KINGDOM OF TONGA

NATIONAL PLAN OF ACTION ON THE CONSERVATION AND MANAGEMENT OF SHARK (REVISED)

2023-2027

Blue Shark
(*Prionace glauca*)

Oceanic whitetip shark
(*Carcharhinus longimanus*)

Silky shark
(*Carcharhinus falciformis*)

April 2023

Prepared by

Ministry of Fisheries, Pacific Islands Forum Fisheries Agency & Pacific Community (SPC)

FOREWORD

The Kingdom of Tonga revised National Plan of Action for Sharks (NPOA Sharks) is intended to provide a comprehensive set of policies aimed at guiding the efforts of the Ministry of Fisheries in the conservation and management of oceanic sharks in Tonga's fisheries waters (as defined in the Tonga Fisheries Management Act of 2002 (as amended). These efforts are consistent with directions of Pacific Islands Forum Leaders to promote stock sustainability and ensure maximum economic benefit from marine resources. Tonga reopened its fisheries waters after a 6 year moratorium placed on locally based foreign and foreign fishing vessels toward the end of 2011. Catch data collected since 2011 indicate a substantial percentage of oceanic sharks that are caught as by-catch, several species of which fall under the International Union for Conservation of Nature (IUCN) conservation status of threatened or endangered.

Without an up-to-date National Plan of Action (NPOA Sharks) to guide and manage the activities of those engaged in the tuna longline fishery, catch of relevant oceanic shark species may continue to increase. Not only is such a scenario detrimental to Tonga's future plans to develop its domestic tuna fishery, but Tonga risks becoming non-compliant in its national and international obligations to conserve and manage the relevant species of oceanic sharks in its fisheries waters. Tonga's obligations in this respect are apparent under national law and emanate from its participation in the Western and Central Pacific Fisheries Convention (WCPFC) and from being a party to the Convention on International Trade in Endangered Species of Wild Fauna and Flora. The failure to implement the necessary frameworks, such as this NPOA on Sharks, would encourage adverse international media coverage of the Kingdom's lack of actions to uphold its international commitments and obligations.

To this end, I, as the Minister responsible, and on behalf of the Cabinet, welcome this new development whole-heartedly. May I also take this opportunity to pledge the support of Cabinet in this endeavour, as we look ahead to the implementation of the NPOA Sharks, over the course of the next four years.

HON. MINISTER OF FISHERIES
KINGDOM OF TONGA

Hon. Samiu Kuita Vaipulu.
Minister for the Ministry of Fisheries.

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ACRONYMS

CBD	Convention on Biological Diversity
CCRF	FAO Code of Conduct for Responsible Fisheries
CITES	Convention on International Trade in Endangered Species of Wild Fauna and Flora
CMM	Conservation and Management Measure
CMS	Convention on Migratory Species
EAFM	Ecosystem approach to fisheries management
EEZ	Exclusive Economic Zone
ESBAs	Ecologically or Biologically Significant Marine Areas
FAO	Food and Agriculture Organisation
FFA	Secretariat of the Pacific Island Forum Fisheries Agency
F_{MSY}	Level of fishing mortality that can be sustainably borne by the stock
IFS	Introduction from the Sea
IPOA	International Plan of Action
IUCN	International Union for Conservation of Nature
MCS	Monitoring, Control and Surveillance
MF	Ministry of Fisheries
MSY	Maximum sustainable yield
NPOA	National Plan of Action
NDF	Non-Detriment Finding
OP	Operational Plan
PI-RPOA	Pacific Island Regional Plan of Action for Sharks
SPC	Pacific Community (formerly Secretariat of the Pacific Community)
SB_{MSY}	Fish stock Spawning Biomass producing maximum sustainable yield
TFMDP	Tuna Fisheries Management and Development Plan
WCPFC	Western and Central Pacific Fisheries Commission
WCPO	Western and Central Pacific Ocean

DEFINITIONS

In this NPOA -

a. **Bycatch** means the incidental capture of non-target species.

b. **Exclusive Economic Zone (EEZ)** means the area beyond and adjacent to the territorial sea of the Kingdom out to a line every point of which is at a distance of 200 nautical miles from the nearest point of the baselines (Figure 1).

c. **Fisheries waters** means the territorial waters of the Kingdom, internal waters including lagoons, and such other waters over which the Kingdom of Tonga from time to time claims sovereign rights or jurisdiction with respect to the marine living resources by legislative enactment or by Royal Proclamation (Figure 1).

d. **Fishing vessel** means any vessel used for fishing or related activities.

e. **Foreign fishing vessel** means any fishing vessel other than a local fishing vessel.

f. **Fishing gear** means any equipment, implement or other thing including any net, rope, trap, pole, line, float, hook, winch or power block, boat, dinghy, helicopter or aeroplane that may be used for fishing;

g. **Incidental catch** means the retained catch of non-target species.

h. **Local fishing vessel** means any fishing vessel –

   i. wholly owned by the Government of Tonga or by any statutory body established under any law of Tonga;

   ii. wholly owned by one or more natural persons who are Tongan subjects; or

   iii. wholly owned by any company, society or other association or persons incorporated or established under the laws of Tonga.

i. **Locally based foreign fishing vessel** means any foreign fishing which –

   i. is based in and fully controlled or operated from Tonga;

   ii. fishes exclusively in the fisheries waters;

   iii. lands all of its catch or a substantial part of its catch in Tonga.

j. **Sharks** means all species of shark, skates, rays and chimaeras (Class Chondrichthyes).

k. **Target species** means the targeted tuna species for commercial longline fishing vessels, which includes albacore, bigeye and yellowfin tuna.

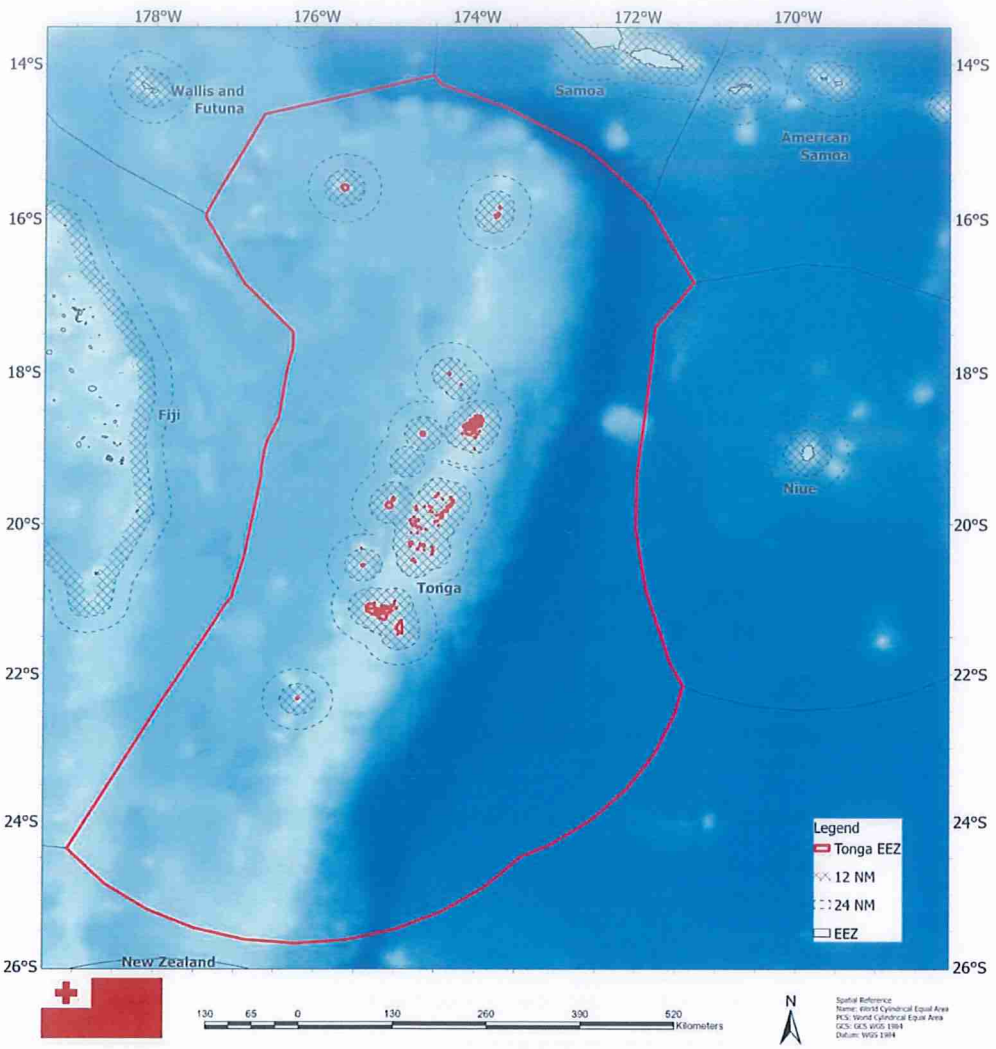

Figure 1: Map delimiting the Exclusive Economic Zone (EEZ), the 12 nautical mile and 24 nautical mile boundaries for the Kingdom of Tonga.

1. PURPOSE

Tonga's National Plan of Action for the Conservation and Management of Sharks (NPOA Sharks) has been developed in line with the overarching goal of the International Plan of Action for the Conservation and Management of Sharks (IPOA Sharks) (FAO, 1999) to "ensure the conservation and management of sharks for their long-term sustainable use". While the IPOA Sharks focuses on both directed and non-directed shark fisheries, it is important to note that there are currently no target fisheries for sharks in Tonga's fisheries waters and any shark catch is bycatch.

The aims of the NPOA Sharks are to:

1. ensure the conservation and management of sharks in Tonga's fisheries waters;
2. minimise any adverse environmental effects of fishing on shark species; and
3. where the long-term sustainability and optimum use of sharks is in accordance with Tonga's national development policy frameworks, consideration is given to:
    a. special needs and requirements to develop and commercialise its fisheries; and
    b. international obligations to which Tonga is a party or a cooperating non-member.

2. SCOPE

Tonga's NPOA Sharks applies to current and future fishing vessels (i.e., local fishing, foreign fishing, locally-based foreign fishing and any other vessels that require a license under Parts IV and V of the Tonga Fisheries Management Act of 2002 (as amended) and to any fishing gear (including those used for artisanal, sport fishing, commercial longline and community fisheries) which may be active in Tonga's fisheries waters and/or the high seas and where sharks are taken as bycatch.

3. PREPARATION & STRUCTURE

Tonga's NPOA Sharks was prepared through effective participation and engagement of all relevant stakeholders consistent with the requirements of the IPOA Sharks. The basis is to raise the level of awareness and promote ownership of the NPOA Sharks by all relevant stakeholders, and increase the successful implementation of the NPOA Sharks.

The NPOA Sharks outlines the key challenges, describes the current state of shark populations within the Western and Central Pacific Ocean (WCPO). The NPOA Sharks presents the current state of domestic fisheries and their relative impact on shark populations, including existing management, operational and monitoring measures. The plan outlines a management and implementation framework covering key targets, strategies and actions. The implementation schedule provides a clear roadmap towards implementing specific actions over the 4-year timeframe of the NPOA Sharks. Progress made with regards to the implementation of the NPOA Sharks and the assessment of the effectiveness of management measures implemented will be closely managed through the Monitoring, Control and Surveillance (MCS) framework. The NPOA review process is to be reported as prescribed by international and national reporting requirements (Section 5).

4. REVIEW & REPORTING

As per the FAO review recommendations prescribed under the IPOA Sharks guidelines, the NPOA Sharks will be reviewed at least every four years to assess its implementation for the purpose of identifying gaps, and to highlight specific areas of improvement and cost-effective strategies for increasing its effectiveness. Any and all reviews should take into consideration the latest decisions of the Western and Central Pacific Fisheries Commission (WCPFC) and other relevant international and regional shark instruments to which Tonga is a Party or cooperating non-member. Any changes made to legal obligations over the NPOA Sharks implementation period will be made to licensing terms and conditions, where applicable and when adopted.

The NPOA Sharks will be reviewed both every four years (full review), and at the end of the second year of its implementation (mid-term review). These reviews will assess the progress made to the implementation schedule, whilst also ensuring all legal and compliance obligations are being met and are up to date. The full review will also review the latest scientific and technical information, taking into consideration latest stock assessments on key shark species, including available shark data housed by the Pacific Community (SPC) TUFMAN-2.

Tonga's Ministry of Fisheries will report on the implementation of this NPOA Sharks as part of its Annual Report, and other fisheries related forums and committees where relevant. Progress of the assessment, development and implementation of the NPOA Sharks will also be reported in part through: Tonga's WCPFC Annual Report Part 1 and Part 2 reports; directly reported to FAO relative to the implementation status of the IPOA & NPOA Sharks; and in accordance with reporting requirements listed under WCPFC Conservation and Management Measures (CMMs) CMM 2022-04 paras. 24 & 25 and CMM 2019-05 para. 7. FAO recommends Shark Assessment Reports should be produced for any elasmobranchs that occur in a nation's fisheries waters, whether target or non-target species, and should include past and present trends for fishing effort and yields, stock status, existing management measures, their effectiveness and any proposed modifications. CITES requires each Party to submit an annual report on its CITES trade, containing a summary of information on, inter alia, the number and type of permits and certificates granted, the States with which such trade occurred, the quantities and types of specimens, and the names of species as included in Appendices I, II and III.

Any changes made to any national or international obligations (including CMMs) and licensing terms and conditions over the NPOA Sharks implementation period, will be reported in internal quarterly monitoring reports for inclusion in both WCPFC Annual Reports, and be used to facilitate and monitor progress of the NPOA Sharks implementation schedule as part of mid-term and full reviews.

5. LEGAL CONTEXT & GUIDING PRINCIPLES

The overarching legal basis of the NPOA Sharks is enshrined in the **Tonga Fisheries Management Act of 2002 (as amended)** (FMA) and regulations. Section 3 of the Act states the Minister is responsible for the conservation, management, sustainable utilisation and the development of fisheries resources in the Kingdom of Tonga and its fisheries waters, and shall follow the principles outlined in Section 5 for determining the total allowable fishing level for any and all fisheries. Section 7 of the Act defines the basis for the development, review and implementation of fishery management and development

plans.

The NPOA Sharks also draws on relevant international and regional instruments such as the: **FAO-International Plan of Action for Sharks** (IPOA Sharks); **FAO Code of Conduct for Responsible Fisheries, Pacific Island Regional Plan of Action (Sharks)** (PI-RPOA Sharks); **WCPFC CMMs on sharks** (CMM 2022-04) **and mobulids** (CMM 2019-05) (current WCPFC CMMs); related provisions of the **Convention on International Trade in Endangered Species** (CITES) and its Appendices II and III; and applicable provisions of the **Convention of Biological Diversity** (CBD). The NPOA Sharks must also align and be consistent with **Tonga's National Development Strategy**, strategic policy directions under its **Tuna Fisheries Management and Development Plan (2022-2026)** (TFMDP), and other relevant legislation and policies of Tonga.

Based on the above legal instruments, the key guiding principles of this NPOA Sharks are defined as:

Participation	Effective participation in shark management and contribute towards minimising fishing mortality on shark species or stocks.
Sustaining stocks	Management and conservation strategies should aim to keep total fishing mortality for each stock within sustainable levels by applying the precautionary approach.
Nutritional & socio-economic considerations	Management and conservation objectives and strategies should recognize that in some low-income, food-deficit communities in Tonga, shark catches are a traditional and important source of food, employment and/or income. Such catches should be managed on a sustainable basis to provide a continued source of food, employment and income to local communities.
Cooperation & integration	Require the fullest possible cooperation among government and non-government agencies and institutions, stakeholders of the fishing industry and local communities, and engagement pursuant to the NPOA Sharks, TFMDP and broader regional and international technical guidelines, measures and obligations on sharks.
Scientific & political actions	Scientific and political actions, as appropriate, which are responsible for the management of shark fisheries, and the need to strengthen and improve their role in taking measures to improve or restore a favourable conservation status of sharks listed in UNCLOS Annex 1, WCPFC Key shark species, under Appendix II of CITES. Such scientific & political actions should also assess threats to shark populations, determine and protect critical habitats and implement harvest strategies consistent with the principles of biological sustainability and rational long-term economic use (in line with ESBAs Process under CBD).
Best available science on	Sharks should be managed to allow for their sustainable harvest, where appropriate, through conservation and

sharks	management measures based on the best available science information.
Ecosystem & precautionary principles	Measures given in the NPOA Sharks should apply widely both to an ecosystem and precautionary principle. Lack of scientific certainty should not be used as a reason for postponing measures to enhance the conservation status of sharks in Tonga's fisheries waters.
Monitoring & compliance	Promote effective monitoring of fishing activities and ensure compliance with shark measures in the NPOA Sharks. All licensed fishing may establish by mutual consent verifiable reporting systems including logsheet and observer reports that include full reporting of shark related data and information pursuant to the NPOA Sharks, TFMDP and broader regional and international guidelines and measures on sharks.

6. OPERATIONAL OBJECTIVES

Operational objectives have been defined for the effective and cost-effective implementation of the NPOA Sharks in line with the objectives outlined in IPOA Sharks, PI-RPOA Sharks and also draws on current international obligations, as outlined in WCPFC CMMs (CMM 2022-04 & CMM 2019-05), CITES, CBD and related Conventions which Tonga is a party to, and national legislation and policies.

The operational objectives of the NPOA Sharks includes:

(i) Ensure that shark catches from oceanic and coastal fisheries are sustainable;
(ii) Assess threats to shark populations, determine and protect critical habitats and implement harvesting strategies consistent with the principles of biological sustainability and rational long-term economic use;
(iii) Identify and provide special attention, in particular to vulnerable, threatened shark stocks, and shark species of special interest;
(iv) Improve and develop frameworks for establishing and coordinating effective consultation involving all stakeholders in research, management and educational initiatives;
(v) Minimise unutilized incidental catches of sharks; minimise waste and discards from shark catches in accordance with Article 7.2.2.(g) of the Code of Conduct for Responsible Fisheries (for example, requiring the retention of sharks from which fins are removed); and encourage full use of dead sharks;
(vi) Contribute to the protection of biodiversity, and ecosystem structure and function;
(vii) Facilitate improved species-specific catch and landings data and monitoring of shark catches;
(viii) Facilitate the identification and reporting of species-specific biological and trade data;
(ix) Implement all applicable technical measures of the current WCPFC CMMs;
(x) Improve understanding of migratory shark populations through research, monitoring and information exchange;
(xi) Build research, data collection, monitoring, compliance and enforcement capacity;
(xii) Ensure, to the extent practicable, the protection of critical habitats and migratory corridors and critical life stages of sharks;

(xiii) Ensure the implementation of all obligations for the Scientific Authority as prescribed by CITES for Appendix II listed shark species are being met, through quality communication with the Management Authority (Department of Environment), the development of processes for non-detriment finding development and reporting, and ensure alignment with national management plans, legislation and regulations; and

(xiv) Increasing public awareness of threats to sharks and their habitats, and enhancing public participation in conservation activities.

7. DOMESTIC TUNA FISHERIES (shark-associated)

The commercial tuna fishery in Tonga's EEZ dates back to at least 1960 and was exclusively a foreign-flagged fishery (foreign fishing and locally based foreign fishing vessels) until 1981. The domestic-flagged fishery (local fishing vessels) comprised the bulk of the licensed fleet between 1990 and 2010. At its peak, between 2000 and 2008, up to 20 local fishing vessels were actively fishing for tuna, fishing effort was between 2.5 and 4.0 million hooks annually, and catches peaked at around 1000 mt. Since 2009, an average of five local fishing vessels have operated in the commercial tuna fishery within Tonga's EEZ.

Towards the end of 2011, Tonga's EEZ was re-opened to foreign fishing and locally-based foreign fishing vessels after a 6 year moratorium. The total number of foreign annual licenses issued since 2011 has varied between 5 and 20, but has averaged about 10 since 2014. As a result of this reintroduced access, total catch and effort in the Tonga EEZ increased dramatically. Between 2012 and 2022, total catch in the commercial longline tuna fishery ranged between 2000 and 3400 mt. Fishing effort has been around 6 million hooks, with the exception of 2013 when 11 million hooks were fished.

Between 2017 and 2021, the catch was dominated by the three tuna species: albacore (*Thunnus alalunga*), yellowfin (*T. albacares*) and bigeye (*T. obesus*). The importance of the three species differed between the domestic-flagged and foreign-flagged fleets as shown below. The primary target of the domestic-flagged fleet is yellowfin tuna while the foreign-flagged fleet catch targets predominantly albacore (Table 1).

Although the Kingdom of Tonga (1) does not have a dedicated domestic shark fishery and no new national shark fisheries will be considered unless stock status and non-detrimental impact can be determined with a high degree of confidence, and (2) has no intention of closing its fisheries waters to tuna fishing in order to ensure that no sharks are taken as bycatch, shark bycatch has, at times, been substantial in Tonga's fisheries waters. Extrapolation from observer data indicates that shark catch was greater than 20% of tuna catch for several years prior to 2015. The situation has improved significantly since then and has averaged around 5% during the period of 2017-2021. Blue sharks have long comprised the large majority of sharks taken in the commercial longline fishery, often representing as much as 90% of the total shark catch by weight. Other shark species taken regularly include several for which there are conservation concerns, including oceanic whitetip, silky shark, short finned and long finned mako, great hammerhead, bronze whaler and thresher sharks (summarised in Annex 3, and all listed on CITES Appendix II, Annex 2).

Table 1. Total catch (in mt) in the local fishing (Tonga fleet) and foreign fishing and locally-based foreign fishing (Foreign) fleets between 2017 and 2021.

Tonga fleet					
Species	2017	2018	2019	2020	2021
Yellowfin	374	186	183	155	203
Other	270	226	294	106	99
Bigeye	24	23	16	10	15
Albacore	26	23	29	13	10
Total	**693**	**458**	**522**	**285**	**328**

Foreign fleet					
Species	2017	2018	2019	2020	2021
Albacore	847	641	1331	802	799
Yellowfin	498	158	561	661	585
Other	298	119	405	345	273
Bigeye	105	37	87	67	112
Total	**1749**	**955**	**2385**	**1875**	**1768**

Logsheet summaries of shark catches still represent underestimates of catch and often do not include breakdown by species. Observers are now well trained in shark species identification and virtually all observed sharks are recorded to species-level (Table 2). Observer coverage in Tonga has been well above the WCPFC 2014 mandated observer coverage level (of 5%) since it was implemented, with coverage being between 25-40% on vessels operating in its EEZ since 2016 (Figure 2).

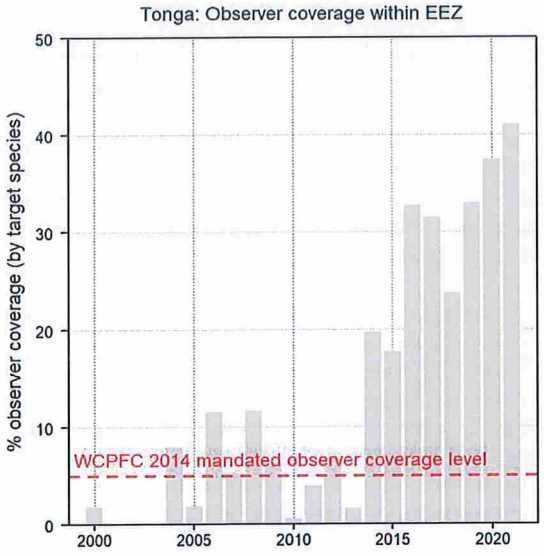

Figure 2. Level of observer coverage aboard commercial longline vessels operating in the Tonga EEZ.
Table 2. Estimates of total shark catch in the commercial longline fishery (all fleets combined) over the period 2017-2021. Estimates are based on observer data.

Species	2017	2018	2019	2020	2021
Blue shark	52.0	10.2	123.2	109.5	76.8
Shortfin mako	8.8	7.5	6.3	5.1	3.4
Pelagic stingray	4.9	0.9	2.3	4.5	4.0
Silky shark	0.2	0.7	2.4	1.9	2.9
Oceanic whitetip	0.8	0.3	1.5	1.1	0.6
Bronze whaler	0.0	0.0	2.2	0.8	0.0
Longfin mako	0.0	1.6	0.0	0.0	0.0
Bigeye thresher	0.0	0.0	0.5	0.5	0.0
other sharks	0.0	0.0	0.0	0.0	0.0
Total	**66.8**	**21.2**	**138.5**	**123.4**	**87.7**

Wahoo, dolphinfish, moonfish and billfishes had high retention rates as these are valuable components in the longline fishery. In contrast, lancetfish, escolar, oilfish and certain shark species are rarely retained. No other interactions with species of special conservation interest (e.g. turtles, marine mammals, birds) have been reported by Observers since the program started in 1995 (WCPFC SC18, Tonga Part 1 report, 2022).

Fate of shark catch

The development and implementation (predominantly thorough fishing license Terms and Conditions) of shark measures set out under the previous NPOA Sharks (2014 - 2018) led to substantial reductions in the proportion of shark catch compared to total tuna catch, in an attempt to address high catches of sharks in 2012 and 2013 that followed the reintroduction of foreign fleets (foreign fishing and locally based foreign fishing vessels) fishing in Tonga's fisheries waters, in 2011. Since 2014, shark bycatch as a proportion of total tuna catch in Tonga's fisheries waters has remained relatively consistent at around 5%. Towards the end of 2011, Tonga's EEZ was re-opened to foreign fishing and locally-based foreign fishing vessels after a 6 year moratorium.

The management measures set out in the previous NPOA Sharks are now conditions of fishing licenses, and include measures relating to the banning of finning (although fins can be naturally folded), prohibiting the use of trace wires, encouraging full retention and implementing a 100% landing policy. The recent high Observer & port sampling coverage means effective monitoring for compliance is in place and appears to be working effectively. A prohibition on retention of shark fins without an accompanying trunk was implemented as part of the WCPFC CMM 2019-04 which came into force on 1 January 2021. Observer data since 2019 confirm that all sharks retained and landed in Tonga were accompanied by the trunk, meaning that any sharks finned were retained with their corresponding trunk, although this was not a binding condition in WCPFC shark CMMs until 2021. It can also be noted that most sharks are fully discarded, whether dead or alive (Figure 3).

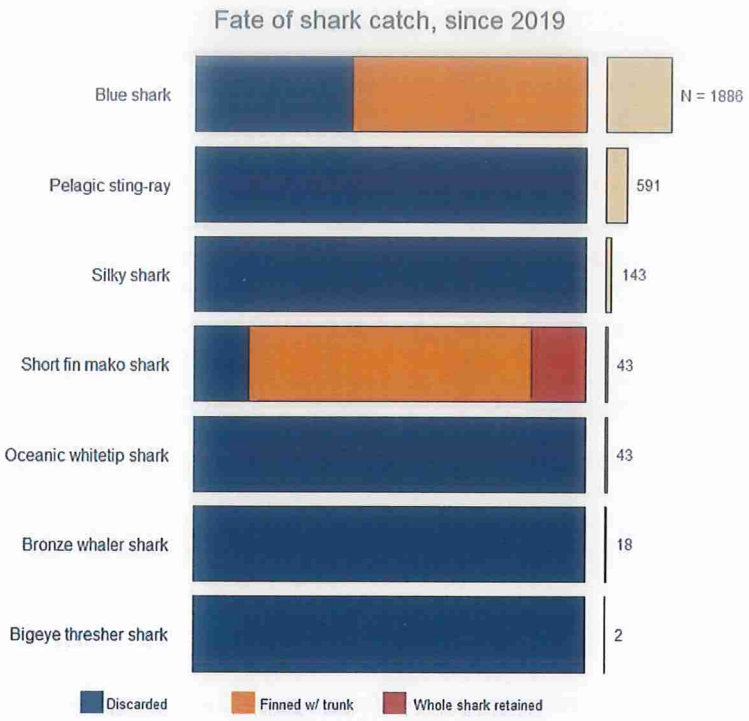

Figure 3. Illustration of fate of sharks observed in longline catches.

Status & Descriptions Of WCPO Sharks caught in Tonga's fisheries waters

Oceanic whitetip shark (*Carcharhinus longimanus*) — The most recent stock assessment was conducted in 2019, and was reviewed and accepted at the 15th Regular Session of the WCPFC Scientific Committee (SC15). Spawning biomass, total biomass and recruitment have all exhibited a substantial declining trend since 1995 (the first year of the assessment) across the Pacific region as a whole. As of 2016 (the final year of the assessment), the current spawning biomass was estimated to be at 4% of spawning biomass in the absence of fishing ($SB/SB_{F=0} = 0.04$) and at 9% of spawning biomass at maximum sustained yield ($SB/SB_{MSY} = 0.09$), and recent fishing mortality is estimated to be nearly four times greater than fishing mortality at maximum sustained yield ($F/F_{MSY} = 3.94$). The key conclusions are that overfishing is occurring and the stock is in a heavily overfished state relative to maximum sustainable yield (MSY)-based reference points. The greatest impact on the stock is attributed to bycatch from the longline fisheries, with lesser impact from purse seining, with few, if any, fisheries targeting oceanic whitetip. Oceanic whitetip sharks were added to CITES Appendix II in 2014.

Silky shark (*Carcharhinus falciformis*) — The most recent stock assessment was conducted in 2018, and was reviewed and accepted as the best available science at the 14th Regular Session of the WCPFC Scientific Committee (SC14). Due to the very large uncertainty in the assessment, SC14 concluded that estimates of stock status were unreliable as a basis for decision making, but the results were indicative of probable status. The stock declined steadily over the assessment model period of 1995-2016. The assessment model estimated recent spawning biomass in 2016 to have been at 47% of the

unexploited level ($SB/SB_0 = 0.469$), and estimated spawning biomass is estimated to be above the MSY reference biomass level ($SB/SB_{MSY} > 1$). Fishing mortality was estimated at 1.6 times the reference F_{MSY} level ($F/F_{MSY} = 1.61$). The greatest impact on the stock is attributed to bycatch from the longline fishery, but there are also significant impacts from the purse seine fishery at lower latitudes, which catches predominantly juvenile sharks. SC14 concluded that overfishing is occurring, but the stock is likely not in an overfished state. Silky sharks were added to CITES Appendix II in 2017.

South Pacific Blue shark (*Prionace glauca*) — A stock assessment was conducted on blue shark in 2021, was reviewed at 17th Regular Session of the WCPFC Scientific Committee (SC17), and further refined in 2022 at the 18th Regular Session of the WCPFC Scientific Committee (SC18). The refined model was accepted by SC17 as the basis for management advice and stock status. The stock has improved substantially over the past decade and is not considered to be overfished ($SB/SB_{F=0} = 0.79$; $SB/SB_{MSY} = 1.64$; $F/F_{MSY} = 0.65$), nor experiencing overfishing. The relatively strong recovery by blue sharks was likely due to a combination of biological and fisheries factors. SC17 noted that blue sharks are relatively productive with fast growth and high fecundity compared to other sharks. In addition, the population is structured spatially with smaller fish in the higher latitudes. Fishing effort plateaued around 2010 and discard rates increased at the same time the noted biomass increase began. Historically, blue sharks have been the most commonly captured shark in the Tonga EEZ. In 2022, CITES passed a resolution (to come into effect on 23 February 2023; Annex 2) to add all the requiem sharks (except tiger shark) as look-alike species to CITES Appendix II, which includes blue shark.

Mako sharks (*Isurus* spp.) — There are two species of mako shark and both are taken as longline bycatch - shortfin (*Isurus oxyrinchus*) and longfin (*I. paucus*). Mako sharks are slow growing, with low fecundity, and can live to at least 30 years of age. Whilst common in longline catches dating to the 1950s, catch data are poor and the latest assessment attempt for shortfin mako sharks (2022, reported to SC18) was deemed too unreliable for determining stock status or as a basis for management advice. SC18 noted that a large number of Commission Members, Cooperating Non-Members and Participating Territories (CCMs) currently release (cut free) shortfin mako sharks. This practice may result in a reduction in fishing mortality and should be encouraged among CCMs as a precautionary measure for a slow growing, unproductive species with unknown stock status. Shortfin and longfin mako sharks were added to CITES Appendix II in 2019.

Thresher sharks (*Alopias* spp.) — Thresher sharks are among the least productive of all pelagic sharks and also for which there is little reliable data upon which to assess any of three thresher shark species: bigeye (*Alopias superciliosus*); common (*A. vulpinus*); and pelagic (*A. pelagicus*). The most widely distributed of the three, and that taken most frequently as bycatch in longline fishing, is the bigeye thresher. An indicator analysis on bigeye was conducted in 2017 and was accepted by the 13th Regular Session of the WCPFC Scientific Committee (SC13) for estimating fishery impacts and to support management actions. In this analysis, there is a >50% probability that fishing mortality levels for threshers are above a sustainable threshold and should be decreased. Bigeye, common and pelagic thresher sharks were added to CITES Appendix II in 2017.

Whale sharks (*Rhincodon typus*) — It is estimated that 75 whale sharks (*Rhincodon typus*) were killed in the WCPO as a result of interactions with the region's purse seine fishery in just two years (2009 and 2010). A ban on whale shark setting by licensed purse-seine fishing vessels anywhere in the Pacific was adopted by the Pacific Island States that are parties to the Nauru Agreement in 2010, and this ban was later extended to the entire

WCPO purse seine fleet by the WCPFC, and is a management measure specific for whale sharks in CMM 2022-04 (Section VI, para. 23; Annex 1A). Whale sharks were the first shark species listed to CITES Appendix II in 2003.

Hammerhead sharks (*Sphyrna* spp.) — Hammerhead sharks have a wide latitudinal distribution and appear to prefer tropical warm waters. Hammerhead sharks are largely concentrated along continental shelves and coastlines, but can be found in the deep ocean. Hammerhead sharks are at a high risk of extinction and are a delicacy in many countries. Little data exists on the bycatch of hammerheads in the WCPO and thus no formal assessment has been done on the stock for consideration at the WCPFC Scientific Committee. Rare bycatches of great hammerhead (*Sphyrna mokarran*) in Tongan longline fisheries have been observed. Great hammerhead sharks were added to CITES Appendix II in 2014, however in 2022 CITES passed a resolution to add all hammerhead species (and lookalikes) to CITES Appendix II, with the decision coming into effect on 23 February 2023 (Annex 2).

Mobulidae (*Manta* spp. and *Mobula* spp.) — Most mobulid species have been reported as bycatch by several fishing methods, including purse seine, longline, trawl and gillnets, and are also taken as target species. Mobulids have life history characteristics (e.g. slow growth, extremely low fecundity, and delayed age of first reproduction) that make them exceptionally susceptible to overexploitation. A specific management measure for mobulids was adopted by WCPFC in 2019 (CMM 2019-05; Annex 1B). *Manta* spp. were added to CITES Appendix II in 2014, whereas *Mobula* spp. were added in 2017.

Management measures

Although there are no specific shark measures in the Fisheries Management Act (2002) (as amended) and regulations, shark conservation and management in Tonga are aligned with international obligations and are enforced through specific shark bycatch measures outlined in the fishing licensing Terms and Conditions (paras. 12 - 15). A national limit for shark catch has been set as part of these Terms and Conditions, such that "The operator shall comply with shark by-catch limit currently set at no more than 10% of total catch per fishing trip." The implementation of these shark measures has been successful in keeping shark catches low and the "no retention" clause on oceanic white tip and silky sharks has been followed since at least 2019. New amendments to the shark CMM, adopted at the 19th Regular Session of the Commission (WCPFC19), now require all longline vessels operating between 20°N and 20°S, and targeting tuna and billfish to prohibit the use of both wire trace as branch lines or leaders and sharklines starting on 1 January 2024, in order to mitigate the impacts of fishing on oceanic whitetip sharks and silky sharks. This new amendment will require a change to the Terms and Conditions, and will require monitoring requirements to ensure compliance. Currently, there is a national requirement for 100% of vessels to be inspected for the presence of shark targeting gear, whereby shark targeting gear is prohibited on board.

The NPOA Sharks encourages the collection and reporting of sharks incidentally caught in territorial waters and associated with coastal fisheries. The preparation of trends and indicator analyses should be conducted to inform periodic reviews and policy decisions in the absence of formal stock assessments on sharks. These analyses should also be utilised for the preparation and periodical updates of Non-Detriment Findings as required under CITES Appendix II obligations.

The collection of shark data and the management of shark populations in Tonga's fisheries

waters are essential to the broader conservation and management of shark species in the WCPO and the protection of critical habitats, biodiversity and ecosystem functions. Tonga recognises the importance of improving current knowledge of sharks and the management of fisheries practices that result or may result in shark bycatch as well as the need to improve collection of shark-specific data (including trade and export data) within Tonga's fisheries waters.

Technical measures

Under the current TFMDP (2022-2026), an annual cap on the number of longline fishing vessels licensed to fish within Tonga's EEZ is implemented, whereby a minimum of 15 licenses are to be local fishing vessels. Targeted shark fishing is prohibited by law. However, incidental shark catch can be taken by vessels targeting tuna and the fishing license Terms and Conditions (paras. 12 - 15) stipulate the Operator's responsibilities for preventing or minimising bycatch and outline the shark bycatch limit which is currently set at 10% of the total catch per fishing trip. Although, the current fishing license Terms and Conditions (paras. 14) prohibits Operators from fishing, storing or retaining on board, transhipping or landing in whole or in part, any of 6 protected shark species (Oceanic whitetip shark, Scalloped hammerhead, Great hammerhead, Smooth hammerhead, Porbeagle shark and Silky shark), the list of species needs to be updated to include any shark species found in Tonga fisheries waters that are also listed to CITES and are included as part of the WCPFC Key shark species and are subject to provisions in CMM obligations. This is due to para. 15 of the current fishing license Terms and Conditions stipulating the Operator's obligations should any of those species listed be unintentionally caught. This section of the Terms and Conditions should also include measures that ensure Tonga's compliance with CITES, and other shark conservation and management measures.

To monitor shark catches, Operators must ensure that 100% of their catch is landed in an approved Tongan port. There is now 100% coverage of port sampling activities, which is needed to handle this requirement. Since WCPFC mandated 5% observer coverage for longline vessels fishing in the WCPFC Convention Area in 2012, there has been an increase in observer coverage to over 30% in the Tonga longline fishery since 2019. Shark identification is also slowly improving with the use of printed shark cards donated by the WCPFC Secretariat, and regular training for observers and port samplers. However, to date, there has been no formal training on the use of shark guides in Tonga.

Tonga shark datasets are currently reported to WCPFC through Parts 1 of the Annual Report and submission of their operational catch and effort data. Commercial, artisanal and observer data are stored in the SPC database, TUFMAN-2. The global Bycatch Management Information System (BMIS) would benefit from the submission of Tonga shark datasets. This revised NPOA Sharks ensures that key shark species are listed and managed through fishing license Terms and Conditions. It also ensures that Tonga meets all binding obligations under international management measures on key shark species, including oceanic whitetip, silky sharks, whale sharks, mobulids (Annexes 1A & 1B), and CITES listed shark species (Annex 2).

The Fisheries Management (Processing And Export) Regulations 2008 refer to shark fins as a commodity to be traded under a fish export license (Schedule 2(8)), and that the issuing of export permits/licenses shall comply with the restrictions on the export of selected species as per the Fisheries Management (Conservation) Regulations 2008. However, sharks are not listed as part of the selected species listed in the Fisheries Management (Conservation) Regulations 2008. To comply with CITES reporting on trade and export of

CITES-listed species, both the Processing and Export and Conservation Regulations will need to be updated to require export permits and relevant Non-Detriment Findings for CITES-listed sharks being exported as well as for those being introduced from the sea (i.e., brought into Tongan ports from the high seas or other EEZs). To meet CITES obligations, species-level export data for any trade of CITES Appendix II-listed shark species is required. Since Tonga is a party to CITES, it is to report annually on its CITES trade, containing a summary of information on, inter alia, the number and type of permits and certificates granted, the States with which such trade occurred, the quantities and types of specimens, and the names of species as included in Appendices I, II and III.

Operational measures

Due to full utilisation requirements at the regional level, there has been an increase in bycatch being landed, including sharks. Further work is needed to promote and train locals on the utilisation and preparation of shark meat to ensure local food security, and to promote the consumption of fish by the local population to meet and enhance local dietary requirements.

The NPOA Sharks supports discouraging waste and discards of dead fish; encouraging live release, control of finning and catch mitigation measures as set out in fishing license Terms and Conditions, including:

- prohibiting the targeting of sharks;
- setting the longlines in waters at least 1000 metres in depth;
- using tuna circle hooks, whereby the first hook is at least 120 metres in depth and the deepest hook is at least 340 metres in depth;
- prohibiting the use of wire trace as branchlines or leaders;
- landing sharks with all fins, including the tail fin, naturally attached. Fins may be cut so they can be folded but must remain naturally attached and not be completely severed from the carcass; and
- promoting live release and use of circle hooks.

The retention and utilisation of CITES-listed shark species for export, or introduced from the sea, will require certificates issued for compliance purposes.

MCS & Enforcement

The NPOA Sharks relies on regular and routine domestic MCS activities through sea/air patrols of the Tonga EEZ, with assistance from New Zealand and regional operations coordinated through the Secretariat of the Pacific Island Forum Fisheries Agency (FFA) Regional Fisheries Surveillance Centre. Tonga observer coverage is relatively high (30-40%) and has been increasing yearly since 2019. Although substantially higher than the coverage mandated by WCPFC for the longline fishery, further improvements in coverage levels are required to ensure compliance with fishing license Terms and Conditions, specifically those measures pertaining to sharks, as well as improving data collection and quality. Monitoring and enforcement of shark measures are also mandatory during landing in Tonga ports through the Tongan ports sampling program, which has 100% coverage.

Further improvement is required in regular/routine enforcement activities and additional resources to support these operations. This includes enhanced working relationships between the Ministry of Fisheries, His Majesty's Armed Forces, the Attorney General's Office, the Department of Environment, the Ministry of Infrastructure (Marine and Port Department) and the National Fisheries Council.

These working relationships are also paramount to the enforcement and monitoring of import and export activities, particularly with regards to CITES-listed shark species. A collaborative and transparent relationship between the Ministry of Fisheries and the Department of Environment is critical to the successful implementation of processes required for, the development and routine updating of Non-Detriment Findings, issuing of certificates, as well as ensuring that licensing Terms and Conditions meet CITES obligations.

Data collection & analysis

Bycatch and shark reporting is conducted through the use of logsheets and port sampling templates. The Ministry of Fisheries collects and stores all shark data, both commercial and artisanal, in the TUFMAN-2 database. Observer reporting of shark data is also stored in the TUFMAN-2 database.

Port samplers report the percentage of shark catch by trip from all tuna vessels offloading in Tonga's port. Port sampler shark reports must be submitted prior to the issue of fuel permits for the next trip.

Port samplers attend annual observer training courses, which include training using a SPC Sharks and Rays Identification Manual to update their knowledge on shark species and provide guidance on shark identification. There have been no non-compliant cases reported from port samplers for breaches in shark requirements set out in the NPOA Sharks and licensed fishing Terms and Conditions.

As of 2022, electronic reporting (ER) is extensively used for port sampling (95% of reports), logbook (86%) and observer data (65%) reporting, among the highest ER rates for any country in the South Pacific.

8. KEY CHALLENGES

The Ministry of Fisheries identified the following challenges that this NPOA Sharks aims to address:

(i) There are no clear policies and regulations on the collection and reporting of shark catches in territorial waters. The FMA includes regulations for fisheries operating in designated community-based Special Management Areas, however, regulations that apply to these areas (Fisheries (Coastal Communities) Regulations 2009) do not include any provisions for shark species. The inclusion of such requirements and any other regulations on shark catches into legislation is essential, particularly with regards to protected species (e.g., under CITES, WCPFC etc.) and collaborative work with coastal fisheries personnel and stakeholders is necessary to better plan for the collection and reporting of shark data;

(ii) The full utilisation of shark meat is challenging, since awareness of potential uses is limited, and care must be taken in ensuring no unintentional markets for targeted shark fishing open due to possible increasing demand. However, the consumption of fish in some communities in Tonga should be encouraged to meet dietary requirements, promote food security, campaign against non-communicable diseases, and compliment subsistence and traditional use of shark meat (e.g., promote cooking recipes such as fish and chips, shark curry, etc.).

(iii) Research into improving and promoting different possible uses of any retained shark bycatch could be further explored, so long as compliance with CITES obligations are met;
(iv) Moderate progress of the implementation of activities relative to capacity building, data collection, MCS and enforcement;
(v) Relatively low level of awareness of sharks by broader local populations and a lack of interest by postgraduate and postdoctoral students to conduct shark research;
(vi) Insufficient biological and environmental data on sharks, and critical habitats in Tonga's fisheries waters;
(vii) Limited collection of information on trans-boundary, straddling, highly migratory and high seas stocks of sharks rendering the effective conservation and management of sharks exploited by two or more States difficult, including when States are parties to different international conventions (e.g., CITES);
(viii) Difficulty amongst fishing masters in further reducing shark bycatch;
(ix) Identifying sharks to species-level in all fisheries, where possible;
(x) The need for the implementation of CITES regulations and obligations, (including non-detriment finding development and reporting requirements) for shark species listed under CITES (see Annex 2), and the development and management of processes between national Management and Scientific Authorities so that Tonga ensures it meets its obligations under CITES, and the collection of species-level export data.

9. TARGETS AND STRATEGIES FOR IMPLEMENTATION

The strategic management and implementation framework draws on the FAO Technical Guidelines on the Conservation and Management of Sharks (FAO, 1999), RPOA (sharks), WCPFC CMMs, the Fisheries Management Act 2002 (as amended) and CITES obligations. The targets and strategies for achieving the NPOA Sharks operational objectives are, inter alia:

(i) Manage the catch of sharks in Tonga's fisheries waters to meet the operational objectives of the NPOA:
- Ban targeted shark fishing by all vessels in all Tonga's fisheries waters.
- Manage the incidental catch of sharks in Tonga's fisheries waters.

(ii) Minimise unutilised incidental shark catch, minimise waste and discards and encourage the full use of dead sharks.
- Improve the utilisation of incidental catch of sharks in Tonga's fisheries waters
- For non-retained sharks, ensure safe release practices are followed

(iii) Ensure that all national and international obligations implemented
- Implement all obligations of WCPFC shark CMMs, CITES, CMS and CBD.
- Implement all national obligations.

(iv) Adopt effective MCS measures to prevent, deter and eliminate IUU shark fishing
- Improve MCS and enforcement of licensing conditions

(v) Collect, analyse and share data in a timely manner to support effective management of sharks and meet national and international obligations
- Improve data collection and monitoring of shark catch in Tonga's fisheries waters

(vi) Build and strengthen overall capacity in shark research, data collection, monitoring, compliance, enforcement. electronic reporting and electronic monitoring
- Facilitate and encourage research on shark species

- Improve training, facilitate capacity building and raise public awareness

(vii) Update the NPOA Sharks

- Assess progress in the implementation of the NPOA Sharks

The actions associated with these targets and strategies are outlined as part of the implementation schedule.

10. IMPLEMENTATION PLAN & SCHEDULE

This NPOA Sharks does not have a dedicated budget for its implementation. The delivery of the actions identified in the NPOA Sharks depends on the resources available within the existing budgets of the Ministry of Fisheries. Supplementary funds for implementation of certain activities may be obtained from other external sources.

The successful implementation of this NPOA Sharks also requires strong cooperation and collaboration among relevant stakeholders and groups, including but not limited to fishermen, fisherman associations, boat operators, indigenous groups, conservation/environmental bodies, recreational and game-fishing associations and research/technical fisheries related institutions.

The table below describes the specific targets, strategies and actions required for the successful implementation of this NPOA Sharks 2023-2027, along with the associated timelines for each of the actions identified.

Target	Strategy	Actions	Timeline	Resources	Regulations/Notices/Fines/Conditions
Manage the catch of sharks in Tonga's fisheries waters to meet the operational objectives of the NPOA.	*Ban targeted shark fishing by all vessels in all Tonga's fisheries waters.*	• Ensure retained shark catch is included in the 72 hour notifications required prior to entry into port. • Enforcement through boarding inspections, off-loading and the presence of observers on board. • Ensure that longline vessels, targeting tuna and billfish do not use, or if carrying, must stow wire trace as branch lines or leaders and do not use shark lines or branch lines running directly off of the longline floats or drop lines. • Ensure that licensing conditions are up to date with national and international obligations, specific to sharks.	*2023* *Ongoing* *Ongoing* *Ongoing*	MCS (Observer, Licensing, Enforcement,VMS) Legal FMDD	
	Manage the incidental catch of sharks in Tonga's fisheries waters	• Ensure compliance with international obligations for shark species listed under UNCLOS Annex 1, WCPFC CMMs and key shark species and CITES Appendix II, CMS, CBD etc. • Species not covered by specific non-retention obligations can be retained (fins and trunk) up to a maximum of 10% by weight of the total landed catch per trip for longline fisheries. • Monitor current shark management limits through the 100% landing port sampling requirement for longline fisheries. • Implement the MCS framework for investigating non-compliance with the current shark management limits. • Ensure vessel operators are made aware of the mandatory release of live sharks and safe release guidelines, the prohibition of the use of sharklines or stowing thereof if on board, the recommended use of circle hooks and deeper hook deployment. • Ongoing training for observers on the best release practices of live sharks and shark identification. • Ban finning in accordance with WCPFC shark CMMs. • Ensure that licensing conditions are up to date with national and international obligations, specific to sharks.	*Ongoing* *Ongoing* *Ongoing* *Ongoing* *2023* *Ongoing* *Ongoing* *Ongoing*	MCS (Observer, Licensing, Enforcement,VMS) Legal SPC Offshore data collection FMDD SPREP FFA	

Target	Strategy	Actions	Timeline	Resources	Regulations/Notices/Fines/Conditions
Minimise unutilised incidental landed shark catch, minimise waste and discards and encourage the full use of dead sharks.	*Improve the utilisation of incidental landed catch of sharks in Tonga's fisheries waters*	• Compliance with international obligations for shark species listed under UNCLOS Annex 1, WCPFC CMMs and key shark species and CITES Appendix II, CMS, CBD etc. • Species not covered by specific non-retention obligations can be retained (fins and trunk) up to a maximum of 10% by weight of the total landed catch per trip for longline fisheries. • Monitor current shark management limits through the 100% landing port sampling requirement for longline fisheries. • Promote the full utilisation of retained shark catch (e.g., promote cooking recipes such as, fish and chips, shark curry, etc.). • Ensure that licensing conditions are up to date with national and international obligations, specific to sharks.	*Ongoing* *Ongoing* *Ongoing* *Ongoing* *Ongoing*	MCS (Observer, Licensing, Enforcement,VMS) Legal SPC Offshore data collection FMDD	
Ensure that all national and international obligations implemented	*Implement all obligations of WCPFC shark CMMs, CITES, CMS and CBD.*	• Incorporate all international obligations relating to sharks into relevant national frameworks and regulations. • Ensure the activities undertaken under the implementation of the NPOA Sharks comply with relevant international obligations, plans and strategies. • Ensure vessel operators are aware of the prohibition of the use of shark lines or stowing thereof if on board. • Ensure the transport and trade of sharks across international borders is in compliance with obligations under CITES. • Require exporters to supply species-level export data. • Develop a NDF for all CITES Appendix II-listed sharks that are traded. • Prepare and submit progress reports on the assessment, development and implementation of the NPOA Sharks as part of the MOF Annual Report, WCPFC Part 1&2 Annual Reporting requirements and biennial reporting to FAO. • Ensure that licensing conditions are up to date with	*Ongoing* *Ongoing* *2024* *Ongoing* *2023* *2023* *Ongoing* *Ongoing*	MCS (Observer, Licensing, Enforcement,VMS) Legal SPC Offshore data collection FMDD SPREP FFA	

Target	Strategy	Actions	Timeline	Resources	Regulations/Notices/Fines/Conditions
		international obligations, specific to sharks.			
	Implement all national obligations.	• Incorporate all national obligations relating to sharks into relevant national frameworks. • Ensure the activities undertaken under the implementation of the NPOA Sharks comply with relevant national obligations, plans and strategies. • Prepare and submit progress reports on the assessment, development and implementation of the NPOA Sharks as part of the MOF Annual Report. • Ensure that licensing conditions are up to date with national obligations, specific to sharks.	*Ongoing* *Ongoing* *Ongoing* *Ongoing*	MCS (Observer, Licensing, Enforcement,VMS) Legal SPC Offshore data collection FMDD	
Adopt effective MCS measures to prevent, deter and eliminate IUU shark fishing	*Improve MCS and enforcement of licensing conditions*	• Improve MCS and enforcement activities for the collection, processing, storage, and trade and utilisation of sharks. • Regular reviews of policies and plans, licensing agreements and license conditions to assess effectiveness of shark measures. • Fisheries divisions provide FMDD with quarterly reporting from the Data Working Group on the progress made to relevant implementation activities and facilitate reviews of the NPOA Sharks. • Ensure that licensing conditions are up to date with national and international obligations, specific to sharks.	*2027+* *Ongoing* *Ongoing* *Ongoing*	MCS (Observer, Licensing, Enforcement,VMS) Science Division, Offshore Section Legal FMDD	
Collect, analyse and share data in a timely manner to support effective management of sharks and meet national and	*Improve data collection and monitoring of shark catch in Tongan fisheries waters*	• Maintain, improve and strengthen data collection, sharing and monitoring of shark data using logsheets, port sampling, observer reports and other means, from all offshore fisheries where sharks are incidentally taken as bycatch. • Facilitate the collection and provision of shark landing data from all licensed local fishing and foreign fishing	*Ongoing* *Ongoing*	MCS (Observer, Licensing, Enforcement,VMS) Legal SPC FFA	

Target	Strategy	Actions	Timeline	Resources	Regulations/Notices/Fines/Conditions
international obligations		vessels operating in Tonga's fisheries waters. • Develop and provide training and refresher courses in shark identification for relevant stakeholders. • Maintain and update species-specific national records of shark catches, landings, discards fate and exports, from all offshore fisheries where sharks are taken as bycatch. • Facilitate timely access to and exchange of shark related information necessary to coordinate conservation and management measures, and facilitate training in data quality assurance. • Maintain and strengthen data management systems to better incorporate shark data.	*2023* *Ongoing* *Ongoing* *Ongoing*	Offshore data collection FMDD Science Division IT Sections Ministry of Environment and Climate Change Department of Environment	
Build and strengthen overall capacity in shark research, data collection, monitoring, compliance, enforcement, electronic reporting and electronic monitoring	*Facilitate and encourage research on shark species*	• Conduct relevant shark-specific analyses of Tonga's fisheries. • Assess the impacts of future fisheries on sharks and shark catches before they are developed and implemented. • Actively increase shark-related scientific capacity within the Ministry of Fisheries. • Actively increase the inclusion of climate change-related science and knowledge into the management and conservation of sharks.	*Ongoing* *2027+* *Ongoing* *Ongoing*	MCS (Observer, Licensing, Enforcement,VMS) Legal SPC FFA Offshore data collection FMDD Science Division SPREP	
	Improve training, facilitate capacity building and raise public awareness	• Develop and provide training in shark CMM requirements, including best handling practices. • Ensure vessel operators are made aware of ways to best avoid targeting sharks, and the benefits of using circle hooks and deeper hook deployment and the ban on the use of sharklines, etc. • FMDD and MOF media section to seek assistance from FFA and SPC to provide training in the development of awareness materials and programme(s) specific to	*2023* *2023* *2023*	MCS Legal SPC FFA Offshore data collection FMDD	

Target	Strategy	Actions	Timeline	Resources	Regulations/Notices/Fines/Conditions
		sharks (e.g.,radio, website, newspaper, posters, seminars, school talks and seminars). • Seek assistance from OFP-SPC, WCPFC Secretariat, FAO and others in the production of shark information and education materials (e.g., shark ID guides) in English and in local language(s).	*2027*	Science Division WCPFC FAO Media section	
Update NPOA Sharks	*Assess progress in the implementation of the NPOA Sharks*	• Monitor the implementation schedule internally on an annual basis. • Conduct a mid-term review every 2 years to assess progress made to the implementation schedule, whilst ensuring all legal and compliance obligations are being met. • Conduct a full review of the NPOA Sharks every 4 years with assistance of FFA and SPC.	*Ongoing* *2025* *2027*	MOF FFA SPC	

VI. Species specific requirements

22. Oceanic whitetip shark and silky shark

(1) CCMs shall prohibit vessels flying their flag and vessels under charter arrangements to the CCM from retaining on board, transshipping, storing on a fishing vessel or landing any oceanic whitetip shark, or silky shark, in whole or in part, in the fisheries covered by the Convention.
(2) CCMs shall require all vessels flying their flag and vessels under charter arrangements to the CCM to release any oceanic whitetip shark or silky shark that is caught as soon as possible after the shark is brought alongside the vessel, and to do so in a manner that results in as little harm to the shark as possible, following any applicable safe release guidelines for these species.
(3) Subject to national laws and regulations, and notwithstanding (1) and (2), in the case of oceanic whitetip shark and silky shark that are unintentionally caught and frozen as part of a purse seine vessels' operation, the vessel must surrender the whole oceanic whitetip shark and silky shark to the responsible governmental authorities or discard them at the point of landing or transshipment. Oceanic whitetip shark and silky shark surrendered in this manner may not be sold or bartered but may be donated for purpose of domestic human consumption.
(4) Observers shall be allowed to collect biological samples from oceanic whitetip sharks and silky shark caught in the Convention Area that are dead on haulback in the WCPO,provided that the samples are part of a research project of that CCM or the SC. In the case that sampling is conducted as a CCM project, that CCM shall report it in their Part 2 Annual Report.

23. Whale shark

(1) CCMs shall prohibit their flagged vessels from setting a purse seine on a school of tuna associated with a whale shark if the animal is sighted prior to the commencement of the set.
(2) CCMs shall prohibit vessels flying their flag and vessels under charter arrangements to the CCM from retaining on board, transshipping, or landing any whale shark caught in the Convention Area, in whole or in part, in the fisheries covered by the Convention.
(3) For fishing activities in Parties to Nauru Agreement (PNA) exclusive economic zones, the prohibition in paragraph (1) shall be implemented in accordance with the Third Arrangement implementing the Nauru Agreement as amended on 11 September 2010.
(4) Notwithstanding sub-paragraph (1) above, for fishing activities in exclusive economic zones of CCMs north of 30 N, CCMs shall implement either this measure or compatible measures consistent with the obligations under this measure. When CCMs apply compatible measures, the CCMs shall annually provide to the Commission, in their Part 2 Annual Report, a description of the measure.
(5) CCMs shall require that, in the event that a whale shark is incidentally encircled in the purse seine net, the master of the vessel shall:
    (a) ensure that all reasonable steps are taken to ensure its safe release.; and
    (b) report the incident to the relevant authority of the flag State, including the number of individuals, details of how and why the encirclement happened, where it occurred, steps taken to ensure safe release, and an assessment of the life status of the whale shark on release.

(6) In taking steps to ensure the safe release of the whale shark as required under sub-paragraph (5)(a) above, CCMs shall encourage the master of the vessel to follow the WCPFC Guidelines for the Safe Release of Encircled Whale Sharks (WCPFC Key Document SC-10)2.
(7) In applying steps under sub-paragraphs (1), (5)(a) and (6), the safety of the crew shall remain paramount.
(8) The Secretariat shall report on the implementation of this paragraph on the basis of observer reports, as part of the Annual Report on the Regional Observer Programme.

ANNEX 1B: CONSERVATION AND MANAGEMENT MEASURE ON MOBULID RAYS CAUGHT IN ASSOCIATION WITH FISHERIES IN THE WCPFC CONVENTION AREA

Conservation and Management Measure 2019-05

Annex 1

BEST HANDLING PRACTICES FOR THE SAFE RELEASE OF MANTAS & MOBULIDS

Purse Seine

Do's:

- Release rays while they are still free-swimming whenever possible (e.g., back down procedure, submerging corks, cutting net).
- It is preferable that larger rays (>60 kg), that are too large to be lifted safely by hand are brailed out of the net and released using a purpose built large-mesh cargo net or canvas sling or similar device as recommended in document SC08-EB-IP-12 (Poisson et al. 2012, Good practices to reduce the mortality of sharks and rays caught incidentally by the tropical tuna purse seiners). It is preferable that release nets or devices are prepared prior to each set.
- It is preferable that small (<30 kg) and medium rays (30-60 kg) are handled by 2 or 3 people and carried by the sides of its wings or preferably using a purpose-built cradle/stretcher while ensuring the safety of the crew.
- When entangled in netting, carefully cut the net away from the animal and release to the sea as quickly as possible while ensuring the safety of the crew.

Don'ts:

- Do not leave a ray on deck until hauling is finished before returning it to the sea.
- Do not punch holes through the bodies of rays (e.g., to pass a cable or line through for lifting the ray).
- Do not gaff, drag, carry, lift or pull a ray by its "cephalic lobes" or tail or by inserting hooks or hands into the gill slits or the spiracles.

Longline

Do's:

- For small rays, gently bring on board and remove as much gear as possible by backing the hook out.
- If hooks are embedded, either cut the hook with bolt cutters or cut the line at the hook and gently return the animal to the sea.
- For medium to large rays (>30 kg), leave the animal in the water and use a dehooker to remove the hook or a long-handled line cutter to cut the gear as close to the hook as possible (ideally leaving <0.5 meters of line attached to the animal).

Don'ts:

- Do not hit or slam a ray against any surface to remove the animal from the line.
- Do not attempt to dislodge a deeply hooked or ingested hook by pulling on the branch line or using a dehooker.

- Do not attempt to lift medium to large (>30 kg) rays aboard vessel.
- Do not cut the tail.
- Do not gaff, drag, carry, lift or pull a ray by its "cephalic lobes" or tail or by inserting hooks or hands into the gill slits or the spiracles.

Additional recommendation:

- Knowing that any fishing operation may catch rays, several tools can be prepared in advance (e.g., canvas or net slings or stretchers for carrying or lifting, large mesh net or grid to cover

ANNEX 2: CONVENTION ON INTERNATIONAL TRADE IN ENDANGERED SPECIES OF WILD FAUNA AND FLORA

Appendices I, II and III
valid from 12 January 2023

CLASS ELASMOBRANCHII (SHARKS)	Appendices		
	I	II	III
CARCHARHINIFORMES			
Carcharhinidae Requiem sharks		Carcharhinidae spp.* *Carcharhinus longimanus* (Oceanic whitetip shark) *C. falciformis* (silky shark) *C. amblyrhynchos* (grey reef shark) *C. obscurus* (dusky shark) *C. porosus* (smalltail shark) *Glyphis gangeticus* (Ganges shark) *C. plumbeus* (sandbar shark) *C. borneensis* (Borneo shark) *C. hemiodon* (Pondicherry shark) *C. leiodon* (smoothtooth blacktip shark) *Negaprion acutidens* (sharptooth lemon shark) *C. perezi* (Caribbean reef	

		shark) *Isogomphodon oxyrhynchus* (daggernose shark) *C. signatus* (night shark) *Nasolamia velox* (whitenose shark) *C. acronotus* (blacknose shark) *C. dussumieri* (whitecheek shark) *C. obsoletus* (lost shark) *C. cerdale* (Pacific smalltail shark) *Lamiopsis tephrodes* (Borneo broadfin shark) *Lamiopsis temminckii* (broadfin shark) Genus *Carcharhinus* Genus *Isogomphodon* Genus *Loxodon* Genus *Nasolamia* Genus *Lamiopsis* Genus *Negaprion* Genus *Prionace* Genus *Rhizoprionodon* Genus *Scoliodon* Genus *Triaenodon* Any other putative species of family Carcharhinidae *Entry into effect delayed by 12 months, i.e.	

		until 25 November 2023	
Sphyrnidae Hammerhead sharks		Sphyrnidae spp.* *Sphyrna lewini* (Scalloped hammerhead) *Sphyrna mokarran* (Great hammerhead shark) *Sphyrna zygaena* (Smooth hammerhead shark) *Sphyrna tiburo* (the bonnethead shark) *Sphyrna media* (Scoophead) *Sphyrna tudes* (Smalleye hammerhead) *Sphyrna corona* (Scalloped bonnethead) *Sphyrna gilberti* (Carolina hammerhead) *Eusphyra blochii* (Winghead shark) Any other yet to be identified species of the Family Sphyrnidae *Entry into effect 23 February 2023	
LAMNIFORMES			
Alopiidae Thresher sharks		*Alopias* spp. *Alopias superciliosus* (bigeye thresher shark) *A. vulpinus* (Common	

		thresher) *A. pelagicus* (pelagic thresher)	
Cetorhinidae Basking sharks		*Cetorhinus maximus* (Basking shark)	
Lamnidae Mackerel sharks		*Carcharodon carcharias* (Great white shark) *Isurus oxyrinchus* (Shortfin mako shark) *Isurus paucus* (Longfin mako shark) *Lamna nasus* (Porbeagle shark)	
MYLIOBATIFORMES			
Myliobatidae Eagle and mobulid rays		Manta spp. Mobula spp.	
Potamotrygonidae Freshwater stingrays		*Potamotrygon albimaculata** *Potamotrygon henlei** *Potamotrygon jabuti** *Potamotrygon leopoldi** *Potamotrygon marquesi** *Potamotrygon signata** *Potamotrygon wallacei** *Entry into effect 23 February 2023	*Paratrygon aiereba* (Colombia) *Potamotrygon* spp. (population of Brazil) (Brazil) *Potamotrygon constellata* (Colombia) *Potamotrygon magdalenae* (Colombia) *Potamotrygon motoro* (Colombia) *Potamotrygon orbignyi* (Colombia) *Potamotrygon schroederi* (Colombia) *Potamotrygon scobina* (Colombia) *Potamotrygon yepezi* (Colombia)

ORECTOLOBIFORMES			
Rhincodontidae Whale sharks		*Rhincodon typus* (Whale shark)	
PRISTIFORMES			
Pristidae Sawfishes	*Pristidae* spp.		
RHINOPRISTIFORMES			
Glaucostegidae Guitarfishes		Glaucostegus spp.	
Rhinidae Wedgefishes		Rhinidae spp.	
Rhinobatidae Guitarfishes		Rhinobatidae spp.* *Acroteriobatus andysabini* (Malagasy blue-spotted guitarfish) *Acroteriobatus annulatus* (Lesser Sandshark; Lesser Guitarfish) *Acroteriobatus blochii* (Bluntnose guitarfish) *Acroteriobatus leucospilus* (Grayspottted guitarfish) *Acroteriobatus ocellatus* (Speckled Guitarfish)	

		Acroteriobatus omanensis (Oman guitarfish) *Acroteriobatus salalah* (Salalah guitarfish) *Acroteriobatus stehmanni* (Socotra blue-spotted guitarfish) *Acroteriobatus variegatus* (Stripenose guitarfish) *Acroteriobatus zanzibarensis* (Zanzibar guitarfish) *Pseudobatos buthi* *Pseudobatos glaucostigma* (Speckled guitarfish) *Pseudobatos horkelii* (Brazilian guitarfish) *Pseudobatos lentiginosus* (Atlantic guitarfish) *Pseudobatos leucorhynchus* (Whitesnout guitarfish) *Pseudobatos percellens* (Chola guitarfish) *Pseudobatos planiceps* (Pacific guitarfish) *Pseudobatos prahli* (Gorgona guitarfish) *Pseudobatos productus*(Shovelnose guitarfish)	

		Rhinobatos albomaculatus (Whitespotted guitarfish) *Rhinobatos annandalei* (Annandale's guitarfish) *Rhinobatos austini* (Austin's guitarfish) *Rhinobatos borneensis* (Borneo guitarfish) *Rhinobatos holcorhynchus* (Slender guitarfish) *Rhinobatos hynnicephalus* (Angel fish; Ringed guitarfish) *Rhinobatos irvinei* (Spineback guitarfish) *Rhinobatos jimbaranensis* (Jimbaran shovelnose ray) *Rhinobatos lionotus* (Smoothback guitarfish) *Rhinobatos manai* (Papuan guitarfish) *Rhinobatos nudidorsalis* *Rhinobatos penggali* (Indonesian shovelnose ray) *Rhinobatos punctifer* (Spotted guitarfish) *Rhinobatos ranongensis* (Ranong guitarfish) *Rhinobatos rhinobatos* (Common guitarfish)	

		Rhinobatos sainsburyi (Goldeneye shovelnose) *Rhinobatos schlegelii* (Brown guitarfish) *Rhinobatos whitei* (Philippine guitarfish) *Entry into effect 23 February 2023	

ANNEX 3: CONSERVATION STATUS AND FREQUENCY OF BYCATCH OF SHARKS TAKEN IN THE COMMERCIAL LONGLINE FISHERY WITHIN TONGA'S EEZ.

Frequency	SPECIES	Scientific name	WCPFC KEY SPECIES	IUCN Listing	CITES	CMS App.1	CMS App.2
Highest Incidence (>25% of sets)	BLUE SHARK	***Prionace glauca***	•	Near Threatened	•II		•II
	SILKY SHARK	***Carcharhinus falciformis***	•	Vulnerable	•II		•II
	PELAGIC STINGRAY	***Pteroplatytrygon violacea***		Least concern			
Low Incidence (2.5-10% of sets)	OCEANIC WHITETIP SHARK	***Carcharhinus longimanus***	•	Critically endangered	•II	•I	
	SHORT FINNED MAKO	***Isurus oxytrinchus***	•	Endangered	•II		•II
	LONG FINNED MAKO	***Isurus paucus***	•	Endangered	•II		•II
Rare Indicence (1-2.5% of sets)	BRONZE WHALER SHARK	***Carcharhinus brachyurus***		Vulnerable	•II		
	BIGEYE THRESHER	***Alopias superciliosus***	•	Vulnerable	•II		•II
	PELAGIC THRESHER	***Alopias pelagicus***	•	Endangered	•II		•II
	GREAT HAMMERHEAD	***Sphyrna mokarran***	•	Critically endangered	•II		•II