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Integrating Legal Protections for Sharks and Rays into Western and Central Pacific Fisheries Commission Regulation



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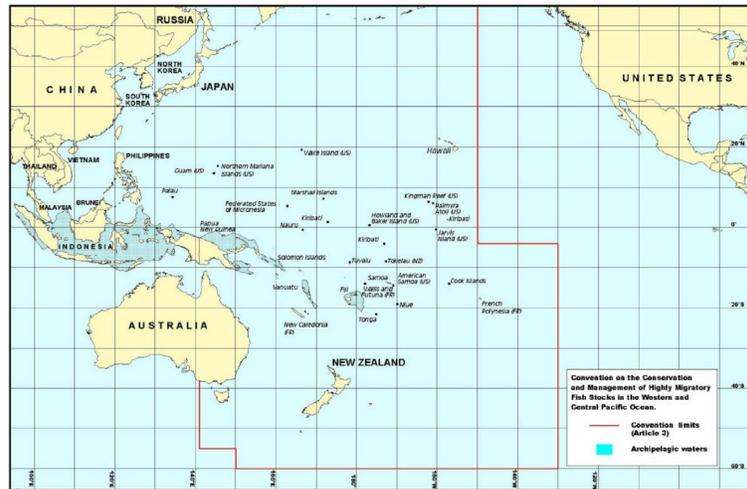
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Introduction to the Report

Sharks play an essential role in the marine ecosystem. As predators, they help to maintain balance in the food chain, eliminate sick and weak animals, and ensure species diversity; and may play a role in protecting coral reefs.¹ Numerous species of migratory sharks traverse the area of the Western and Central Pacific Ocean, migrating across national boundaries and into the high seas, areas beyond national jurisdiction (ABNJ). Many populations of migratory sharks have significantly declined and many species are endangered. Threats include their bycatch in industrial tuna and swordfish fisheries employing longlines and purse seines, which have high levels of mortality. Sharks are also valuable as catch, targeted for both fins and meat, and fisheries frequently retain shark bycatch. Finally, inadequate regulation of shark fisheries that are based on insufficient data contribute to population declines.

The report addresses the key legally binding international agreements that are concerned with the conservation and management of migratory sharks: those that migrate across national boundaries and into areas beyond national jurisdiction. It primarily examines three international agreements: the Western and Central Pacific Fisheries Convention, which deals with conservation and management generally of marine resources in the area; the Convention on International Trade in Endangered Species, which regulates international trade of species determined to be endangered; and the Convention on the Conservation of Migratory Species, which focuses on the conservation of endangered or threatened species.

Map of the Western and Central Pacific Fisheries Convention Area



¹ Motivarash et al., Importance of sharks in ocean ecosystem, Journal of Entomology and Zoology Studies 2020; 8(1): 611-613.

Section 1: Protections and Listings for Sharks and Rays within the Western and Central Pacific Fisheries Convention Area

The report discusses how parties to the legal regimes that govern sharks can carry out their treaty obligations in a more integrated manner. Although several treaties address the same shark and ray species, they are not always coordinated to implement their objectives for conservation and management consistently and effectively. In particular, this document aims to map what synergies and gaps exist among the different legal obligations for parties that fish in the ABNJ.

Overview of Treaty Commitments

Several international legal instruments govern the conservation and management of biodiversity in the oceans. The United Nations Convention on the Law of the Sea (UNCLOS) provides a legal framework for exploitation as well as conservation of living marine resources. It sets out broad provisions requiring States to cooperate both to protect the marine environment² and to conserve and manage “living resources in the areas of the high seas.”³ With respect to highly migratory species, States are to “cooperate directly or through appropriate international organizations with a view to ensuring conservation and promoting the objective of optimum utilization of such species throughout the region, both within and beyond the exclusive economic zone.”⁴ In areas where management organizations do not exist, coastal and fishing states are to establish them.

The UN Fish Stocks Agreement (FSA)⁵ specifies additional conservation principles. Its goal is to “adopt measures to ensure long-term sustainability of straddling fish stocks and highly migratory fish stocks and promote the objective of their optimum utilization.” Parties are to apply precautionary and ecosystem approaches, considering target species, species that are part of the same ecosystem, and associated or dependent species, for which they must establish conservation and management measures to maintain or restore the species populations above levels at which their reproduction may become seriously threatened. They are to minimize discards, waste and bycatch of associated and dependent species, particularly

² Article 204(2).

³ Article 118.

⁴ Article 64].

⁵ United Nations Agreement for the Implementation of the Provisions of the United Nations Convention on the Law of the Sea of 10 December 1982 relating to the Conservation and Management of Straddling Fish Stocks and Highly Migratory Fish Stocks.

endangered species, and protect marine biodiversity.⁶ Using management strategies, they are to restore or maintain populations of associated and dependent species at levels consistent with precautionary reference points.⁷

Under UNCLOS and the FSA, nations have created regional fisheries management organizations and bodies, including the Western and Central Pacific Fisheries Commission (WCPFC), which have general authority to regulate the conservation and management of living marine resources on the high seas. Parties agree to cooperate and to implement compatible measures on the high seas and within their own jurisdictions. Within the governance ambit of the WCPFC are both directed fisheries for sharks and conservation of species such as migratory sharks that are associated with fisheries. Most WCPFC members are also Parties to the FSA.

The Pacific Islands Forum Fisheries Agency (FFA) is an organization of 17 nations in the southern Pacific region that focuses on sustainability of tuna fisheries within the exclusive economic zones of its members.

Members of the United Nations Food and Agriculture Organization (FAO) adopted the voluntary Code of Conduct for Responsible Fisheries. Under the Code of Conduct, the FAO has developed non-mandatory guidelines such as the FAO Guidelines for Responsible Fish Trade,⁸ which call for conservation and management measures, including catch documentation schemes, to protect sustainable fisheries as the basis for fish trade. The FAO International Plan of Action for Sharks also encourages states to adopt voluntary national plans of action for sharks (NPOA–Sharks) that, among other objectives, seek to ensure that shark catches are sustainable. Most members of the WCPFC have adopted NPOAs for sharks, and the FFA has adopted a regional plan of action for sharks.

Two international environmental agreements—the Convention on the International Trade in Endangered Species (CITES)⁹ and the Convention on the Conservation of Migratory Species of Wild Animals (CMS)¹⁰—address international trade regulation and conservation measures respectively for certain sharks and rays. The Memorandum of Understanding on the Conservation of Migratory Sharks (Sharks MOU), negotiated under the CMS, also addresses

⁶ Fish Stocks Agreement, Article 5.

⁷ Fish Stocks Agreement, Article 4, Annex II.

⁸ FAO Technical Guidelines for Responsible Fisheries 11–Responsible Fish Trade (2009), <http://www.fao.org/3/a-i0590e.pdf>.

⁹ Convention on international trade in endangered species of wild fauna and flora, March 3, 1973, 993 U.N.T.S. 243.

¹⁰ Convention on the conservation of migratory species of wild animals (CMS), 2015. Appendices I and II of the Convention on the conservation of migratory species of wild animals (CMS), <http://www.cms.int/en/species>.

shark conservation. Many members of the WCPFC are Parties to CITES and/or CMS, and/or are Signatories to the Sharks MOU.

Seeking to curtail illegal, unregulated, and unreported (IUU) fishing, the FAO developed the Port State Measures Agreement (PSMA), which entered into force in 2016. Port state Parties must implement certain mechanisms to prevent landing of catch that has not been taken consistent with applicable national and international measures.

Table 1 indicates the international commitments of WCPFC members and participating parties.

Table 1. Membership in WCPFC and other multinational marine conservation agreements/policies

WCPFC	CITES	PSMA	FFA	CMS	Shark MOU Signatory or Range State ¹¹	Fish Stocks Agreement
<i>Members (26)</i>	<i>(17) (7)</i>	<i>(14) (5)</i>	<i>(16)</i>	<i>(9) (2)</i>	<i>(11) (2)</i>	<i>(23) (3)</i>
Australia	Yes	Yes	Yes	Yes	Yes	Yes
China	Yes				Range state	
Canada	Yes	Yes			Range state	Yes
Cook Islands			Yes	Yes	Range state	Yes
European Union	Yes	Yes		Yes	Yes	Yes
Federated States of Micronesia			yes			Yes
Fiji	Yes	Yes	Yes	Yes	Range state	Yes
France	Yes	Yes		Yes	Yes	
Indonesia	Yes	Yes			Range state	Yes
Japan	Yes	Yes			Range state	Yes
Kiribati			Yes		Range state	Yes
Republic of Korea	Yes	Yes			Range state	Yes
Republic of Marshall Islands			yes		Range state	Yes
Nauru			Yes		Yes	Yes
New Zealand	Yes	Yes	Yes	Yes	Yes	Yes
Niue			yes		Range state	Yes
Palau	Yes	Yes	Yes	Yes	Yes	Yes
Papua New Guinea	Yes		Yes		Range state	Yes
Philippines	Yes	Yes		Yes	Yes	Yes
Samoa		(signature only)	yes	Yes	Yes	Yes
Solomon Islands	Yes		Yes		Range state	Yes
Chinese Taipei						
Tonga	Yes	Yes	Yes		Range state	Yes
Tuvalu			Yes		Yes	Yes
United States	Yes	Yes			Yes	Yes
Vanuatu	Yes	Yes	Yes		Yes	Yes

¹¹ Under CMS, a range state is a state through which a species migrates and with which signatories may seek to make conservation agreements. Art. I.1(h).

WCPFC	CITES	PSMA	FFA	CMS	Shark MOU Signatory or Range State ¹¹	Fish Stocks Agreement
<i>Cooperating Non-Members (7)</i>						
Ecuador	Yes	Yes		Yes	Yes	Yes
El Salvador	Yes				Range state	
Nicaragua	Yes				Range state	
Panama	Yes	Yes			Range state	Yes
Liberia	Yes	Yes		Yes	Yes	
Thailand	Yes	Yes			Range state	Yes
Vietnam	Yes	Yes			Range state	

Note: Malaysia and Singapore not members of WCPFC, but are members of CITES.

Western and Central Pacific Fisheries Convention and Conservation Management Measures

The WCPF Convention¹² addresses migratory fish stocks¹³ and reflects principles of the Fish Stocks Agreement. The preamble declares that members are “mindful that effective conservation and management measures require the application of the precautionary approach and the best scientific information available.” Further, they are “conscious of the need” to “preserve biodiversity” and “maintain the integrity of marine ecosystems.” Members are to, *inter alia*, apply the precautionary approach; assess fishing impacts on target stocks, non-target species, associated or dependent species, and species belonging to the same ecosystem; minimize waste, discards, and catch of non-target species; protect biodiversity; collect and share in a timely manner complete and accurate data; and implement and enforce measures through effective monitoring, control and surveillance.¹⁴ The Convention requires the WCPFC to adopt conservation measures¹⁵ for nontarget, dependent, and associated species, which include sharks and rays. The measures are to maintain or restore “populations of such species above levels at which their reproduction may become seriously threatened.”¹⁶ In applying the precautionary approach, the WCPFC is to determine, on the basis of the best scientific information available, stock-specific reference points and the action to be taken if they are exceeded.¹⁷

¹² Convention on the Conservation and Management of Highly Migratory Fish Stocks in the Western and Central Pacific Ocean.

¹³ Part 1, Art. 1(f) of the Convention defines highly migratory fish stocks” as “all fish stocks of the species listed in Annex 1 of the 1982 Convention occurring in the Convention Area, and such other species of fish as the Commission may determine.” Annex I lists the shark species and families *Hexanchus griseus*; *Cetorhinus maximus*; Family *Alopiidae*; *Rhincodon typus*; Family *Carcharhinidae*; Family *Sphyrnidae*; and Family *Isurida* . These groups include all WCPFC key shark (not ray) species and CMS and CITES-listed sharks, but not rays or sawfishes.

¹⁴ WCPF Convention, Art. 5

¹⁵ Art. 10.1(c).

¹⁶ *Id.*

¹⁷ WCPF Convention, Art. 6.

The WCPFC designates certain sharks as key shark species. In determining which species to designate, it considers a number of factors, including high risk from fishing, ease of identification, and how frequently they are reported in annual catch data.¹⁸ Once designated, the WCPFC monitors the populations. It makes population assessments, estimates annual catches, and, for most, requires reporting of catch and effort data from log sheets. It has reviewed data available for non-key shark species and developed a process through which non-key species may be designated as key species. WCPFC key shark species for assessment and reporting are blue, mako, oceanic whitetip, silky, thresher (three species), hammerhead (three species), porbeagle, and whale sharks. Six species of manta and mobulid (devil) rays are key species for assessment. Basking sharks, white sharks, and dusky sharks are not key species, although they are listed under CITES and/or CMS.

The WCPFC adopts rules called conservation and management measures (CMMs) to carry out its mandates. A single comprehensive shark CMM, 2019-04, went into effect in November 2020. It maintains earlier prohibitions on retention of oceanic whitetip, silky, and whale sharks, and requirements to use safe release guidelines for these incidentally caught species. For other shark species not retained, it recommends the use of safe release guidelines. For species that are retained and landed, a new provision requires that sharks be landed with fins attached or by using one of three alternatives. A new ray CMM prohibits directed fisheries of mobulid rays; prohibits retention on board, transshipping, or landing all mobulid rays and ray parts; and encourages following safe release guidelines for mobulid rays.¹⁹

Convention on International Trade in Endangered Species (CITES), Convention on the Conservation of Migratory Species of Wild Animals (CMS), and Memorandum of Understanding on the Conservation of Migratory Sharks (Sharks MOU)

Numerous members of the WCPFC are Parties to CITES and CMS. Members of the WCPFC that are Parties to CITES, CMS, and/or signatories to the Sharks MOU have responsibilities—mandatory or recommended—to advance the objectives of those agreements through cooperation in enforcement, evaluation, and/or establishing conservation measures, including in the WCPFC. When implementing CITES requirements, Parties should take into account WCPFC measures and data for catch that comes from areas beyond national jurisdiction. For Parties and members to consistently fulfill their obligations under the different management and conservation treaties, the agreements should be interpreted consistently with each other.

¹⁸ PROCESS FOR DESIGNATING WCPFC KEY SHARK SPECIES FOR DATA PROVISION AND ASSESSMENT, <https://www.wcpfc.int/system/files/Key-Doc-SC-08-Process-Designation-Key-WCPFC-Shark-Species.pdf>.

¹⁹ CMM 2019-05, effective February 2021.

In coordinating the treaty requirements, it may be considered how objectives complement or conflict with each other, and any gaps in management or enforcement.

CITES

CITES sets out a framework to regulate international trade in endangered species. It assesses the status of species to determine whether or not they are endangered, assigning listed species to Appendix I, II, or III, together with associated trade restrictions. Parties implement a permit scheme that is meant to ensure that cross-border trade in listed species is legal and sustainable.

CITES prohibits international trade by Parties in Appendix I-listed species,²⁰ which are species threatened with extinction. A species meets Appendix I criteria for listing if it meets any of the biological criteria listed in Annex I of Resolution Conf. 9.24 (Rev. CoP17). Appendix II-listed species, which are those that could be threatened with extinction if their trade is not controlled, may only be exported after the CITES management and scientific authorities of the state of introduction and/or export determine that the catch was obtained legally under the laws of the state for the protection of fauna and flora (Legal Acquisition Finding or LAF), and that export or introduction from the sea of the specimen would not be detrimental to the survival of the species (Non-detriment Finding or NDF). For sharks, an NDF typically determines whether or not the taking of the specimen was consistent with the regulations of a sustainable fishery. When parties make decisions about legality for species that an RFMO regulates within its area, a CITES resolution recommends that they take into account compliance with international, including RFMO, measures. RFMO documentation and other requirements can help verify legality. An RFMO can also play a critical role in supplying the data for and/or making NDFs for highly migratory species in the region. These issues are explored in [section 2](#).

CMS

CMS is a framework agreement with the objective of conserving migratory animals. Depending on a species' assessment and assignment to Appendix I or II, it calls for strict protection and/or for agreements to take action to conserve the species. A Memorandum of Understanding for the Conservation of Migratory Sharks (Sharks MOU) sets out specific conservation actions that signatories commit to undertake with respect to migratory sharks.

Appendix I of CMS lists migratory species²¹ that are in danger of extinction throughout all or a significant portion of their range,²² while Appendix II lists those that need or would benefit

²⁰ Of species in the class Elasmobranchii, CITES lists 7 species of sawfishes in Appendix I (*Pristidae* spp.).

²¹ CMS Art. 1.1(a) defines "migratory species" as "the entire population or any geographically separate part of the population of any species or lower taxon of wild animals, a significant proportion of whose members cyclically and predictably cross one or more national jurisdictional boundaries."

²² CMS Arts. I (e), III.

greatly from international conservation efforts.²³ Conservation status is determined in relation to factors that include population dynamics, range of the species, habitat, and relation to historic coverage and ecosystems. A listing under Appendix I requires parties to prohibit “taking” the species, defined as “taking, hunting, fishing, capturing, harassing, deliberate killing, or attempting to engage in any such conduct.” For Appendix II-listed species, which have an unfavorable conservation status, Parties commit to endeavor to conclude agreements that range states²⁴ may join with the goal of restoring or maintaining the species to a “favourable conservation status,” A species with a favourable conservation status (1) is “a viable component of ecosystems;” (2) has a range that is not “being reduced [or] likely to be reduced, on a long-term basis”; (3) has now or “in the foreseeable future sufficient habitat to maintain the population . . . on a long-term basis”; and (4) has a distribution and abundance that approaches “historic coverage and levels to the extent that potentially suitable ecosystems exist and to the extent consistent with wise wildlife management.”²⁵ Signatories to the nonbinding Sharks MOU commit to involving RFMOs in the development and implementation of actions under the Sharks MOU, and strengthening and improving their role in taking measures.

[Section three](#) evaluates gaps and synergies between the CMS and WCPFC regulation and explores how CMS parties and MOU signatories may reinforce their commitments through RFMO action. For Appendix I species, they can work to extend take bans on directed catch and retention to all CMS-listed Appendix I species. For Appendix II species, they can seek to restore the populations to a favorable conservation status through RFMO measures.

All three agreements identify specific species for monitoring and regulation; the different bodies have identified most of the same species. All agreements seek to achieve sustainability or conservation of the species; they call for use of many of the same methods to achieve this goal. CITES and the WCPFC both emphasize compliance with regulations or legality of the catch.²⁶

Gaps in regulation include some inconsistencies in language, in conservation measures, in coordination of requirements, and in implementation of existing regulations. Some sharks listed under CMS or CITES are not addressed by the WCPFC while CMS lists some sharks in its Appendix I that are not CITES Appendix I species. The Sharks MOU lists all CMS-listed shark and ray species except blue sharks. (See Table 2 below.)

²³ CMS Art. IV.

²⁴ CMS Art. 1.1 defines “Range State” as “any State (and where appropriate any other Party referred to under subparagraph (k) of this paragraph) that exercises jurisdiction over any part of the range of that migratory species, or a State, flag vessels of which are engaged outside national jurisdictional limits in taking that migratory species.”

²⁵ CMS Art. 1.1(c).

²⁶ See Margaret Young, *Protecting Endangered Marine Species: Collaboration Between the Food and Agriculture Organization and the CITES Regime*, MELBOURNE J. INT’L L., Vol. 11, 1-50 (2010).

Although the WCPFC Convention, CITES, and Sharks MOU all call for science-based limits on shark catch, the WCPFC has not identified or implemented regional limits for traded shark species. The bodies require identifying species of catch; however, in practice many vessels do not consistently and correctly identify the species. There are various bycatch-related measures; however, the measures do not adequately protect many sharks from mortality and are not fully enforced. For most shark species that fisheries take as directed catch and/or bycatch, the WCPFC has not implemented area-based measures in areas beyond national jurisdiction. There is inadequate assurance of legality.

The FAO, CITES, and CMS have recognized the need to coordinate among the conventions. Both formal memoranda and resolutions on the one hand, and specific coordinating projects on the other, address coordination. Among the formal memoranda is the 2006 FAO-CITES Memorandum of Understanding, which calls for cooperation relative to information sharing, capacity-building, joint involvement in determining criteria for and the listing of CITES species, and allocation of resources.²⁷ The Signatories to the Sharks MOU adopted a Strategy for Cooperation with Regional Fisheries Management Organizations, Regional Seas Conventions and Fisheries-Related Organizations,²⁸ which consists of a framework for developing shark conservation measures within RFMOs and other conventions. The CITES Conference of the Parties has encouraged Parties to implement and enforce actions relating to data collection and reporting by species and gear, and management and conservation measures through RFMOs and other international measures.²⁹

Cooperative projects include the FAO Common Oceans Project, which addresses a wide range of issues in promoting “sustainable management of tuna fisheries and biodiversity conservation in the ABNJ.” CITES and the FAO are also cooperating to educate members on CITES provisions relative to catch certification schemes for fishery products and the FAO Port State Measures Agreement; create a database of shark conservation measures; and promote “consensus-building between CITES and fisheries-related stakeholders at national and regional levels.” An EU-CITES project that focuses on collaboration between CITES and fisheries stakeholders will seek to improve compatibility between RFMO measures for sharks and rays and CITES, improve national and regional NDFs, and assist in implementing Introduction from the Sea provisions. The 2015-2020 CITES-CMS Joint Work Programme seeks to “optimize the effectiveness of

²⁷ *Id.*

²⁸ <https://www.cms.int/en/document/strategy-cooperation-regional-fisheries-management-organizations-regional-seas-conventions>.

²⁹ Res. Conf. 12.6 (Rev. CoP18).

actions taken by Parties to both CMS and CITES concerning sharks and rays, and strengthen synergies with FAO, RFMOs and other relevant bodies.”

Species Regulated

All of the WCPFC key shark species are listed in at least one CITES or CMS Appendix. Key shark species listed in CMS Appendix I are oceanic whitetip and whale sharks and manta and mobulid rays. The WCPFC prohibits directed fishing and retention of these species, which supports the CMS prohibition on take of Appendix I species.³⁰ Appendix I also lists numerous species of sawfish and guitarfish that WCPFC does not currently regulate. Of non-key shark species in the Western and Central Pacific, CMS Appendices I and II list basking sharks and white sharks. These species are also listed in Appendix II of CITES. Dusky sharks are listed in CMS Appendix II, but are not a WCPFC key shark species.

Table 2. WCPFC Key Shark and CITES- and CMS-Listed Species

Species	WCPFC key shark species/ protections	CITES-listed species/ protections	CMS-listed species/ protections	Sharks MOU Annex 1	IUCN status
	<i>Data provision and population assessment of most key shark species; CMMs 2019-04 (sharks – all earlier provisions, fins-attached); 2019-05 (rays – no targeted fishing, no retention, safe release measures)</i>	<i>Appendix I – all international trade prohibited Appendix II – international trade allowed if not detrimental to the species/ stock (NDF), and legally obtained (LAF)</i>	<i>Appendix I (endangered) – all take prohibited; parties seek to conserve habitats and reduce endangering factors Appendix II (unfavorable conservation status) – range state parties shall endeavor to conclude agreements to restore favorable conservation status</i>		
Blue shark (Prionace glauca)	Yes	No	Yes – App II	No	
Mako shark (Isurus spp)	Yes Isurus oxyrinchus – Shortfin, Isurus paucus – Longfin	Yes – App II Isurus oxyrinchus, Isurus paucus	Yes – App II (Isurus oxyrinchus – Shortfin, Isurus paucus – Longfin)	Yes, both species	Longfin – EN, decreasing; Shortfin – EN, decreasing

³⁰ See discussion in Section 3 on meaning of take under the CMS.

Species	WCPFC key shark species/ protections	CITES-listed species/ protections	CMS-listed species/ protections	Sharks MOU Annex 1	IUCN status
	<i>Data provision and population assessment of most key shark species; CMMs 2019-04 (sharks – all earlier provisions, fins-attached); 2019-05 (rays – no targeted fishing, no retention, safe release measures)</i>	<i>Appendix I – all international trade prohibited Appendix II – international trade allowed if not detrimental to the species/ stock (NDF), and legally obtained (LAF)</i>	<i>Appendix I (endangered) – all take prohibited; parties seek to conserve habitats and reduce endangering factors Appendix II (unfavorable conservation status) – range state parties shall endeavor to conclude agreements to restore favorable conservation status</i>		
Oceanic Whitetip Shark (Carcharhinus longimanus)	Yes, 2012 stock assessment CMM 2011-04, 2019-04) (no retention)	Yes – App II Carcharhinus longimanus Requiem shark	Yes – App I	Yes	CR, decreasing
Silky Shark (C. falciformis)	Yes CMM 2013-08. 2019-04 (no retention)	Yes – App II Carcharhinus falciformes (Requiem shark)	Yes – App II	Yes	VU, decreasing
Thresher Shark (Alopias spp)	Yes Alopias superciliosus – Bigeye, Alopias vulpinus – Common, Alopias pelagicus – Pelagic	Yes – App II Alopias spp	Yes – App II Alopias pelagicus – Pelagic thresher shark, Alopias superciliosus – Bigeye thresher shark, Alopias vulpinus – Common thresher shark	Yes, bigeye, common, pelagic	Bigeye – VU, decreasing; Common – VU, decreasing

Species	WCPFC key shark species/ protections	CITES-listed species/ protections	CMS-listed species/ protections	Sharks MOU Annex 1	IUCN status
	<i>Data provision and population assessment of most key shark species; CMMs 2019-04 (sharks – all earlier provisions, fins-attached); 2019-05 (rays – no targeted fishing, no retention, safe release measures)</i>	<i>Appendix I – all international trade prohibited Appendix II – international trade allowed if not detrimental to the species/ stock (NDF), and legally obtained (LAF)</i>	<i>Appendix I (endangered) – all take prohibited; parties seek to conserve habitats and reduce endangering factors Appendix II (unfavorable conservation status) – range state parties shall endeavor to conclude agreements to restore favorable conservation status</i>		
Hammerhead Shark (<i>Eusphyra blochii</i> (Winghead), <i>Sphyrna lewini</i> , <i>S. mokarran</i> , <i>S. zygaena</i>)	Yes	Yes – App II <i>Sphyrna lewini</i> , <i>Sphyrna mokarran</i> , <i>Sphyrna zygaena</i>	Yes – App II scalloped hammerhead (<i>S. lewini</i>), great hammerhead (<i>S. mokarran</i>)	Yes, scalloped, great, smooth	Scalloped – CR, decreasing; Smooth – VU, decreasing; Great – CR, decreasing; Smalleye – VU, decreasing; Winghead – EN, decreasing
Porbeagle Shark (<i>Lamna masus</i>)	Yes	Yes – App II <i>Lamna nasus</i>	Yes – App II	Yes	VU, decreasing
Whale Shark (<i>Rhincodon typus</i>)	Yes CMM 2012-14, 2019-04 (no retention; release guidelines from purse seines)	Yes – App II (<i>Rhincodon typus</i>)	Yes – App I and II	Yes	EN, decreasing

Species	WCPFC key shark species/ protections	CITES-listed species/ protections	CMS-listed species/ protections	Sharks MOU Annex 1	IUCN status
	<i>Data provision and population assessment of most key shark species; CMMS 2019-04 (sharks – all earlier provisions, fins-attached); 2019-05 (rays – no targeted fishing, no retention, safe release measures)</i>	<i>Appendix I – all international trade prohibited Appendix II – international trade allowed if not detrimental to the species/ stock (NDF), and legally obtained (LAF)</i>	<i>Appendix I (endangered) – all take prohibited; parties seek to conserve habitats and reduce endangering factors Appendix II (unfavorable conservation status) – range state parties shall endeavor to conclude agreements to restore favorable conservation status</i>		
Manta Rays (Manta spp)	Yes (assessment only) No retention and recommended safe release under 2019-05	Yes – App II	Yes – App I and II (Manta alfredi); (Manta birostris)	Yes, Giant and reef	Alfredi – VU, decreasing; Birostris – VU, decreasing
Mobula (devil) Rays (Mobula spp)	Yes (assessment only) No retention and recommended safe release under 2019-05	Yes – App II	Yes – App I and II (Mobula birostris, Mobula eregoodootenkee, Mobula hypostoma, Mobula japanica, Mobula kuhlii, Mobula mobular, Mobula munkiana, Mobula rochebrunei, Mobula tarapacana, Mobula thurstoni)	Yes, all species	VU and EN species, decreasing
Basking Shark (Cetorhinus maximus)	No	Yes – App II	Yes – App I and II	Yes	EN, decreasing
Great White Shark, White Shark (Charcharodon carcharias)	No	Yes – App II	Yes – App I and II	yes	White – VU, decreasing

Species	WCPFC key shark species/ protections	CITES-listed species/ protections	CMS-listed species/ protections	Sharks MOU Annex 1	IUCN status
	<i>Data provision and population assessment of most key shark species; CMMS 2019-04 (sharks – all earlier provisions, fins-attached); 2019-05 (rays – no targeted fishing, no retention, safe release measures)</i>	<i>Appendix I – all international trade prohibited Appendix II – international trade allowed if not detrimental to the species/ stock (NDF), and legally obtained (LAF)</i>	<i>Appendix I (endangered) – all take prohibited; parties seek to conserve habitats and reduce endangering factors Appendix II (unfavorable conservation status) – range state parties shall endeavor to conclude agreements to restore favorable conservation status</i>		
Sawfishes		Yes – App I (Pristidae spp)	Yes – App I and II (Anoxypristis cuspidate – Narrow Sawfish, Pristis clavate – Dwarf Sawfish, Pristis pectinate – Smalltooth Sawfish)		CR & EN, decreasing
Guitarfishes	No	Yes – App II (Glaucostegus spp)			
Wedgefishes	No	Yes – App. II (Rhinidae spp)			
Dusky Shark (Carcharhinus obscurus)	No		Yes – App II	Yes	EN, decreasing

*Two other CMS-listed sharks, angelshark and spiny dogfish, do not occur in the convention area of the WCPFC.

Overview of Conservation Status and Regulatory Measures for Shark Species

The following summarizes the IUCN status of each shark species (or species group) that is a WCPFC key shark species and/or listed under CITES and/or CMS, and IUCN recommendations for management. It also lists the main treaty provisions applicable to each species. For all species, IUCN recommends that nations fully implement their international commitments in relation to these species.

Oceanic Whitetip Shark (*Carcharhinus longimanus*)

IUCN assesses this species as Critically Endangered. Its population is decreasing, with declines of well over 90% in the last 15 years. Bycatch is the primary threat, most of it in commercial pelagic fisheries including on the high seas. Because of its critically endangered status, IUCN emphasizes the importance of preventing capture, minimizing bycatch mortality, promoting safe release, and improving reporting of catch and discards.

CMS lists oceanic whitetip sharks under Appendix I, which prohibits take by parties. It is a WCPFC key shark species. WCPFC bans retention, possession, transshipment, and trade, which is consistent with the CMS Appendix I listing. Vessels must release unintentionally caught sharks following safe release guidelines. Although CITES lists oceanic whitetip sharks under Appendix II, it is illegal to catch and trade any oceanic whitetip shark caught in the WCPFC convention area.

In 2019, with a 2.6% observer coverage, vessels recorded observed bycatch of oceanic whitetip sharks in the WCPFC longline fishery of 822 captures, 171 dead releases, and 620 live releases. Extrapolating these numbers to the entire fishery, at least **31,615** oceanic whitetip sharks were captured and **6,500** died from interactions. Released oceanic whitetip as well as other sharks die at relatively high rates, and reporting typically underreports interactions, meaning that bycatch-related mortality is likely significantly higher than these numbers indicate. A small percentage of bycatch in the purse seine fishery is oceanic whitetip sharks, with an estimated **321** direct mortalities in 2019.

Silky Shark (*Carcharhinus falciformes*)

IUCN assesses this species as Vulnerable, with a decreasing population. It is the second most frequently caught species worldwide. In the Western and Central Pacific, both longline and purse seine fisheries catch silky sharks. In the latter, silky sharks comprise 90% of shark and ray bycatch. The sharks have a high level of post-release mortality, which can be over 84% in tropical tuna purse seines, and about 56% on tropical longline hooks.³¹

Silky sharks are listed under CMS Appendix II, meaning that they have a compromised conservation status. They are a WCPFC key shark species. WCPFC bans retention, transshipment, and trade, and requires release of unintentionally caught sharks following safe release guidelines. Although they are listed under CITES Appendix II, it is illegal to catch and trade such sharks caught in the WCP convention area.

In the WCPFC longline fishery, observed catch was 2,754, mortality 594, and live releases 1,448. Extrapolating to the entire fishery, direct mortality was over **22,800**. Silky sharks are also

³¹ Review and gap analysis of shark and ray bycatch mitigation measures employed by fisheries management bodies, CMS/Sharks/CWG1/Doc.3.1.

bycatch in the purse seine fishery. Observed interactions were 52,474, mortalities 16,891, and live releases 20,955. Extrapolating from an observer coverage of 46.39%, total direct mortalities in the purse seine fishery were **36,417**. Likely mortalities were much higher due to high post-release mortality and under-reporting.

Thresher Shark (*Alopias superciliosus* – Bigeye; *Alopias vulpinus* – Common; *Alopias pelagicus* – Pelagic)

IUCN has evaluated three species of thresher shark. The Pelagic Thresher shark is Endangered, and its population is decreasing. IUCN estimates that its median population decreased over 70% over three generations. Most of the catch is caught as bycatch in industrial pelagic fisheries offshore and on the high seas. IUCN recommends prohibiting all Pelagic Thresher retention and landings. In addition, measures should “minimize bycatch mortality, promote safe release, and improve catch (including discard) reporting.”

Both the Bigeye Thresher and Common Thresher shark (both more frequently found in coastal waters) are assessed as Vulnerable, and their populations are decreasing. Globally they have decreased 30-49% over about 55 years. Most of the catch is bycatch in industrial pelagic fisheries offshore and on the high seas. Mortality from hooking of Bigeye Thresher is 49-68%. For both species, IUCN recommends use of scientifically based and/or precautionary regional and national catch limits, and improved reporting of catch and discard data.

All three species of thresher shark are listed under Appendix II of CITES, requiring legality and non-detriment findings for sharks that are to be traded internationally. They are also listed under Appendix II of CMS, which reflects their compromised conservation status. Thresher sharks are WCPFC key species. The IOTC bans retention, transshipment, landing, storage, and sale of all three species of thresher sharks, while in the Atlantic, ICCAT bans retention of bigeye and discourages targeting of common thresher sharks.

Bigeye thresher are caught and die at high rates in the WCPFC longline fishery, with an estimated **23,384** mortalities out of over 87,000 captures in 2019.

Hammerhead Shark (*Sphyrna lewini* – Scalloped; *Sphyrna mokarran* – Great; *Sphyrna zygaena* – Smooth)

IUCN has assessed both the Scalloped Hammerhead and Great Hammerhead as Critically Endangered, with decreasing populations. Both populations have declined over 80% in 71-74 years. Most Scalloped Hammerhead catch is bycatch in industrial pelagic fisheries offshore and on the high seas. They have high bycatch-associated mortality, over 50% on longlines and up to 100% in purse seines. Smooth hammerhead sharks are assessed as Vulnerable, with a decreasing population that has declined an estimated 30-49% over about 72 years. Great Hammerhead and Smooth Hammerhead are subject to target fishing and bycatch in a variety of

commercial and small-scale fisheries. For Great, Scalloped, and Smooth Hammerheads, IUCN recommends prohibiting all landings, and instituting measures to prevent capture, minimize bycatch mortality, and improve catch and discard reporting.

All three hammerhead sharks are listed under CITES Appendix II. Scalloped and great hammerheads are listed under CMS Appendix II. They are key WCPFC shark species. ICCAT bans their retention, transshipment, landing, storage, and sale.

Whale Shark (*Rhincodon typus*)

IUCN assesses the whale shark as Endangered, with a decreasing population. It estimates that in the Indo-Pacific, the population has decreased 63% in 75 years. It has suffered from directed fishing, from bycatch in purse seine fisheries, as well as vessel strikes. Post-release mortality has been estimated as up to 50%. IUCN recommends conservation actions that include site protection where there are high densities of the sharks, including protecting fish spawning areas and other aggregation sites, and managing shipping lanes. Although the WCPFC has banned intentionally setting purse-seine nets around whale sharks, a high percentage of whale sharks are not sighted before entanglement (an estimated 73% in the Western and Central Pacific). IUCN recommends educating fishers on safe release practices.

The whale shark is listed in Appendix II of CMS. It is a WCPFC key shark species. The WCPFC bans retention, transshipment, and landing of the species. The WCPFC, together with the IATTC and IOTC, requires release of species that are accidentally caught in seine nets and following best practices for safe release. Although it is a CITES Appendix II-listed species, its catch and trade in the WCP convention area is illegal. However, there is continuing illegal trade.

In the WCPFC, of observations, there were 319 interactions, 9 mortalities, and 276 live releases, or an estimated 20 actual mortalities.

Basking Shark (*Cetorhinus maximus*)

IUCN assesses basking sharks as Endangered, with a decreasing population that has decreased 50-79% over the last century. It is not targeted but is taken as bycatch in a variety of fisheries. Although the global population may be stabilizing, fisheries still take adult females and recovery is expected to take hundreds of years.

Basking sharks are listed on CMS Appendices I and II and on CITES Appendix II. It is not a key WCPFC species. The WCPFC does not ban retention of the sharks.

White Shark (*Charcharodon carcharias*)

IUCN assesses white sharks as Vulnerable, with a decreasing population, with a decrease of 30-49% over 150 years. Most catch is as bycatch in inshore fisheries. For recovery, IUCN recommends implementing bans on take, or at a minimum scientific and/or precautionary

catch limits, and preventing lethal contact, minimizing bycatch mortality, promoting safe release, and improving reporting of catches including discards.

White sharks are listed under CITES Appendix II and CMS Appendix I and II. They are not a WCPFC key shark species.

Dusky Shark (*Carcharhinus obscurus*)

IUCN assesses the dusky shark as Endangered, with a decreasing population. Their habitat is primarily coastal, most of the catch is bycatch of commercial pelagic fisheries offshore or on the high seas. The Indo-Pacific population is estimated to have decreased by over 80% over the last century. IUCN recommends prohibiting retention and landings, or at least implementing scientific and/or precautionary catch limits, improving reporting of catch and discards, minimizing bycatch mortality, and promoting safe release protocols.

The CMS lists the dusky shark on its Appendix II, meaning that it has a compromised conservation status. The dusky shark is not a WCPFC key shark species.

Mako Shark (*Isurus oxyrinchus* – Shortfin; *Isurus paucus* – Longfin)

IUCN assesses both shortfin mako and longfin mako sharks as Endangered worldwide, with decreasing populations. Shortfin mako are Vulnerable in the North Pacific with a declining population and of Least Concern in the South Pacific, where the population is increasing. Global populations of both species are estimated to have declined 50-79% over about 75 years. Most of the catch is bycatch in industrial pelagic fisheries offshore and on the high seas. Post-release mortality from longlines for shortfin mako has been reported as 30-33%, while longfin mako are less vulnerable to pelagic longline gear. IUCN recommends prohibiting shortfin mako and longfin mako landings, or at least using scientific and/or precautionary catch limits, improving reporting of catch and discards, and promoting safe release protocols.

Both shortfin and longfin mako sharks are listed on CITES Appendix II, requiring that take for international trade be legal and from sustainable fisheries. They are both also listed under CMS Appendix II because of their compromised conservation status. They are a WCPFC key shark species. The United States bans retention of longfin mako sharks in the Atlantic.

Porbeagle Shark (*Lamna masus*)

IUCN assesses porbeagle sharks as Vulnerable, with a decreasing population. The Southern Hemisphere population has decreased less than 20%, although the global population has decreased 30-45% over about 60-115 years. Most catch is bycatch in large-scale pelagic fleets offshore and on the high seas. Post-release mortality on longlines ranges between 10 and 75%. IUCN recommends the use of scientific and/or precautionary catch limits.

Porbeagle sharks are listed on CITES Appendix II, requiring that take for international trade be legal and from a sustainable fishery. They are also listed on CMS Appendix II. They are a WCPFC key shark species.

Blue Shark (*Prionace glauca*)

IUCN assesses blue sharks as Near Threatened, with a decreasing population. There has been a global population decrease of 20-29% over about 30 years, but the population is increasing in the North and South Pacific. Most catch is bycatch in industrial pelagic fisheries offshore and on the high seas. IUCN recommends the use of scientific and/or precautionary catch limits, improving reporting of catch and discards, and minimizing bycatch mortality. An estimated over **182,000** blue sharks died due to longline bycatch in the WCPFC longline fishery in 2019.

Blue sharks are listed under Appendix II of the CMS, but not on Annex I of the MOU. They are a WCPFC key shark species. The WCPFC does not place catch limits on the species. ICCAT is the first RFMO to institute a catch limit for blue sharks.

Manta Rays (*Manta alfredi*, *Manta birostris*)

Manta rays include the giant manta ray and the reef manta ray. IUCN assesses both species as Vulnerable and decreasing. The main threat is sustained directed and incidental fishing, and the limited ability of the species to recover due to its life history.

Manta rays are listed on CITES Appendix II, requiring findings of legality and take from a sustainable fishery, and on both CMS Appendices I and II. The WCPFC has listed them as a key species for assessment only. It prohibits retention, and recommends following safe release guidelines as of February 2021.

Mobula Rays (*Mobula birostris*, *Mobula eregoodootenkee*, *Mobula hypostoma*, *Mobula japanica*, *Mobula kuhlii*, *Mobula mobular*, *Mobula munkiana*, *Mobula rochebrunej*, *Mobula tarapacana*, *Mobula thurstoni*)

Mobula (devil) rays include both IUCN-assessed Endangered and Vulnerable species. All populations are decreasing with an estimated reduction of 50-79% over 38 years. Threats are directed and incidental fishing, and they are susceptible to bycatch, including in small and large-scale tuna fisheries. Over 90% of the reported bycatch in the Western and Central Pacific from 2010-2015 was in purse seine fisheries. The rays have high post-release mortality.

IUCN recommends prohibiting landings of mobulids, or at least improving reporting of catch and discard data, scientific and/or precautionary catch limits, minimizing bycatch mortality, and

implementing safe release protocols, and following the IUCN SSG Global Devil and Manta Ray Conservation Strategy.

CITES lists mobula rays under Appendix II, requiring that take for international trade be legal and from a sustainable fishery. CMS lists them under both Appendices I and II. The WCPFC lists them as key shark species for assessment (not reporting), recommends that vessels follow safe release guidelines, and as of February 2021, prohibits their retention.

Section 2. CITES Legal Acquisition Finding and Non-Detriment Finding

Of the 26 members of the WCPFC, 17 are Parties to CITES, while all 7 cooperating non-members are CITES Parties. Through its control of trade in endangered species, CITES is a tool that can complement enforcement of WCPFC conservation and management measures. This section looks at complementary requirements, and where one set of regulations could assist in implementing the other. Parties' implementation of CITES in national law is a critical element. Fisheries and CITES agencies should coordinate with each other in implementing the requirements. However, the current fragmentation of ocean governance presents challenges to this coordination. An additional complication is that laws differ among nations, with some allowing trade of CITES-listed species and some prohibiting such trade.

Legality Determination (Legal Acquisition Finding)

Industrial longline and purse seine tuna fisheries catch large numbers of migratory sharks and rays, some of which are CITES-listed species, on the high seas, or ABNJ.³² A consideration of RFMO rules is recommended for national CITES determinations of legality for Appendix II sharks that were caught in the ABNJ.

CITES requires that before exporting Appendix II-listed species, Parties determine that the specimens have been obtained legally, as well as that their trade will not be detrimental to the population (NDF). The exporting party's CITES Management Authority must be satisfied that the specimen was obtained consistent with the laws and regulations of the country.³³ One way to satisfy this requirement is to ensure that the catching of the specimen was consistent with a fishing permit under the applicable laws, if there is adequate compliance and enforcement (monitoring, surveillance, and compliance) of the requirements.

³² <https://www.iucnssg.org/press.html>.

³³ Res. Conf. 18.7: A Legal Acquisition Finding refers to "the examination conducted by a Management Authority prior to issuing a CITES export permit to satisfy itself that the specimen was not obtained in contravention with of the laws and regulations of that State for the protection of fauna and flora (in other words, it was legally acquired)."

When a vessel of a flag state catches a CITES-listed shark on the high seas, CITES requires that the flag state provide a certificate of Introduction from the Sea (IFS)³⁴ for the specimen before introducing it into the same state or an Export permit before exporting it to another state. An IFS requires a Non-detriment Finding. Although not a CITES requirement, Resolution Conf. 14.6 (Rev CoP16) recommends that the party's Management Authority, when making a legality determination for IFS, Export, or Import of species obtained outside of national jurisdiction, ensures that the specimen was obtained consistent with "international law for the conservation and management of living marine resources" and not as the result of illegal, unreported, or unregulated (IUU) fishing.³⁵ It recognizes "the need for States to consult and cooperate with relevant Regional Fisheries Management Organizations and Arrangements (RFMO/A) when issuing certificates of introduction from the sea and export and import permits for specimens taken in the marine environment not under the jurisdiction of any State."³⁶ One challenge in implementing this recommendation can be the issue of adequate communication between countries' conservation or environmental agencies and their fishery agencies.

Parties' Actions to Ensure Compliance With RFMO Regulations

Members of the RFMO have the authority and responsibility to enforce RFMO regulations against their vessels, and to incorporate them into their national laws.³⁷ Fisheries permitting that incorporates RFMO requirements is one approach to ensuring compliance with RFMO rules. Countries can also benefit from processes that streamline and facilitate cooperation on information sharing. Consultation and coordination with the RFMO can help Management Authorities of Parties take into account reported compliance with CMMs as part of their legality

³⁴ "Introduction from the sea" is "the transportation into a State of specimens of any species which were taken in the marine environment not under the jurisdiction of any State." Before a state issues an IFS certificate, the Scientific Authority must first determine that the introduction will not be detrimental to the survival of the species."

³⁵ For specimens of marine species in Appendix I or II "taken in the marine environment not under the jurisdiction of any State, in satisfying itself that the provisions of the Convention are met," Resolution Conf. 14.6 (Rev. CoP16) para. 3, recommends that

- a) the State of introduction, prior to issuing a certificate of introduction from the sea;
- b) the State of export, prior to issuing an export permit; and
- c) the State of import, prior to issuing an import permit, or when presented with an export permit: take into account whether or not the specimen was or will be acquired and landed:
 - i) in a manner consistent with applicable measures under international law for the conservation and management of living marine resources, including those of any other treaty, convention or agreement with conservation and management measures for the marine species in question; and
 - ii) through any illegal, unreported or unregulated (IUU) fishing activity

³⁶ See also Mundy-Taylor, V. and Crook, V., Into the Deep: Implementing CITES measures for commercially-valuable sharks and rays, Report prepared for the European Commission (2013).

³⁷ WCPF Convention Art. 23, "Each member of the Commission shall promptly implement the provisions of this Convention and any conservation, management and other measures or matters which may be agreed pursuant to this Convention from time to time and shall cooperate in furthering the objective of this Convention.

determinations. As an overlapping obligation, WCPFC members have general authority to use port state measures to prohibit landing of illegal catch from foreign vessels.³⁸ Parties to the PSMA must specifically check that catch listed under CITES has the required CITES certificate or permit before landing.

Although flag states are to issue an IFS certificate or Export permit for Appendix II sharks caught on the high seas before transshipment or landing,³⁹ as of 2018, only 6 IFS certificates for commercial trade in sharks had been reported to CITES.⁴⁰ Potential reasons for the few reported certificates include a lack of national legislation, lack of data for an NDF, and lack of guidance for issuing IFS certificates. The fact that reported trade in CITES-listed shark species is lower than reports of catch volumes could be due to discrepancies in units used, stockpiling of products, mixed species issues, and illegal trade.⁴¹ In addition, some countries prohibit retention of CITES-listed species and are therefore not landing them.⁴² Illegal trade may also be related to vessels flying flags of convenience (FOCs) and/or landing in ports of convenience (POCs) that avoid compliance with CITES reporting requirements and instead catch and/or trade sharks without reporting them.⁴³ For instance, one report indicates that worldwide 48% of refrigerated cargo vessels, which typically receive transhipped catch, fly FOCs.⁴⁴

Res. Conf. 14.6 recommends that CITES parties take into account whether taking was consistent with international law, including RFMO measures. To determine the consistency of the taking with international law, or legality, of an Appendix II-listed shark from the high seas, Parties should consider compliance with the following WCPFC CMMs at a minimum. Many of these requirements can be incorporated into states' fisheries permits.

- CMM 2019-04, Sharks⁴⁵
- CMM 2019-05, Rays

³⁸ WCPF Convention Art. 27. See discussion, pp. 34 ff.

³⁹ "The IFS certificate should be issued prior to transshipment, or the Master of the vessel receiving the transhipped specimens should obtain satisfactory proof that the IFS certificate already exists or will be issued before the IFS occurs. "The export permit should be issued prior to transshipment, or the Master of the vessel receiving the transhipped specimens should obtain satisfactory proof that the export permit already exists or will be issued before the import occurs." (Resolution Conf. 14.6 (Rev. CoP16)).

⁴⁰ SC70 Doc. 34, INTRODUCTION FROM THE SEA: REPORT OF THE SECRETARIAT (Oct. 2018).

⁴¹ AC30 Com. 8 (Rev. by Sec.), Thirtieth meeting of the Animals Committee, SHARKS (July 2018).

⁴² See, e.g., Japan's National Plan of Action for the Conservation and Management of Sharks (rev. 2016); prohibition on landing all sharks except Blue Shark, Shortfin Makoshark, Salmon Shark, and Thresher Sharks.

⁴³ Glenn Sant, personal communication, Dec. 22, 2020.

⁴⁴ <https://globalfishingwatch.org/press-release/the-first-ever-global-view-of-transshipment-in-commercial-fishing/>.

⁴⁵ The sharks and rays CMMs contain conservation and management measures for the species.

- CMM 2019-07, IUU Vessel List⁴⁶
- WCPFC Record of Fishing Vessels
- CMM 2013-04, WCPFC implementation of a Unique Vessel Identifier⁴⁷
- CMM 2013-05, Daily catch and effort reporting⁴⁸
- CMM 2014-02, Commission VMS⁴⁹

The following paragraphs describe further the list of CCMs related to determining legality.

Determining whether the vessel has complied with registration requirements and is not listed as a vessel engaging in IUU fishing

The WCPFC lists vessels that it has determined to be fishing illegally, not reporting catch, or not regulated on the public IUU vessel list under CMM 2019-07. The WCPFC Record of Fishing Vessels provides the authorization for vessels of CCMs to fish in the Convention Area.⁵⁰ Vessels must also have a unique identifier.⁵¹ To be legal, the vessel catching the shark must not be listed on the IUU vessel list, be a WCPFC vessel unless it is otherwise authorized, and have a unique identification number.

Whether the vessel has committed a violation or is suspected of committing a violation

Additional information about potential violations comes from inspections conducted under WCPFC Boarding and Inspection procedures (CMM 2006-08), and reported in the Compliance Monitoring Scheme (CMM 2019-06). The Compliance Case File System (CCFS) under CMM 2019-06 maintains information about potential violations in its records of inspections and enforcement actions. Information about completed cases and cases under investigation in the Compliance Case File is to be made available to relevant CCMs, which besides the flag state can include “the CCM that notified the case to the flag CCM, and [] the coastal CCM, the ROP observer provider and the chartering CCM.”

Compliance with the consolidated shark CMM

The consolidated shark CMM requires members to prohibit their vessels from finning, requires them to fully utilize sharks, and requires them to land sharks with fins attached unless the member uses one of three alternatives. Finning means “Removing and retaining all or some of a

⁴⁶ Relative to legality of vessels catching sharks.

⁴⁷ The Record of Fishing Vessels and Unique Vessel Identifier are means of determining whether the vessel has complied with basic registration requirements.

⁴⁸ Relevant to compliance with catch regulations and identification of species and information on amount of catch and bycatch.

⁴⁹ Relevant to compliance with fishing in legal area at legal time.

⁵⁰ Convention Art. 24(2).

⁵¹ WCPFC Record of Fishing Vessels.

shark's fins and discarding its carcass at sea." Full utilization means "Retention by the fishing vessel of all parts of the shark excepting head, guts, vertebrae and skins, to the point of first landing or transshipment." The CITES Sharks and Rays Working Group identified the importance of compliance with requirements to land sharks with fins attached in making Legal Acquisition Findings and legality determinations for Introduction from the Sea certificates.⁵² However, by potentially introducing uncertainty as to whether fins are landed with their corresponding carcasses, the alternatives to landing with fins-attached could hinder verification of legality. In addition, the ray CMM, 2019-05, prohibits all retention, landing, and transshipment of rays, making their trade illegal.

Records and compliance monitoring reports

Members are to require vessels to keep daily logbook records and VMS records of specific species and quantity of catch and catch area that are relevant to legality.

Yearly compliance monitoring reports provide evidence of a member's compliance or non-compliance with existing WCPFC shark CMMs. The reports can provide evidence that shark catch of a particular member is at higher risk of being illegal, and trigger closer inspection and evaluation of whether to issue a CITES import or export permit for sharks from such countries.

The most recent WCPFC compliance report⁵³ indicated that Indonesia was non-compliant with the CMM 2010-07 requirement to prohibit its vessels from retaining on board, transshipping, landing, or trading any fins that exceeded the 5% ratio requirement or were harvested in violation of the former shark CMM. Philippines and Chinese Taipei were under flag state investigation as to this provision. Countries that had not complied with the reporting deadline concerning measures taken were Papua New Guinea, and as priority non-compliant, Liberia and Panama. Liberia and Panama issue flags of convenience to vessels, which states are less likely to enforce regulations against their flagged vessels.

With respect to CMM 2011-04, oceanic whitetip sharks, Indonesia was priority non-compliant with the requirement to prohibit its vessels and vessels under charter arrangements from retaining on board, transshipping, storing on a fishing vessel, or landing any oceanic whitetip shark, in whole or in part. The Philippines was under flag state investigation. Ecuador had not complied with the reporting deadline for submitting an annual estimate of releases and the shark's condition upon release.

As to CMM 2013-08 on silky sharks, Indonesia was priority non-compliant with the requirement to prohibit its vessels or charter vessels flying their flag from retaining on board, transshipping,

⁵² CITES SC70 Doc 48.1, Sharks and Rays, Report of the Working Group, Oct. 2018.

⁵³ 2019 Final Compliance Monitoring Report (covering 2018 activities), WCPFC16-2019-fCMR (6 December 2019).

storing on a fishing vessel, or landing any silky shark caught in the Convention Area, in whole or in part, in the fisheries covered by the Convention. Japan, Papua New Guinea, the Philippines, and Chinese Taipei were under flag state investigation on this issue. Ecuador was non-compliant with the reporting deadline for submitting an annual estimate of silky shark releases and condition upon release.

A country's lack of compliance increases the risk that sharks landed or traded that were caught by vessels of that country were caught illegally.

Traceability of Catch

Traceability systems, including catch documentation schemes (CDSs), are means to help determine the legality of a product. CITES and the FAO have evaluated traceability systems for CITES-listed species and for fisheries.⁵⁴ The WCPF Convention requires reporting of target and non-target catch.⁵⁵ The WCPFC has adopted a CMM that requires members and cooperating parties to develop a catch documentation scheme for blue fin tuna.⁵⁶ An FAO GEF-funded ABNJ project is working on a common traceability framework for use across all t-RFMOs.⁵⁷ ICCAT and CCSBT both have CDS systems in operation, but not for sharks.⁵⁸ The CCAMLR uses an electronic CDS for toothfish that is integrated with VMS and port state measures.⁵⁹ Commercial traceability systems include the Marine Conservation Standard. **Neither CITES nor the WCPFC currently have a catch documentation scheme for sharks.**

CITES Resolution Conf. 18.7, Legal Acquisition Findings,⁶⁰ discusses the need for traceability to ensure legality of catch, but does not require it. It recommends that documentation provide information about the chain of custody back to the source of the specimen. The CITES working definition of traceability is “the ability to access information on specimens and events in a CITES species supply chain.”⁶¹ The CITES Animals committee also recognized the role of systems of catch and trade documentation in legality determinations.⁶² Documentation should show that removal of the specimen from the wild was legal, identify the specific specimen, and document

⁵⁴ Lehr, Traceability study in shark products, Report commissioned by the CITES Secretariat; Mundy, V. and Sant, G. (2015). Traceability systems in the CITES context: A review of experiences, best practices and lessons learned for the traceability of commodities of CITES-listed shark species. TRAFFIC report for the CITES Secretariat.

⁵⁵ WCPF Convention Art. 5.

⁵⁶ CMM 2019-02.

⁵⁷ <http://www.fao.org/in-action/commonoceans/news/detail-events/en/c/1174968/>.

⁵⁸ FAO, Report of the Expert Consultation on Catch documentation Schemes (CDS), Rome, 20-24 July 2015.

⁵⁹ <https://www.ccamlr.org/en/compliance/catch-documentation-scheme>.

⁶⁰ Annex I, 2.b.

⁶¹ “* This information should be carried, on a case by case basis, from as close to the point of harvest as practicable and needed to the point at which the information facilitates the verification of legal acquisition and non-detrimental findings and helps prevent laundering of illegal products.” https://www.cites.org/eng/prog/Cross-cutting_issues/traceability.

⁶² AC24, WG5, Doc. 1.

transfers of ownership.⁶³ As discussed by Lehr, “traceability is a tool to strengthen CITES processes.”⁶⁴

Lehr identifies three key elements of traceability: what to trace (unique identification of item and supplier); when to record (critical tracking events – CTEs); and what to record (key data elements – KDEs). A catch certificate or document issued at the time of catch could enhance traceability⁶⁵ by allowing authorities to link the CITES permit to a legal origination process. Verification of the certificate through monitoring, control, and surveillance (MCS) measures such as fishery observers, video surveillance, and/or electronic logbooks would help to ensure its robustness or validity. Measures against substitution fraud in certificates include (i) recording them electronically (ii) as soon as possible after catch⁶⁶ with (iii) essential information that includes unique identification, the species, and quantity or weight. Lehr concluded that electronic recording is required to ensure verification. Mundy and Sant, in a report for the CITES Secretariat, emphasized the importance of unique identification, recording catch information in a paper or electronic catch document, and communicating catch data through transshipment and landing, which can be done through paper documentation or a central database that can be linked to CITES permitting procedures.⁶⁷ Additional countermeasures against errors can include a fins-attached requirement, training in CITES listings, taking photos of catch, educating fisheries officers, checking species at landing, and using port state measures.⁶⁸ The catch or landing certificate should undergo a risk assessment before the authority issues the CITES document.

Different entities could implement traceability measures. Individual parties to CITES may require them as part of national legislation, particularly if CITES makes traceability a requirement. The Kobe II Workshop on MCS 17 (2010) recommended that RFMOs extend catch documentation to sharks.⁶⁹

Seafood industries could implement a traceability system for sharks; the expectation of increased profits could provide an incentive for implementing the system. An FAO initiative

⁶³ “Such information may include records demonstrating that the specimen or parental stock was removed from the wild in accordance with relevant laws (licenses, collections permits, etc.), records identifying the specific specimen (band numbers or other marks, etc.) and documenting the history of transfers of ownership (sales, receipts, invoices, etc.) . . .” (Resolution Conf. 18.7, Legal Acquisition Findings, Annex I, 2.b).

⁶⁴ Lehr, *supra* note 54; *see also* Vasconcellos et al., “A Country and Regional Prioritization for Supporting Implementation of CITES Provisions for Sharks,” FIAF/C1156 (FAO 2018).

⁶⁵ In the EU, RFMO catch certificates or documentation schemes can serve as the required catch certification.

⁶⁶ Lehr, *supra* note 54; U.S. regulations require recording within 48 hours of catch or before landing, whichever is sooner, 50 C.F.R. 635.5.

⁶⁷ Mundy and Sant, *supra* note 54, at pp. 74-76.

⁶⁸ Lehr, *supra* note 54.

⁶⁹ <https://www.tuna-org.org/Documents/TRFMO3/BackgroundInfo.pdf>, cited in *Into the Deep*, *supra* note 36.

could coordinate a global traceability system. In addition, as the main entity that manages fisheries in its convention area, the WCPFC⁷⁰ supports traceability through its MSC measures.⁷¹ Not only do WCPFC regulations set conservation standards, but they also include measures that relate to documenting legal catch, identifying catch, and communicating information.

This section looks at WCPFC requirements to identify and document catch and communicate information relevant to CITES legality determinations. Applicable CMMs include the consolidated shark CMM 2019-04; CMM 2013-05, daily catch and effort reporting; CMM 2013-04, WCPFC implementation of a Unique vessel identifier, and CMM 2014-02, Commission VMS.

Requirements for documentation and identification

CMM 2013-05, daily catch and effort reporting, requires vessels to report information about the original wild catch. Vessels must keep dated daily electronic or manual records of number or weight of catch of key species: blue shark, silky shark, oceanic whitetip shark, mako shark, thresher shark, porbeagle shark (south of 20 degrees S), hammerhead shark (winghead, scalloped, great, and smooth), and whale shark.⁷² They must report incidental catch and live releases of these species.⁷³ Reports also must include the status on release of oceanic whitetip and silky shark.⁷⁴ For whale sharks, they must report all accidental captures and condition on release.⁷⁵ The WCPFC is developing a CMM to address electronic reporting.⁷⁶ Current electronic reporting standards require including discards of sharks and rays by species and condition.⁷⁷ The WCPFC is encouraged to educate members on species identification.⁷⁸ The consolidated shark CMM requires landing with fins-attached, unless vessels use one of three alternatives. Landing sharks with fins attached improves traceability by ensuring that fins are linked with their corresponding carcasses.⁷⁹

⁷⁰ Parties' regulation of their national areas is to be compatible with WCPFC regulation. WCPF Convention Art. 8.

⁷¹ The WCPF Convention authorizes the WCPFC to regulate in this area. Art. V(i), Art. 29(3), Annex III, Art. 5.

⁷² Requirements are "information specified in sections 1.3 to 1.6 of ANNEX 1 of the Scientific Data to be Provided to the Commission; [and] b. Catch information about other species not listed in those sections, but required to be reported by CCMs under other Commission decisions such as, inter alia, key shark species according to FAO species codes."

⁷³ Report of the Working Group, *supra* note 52.

⁷⁴ Annual Report Pt. 1 revised to reflect decisions at WCPFC 16.

⁷⁵ CMM 2019-04.

⁷⁶ <https://www.wcpfc.int/meetings/erandemwg4>.

⁷⁷ Members are to provide annual "[e]stimates of discards/releases . . . for each species."

https://www.wcpfc.int/system/files/WCPFC13%20Summary%20Report%20final_issued%20%20March%202017%20complete.pdf.

⁷⁸ CMM 2019-04 recommends that the WCPFC consider capacity assistance to states that includes "supplying species identification guides for their fleets" for assistance with shark identification.

⁷⁹ Report of the Working Group, *supra* note 52.

Gaps

Limitations in species identification and recording

Correctly identifying and recording the species of shark catch is a first step in traceability. Although regulations require fishers or observers to identify and record sharks at species level, many fleets do not have the knowledge necessary to identify all CITES-listed sharks at species level. CMM 2019-04 encourages, but does not require, the WCPFC to disseminate shark species identification guides to developing state members and participating territories.

Further, many vessels are not complying with reporting requirements. A recent report indicates that in many cases, logbook records report shark bycatch under a single “sharks” heading, rather than recording individual key shark species.⁸⁰

No requirement for unique identification

Although CMM 2013-05, daily catch and effort reporting, requires identifying the catch per set or day, it does not require that CITES species be identified and marked individually. There is no requirement for a catch certificate.

Verifying that fins are landed with corresponding carcasses

CMM 2019-04 requires vessels to land sharks with fins attached or use one of three alternatives. The separation of carcasses and fins under these alternatives could undermine the assurance that fins are actually landed with their corresponding carcasses.

Recommendation

Mandate and provide capacity assistance to flag states for ongoing efforts to educate and provide species identification guides to fishers, and provide sufficient capacity assistance to ensure the information is available to all vessels. Alternatively, flag states could require that industrial fishing companies provide the training as a condition of operation under their flags.

Require unique identification of catch of sharks and rays and recording of information in a catch document.⁸¹ Information that has been recommended to include in a catch or landing document includes the species, date, catch location/area, gear used and vessel name/registration number” or the unique fishing vessel ID, permission to fish, catch areas, start

⁸⁰ WCPFC-TCC15-2019-DP06_rev126Sept 2019, INFORMATION PAPER ON A COOPERATIVE MONITORING, CONTROL AND SURVEILLANCE ACTIVITY IN THE WESTERN AND CENTRAL PACIFIC FISHERIES COMMISSION CONVENTION AREA: OPERATION NASSE.

⁸¹ Mundy and Sant, *supra* note 54.

and finish date, observer ID (if applicable), type of unloading, species and product type, and estimated volume to be unloaded.⁸²

Harmonize bycatch/retention rules harmonize across jurisdictions.

Monitor implementation of the fins-attached measure. Assess extent to which the alternatives undermine verification.

Establish a central database that contains shark catch information. This would be consistent with the WCPFC requirement to collect and share data in a timely manner that includes catch of non-target species.⁸³ The data-base could provide easily accessible, complete and accurate information about compliance of shark catches with CMMs that CITES decision-makers could access.

Other Measures to Check for Legality

Additional means of verifying or cross-checking CITES IFS certificates and Export permits for legality of sharks caught on the high seas include reviewing information at *transshipment* and *landing*.

Transshipment documentation

CMM-2009-06, Regulation of transshipment, requires that vessels notify the Executive Director prior to transshipment and make a declaration after transshipment. At least 36 hours prior to each transshipment, vessels must notify the Executive Director of the name and WCPFC Identification Number (WIN) of the offloading vessel, the name and WIN of the receiving vessel, the product (including species and processed state) to be transhipped, the tonnage of product, the date and estimated location of transshipment, and the geographic location of the highly migratory fish stock catches.⁸⁴

Following the transshipment, the vessel must provide the Executive Director with a WCPFC Transshipment Declaration documenting the species of product and quantity of by-product. The Transshipment Declaration must list a unique document identifier, the fishing gear used, quantity of product including species and processed state, state of fish (fresh or frozen), quantity of by-product, name and signature of the WCPFC observer, and quantity of product already on board the receiving vessel and geographic origin of that product.

⁸² Gilles Hosch and Francisco Blaha, Seafood traceability for fisheries compliance; Country-level support for catch documentation schemes, FAO Technical Paper 619, 2017; *see also* Mundy and Sant, *supra* note 54.

⁸³ Mundy and Sant, *supra* note 54.

⁸⁴ Annex III of the CMM.

Gaps

The current transshipment CMM does not require documentation sufficient to verify whether the IFS certificate or Export permit has met the legality requirements for an Appendix II-listed shark. Before transshipment, the CMM does not require vessels to report all transhipped shark bycatch by species. After transshipment, the Transshipment Declaration requires vessels to report only the quantity of by-product and not species. Sharks for which retention is not prohibited could be transhipped as unspecific by-product. The declaration does not explicitly require reporting of the geographic location of by-product that could include sharks, which limits cross-verification through VMS reporting requirements.

Recommendation

Two sets of alternatives could be considered to address the gaps in documentation of transhipped sharks. First, transshipment reporting requirements could be made more complete. The transshipment certificate could document shark bycatch by species, weight, and location of capture. This documentation could be linked to a catch certificate or other catch document, which would accompany the catch at transshipment.⁸⁵ Observer reporting to the Secretariat of all species transhipped, whether or not bycatch, could be required, as recommended by WWF.⁸⁶

A second set of alternatives is to either presume that transhipped shark product was obtained illegally or to prohibit transshipment outright. Because current transshipment documentation requirements leave gaps in verifying legality of catch and bycatch of sharks and shark products, member states could presume that any transhipped shark or shark product was acquired illegally and prohibit its landing and trade, unless sufficient proof of legality is provided. Alternatively, the WCPFC could implement a ban on transshipment at sea similar to that of the Southeast Atlantic Fisheries Organization (SEAFO), which requires its contracting parties “to ensure that its vessels are not involved in transshipment in the Convention Area on fishery resources covered by the Convention.”⁸⁷

Port State Measures

When IUU fishing, which is facilitated by flags and ports of convenience, is the reason for a lack of accountability for shark catch, the effect of improvements in traceability requirements may be limited. In such cases the initial catch and any subsequent transshipment are illegal, unreported, or unregulated, and therefore not accounted for in a traceability system. One

⁸⁵ Mundy and Sant, *supra* note 54.

⁸⁶ WCPFC-TCC15-2019-OP06, Observer Reporting of Transshipments in the WCPFC.

⁸⁷ SEAFO, System of Observation, Inspection, Compliance and Enforcement, Art 5 (2015); *see also* Chris Wold, The Impracticability Exemption to the WCPFC’s Prohibition on Transshipment on the High Seas.

means of combating the landing of IUU fish, including sharks, is through the use of port state measures.

In determining the legality of catch to be landed, a port state has the authority to review required information and documentation about catch and compliance with CMMs of any vessel entering its ports.⁸⁸ The WCPFC port state CMM requires members to inspect at least those vessels on the IUU vessel list and foreign vessels in their designated ports “not listed on the WCPFC Record of Fishing Vessels, other than in cases where the vessel is authorized with another RFMO to which the port CCM is a Party, as practicable.”⁸⁹

Separately as part of national legislation, some CITES parties have procedures in place to review CITES-listed species at landing.⁹⁰ New Zealand, for example, sends the IFS certificate to port officials prior to arrival to enable inspection of specimens against the certificate. The officials are authorized to inspect and seize CITES species that do not have certificates or comply with the certificate.

Under the CMM, port states have the authority to review documentation, gear, and catch to determine whether vessels are in compliance with applicable measures.⁹¹ Documentation about the vessel and catch that is required and available to the port state includes the IUU Vessel List, the WCPFC Record of Fishing Vessels, VMS records, the Unique Vessel Identifier, Daily catch and effort reporting, and the Transshipment Declaration. Port states may inspect vessels known or suspected of non-compliance.

The CMM requires port states to “carry out inspections on at least” (i) Any foreign vessel not listed on the WCPFC Record of Fishing Vessels (unless authorized by another RFMO), and (ii) Vessels on the IUU List. These minimum standards help to establish the legality or illegality of catch from these two categories of vessels. The port state shall “give particular consideration to inspecting vessels suspected of IUU fishing, . . . particularly where evidence of IUU fishing or fishing related activities in support of IUU fishing has been provided.”

For those WCPFC members that are parties to the Port State Measures Agreement, additional requirements apply. States are to publicize a list of designated ports at which foreign vessels may seek entry. Before gaining entry to the port, the vessel must send a list of information to the port authorities. After reviewing this information, the port decides whether to allow the vessel into port, for inspection, and/or for offloading of catch and use of port services. The port

⁸⁸ WCPF Convention, Art. 27.

⁸⁹ CMM 2017-02.

⁹⁰ SC70-34.

⁹¹ WCPF Convention and CMM 2017-02, Minimum standards for port state measures.

state is also to consider “such other information as it may require to determine whether the vessel requesting entry into its port has engaged in IUU fishing or fishing related activities in support of such fishing,”⁹² When a port state finds sufficient proof of IUU fishing or support of IUU fishing it must prohibit offloading or transshipment of catch and reprovisioning or other use of port services that support fishing. A port state may “allow entry into its ports of a vessel referred to in those paragraphs exclusively for the purpose of inspecting it.”⁹³

The CMM provides optional formats (identical to PSMA formats) for inspection procedures and reports for reviewing compliance with WCPFC requirements. Information available to the port state for inspection includes daily catch and effort reports that record shark catches and discards or releases; the Transshipment Declaration that records transshipment of sharks; VMS information indicating vessel locations at the time of fishing; fishing authorizations; and vessel registration and authorization. Any applicable CITES certificate or permit for the catch, issued as a requirement at point of catch or landing, may also be available. For those states party to the PSMA, information about vessel identity and ownership, VMS, fishing authorizations, transshipment authorizations and information, and total catch by species, product form, and area onboard, must be provided prior to entry into port.

The inspection report shows flag state status, vessel registration status, fishing authorizations, transshipment authorizations, and transshipment information for donor vessels; evaluation of offloaded catch (quantity), evaluation of catch retained onboard (quantity); and logbook and other documentation review, compliance with applicable catch documentation scheme, *compliance with applicable trade information scheme* [emphasis added] that requires showing the applicable CITES document in order to land catch, and type of gear used; examination of gear, inspector’s findings, and any apparent infringements including reference to relevant legal instruments(s).

Recordation is the next step at landing, whether or not the vessel has been inspected. This is a separate issue from inspections of vessels, but would require recording of actual landed catch.

Gaps

There are several gaps in WCPFC-required procedures to determine legality before landing.

The current port state CMM is missing several key elements of the PSMA. The CMM does not require states to designate ports that foreign vessels must use. It does not require vessels to provide key information before entry into port, including any required CITES documents. Third, it mandates only inspection of vessels that are on the IUU list or not listed as a WCPFC registered vessel, and authorizes but does not require port states to inspect foreign vessels that

⁹² Art. 9(1).

⁹³ Art. 9(5).

are suspected of IUU fishing. It also does not require that the applicable CITES documents be presented at landing.

Additionally, the port state is not listed as a relevant state for obtaining information in the Compliance Case File System (CCFS),⁹⁴ which could hinder evaluation of whether the vessel has engaged in or supported IUU fishing.

Recommendation

Improvements in the CMM on port state measures would require port designation and vessel notification of information prior to entering port. The port state would have access to the information in the CCFS prior to determining whether a foreign vessel may enter its port. It should have access to the relevant CITES documents for catch to be landed. If it finds sufficient evidence of illegality, the port state would be required to inspect the vessel and/or deny landing of fish.

As an example, the International Commission for the Conservation of Atlantic Tunas (ICCAT) port state measure mirrors the PSMA. Members must designate ports for foreign vessels and require foreign vessels to provide information to the port 72 hours prior to entry. If the port state has sufficient proof that the vessel engaged in IUU fishing, it must deny the vessel entry to the port, or entry only for inspection but prohibit any offloading, transshipping, packaging, processing, or other port services.⁹⁵ For vessels in port, the port state must deny port services if the vessels do not have a valid authorization to fish in the ICCAT Convention Area; it receives clear evidence that the fish onboard was taken in violation of ICCAT measures; the flag state does not confirm within a period of time that the fish was taken consistent with ICCAT measures; or the port state has reasonable grounds to believe that the fish was taken in contravention of ICCAT measures. The South Pacific Regional Fisheries Management Organisation (SPRFMO) has a similar port state measure.⁹⁶

Collecting and recording in-port data would also improve traceability of shark catch and thereby determinations of legality. The FFA recommends full port monitoring and recording of data for longliners as well as purse seine vessels. Catch weight could be determined through use of a weighing scale at transshipment and landing.⁹⁷

⁹⁴ Conservation and Management Measure for Compliance Monitoring Scheme, CMM 2019-06.

⁹⁵ ICCAT, Recommendation by ICCAT on Port State Measures to Prevent, Deter, and Eliminate Illegal, Unreported, and Unregulated Fishing.

⁹⁶ ICCAT CMM 07-2019, Conservation and Management Measure on Minimum Standards of Inspection in Port.

⁹⁷ Wetjens Dimmlich, FFA, personal communication, March 10, 2020.

Non-Detriment Findings

CITES Requirements

Prior to issuing an Introduction from the Sea certificate or an Export permit for a specimen in Appendix II, national CITES scientific authorities must make a finding that the “export will not be detrimental to the survival of that species.”⁹⁸ The Scientific Authority of each Party is also to monitor export permits and actual exports of a species to ensure that exports do not exceed the level required “to maintain that species throughout its range at a level consistent with its role in the ecosystems in which it occurs and well above the level at which that species might become eligible for inclusion in Appendix I;” if they exceed that level, it is to advise the Management Authority of measures to limit export permits for the species.⁹⁹

Consistent with CITES’ consideration of ecosystem impacts, WCPFC regulation is to apply the precautionary approach; assess fishing impacts on non-target and associated or dependent species, and species belonging to the same ecosystem; reduce bycatch; and protect biodiversity.¹⁰⁰ The WCPFC is to take measures to minimize catch of endangered species; adopt plans to conserve non-target species and protect habitats of special concern; and use enhanced monitoring when species are at risk in order to review their status and the efficacy of conservation and management measures.¹⁰¹ Conservation measures for such species are to aim to maintain or restore their populations “above levels at which their reproduction may become seriously threatened.”¹⁰²

The CITES Guidance for Making Non-detriment Findings for sharks and rays provides a detailed recommended framework for making NDFs.¹⁰³ The process is a form of assessment of the risk of take to the population.¹⁰⁴ There are several steps in making NDFs. As a preliminary matter, Parties determine whether the catch was taken legally and whether CITES controls apply. If exports are allowed under CITES and an NDF is required, Step 2 is to make an assessment of biological vulnerability and conservation concern for the species or stock. In Step 3 a party assesses trade and fishing pressures on the species. Step 4 evaluates existing management

⁹⁸ CITES Art. IV.

⁹⁹ Art. IV.3; Appendix II sharks that may be retained and landed under WCPFC rules *and* require a non-detriment finding for an IFS or export are shortfin and longfin sharks, pelagic thresher sharks, hammerhead sharks, porbeagle sharks, basking sharks, and great white sharks. No NDF is needed if national laws prohibit their landing.

¹⁰⁰ Art. 5.

¹⁰¹ Art. 6.

¹⁰² Art. 10.

¹⁰³ CITES document AC27 Inf. 1 CITES Non-detriment Findings Guidance for Shark Species 2ND, REVISED VERSION — A Framework to assist Authorities in making Non-detriment Findings (NDFs) for species listed in CITES Appendix II, Victoria Mundy-Taylor, Vicki Crook, Sarah Foster, Sarah Fowler, Glenn Sant and Jake Rice (2014)).

¹⁰⁴ *Id.* at 28.

measures, which includes evaluating both their adequacy and the extent of enforcement and compliance. Step 5 is to determine whether an NDF can be made, and if so, whether mandatory conditions should be applied to the NDF.

Potential Role of the WCPFC in Making Regional NDFs

CITES allows a regional fishery body or regional fishery management organization to act as an international Scientific Authority for high seas stocks. IFS certifications “may be granted on the advice of a scientific Authority in consultation . . . , when appropriate, with international scientific authorities.”¹⁰⁵ When the specimen is taken from international waters, or ABNJ, CITES Resolution Conf. 14.6 (Rev. CoP 16) (Introduction from the Sea) recommends that the state of export consult with international scientific authorities, when appropriate, when making an NDF. Additionally, the Shark NDF Guidance emphasizes the importance of international cooperation and the role of fisheries management bodies. Principle 2 states that there should be “International coordination, including through the bilateral and multilateral development of joint NDFs for shared (straddling, high seas and highly migratory) stocks.” Principle 3 calls for “Collaborative development of stock assessments and NDFs for high seas shark stocks through membership of Regional Fisheries Bodies.”

The 2018 CITES Working Group on Sharks and Rays recommended that Parties cooperate with RFMOs and RFBs for the purpose of making NDFs for shared and highly migratory species.¹⁰⁶ It invited RFMOs and RFBs to provide standards and information that can inform NDFs. These actions include updating catch limits, which could provide a basis for making NDFs, for heavily fished CITES-listed oceanic sharks. Other information from RFMOs that could inform NDFs would include data on shark catches and landings and assessments of regional fishing risk to sharks and rays. The group called on RFMOs to support the development of NDFs for shared stocks and high seas species.¹⁰⁷

Simpfendorfer proposed a model for the making of regional NDFs in the Oceania region¹⁰⁸ that could involve the WCPFC or its scientific body, the Secretariat of the Pacific Community;¹⁰⁹ or the Pacific Islands Forum Fisheries Agency (FFA),¹¹⁰ another regional institution that could help develop information for national NDFs.¹¹¹ The international scientific body would assess

¹⁰⁵ CITES Art. IV.7.

¹⁰⁶ SC70 Doc. 48.1.

¹⁰⁷ See also Indonesian Workshop Non-detriment Findings for CITES Appendix II Sharks and Rays, Workshop Report, March 2017, which mentions use of RFMO data. UNCLOS Parties also have a duty of cooperation under Art. 194.5.

¹⁰⁸ Colin Simpfendorfer, 2014, “Towards NDFs for the Oceania Region.”

¹⁰⁹ SPC - <http://www.spc.int/>.

¹¹⁰ www.ffa.int.

¹¹¹ According to Simpfendorfer, the “SPC has a wider remit than tuna fisheries and so has greater capacity to deal with the breadth of issues related to shark catches in the region.”

regional and national data on biological and management characteristics to make a regional assessment of stock status and sustainable catch, fishing pressures, and management effectiveness as part of a decision on a regional NDF.

The WCPFC currently plays an important role by assessing the regional status of stocks of sharks and establishing conservation and management measures. The following WCPFC measures and actions could contribute to the making of NDFs for highly migratory species:

- Stock assessments
- Provision of data on shark catches and landings by species and effort, including bycatch records
- Assessment of regional fishing risk to sharks and rays
- Catch limits for heavily-fished CITES-listed species
- Evaluation of extent to which WCPFC members have implemented WCPFC shark measures; and extent of compliance with WCPFC measures
- Supporting development of NDFs for shared stocks and high seas species

RFMO data and standards can apply to the following steps in the NDF Guidance.

Step 1 determines whether an NDF is needed at the regional level for shared, high seas, and/or highly migratory stocks. Data from RFMO-required vessel logbooks and other monitoring measures can identify origin and legality, as discussed above.¹¹²

In **Step 2** an RFMO can contribute assessments of biological vulnerability and conservation concerns for shared, high seas and/or highly migratory stocks. Current WCPFC assessments of key shark species that are highly migratory and occur in the ABNJ are available for CITES member states as one source of information on stock status. Assessments of highly migratory species that occur in the ABNJ of the WCPFC area include the CITES-listed species of mako, oceanic whitetip, silky, thresher, hammerhead, porbeagle, and whale sharks, and manta and mobula rays.¹¹³ The WCPFC has also assessed the stock status of North Pacific blue, Southwest Pacific blue, and bigeye thresher sharks. The assessment for whale sharks is a risk assessment.¹¹⁴ The WCPFC is conducting preliminary work for assessments of three species of hammerhead shark stocks, scalloped, great and smooth hammerheads. More research is needed on stock status of hammerheads and the extent to which stocks are shared and/or are highly migratory.¹¹⁵ Where data is lacking, a precautionary approach, which is a guiding

¹¹² SC70 Doc. 48.1; see Resolution Conf. 12.3 (Rev. CoP16).

¹¹³ WCPF Convention does not provide authority to regulate straddling stocks that do not occur in the high seas.

¹¹⁴ Schedule of analyses under the WCPFC Shark Research Plan.

¹¹⁵ Simpfendorfer, *supra* note 109.

principle of management under the Convention, would assume that trade is detrimental rather than not detrimental.¹¹⁶

Step 3 could be informed through ongoing RFMO, regional, and national data collection and assessment to evaluate the severity of fishing and trade pressures. RFMOs provide catch and landing documentation, including data collection on fishing data, fishing gear used, bycatch reports, and discard measures. They can assess the level of exploitation of and fishing risk to sharks as i) targeted fisheries; ii) secondary catch (as a target); and iii) shared stocks exploited by several states.¹¹⁷

Data on fishing pressures on shark and ray species is available through WCPFC catch records and annual reports in the Convention area. WCPFC measures require the reporting of shark catch, bycatch, and interactions, which is essential information for step 3 of the guidance. Vessels report daily catch in logbooks, and annual reports summarize the catch and interactions.

Step 4 would evaluate RFMO and other regional and national management measures and their adequacy. In this step there are both assessments of the effectiveness of shark measures for conservation and management and compliance with the measures. These could include the consolidated shark CMM 2019-04, and new ray CMM, 2019-05, discussed above.

The shark CMM requires longline directed shark fisheries to develop management plans, which are to establish catch or other limits at a national level. The measure does not require plans or TACs to be coordinated among members. The WCPFC has not established any regional limits on total catch and bycatch, or other reference point, for any species of sharks.

Compliance reports by member countries, bycatch records, and assessments by the TCC contribute to an understanding of the effectiveness of current shark and ray conservation measures. Where members comply with conservation and management measures, the risk that trade is detrimental to the species is lower. Where compliance is inadequate, the risk increases that trade is detrimental. Assessment of the effectiveness of the measures themselves is also important to understanding whether compliance is adequate to reduce risk.¹¹⁸

As discussed in the legality section above, the most recent compliance report showed that Indonesia was non-compliant with the requirement in the sharks CMM to prohibit its vessels from retaining, transshipping, landing, or trading fins in excess of the 5% ratio or fins otherwise

¹¹⁶ Convention Art. 5(c); Guidance, *supra* note 104.

¹¹⁷ SC70 Doc.48.1.

¹¹⁸ Towards an Integrated Shark Conservation and Management Measure for the Western and Central Pacific Ocean WCPFC-SC9-2013/ EB-WP-08, <https://www.wcpfc.int/system/files/EB-WP-08-Integrated-shark-CMM.pdf>.

illegally harvested.¹¹⁹ Philippines and Chinese Taipei were under flag state investigation concerning such violations. Papua New Guinea, and as priority non-compliant, Liberia and Panama, were not reporting required information.

According to FAO data through 2017,¹²⁰ eight of the top 20 shark producers are WCPFC members or cooperating parties. Indonesia catches the most sharks, with an average of 210,737 tons/year over the last ten years. Although most states report compliance with the shark conservation measures, Indonesia, the largest producer of sharks, has not been compliant with the sharks CMM. Chinese Taipei is among the top 20 producers, and was potentially non-compliant with CMMs in 2018. In addition, Liberia and Panama, which were not compliant with some shark reporting deadlines, provide flags of convenience (FOCs) to vessels with beneficial ownership elsewhere,¹²¹ and together comprise about a quarter of FOC vessels worldwide.¹²² Countries providing FOCs typically lack capacity to monitor and take enforcement action against the flagged vessels. Shark take by noncompliant CCMs undermines the effectiveness of the CMMs and the ability to make a determination that take of sharks does not result in a detriment to the population.

Step 5 is to make the NDF, which can be a negative NDF, NDF with conditions, or positive NDF, which could be made regionally and based on a regional TAC. Given the practical difficulties in allocating quota, input controls—effort and technical limitations—on fisheries could be a way forward to implement a TAC.¹²³ If data shows both compliance with effort and other limitations and that measures are effective, then a positive NDF finding could be made.¹²⁴

CITES does not require use of the NDF Guidance. For member states that have a national management plan for sharks, the determination of whether take results in detriment to the population is frequently determined by whether it is in compliance with the management plan, which may specify a quota through its permitting system. However, the plan and quota should take into account the regional status of migratory sharks and RFMO information.

Gaps

Gaps in WCPFC measures and their implementation that support CITES NDFs are the following:

¹¹⁹ 2019 Final Compliance Monitoring Report (covering 2018 activities), WCPFC16-2019-fCMR (6 December 2019).

¹²⁰ Traffic, “An Overview of Major Shark Traders, Catchers, and Species,” 2019.

¹²¹ <https://www.shipbreakingplatform.org/wp-content/uploads/2019/01/Flags-of-convenience-1.pdf>.

¹²² Global Fishing Watch and Skytruth, “The Global View of Transshipment: Preliminary Findings,” (2017), <https://globalfishingwatch.org/data/>.

¹²³ Glenn Sant, personal communication, Dec. 22, 2020.

¹²⁴ Simpfendorfer, *supra* note 109.

- The WCPFC has not instituted catch limits for heavily-fished CITES Appendix II-listed species other than take prohibitions on oceanic whitetip, silky, and whale sharks, and manta rays.
- Logbooks do not fully identify and report catch, bycatch, and releases by species.
- Some parties are not fully implementing RFMO measures for sharks.
- The WCPFC is not typically involved in developing NDFs for shark species.

Recommendation

- **Legality:** Improve WCPFC traceability to facilitate determining whether an NDF is required, as discussed in legality section.
- **Data:** Improve reporting of catch, bycatch, discard and landings by species and by weight to improve evaluation of fishing pressures.¹²⁵ Improve observer coverage. Use electronic logbooks and reporting. (Step 3) Make information available to CITES authorities where it is not currently being communicated.
- **Member implementation:** All members enact implementing legislation to comply with WCPFC shark and ray CMMs. (Step 4).
- **Management:** WCPFC coordinates national management plans to account for regional catch. Alternatively, the WCPFC develops regional management plans with total catch or effort limits for CITES Appendix II-listed and highly fished species. (Step 4)
- **Making NDFs:** Involve the WCPFC in making the NDF (Step 5)¹²⁶ or the WCPFC makes the NDF for highly migratory shared stocks.

Section 3: Gaps and Synergies Between the CMS and WCPFC Regulation

As an umbrella convention, the Convention on the Conservation of Migratory Species of Wild Animals (CMS) calls for Parties to develop binding as well as non-binding agreements. Parties must prohibit the taking of species listed in Appendix I. They are to endeavor to conclude agreements to protect species listed in Appendix II. The Memorandum of Understanding on the Conservation of Migratory Sharks (Sharks MOU), a non-binding agreement,¹²⁷ is a first step towards a binding agreement.¹²⁸ Its Signatories assume good faith obligations to work to implement its objectives, including through the RFMOs of which they are members.¹²⁹ CMS

¹²⁵ Guidance, *supra* note 104.

¹²⁶ Report of the Working Group, *supra* note 52.

¹²⁷ Convention, Art. IV.2.

¹²⁸ Res. 2.6, CoP 2, 1988.

¹²⁹ MOU, Sections 3 and 4.

Parties have also developed Concerted Actions for the Whale Shark, Mobulid Rays, and Angel Sharks.¹³⁰

Although there are no obligations for the WCPFC itself to take action in relation to the Sharks MOU, its members that are its Signatories commit to working with RFMOs of which they are members to advance MOU goals. Engagement can be at the level of the MOU, through participation in WCPFC scientific and decision-making meetings, and by the individual Signatories. For example, some Parties to CMS and Signatories to the Sharks MOU were involved in introducing the 2019 CMM for Mobulid Rays¹³¹ and measures to require landing of sharks with fins attached in the consolidated 2019 CMM for Sharks.¹³²

There is little documented history of engagement between the WCPFC and the CMS or MOU, and neither the CMS secretariat nor the Sharks MOU signatory body have a memorandum of understanding with the WCPFC. However, there are commonalities between Sharks MOU policy frameworks and the WCPF Convention provisions. The Sharks MOU could inform ecosystem and precautionary approaches to conservation of sharks in the WCP convention area. One coordination project is the FAO Common Oceans Project, which seeks “harmonization of conservation and sustainable use following the principles of the ecosystem approach.” Its goal is to bring a more integrated approach, coordinating actions of tuna RFMOs and the UN Environment World Conservation and Monitoring Centre.¹³³

This section analyzes WCPFC measures related to Shark MOU Actions for management and legislation and certain recommendations of the Concerted Action for Mobulid Rays. It notes areas of consistency between WCPFC measures and selected MOU Actions, identifies gaps, and suggests measures to bridge the gaps. Legislative implementation of the relevant CMMs by members is an important component. It recommends that the WCPFC serve as a channel for harmonizing regulatory reform across member countries. To improve conservation of migratory sharks consistent with the Sharks MOU, it recommends that Signatories work or continue to work with the WCPFC towards the following:

- Prohibit take of the CMS Appendix I species of basking shark and white shark. Ensure that all members implement the existing and future WCPFC prohibitions on directed fishing and retention of Appendix I species.

¹³⁰ This analysis addresses actions for rays, but not angel sharks or whale sharks. Angel sharks do not occur in the Western and Central Pacific, and Sea Shepherd Legal is undertaking an analysis of the implementation of the Concerted Action for the Whale Shark.

¹³¹ Sixteenth Regular Session of the Commission, WCPFC16 Summary Report issued 2 April 2020.

¹³² Fifteenth Regular Session of the Technical and Compliance Committee, Summary Report.

¹³³ See, e.g., Governance of areas beyond national jurisdiction for biodiversity conservation and sustainable use Institutional arrangements and cross-sectoral cooperation in the Western Indian Ocean and South East Pacific.

- Adopt effective additional conservation measures to allow recovery of species that have declined under existing measures, particularly oceanic whitetip sharks and silky sharks.
- Adopt scientifically-based precautionary quotas or effort limitations for all listed sharks that take into account bycatch and fishery-related mortality.
- Mandate gear modifications and bycatch avoidance in accordance with scientific research showing benefits to sharks.
- Ensure that all members implement the fins-attached rule; evaluate enforcement and whether the alternatives ensure that fins are landed with the corresponding carcasses.
- Institute time and area-based fishery closures on an adaptive management basis for species that are vulnerable to fishery-related mortality and for which area use is known.

The objective of the Sharks MOU is to achieve a favorable conservation status for migratory sharks. Conservation status is considered favorable when:

- i) population dynamics data relative to appropriate biological reference points indicate that migratory sharks are sustainable on a long-term basis as a viable component of their ecosystems;
- ii) the distributional range and habitats of migratory sharks are not currently being reduced, nor are they likely to be reduced in the future to levels that affect the viability of their populations in the long term; and
- iii) the abundance and structure of populations of migratory sharks remains at levels adequate to maintain ecosystem integrity

In order to achieve this objective, the MOU sets out a series of actions that signatories commit to undertake on a voluntary basis. It recognizes the need for parties to work through the RFMOs of which they are members to implement its objectives.

Objective B of the MOU is to ensure that directed and non-directed shark fisheries are sustainable. Populations are to be managed in an ecologically sustainable manner, including adequate monitoring, control, and surveillance. Specific actions include monitoring directed shark fisheries and bycatch (Action 4.2); prohibiting the taking of species listed in Appendix I (Action 4.3); applying the precautionary approach to ensure that mortality from fishing does not result in significant population declines (Action 4.4); and setting targets for fish quotas or effort (Action 4.5). Similarly, under Goal B of the Conservation Plan for Mobulid Rays, “Devil and manta ray populations are maintained at, or recovered to, ecologically relevant levels by managing fisheries, trade, and demand.” Actions include to implement standardized guidelines for data collection, adopt a standardized system, and report species-specific landings to the FAO or RFMOs (Actions 5.3, 5.4, 5.5).

To limit bycatch, specific actions are to develop and/or use selective gear, devices, and techniques to ensure sustainable take and minimize mortality (Action 5.1); and implement incidental capture mitigation mechanisms that prioritize avoiding capture of Appendix I species (Action 5.2). The Strategy for Mobulid Rays calls for developing gears and practices to minimize bycatch (Action 5.8).

The MOU calls for considering legislation or regulations to require sharks to be landed with fins naturally attached (Action 7.3.1).

Objective C calls for ensuring the protection of critical habitats and migratory corridors and critical life stages of sharks. Specific actions are to designate and manage conservation areas, sanctuaries, or temporary exclusion zones, including on the high seas, cooperating with RFMOs and RSCAPs (Action 9.1); and to develop, implement, and assess spatial and/or seasonal closures of fishing areas to reduce incidental capture, especially to protect nursery grounds and aggregation areas (Action 9.3). The Strategy for Mobulid Rays also calls for protecting habitat and areas of fishery interaction (Actions 5.6 and 5.15).

Outcome 3.4 of the Third Meeting of the Signatories¹³⁴ called on signatories to engage with RFMOs to “Support adoption of measures consistent with the objectives of the MOU and its associated Conservation Plan.” Measures are to ensure that all shark catch is within sustainable limits (Actions 4.4, 4.5, and 5.1); require sharks to be landed with fins naturally attached (Action 7.3.1); require safe handling and release of all incidentally caught sharks and rays (Actions 5.1, 5.2); improve data collection (Action 4.2); mitigate bycatch and associated mortality and reduce entanglement (Actions 5.1, 5.2); assess and monitor the status of shark species in RFMO areas (Action 4.2); and use precautionary management for fisheries that catch sharks (Action 4.4).

The WCPF Convention requires the WCPFC to take action to protect non-target as well as target species, giving it the authority and responsibility to implement conservation actions for threatened sharks and rays. Several provisions of the Convention require the WCPFC to apply the precautionary approach; minimize waste, discards, catch by lost or abandoned gear, *catch of non-target species*, and *impacts on associated or dependent species, in particular endangered species* [emphasis added]; to adopt conservation and management measures for nontarget species in order to maintain populations above endangered levels (Article 5); and to determine stock-specific reference points. (Article 6)

¹³⁴ Outcome 3.4 of the Third Meeting of the Signatories of the MOU, December 2018, Guidance for MOU Signatories and the Secretariat in their engagement with RFMOs.

Prohibition on Taking of Species in CMS Appendix I

Action 4.3 to Prohibit Take of CMS Appendix I Species

Paragraph 13i of the MOU calls for Parties to prohibit the taking of species listed in Appendix I of the Convention in accordance with Article III of the Convention, which prohibits take of such species. Article III makes a few exceptions, including when “the taking is to accommodate the needs of traditional subsistence users of such species.”¹³⁵ Appendix I includes the following shark and ray species:

- Oceanic whitetip shark
- Whale shark
- Manta rays
- Mobula (devil) rays
- Basking shark
- Great white shark; white shark
- Sawfishes

Of these, the WCPFC prohibits directed fisheries and retention, transshipment, storing, and landing of oceanic whitetip shark. It prohibits directed fisheries and retention, transshipment and landing of whale shark, and manta and mobula rays.¹³⁶ It also prohibits directed fisheries and retention, transshipment, storing and landing of silky shark, a WCPFC key shark species.

An important issue is how the WCPFC addresses total mortality due to fishing. The ban on directed fisheries and retention for oceanic whitetip, whale, and silky sharks does not place a quota on the amount of bycatch or interaction in a fishery. Species whose retention is banned may need additional conservation protections for adequate protection. It is a reasonable interpretation that the CMS prohibition on take of Appendix I species does not prohibit bycatch.¹³⁷ However, Action 5.2 of the MOU, discussed below, does focus on preventing bycatch of the Appendix I species listed in paragraph 13i.

Member countries that have instituted bans on directed commercial fisheries¹³⁸ and/or retention of oceanic whitetip, silky, and/or whale sharks in compliance with existing WCPFC

¹³⁵ Paragraph 5(c).

¹³⁶ In the 2019 Sixteenth Regular Session of the Commission, Palau, a CMS Party and MOU Signatory, introduced CMM 2019-DP02, which became CMM 2019-05 on Mobulid Rays.

¹³⁷ LEGISLATIVE REVIEW AND RECOMMENDATIONS FOR IMPLEMENTATION OF THE CMS CONCERTED ACTION FOR THE WHALE SHARK (*Rhincodon typus*), Sea Shepherd Legal, UNEP/CMS/COP13/Inf.15, 29 October 2019.

¹³⁸ The Convention allows subsistence fishing.

CMMs include Australia,¹³⁹ the EU,¹⁴⁰ Fiji,¹⁴¹ France,¹⁴² Indonesia,¹⁴³ Japan,¹⁴⁴ New Zealand,¹⁴⁵ Philippines,¹⁴⁶ Solomon Islands,¹⁴⁷ and Vanuatu.¹⁴⁸ Some member countries and participating territories with shark sanctuaries ban directed commercial fisheries for additional species or all sharks, including the three shark species banned by the WCPFC. These are the Cook Islands,¹⁴⁹ French Polynesia,¹⁵⁰ Kiribati, (ban only applies to oceanic whitetip, whale, silky, great white, and basking sharks, and does not apply to persons of indigenous Kiribati descent engaged in non-commercial fishing, nor to permits issued to allow bycatch that does not harm conservation status),¹⁵¹ Marshall Islands,¹⁵² Micronesia,¹⁵³ New Caledonia,¹⁵⁴ Palau (exception for non-commercial fishing by Palau citizens),¹⁵⁵ and Samoa.¹⁵⁶

¹³⁹ Fisheries Management (International Agreements) Regulations 2009, Schedule 2,2, 17; Schedule 3; 19. <https://www.legislation.gov.au/Details/F2017C00604>.

¹⁴⁰ Council Regulation (EU) 2019/124 of 30 January 2019 fixing for 2019 the fishing opportunities for certain fish stocks and groups of fish stocks, applicable in Union waters and, for Union fishing vessels, in certain non-Union waters; Initial text: <https://eur-lex.europa.eu/legal-content/EN/TXT/PDF/?uri=CELEX:32019R0124&from=EN>.

¹⁴¹ Endangered and Protected Species (Amendment) Act 2017 (No. 10 of 2017), 4. (c) p. 76: silky shark, <http://extwprlegs1.fao.org/docs/pdf/fij171675.pdf>, Amends <http://extwprlegs1.fao.org/docs/pdf/fij50960.pdf> (Endangered and Protected Species Act 2002 (No. 29 of 2002)).

¹⁴² à la protection du biotope des eaux territoriales de l'île de Clipperton dénommée «aire marine protégée dans les eaux territoriales de l'île de Clipperton,» <http://extwprlegs1.fao.org/docs/pdf/FRA160272.pdf>. In French, Article 1 (protection of species): oceanic whitetip shark, whale shark, mobulid rays, Arrêté du 15 novembre 2016 instituant une liste d'espèces protégées dans les eaux territoriales de l'île de Clipperton, <http://extwprlegs1.fao.org/docs/pdf/FRA160273.pdf>. In French, Article 1.

¹⁴³ Indonesia also bans directed fishing for hammerhead sharks.

¹⁴⁴ Japan's National Plan of Action for the Conservation and Management of Sharks (rev. 2016).

¹⁴⁵ Wildlife Act 1978 (Wildlife (Oceanic Whitetip Shark) Order 2012); *see also* https://www.inshore.co.nz/fileadmin/Documents/Sharks/Shark_finning-FS1-0814-web.pdf (whale shark and oceanic whitetip shark prohibitions).

¹⁴⁶ Administrative Order No. 282 intensifying the protection of the whale shark (*Rhincodon Typus*) popularly known as "Butanding," in the Philippine waters. <http://extwprlegs1.fao.org/docs/pdf/phi115203.pdf>.

¹⁴⁷ Fisheries Management Act 2015 - Fisheries Management Regulations 2017 - LN 2, 2017, Part 3, Division 3 p. 14-16. 22 (1), (2). <http://extwprlegs1.fao.org/docs/pdf/sol179389.pdf>; http://www.pacii.org/cgi-bin/sinodisp/sb/legis/sub_leg/fma2015fmr2017l22017519/index.html?stem=&synonyms=&query=shark.

¹⁴⁸ International Trade (Fauna and Flora) Act (Cap. 210) https://www.ecolex.org/details/legislation/international-trade-fauna-and-flora-act-cap-210-lex-faoc088903/?q=shark&type=legislation&xcountry=Vanuatu&xdate_min, Whale Shark, Great Whale Shark, Basking Shark in Appendices II (p.51) Article IV p. 9.

¹⁴⁹ Marine Resources (shark conservation) Regulations 2012, 5.(1), (2), (3), (4); 6, <http://extwprlegs1.fao.org/docs/pdf/cok166768.pdf>.

¹⁵⁰ Marine Resource (Shark Conservation) Regulations 2012.

¹⁵¹ Shark Sanctuary Regulations 2015, <http://extwprlegs1.fao.org/docs/pdf/kir155693.pdf> Part II.

¹⁵² Bill No 100ND1 (2011).

¹⁵³ No. 18-134, C.D.1, C.D.2; D.B. 19-86 (2015).

¹⁵⁴ No. 2013-1007/GNC (2013).

¹⁵⁵ Senate Bill No. 8-1005 (2009).

¹⁵⁶ Marine Wildlife Protection Regulation 2018.

Recommendation

To support implementation of the CMS prohibitions by CMS parties and range states, MOU signatories should advocate for WCPFC prohibitions on directed fisheries for and retention, transshipment, storage, and landing of basking and white sharks.¹⁵⁷ All WCPFC member countries should implement in their national legislation existing WCPFC bans on directed fishing and retention for oceanic whitetip, silky, and whale sharks, and rays.

Requirement That Fishing Mortality Does Not Result in Significant Population Decline

Action 4.4 – to ensure that mortality rates arising from fishing activities do not exceed levels resulting in a significant decline of populations following the precautionary approach in proactively setting conservation and management measures at all times (2018 Guidance – precautionary management approaches with regard fisheries that catch sharks)

Although the WCPFC has banned the retention of oceanic whitetip sharks since 2011, the species has continued to decline and is in danger of extinction. The WCPFC 2019 stock assessment concluded that under current levels of fishing mortality, the population will go extinct over the long term.¹⁵⁸ The IUCN has classified the sharks as “critically endangered” due to “steep population declines” in all oceans with a median decline of 98-100%.¹⁵⁹

Recommendation

To be consistent with Action 4.4 and protect oceanic whitetip sharks and silky sharks, and potentially others that continue to decline, against further decline from interactions with fisheries, MOU signatories should work with the WCPFC to adopt effective additional conservation and management measures to allow recovery of the populations. Regulatory tools available include fishery closures,¹⁶⁰ improved gear restrictions and bycatch avoidance, and a quota on bycatch¹⁶¹ and fishery-related mortality.

¹⁵⁷ Because sawfishes are typically not found outside of national jurisdiction and are not highly migratory species, the WCPFC does not have authority to regulate their take. WCPF Convention Art. 5.

¹⁵⁸ Despite the relative improvements in F-based reference points since 2013, the median value of F/F crash over all 648 grid runs for 2016 remains above 1 (median: 1.41, 95%CI: 0.98–2.15), indicating that the population should go extinct on the long-term current levels of fishing mortality. file:///C:/Users/swans/AppData/Local/Temp/SC15-SA-WP-06%20Oceanic%20whitetip%20shark_assessment.pdf.

¹⁵⁹ <https://www.iucnredlist.org/species/39374/2911619>.

¹⁶⁰ See Action 9.3, discussed below.

¹⁶¹ See, e.g., Evaluating effectiveness of time/area closures, quotas/caps, and fleet communications to reduce fisheries bycatch, <https://academic.oup.com/icesjms/article/71/5/1286/638196>.

Setting Targets for Fishing Quotas or Effort for Sharks

Action 4.5 – for parties to encourage RFMOs and other bodies to “to set targets for fish quotas, fishing effort and other restrictions to help achieve sustainable use.” (2018 Guidance – measures to ensure that all shark catch is within sustainable limits)

WCPF Convention Article 10 authorizes the WCPFC to establish total allowable catch or total fishery effort. CMM 2019-04 directs WCPFC members to develop management plans for directed shark fisheries that include targets or limits on catch and/or effort. However, except for the ban on directed fishing and retention for oceanic whitetip, silky, and whale sharks, and rays, the WCPFC¹⁶² has not instituted any convention-wide fishery quotas or effort limitations relative to either directed fisheries or bycatch for CMS Appendix II-listed species.

Recommendation

To better close the gap between MOU Action 4.5 on sustainable use and current regulation, MOU Signatories should ask the WCPFC to consider fishery quotas and/or effort limitations that take into account bycatch and fishery mortality for all shark and ray species that have significant fishery interactions and are listed in Appendix II.¹⁶³ Examples of precautionary measures are ICCAT provisions establishing total allowable catch for both Northern and Southern Atlantic blue sharks.¹⁶⁴

Use of Selective Gear, Techniques, and Incidental Capture Mechanisms to Ensure Sustainable Take of Sharks

Action 5.1 – To the extent practicable, develop and/or use selective gear, devices, and techniques to ensure that the take of sharks in fisheries is sustainable and appropriately managed and that mortality of non-utilized catches is minimized to the greatest extent possible (2018 Guidance – measures to mitigate bycatch and associated mortality and reduce entanglement)

Action 5.2 – develop and implement incidental capture mitigation mechanisms in national waters and on the high seas, prioritizing work to avoid the capture of protected sharks in accordance with paragraph 13i of the MoU.

¹⁶² CMM 2109-4; see, e.g., individual management plans submitted by Japan and Chinese Taipei, New Zealand’s quota management system, Australia’s shark regulations for the Eastern Tuna and Billfish Fishery.

¹⁶³ Take of CMS Appendix I species is banned; in most cases, the WCPFC bans their retention, landing, and trade.

¹⁶⁴ 19-07, Recommendation by ICCAT on Amendment to Recommendation 16-12 on Management Measure for the Conservation of North Atlantic Blue Shark Caught in Association with ICCAT Fisheries (entered into force 20 June 2020); 19-08, Recommendation by ICCAT on Management Measure for the Conservation of South Atlantic Blue Shark Caught in association with ICCAT Fisheries (entered into force 20 June 2020).

In addition to bans on directed fisheries and retention for some species, the WCPFC addresses bycatch of sharks and rays through gear limitation and safe handling and release guidelines applicable to all sharks. These measures implement in part Actions 5.1 and 5.2.

Specific rules to reduce incidental catch of whale sharks apply to FADs and purse seines. The WCPFC also places seasonal restrictions on FAD use at certain latitudes. Oceanic whitetip and silky sharks are subject to significant bycatch in artificial FADs,¹⁶⁵ but the WCPFC does not directly address this issue. Mitigation of longline bycatch can address the size and shape of hooks, gear configuration, soak time, type of leader, depths set, time of day or night, and location.¹⁶⁶ The sharks CMM provides the option of using either wire trace or shark lines, both associated with greater shark mortality, but does not prohibit the use of both of them.

Recommendation

MOU signatories should work for effective science-based mitigation measures to limit mortality of sharks with declining populations in the WCPFC. A range of science-based measures can help secure the long-term economic benefits of fishing, on which most WCPFC member countries depend. Such measures could include a stronger gear measure for longlines¹⁶⁷ that would ban the use of both wire trace and shark lines and prohibit vessels from carrying any of the banned gears. The WCPFC could follow other RFMO decisions to limit the bycatch of silky and oceanic whitetip sharks in purse seine fisheries by requiring the use of non-entangling and/or biodegradable FADs.¹⁶⁸ Additional measures could address risks for particular species, fisheries, and locations.

In accordance with Action 5.2 of the MOU, which prioritizes protection of species listed in paragraph 13i, signatories should work with the WCPFC's efforts to require following best practices to avoid capture and for release of individuals of Appendix I species. In addition to existing requirements to use best handling and release guidelines for oceanic whitetip, silky, and whale sharks, the guidelines should be mandatory for at least other Appendix I species. Because significant mortality still occurs for¹⁶⁹ oceanic whitetip, silky, and whale sharks, and mobulid rays¹⁷⁰ in spite of existing mitigation and safe handling and release guidelines, the WCPFC should continuously update the guidelines to reflect the most recent scientific

¹⁶⁵ A study found that changing fishing effort from FADs to free schools could reduce bycatch of silky shark by 83% and oceanic whitetip shark by 57%. (Gap analysis).

¹⁶⁶ *Id.*

¹⁶⁷ Some WCPFC members have adopted this measure; *see, e.g.*, Section 913(3) of Chapter 9 of title 24 of the Code 13 of the Federated States of Micronesia. The measure is among those that the WWF and Pew also recommend.

¹⁶⁸ IOTC Res. 15/08 and ICCAT recommendation 15/01

¹⁶⁹ *See, e.g.*, https://www.bmis-bycatch.org/system/files/zotero_attachments/library_1/I54PIF5V%20-%20SPC%20and%20WCPFC-2017-Report%20of%20the%20Expert%20Workshop%20on%20Shark.pdf.

¹⁷⁰ <https://iss-foundation.org/research-insights-to-help-protect-sharks-and-mobulid-rays-in-tuna-fisheries/>.

understanding. When available, additional science-based methods of bycatch avoidance should be implemented.

Landing With Fins-Attached Rules

Action 7.3.1 – Where not already in place, consider enacting legislation or regulations requiring sharks to be stored on board and landed with each fin naturally attached (2018 Guidance – measures requiring sharks to be landed with fins naturally attached)

WCPFC CMM 2019-04 requires landing of all sharks with fins naturally attached but provides three alternatives to the requirement. The alternatives are: (1) each individual shark carcass and its corresponding fins are stored in the same bag; (2) each individual shark carcass and its corresponding fins are bound together using rope or wire; or (3) identical and uniquely numbered tags are attached to each shark carcass and its corresponding fin in a manner that inspectors can easily identify the matching of the carcass and fins at any time. They are to be stored in the same hold, except if the fishing vessel maintains a record or logbook that shows where the tagged fins and correspondingly tagged carcasses are stored, in a manner that they are easily identified by inspectors.

Member countries that currently require landing sharks with fins-attached (or prohibit landing entirely) include Australia,¹⁷¹ Canada,¹⁷² China,¹⁷³ Cook Islands (no shark fishing),¹⁷⁴ the EU,¹⁷⁵ Fiji, Indonesia (only applicable to shark sanctuaries),¹⁷⁶ French Polynesia (no shark fishing except for Mako sharks),¹⁷⁷ Marshall Islands (no commercial shark fishing or sale),¹⁷⁸ Micronesia (no commercial shark fishing),¹⁷⁹ Palau (no commercial shark fishing in 80% of

¹⁷¹ Fisheries Management (International Agreements) Regulations 2009, Schedule 3, 12.1.
<https://www.legislation.gov.au/Details/F2017C00604>.

¹⁷² Fisheries Act (R.S.C. 1985, c. F-14), 32(1), 32.1(1) <http://www.fao.org/faolex/results/details/en/c/LEX-FAOC001077/>.

¹⁷³ Directions on the Disposal of the Fins of the Shark Catches of Fishing vessels, Art. 1,
<http://extwprlegs1.fao.org/docs/pdf/tw155711E.pdf>.

¹⁷⁴ Marine Resources (shark conservation) Regulations 2012, 5. (1), (2), (3), (4), 6,
<http://extwprlegs1.fao.org/docs/pdf/cok166768.pdf>.

¹⁷⁵ <https://eur-lex.europa.eu/legal-content/EN/TXT/PDF/?uri=CELEX:32013R0605&from=EN>.

¹⁷⁶ Act (UU) No.31/2004 and Act (UU) No.45/2009 on Fisheries and Government Regulation (PP) No.60/2007 on the Conservation of Fish Resources.

¹⁷⁷ <https://www.hsi.org/wp-content/uploads/2019/06/2019-Shark-Fishing-and-Finishing-Regulations.pdf>.

¹⁷⁸ Title 51 (Fisheries) Amendment Act, 2011 (P.L. 2011 - 103),
<http://extwprlegs1.fao.org/docs/pdf/mas155685.pdf>.

¹⁷⁹ <http://www.fao.org/faolex/results/details/en/c/LEX-FAOC155664/>;
<http://extwprlegs1.fao.org/docs/pdf/mic155664.pdf>.

EEZ),¹⁸⁰ New Zealand,¹⁸¹ Solomon Islands,¹⁸² Taiwan (with exception for smaller vessels for which fins may be bound to the carcass),¹⁸³ and the United States.¹⁸⁴

Recommendation

To comply with CMM 2019-04, the remaining WCPFC member countries should at a minimum fill gaps in their national regulation by requiring landing of sharks with fins-attached or one of the alternatives that links each fin to its corresponding carcass. If reports show that use of the alternatives is undermining enforcement, MOU Signatories should continue to advocate¹⁸⁵ for revising the CMM to eliminate alternatives that cannot be adequately verified.

Area-Based Regulation

Both fisheries and habitat loss are major threats to sharks and rays.¹⁸⁶ Among oceanic sharks, silky, shortfin mako, blue, and great hammerhead sharks occupy predictable areas that may vary seasonally,¹⁸⁷ including migratory corridors in the high seas.¹⁸⁸ They may be associated with biodiversity hotspots that include areas in the Northwest and Southwest Pacific Ocean.¹⁸⁹ Many shark species use large areas around seamounts,¹⁹⁰ a type of bottom habitat.¹⁹¹ There are also areas of overlap of tuna fisheries and sharks.¹⁹²

¹⁸⁰ Palau National Marine Sanctuary Act (RPPL No. 9-49 of 2015), Subchapter V, (a), <http://extwprlegs1.fao.org/docs/pdf/pau152765.pdf>.

¹⁸¹ Fisheries (Commercial Fishing) Amendment Regulations (No 2) 2014, 5 p. 2(52 B; 52 C), <http://extwprlegs1.fao.org/docs/pdf/nze155671.pdf>.

¹⁸² Fisheries Management Regulations 2017 (L.N. No. 2 of 2017), Division 3 “Shark fishing” p.14-16, <http://extwprlegs1.fao.org/docs/pdf/sol179389.pdf>.

¹⁸³ <https://www.hsi.org/wp-content/uploads/2019/06/2019-Shark-Fishing-and-Finishing-Regulations.pdf>.

¹⁸⁴ Shark Finning Prohibition Act (PL. 106–557) Sec 3(3) (2000), <http://extwprlegs1.fao.org/docs/pdf/us157881.pdf>.

¹⁸⁵ For example, at the 2019 Meeting of the Fifteenth Regular Session of the Technical and Compliance Committee, the FFA, which includes 6 CMS Parties, supported a rule for landing with fins attached without exceptions.

¹⁸⁶ <https://www.iucnssg.org/global-analyses.html>;

https://www.iucnssg.org/uploads/5/4/1/2/54120303/iucn_ssg_infographicfinal.jpg.

¹⁸⁷ A Practical Guide to the Effective Design and Management of MPAs for Sharks and Rays, WWF, 2019, https://sharks.panda.org/images/PDF/WWF_MPA_Guide2019.pdf.

¹⁸⁸ Fu, D., Roux, M., Clarke, S., Francis, M., Dunn, A., and Hoyle, S. (2017) Pacific-wide sustainability risk assessment of bigeye thresher shark (*Alopias superciliosus*). Common Oceans ABNJ Tuna Project. WCPFC-SC13-2017/SA-WP-11 (rev 2). Available at www.wcpfc.int/node/29524.

¹⁸⁹ https://sharks.panda.org/images/PDF/WWF_MPA_Guide2019.pdf.

¹⁹⁰ T. Morato et al., “Seamounts are hotspots of pelagic biodiversity in the open ocean,” *PNAS*, v. 107, no. 21, 9707–9711; https://www.ncbi.nlm.nih.gov/pmc/articles/PMC2906904/4.epdf?author_access_token=30PfKyj9zeGxd83CCLmKv9RgN0jAjWeI9jnR3ZoTv0MFy8kxih1JaJBvzKb6kL6itSxD_4veiHYaRE-10gYqMM9RWN7pn20_qmDzljzj83i6mF6T-us1LwLDNhs_hncUz528XlqgXBRhN3wBuhcZq-Q%3D%3D.

¹⁹¹ *Id.*; T. Letessier et al., “Remote reefs and seamounts are the last refuges for marine predators across the Indo-Pacific,” <https://journals.plos.org/plosbiology/article?id=10.1371/journal.pbio.3000366>.

¹⁹² T. Morato et al., “Tuna fisheries and pelagic biodiversity in the Western and Central Pacific Ocean,” *Oceanic Fisheries Program, Secretariat of the Pacific Community*; Queiroz et al., “Global spatial risk assessment of sharks under the footprint of fisheries,” <https://www.nature.com/articles/s41586-019-1444->, Queiroz, N., Humphries,

In recent stock assessments, the WCPFC and the FAO Common Oceans Project evaluated area use and degree of interaction with fisheries,¹⁹³ including areas of abundance for big-eye thresher sharks and whale sharks.¹⁹⁴ Among sharks occurring in the WCPF Convention area, bigeye thresher (CMS App. II), dusky (CMS App. II), and scalloped hammerhead (CMS App. II; IUCN category critically endangered) were among the studied sharks most susceptible to impacts from bycatch and fishery interactions.¹⁹⁵

Studies have shown benefits to shark populations that occupy no-take marine protected areas (MPAs).¹⁹⁶ The use of area-based regulation may be especially useful where “fishing mortality is difficult to control, IUU fishing prevails, or fisheries are mismanaged.”¹⁹⁷ Thus, time and area-based closures, by protecting habitat and/or limiting interactions with fisheries, could provide conservation benefits to critically endangered, endangered and vulnerable species of sharks and rays that are most susceptible to impacts from bycatch and fishery interactions.¹⁹⁸

Actions Under the MOU and Concerted Action for Mobulid Rays

Action 9.1 – Designate and manage conservation areas, sanctuaries or temporary exclusion zones along migration corridors and in areas of critical habitat, including those on the high seas in cooperation with relevant RFMOs and RSCAPs where appropriate, or take other measures to remove threats to such areas.

Action 9.3 – Develop, implement and assess spatial and/or seasonal closures of fishing areas to reduce incidental capture of sharks, particularly to protect nursery grounds as well as aggregation areas for mating and pupping.

N.E., Mucientes, G., Hammerschlag, N., Lima, F.P., Scales, K.L., Miller, P.I., Sousa, L.L., Seabra, R., and Sims, D.W. (2016); Ocean-wide tracking of pelagic sharks reveals extent of overlap with longline fishing hotspots. *Proceedings of the National Academy of Sciences* 113(6), 1582-1587. doi: 10.1073/pnas.1510090113, Watson, J.T., Essington, T.E., Lennert-Cody, C.E., and Hall, M.A. (2009) Trade-offs in the design of fishery closures: management of silky shark bycatch in the Eastern Pacific Ocean tuna fishery, *Conservation Biology* 23(3), 626-635. doi: 10.1111/j.1523-1739.2008.01121.x.

¹⁹³ See, e.g., Status snapshot of key WCPFC shark species.

¹⁹⁴ “Taking stock of Pacific sharks,” <http://www.fao.org/in-action/commonoceans/news/detail-events/en/c/1180271/>.

¹⁹⁵ A. Gallagher et al., Vulnerability of oceanic sharks as pelagic longline bycatch, *Global Ecology and Conservation* 1(2014) 50–5, <https://reader.elsevier.com/reader/sd/pii/S2351989414000055?token=9A0F9808E7EF3317BB9C8FB83845634020EAFD0F526AC1472D2AD44A8A9F418B28EF52757DB95B28689F396BED07B3D>.

¹⁹⁶ V. Jaiteh et al., Higher Abundance of Marine Predators and Changes in Fishers' Behavior Following Spatial Protection within the World's Biggest Shark Fishery, *Front. Mar. Sci.*, 2016, <https://doi.org/10.3389/fmars.2016.00043>.

¹⁹⁷ K. Boerder et al., “Not all who wander are lost: Improving spatial protection for large pelagic fishes,” *Marine Policy*, v. 105, pp. 80-90, 2019.

¹⁹⁸ “A Practical Guide to the Effective Design and Management of MPAs for Sharks and Rays,” WWF Report 2019.

The Conference of the Parties adopted a resolution in February, 2020,¹⁹⁹ to extend habitat and other protections to all Chondrichthyan species (sharks, rays, skates, and chimaeras) from the earlier sharks-focused Resolution 11.20. Parties are to “identify and conserve critical habitats and life stages, and migration routes,” and “Parties, RFMOs and other relevant bodies” are encouraged “to *minimize the impact of fishing in migration corridors and other habitats deemed critical to the recovery and sustainability of chondrichthyan species populations*, including those that *straddle jurisdictional boundaries*.” (emphasis added).

The Concerted Action for Mobulid Rays²⁰⁰ calls on Parties to implement the Global Conservation Strategy for Mobulid Rays,²⁰¹ which recommends that nations, regions, and RFMOs coordinate their area regulation among other actions. The Strategy calls for determining “*areas of overlap between devil and manta ray distributions and relevant fisheries* to identify priority areas to minimize bycatch” (Action 5.6), and ensuring that “*important devil and manta ray aggregation sites are protected* through existing and/or revised spatial and temporal management measures in each RFMO, region, and nation.” (Action 5.15) (emphases added).

In 2018, the Advisory Committee at the Meeting of the Signatories to the MOU advised that for the vast majority of species of concern, data is still not adequate for effective implementation of area-based measures. It advised evaluating the effectiveness of current area protections for sharks, integrating area regulation into marine planning for ecotourism, and combining area regulation on behalf of certain sharks with protection of features and/or spawning areas for other species (e.g., prey for sharks). However, it acknowledged the difficulty of controlling mortality from bycatch of certain species such as hammerhead sharks, and that in spite of incomplete data, spatial regulation could be “an important management measure to reduce mortality.”

One tool available to the WCPFC to ensure the long-term conservation and sustainable use of highly migratory fish stocks²⁰² is to address “the areas and periods in which fishing may occur.”²⁰³ The WCPFC has in fact instituted limited spatial measures in relation in whale sharks, as discussed above.

In order to develop and implement science-based fishery area closures to protect habitats and migration corridors of highly migratory sharks, data is required concerning sharks’ life history,

¹⁹⁹ UNEP/COP13/Doc.26.2.7.

²⁰⁰ UNEP/CMS/Concerted Action 12.6.

²⁰¹ Lawson et al. 2017.

²⁰² Art. 2; see, e.g., CMM 2018-03, which restricts types of gear based on latitude to protect seabirds while CMM 2016-02 prohibits transshipment and requires continuous transmission of VMS data, including to coastal states, in the Eastern Pocket area.

²⁰³ Art. 10, para. 2(d).

migration patterns, and interactions with fisheries in particular areas. WCPFC reporting requirements contribute to the scientific research on aggregation and fishery interactions. Vessel reporting of data on the location of shark and fisheries interaction, catch, and bycatch, is one way to identify areas of higher levels of conflict with fisheries. The WCPFC requires certain shark catch data, including the location and amount of catch and bycatch, to be reported as part of daily catch and effort reporting.²⁰⁴ Its Shark Research Plan addresses shark habitat and areas of fishery interactions.²⁰⁵ CMM 2019-04 requires CCMs to “as appropriate, support research and development of strategies for the avoidance of unwanted shark captures” that include identification of nursery grounds. Several other RFMOs have similar measures, while the Inter-American Tropical Tuna Commission (IATTC) also calls for defining “areas/periods when species are most likely caught.”²⁰⁶ The IATTC additionally prohibits fishing in silky shark pupping areas that its scientific staff, in coordination with the Scientific Advisory Committee, has designated.²⁰⁷

Fisheries closures of Vulnerable Marine Ecosystems (VMEs) such as seamounts could contribute to protection. Some RFMOs have used their authorities to implement closures of VMEs to protect sensitive and biodiverse bottom habitats.²⁰⁸ Such closures may benefit sharks that frequent seamount areas.

In the eastern Pacific, the MPAs of Cocos Ridge, Galapagos Marine Reserve, and Malpelo Flora and Fauna Sanctuary protect sharks within their boundaries, which are in areas under national jurisdiction. Advocates seek to connect the MPAs along the migratory corridor used by sharks between the sanctuaries in order to protect sharks from fishing pressure.²⁰⁹ Because the corridor comprises areas both within and outside of national jurisdiction, protecting it would require that an RFMO with jurisdiction over areas outside of national jurisdiction implement the closures in those areas.

²⁰⁴ WCPFC Data Required to be Reported.

²⁰⁵ A Proposal for a Research Plan to Determine the Status of the Key Shark Species, WCPFC-SC10-2014/ EB-IP-06 (SC6-EB-WP-01), WCPFC Scientific Committee Tenth Regular Session, 2014.

²⁰⁶ Resolution C-19-05.

²⁰⁷ Resolution C-10-05 Amendment to Resolution C-16-06 – Conservation Measures for Shark Species with special emphasis on the silky shark for the years 2020 and 2021.

²⁰⁸ CCAMLR, NAFO, NPFC, GFCM, NEAFC, SEAFO.

²⁰⁹ Penaherrera-Palma, C., Aruaz, R., Bessudo, S., Bravo-Ormaza, E., Chassot, O., Chinacalle-Martinez, N., Espinoza, M., Forsberg, K., Garcia-Rada, E., Guzman, H., Hoyos, M., Hucke, R., Ketchum, J., Klimley, A.P., Lopez-Macias, J., Papastamatiou, Y., Rubin, R., Shillinger, G., Soler, G., Steiner, T.V., Zanella, I., Zarate, P., Zevallos-Rosada, J., and Hearn, A. (2018) Justificación biológica para la creación de la Migra Via Cocos-Galapagos. MigraMar Pontificia Universidad Católica del Ecuador Sede Manabí. Portoviejo, Manabí, Ecuador; <https://marine-conservation.org/on-the-tide/wayfarers-of-the-eastern-tropical-pacific/>.

Recommendation

To close gaps with the MOU Actions, signatories should work towards WCPFC evaluation and implementation of time and area-based fishery closures, which could be dynamic, on a precautionary adaptive management basis as additional protection for species that are particularly vulnerable to fishery-related mortality and for which there is knowledge of areas of congregation, use, and/or migration.²¹⁰

Next Steps

As set forth in this report, in order to better integrate the work of the three conventions and the MOU, Parties and Signatories to the agreements should coordinate amongst themselves, internationally and nationally, taking into account the standards developed by the other conventions where appropriate, including in existing coordination efforts. For instance, Parties to CITES should take into account the requirements of the WCPFC and compliance with them when making determinations about legality of sharks that were caught in areas beyond national jurisdiction. They should consider regional data and population assessments when making NDFs, and could coordinate with the WCPFC to make a regional NDF for highly migratory sharks that travel through the ABNJ. Finally, in order to better meet conservation objectives in both the WCPF Convention and the Sharks MOU, the Signatories to the Sharks MOU that are WCPFC members should continue to advocate for the implementation of MOU conservation actions in the context of the WCPFC where appropriate.

²¹⁰ See recommendations in Rigby, C.L., Simpfendorfer, C.A. and A. Cornish (2019) A Practical Guide to Effective Design and Management of MPAs for Sharks and Rays. WWF, Gland, Switzerland, https://sharks.panda.org/images/PDF/WWF_MPA_Guide2019.pdf.



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LAW • INSTITUTE®

1730 M Street, NW, Suite 700

Washington, DC 20036

Tel: 202.939.3800

Fax: 202.939.3868

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