



Shark fishing in Mozambique

*A preliminary assessment of
artisanal fisheries*

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EXECUTIVE SUMMARY

- The Mozambique coastline extends 2, 770 km along the southeastern edge of the African continent. The total EEZ size is 562.000 km². The fisheries sector is an important source of employment, income and food to the country.
- Around 122 species of sharks, skates and rays are found within Mozambican waters. Little research has been conducted on this group within Southern Africa. The increasing market value of fin fisheries for this group worldwide has probably resulted in increased targeting of these fish.
- Industrialised, semi-industrialised and artisanal fisheries all operate within Mozambican waters. The main industrialised fisheries target prawn in coastal waters and tuna offshore. A substantial bycatch of sharks may be taken in the tuna fishery. Most fishing takes place at the artisanal and subsistence level, with around 83% of fishers involved in this sector.
- An extensive coastline and lack of enforcement capability have resulted in Mozambique being subject to major illegal and unreported fisheries, particularly offshore. Vessels are known to target sharks and shark-like rays for their fins.
- The high dispersion of monitoring centres and lack of human and financial resources has meant that assessment of artisanal fisheries within the country is lacking. Official government figures are known to underestimate total catch.
- No data on artisanal shark fisheries in northern Mozambique (categorised as Cabo Delgado south to Sofala provinces) was available for this report.
- Shark fisheries primarily target fins, which are bought directly or indirectly by Chinese buyers. The export of these fins is likely to be illegal at the time of writing.
- The ~ 85 km length of coastline between Morrumbene and Pomene appears to have the most concentrated artisanal shark fisheries in southern Mozambique (Inhambane to Maputo provinces), though the entire area from the Bazaruto Archipelago south to around Zavora is subject to relatively high fishing pressure. Bottom-set longlines may be the most commonly used gear. A range of elasmobranch species are taken within these fisheries. Carcharhinid sharks and *Rhynchobatus* guitarfish seem to be a major target.
- The artisanal shark fishery in Mozambique is larger than official estimates would suggest, and is probably still increasing in its size and sophistication.

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1. INTRODUCTION & METHODS

Mozambique extends 2,770 km along the Indian Ocean coast from 10°20' (the Rovuma River mouth on the Tanzania border) to 26°50' south (Ponta do Ouro on the South African border). The coastline is characterized by a wide diversity of habitats, including sandy beaches, coral reefs, estuary systems, bays, mangroves and seagrass beds. The Mozambique Channel, 400 km wide at its narrowest point, separates Mozambique from the island of Madagascar. The continental shelf averages 15 to 25 km in width, varying from as narrow as 100 m (off Pemba in northern Mozambique) to as wide as 145 km (Sofala Bank). The Mozambican Exclusive Economic Zone, which extends to 200 nautical miles offshore, covers an area of 562,000 km².

The fisheries sector in Mozambique is an important source of both food and employment. The production of marine fisheries is estimated at between 100, 000 and 120, 000 tonnes per year (Afonso 2006), contributing approximately US\$115 million to the economy (8% of GDP) (Kelleher 2002). Over two-thirds of the population lives within 150 km of the coast, and around 45% of protein intake per capita is estimated to come from fish (of which 83% is marine in origin) (Lopes 2001, FAO 2006). Fish consumption is estimated at 2.5 kg/yr per capita (MRAG 2005). The fisheries industries provide direct employment for between 50,000 (FAO 2006) and 90 000 people, excluding those involved in trading and processing (Afonso 2006). Ninety percent of these people are artisanal fishermen, or those associated with the artisanal fisheries handling and distribution activities. Between 226,820 and 480,000 people are economically dependent on the sector (Kelleher 2002, FAO 2006).

Subequatorial African waters are a centre of diversity for sharks, rays and skates (the elasmobranch fishes), and contain a large endemic fauna. The rapid development of fisheries in the region, coupled with a lack of effective regulation, have the potential to severely impact on the elasmobranch species in this region (Fowler et al. 2005). Mozambican waters contain approximately 122 elasmobranch species ranging from deep-water skates to the whale shark (*Rhincodon typus*), the largest fish in the world (Appendix One). Around 20% of these species are internationally listed as threatened species on the IUCN Red List of Threatened Species, including several that are likely to be caught in fisheries and some, such as the freshwater and euryhaline sawfish, that are Critically Endangered on a global level. Sharks and rays are also important to burgeoning marine tourism industries in Inhambane Province and around Ponta do Ouro. Little research on elasmobranchs has been conducted within Mozambique (Bandeira et al. 2002), and information on their contribution to fisheries is scarce. However, it has become evident that several species are being increasingly targeted by directed fisheries due to the high value of shark fins in eastern Asia. Reported landings are believed to be a substantial underestimate of actual catches.

This draft report aims to summarise the data available on shark fisheries within the Mozambican Exclusive Economic Zone (EEZ). Data from published reports and reviews have been summarised, and readers should consult these publications for specific information and references to primary literature. Anecdotal and observational data from multiple sources have been collated to update these reports where possible. In general, there is a lack of recent data on elasmobranch fisheries in Mozambique, and the decentralised nature of marine fisheries makes it difficult to provide an accurate assessment of the issues surrounding shark-fishing. Figures and extrapolations within this section should therefore be interpreted cautiously, as the increasing value of shark fins in recent years is likely to have dramatically increased catch rates in some regions. It is hoped that this preliminary report will provide a framework for the addition of

further information from government departments and stakeholders, stimulating further research, assessment and legislative action on the issues raised.

2. AN OVERVIEW OF MOZAMBICAN MARINE FISHERIES

Mozambique has three main types of fisheries: industrial fisheries, semi-industrial, and artisanal. The industrial fisheries comprise 186 vessels, 90 of which are used in the tuna fisheries, and are dominated by State joint-venture companies. The major products include shallow- and deep-water prawn, lobster, fish and some tuna, most of which are exported. The industrial fleets are principally based in the central and northern ports of Beira and Quelimane (Afonso 2006). The tuna fleets follow tuna on their migration through the EEZ of Mozambique, either along the coast or offshore according to temperature zones and local current patterns. A lack of inspection platforms means that the offshore tuna fishery is currently virtually uncontrolled (MRAG 2005).

The semi-industrial fisheries comprise 97 vessels under 20 m in length whose ownership is generally national. These vessels are mostly ice carriers, with limited capacity to store and process fish products. Thus, they generally make short trips and stay close to the coast. The main products are shallow water prawn and demersal fish. The major ports are Beira and Maputo. Target markets include national markets and regional export markets, principally South Africa. The total annual production of the industrial and semi-industrial sectors was estimated at 19 524 tonnes in 2003. Shallow water prawn contributed 39% of the total value of industrial fisheries. Other important products were tuna (38%), deep prawn (7%) and fish (5%). As control on the tuna fisheries is limited, the Government considers the shallow-water prawn, deep-water prawn and fish the most important resources captured in industrial fisheries (Afonso 2006).

The majority of fishing in Mozambique operates at the subsistence and artisanal level (van der Elst et al. 2005). Around 83% of fishers are involved in this sector (van der Elst et al. 2005), landing at least 75% of Mozambican landings (FAO 2006), utilising an estimated 15, 269 artisanal boats (Afonso 2006). These vessels provide employment for around 58, 000 fishers, plus a further 1, 468 fishers without vessels operate from the shoreline. Artisanal fisheries are confined to near coastal areas and use diverse fishing gears including beach seines, hand lines, gillnets, traps, spears, and manual extraction. The main products are fish and prawn, but large capture levels of crab, lobster, bivalves, sea cucumber, sea shells, squid, and sharks are made in certain areas. Informal traders dominate the trade of these products. Processing usually involves smoking or sun drying but a small portion is sold fresh in cities or villages. Prices vary considerably by site, and they may increase two to three times in the urban markets (Afonso 2006).

Most small-scale fisheries within the western Indian Ocean are considered to be fully- or overexploited, especially where they are found close to centres of population. Over the last ten years, the number of underexploited fisheries in the coastal zone has tended to decline and such fisheries are now an exception. This change is due to the high density and low mobility of the artisanal and traditional fleets (FAO 2006). The high dispersion of fishing monitoring centres along the coast, lack of human and financial resources, and lack of a clear definition of responsibilities inside the fishing sector in Mozambique have made the total annual catch for the country difficult to estimate (van der Elst et al. 2005). Official catch values for this subsector were known to be under-estimated, and until national fishery statistics more accurately reflect the landing of artisanal and other small-scale fisheries, the absolute quantities landed will remain uncertain (van der Elst et al. 2005). Probability-based survey techniques for estimating catch and effort of artisanal fisheries have been developed more recently, and were used to estimate an

annual production of 67, 070 tonnes in beach seine, gillnet and handline fisheries in 2003 (Afonso 2006).

The extensive coastline and lack of infrastructure makes Mozambique a target for illegal, unreported and unregulated (IUU) fishing (Lopes 2001). The IUU fishing industry is estimated to be around 18% of the size of the legal fishery, costing Mozambique around US\$38 million per year (MRAG 2005). IUU fishing usually contributes to unsustainable impacts on both target species and the ecosystem, reducing productivity, biodiversity and ecosystem resilience (MRAG, 2005). This in turn is likely to lead to a reduction in food security for artisanal fishers. The elimination of IUU fishing would potentially increase fish consumption 0.44 kg/yr per capita and boost GNP by 0.67% (MRAG 2005). Generally speaking, the best law enforcement in western Indian Ocean countries is applied to industrial fisheries that are compelled to use port facilities, and are thus more readily checked, while the artisanal fisheries spread along the extensive coastline received little or no enforcement (van der Elst et al. 2005).

INSHORE & ARTISANAL SHARK FISHERIES

There is little published data on shark catches within the industrialised or semi-industrialised fisheries of Mozambique. The Food and Agriculture Organisation of the United Nations (FAO) is responsible for compiling international fishery catch statistics, but relies on the voluntary reporting of national catch statistics. Within the period 1985-2000 shark catches were only reported from 1995 (165 mt) and 1996 (21 mt) (Fowler et al. 2005), though Mozambique did export 2,894 kg dry weight of fins to Hong Kong in 2000 (IUCN/TRAFFIC 2002). Seventy-eight tonnes of shark products, probably comprising mostly meat, were exported from Mozambique to EU countries in 1998. Fins were exported to Singapore, and possibly other countries (Vannuccini 1999). Commercially important shark species were reported to include the snaggletooth shark (*Hemipristis elongata*), spinner shark (*Carcharhinus brevipinna*), great hammerhead (*Sphyrna mokarran*) and sandbar shark (*C. plumbeus*) (Vannuccini 1999). The prawn trawling industry almost certainly produced a large bycatch of demersal sharks and rays (Gove et al. 2001), with approximately 1,500 metric tons of elasmobranch fishes caught as a prawn fishery bycatch in 1994 (CITES 1997). The main elasmobranch group accidentally caught in this fishery prior to the introduction of turtle excluder devices (TEDs) were *Rhinobatos* spp. (Gove et al. 2001). The introduction of TEDs into this fishery may have substantially reduced elasmobranch bycatch (Gove et al. 2001). Projects aimed to develop the artisanal shark fishery in Mozambique were conducted with FAO support in the 1980s, providing training in fishing methods with a particular focus on longline techniques (Fowler et al. 2005).

Little specific data on the Mozambican artisanal shark fishery is available. Shark fishing has been reported in artisanal fisheries around the Sofala Banks (FAO 1990), the Quirimbas Archipelago in northern Mozambique (Johnstone 2004) and from Vamizi Island, near Palma in northern Mozambique, where shark/ ray meat was worth US\$0.16 per kg whereas shark fins (mapenzi) were worth (US\$56-133) per kg (Hill 2005). A 1994 estimate suggested that approximately 1,800 metric tons of sharks were caught in directed artisanal gillnet fisheries, with *H. elongata* and the spinner shark *C. brevipinna* caught by recreational sport fishers around Bazaruto Island (CITES 1997). Long-term data from the bather-protection nets set to catch sharks off swimming beaches along the KwaZulu-Natal coast of South Africa has shown a declining trend in catches of Zambezi (bull) sharks *C. leucas*, blacktip sharks *C. limbatus*, scalloped hammerheads *Sphyrna lewini* and great hammerheads *S. mokarran* over the period 1978-2003 (Dudley and Simpfendorfer 2006). Blacktip sharks, pignose sharks *C. amboinensis* and great white sharks

Carcharodon carcharias have also declined in the mean lengths of catches over the same period (Dudley and Simpfendorfer 2006). Blacktip shark nursery grounds are thought to lie off Mozambique where they are caught in artisanal fisheries in inshore waters along the length of the coastline (Dudley and Simpfendorfer 2006). This fishery may also affect other coastal species, such as *C. amboinensis*, *C. brevipinna* and *S. lewini* (Dudley and Simpfendorfer 2006). There is also an IUU component to the inshore shark fishery, with long-lining vessels reportedly operating within the Bazaruto Archipelago National Park (Peterson 2003).

Artisanal fishers are mostly restricted to nearshore waters, i.e. behind barrier reefs and in sheltered bays and lagoons. These may well be shark nursery areas. The impact of artisanal fisheries on specialized elasmobranchs, such as sawfish (Pristidae), is largely undocumented but probably significant. The number of chondrichthyan species caught by the artisanal fishery is large. At least 16 species are caught in Madagascar and 12 species in Tanzania, ranging from large coastal sharks such as tiger sharks (*Galeocerdo cuvier*), to white-spotted eagle rays (*Aetobatus narinari*) (Kroese and Sauer 1998). Large white-spotted guitarfish (*Rhynchobatus djiddensis*) are increasingly being targeted for their fins by artisanal fisherman in southern and central Mozambique (Dudley 2005). Overall, the number of elasmobranchs landed by the artisanal sector is at best an educated guess. An annual catch of around 1500 t was estimated for this sector in Mozambique by Kroese and Sauer (1998).

Much of the information within the Kroese & Sauer (1998) review on artisanal shark fisheries in Africa remains relevant to Mozambique. This sector is a multispecies, multigear fishery. Sail- or oar-powered vessels are commonly used. Gill-nets are the preferred gear in most countries, because of the by-catch of teleosts, turtles, and marine mammals, but longlines are also used in most countries in addition to fish corrals, fish traps, beach-seines and handlines. Sharks are considered a valuable addition to the normal landings. Although the meat is utilized, sharks are often targeted largely for their fins, which can easily be dried and stored (Kroese and Sauer 1998). Kroese & Sauer (1998) reported that as many as 50% of elasmobranchs caught in Africa are not landed and are consequently not recorded in official landing statistics. The artisanal fisheries also add a substantial component to the unreported catch. The cause of under-reporting is most likely due to a combination of lack of the necessary infrastructure and the fact that developing countries in Africa perceive elasmobranchs as an under-exploited resource, and usually not caught in sufficient numbers to warrant increased attention. However, the increasingly high value and demand for shark fins over recent years may ensure that few sharks are released alive from fisheries at the time of writing.

OFFSHORE SHARK FISHERIES

Offshore fisheries in Mozambique target tuna, swordfish, marlin and shark. Major problems with compliance exist in this fishery, as the lack of surveillance and enforcement vessels results in little effective regulation. Entry and departure from the EEZ is unregulated even for foreign vessels (Kelleher 2002). These factors have led to the tuna fishing fleet regularly conducting IUU fishing operations. A commonly found infringement of the tuna fleets, particularly longliners, is to fish outside the terms of their license. Most commonly this is in relation to shark, where increasing demand has meant that longliners with licenses for tuna start targeting shark either whole or for their fins. In extreme case the vessels may completely switch gear and there are examples in Mozambique of longliners seen fishing with gill nets for shark and running the risk of taking large amounts of turtle as bycatch. This process has actually been photographed, as have the numbers of shark fins hung out to dry on such boats (Kelleher 2002; MRAG 2005).

It has been reported that high numbers of shark have been caught by illegal longliners within Mozambican waters. A legitimate bycatch of shark, up to 20% of total catch, is allowed in directed tuna fisheries. However, under normal tuna fishing conditions (i.e. not targeting shark), only around 3% of catch by numbers are shark (MRAG 2005). The level of under-reporting in the longline fleet is unclear. A catch of 1500 t was estimated for the foreign fishing fleet operating under permit in South African waters in 1994, derived from the total number of fishing days and an average number of hooks set per day. The fleet reported a catch of only 200 t for the same period. Therefore, it can be assumed that 1300 t of sharks were either not reported or discarded (Kroese and Sauer 1998). One vessel fishing from October 2004 to January 2005 caught 60 metric tons of sharks (IOTC 2005), and apprehended IUU vessels have contained between 20-30 and 70 tonnes of shark according to news reports.

A 2005 report estimated that 120 fishing vessels, owned and operated by fishers of Taiwan Province of China (TPC), were operating shark-fin fisheries offshore from Africa and the Middle East in the Western Indian Ocean. The number of vessels was expected to expand to 150-200 at the cessation of the tuna fishing season around Taiwan. This fleet is reported to fish offshore from Mozambique, Tanzania and Madagascar year-round, occasionally fishing within three or four miles of the coastline (IOTC 2005). These areas are not covered by sufficient surveillance by coastal countries, and the vessels are poaching well into territorial waters (Dudley 2005). In Mozambique, these activities take place particularly in the region of Cabo Delgado (Palma and Mocímboa da Praia), Inhambane (in the Bazaruto area) and Nampula (Angoche and Mussoril) (Lopes 2001). The main target shark species of these vessels are hammerhead sharks (*Sphyrna* spp.) and guitarfish (*R. djiddensis*) which have large fins with the highest market value. Other species of sharks are also caught. Shark meats other than fins are discarded in the ocean, whereas fins are offloaded to freezer carriers and transported to China or TPC to be dried and processed for market sale in markets in China, TPC or Hong Kong (IOTC 2005). Recent arrests of foreign vessels illegally fishing off Mozambique have confirmed large catches of *R. djiddensis* (Dudley 2005).

Longline fisheries have almost certainly had a significant impact on elasmobranchs. Catch rates were 26 sharks per 1000 hooks at the inception of tuna longline fisheries in southern Africa in 1964–67, but reported catches for the same area have declined to 2.1 sharks per 1000 hooks (Kroese and Sauer 1998). The species caught in offshore Mozambique waters by Taiwanese vessels include silvertip shark (*C. albimarginatus*), oceanic whitetip shark (*C. longimanus*), hammerheads (*Sphyrna* spp.) and thresher sharks (*Alopias* spp.) (CITES 1997).

3. INSHORE SHARK FISHERIES: CURRENT STATUS

Mozambique's coastal provinces, from north to south, are Cabo Delgado, Nampula, Zambezia, Sofala, Inhambane, Gaza and Maputo. No data was sourced from northern Mozambique (categorised as Cabo Delgado south to Sofala provinces). Anecdotal and observational data was collated from southern Mozambique (Inhambane to Maputo provinces).

NORTHERN MOZAMBIQUE

No data available.

SOUTHERN MOZAMBIQUE

Some data is available for this region, taken mainly through informal interviews with fishers and supplemented by personal observations and reports from interested parties. Much of the data remains unverified, though in several cases the information recorded here has been corroborated by multiple sources. Although the localities mentioned in the text are discussed geographically, from north to south, it is interesting to note that a coastal aerial survey with scientific observers aboard undertaken for unrelated purposes in February 2007 from the southern Mozambican border north to the southern end of the Bazaruto Archipelago noted that the highest concentration of buoys (assumed to be markers for long-lines, which are generally set to target sharks and shark-like fishes) lay between the coast adjacent to Morrumbene and Pomene, indicating that this area of Inhambane province may be the hotspot for shark fishing within the surveyed area.

One or more Chinese nationals are buying shark fins within Vilanculos from the local population and illegally exporting them from Mozambique. Mozambican customs officials have stated that no license has been applied for, nor granted, for the export of shark fins. Two possible routes for export that have been identified are (1) transport south to Maputo, whereupon fins are smuggled out from the port adjacent to the main fishing harbour (but not through the fishing harbour itself); and (2) the occasional use of a vessel outside the Bazaruto Archipelago, where which fins are supplied to this vessel directly from Vilanculos through unknown means.

The buyers based in Vilanculos are a trading centre for fins obtained at least as far north as Inhassoro, where an active shark-fishery has been reported to exist in 2007, and as far south as Morrumbene, with Pomene and Chidenguele also within this region. From early 2007, local Mozambicans have set up a camp north of Vilanculos to receive fresh shark fins and dry them, after which they are delivered via motorcycle to the Chinese house in Vilanculos itself. This is apparently a response to pressure on the buyers from EOTH representatives. Fins are stored within a house in Vilanculos and protected by a very aggressive baboon.

The local community in Pomene forced shark fishers to leave the area in 2003. Up until that time Chinese nationals visited the area to buy fins. The shark fishery began again in late 2004, when Mozambicans from Vilanculos & Inhambane began fishing in the area. Resentment built towards these fishers due to their lack of consultation with tribal heads and disregard for tribal laws, and the local community forced these fishers to leave as well. More recently the fishery has re-started

once again, with the tacit support of local political figures (though it remains unsupported by tribal leaders). Fins are delivered to buyers in Vilanculos by the fishers themselves.

A locally-based stakeholder has observed up to around 25 sharks caught per day at Pomene, while the average daily catch of the five boats in operation is between 10 and 20 sharks. The species composition of this catch is mixed and largely indiscriminate, and includes grey reef, white-tipped reef, tiger and Zambezi (bull) sharks. Bottom-dwelling species such as nurse sharks, guitarfish and other rays are caught using baits, along with other large teleost species such as potato and brindle bass (both of which are protected species). These activities are thought to have had a marked effect on the local marine environment, with noted declines in the number of sharks seen while spearfishing and scuba diving. A recent visit to the area by EOTH representatives noted a catch of 12 sharks and one large stingray during October 2007. Catch composition included six hammerhead sharks, one large guitarfish, three Zambezi sharks, one leopard shark (*Stegostoma fasciatum*), one grey reef shark (*C. amblyrhynchos*) and a large whiptail ray. Fins were removed on the beach, washed, then air-dried in the centre of Pomene village. Interviews with fishers found that fins are transported to either Vilanculos or Maputo to sale to foreign nationals, with prices varying from approximately 1000-3000 Mt depending on fin quality. Some meat was given to the local community by the fishers, or was otherwise sold for around 15 Mt per kilo. Shark jaws were sold as curios for tourists, with around 40 jaws up for sale at the time of observation. The shark fishers were from surrounding cities (including Morrumbene and Massinga) rather than Pomene itself.

A scientific observer noted general details of a coastal shark-fishing camp located slightly north of Morrumbene on a short visit to the area. Fishers reported that they caught, on average, 10-20 sharks a day using longlines with an eight-hour soak time. Generally lines are set around 5 am most days, and shark fins are reportedly sold for SAR1000 per kg. At least seven species were caught during two days of observation including guitarfish, devil rays (*Mobula* spp.) and tiger, sandbar, blacktip, scalloped hammerhead and bull sharks. A translator suggested that shark-fishers here were not local to the area.

Sharks are caught by fishers based at Barra Point, south of Inhambane Harbour, and also Tofo Beach. There are 26 small oar-powered boats at Tofo Beach and several full-time spear-fishers. Until December 2005 sharks and rays longlines were regularly set around inshore reefs. Anecdotal reports suggest that this fishing had a significant impact on the local white-spotted guitarfish (*Rhynchobatus djiddensis*) (many specimens observed caught by locally-based marine scientists were mature females) and bow-mouth guitarfish (*Rhina ancylostoma*) populations, with numbers of these species reduced to very low levels on reefs where they were abundant before long-line fisheries began locally in the early 2000's. An operation between EOTH representatives and local government officials at that time confiscated seven of these (illegally-set) longlines which temporarily shut down the shark fishery.

Sharks and rays are still being regularly caught from Tofo Beach, generally as a bycatch of artisanal fisheries targeting pelagic teleost species using rod and line. Though many local fishers still own longlines, these are not generally set year-round. Shark fishing is seasonal and is thought to relate to sea surface temperature which affects the sharks' position in the water column. When temperatures decrease sharks come to the surface more readily and hence are easier to catch using long lines. August was suggested as the optimum time by two fishermen. Another spear-fisher reported that many local fishers own long-lines, but that they are only normally used between September and November, the main shark season. There are apparently four active shark fishers in Tofo. They do not utilize boats, but swim out from the headlands to set longlines with around 20 hooks to be retrieved the next day. One owner controls most of the fishing boats launched

from Tofo. There is one main fin-buyer in Inhambane town who buys stock from Barra and Tofo in the north to Guinjata, Jangamo and Zavora in the south. There is also at least one smaller-scale buyer based in Maxixe. Fins may also be sold directly to buyers in Maputo on occasion. A spear-fisher reported that fins are worth between 6-7000 MT per kilo, with sharks and guitarfish being the target species. Fins are apparently sold-on to Chinese buyers in Maputo.

Mixed elasmobranch species are caught from Tofo Beach, with manta rays (*Manta birostris*), devil rays (*Mobula* spp.), whiprays (*Himantura* spp.), stingrays (*Dasyatis* spp.) white-spotted eagle rays (*Aetobatus narinari*) and leopard sharks (*Stegostoma fasciatum*) caught mainly by spear-fishers, and line-fishers catching whaler sharks (*Carcharhinus* spp.), hammerhead sharks (*Sphyrna* pp.), tiger sharks (*Galeocerdo cuvier*) and guitarfish. Several large rays and sharks are caught during normal fishing activities each week. Data collected on whale sharks from the region has also shown that around 5% of the total population is either entangled in gill-nets or shows some evidence of escape from previous entanglement, indicating that this species may also be affected by coastal net fisheries.

A target fishery for manta rays, catching approximately 1-2 rays per week for their meat, existed near Praia de Rocha until early 2007. Slightly further south, at least 4 fishing camps have been identified where sharks and rays are landed on a regular basis along the 30 km stretch of coast between Coconut Bay and Legogo Bay. Fishers are using rod and line, spearguns, and gill nets. Irregular monitoring by a scientific observer over a two-year period revealed catches comprised mainly of guitarfish, *Mobula* rays, *Himantura* whiprays, white-spotted eagle rays and stingrays. Manta rays are occasionally caught during the summer months when this species seems to come inshore and is often at the surface. It is estimated that 25-30 individuals of *M. birostris* are landed each year from this stretch of coastline. The meat is consumed but little else is used and often the carcass and the entrails are left on the beach and taken by the rising tide. The fins of sharks and guitarfish are also immediately severed and transported to Inhambane or Maxixe for sale. The trunks are processed quite quickly on the beach and transported in plastic buckets over the dunes to local villages where the meat is distributed and sold.

4. FISHERIES LEGISLATION

The following information about maritime protection, fishing laws and the role of the public sector in Mozambique was collected from the 2nd edition of the “Colectanea de Legislação do Ambiente”, edited by Carlos Serra and the Ministerio de Justicia in 2006. The fishery laws of Mozambique are complex, and only passages that are particularly relevant to the shark fishery have been chosen for illustrative purposes. The Mozambican legislation is written in Portuguese, and has been translated to English for this report.

Table 1: Protected marine species in Mozambican sport fisheries¹

Peixes (Nome Local)	Fishes (English name)	Scientific Name
Garoupa lanceolatus	Brindle bass	<i>Epinephelus lanceolatus</i>
Dentuco Manchado	Seventy –four	<i>Polysteganus undulosus</i>
Garoupa Batata	Potato bass	<i>Epinephelus tukula</i>
Pargo vermelho	Red steen bras	<i>Petrus rupestris</i>
Tubarao branco	Great white shark	<i>Carcharodon carcharias</i>
Tartaruga Marinha	Marine turtles	
Dugongo	Dugong	<i>Dugon dugon</i>
Baleias (todas as espécies)	Whales (all species)	
Golfinhos (todas as especies)	Dolphins (all species)	
Tridacna gigante	Giant clam	<i>Tridacna gigas</i>
Tridacna squamosa	Giant clam	<i>Tridacna squamosa</i>
Capacete gigante	Hornet helmet	<i>Cassis cornuta</i>
Corneta trompeteria	Trumpet triton	<i>Charonias tritonis</i>

Table 2: Fish species catch restrictions in Mozambican sport fisheries²

Peixes (Nome Local)	Fishes (English name)	Number of fishes per fisher / day
Marreco	Slinger	4
Robalo	Soldier	4
Gachucho	Blueskin	4
Garoupa	Rockod	4
Papagaio	Parrotfish	1
Tubaroes	Sharks	
Todas as especies excepto Tubarao branco	All species except great white sharks	2

¹ Lei de Pescas; Anexo.2; page. 371 (Sport Fishery Regulation, Decree 51/99 of 31 August)

² Lei de Pescas; Anexo.1; page. 370 (Sport Fishery Regulation, Decree 51/99 of 31 August)

FISHING LICENCES

Any artisanal, semi-industrial or industrial fishing operations in Mozambican waters, and all other businesses connected to fishing, are required to obtain an official fishing licence from the state. Fishing for personal sustenance is excluded from this rule.³ The issuing of fishing licences and permits is exclusively controlled by the “Secretary of State, Department of Fisheries”. If valuable for the State of Mozambique, the power of issuing licences might be transferred to any other official authority of the state. Licences are valid for a period of up to one year, and can be renewed by the entitled Person, fulfilling individual, definite conditions.⁴

Licence applications must also include relevant background information, including:

- a.) The type of fishing and the characteristics of fishing equipment
- b.) The geographical area where the fishing will take place (estuaries are protected)
- c.) Targeted species and the quantities to be extracted (sustainability should be ensured)⁵

ENFORCEMENT MECHANISMS

Every illegal fishing practice, or other operations connected to illegal fishing practices, can lead to legal punishment administered by official state officers. A “Multa”, or fine, is the first penalty. The amount of the fine will depend on the degree and the type of violation. Additionally, a loss of all state benefits in terms of future fishing licences or practices is part of the state punishment. Furthermore, all existing and possessed captures will be confiscated by state officers.

The following fishing law violations will lead to punishment:

- a.) The use of illegal equipment (size and type of the fishing equipment used; see below.)
- b.) Fishing in prohibited areas or during closed seasons (see below)
- c.) Catching fish below their legal minimum size (depending on the species and their regulations)
- d.) Exceeding daily captured quota and fishing unsustainably (depending on the species)
- e.) Providing false capture data or any other false information to a Fishery Tax officer⁶

LEGAL FISHING TECHNIQUES

The following marine fishing techniques are classified as legal, within a framework of limitations and regulations:

- | | | |
|------------------------|---|--|
| a.) Redes de arrasto | - | Drag nets |
| b.) Redes de cerco | - | Circle nets |
| c.) Redes de emalhar | - | Gill nets |
| d.) Aparelhos de anzol | - | Instruments with hooks (fishing lines) |
| e.) Armadilhas | - | Traps |
| f.) Ganchorros | - | Weighted nets |

³ Lei de Pescas, Titulo. 2 Capitulo.2; Artigo.16; page 354 and Artigo.52; page 360

⁴ Lei de Pescas, Titulo.2; Capitulo.2; Artigo.18, page 355

⁵ Lei de Pescas, Titulo. 2 Capitulo.2; Artigo.20, page. 355

⁶ Lei de Pescas; Titulo.5; capitulo.2; Artigo.53, page.360

The Ministry of Fisheries reserves the right to authorise any other type of fishing technique. The fishing techniques outlined above are classified as “legal” within their limitations. They are divided in six categories and are then subdivided to more specific fishing techniques.⁷ The techniques most commonly used in shark fisheries are described further below.

LONG-LINES

In the category “Aparelhos de Anzol” (instruments with hooks) there exists one specification called “Palangre”. This technique, known in English as long-lining, is commonly used by fishers targeting sharks.

- Palangre - Long-line

Definition: A vertical rope, or cable, which may vary in strength and length. On different levels of the main rope, exit minor lines with hooks at their ends. The lines may free float in the water, or be attached to the sea bottom with anchors, or weights.⁸

Rules and limitations: The law states that the Ministry of Fisheries could establish rules and regulations for the size of the hooks, the maximum number of used hooks on each line, the maximum length of lines, or the minimum distance in-between hooks, as well as any other conservation-related measures as seen fit.⁹

GILL NETS

In the category “Redes de Emalhar” (gill nets) there are two further specifications, for bottom-set and free-floating nets. Both techniques are regularly used to target sharks.¹⁰

- Redes de Emalhar - Gill Nets

Definitions:

- a. Gill nets attached to the sea bottom, or near to the sea bottom. They are attached to the sea bottom with iron bars, anchors, or other heavy weights. They can be made up of one single net, or up to maximum of three layers of nets; usually rectangular in shape and applied vertically in waters. The centre of the net is usually the densest with the smallest mesh, the outside of the net the widest with the largest mesh.¹¹
- b. Free floating surface, or just below surface gill nets. Use of different weights attached to the net make the net float vertically below the surface, or sometimes in mid water. Should be marked with buoys to allow them to float freely in the current. They are sometimes attached to fishing boats and dragged behind.¹²

⁷ Lei de Pescas; Regulamento Geral, capitulo.1; Artigo.20, page.397

⁸ Lei de Pescas; Regulamento Geral, capitulo.1; Artigo.2 Definicoes; pagina. 393 e Artigo.53, page.401

⁹ Lei de Pescas; Regulamento Geral, capitulo.3; Artigo.54; pagina. 401

¹⁰ Lei de Pescas; Regulamento Geral, capitulo.1; Artigo.47; page.401

¹¹ Lei de Pescas; Regulamento Geral, capitulo.1; Artigo.47 - 50, page.401

¹² Lei de Pescas; Regulamento Geral, capitulo.1; Artigo.47 – 50; page.401

Rules and limitations: The minimum mesh size of a gill net officially authorised for use in shark fishing should not be smaller than 120 mm. The maximum length of combined underwater gill nets should not exceed 3000 metres. The law states that the Ministry of Fisheries may establish rules and regulations for the length of these nets; for different kinds of species targeted with these nets; and for the protection of certain areas and times of the year, for conservation-related reasons.¹³

5. FUTURE DIRECTIONS & RECOMMENDATIONS

These recommendations focus solely on inshore shark fisheries. The paucity of data available of the current status of shark fisheries in Mozambique will be evident from the lack of data provided within this report. Accurate quantitative data from offshore fisheries is almost entirely lacking, providing little guideline for effective management. Unfortunately, given the high potential value of offshore targeted shark fisheries, it seems likely that this lack of oversight will have been exploited. Further information on the necessary management measures within these fisheries has been provided by (Kelleher 2002), and readers are referred to this publication for detailed recommendations.

Inshore, the published data available on shark fisheries is scarce and largely outdated. The major increase in demand evident for shark fins within Asian markets has seen a dramatic rise in the number of sharks caught worldwide, and this almost certainly applies to Mozambican fisheries. The anecdotal data provided within this report is largely unverified, and it is presented as a basis for further investigation rather than as a citable information source. However, there are several broad findings that should be noted:

1. Fisheries have shown rapid increase in size and extent over recent years.
2. These fisheries are highly profitable.
3. Shark fisheries within Mozambique appear to be driven by a demand for fin exports. Few permits for fin export are known to have been applied for, indicating that illegal export is the norm.

From scientific, conservation and legal standpoints these fisheries require considerable further investigation. Some recommendations are presented here:

- Enhance awareness amongst national and provincial governments, and also national and international non-governmental organisations (NGOs), of the issues relevant to shark fishing.
- Encourage research on the species composition and size of shark fisheries along the Mozambican coast.
- Establish a monitoring and control system (MCS) allowing stakeholders to report illegal practices for enforcement by relevant government departments.
- Identify fragile ecosystems, endangered species and necessary conservation measures.
- Educate people within and associated with the fishing industry on sustainable practices.

¹³ Lei de Pescas; Regulamento Geral; capitulo.1; Artigo.49 -50; page. 401

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PROVISIONAL SPECIES LIST OF MOZAMBICAN ELASMOBRANCHS

This species list has been compiled using the country lists provided by FishBase (www.fishbase.org) and the IUCN Red List (www.iucnredlist.org), and modified with reference to the chondrichthyan checklist for southern Africa prepared by L.J.V. Compagno and B. A. Human for the IUCN Shark Specialist Group in 2003. The checklist for reef-associated fishes of Mozambique prepared by M.A.M. Pereira in 2000 and a new country record for *Dasyatis microps* (Pierce et al. 2008 in *Zootaxa*) were also useful in creating this checklist.

Mozambican common names for all species were obtained from the FishBase database, and the current Red List status for each assessed species was downloaded from the IUCN Red List database. See the Red List website for a full discussion of conservation status for each species: CR = Critically Endangered; EN = Endangered; VU = Vulnerable; NT = Near Threatened; LR/nt = Lower Risk (near threatened); LC = Least Concern; and DD = Data Deficient, where the information available for that species was considered insufficient for global assessment. CR, EN and VU are 'threatened species' and have shown a significant decreasing trend in populations on a worldwide basis. Where no Red List status is noted the species can be considered NE = Not Evaluated.

In general, the elasmobranch community present in Mozambican waters is poorly known, and is likely to be richer than is recorded here. Several undescribed species are listed in the Compagno and Human checklist (2003), and that document should be consulted for further details.

This appendix follows the following format:

ORDER (COMMON NAME)

Family (common name)

Species name (citing authority).

Common name (Common name in Mozambique). IUCN Red List status. Species recorded within the artisanal shark fishery.

HEXANCHIFORMES (COW SHARKS)

Hexanchidae (cow sharks)

Heptranchias perlo (Bonnaterre, 1788).

Sharpnose sevengill shark (Canhabota boca doce). NT

Hexanchus griseus (Bonnaterre, 1788).

Bluntnose sixgill shark (Canhabota cinzenta). LR/nt

Hexanchus nakamurai (Teng, 1962).

Bigeye sixgill shark (Canhabota olho grande).

SQUALIFORMES (DOGFISH SHARKS)

Echinorhinidae (bramble sharks)

Echinorhinus brucus (Bonnaterre, 1788).
Bramble shark. DD

Squalidae (dogfish sharks)

Cirrhigaleus asper (Merrett, 1973).
Roughskin spurdog (Quelme rugoso). DD
Squalus cf. *megalops* (Macleay, 1881).
Shortnose spurdog (Quelme liso). DD
Squalus cf. *mitsukurii* (Jordan & Snyder, in Jordan & Fowler, 1903).
Shortspine spurdog (Quelme mitsukuri). DD

Centrophoridae (gulper sharks)

Centrophorus cf. *uyato* (Rafinesque, 1810).
Little gulper shark (*Lixa pequena*). DD
Centrophorus granulosus (Bloch & Schneider, 1801).
Gulper shark (*Lixa granulosa*). VU
Centrophorus lusitanicus (Bocage & Capello, 1864).
Lowfin gulper shark (*Lixa lusitânica*).
Centrophorus moluccensis (Bleeker, 1860).
Smallfin gulper shark (*Lixa barbatana curta*). DD
Centrophorus niaukang (Teng, 1959).
Taiwan gulper shark. NT
Centrophorus squamosus (Bonnaterre, 1788).
Leafscale gulper shark (*Lixa escamosa*). VU
Deania quadrispinosum (McCulloch, 1915).
Longsnout dogfish (*Sapata*).

Etmopteridae (lantern sharks)

Etmopterus brachyurus (Smith & Radcliffe, 1912).
Shorttail lanternshark
Etmopterus cf. *molleri* (Whitley, 1939).
Slendertail lanternshark.
Etmopterus lucifer (Jordan & Snyder, 1902).
Blackbelly lanternshark (*Lixinha-de-fundura lucifera*).
Etmopterus pusillus (Lowe, 1839).
Smooth lanternshark (*Lixinha-de-fundura lisa*).
Etmopterus sentosus (Bass, D'Aubrey & Kistnasamy, 1976).
Thorny lanternshark (*Lixinha-de-fundura espinhosa*). LC

Somniosidae (sleeper sharks)

Proscymnodon plunketi (Waite, 1910).
Plunket's dogfish. NT

Oxynotidae (rough sharks)

Oxynotus centrina (Linnaeus, 1758).
Angular rough shark. VU

Dalatiidae (kitefin sharks)

Dalatias licha (Bonnaterre, 1788).
Kitefin shark (Carocho). DD
Isistius brasiliensis (Quoy & Gaimard, 1824).
Cookiecutter shark. LC

PRISTIOPHORIFORMES (SAWSHARKS)

Pristiophoridae (sawsharks)

Pliotrema warreni (Regan, 1907).
Sixgill sawshark. NT

SQUATINIFORMES (ANGEL SHARKS)

Squatinae (angel sharks)

Squatina africana (Regan, 1909).
African angelshark (Anjo africano). DD

RAJIFORMES (RAYS)

Pristidae (sawfishes)

Pristis microdon (Latham, 1794).
Largetooth sawfish (Tubarão-serra dentuço). CR
Pristis pectinata (Latham, 1794).
Smalltooth sawfish (Tubarão-serra candú). CR
Pristis zijsron (Bleeker, 1851).
Longcomb sawfish (Tubarão-serra africano). CR

Rhinidae (sharkrays)

Rhina ancylostoma (Bloch & Schneider, 1801).
Bowmouth guitarfish. VU. Fished species.

Rhynchobatidae (wedgfishes)

Rhynchobatus djiddensis (Forskål, 1775).
Giant guitarfish. VU. Fished species.

Rhinobatidae (guitarfishes)

- Rhinobatos annulatus* (Smith, in Müller & Henle, 1842).
Lesser sandshark. LC
- Rhinobatos blochii* (Müller & Henle, 1841).
Bluntnose guitarfish.
- Rhinobatos leucospilus* (Norman, 1926).
Grayspotted guitarfish.
- Rhinobatos ocellatus* (Norman, 1926).
- Rhinobatos schlegelii* (Müller & Henle, 1841).
Yellow guitarfish.

Narcinidae (numbfishes)

- Heteronarce garmani* (Regan, 1921).
Natal electric ray.
- Narcine rierai* (Lloris & Rucabado, 1991).
Slender electric ray

Torpedinidae (torpedo rays)

- Torpedo fuscomaculata* (Peters, 1855).
Black-spotted torpedo. DD
- Torpedo sinuspersici* (Olfers, 1831).
Marbled electric ray. DD

Rajidae (skates)

- Cruriraja triangularis* (Smith, 1964).
Triangular legskate (*Raia triangularis*).
- Dipturus campbelli* (Wallace, 1967).
Blackspot skate (*Raia mancha preta*). NT
- Dipturus lanceorostratus* (Wallace, 1967).
Rattail skate (*Raia ratazana*). DD
- Dipturus springeri* (Wallace, 1967).
Roughbelly skate (*Raia barriguda*)
- Dipturus stenorhynchus* (Wallace, 1967).
Prow-nose skate (*Raia focinhuda*). DD
- Leucoraja wallacei* (Hulley, 1970).
Yellow spotted skate (*Raia sardenta*).
- Okamejei heemstrai* (McEachran & Fechhelm, 1982).
East African skate.
- Rostroraja alba* (Lacepede, 1803).
Bottlenosed skate (*Raia tairoga*). EN

Anacanthobatidae (legskates)

- Anacanthobatis marmoratus* (von Bonde & Swart, 1924).
Spotted legskate (*Raia pintalgada*). DD
- Anacanthobatis ori* (Wallace, 1967).
Black legskate (*Raia preta*). DD

Plesiobatidae (giant stingarees)

- Plesiobatis daviesi* (Wallace, 1967).
Deepwater stingray (Ratão de profundidade). LC

Dasyatidae (whiptail stingrays)

- Dasyatis brevicaudata* (Hutton, 1875).
Short-tail stingray (Uge cauda-curta). LC
- Dasyatis kuhlii* (Müller & Henle, 1841).
Bluespotted stingray (Uge ponteado). Fished species.
- Dasyatis microps* (Annandale, 1908).
Smalleye stingray. Fished species.
- Dasyatis thetidis* (Ogilby, in Waite, 1899).
Thorntail stingray (Uge cauda-espinhosa).
- Himantura* cf. *gerrardi* (Gray, 1851).
Sharpnose stingray (Uge cauda-espinhosa).
- Himantura* cf. *uarnak* (Forsskael, 1775).
Honeycomb stingray (Burá alveolado). Fished species.
- Himantura jenkinsii* (Annandale, 1909).
Pointed-nose stingray.
- Taeniura lymma* (Forsskael, 1775).
Bluespotted ribbontail ray (Ratão pintalgado). LR/nt
- Taeniura meyeri* (Müller & Henle, 1841).
Blotched fantail ray (Ratão cauda redonda). VU
- Urogymnus asperrimus* (Bloch & Schneider, 1801).
Porcupine ray (Raia pungente Africana). VU

Gymnuridae (butterfly rays)

- Gymnura natalensis* (Gilchrist & Thompson, 1911).
Backwater butterfly ray. DD

Myliobatidae (eagle rays)

- Aetobatus narinari* (Euphrasen, 1790).
Spotted eagle ray (Ratao ponteado). NT. Fished species.
- Aetomylaeus nichofii* (Bloch & Schneider, 1801).
Banded eagle ray. VU
- Aetomylaeus vespertilio* (Bleeker, 1852).
Ornate eagle ray. EN
- Pteromylaeus bovinus* (Geoffroy St. Hilaire, 1817).
Bull ray (Ratao bovino). DD

Rhinopteridae (cownose rays)

- Rhinoptera javanica* (Müller & Henle, 1841).
Javanese cownose ray. VU

Mobulidae (devil rays)

- Manta birostris* (Donndorff, 1798).
Manta (Jamanta gigante). NT. Fished species.
- Mobula eregoodootenkee* (Bleeker, 1859).
Pygmy devilray. NT
- Mobula kuhlii* (Valenciennes, in Müller & Henle, 1841).
Shortfin devil ray. Fished species.

HETERODONTIFORMES (BULLHEAD SHARKS)

Heterodontidae (bullhead sharks)

- Heterodontus ramalheira* (Smith, 1949).
Whitespotted bullhead shark (Tubarão dorminhoco de Moçambique). DD

LAMNIFORMES (MACKERAL SHARKS)

Mitsukurinidae (goblin sharks)

- Mitsukurina owstoni* (Jordan, 1898).
Goblin shark. LC

Odontaspidae (sand tiger sharks)

- Carcharias taurus* (Rafinesque, 1810).
Ragged-tooth shark (Tubarão de areia). VU

Alopiidae (thresher sharks)

- Alopias pelagicus* (Nakamura, 1935).
Pelagic thresher (Zorro pelágico)
- Alopias superciliosus* (Lowe, 1839).
Bigeye thresher (Zorro olho grande)
- Alopias vulpinus* (Bonnaterre, 1788).
Thintail thresher (Zoro cauda longa). DD

Lamnidae (mackerel sharks)

- Carcharodon carcharias* (Linnaeus, 1758).
Great white shark. VU
- Isurus oxyrinchus* (Rafinesque, 1811).
Shortfin mako (Anequin barbatana curta). LR/nt

ORECTOLOBIFORMES (CARPET SHARKS)

Stegostomatidae (zebra sharks)

Stegostoma fasciatum (Hermann, 1783).
Zebra shark. VU. Fished species.

Ginglymostomatidae (nurse sharks)

Nebrius ferrugineus (Lesson, 1830).
Tawny nurse shark (Tubarão-de-leite tostado). VU

Rhincodontidae (whale sharks)

Rhincodon typus (Smith, 1829).
Whale shark. VU

CARCHARHINIFORMES (GROUND SHARKS)

Scyliorhinidae (cat sharks)

Apristurus longicephalus (Nakaya, 1975).
Longhead catshark.

Bythaelurus lutarius (Springer & D'Aubrey, 1972).
Brown catshark. DD

Cephaloscyllium sufflans (Regan, 1921).
Balloon shark (Pata-roxa ensuflada). LC

Halaaelurus lineatus (Bass, D'Aubrey & Kistnasamy, 1975).
Lined catshark (Pata-roxa lineada). DD

Halaaelurus lutarius (Springer & D'Aubrey, 1972).
Mud catshark (Pata-roxa de lodo).

Halaaelurus natalensis (Regan, 1904).
Tiger catshark. DD

Holohalaaelurus punctatus (Gilchrist, 1914).
African spotted catshark (Pata-roxa Africana).

Holohalaaelurus regani (Gilchrist, 1922).
Izak catshark (Pata-roxa reticulada).

Parmaturus macmillani (Hardy, 1985).
McMillan's catshark. DD

Poroderma pantherinum (Smith, in Müller & Henle, 1838).
Leopard catshark.

Proscylliidae (finback catsharks)

Eridacnis sinuans (Smith, 1957).
African ribbontail catshark. LC

Triakidae (hound sharks)

- Galeorhinus galeus* (Linnaeus, 1758).
Tope shark (Perna-de-moça). VU
- Hypogaleus hyugaensis* (Miyosi, 1939).
Blacktip tope. LR/nt
- Mustelus manazo* (Bleeker, 1854).
Starspotted smooth-hound (Caneja).
- Mustelus mosis* (Hemprich & Ehrenberg, 1899).
Arabian smooth-hound.
- Mustelus palumbes* (Smith, 1957).
Whitespot smoothhound. DD
- Triakis megalopterus* (Smith, 1849).
Sharptooth houndshark

Hemigaleidae (weasel sharks)

- Hemipristis elongatus* (Klunzinger, 1871).
Snaggletooth shark (Tubarão doninha). VU. Fished species.

Carcharhinidae (requiem sharks)

- Carcharhinus albimarginatus* (Rüppell, 1837).
Silvertip shark (Marracho de pontas).
- Carcharhinus altimus* (Springer, 1950).
Bignose shark (Marracho baboso).
- Carcharhinus amblyrhynchos* (Bleeker, 1856).
Grey reef shark (Marracho enlutado). LR/nt. Fished species.
- Carcharhinus amboinensis* (Müller & Henle, 1839).
Pigeeye shark (Marracho baleta). DD
- Carcharhinus brevipinna* (Müller & Henle, 1839).
Spinner shark (Marracho barbatana negra). LR/nt
- Carcharhinus falciformis* (Müller & Henle, 1839).
Silky shark (Marracho sedoso). LR/lc
- Carcharhinus leucas* (Müller & Henle, 1839).
Bull shark (Marracho touro). LR/nt. Fished species.
- Carcharhinus limbatus* (Valenciennes, 1839).
Blacktip shark (Marracho macuira). LR/nt. Fished species.
- Carcharhinus longimanus* (Poey, 1861).
Oceanic whitetip shark (Marracho oceánico). VU
- Carcharhinus melanopterus* (Quoy & Gaimard, 1824).
Blacktip reef shark (Marracho tinteiro de coral). LR/nt
- Carcharhinus obscurus* (Lesueur, 1818).
Dusky shark (Marracho areneiro). LR/nt
- Carcharhinus plumbeus* (Nardo, 1827).
Sandbar shark (Marracho de Milberto). LR/nt. Fished species.
- Carcharhinus sealei* (Pietschmann, 1916).
Blackspot shark (Marracho marcado). NT
- Carcharhinus sorrah* (Valenciennes, in Müller & Henle, 1839).
Spottail shark (Marracho rabo manchado).

Galeocerdo cuvier (Peron & Lesueur, 1822).
Tiger shark (Marracho tigre). LR/nt. Fished species.
Loxodon macrorhinus (Müller & Henle, 1839).
Sliteye shark (Marracho agudo). LC
Negaprion acutidens (Rüppell, 1837).
Sicklefin lemon shark (Limão foiçador). VU. Fished species.
Prionace glauca (Linnaeus, 1758).
Blue shark (Guelha azul). LR/nt
Rhizoprionodon acutus (Rüppell, 1837).
Milk shark (Marracho branco). LC
Scoliodon laticaudus (Müller & Henle, 1838).
Spadenose shark (Marracho espadarte). LR/nt
Triaenodon obesus (Rüppell, 1837).
Whitetip reef shark (Marracho de covas). LR/nt. Fished species.

Sphyrnidae (hammerhead sharks)

Sphyrna lewini (Griffith & Smith, in Cuvier, Griffith & Smith 1834).
Scalloped hammerhead (Tubarão martelo comum). LR/nt. Fished species.
Sphyrna mokarran (Rüppell, 1837).
Great hammerhead (Tubarão martelo gigante). EN
Sphyrna zygaena (Linnaeus, 1758).
Smooth hammerhead (Tubarão martelo liso). LR/nt