supervised and financed, so that they can efficiently do their important job.

An institutional legal framework should first be available for surveillance and enforcement personnel to be able to do their duties effectively. This might imply the modification or development of laws and regulations to back up all management measures with a corresponding penalty for infringement, as well as to regulate surveillance and enforcement activities, empower staff to carry them out, and also protect their physical integrity.

It is also important to mention that in recent meetings of the Regional Working Group on Illegal, Unreported and Unregulated Fishing (RWG-IUU), held in Barbados in March and September 2017, important work towards improvement in surveillance and enforcement was initiated for the region. Measures suggested in this RPOA for the improvement of these important aspects of fishery management will be linked with the measures that have been discussed and agreed by the RWG-IUU, such as those related to the marking and identification of fishing vessels, establishment of a regional authorized vessel record and the establishment and use of a regional IUU vessel list.

G. DISSEMINATION, PUBLIC AWARENESS AND ENVIRONMENTAL EDUCATION

Periodic dissemination of research and management outcomes, and environmental education of the general public about the conservation needs of sharks are integral parts of a successful conservation and management strategy. Thus, giving stakeholders (fishers, traders, managers, academia and NGOs) a participative role where their opinions and needs are taken into account while at the same time keeping them informed about progress and constraints, is the best way to exert a change in attitude among them and get them actively involved and committed into the conservation and management of sharks. Such an involvement is also in line with the Ecosystem Approach to Fisheries (EAF) that is widely applied and promoted in the WECAFC area.

Raising public awareness about the conservation needs of sharks and their importance in marine ecosystems as top predators, as well as informing the public about regional efforts towards shark conservation and fisheries management is also an important activity towards success. Possible measures to achieve this are including specific material about these topics into curricula at all levels of education, and holding special educational conferences for the general public in places such as museums and aquaria.

Coordination and collaboration with other regional organizations with interests in fishery management and environmental conservation like ICCAT and UNEP-SPAW needs to be fostered in order to take advantage of the synergies and efficiencies that could be come out of such partnerships.

H. FINANCING

Many of the lines of action and specific actions identified in this RPOA-sharks for the WECAFC area necessitate that national governments and regional organizations (CRFM, OSPESCA, UNEP-CEP, SPAW, CFMC, UNESCO, and WECAFC) increase their investment in shark management and conservation. Only through increased staffing that is better trained and properly equipped, and has sufficient operational budgets, will it be possible to achieve improvements in research, monitoring, control, surveillance and enforcement. Financing is needed also to provide the continuous capacity building that is necessary in all areas identified above, all which are necessary parts of improved management and conservation of sharks.

The costs will be considerable, and governments, regional and international bodies, as well as NGOs, will all have to contribute to financing of the implementation of the RPOA and increase their investment in shark conservation and management if the RPOA is to translate into rebuilding of shark and ray populations and their associated fisheries in the region. Without substantial changes in the current levels of investment, this RPOA as well as the NPOAs of member nations will serve only as good intentions that do not translate into real stock and fisheries improvements. An additional and complimentary way to finance some of these actions is through auto-financing schemes such as levying a specific percentage of tax to all shark landings and using it directly for research, MCS&E, etc.

I. REVIEW, UPDATE AND EVALUATION

Progress achieved during the implementation of the RPOA-sharks will be evaluated on a yearly basis and measured according to the indicators listed for each line of action in the next section. Likewise, the RPOA-sharks itself needs to be reviewed and updated every 5 years. The yearly evaluation of progress and the 5-year review and update could be best achieved through meetings of the joint Working Group. The evaluation of the RPOA-sharks after 5 years could be performed with the aid of expert consultants or any outside institution independent of the joint Working Group.

Table of Actions classified by lines of action, objectives and goals, and with corresponding indicators and proposed timeframe for implementation (s=short or 1-3 years, M=medium or 4-6 years, L=longterm or 7-10 years)

Overall Objective	Goal	Outcome of Action	Possible (suggested) Actions	Indicator	Timeframe for Implementation
Improving our understanding of shark populations through research monitoring and data collection	Essential biological data for stock assessment of main species is available	Studies of age, grow and reproductive cycle of main shark species are carried out in the region	Carry out studies of age and growth through hard parts (vertebrae, spines) including validation of age, for respective shark species	Number of species for which there are published studies of age, growth and reproduction for populations from the region	M
			Carry out studies of reproductive cycle (length of first maturity for each sex, length at birth, birth season, fecundity, length of gestation period, length of entire reproductive cycle) for main species in the region		
	Essential ecological data for management of main species is available	Pupping and nursery areas of main species are identified and mapped using traditional scientific and local ecological knowledge	Carry out literature research and interview surveys to identify pupping and nursery areas	Number of species for which there are published studies of utilization of pupping and nursery areas	M
			Carry out direct surveys to identify pupping and nursery areas (fishing and eDna)		
		Seasonality and routes of migratory species in the region are known using traditional scientific and local ecological knowledge	Carry out literature research to identify seasonal migrations	Number of species for which there are published studies of migrations and movements with electronic tags	M
			Carry out electronic tagging studies (acoustic and satellite tags) of main species to unveil migratory behavior, and utilization of pupping and nursery areas		

Overall Objective	Goal	Outcome of Action	Possible (suggested) Actions	Indicator	Timeframe for Implementation
Ensuring that target and non-target shark fisheries are sustainable	Fishing mortality of sharks and rays is reduced	By-catch of sharks and rays is reduced in non-target fisheries	Carry out research on by-catch mitigation across different fisheries	Number of fisheries where shark by-catch is successfully reduced and documented in publications	M
	Stock assessments can be successfully tuned to provide robust results	Historical fishery-independent abundance indices are available for stock assessment models	Several fishery-independent abundance indices are carried out every year in perpetuity in different parts of the region using standardized methodologies	Number of fishery independent abundance indices available in the region, and number of cumulative years that each index has	L
	Management measures are implemented without waiting for information to exist to feed into formal stock assessment models and using the precautionary approach	Interim science-based management measures are available to improve management in the short term	ERA, demographic models, and other alternative methods for fisheries evaluation are carried out for the most important species in the fisheries	Number of shark populations for which there are peer-reviewed publications of alternative methods to guide fisheries management	S
		Sensitive habitats and critical life stages are protected	Fishing for sharks is prohibited seasonally in sensitive habitats (parturition and nursery areas) and minimum size limits for each of the main species are put into law	Number of parturition and nursery areas protected in the region and number of species for which minimum size limits are established	S
	Time-series information on total shark catches (landings and discards at sea) is available for all fisheries (directed or by-catch) on a species by species basis across the region	Total shark catch data (landings and discards at sea) is collected permanently for all fisheries (directed or by-catch) on a species by species basis across the region	Adequate fisheries monitoring programs to collect detailed information on total catches for each species of shark in all fisheries are implemented and maintained on a permanent basis	Years of complete and properly collected total catch data for each of the main shark species in the region	L

Overall Objective	Goal	Outcome of Action	Possible (suggested) Actions	Indicator	Timeframe for Implementation
Ensuring that target and non-target shark fisheries are sustainable	Time series information on effort is available for all shark fisheries (directed or by-catch) across the region	Effort data is routinely collected for all shark fisheries (directed or by-catch) across the region	Adequate fisheries monitoring programs to collect detailed information on total effort for each shark fishery, using the best measures of effort, implemented and maintained on a permanent basis	Years of complete and properly collected total effort data for each of the main shark fisheries (directed or by-catch) in the region	L
	Understanding and taking into account social, economic, trade and cultural aspects in shark fisheries management	Trade data are available at lowest possible taxonomic level	Carry out a regional trade study for sharks	Report of a regional trade study is available	M
		Information on market chain for shark products is available	Carry out a traceability study for sharks and their products	Report of a regional traceability study is available	M
		Some shark fisheries in the region are certified for sustainability	Implement a certification system for sustainable shark fisheries	Certification system is in place and running	L
		Exports of shark products comply with CITES commitments	Implement NDFs for CITES	Countries routinely produce NDFs for their shark exports	M
	Shark conservation and management is significantly improved across the region	Compliance with the FAO Code of Conduct and IPOA-Sharks is widespread in the region	All countries in the region prepare their corresponding SAR, and prepare and adopt their corresponding NPOA-sharks	Total number of countries that develop their SAR and prepare and adopt their NPOA-sharks	S
		Wasteful fishing practices are avoided, and by-catch of sharks is reduced in other fisheries	All countries in the region prohibit the practice of finning and require that all fishing vessels land sharks with fins naturally attached, in an either complete or partial manner	Number of countries that pass a finning ban into law	S

Overall Objective	Goal	Outcome of Action	Possible (suggested) Actions	Indicator	Timeframe for Implementation
Ensuring that target and non-target shark fisheries are sustainable	Shark conservation and management is significantly improved across the region	Mortality of sharks protected under MEAs and RFMO measures is reduced in direct and indirect fisheries across the region, as applicable	All countries in the require that vessels flying their flags promptly release unharmed to the extent possible all sharks in compliance with the relevant MEA commitments, RFMO/RFB obligations and recommendations, and national legislation	Number of countries enacting into law the requirement to promptly release unharmed all such species	S
		Mortality of sharks classified as endangered by IUCN is eliminated in fisheries across the region	All countries in the region prohibit the targeting, landing, and transshipping of daggernose and whale sharks, manta rays, smalltooth and largetooth sawfishes, smooth skates and Caribbean electric rays	Number of countries passing into law a ban on fishing for these shark species	S
	Shark conservation and management measures are seldom or rarely violated	There is sufficient surveillance and enforcement of management measures to discourage infringements of the law	Effective surveillance and enforcement systems (properly staffed, trained, equipped, financed and supervised) are put in place in main shark fishing nations in the region	Number of active surveillance and enforcement teams in each country	S
			Observers, VMS and video monitoring technology is used by fishing fleets in the region as appropriate	Number of fisheries that implement observers, VMS and video monitoring technology	M
		Surveillance and enforcement staff count with the legal and institutional backing to enforce their activities and ensure that infringement of measures for shark conservation and management are prosecuted and penalized	Institutional and legal frameworks are put in place in main shark fishing nations in the region to back up shark conservation and management measures, regulate surveillance and enforcement activities, empower staff to carry them out, and protect their physical integrity	Number of countries that put in place required institutional and legal frameworks to support fisheries' surveillance and enforcement	S
		Surveillance and enforcement is strengthened and optimized across the region	Cooperate and coordinate on surveillance and enforcement, including through bi- and multi-lateral agreements, and information and intelligence sharing	Development of a regional mechanism for cooperation and coordination of surveillance and enforcement measures	S

Overall Objective	Goal	Outcome of Action	Possible (suggested) Actions	Indicator	Timeframe for Implementation
Foster regional capacity building, cooperation and knowledge sharing	Target and non-target shark fisheries in the region are managed taking into account information from each stock in its entirety and all the fisheries exploiting such stocks	Data for shark fisheries stock assessment and management is available from all countries in the region with significant shark fisheries in order to allow adequate regional management	A system for information sharing on the biology, ecology and fisheries for sharks is implemented and maintained for the region. This system has information from all countries with significant shark fisheries and provides the confidentiality of information, as agreed upon by the members	Number of countries sharing databases and updating them on a regular basis	S
			Bi-and multi-lateral cooperative management agreements are formalized for conservation and management of transboundary stocks	Number of cooperative management agreements concluded by the parties	M
	Data on shark catches is correctly reported on a species by species basis	Proficiency in shark species ID is achieved by those working in the fisheries sector	Training workshops and courses in shark identification are regularly delivered to fisheries enumerators, stakeholder partners, supervisors, researchers and even managers	Number of training courses delivered in a year or number of total people successfully trained in a year	S
		Shark ID guides are widely available to all fisheries enumerators, stakeholder partners, supervisors, researchers and managers	Print a sufficiently large number of shark ID guides and distribute them to all personnel that needs them across the region	Number of copies of shark ID guide distributed	S
	Fisheries dependent and independent data needed for formal stock assessment are collected in accordance with agreed protocols	Shark fisheries data (total catch including Total landings and discards at sea, and total effort by fishery) can be collected correctly and regularly	Training courses on statistical design of fisheries data collection programmes are offered to staff across the region	Number of training courses delivered in a year or number of total people successfully trained in a year	S
	Management is based on the best available science advise	Best available science is used for stock assessment of shark fisheries	Training courses on state-of-the-art statistical stock assessment methods is given to fisheries biologists in charge of stock assessment across the region	Total number of biologists successfully trained	M
	Recommendations of the RPOA can be implemented	Legal frameworks are in place in all countries so that RPOA recommendations can be implemented	Improve legal frameworks in all countries for proper implementation of RPOA recommendations	Number of countries where national legislation supports RPOA implementation	S

Overall Objective	Goal	Outcome of Action	Possible (suggested) Actions	Indicator	Timeframe for Implementation
Promote increased public and stakeholder awareness about shark and ray management and conservation in the region	Compliance with shark conservation and management measures increases	All stakeholders are encouraged to participate in shark conservation and fisheries management decisions and commit themselves to achieve objectives	Government organizes meeting with all stakeholders for shark fisheries conservation and management	Number of shark conservation and management meetings with stakeholder organized per year in each country	S
	Shark populations recover and are sustainably exploited	The general public supports and demands effective shark conservation and management measures	Environmental education activities to raise public awareness about shark conservation and management are held in main fishing localities and major urban centres on a regular basis	Number of persons reached in each country each year through public awareness activities	S
			Survey of stakeholder satisfaction with the decision-making process	Number of stakeholder surveys implemented	S
Financing	Achievement of objectives for conservation and management of shark resources is supported by adequate financial	Lines of action of the RPOA sharks are actually implemented following the planned timeframe	Sufficient financial resources are made available for RPOA implementation in each country	Amount of money invested by each country and entity for RPOA implementation	S
			Potential donor agencies and organizations are identified and approached for RPOA support	Total available budget for RPOA implementation	S
Review, update and evaluation	The RPOA-sharks serves as a real tool to achieve shark conservation and sustainable management in the region	Progress on RPOA-sharks implementation is regularly measured and new information and improvements are incorporated	Progress reports on implementation of RPOA-sharks are prepared yearly by the working group	Number of yearly progress reports for RPOA-shark implementation produced	S
		The effectiveness and adequacy of the RPOA-sharks is properly evaluated so that it can adapt to changing circumstances and new information, and be improved if necessary	An independent evaluation, review and update of the RPOA-sharks is prepared every 5 years	Number of 5-year evaluation, review and update processes for the RPOA-sharks	M

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ANNEX 2: MAIN SPECIES OF SHARKS AND RAYS IN THE WECAFC AREA

	Species	Common name	IUCN Status	CITES
	SHARKS			
1	*Heptranchias perlo*	Sharpnose Sevengill Shark	NT	
2	*Hexanchus griseus*	Bluntnose Sixgill Shark	NT	
3	*Hexanchus nakamurai*	Bigeye Sixgill Shark	DD	
4	*Squalus acanthias*	Spiny Dogfish	VU	
5	*Squalus cubensis*	Cuban Dogfish	DD	
6	*Squalus mitsukurii*	Shortspine Spurdog	DD	
7	*Centrophorus granulosus*	Gulper Shark	VU (W Atlantic: DD)	
8	*Squatina dumeril*	Atlantic Angel Shark	DD	
9	*Carcharias taurus*	Sand Tiger	VU	
10	*Odontaspis ferox*	Smalltooth Sand Tiger	VU	
11	*Odontaspis noronhai*	Bigeye Sand Tiger	DD	
12	*Alopias superciliosus*	Bigeye Thresher Shark	VU (WC Atlantic: EN)	CITES Ap. II
13	*Alopias vulpinus*	Common Thresher Shark	VU (WC Atlantic: VU)	CITES Ap. II
14	*Cetorhinus maximus*	Basking Shark	VU	CITES Ap. II
15	*Carcharodon carcharias*	Great White Shark	VU	CITES Ap. II
16	*Isurus oxyrinchus*	Shortfin Mako	VU	
17	*Isurus paucus*	Longfin Mako	VU	
18	*Lamna nasus*	Porbeagle shark	VU (NW Atlantic: EN)	
19	*Ginglymostoma cirratum*	Nurse Shark	DD (W Atlantic: NT)	
20	*Rhincodon typus*	Whale Shark	VU	CITES Ap. II
21	*Mustelus canis*	Dusky Smoothhound	NT	
22	*Mustelus higmani*	Smalleye Smoothhound	LC	
23	*Mustelus minicanis*	Venezuelan Dwarf Smoothhound	DD	
24	*Mustelus norrisi*	Narrowfin Smoothhound	DD	
25	*Mustelus sinusmexicanus*	Gulf of Mexico Smoothhound	DD	

	Species	Common name	IUCN Status	CITES
	SHARKS			
26	*Carcharhinus acronotus*	Blacknose Shark	NT	
27	*Carcharhinus altimus*	Bignose Shark	DD (NW Atlantic: NT)	
28	*Carcharhinus brachyurus*	Copper shark	NT	
29	*Carcharhinus brevipinna*	Spinner Shark	NT (NW Atlantic: VU)	
30	*Carcharhinus falciformis*	Silky Shark	NT (NW & WC Atlantic: DD)	CITES Ap. II
31	*Carcharhinus galapagensis*	Galapagos Shark	NT	
32	*Carcharhinus isodon*	Finetooth Shark	LC	
33	*Carcharhinus leucas*	Bull Shark	NT	
34	*Carcharhinus limbatus*	Blacktip Shark	NT (NW Atlantic: VU)	
35	*Carcharhinus longimanus*	Oceanic Whitetip Shark	VU (WC Atlantic: CR)	CITES Ap. II
36	*Carcharhinus obscurus*	Dusky Shark	VU (WC Atlantic: EN)	
37	*Carcharhinus perezi*	Caribbean Reef Shark	NT	
38	*Carcharhinus plumbeus*	Sandbar Shark	VU	
39	*Carcharhinus porosus*	Smalltail Shark	DD	
40	*Carcharhinus signatus*	Night Shark	VU	
41	*Galeocerdo cuvier*	Tiger Shark	NT	
42	*Isogomphodon oxyrhynchus*	Daggernose Shark	CR	
43	*Negaprion brevirostris*	Lemon Shark	NT	
44	*Oxynotus caribbaeus*	Caribbean Roughshark	DD	
45	*Prionace glauca*	Blue Shark	NT	
46	*Rhizoprionodon lalandii*	Brazilian Sharpnose Shark	DD	
47	*Rhizoprionodon porosus*	Caribbean Sharpnose Shark	LC	
48	*Rhizoprionodon terraenovae*	Atlantic Sharpnose Shark	LC	

	Species	Common name	IUCN Status	CITES
	SHARKS			
49	*Sphyrna lewini*	Scalloped Hammerhead	EN (NW & WC Atlantic: EN)	CITES Ap. II
50	*Sphyrna media*	Scoophead Shark	DD	
51	*Sphyrna mokarran*	Great Hammerhead	EN	CITES Ap. II
52	*Sphyrna tiburo*	Bonnethead Shark	LC	
53	*Sphyrna tudes*	Smalleye Hammerhead	VU	
54	*Sphyrna zygaena*	Smooth Hammerhead	VU	CITES Ap. II

	Species	Common name	IUCN Status	CITES
	BATOIDS			
1	*Pristis pectinata*	Smalltooth Sawfish	CR	CITES Ap. I
2	*Pristis pristis*	Largetooth Sawfish	CR	CITES Ap. I
3	*Pseudobatos lentiginosus*	Atlantic Guitarfish	NT	
4	*Pseudobatos percellens*	Southern Guitarfish	NT	
5	*Diplobatis colombiensis*	Colombian Electric Ray	VU	
6	*Diplobatis guamachensis*	Brownband Numbfish	VU	
7	*Diplobatis picta*	Painted Dwarf Numbfish	VU	
8	*Narcine bancroftii*	Caribbean Electric Ray	CR	
9	*Tetronarce occidentalis*	Western Atlantic Torpedo	NE	
10	*Torpedo andersoni*	Florida Torpedo	DD	
11	*Gymnura altavela*	Spiny Butterfly Ray	VU (USA: LC)	
12	*Gymnura micrura*	Smooth Butterfly Ray	DD (USA: LC)	
13	*Bathytoshia centroura*	Roughtail Stingray	LC (USA: LC)	
14	*Fontitrygon geijskesi*	Wingfin Stingray	NT	
15	*Hypanus americanus*	Southern Stingray	DD (USA: LC)	
16	*Hypanus guttatus*	Longnose Stingray	DD	
17	*Hypanus sabinus*	Atlantic Stingray	LC	
18	*Hypanus say*	Bluntnose Stingray	LC	
19	*Pteroplatytrygon violacea*	Pelagic Stingray	LC	
20	*Styracura schmardae*	Chupare Stingray	DD	
21	*Myliobatis freminvillii*	Bullnose Ray	DD	
22	*Myliobatis goodei*	Southern Eagle Ray	DD	

	Species	Common name	IUCN Status	CITES
23	*Aetobatus narinari*	Spotted Eagle Ray	NT	
24	*Rhinoptera bonasus*	Cownose Ray	NT (USA: LC)	
25	*Rhinoptera brasiliensis*	Brazilian Cownose Ray	EN	
26	*Mobula birostris*	Giant Manta Ray	VU	CITES Ap. II
27	*Mobula hypostoma*	Atlantic Devilray	DD	CITES Ap. II
28	*Mobula tarapacana*	Sicklefin Devilray	DD	CITES Ap. II

The First meeting of the WECAFC/OSPESCA/CRFM/CITES/CFMC Working Group on shark conservation and management was held in Barbados on 17-19 October 2017. The meeting was attended by 30 shark fisheries experts from 15 WECAFC member countries and partner agencies. The meeting recognized the decline in various shark and ray stocks in the Caribbean region, as well as the need to conserve the threatened species among them. The meeting stressed the importance of harmonizing conservation and management measures with various international and regional conventions for the protection of these often-migratory species, as well as with measures by regional fisheries management bodies in the Atlantic. The fisheries experts recommended amongst others that the countries in the region should prohibit the removal of shark fins at sea and require that all sharks be landed with their fins naturally attached through the point of first landing of the sharks. The experts recommended the prohibition of targeted fisheries for iconic species, such as whale sharks, sawfishes and manta rays. The experts worked on a regional shark stocks and fisheries status assessment and a Regional Plan of Action for the conservation and management of sharks and rays in the WECAFC area.

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