The Protection of Sharks: A Legal and Policy Analysis

Prepared by: Instituto Internacional de Derecho y Medio Ambiente
Commissioned by: OCEANA

Author: Ana Barreira, Director of Instituto Internacional de Derecho y Medio Ambiente. Lawyer, LL.M (Master of Laws) Environmental Law ’93 London University, LL.M International Legal Studies ’96 New York University. Member of IUCN Environmental Law Commission.
The main biological characteristics of sharks are: slow growth, delayed maturation, long reproductive cycles, low fecundity, and long life spans. Their populations increase at extremely low rates, leaving them exceptionally vulnerable to overexploitation and slow recovery from depletion. Sharks are targeted and taken as bycatch in many fisheries. Many stocks are now depleted and some species are now considered to have a heightened risk of extinction, mostly as a result of the rapid and largely unregulated growth of target and bycatch fisheries in State waters and on the high seas.

Existing international, regional, and national legal and policy instruments to manage fisheries, conserve natural resources, protect marine biological diversity, and prevent trade of endangered species offer tools to protect sharks and to reverse their depletion. Although legal mechanisms exist to which the EC is a contracting Party, there has been little progress in spite of the fact that it has one of the leading fleets in shark catch.

This study analyses those main instruments, showing that in recent years some measures have been slowly introduced to protect sharks through a combination of tools but that there has been little success in light of data of the state of this species. Until now, the precautionary and ecosystem approaches have hardly been taken into consideration in the development of fisheries measures. Furthermore, wildlife tools have been more successful in introducing measures for the protection of the shark. This is due to their emphasis on conservation and their facilitation of the implementation of the precautionary and ecosystem approaches. It also shows that trade in shark product is hardly regulated.

The EC as a Party of all the international conventions analysed in this study must:

- ensure through conservation and management measures that sharks are not endangered in community waters by overexploitation in the case of directed fisheries. When taking measures for single or multiple fisheries, it must take into consideration the need to keep associated sharks species above a level where those sharks would be seriously threatened;
- cooperate in RFMOs to introduce measures to ensure conservation and optimal utilization of shark straddling species within and beyond the EEZ;
- minimize catch of non-target sharks and impacts on associated or dependent shark species, in particular shark endangered species in order to conserve and manage straddling shark stocks and highly migratory shark stocks;
- adopt an Action Plan for the management and conservation of sharks as required by the CBD;
- introduce habitats for the protection of shark species in the Annexes of the Habitat Directive revision.
Table of Contents

1. Introduction .................................................................................................................................................4
   1.1. Background and General Considerations ..........................................................................................4
   1.2. Objective ...............................................................................................................................................8
2. The Regime for Sharks Fisheries Conservation and Management .........................................................8
   2.2. The UN Fish Stock Agreement ........................................................................................................13
   2.3. The FAO Code of Conduct on Responsible Fisheries .....................................................................17
   2.4. The International Plan of Action for the Conservation and Management of Sharks (IPOA-Sharks) and the National Plans .............................................................19
       2.4.1. Shark National Plans of Action ...............................................................................................21
   2.5. The RFMOs and the protection of sharks .........................................................................................25
       2.5.1. Measures for the protection of sharks at RFMOs .................................................................26
       2.5.2. The protection of sharks at other RFBS ..............................................................................29
   2.6. The European Community ................................................................................................................30
       2.6.1. The CFP and Shark Protection ...............................................................................................30
       2.6.2. EC Measures for the Protection of Sharks ..............................................................................31
   2.7. National measures for the management and conservation of sharks ................................................36
3. The Regime for Sharks Protection under Conservation and Wildlife Instruments ................................39
   3.1. The Convention on Biological Diversity ............................................................................................40
   3.2. The Convention on Migratory Species .................................................................................................42
   3.3. UNEP Regional Seas Programme: The Barcelona Convention .......................................................45
   3.4. The Convention on the Conservation of European Wildlife and their Natural Habitats ...............47
   3.5. The Protection of Biodiversity at the EC and Sharks ......................................................................48
   3.6. National measures for the conservation of sharks .........................................................................50
4. The Regime for Shark Trading ..................................................................................................................52
   4.1. CITES ..................................................................................................................................................53
5. Conclusions ..................................................................................................................................................54
Bibliography .....................................................................................................................................................56
Annex: National measures for the protection of sharks ..................................................................................58
ACRONYMS

CBD Convention on Biological Diversity
CCAMLR Commission for the Conservation of Antarctic Marine Living Resources
CFP Common Fisheries Policy
CITES Convention on International Trade in Endangered Species
CMS Convention on Migratory Species
COFI Committee on Fisheries
COP Conference of Parties
CPC All contracting parties, cooperating non-contracting parties, entities and fishing entities
EC European Commission
EEZ Exclusive Economic Zone
FAO Food and Agricultural Organization
IATTC Inter-American Tropical Tuna Commission
ICCAT The International Commission for the Conservation of Atlantic Tunas
ICES International Council for the Exploration of the Sea
IOTC Indian Ocean Tuna Commission
IPOA-Sharks International Plan of Action for the Conservation and Management of Sharks
IUCN The World Conservation Union
IUU Fishing Illegal, unreported, and unregulated fishing
MCS Marine Conservation Society
NAFO Northwest Atlantic Fisheries Organization
NASCO North Atlantic Salmon Conservation Organization
NEAFC North East Atlantic Fisheries Commission
OLDESPESCA Organización Latinoamericana de Desarrollo Pesquero
OSPAR Convention for the Protection of the Marine Environment of the North-East Atlantic
RFB Regional Fisheries Bodies
RFMOs Regional Fisheries Management Organizations
SBSTTA Subsidiary Body on Scientific, Technical and Technological Advice
SEAFO South East Atlantic Fisheries Organization
SRCs Standing Committee on Research and Statistics
TAC Total Allowable Catch
UNFSA United Nations Fish Stocks Agreement
WCPFC Western and Central Pacific Fisheries Commission
1. Introduction

1.1. Background and General Considerations

The term Shark includes rays or batoids and chimaeroids as well as ‘nonbatoid’ or ‘typical’ sharks\(^1\). This report will use that term in this sense. There is great diversity among sharks, with approximately 1,200 known living and valid species of shark-like fishes, cartilaginous fishes, or chondrichthysans, which form the class Chondrichthyes. The number of shark species is small compared with the number of species of bony fishes, but they occupy a variety of habitats from near shore to the ocean abyss. The living cartilaginous fishes are divided into two sister-groups: Holocephali (with a single living order Chimaeriformes), and the sharks, skates and rays proper or Elasmobranchii\(^2\). The great majority of commercially and recreationally important species of chondrichthysans are elasmobranchii (elasmobranches)\(^3\).

Most sharks have an unusual combination of biological characteristics: slow growth and delayed maturation, long reproductive cycles, low fecundity, and long life spans. These factors determine the low reproductive potential of many shark species\(^4\). These are characteristics of species with few natural predators being highly successful under natural conditions\(^5\). Their populations typically increase at extremely low rates, leaving them exceptionally vulnerable to overexploitation and slow recovery from depletion\(^6\). Sharks are targeted and taken as bycatch in many fisheries. Many stocks are now depleted and some species are now considered to have a heightened risk of extinction, mostly as a result of the rapid and largely unregulated growth of target and bycatch fisheries in State waters and on the high seas\(^7\). The IUCN Red List includes many shark species\(^8\). The IUCN Shark Specialist Group (SSG) is currently undertaking a global marine assessment of the red list status of all chondrichthyan species.

Most sharks play an important role as top predators in the ecosystem and significant reductions in their numbers are likely to have impacts on other elements of those

---

2 Ibidem.
7 UNEP/CMS (2007) op. cit.
8 www.iucnredlist.org
ecosystems. That is why an ecosystem approach is extremely important when managing and protecting these species.

Sharks have been sought for centuries for their meat, hides, liver oil, fins and teeth, and more recently for their cartilage skeletons and for sport. The demand for fins of sharks is growing at such a rate that they are among the world’s most expensive fisheries products.

The following categories of shark fisheries can be identified: coastal hook and gillnet fisheries, demersal trawl bycatch fisheries, deep-water bycatch fisheries, pelagic bycatch fisheries (primarily bycatch in tuna longline and purse seine fisheries), and freshwater shark fisheries. Since most shark catch is taken as bycatch, most of the catch is reported as unidentified shark, mixed fish or is not reported at all. This lack of species identification of the catches and lack of information on fishing effort means basic data for fishery assessment are not available for most species but it also causes problems in the conservation and management of sharks.

Shark fisheries or catch fall into one of the following categories:

- Targeted fishing for sharks for fins and/or for meat
  - Targeted fishing for other species that results in an incidental catch of shark which is then either:
    - Retained for fins with the carcass discarded (if permitted); or
    - Retained for fins with the carcass landed (if required); or
    - Discarded, dead or alive

In fact, most species of shark are captured in multi-species fisheries directed at more productive and more highly valued teleost species. Harvest strategies designed to maximize economic and social benefit from these multi-species fisheries will inevitably deplete the less productive shark and other chondrichthyan species unless methods for reducing the catch of the less productive species can be developed and implemented.

According to FAO statistics the world shark catch trend was upwards until 2003 but since 2004 is decreasing probably due to the declining of shark populations. The first year reported 1950 the catch amounted 271.813 tns. In 2003 the shark catch reached 880.785 tns declining in 2004 to 819.012 tns and in 2005 to 771.105 tns. However, this data do not include discards. Thus, the depletion of shark populations may go unnoticed for long periods of time.

---

12 FAO Fisheries Management (2000), op.cit, p. 4.
Lack and Sant have identified the top 20 shark catching countries in 2004 as well as the top 10 shark product exporters in this year.

Table 1. Top twenty shark catching countries and to top ten shark product exporters (Lack and Sant, 2006a)

<table>
<thead>
<tr>
<th>Rank and country</th>
<th>Catch ('000t)</th>
<th>% global catch</th>
<th>Exporter</th>
<th>Exports (t)</th>
<th>% world exports</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Indonesia</td>
<td>122</td>
<td>(15.0)</td>
<td>Taiwan</td>
<td>16.329</td>
<td>18.1</td>
</tr>
<tr>
<td>2. India</td>
<td>61</td>
<td>(7.6)</td>
<td>Spain</td>
<td>11.670</td>
<td>13.0</td>
</tr>
<tr>
<td>3. Spain</td>
<td>51</td>
<td>(6.3)</td>
<td>Japan</td>
<td>5.046</td>
<td>5.6</td>
</tr>
<tr>
<td>4. Taiwan</td>
<td>44</td>
<td>(5.4)</td>
<td>Panama</td>
<td>5.002</td>
<td>5.6</td>
</tr>
<tr>
<td>5. Mexico</td>
<td>32</td>
<td>(4.0)</td>
<td>UK</td>
<td>4.596</td>
<td>5.1</td>
</tr>
<tr>
<td>6. Argentina</td>
<td>32</td>
<td>(4.0)</td>
<td>Canada</td>
<td>4.142</td>
<td>4.6</td>
</tr>
<tr>
<td>7. USA</td>
<td>31</td>
<td>(3.8)</td>
<td>Costa Rica</td>
<td>4.132</td>
<td>4.6</td>
</tr>
<tr>
<td>8. Thailand</td>
<td>28</td>
<td>(3.5)</td>
<td>Ireland</td>
<td>3.793</td>
<td>4.2</td>
</tr>
<tr>
<td>9. Pakistan</td>
<td>27</td>
<td>(3.4)</td>
<td>Chile</td>
<td>3.286</td>
<td>3.7</td>
</tr>
<tr>
<td>10. Japan</td>
<td>27</td>
<td>(3.4)</td>
<td>Namibia</td>
<td>2.997</td>
<td>3.3</td>
</tr>
<tr>
<td>11. Malaysia</td>
<td>25</td>
<td>(3.1)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>12. France</td>
<td>22</td>
<td>(2.7)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>13. Brazil</td>
<td>20</td>
<td>(2.5)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>14. Sri Lanka</td>
<td>20</td>
<td>(2.4)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>15. Iran, Islamic Rep.of</td>
<td>18</td>
<td>(2.3)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>16. New Zeland</td>
<td>17</td>
<td>(2.1)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>17. UK</td>
<td>16</td>
<td>(2.0)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>18. Nigeria</td>
<td>14</td>
<td>(1.7)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>19. Portugal</td>
<td>13</td>
<td>(1.6)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>20. Yemen</td>
<td>13</td>
<td>(1.6)</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
Comparisons of FAO shark trade and catch data shows that there is also considerable under-reporting of shark catch by individual countries. In addition, there is limited reporting of shark catch on a species basis. Apart from the general taxonomic uncertainties associated with a large number of species of sharks and other chondrichthyans, common practices of heading, gutting, finning, skinning, and filleting or excising livers at sea exacerbates the problem for identifying the species of a shark in the catch. As said, lack of accurate, species-specific harvest data often hampers quantitative stock assessment. In such cases, trade studies can provide insights into exploitation unavailable from traditional monitoring. A team of researchers calculated the number of sharks represented in the fin trade using a unique statistical model and data from Hong Kong traders. When the figures were converted to shark weight showed that the shark biomass in the fin trade is three to four times higher than shark catch figures reported to FAO.

This data also shows that the EC fleet takes in the second most shark catch with 102,000 tns (adding the Spanish, French, British and Portuguese catch) as well as exports the second most amount with 16,266 tns. (adding the Spanish and British trading figures).

Given the wide-ranging distribution of sharks, including on the high seas, and the long migration of many species, it is increasingly important to have international cooperation and coordination.

A variety of legal and policy mechanisms exist that could help protect and conserve shark populations worldwide. In 1982 the United Nations Convention on the Law of the Sea (UNCLOS) listed oceanic shark species on Annex 1- Highly Migratory Species. In 1999, the Food and Agricultural Organization of the United Nations (FAO) developed an International Plan of Action for the Conservation and Management of Sharks (IPOA-Sharks). In addition, we also find national, regional, and international laws, agreements, and regulations adopted to manage fisheries, conserve natural resources and marine biological diversity, and prevent trade of endangered species. Although legal mechanisms exist to which the EC is a contracting Party it has done very little to protect sharks in spite of the fact that it has one of the leading fleets in shark catch. Thus, most shark fisheries remain unregulated and many shark populations are in decline as a result. This is primarily because as seen most sharks are captured and killed incidentally, as bycatch, in fisheries for other species such as tunas. While the target fishery is sometimes regulated, the shark bycatch is frequently neither limited nor even well documented.

---

1.2. Objective

This report has been commissioned by Oceana. Its purpose is to carry out a legal and policy analysis of measures taken to conserve, manage and protect sharks at the international, regional, and national levels. This analysis will assist us to identify EC’s international commitments to protect sharks and legal gaps. We find three types of legal and policy mechanisms or tools:

1. Fisheries conservation and management measures including treaties, laws, and regulations aimed at controlling fish catches and making marine fisheries sustainable.
2. Biodiversity and concrete species protection measures including treaties, laws, and regulations aimed at protecting species and conserving marine biological diversity.
3. Trade measures including treaties, laws, and regulations that require monitoring of international trade in wildlife, placing limits on trade, or imposing trade sanctions for non-compliance with conservation or fisheries agreements.

To that purpose, this study analyses first the legal and policy regime relevant to shark fisheries conservation and management. In this part we will focus on the international and regional regime including soft law and hard law instruments as well as on EC measures and briefly revise national measures. Secondly, it examines the existing mechanisms for biodiversity preservation at the international, regional, EC, and national levels which are applicable or could be of application to the protection of sharks. It will follow a review of the trade measures to prevent the trade of sharks endangered species. Finally, this analysis will allow us to provide some conclusions.

2. The Regime for Sharks Fisheries Conservation and Management

According to FAO\textsuperscript{16}, to be effective, management of shark fisheries has to be concerned with the whole stock units over their entire areas of distribution. “The best scientific evidence available should be used to determine the area of distribution and the area through which fish in the stock migrates during its life cycle. Where a stock falls entirely within the Exclusive Economic Zone of a single nation, then that resource can be managed under the single jurisdiction of that nation. However, where a stock is distributed in the EEZs of more than one nation or where it is distributed on the high seas, jurisdictional arrangements are more complex. Such shared or transboundary straddling stocks can be managed through bilateral and multilateral arrangements of Regional Fisheries Management Organizations (RFMOs)\textsuperscript{17}.”

\textsuperscript{16} FAO Fisheries Management (2000) \textit{op. cit.} p. 6.
\textsuperscript{17} Ibidem.
Shark stocks distributed under the jurisdiction of two or more states or in the high seas are:

a) transboundary stocks. These are shark stocks crossing the EEZ boundary of one coastal State into the EEZ(s) of one, or more, other coastal States –;
b) highly migratory sharks, as set forth in Annex 1 of the 1982 UN Convention on the Law of the Sea (UNCLOS);
c) straddling stocks. These are all other shark stocks that are to be found, both within the coastal State EEZ and the adjacent high seas;
d) high seas shark stocks. These are shark stocks to be found exclusively in the high seas.\(^{18}\)

Therefore, shark fisheries can be subject to:

1. An international or regional regime in case of oceanic, migratory and straddling species which move within various marine zones and which are subject to fisheries pressures from multiple sources (i.e. blue shark- Prionace Glauca)

2. A national fisheries regime in case of coastal species whose stocks are within one state jurisdiction.\(^{19}\)


Adopted on 10 December 1982\(^ {20}\), it establishes overarching rules governing all uses of the world’s oceans and seas and their resources. It is the principal international legal instrument setting forth the general rights and obligations of states and members of the international community for the conservation and sustainable use of marine living resources. With respect to the provisions on the management and conservation of fisheries, UNCLOS may be considered to reflect customary international law\(^ {21}\), meaning it creates obligations for all states except for those that have persistently objected to it. Of particular relevance to fisheries is Part V (articles 55 to 75) on the Exclusive Economic Zone (EEZ) and Part VII on the High Seas (articles 86 to 120).

UNCLOS recognizes the sovereign rights of the coastal States for the purpose of exploring and exploiting, conserving and managing fishery resources in their EEZs\(^ {22}\). Subject to its right to determine the total allowable catch (TAC) of living resources in its EEZ, the coastal state must ensure through conservation and management measures that living resources are not endangered by overexploitation, taking into account the best scientific available information to it\(^ {23}\). Relevant to shark bycatch, these measures must

---

\(^{18}\) Stocks that are purely or entirely in the high seas, that is, for stocks that are neither highly migratory nor straddling. They are also denominated as discrete high seas fish stocks.

\(^{19}\) In the EC, given the competence of the Community in fishing matters, the management regime of coastal species in community waters is under the Common Fisheries Policy.

\(^{20}\) It entered into force on 16 November 1994.


\(^{22}\) Article 56.1. (a).

\(^{23}\) Article 61.1 and 2.
also take into consideration the need to keep associate or dependent species above a level at which they would be seriously threatened\textsuperscript{24}. Coastal states must also promote the optimum utilization of fishery resources in their EEZs\textsuperscript{25}. Nationals of other states fishing in the EEZ must comply with the measures, laws and regulations adopted by the coastal state, including conservation laws\textsuperscript{26}.

Under UNCLOS, a coastal state must ensure through conservation and management measures that sharks are not endangered by overexploitation in the case of directed fisheries. When taking measures for single or multiple fisheries, the need to keep associated sharks species above a level where those sharks would be seriously threatened must be taken into consideration.

The UNCLOS contains but one provision pertaining to the management of transboundary fish stocks, namely Article 63 (1), which reads as follows:

Where the same stock or stocks of associated species occur within the exclusive economic zones of two or more coastal States, these States shall seek, either directly or through appropriate subregional or regional organizations, to agree upon the measures necessary to coordinate and ensure the conservation and development of such stocks without prejudice to the other provisions of this Part [V].

The Convention imposes a duty on the relevant coastal States to negotiate over arrangements for the management of shark transboundary stocks. Importantly, however, it does not impose a duty on the States to reach an agreement. If the States are unable to reach an agreement, then each State shall manage that segment of the shark transboundary stock occurring within its EEZ. It shall do so in accordance with the rights and duties relating to fisheries management and conservation by a coastal State within its EEZ, as set forth by the Convention\textsuperscript{27}.

The UNCLOS refers on Part V on the Exclusive Economic Zone to the straddling stocks. Article 63(2) reads as follows:

Where the same stock or stocks of associated species occur both within the exclusive economic zone and in an area beyond and adjacent to the zone, the coastal State and the States fishing for such stocks in the adjacent area shall seek, either directly or through appropriate subregional or regional organizations, to agree upon the measures necessary for the conservation of these stocks in the adjacent seas.

This article calls for cooperation with respect to conservation of straddling sharks in the adjacent high seas alone. It obliges non-coastal states exploiting shark stocks in the high seas adjacent to the EEZ to comply with obligations for high seas sharks which basically consist of:

- compliance with their treaty obligations,
- respect to the rights and duties as well as interest of coastal states,
- cooperation in the conservation and management of shark fishery, taking into consideration the effects of fishing in the adjacent area on sharks associated with or dependent upon harvested species resources occurring in the high seas and

\textsuperscript{24} Article 61.4.
\textsuperscript{25} Article 62.1.
\textsuperscript{26} Article 62.4.
o seeking to cooperate for the establishment of regional or sub-regional fisheries organizations\textsuperscript{28}.

A study of FAO on the state of the world’s highly migratory, straddling and other high seas fishery resources and associated species includes the following list of straddling shark species from information provided by NEAFC\textsuperscript{29}: the Iceland catshark (\textit{Apristurus} spp.), gulper shark (\textit{Centrophorus granulosus}), leafscale gulper shark (\textit{Centrophorus squamosus}), black dogfish (\textit{Centroscyllium fabricii}), Portuguese dogfish (\textit{Centroscymnus coelolepis}), longnose dogfish (\textit{Centroscymnus crepidater}), rabbit fish (rattail) (\textit{Chimaera monstrosa}), frilled shark (\textit{Chlamydoselachus anguineus}), kitefin shark (\textit{Dalatias licha}), birdbeak dogfish (\textit{Deania calceus}), greater lanternshark (\textit{Etmopterus princeps}), velvet belly (\textit{Etmopterus spinax}), blackmouth dogfish (\textit{Galeus melastomus}), mouse catshark (\textit{Galeus murinus}), bluntnose six-gilled shark (\textit{Hexanchus griseus}), large-eyed rabbit fish (ratfish) (\textit{Hydrolagus mirabilis}), saifin roughshark (\textit{Oxynotus paradoxus}), round skate (\textit{Raja fyllae}), Arctic skate (\textit{Raja hyperborea}), Norwegian skate (\textit{Raja nidaroensis}), straightnose rabbitfish (\textit{Rhinochimaera atlantica}), knifetooth dogfish (\textit{Scymnodon ringens}), and Greenland shark (\textit{Somniosus microcephalus}) in the Northeast Atlantic. The straddling shark stocks that occur in other regions are not identified by species in this FAO study.

**Highly migratory species stocks** are covered by Article 64 in Part V of the UNCLOS which reads as follows:

1. The coastal State and other States whose nationals fish in the region for the highly migratory species listed in Annex I shall cooperate directly or through appropriate international organizations with a view to ensuring conservation and promoting the objective of optimum utilization of such species throughout the region, both within and beyond the exclusive economic zone. In regions for which no appropriate international organization exists, the coastal State and other States whose nationals harvest these species in the region shall co-operate to establish such an organization and participate in its work.

2. The provisions of paragraph 1 apply in addition to the other provisions of this Part.

UNCLOS requires that States fishing highly migratory shark stocks on the high seas adjacent to the EEZ take into account the rights, duties and interests of relevant coastal states, as in the case of shark straddling stocks\textsuperscript{30}. This article obliges coastal state and non-coastal states to cooperate to ensure conservation and optimal utilization of shark straddling species within and beyond the EEZ. Thus, coastal states are subject to a restriction in their intra-EEZ management consisting of a duty to cooperate amongst themselves and with non coastal states.

Annex 1 of UNCLOS lists the following sharks: \textit{Hexanchus griseus}, \textit{Cetorhinus maximus}, family Alopidae, \textit{Rhincodon typus}, family Carcharhinidae, (family Sphyrnidae), and the mackerel sharks (family Lamnidae) (it is noted that in UNCLOS the family Lamnidae is listed as Isurida, using an old family name)\textsuperscript{31}.

\textsuperscript{28} Article 118.
\textsuperscript{30} Article 116.
\textsuperscript{31} Maguire, J.-J.; Sissenwine, M.; Csrke, J.; Grainger, R.; Garcia, S. (2006) \textit{op.cit.}
Table 2. Highly migratory sharks included on UNCLOS Annex 1.

<table>
<thead>
<tr>
<th>Family</th>
<th>Species</th>
</tr>
</thead>
<tbody>
<tr>
<td>Alopiidae (Thresher sharks)</td>
<td>Alopias pelagicus, Alopias superciliosus, Alopias vulpinus</td>
</tr>
<tr>
<td>Carcharhinidae (Requiem sharks)</td>
<td>Rhincodon typus (Whale shark)</td>
</tr>
<tr>
<td>Family Sphyrnidae The members of the family are considered coastal;</td>
<td></td>
</tr>
<tr>
<td>Eusphyra blochii (Winghead shark)</td>
<td>Sphyrna corona (Scalloped bonnethead)</td>
</tr>
<tr>
<td>Sphyrna lewini (Scalloped hammerhead)</td>
<td>Sphyrna media (Scoophead)</td>
</tr>
<tr>
<td>Sphyrna mokarran (Great hammerhead)</td>
<td>Sphyrna tiburo (Bonnethead)</td>
</tr>
<tr>
<td>Sphyrna tudes (Smalleye hammerhead)</td>
<td>Sphyrna zygaena (smooth hammerhead)</td>
</tr>
<tr>
<td>Family Lamnidae</td>
<td></td>
</tr>
<tr>
<td>Carcharodon carcharias (Great White Shark)</td>
<td>Isurus oxyrinchus (Shortfin Mako)</td>
</tr>
<tr>
<td>Isurus paucus (Longfin mako)</td>
<td>Lamna ditropis (Salmon shark)</td>
</tr>
<tr>
<td>Lamna nasus (Porbeagle)</td>
<td></td>
</tr>
</tbody>
</table>


Part VII of UNCLOS establishes rules for high seas activities. It recognizes the free access and the freedom of fishing to all States, limiting in three ways the right of nationals to fish on the high seas:

a) treaty obligations must be complied with

---

32 Ibidem.
33 Carcharhinus sorrah (spot-tail shark) is also important from a fisheries’ point of view but it is a coastal non-oceanic species taken primarily within EEZs.
34 Article 87.1.(e)
35 Article 116.
b) the rights and duties as well as the interests of coastal States must be respected in relation to the provisions on straddling stocks, highly migratory species, marine mammals, anadromous stocks, and catadromous stocks.

c) provisions concerning the conservation and management of the living resources on the high seas as established in Articles 116-120 must be respected.

This Part of UNCLOS calls upon all States and particularly upon fishing States to cooperate in the conservation and management of fishery resources occurring in the high seas and cooperate for the establishment of regional or sub-regional fisheries organizations. In addition, the requirement that States must take into consideration the effects of fishing in the high seas on species associated with or dependent upon harvested species with a view to maintaining or restoring populations of such associated or dependent species above levels at which their reproductions may become seriously threatened is relevant to shark bycatch.

Most of the top twenty shark catching countries and top twenty shark trading countries are Party to UNCLOS including the EC with the exception of Iran, Thailand and the United States. Taiwan’s political status is controversial and it is not a member of the UN.

2.2. The UN Fish Stock Agreement

In spite of UNCLOS, overexploitation of fisheries within the EEZ or on the high seas continued and continues as is the case of sharks. Agenda 21 recognized the inadequacy of many conservation measures and called for convening a conference on straddling and highly migratory fish stocks that took place in August 1995. This conference adopted the UN Agreement for the Implementation of the Provisions of the United Nations Convention on the Law of the Sea of 10 December 1982 Relating to the Conservation and Management of Straddling Fish Stocks and Highly Migratory Stocks (UNFSA). The UNFSA came into force on 11 December 2001.

Its overarching objective is “to ensure the long-term conservation and sustainable use of straddling fish stocks and highly migratory stocks through effective implementation of the relevant provisions of the Convention.” The Agreement creates a detailed framework for the management and conservation of these stocks as well as associated and dependent species. It also goes further and places the conservation and management within a wider context of the need to avoid adverse impacts on the marine environment, of the preservation of marine diversity, and of the integrity of the marine ecosystem. It was intended to serve as a framework for subsequent regional fisheries agreements. The Agreement contains twelve parts (50 articles) and two annexes.

---

36 Article 118.
37 Article 119.1 (b)
39 We must recall that Taiwan is not a UN member and its controversy on its political status.
40 Article 3.
The effectiveness of this Agreement was the subject of an assessment under the Review Conference of UNFSA that took place from 22-26 May 2006\textsuperscript{42}.

Currently this Agreement counts with 69 Parties including the EC\textsuperscript{43}. Of the top twenty shark catching countries only half of them are Parties to UNFSA: Brazil, France, India, Iran, Japan, Portugal, Spain, Sri Lanka, the UK and the USA. The Review Conference emphasized the importance of obtaining universal participation in the Agreement to ensure its effectiveness\textsuperscript{44}.

The Agreement applies to the conservation and management of straddling fish stocks and highly migratory fish stocks beyond areas under national jurisdiction, except that its Articles 6 and 7 also apply to the conservation and management of such stocks within areas under national jurisdiction, and coastal states must apply the general principles enumerated in Article 5 to stocks within areas of national jurisdiction\textsuperscript{45}. Therefore, this Agreement applies to the conservation and management of straddling and highly migratory sharks.

To effectively implement the duty to cooperate provided by the Agreement, article 5 commits coastal and states fishing on the high seas to adopt a series of measures all relevant for shark stocks:

\begin{itemize}
  \item[(a)] adopt measures to ensure long-term sustainability of straddling fish stocks and highly migratory fish stocks and promote the objective of their optimum utilization;
  \item[(b)] ensure that such measures are based on the best scientific evidence available and are designed to maintain or restore stocks at levels capable of producing maximum sustainable yield, as qualified by relevant environmental and economic factors, including the special requirements of developing States, and taking into account fishing patterns, the interdependence of stocks and any generally recommended international minimum standards, whether subregional, regional or global;
  \item[(c)] apply the precautionary approach in accordance with article 6;
  \item[(d)] assess the impacts of fishing, other human activities and environmental factors on target stocks and species belonging to the same ecosystem or associated with or dependent upon the target stocks;
  \item[(e)] adopt, where necessary, conservation and management measures for species belonging to the same ecosystem or associated with or dependent upon the target stocks, with a view to maintaining or restoring populations of such species above levels at which their reproduction may become seriously threatened;
  \item[(f)] minimize pollution, waste, discards, catch by lost or abandoned gear, catch of non-target species\textsuperscript{46}, both fish and non-fish species, (hereinafter referred to as non-target species) and impacts on associated or dependent species, in particular endangered species, through measures including, to the extent practicable, the development and use of selective, environmentally safe and cost-effective fishing gear and techniques;
  \item[(g)] protect biodiversity in the marine environment;
  \item[(h)] take measures to prevent or eliminate overfishing and excess fishing capacity and to ensure that levels of fishing effort do not exceed those commensurate with the sustainable use of fishery resources;
\end{itemize}

\textsuperscript{42}Article 36 called for the convening of this conference four years after the entry into force of this Agreement.


\textsuperscript{45}Article 3.1. and 2.

\textsuperscript{46}The Review conference recognized that while many regional fisheries management organizations have adopted measures to minimize the catch of non-target and associated and dependent species, the scope and effectiveness of these measures could be improved, particularly with respect to the species covered, compliance, and data reporting. A/CONF.210/2006/15
(i) take into account the interests of artisanal and subsistence fishers;
(ii) collect and share, in a timely manner, complete and accurate data concerning fishing activities on, *inter alia*, vessel position, catch of target and non-target species and fishing effort, as set out in Annex I, as well as information from national and international research programmes;
(j) promote and conduct scientific research and develop appropriate technologies in support of fishery conservation and management; and
(k) implement and enforce conservation and management measures through effective monitoring, control and surveillance.

According to this article, Contracting parties, including the EC, must minimize catch of non-target sharks and their impacts on associated or dependent shark species, in particular, shark endangered species in order to conserve and manage straddling shark stocks and highly migratory shark stocks.

The Review Conference revealed that UNFSA principles are now settled as the rules of the game for straddling and migratory fish stocks management, even for most non-parties. This statement does not seem very realistic when applied to sharks. Some delegations stated that the general principles of the Agreement should be applied to high seas fish stocks.

Contracting Parties must apply the precautionary approach widely to conservation, management, and exploitation of straddling shark stocks and highly migratory shark stocks. According to UNFSA, in applying the precautionary approach, states must establish stock-specific “precautionary reference points” of two kinds: conservation or limit reference point and target reference point. The first sets boundaries which are intended to constrain harvesting within safe biological limits within which the stocks can produce maximum sustainable yield. Target reference points are intended to meet management objectives. Management strategies shall seek to maintain or restore populations of harvested stocks, and where necessary associated or dependent species, at levels consistent with previously agreed precautionary reference points. Fishery management strategies must ensure that the risk of exceeding limit reference points is very low and that target reference points are not exceeded on average. If a stock falls below a limit reference point or is at risk of falling below such a reference point, conservation and management action should be initiated to facilitate stock recovery.

The implementation and application of the precautionary approach and precautionary reference points leaves a great deal to be determined by the relevant RFMOs. The Final Report of the Review Conference shows that States have begun to apply the precautionary approach to fisheries management but practical implementation varies widely. The adoption of measures based on the precautionary approach was identified as a significant challenge to RFMOs.

Article 7 of the Fish Stocks Agreement is one of its central provisions, as it addresses the relationship between the rights of the coastal State in its area under national jurisdiction and the rights of States fishing on the high seas in respect of straddling and highly migratory fish stocks. It is intended to provide guidance to coastal states and states fishing on the high seas, which have to reach agreement on measures to ensure the

---

48 Article 6.1.
49 Article 6 and Annex II.
50 A/CONF.210/2006/15.
51 Ibidem.
sustainable conservation and management of straddling fish stocks and highly migratory fish stocks\textsuperscript{52}. Compatibility of conservation and management measures established for the high seas and those adopted for areas under national jurisdiction must be attained in order to ensure conservation and management of the straddling and highly migratory shark stocks in their entirety. The Review Conference recommended taking measures to improve cooperation between flag States whose vessels fish on the high seas and coastal States so as to ensure the achievement of compatibility of measures for the high seas and for those areas under national jurisdiction with respect to straddling fish stocks and highly migratory fish stocks\textsuperscript{53}.

Part III covers mechanisms for international cooperation. Article 8 on Cooperation for Conservation and Management allows states to choose the level at which to cooperate. It does, nonetheless, appear to express a marked preference for RFMOs. Among the cooperation mechanisms are consultations and a framework for regional or subregional fisheries management organizations or arrangements (scope, functions, membership and participation, transparency, information exchange, scientific and technical cooperation). Where a RFMO is competent to establish conservation and management measures for a particular stock, states fishing that stock are required to become members of or participants in the organization, or agree to apply its measures in order to be permitted to continue to fish for the stock\textsuperscript{54}. The Review Conference placed emphasis on the role of RFMOs as a key mechanism to implement the Agreement but a sentiment that most RFMOs are not performing their main duty, which is to achieve the long-term sustainability of fish stocks, prevailed\textsuperscript{55}. It was recommended as a matter of urgency to undertake performance reviews of RFMOs to enhance their effectiveness\textsuperscript{56}. It also displayed that RFMOs are only as effective as States want them to be.

Part IV covers the duty of non-members in regional management organizations (and other fishing entities) to cooperate in the conservation and management of stocks managed by the organization, not to authorize their flag vessels to fish those stocks and to exchange information. Part V specifies the duties of the flag state, stating that a State’s authorization to fly its flag shall be commensurate with its ability to exercise control over the ship flying it\textsuperscript{57}. Part VI covers compliance and enforcement by the flag state\textsuperscript{58} including measures for international\textsuperscript{59}, regional, and subregional cooperation\textsuperscript{60}, procedures for boarding and inspection and measures\textsuperscript{61} to be taken by the port State\textsuperscript{62}. This qualifies the access to high sea fishing resources departing from traditional

\textsuperscript{53} A/CONF.210/2006/15
\textsuperscript{54} Articles 8 (4) and 17.
\textsuperscript{55} ENB, op.cit.
\textsuperscript{56} This has also been requested previously by United Nations Open-ended Informal Consultative Process on Oceans and the Law of the Sea (ICP) in 2005 and United Nations General Assembly (UNGA) Resolutions 60/31 and 61/105. The 27th session of COFI called to improve governance of RFMOs as well as to carry out performance reviews.
\textsuperscript{57} Article 18.
\textsuperscript{58} Article 19.
\textsuperscript{59} Article 20.
\textsuperscript{60} Article 21.
\textsuperscript{61} Article 22.
\textsuperscript{62} Article 23.
principles reflecting absolute rights of high seas fisheries freedom that was begun by UNCLOS.

The Review Conference discussion on monitoring control and surveillance and compliance and enforcement focused on sanctions, a legally binding instrument on port State controls, regulating transhipment, assistance to developing countries to MCS, and alternative mechanisms. The Conference recommended that States individually or through RFMOs:

- strengthen effective control over vessels flying their flag, ensuring that vessels comply with RFMO-adopted measures;
- adopt, strengthen and implement compliance and enforcement schemes in all RFMOs;
- adopt stringent measures to regulate transhipment, in particular at sea transhipment, and request and provide support to FAO to study the current practices of transhipment and produce guidelines for this purpose;
- adopt all necessary port State measures consistent with UNFSA article 23, and initiate a process with FAO to develop a legally binding instrument on minimum standards for port State measures, building on the FAO Model Scheme and the International Plan of Action on IUU fishing\textsuperscript{63}.

Other recommendations of the Review Conference significant to shark protection were:

- Develop management tools, including closed areas, marine protected areas and marine reserves and criteria for their implementation, to effectively conserve and manage straddling fish stocks, highly migratory fish stocks and high seas discrete stocks and protect habitats, marine biodiversity and vulnerable marine ecosystems, on a case-by-case basis in accordance with the best available scientific information, the precautionary approach and international law;
- Commiting themselves to submitting, on a priority basis, information on deep-sea fish catches, as requested by the twenty-sixth session of the FAO Committee on Fisheries, and contribute to the work of FAO to collect and collate information concerning past and present deep-water fishing activities and to undertake an inventory of deep-water stocks and an assessment of the effects of fishing on deep-water fish populations and their ecosystems.

\section*{2.3. The FAO Code of Conduct on Responsible Fisheries}

While UNFSA was being elaborated, the FAO promoted the preparation of a voluntary Code of Conduct on Responsible Fisheries which was unanimously adopted by the FAO Conference on 31 October 1995\textsuperscript{64}. It complements UNFSA. It is voluntary in nature and

\textsuperscript{63} During the 27th meeting of FAO's Committee on Fisheries (COFI, March 2007), it was agreed to start a process leading to the adoption of a legally binding international agreement establishing control measures in ports where fish are landed, transshipped, or processed in order to combat illegal, unreported, and unregulated (IUU) fishing.

\textsuperscript{64} The Agreement to Promote Compliance with International Conservation and Management Measures by Fishing Vessels on the High Seas forms an integral part of the Code of Conduct for Responsible Fisheries.
The Protection of Sharks: A Legal and Policy Analysis- IIDMA

does not create legally binding obligations upon States. This voluntary nature of the Code has enabled it to cover much more than may have been possible in a document intended to be a binding international agreement. However, certain parts of it are based on relevant rules of international law as reflected in UNCLOS.

The Code sets out principles and international standards of behaviour for responsible practices with a view to ensuring the effective conservation, management, and development of living aquatic resources, with due respect for the ecosystem and biodiversity.

The Code has the widest scope, as it is stated to be "global in scope, and is directed towards members and non-members of FAO, fishing entities, subregional, regional and global organizations, whether governmental or non-governmental, and all persons concerned with the conservation of the fishery resources and management and development of fisheries, such as fishers, those engaged in processing and marketing of fishery products and other users of the aquatic environment in relation to fisheries." It continues: "It also covers the capture, processing, trade and marketing of fish and fishery products, fishing operations, aquaculture, fisheries research and the integration of fisheries into coastal area management."

Thus, the Code, by applying to all fisheries, covers fisheries on the high seas, within the EEZ, in territorial waters, as well as covering inland fisheries, even when they are in shared waters. It has to be interpreted and applied in conformity with the relevant rules of international law, as reflected in UNCLOS and UNFSA.

The Code is structured so that it has a statement of general principles followed by articles that give specific content to the general principles. The General Principles are set out in article 6. In effect, article 6 provides the outline of the Code. For the purpose of this analysis we note the following principles which urge States to:

- conserve aquatic ecosystems, recognizing that the right to fish carries with it an obligation to act in a responsible manner;
- prevent overfishing and excess capacity;
- base conservation and management decisions on the best scientific evidence available, taking into account traditional knowledge of the resources and their habitat;
- apply the precautionary approach;
- develop further selective and environmentally safe fishing gear, in order to maintain biodiversity, minimize waste, catch of non-target species, etc.;
- protect and rehabilitate critical fisheries habitats;
- ensure fisheries interests are accommodated in the multiple uses of the coastal zone and are integrated into coastal area management;
- ensure compliance with and enforcement of conservation and management measures and establish effective mechanisms to monitor and control activities of fishing vessels and fishing support vessels;

and was negotiated to deter the practice of re-flagging of vessels to avoid compliance with conservation and management rules for fishing activities on the high seas.

65 Article 1.2.
66 Article 1.3.
• exercise effective flag State control in order to ensure the proper application of the Code;
• cooperate through subregional, regional, and global fisheries management organizations;
• ensure transparent and timely decision making processes;
• conduct fish trade in accordance with the principles, rights, and obligations established in the WTO Agreement;
• promote awareness of responsible fisheries through education and training, as well as involving fishers and fishfarmers in the policy formulation and implementation process.

In line with UNFSA\(^{67}\), this Code recommends a series of management measures to minimize waste discards, catch by lost or abandoned gear, catch of non-target species, both fish and non-fish species, and negative impacts on associated or dependent species, in particular endangered species\(^{68}\). These are technical measures related to fish size, mesh size or gear, discards, closed seasons, and areas and zones reserved for selective fisheries, particularly artisanal fisheries. It also recommends state and sub-regional and RFMOs to promote the development and use of selective, environmentally safe and cost effective gear techniques. Without any doubt this recommendation should be taken into account for the establishment of shark and multiple fisheries management measures.

2.4. The International Plan of Action for the Conservation and Management of Sharks (IPOA-Sharks) and the National Plans

To implement the Code for Responsible Fisheries, FAO has adopted four plans of actions:
1. the International Plan of Action for the Conservation and Management of Sharks
2. the International Plan of Action to Prevent, Deter and Eliminate Illegal, Unreported and Unregulated Fishing
3. the International Plan of Action for the Management of Fishing Capacity
4. the International Plan of Action for Reducing Incidental Catch of Seabirds in Longline Fisheries

Though the second and third Plan also contain measures of importance for the protection of sharks, we concentrate in the plan of action centered on sharks. This Plan adopted by the 23\(^{rd}\) session of COFI in 1999 was elaborated within the framework of the Code of Conduct for Responsible Fisheries as envisaged by Article 2 (d). Therefore, it provides guidance on conservation and management of shark with the intention to be used in the formulation and implementation of international agreements and other legal instruments, both binding and voluntary.

IPOA-Sharks emerged out of growing international concerns about the sustainability for shark populations given increased commercial exploitation, population vulnerability to overfishing, slow population recovery rates and limited knowledge about these species and related fisheries practices. In 1994, CITES requested FAO to gather necessary

---

\(^{67}\) Article 5 (g).
\(^{68}\) Article 7.2.2 (g) and 7.6.9.
information on sharks to develop and propose guidelines leading to a plan of action for the conservation and management of sharks.\textsuperscript{69}

It is a voluntary instrument whose overall objective is to ensure the conservation and management of sharks and their long-term sustainable use embracing the precautionary approach. The IPOA-Sharks applies to States in whose waters sharks are caught by vessels (their own or foreign) or whose vessels catch sharks on the high seas. The term “shark catch” is taken to include directed (targeted), non-directed (non-targeted), bycatch (discards), commercial, recreational and other forms of taking sharks.\textsuperscript{70}

All states are encouraged to assess their current shark populations, produce a Shark Assessment Report (SAR), identify threats to these populations, and provide special attention to vulnerable or threatened species. They also are encouraged to improve catch reporting, increase catch utilization, and enhance frameworks for broad stakeholder consultation. Member states agree voluntarily to develop, implement, and monitor a national plan of action (NPOA-Shark) if their vessels conduct directed fisheries for sharks of if their vessels regularly catch sharks in non-directed fisheries.

According to FAO\textsuperscript{71}, IPOA-Sharks prescribes a process whereby individual States, relevant sub-regional arrangements through bilateral and multilateral agreements, and relevant RFMOs identify national, sub-regional, and regional issues and then appropriately develop national, sub-regional, or regional “Shark Plans” to address the issues and assesses its effectiveness at least every four years. This is particularly important where transboundary, straddling, highly migratory stocks, and high seas stocks of sharks have been exploited by two or more states. Each State and RFMO (and where required each sub-regional entity) should carry out a regular assessment of the status of its shark stocks subjected to fishing so as to determine whether or not there is a need to develop a Shark Plan.

The IPOA-Sharks lists ten objectives that should be achieved by NPOA:

- Ensure that shark catches from directed and non-directed fisheries are sustainable
- 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
- Identify and provide special attention to vulnerable or threatened shark stocks
- Improve and develop frameworks for establishing and coordinating effective consultation involving all stakeholders in research, management, and educational initiatives within and between States
- Minimize unutilized incidental catches of sharks
- Contribute to the protection of biodiversity and ecosystem structure and function
- Minimize 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);
- Encourage full use of dead sharks
- Facilitate improved species-specific catch and landings data and monitoring of shark catches

\textsuperscript{69} CITES Conference Resolution 9.17.
\textsuperscript{70} FAO Fisheries Management (2000) \textit{op.cit.}
\textsuperscript{71} \textit{Ibidem.}
Facilitate the identification and reporting of species-specific biological and trade data.

The Technical Guidelines for conservation and management of sharks identify four elements of the IPOA-Sharks:

a) the particular conservation needs of some shark and other chondrichthyan species. Some species of shark need “special protection” (or “special management”). Such species may need special protection through management action such as prohibition of their capture, prohibition of specific fishing gears, or closed areas to their capture or use of specific fishing gears;

b) the need for maintenance of biodiversity through viability of shark population. The number of species and within-species genetic variability of shark and other chondrichthyan species is naturally low compared with those of many other taxonomic groups. The loss of species, the loss of individual populations within a species, or loss of genetic variation within a species or population, and consequent loss of ecological processes reduces biodiversity as well as benefits to human kind;

c) the need for habitat protection. Special habitat protection or habitat restoration programmes might be required where a species abundance or range has been reduced as a result of habitat loss;

d) the management requirements of shark fishery resources for sustainable use. Sustainable use requires an understanding of the biophysical and ecological systems and requires maintaining stocks at, or restoring to, levels above those capable of producing maximum sustainable yields. Managing shark resources for sustainable use involves controlling fishing mortality through limiting fishing effort and/or catch and through biological controls such as legal minimum lengths, prescribed mesh-sizes or hooks sizes of the fishing gear, closed seasons and closed areas.

2.4.1. Shark National Plans of Action

IPOA-Shark called States contributing to fishing mortality to prepare a Shark-plan by the COFI Session in 2001. However, few countries have adopted a NPOA-Shark. In addition, the implementation of these plans is not effective in general. In 2006, the United Nations General Assembly urged States, including those working through sub-regional or regional fisheries management organizations and arrangements, to implement fully the International Plan of Action for the Conservation and Management of Sharks. In 2007, FAO has reported that over one in two Members have conducted a SAR to

---


73 Notably through the collection of scientific data regarding shark catches and the adoption of conservation and management measures, particularly where shark catches from directed and non-directed fisheries have a significant impact on vulnerable or threatened shark stocks, in order to ensure the conservation and management of sharks and their long-term sustainable use, including by banning directed shark fisheries conducted solely for the purpose of harvesting shark fins and by taking measures for other fisheries to minimize waste and discards from shark catches, and to encourage the full use of dead sharks. A/RES/61/105
determine whether a Plan was needed, marking a near doubling over the 2005 report. One in three of those Members had developed and implemented a plan\textsuperscript{74}.

Of the twenty top shark catching countries only Taiwan\textsuperscript{75}, Mexico\textsuperscript{76}, the United States\textsuperscript{77} and Japan\textsuperscript{78} have passed their NPOA-Sharks. Malaysia\textsuperscript{79} in 2005 and the UK\textsuperscript{80} in 2004 drafted their plans but they have not adopted them yet.

Taiwan passed its NPOA-Sharks in 2004\textsuperscript{81}. We only could accede to a summary of this text in English which shows that the NPOA-Sharks follows in general the recommendations of FAO on the content of these plans:

- Existing Shark species in Taiwan
- Shark fisheries
- Data collection
- Utilization
- Shark research in Taiwan
- Stock assessment\textsuperscript{82}
- Education and extension
- International cooperation
- Management measures

This Plan informs on the constitution of a shark management working group in 2001.

The Mexican NPOA-Shark was also approved in 2004\textsuperscript{83}. It contains an assessment of their shark population listing endangered or threatened species: *Carcharodon carcharias*, *Rhinodon typus*, *Cetorhinus maximus*, *Pristiophorus schroederi*, *Pristis pristis*, *P. pectinata*, *P. perotteti*, *P. microdon*, *Manta birostris*, *Mobula japonica*, *M. thurstoni* and *M. tarapacana*. It also includes a description of the shark fisheries comprising information on gear, effort, catching (targeted, non-directed and bycatch), institutions (research, management and processing) and research funds. The implementation of this NPOA was to be based on guidelines that would originate a series of specific programmes\textsuperscript{84} supporting the compliance with the established objectives and goals. The

\textsuperscript{80} http://www.jncc.gov.uk/pdf/jncc360.pdf Last visited on 15.02.2007.
\textsuperscript{81} http://www.fao.org/fi/website/FIRetrieveAction.do?dom=org&xml=ipoa_sharks.xml&xp_nav=4
\textsuperscript{82} This assessment has been only carried out for a few pelagic shark species.
\textsuperscript{84} These programmes are: research programme includes two subprogramme on tagging and observers; information system programme; dissemination, awareness raising and capacity building programme; inspections and monitoring programme; interinstitutional cooperation programme.
Code of Conduct on Responsible Fisheries was the basis of the guidelines. The foreseen programmes would cover specific problems to achieve the well functioning of the Plan. However, this NPOA has not been implemented at all\textsuperscript{85} but Mexico recently passed a Mexican Official Norm for Responsible Shark Fisheries (see below).

The United States NPOA-Sharks was adopted in February 2001\textsuperscript{86}. Its objectives coincide with those of the FAO IPOA-Sharks. It includes a synopsis of fisheries and management measures in the U.S containing information on U.S. shark fisheries, including stock assessment results, data on catches, landings and discards, management measures, and research needs. The authority for implementing the US NPOA comes through the Magnuson-Stevens Act. For management entities that have jurisdiction of directed shark fisheries or fisheries with regular catches of sharks\textsuperscript{87}, the NPOA called for the following actions to be taken:

1. Data collection
2. Stocks Assessment
3. Adoption of management measures based on the results of the SAR
4. Research and Development of Mitigation Measures and Methods
5. Limitation of Fishing Capacity
6. Outreach and Education
7. Reporting and Monitoring

The Japanese NPOA-Sharks was adopted in February 2001. It identifies the impacts of the Japanese fisheries on shark resources, analyzing it scientifically, and takes into account the internationally agreed codes of conduct in order to implement appropriate conservation and management measures. For the elaboration of the NPOA an assessment of the following fisheries was made:

a) gillnet fisheries (skates)
   b) trawling fisheries (pike dogfish, botton sharks and rays)
   c) tuna longline fisheries (oceanic sharks)

The Plan includes measures for the collection of data, promotion of effective utilization, educational and awareness raising activities, and promotion of international cooperation. It also includes a commitment to introduce management measures based on the results of the work of a group of experts established to carry out shark assessment on a continuous basis.

\textsuperscript{85} Source: Jorge Ramirez from Iemanya Oceánica Mexico (www.iemanya.org)
\textsuperscript{87} These management entities are: the Secretary of Commerce in case of highly migratory species, state regulatory agencies and the states management councils (New England Fishery Management Council, the Mid-Atlantic Fishery Management Council, the South Atlantic Fishery Management Council, the Gulf of Mexico Fishery Management Council, Caribbean Fishery Management Council, Pacific Fishery Management Council, North Pacific Management Council, Western Pacific Fishery Management Council). Within 3 nautical miles of the territorial sea states as well as interstate commissions are responsible for the implementation of NPOA-Shark. The interstate commissions are: the Pacific States Marine Fisheries Commission, the Atlantic States Marine Fisheries Commission and the Gulf States Marine Fisheries Commission.
The UK drafted NPOA-Sharks to inform the drafting process of the EC Shark Action Plan which was being elaborated at that time but that has not been adopted yet. It includes a brief description of shark fisheries and a summary of trends, stock status, and management. The draft also includes recommendations for the conservation of sharks in the UK following the ten objectives pointed out in FAO IPOA-Sharks. The UK is awaiting the adoption of the European Community Plan which is expected to be prepared by the European Commission within the first half of 2007 and submitted to the European Parliament no later than 30 June 2007.

Of the ten shark products exporter countries, in addition to Taiwan and Japan, only Canada has adopted a NPOA-Shark and Chile has prepared a draft. The Canadian NPOA-Shark was adopted in March 2007. It makes a revision of the state of management of sharks in Canada. It is relevant to note that Canada already makes use of a series of Integrated Fisheries Management Plans, some of them applicable to sharks. It also makes use of research and consultation mechanisms as well as shark fisheries monitoring programmes. The shark fisheries are subject to dockside monitoring, at-sea observer coverage, quota monitoring systems, electronic vessel monitoring system, and hail requirement for both the at-sea observer programme and dockside monitoring programme. To cover existing gaps in shark management in Canada the NPOA includes a series of actions including: data collection and research, adoption of an ecosystem approach and the precautionary approach, standardizing reporting and a management plan process, bycatch reduction and reporting of discard mortality, extension of conservation and management measures to the Artic Coast, enhancing outreach, and education efforts in Canada. The Canadian Plan recognises the need to cooperate with RFMOs to improve the conservation and management of sharks.

Other countries that have adopted a NPOA-Shark are: Australia (2004) and Ecuador (2006).

---


93 http://www.cpps-int.org/spanish/cientifico/reunion/proteccion%20tiburones/PLAN%20TIBURONES%20ECUADOR.pdf
No RFMO has adopted a Plan for the Conservation and Management of Sharks. In the following section we will analyse the measures that some Regional Fisheries Bodies (RFBs) have taken measures for the protection of sharks.

It is important to highlight that a NPOA-Shark is the first step for a sound conservation and management of sharks but it must be accompanied by their correspondent implementation measures as well as the adoption of legally binding instruments to ensure the long-term conservation and sustainable use of shark fishery resources.

2.5. The RFMOs and the protection of sharks

RFBs are in general established under the mandate of FAO. These bodies have a management, advisory and scientific role. The family of Regional Fishery Bodies – already numbering thirty-eight including eighteen bodies with a management mandate (RFMOs) – is rapidly expanding in response to recognition by the international community of the continuing need to strengthen international cooperation and institutions that work on a regional basis, and to increase the coverage of the oceans by RFBs.

Chapter 17 of Agenda 21, the 1995 UNFSA and the 1995 FAO Code of Conduct for Responsible Fisheries highlight the role of RFMOs in implementing management measures designed to secure long-term sustainable and responsible outcomes. RFMOs serve as fora through which states meet and cooperate to manage fisheries for the conservation and sustainable use of marine living resources. An RFMO is defined by the FAO as “an intergovernmental fisheries organization or arrangement, as appropriate that has the competence to establish fisheries conservation and management measures.”

Most RFMOs were established before the UN Fish Stocks Agreement (1995) and the FAO Compliance Agreement (1993) were adopted. Several RFMOs predate the adoption in 1982 of the UN Convention on the Law of the Sea. This means that their mandates do not include the precautionary approach as required by UNFSA. To date, many RFMOs have failed to adopt, or apply, an ecosystem-based approach to management. They are working to strengthen international cooperation, promote transparency, address non-members, and enhance monitoring, control and surveillance (MCS) measures, including the implementation of mandatory vessel monitoring systems (VMS), the adoption of regional schemes for port State measures and the development of measures.

97 See FAO International Plan of Action to Prevent, Deter and Eliminate Illegal, Unreported and Unregulated Fishing (IPOA-IUU), para 6.
98 UNEP/CMS/MS/4.
of vessel lists\textsuperscript{99}. However until now, RFMOs have generally failed to prevent over-exploitation of straddling and highly migratory fish stocks, to rebuild overexploited stocks, and to prevent degradation of the marine ecosystems in which fishing occurs\textsuperscript{100}.

Some gaps remain, particularly with respect to high seas fish stocks since only a few organizations cover whole ocean basins while most manage straddling stocks and specific species highly migratory stocks.

\textbf{2.5.1. Measures for the protection of sharks at RFMOs}

Though IPOA-Sharks made a call to RFMOs to develop shark plans where appropriate, none of them have adopted such a plan. Most of these bodies have introduced some conservation and management measures which basically consist of requiring shark data, such as biological data and catch reporting, and shark finning controls\textsuperscript{101}. Some have taken actions to carry out an assessment of specific stocks and introduced specific-species measures.

The Commission for the Conservation of Antarctic Marine Living Resources (CCAMLR)\textsuperscript{102} has prohibited direct fishing on shark species\textsuperscript{103} except for scientific research. This prohibition applies until the Scientific Committee has investigated and reported on the potential impacts of this fishing activity and the Commission has agreed on the basis of advice from the Scientific Committee that such fishing may occur in the Convention Area. In addition, this conservation measure requires the maximum effort to release shark bycatch alive, especially juveniles and gravid females, taken accidentally in other fisheries. Conservation Measure 33-02 (2006) limits bycatch of skates and rays in Statistical Division 58.5.2 in the 2006/07 season.

The International Commission for the Conservation of Atlantic Tunas (ICCAT)\textsuperscript{104} has adopted the following resolutions and recommendations on sharks:

- Res. 1995-02 called its members to cooperate with FAO in the programme initiated to collect necessary biological data, including stock abundance and the magnitude of bycatch, and trade data on shark species.
- Res. 2001-11 on Atlantic Sharks whereby the Standing Committee on Research and Statistics (SCRS) should conduct assessments on the Atlantic shortfin mako and blue sharks. All contracting parties, cooperating non-contracting parties, entities and fishing entities (CPCs) should:

\begin{itemize}
  \item Res. 1995-02 called its members to cooperate with FAO in the programme initiated to collect necessary biological data, including stock abundance and the magnitude of bycatch, and trade data on shark species.
  \item Res. 2001-11 on Atlantic Sharks whereby the Standing Committee on Research and Statistics (SCRS) should conduct assessments on the Atlantic shortfin mako and blue sharks. All contracting parties, cooperating non-contracting parties, entities and fishing entities (CPCs) should:
\end{itemize}

\textsuperscript{99} FAO. Strengthening Regional Fisheries Management Organizations and their Performances Including the Outcome of the 2007 Tuna RFMOs Meeting \textit{op.cit}.
\textsuperscript{101} We prefer to use this term instead of “shark finning bans” as Lack M. and Sant. G (2006) accurately suggest.
\textsuperscript{102} \url{http://www.ccamlr.org/pu/e/cc/intro.htm}. It regulates straddling fish stocks. The EC is a member of the Commission.
\textsuperscript{104} \url{http://www.iccat.es/main.htm}. It regulates highly migratory tuna and tuna-like stocks. The EC is a contracting Party.
a) submit catch and effort data, including dead discard estimates, for porbeagle, shortfin mako and blue sharks;
b) encourage the release of live sharks, to the extent possible, that are caught incidentally, especially juveniles;
c) minimize 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);
d) voluntarily agree not to increase fishing effort targeting Atlantic porbeagle, shortfin mako and blue sharks until sustainable levels of harvest can be determined through stock assessments.

- Res. 2003-10 on the Shark Fishery calling each CPCs to provide the Working Group of the Sub-Committee on Bycatch with the information on their shark catches, effort by gear type, landings and trade of shark products and to implement a NPOA
- Rec. 2004-10 concerning the conservation of sharks caught in association with fisheries managed by ICCAT request CPCs to report annually data for shark catches, to require their fishermen to fully utilize their shark catches, to require their vessels to not have onboard fins that total more than 5% of the weight of sharks onboard, up to the first point of landing. In fisheries that are not directed at sharks, CPCs shall encourage the release of live sharks, especially juveniles, to the extent possible, that are caught incidentally and are not used for food and/or subsistence. It calls the SCRS to review the assessment of shortfin mako sharks and recommend management alternatives for consideration by the Commission, and reassess blue shark and shortfin mako no later than 2007.
- Rec. 2006-10 calls the SCRS to conduct stock assessments of, and recommend management alternatives for, shortfin mako and blue sharks in time for consideration at the 2008 annual meeting of the Commission.

The Inter-American Tropical Tuna Commission (IATTC)\textsuperscript{105} adopted a Resolution on the Conservation of Sharks caught in association with fisheries in the Eastern Pacific Ocean.\textsuperscript{106} It requests CPCs to report annually data for catches of sharks, take the necessary measures to require that their fishermen fully utilise their entire catches of sharks and release live sharks that are caught incidentally. It also establishes a finning control and commits IATTC to provide preliminary advice on the stock status of key shark species and propose a research plan for a comprehensive assessment of these stocks in cooperation with scientists of CPCs and, if possible, the Western and Central Pacific Fisheries Commission.

The Indian Ocean Tuna Commission (IOTC)\textsuperscript{107} passed resolution Resolution 05/05 concerning the conservation of sharks caught in association with fisheries managed by IOTC. CPCs are requested to report annually data for catches of sharks, take the necessary measures to require that their fishermen fully utilise their entire catches of sharks and release live sharks that are caught incidentally. This Resolution includes a finning control and request the Scientific Committee (in collaboration with the Working Party on Bycatch) to provide preliminary advice on the stock status of key shark species

\textsuperscript{105} \url{http://www.iatc.org}. It regulates highly migratory tuna and tuna-like stocks. The EC is a Cooperating Non Party to IATTC and France and Spain are members of this Commission.

\textsuperscript{106} Resolution C-05-03.

\textsuperscript{107} \url{http://www.iotc.org/English/index.php}. It regulates highly migratory tuna and tuna-like stocks. The EC is a contracting Party to IOTC.
and propose a research plan and timeline for a comprehensive assessment of these stocks.

The Northwest Atlantic Fisheries Organization (NAFO)\textsuperscript{108} Fisheries Commission has introduced a series of measures for the protection of sharks including shark finning controls, quotas and technical measures\textsuperscript{109}. Contracting Parties must report data for all catches of sharks following detailed procedures\textsuperscript{110} and take the necessary measures to require that their fishermen fully utilise their entire catches of sharks and release live sharks that are caught incidentally. NAFO has established a TAC for thorny skate (\textit{Amblyraja radiata}) of 13,500 corresponding to the EC a quota of 8,500 (metric tonnes)\textsuperscript{111}. It prohibits the use of trawl net having in thereof net meshes of dimensions less than 130mm for direct fishing on the following shark species\textsuperscript{112}:

- Spiny dogfish \textit{Squalus acantias}
- Dogfishes (NS) \textit{Squalidae}
- Sand Tiger shark \textit{Odontaspis taurus}
- Porbeagle \textit{Lamna nasus}
- Shortfin mako shark \textit{Isurus oxyrinchus}
- Dusky shark \textit{Carcharhinus obscurus}
- Great Blue shark \textit{Prionace glauca}
- Large sharks (NS) \textit{Squaliformes}
- Atlantic Sharpnose shark \textit{Rhizoprionodon terraenovae}
- Black Dogfish \textit{Centroscyllium fabricii}
- Boreal (Greenland) shark \textit{Somniosus microcephalus}
- Basking shark \textit{Cetorhinus maximus}
- Skates (NS) \textit{Raja sp.}
- Little skate \textit{Leucoraja erinacea}
- Arctic skate \textit{Amblyraja hyperborea}
- Barndoor skate \textit{Dipturus laevis}
- Winter skate \textit{Leucoraja ocellata}
- Thorny skate (Starry Ray) \textit{Amblyraja radiata}
- Smooth skate \textit{Malcoraja senta}
- Spinytail skate (Spinetail Ray) \textit{Bathyraja spinicauda}

For the direct fishing of skates, that mesh size must be increased to a minimum of 280 mm in the codend and 220 mm in all other parts of the trawl\textsuperscript{113}.

The North East Atlantic Fisheries Commission (NEAFC)\textsuperscript{114} has introduced an interim conservation measure which prohibits directed fishing for basking shark in 2006 and 2007\textsuperscript{115}, a shark finning control\textsuperscript{116} and a ban on using gillnets in waters greater than 200 metres depth\textsuperscript{117}. It also calls for compilation of data to better assist assessments of the basking shark stock status and advice on this and other pelagic shark species. NEAFC

\textsuperscript{108} \texttt{www.nafo.int}. It regulates straddling fish stocks. The EC is a contracting Party to NAFO.
\textsuperscript{109} NAFO Conservation and Enforcement Measures for 2007 (NAFO FC Doc. 07/1 Serial No. N5335).
\textsuperscript{110} Chapter III of NAFO Conservation and Enforcement Measures for 2007.
\textsuperscript{111} It corresponds to Canada a quota of 2250, to Russia 2250 and to others 500.
\textsuperscript{112} Article 10 d).
\textsuperscript{113} Article 10 c).
\textsuperscript{114} \texttt{http://www.neafc.org}. It regulates straddling fish stocks. The EC is a contracting Party to NEAFC.
\textsuperscript{116} Each Contracting Party shall require their vessels not to have onboard shark fins that total more than 5% of the weight of sharks onboard, up to the first point of landing.
also requires the communication of shark catch and of transshipment for deep-sea shark species following detailed formats.

The South East Atlantic Fisheries Organization (SEAFO)\textsuperscript{119} has also adopted a conservation Measure 04/06 on the Conservation of Sharks that applies only to sharks caught in association with fisheries for species covered by the SEAFO Convention. Contracting Parties are requested to report annually data for catches of sharks, take the necessary measures to require that their fishermen fully utilise their entire catches of sharks and release live sharks that are caught incidentally. This Resolution includes a finning control.

The Western and Central Pacific Fisheries Commission (WCPFC)\textsuperscript{120} has adopted the Conservation and Management Measure (2006-05) for Shark in the Western and Central Pacific Ocean introducing a shark finning control and encourage the full utilization of sharks and the release of live sharks, that are caught incidentally and are not used for food or other purpose. However, this Measure only applies to vessels greater than 24m overall length and will not enter into force until 1\textsuperscript{st} January 2008.

Shark finning controls helps to identify the shark catch species but this contribution is maximized if fins are required to remain attached to the trunk until landing. The shark finning control introduced by RFMOs uses a 5\% ratio of fins to body weight. The appropriateness of the ratio of fins to body weight adopted is a key determinant of the effectiveness of shark finning controls in place\textsuperscript{121}. The IATTC’s Working Group on Stock Assessment has highlighted that the used 5\% ratio of fins to body weight by RFMOs do not mention if the standard applies to the wet or dry weight of the fins, the dressed weight or whole weight of the shark, the whole fin or just what is sold in the market, etc.\textsuperscript{122}

Most of the measures introduced by RFMOs for the conservation and management of sharks introduce some requirements of IPOA-Shark but still there is much to be done to assess the shark stocks, to protect specific species, and to introduce measures to minimize bycatch of sharks.

\section*{2.5.2. The protection of sharks at other RFBs}

In addition to the measures taken by RFMOs, some RFBs are acting to protect sharks. ICES\textsuperscript{123} as the official scientific advisory body to the NEAFC, North Atlantic Salmon Conservation Organization (NASCO) and European Commission plays and important role providing advice on Deepwater sharks and elasmobranchs. The Organización

\begin{itemize}
\item Article 12, Scheme 2007. This obligation cover the following species: Iceland catshark, Gulper shark, Leafscale gulper shark, Black dogfish, Portuguese dogfish, Longnose velvet dogfish, Rabbit fish, Frilled shark, Kitefin shark, Birdbeak dogfish, Greater lanternshark, Blackburn roughshark, Mouse catshark, Blondnose six-gilled shark, Large- eyed rabbit fish (Ratfish), Salfin roughshark, Round skate, Arctic skate, Norwegian skate, Straightnose rabbitfish, Knifetooth dogfish and Greenland shark.
\item \url{http://www.seafo.org}. It regulates straddling fish stocks. The EC is a contracting Party to SEAFO.
\item \url{http://www.wcpfc.int}. It regulates highly migratory tuna and tuna-like stocks. The EC is a contracting Party to WCPFC.
\item Lack M. and Sant G. \textit{op.cit.}
\item IATTC Working Group on Stock Assessment. 7\textsuperscript{th} Meeting, Review of 2006 Stock Assessment (La Jolla, 15-19 May 2006), Meeting Report.
\item \url{http://www.ices.dk/}
\end{itemize}
Latinoamericana de Desarrollo Pesquero (OLDEPESCA) have fostered the development of NPOA-Sharks of their members through the cooperation programme with FAO\textsuperscript{124}.

\textbf{2.6. The European Community}

The Common Fisheries Policy (CFP) is the European Union's instrument for the management of fisheries and aquaculture. The main goal of the new CFP, established in 2003, is to ensure exploitation of living aquatic resources that provides sustainable economic, environmental, and social conditions\textsuperscript{125}. For this purpose, the Community applies the precautionary approach when taking measures designed to protect and conserve living aquatic resources, to provide for their sustainable exploitation and to minimise the impact of fishing activities on marine eco-systems. The CFP aims at a progressive implementation of an eco-system-based approach to fisheries management.

\textbf{2.6.1. The CFP and Shark Protection}

The measures for the conservation and management of fisheries that can be adopted under the CFP include recovery plans, management plans, total allowable catches (TACs) which are divided among Member States as national quotas, limitation of fishing effort, closed seasons and/or areas, measures regarding the structure of fishing gear, minimum size of individuals that may be retained on board and/or landed, specific measures to reduce the impact of fishing activities on marine eco-systems and non target species\textsuperscript{126}.

In spite of having adopted the precautionary approach and implementing progressively the ecosystem approach, the EC has not developed a strong policy for the conservation and management of sharks. We must recall that the EC is a Party to UNCLOS and UNFSA and that among the top twenty shark catching countries there are four members of the EC: Spain, UK, France and Portugal. The first two countries are also in the list of the top ten shark trading countries.

As seen previously, the EC has not developed a Shark Plan. In the Community Action Plan, to integrate environmental protection requirements into the Common Fisheries Policy\textsuperscript{127} proposed by the Commission and endorsed by the Council, the Commission committed to propose legislation to implement Community Action Plans to manage sharks and protect seabirds in the context of FAO IPOAs before the end of 2003. This has not happened yet though it is expected that the European Commission will present a proposal for a Plan of Action for the Conservation of Sharks in 2007\textsuperscript{128}. According to

\textsuperscript{124}\url{http://www.oldepesca.org/tiburon.htm}

\textsuperscript{125} Council Regulation (EC) No 2371/2002 of 20 December 2002 on the conservation and sustainable exploitation of fisheries resources under the Common Fisheries Policy

\textsuperscript{126} Article 4 Council Regulation (EC) No 2371/2002.


Council Regulation (EC) No 2371/2002 the objective of a EC fisheries management plan is to maintain stocks within safe biological limits for fisheries exploiting stocks at/or within safe biological limits. It must include conservation reference points, such as targets against which the maintenance of stocks within such limits shall be assessed. The measures that can be established under a management plan are: limitation of catches, number and type of fishing vessels authorised to fish, limitation of fishing effort, closed seasons and/or areas, measures regarding the structure of fishing gear, minimum size of individuals that may be retained on board and/or landed, specific measures to reduce the impact of fishing activities on marine eco-systems and non target species, incentives to promote more selective or low impact fishing, pilot projects on alternative types of fishing management techniques, and harvesting rules which consist of a predetermined set of biological parameters to govern catch limits.129

2.6.2. EC Measures for the Protection of Sharks

Until now, the measures adopted at the EC level to protect sharks are the “finning regulation”, the establishment of TACs and some technical measures as well as the prohibition of direct shark fishing in certain areas or for certain species. Some of these measures derive from the EC being a member of RFMOs.

Council Regulation (EC) No. 1185/2003 of 26 June 2003 on the removal of fins of sharks130 establishes measures to prevent and restrict the practice of shark finning. It applies to the removal of shark fins, retention on board, transhipment and landing of sharks or shark fins by vessels in maritime waters under the sovereignty or jurisdiction of Member States and by vessels flying the flag or registered in Member States in other maritime waters.131

The Regulation prohibits132:

- the removal of shark fins on board vessels and their retention on board, transhipment or landing;
- the purchase or sale of shark fins which have been removed on board, retained on board, transhipped or landed in contravention of the regulation.

However, this Regulation also provides derogation from the prohibition to remove shark fins from dead sharks on board and to retain on board, tranship or land shark fins. To apply this derogation, flag Member States must issue and administer a special permit authorising the removal on board of fins from dead sharks on condition that the remainder of the carcass is also retained on board (with the exception of waste associated with gutting, beheading and skinning). In that case, the weight of the fins retained on board must never exceed 5% of the total weight of the shark catch (live weight).

---

129 Article 6.
131 Article 1.
132 Article 3.
Such authorisation may be granted only where the fishing vessels are capable of using all parts of the sharks and can demonstrate the need for the separate processing of shark fins and other shark parts.

A system of recording and monitoring the quantities of shark fins and other parts of sharks retained on board, transhipped, landed, and sold makes possible the monitoring of compliance with these provisions by the masters of vessels which hold this permit. The data must be verified by the Member States. However, fins and carcasses can be landed separately.

Where landings take place at non-Community ports, a system of prior notification of at least 72 hours is also included in the monitoring arrangements.

The main problem with this Regulation is the established fin-to-body weight ratio. In contrast to the science-based 5% dressed-weight fin to carcass ratio in place in the US, Canada and Australia, the EU finning regulation establishes a substantially higher fin to carcass ratio limit of 5% of the whole or “live” weight\(^{133}\) which corresponds to dressed-ratios of 8% or more\(^{134}\). ICCAT’s SRCS have indicated that it is not advisable to establish universal fin-to-body weight ratios and have recommended that conversion factors between the fins and body weight are developed and implemented on a species- and/or fleet specific basis\(^{135}\). Nevertheless, IUCN has concluded that “the use of 5% as a target figure in shark fishery management plans already allows considerable flexibility for species-specific variation in fin carcass weights and should not be exceeded. An appropriate regulation should therefore contemplate either ratios of 2% fin-live (whole body) weight or of 5% fin: dressed carcass weight, as both are suitable for most large-finned species”\(^{136}\).

The finning regulation requires Member States to submit to the Commission an annual report by 1 May at the latest on its implementation. The Commission’s report on the operation of the regulation\(^ {137}\) noted the general failure of Member States to present their reports on implementation on time or insufficient detail. Four States reported issuing vessels with special permits permitting fins to be removed from sharks onboard: Germany, Portugal, Spain and the UK. Of these, two reported concerns over the permitted fin-carcass ratio under the Regulation: Spain and Portugal. It was unclear whether any vessels landed fins separately from carcasses. The Commission concluded, however, that the Regulation appeared to be achieving its general objectives, that the sector was not experiencing significant difficulties in coping with the legislation, and that no amendment appears necessary at that stage.

The European Parliament made a tricky call to the Commission to submit it a proposal for amending Council Regulation (EC) No 1185/2003 revising the theoretical ratios of

---

133 As seen above, RFMOs use the same ratio but they do not indicate if the standard applies to dressed weight or whole weight of the shark.
fin weight to live weight no later than 28 March 2007\textsuperscript{138}. But on a question of the European Parliament to the Commission on Fin/body weight ratio for blue sharks, the Fisheries and Maritime Affairs Commissioner responded that the Commission considers appropriate the ratio established by the Regulation and therefore, no amendment will be proposed\textsuperscript{139}.

Fishing opportunities for deep sea sharks\textsuperscript{140} are established by Council Regulation (EC) No 2015/2006 of 19 December 2006\textsuperscript{141} fixing for 2007 and 2008 fishing opportunities for Community fishing vessels for certain deep-sea fish stocks. It does not allow direct fisheries for deep sea sharks in the Community waters and waters not under the sovereignty or jurisdiction of third countries of ICES areas V, VI, VIII and XI. In these areas quotas are established for bycatches\textsuperscript{142}:

<table>
<thead>
<tr>
<th>Year</th>
<th>2007</th>
<th>2008</th>
</tr>
</thead>
<tbody>
<tr>
<td>Germany</td>
<td>59</td>
<td>39</td>
</tr>
<tr>
<td>Spain</td>
<td>280</td>
<td>187</td>
</tr>
<tr>
<td>Estonia</td>
<td>4</td>
<td>2</td>
</tr>
<tr>
<td>France</td>
<td>1 014</td>
<td>676</td>
</tr>
<tr>
<td>Ireland</td>
<td>164</td>
<td>109</td>
</tr>
<tr>
<td>Lithuania</td>
<td>4</td>
<td>2</td>
</tr>
<tr>
<td>Poland</td>
<td>4</td>
<td>2</td>
</tr>
<tr>
<td>Portugal</td>
<td>381</td>
<td>254</td>
</tr>
<tr>
<td>United Kingdom</td>
<td>562</td>
<td>375</td>
</tr>
<tr>
<td>EC</td>
<td>2 472</td>
<td>1 646</td>
</tr>
</tbody>
</table>

In ICES areas X and XII direct shark fisheries is allowed. In area X only Portugal counts with a quota of 20 tonnes (live weight) for each year 2007 and 2008. In area XI the established quota is:

<table>
<thead>
<tr>
<th>Year</th>
<th>2007</th>
<th>2008</th>
</tr>
</thead>
<tbody>
<tr>
<td>Spain</td>
<td>69</td>
<td>34</td>
</tr>
<tr>
<td>France</td>
<td>22</td>
<td>11</td>
</tr>
<tr>
<td>Ireland</td>
<td>4</td>
<td>2</td>
</tr>
<tr>
<td>UK</td>
<td>4</td>
<td>2</td>
</tr>
<tr>
<td>EC</td>
<td>99</td>
<td>49</td>
</tr>
</tbody>
</table>

Council Regulation (EC) No. 41/2006 of 21 December 2006\textsuperscript{143} fixes fishing opportunities for the year 2007, for certain fish stocks and groups of fish stocks, and the associated conditions under which such fishing opportunities may be used.

\textsuperscript{138} P6 TA(2006)0391 op.cit.
\textsuperscript{139} P-4487/2006
\textsuperscript{140} These TACs are fixed for the following species: Portuguese dogfish (Centroscymnus coelolepis), Leafscale gulper shark (Centrophorus squamosus), Birdbeak dogfish (Deania calcea), Kitefin shark (Dalatias licha), Greater lanternshark (Etmopterus princeps), Velvet belly (Etmopterus spinax), Black dogfish (Centroscyllium fabricii), Gulper shark (Centrophorus granulosus), Blackmouth dogfish (Galeus melastomus), Mouse catshark (Galeus murinus), Iceland catshark (Apristuris spp.).
\textsuperscript{142} In tonnes live weight.
\textsuperscript{143} OJ L 15/1, 20.01.2007.
It bans Community vessels to fish for, to retain on board, to tranship and to land the Basking shark (*Cetorhinus maximus*) and the White shark (*Carcharodon carcharias*) in all Community and non-Community waters.\(^ {144}\) This ban also applies to third-countries vessels in all Community waters\(^ {145}\). It also prohibits direct fishery of shark in CCAMLR area in accordance with CCAMLR Conservation Measure 32-18 (2006).

It establishes TAC and quotas in tonnes live weight for directed and non-target shark species.

<table>
<thead>
<tr>
<th>Zone</th>
<th>TAC</th>
<th>UE</th>
<th>BE</th>
<th>DK</th>
<th>DE</th>
<th>EE</th>
<th>FR</th>
<th>LT</th>
<th>LV</th>
<th>NL</th>
<th>PT</th>
<th>UK</th>
</tr>
</thead>
<tbody>
<tr>
<td>EC Waters of I, IIa, IV bycatch quota</td>
<td>2190</td>
<td>2190</td>
<td>369</td>
<td>14</td>
<td>18</td>
<td>58</td>
<td></td>
<td>314</td>
<td>1417</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>NAFO 3LNO(^ {147})</td>
<td>13500</td>
<td>8500</td>
<td></td>
<td>546</td>
<td>6561</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>1274</td>
<td></td>
<td></td>
</tr>
<tr>
<td>TOTAL</td>
<td>15690</td>
<td>10690</td>
<td>369</td>
<td>14</td>
<td>18</td>
<td>546</td>
<td>6561</td>
<td>58</td>
<td>119</td>
<td>314</td>
<td>1274</td>
<td>1417</td>
</tr>
</tbody>
</table>

In the area of CCAMLR the TAC on skate and rays is of 120 but it was not allocated to the members of CCAMLR and hence the Community share is undetermined. For this area it also establishes catch and bycatch limits for new and exploratory fisheries of skate and rays\(^ {148}\).

<table>
<thead>
<tr>
<th>Zone</th>
<th>TAC</th>
<th>UE</th>
<th>BE</th>
<th>DK</th>
<th>DE</th>
<th>FR</th>
<th>NL</th>
<th>SE</th>
<th>UK</th>
<th>NR</th>
</tr>
</thead>
<tbody>
<tr>
<td>EC Waters of I, IIa, IV bycatch quota(^ {150})</td>
<td>841</td>
<td>791</td>
<td>13</td>
<td>77</td>
<td>14</td>
<td>25</td>
<td>21</td>
<td>1</td>
<td>640</td>
<td>50(^ {151})</td>
</tr>
<tr>
<td>IIIa EC and internacion waters of I, V, VII, VIII, XIII and XIV</td>
<td>2828</td>
<td>2828</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

The regulation reproduces the quota and technical measures for community vessels fishing in the NAFO area of application to sharks provided in NAFO Conservation and Enforcement Measures for 2007 (see above).

---

\(^ {144}\) Article 5.

\(^ {145}\) Article 13.2.

\(^ {146}\) Article 5 and Annex I.

\(^ {147}\) In accordance with NAFO Conservation and Enforcement Measures for 2007.

\(^ {148}\) Conservation Measure 33-02 (2006).

\(^ {149}\) Article 5 and Annex I.

\(^ {150}\) These species shall not comprise more than 5% by live weight of the catch retained on board.

\(^ {151}\) This bycatch quota for Norway also includs catches taken with long-lines of tope shark (*Galeorhinus galeus*), kitefin shark (*Dalatias licha*), bird beak dogfish (*Deania calcea*), leafscale gulper shark (*Centrophorus squamosus*), greater lantern shark (*Etmopterus princeps*), smooth lantern shark (*Etmopterus spinax*) and Portuguese dogfish (*Centroscymnus coelolepis*). This quota may only be taken in zones IV, VI and VII.
Under the associated conditions for third-countries fishing vessels, this Regulation contains a limitation of 4 licences for Venezuela fishing sharks in the French Guyana waters\textsuperscript{152}.

The regulation also provides transitional technical and control measures for Community vessels which include measures for the protection of sharks\textsuperscript{153}. When using specific gillnets in ICES zones Via, b, VII b, c, j, k and XII the quantity of sharks retained on board shall be no more than 5% by live-weight of the total quantity of marine organisms retained on board\textsuperscript{154}. In the Eastern, Western and Central Pacific Ocean purse seine vessels must promptly release, to the extent practicable, sharks and rays\textsuperscript{155} in line with SEAFO conservation measures an stricter than the measures approved by the WCPFC which only applies to vessels greater than 24m overall length.

Council Regulation (EC) No 97/2001 of May 2001 lays down technical measures for the conservation of certain stocks of highly migratory species\textsuperscript{156} transposing into EC law measures adopted by ICCAT, IOTC and IATTC. It requires Member States to encourage the release of live sharks caught accidentally and the reduction of discards of sharks\textsuperscript{157}. This Regulation allowed the use of electric current or harpoon guns to catch basking shark \textit{(Cetorhinus maximus)} in the Skagerrak and Kattegat, but Regulation (EC) No. 41/2006 has now banned this fishery in all Community and non-Community waters.

Recently, the Commission has proposed to bring in changes to the CFP to progressively introduce a discard ban and to reduce unwanted bycatches a measure that would impact positively on shark protection\textsuperscript{158}. It intends to regulate catches in the first place rather than to regulate landings. To reduce bycatches the Commission will introduce measures to encourage the development and use of selective gears, real-time area closures, an obligation to switch fishing grounds, quota flexibility, fees on unwanted bycatches, and expropriation of unwanted bycatches. Instead of using technical regulation as it does now, the EC will introduce a management system based on outcomes, defined in terms of maximum acceptable bycatch, together with an obligation to land all fish caught.

The measures introduced by the EC to protect sharks are fragmented and most of them are transpositions of international commitments into EC law. The status of sharks is the best evidence of the need to approve a Community Shark Action Plan and to take measures to avoid bycatches.

\begin{itemize}
  \item Article 23 and Annex IV, Part II.
  \item Article 11 and Annex VII.
  \item Annex III Part A.
  \item Annex III Part E.
  \item Article 12 bis.
\end{itemize}
2.7. National measures for the management and conservation of sharks

One key aspect of a NPOA-Sharks is the adoption of management measures and its implementation as well as the adoption of laws and regulatory instruments. Nevertheless, though not many countries have elaborated a NPOA-Shark some count fisheries management measures. We review here management measures adopted by the some of the twenty top shark catch and twenty shark countries

Canada

As mentioned before, Canada some of a series of Integrated Fisheries Management Plans to be applicable to sharks\(^{159}\). Shark finning was banned in Canada in June 1994. The bans applies to Canadian fisheries waters and Canadian licensed vessels fishing outside of the EEZ. Moreover, trade and sale of fins must be in appropriate proportion to the quantity of carcasses landed (five per cent of dressed carcass weight). It also counts with research and consultation mechanisms as well as shark fisheries monitoring programmes. The shark fisheries are subject to dockside monitoring, at-sea observer coverage, quota monitoring systems, electronic vessel monitoring system, and hail requirement for both the at-sea observer programme and dockside monitoring programme.

Malaysia

Under the Fisheries (Control of Endangered Species of Fish) Regulations 1999, whale shark (\textit{Rhincodon typus}) is listed as endangered marine animal. The regulation stipulates that no person shall fish, disturb, harass, catch, kill, take, posses, sell, buy, export, or transport any endangered species except with the written permission from Director General of Fisheries Malaysia. Any person who contravenes the regulations is committing an offence under Section 25(b) Fisheries Act 1985 and can be fined an amount not exceeding RM 20,000 (US$ 5,229) or a term of imprisonment not exceeding two years or both.

Mexico

Mexico passed the Mexican Official Norm (NOM-029-PESC- 2006) on shark and rays responsible fisheries. Its purpose is fostering the sustainable use of sharks as well as contributing to the conservation and protection of elasmobranches and other by-catch species. It main provisions are:

- fining controls. This Norm prohibits the landing of shark fins unless trunks are on board;

\(^{159}\) In Annex to this study it is included detailed information on these measures as well as a table elaborated by the CMS which includes regional and national legal and management measures of migratory sharks.

\(^{160}\) See Annex
• banning the catch and retention of the following species: Whale Shark (*Rhincodon typus*), basking shark (*Cetorhinus maximus*), white shark (*Carcharodon carcharias*), and big skate (*Manta birostris, Mobula japonica, M. thurstoni, M. munkiana, M. hypostomata y Mobula tarapacana*). Any bycatch of these species must be returned to water. These species cannot be retained, alive or dead, whole or any of its parts resulting in a prohibition of its commerce and human consumption.
• closed and exclusion zones
• detailed logbooks to register species retained on board
• observer programme
• the use of driftnets is allowed until August 2009

**United Kingdom**

There are twelve Sea Fisheries Committees (SFCs) that regulate local sea fisheries around virtually the entire coast of England and Wales out to 6 miles. SFCs were established in the last century and are empowered to make bylaws for the management and conservation of their districts' fisheries. In 1995 their powers were widened to include the control of fisheries in their districts for environmental reasons. The Southern Sea Fisheries District Committee161 prohibits in Bylaw 22 the taking of:

• any skate or ray that measures less than 40cm between the extreme tips of the wings; or
• any wing which measures less than 20cm in its maximum dimension and which is detached from
• the body of a skate or ray

**United States**

The Magnuson-Stevens Fishery Conservation and Management Act (Magnuson-Stevens Act) delegates the responsibility for conservation and management of marine fisheries within the Exclusive Economic Zone (EEZ) to the Secretary of Commerce, who in turn, delegates that day-to-day responsibility to National Marine Fisheries Service (NMFS). The Magnuson-Stevens Act established a U.S. exclusive economic zone which ranges between 3 and 200 miles offshore, and created eight regional fishery councils to manage the living marine resources within that area. The Act requires NMFS and the Regional Fishery Management Councils (Councils) to analyze fisheries under their jurisdiction. If appropriate, management measures ensuring the sustainability of elasmobranch catches should be developed as fishery management plans (FMPs), FMP amendments, and/or regulations.

Fishery Management Plans are the responsibility of the eight regional fishery management councils which were established under the Magnuson-Stevens Act.

**Atlantic Ocean**

New England Fishery Management Council (NEFMC)162
Mid-Atlantic Fishery Management Council (MAFMC)163

162 [http://www.nefmc.org](http://www.nefmc.org)
South Atlantic Fishery Management Council (SAFMC)\textsuperscript{164}
Gulf of Mexico Fishery Management Council (GMFMC)\textsuperscript{165}
Caribbean Fishery Management Council (CFMC)\textsuperscript{166}

Pacific Ocean
Pacific Fishery Management Council (PFMC)\textsuperscript{167}
North Pacific Fishery Management Council (NPFMC)\textsuperscript{168}
Western Pacific Fishery Management Council (WPFMC)\textsuperscript{169}

NEFMC counts with two plans dealing with cartilaginous fishes. One specifically deals with dogfish\textsuperscript{170} while the other is directed towards skates, The Mid-Atlantic Council leads the joint management of the Spiny Dogfish FMP\textsuperscript{171}, whose plan the NEFMC implements (see below). The NEFMC has developed its own plan for skates which applies to seven species of skates are included in the Northeast complex: winter skate, barndoor skate, thorny skate, smooth skate, little skate, clearnose skate, and rosette skate\textsuperscript{172}. This plan has seven main objectives:

1. Evaluate the status of skate fisheries in Atlantic waters and the effectiveness of previously employed management policies
2. Protect and increase the number of 2 overfished species (barndoor and thorny) of skates as well as prevent future overfishing of other skates
3. Develop a skate permit system and an effective catch reporting system
4. Minimize the mortality rate of skates caught by accident and discarded
5. Promote and encourage research for biological, ecological and fishery information as well as develop and distribute a skate species identification guide
6. Minimize the effects of skate management on other marine life
7. Manage clearnose and rosette skates separately as they are distributed primarily in the Mid-Atlantic and South Atlantic regions

MAFMC has in place a joint plan for dogfish\textsuperscript{173}. The management unit for this FMP is defined as the entire spiny dogfish (\textit{Squalus acanthias}) population along the Atlantic coast of the United States. The overall goal of this FMP is to conserve spiny dogfish in order to achieve optimum yield from this resource.

The PFMC has established an FMP for “highly migratory species” (HMS)\textsuperscript{174}, in which sharks are included.

\begin{flushleft}
\textsuperscript{163} \url{http://www.mafmc.org} \\
\textsuperscript{164} \url{http://www.safmc.net} \\
\textsuperscript{165} \url{http://www.gulfcouncil.org} \\
\textsuperscript{166} \url{http://www.caribbeanfmc.org} \\
\textsuperscript{167} \url{http://www.pcouncil.org} \\
\textsuperscript{168} \url{http://www.fakr.noaa.gov/npfmc} \\
\textsuperscript{169} \url{http://www.wpcouncil.org} \\
\textsuperscript{170} \url{http://www.nefmc.org/dogfish/index.html} \\
\textsuperscript{171} \url{http://www.mafmc.org/mid-atlantic/fmp/dogfish-supp.htm} \\
\textsuperscript{172} See Annex \url{http://www.mafmc.org/mid-atlantic/fmp/dogfish-supp.htm} \\
\textsuperscript{173} \url{http://www.mafmc.org/mid-atlantic/fmp/dogfish-supp.htm} \\
\textsuperscript{174} \url{http://www.pcouncil.org/hms/hmsfmp.html} (See Annex)
\end{flushleft}
The WPFMC does have a FMP established for “highly migratory species”, under which many cartilaginous fish fall.\textsuperscript{175}

US introduced finning controls through the Shark Finning Prohibition Act (Public Law 106-557) which entered into force in March 2002. Among other things, this Act amended the Magnuson-Stevens Fishery Conservation and Management Act to prohibit any person under U.S. jurisdiction from (i) engaging in the finning of sharks; (ii) possessing shark fins aboard a fishing vessel without the corresponding carcass; and (iii) landing shark fins without the corresponding carcass. It establishes a rebuttable presumption that any shark fins possessed on board a U.S. fishing vessel, or landed from any fishing vessel, were taken, held, or landed in violation of these regulations if the total wet weight of the shark fins exceeds 5 percent of the total dressed weight of shark carcasses landed or found on board the vessel.

Waters under the jurisdiction of the individual states extend from the shoreline out to 3 miles (9 nautical miles off Texas, the west coast of Florida, and Puerto Rico), while US waters usually falls under the authority of state regulatory agencies. Each state develops and enforces its own fishing regulations for waters under its jurisdiction. Many coastal states promulgate regulations for shark fishing in state waters that complement or are more restrictive than Federal shark regulations for EEZ.

Cooperative management of the fisheries that occur in the jurisdiction of two or more states and Federal waters may be coordinated by an interstate fishery management commission. These commissions are interstate compacts that work closely with NMFS.

The interstate commissions are:

- Pacific States Marine Fisheries Commission (PSMFC)\textsuperscript{176}
- Atlantic States Marine Fisheries Commission (ASMFC)\textsuperscript{177}
- Gulf States Marine Fisheries Commission (GSMFC)\textsuperscript{178}

The ASMFC Commission does have an interstate FMP set up for spiny dogfish and other coastal sharks\textsuperscript{179}.

### 3. The Regime for Sharks Protection under Conservation and Wildlife Instruments

Law for the conservation of biodiversity is relatively well developed and facilitates the protection of sharks through these kind of measures well. Regulatory techniques that can be applied to protect sharks include:

- Prohibitions and/or regulations on the taking of particular species
- The establishment of quotas for the establishment of species

\textsuperscript{175} http://www.pcouncil.org/hms/hmsfmp.html (see Annex)
\textsuperscript{176} http://www.psmfc.org
\textsuperscript{177} http://www.asmfc.org
\textsuperscript{178} http://www.gsmfc.org
\textsuperscript{179} http://www.asmfc.org/speciesDocuments/dogfish/fmps/spinyDogfishFMP.pdf (See Annex)
The Protection of Sharks: A Legal and Policy Analysis- IIDMA

- Prohibition of methods or means of taking
- Regulated taking or exploitation subject to compliance with general standards limiting utilization to that which is “rational”, or “optimal” or “maximal”

Now it follows an analysis of global and regional biodiversity measures that have been adopted for the protection of sharks as well as measures that could be used for such protection.

3.1. The Convention on Biological Diversity

This Convention of global application has three objectives: the conservation of biological diversity, the sustainable use of its components, and the fair and equitable sharing arising out of the utilization of genetic resources. It applies to terrestrial and marine biodiversity.

Except for the United States, the twenty top shark catch countries and the ten top shark trading countries are contracting parties to the Convention on Biological Diversity (CDB) including the EC\(^{180}\).

The CDB text makes two important distinctions on its jurisdictional scope\(^{181}\): on one side, between “component of biological diversity” and “activities and processes” and on the other side, between areas within and beyond the limits of national jurisdiction. In the areas within national jurisdiction, the CBD provisions apply to components of biological diversity and to processes and activities which adversely affect to biodiversity. When establishing which marine areas are of national sovereignty, the distinction of different marine zones of sovereignty and competence under UNCLOS has a crucial effect on the CBD scope. Therefore, CBD applies to sharks within the territorial sea and the EEZ. In areas beyond the limits of national jurisdiction, CBD provisions apply to shark fisheries activities carried out by vessels flying the flag of a signatory country. As do UNCLOS and UNFSA, CDB highlights the need to cooperate “with other Contracting Parties, directly or, where appropriate, through competent international organizations, in respect of areas beyond national jurisdiction and on other matters of mutual interest, for the conservation and sustainable use of biological diversity”\(^{182}\). The Parties to this Convention must implement it with respect to the marine environment as well as to the rights and obligations of States under the law of the sea\(^{183}\).

CDB defines sustainable use as the use of components of biological diversity in a way and at a rate that does not lead to the long-term decline of biological diversity, thereby maintaining its potential to meet the needs and aspirations of present and future generations.

The Convention requires Parties to “adopt measures relating to the use of biological resources to avoid or minimize adverse impacts on biological diversity”\(^{184}\). It also


\(^{181}\) Article 4.

\(^{182}\) Article 5.

\(^{183}\) Article 22.

\(^{184}\) Article 10 b)
requires them to endeavour to provide the conditions needed for compatibility between present uses and the conservation of biological diversity and the sustainable use of its components\textsuperscript{185}. Parties must foster cooperation between its governmental authorities and its private sector in developing methods for sustainable use of biological resources\textsuperscript{186}. Without doubt, these obligations must be taken into consideration when regulating fisheries and particularly when protecting sharks.

In relation to conservation and sustainable use, the CDB includes other obligations for the Parties, such as preparing national strategies, plans, and programmes for the conservation and sustainable use of biological diversity as well as integrating conservation and sustainable use of biological diversity into relevant sectoral or cross-sectoral plans, programmes, and policies\textsuperscript{187}. This provision establishes a clear obligation to Parties of the CDB to prepare national plans of action for the conservation of sharks. In addition, the CDB establishes the obligation to develop or maintain necessary legislation and/or other regulatory provisions for the protection of threatened species and populations\textsuperscript{188} as it is the case of many shark species.

CBD negotiations focused on terrestrial biodiversity. The aspects related to marine and coastal biodiversity were included at the last minute. It was not until COP II in 1995 where deep concerns were expressed regarding “serious threats to marine and coastal biological diversity caused by factors including physical alteration, destruction and degradation of habitats, pollution, invasion of alien species, and over-exploitation of living marine and coastal resources”\textsuperscript{189}. As a result, the Subsidiary Body on Scientific, Technical and Technological Advice (SBSTTA) established a work programme following the Jakarta Mandate. This programme focused on five thematic issues areas:

\begin{itemize}
  \item[a)] Integrated marine and coastal area management
  \item[b)] Marine and coastal protected areas
  \item[c)] Sustainable use of marine and coastal living resources
  \item[d)] Mariculture
  \item[e)] Alien species
\end{itemize}

The marine and coastal biodiversity programme was adopted by COP IV (1998)\textsuperscript{190} whose content was reviewed and updated by COP VII (2004) including objectives to be attained by 2010 in accordance with the 2010 biodiversity target\textsuperscript{191}. It can be implemented at the international, regional and national levels.

The precautionary and ecosystem approaches constitute the bases of the implementation of this elaborated programme of work. UNCLOS and UNFSA provides for the restoration or maintenance of levels that can produce the maximum sustainable yield for the regimes on the high seas and EEZ. These rules are significantly less comprehensive than an ecosystem approach to the protection and management of marine life. The ecosystem approach to the management and protection of marine life does not only focus on particular, harvested, or other species, but includes the protection of all living

\textsuperscript{185} Article 8 i).
\textsuperscript{186} Article 10 e).
\textsuperscript{187} Article 6
\textsuperscript{188} Article 8 k)
\textsuperscript{189} Decision II/10 COP II.
\textsuperscript{190} Decision IV/5
\textsuperscript{191} La Decision VII/5 on marine and coastal biodiversity.
organisms and non-living features and their interdependence in the marine environment\textsuperscript{192}. These interdependencies take into account biological and ecological interactions between all marine species in the same as well as in neighbouring jurisdictional zones, and the ecological conditions of the physical surroundings\textsuperscript{193}. UNCLOS’ fisheries regime focuses on harvested species, reflecting not only a single species, but rather a clear utilitarian point of view. CBD, although also promoting the sustainable use of biodiversity and consequently also taking a utilitarian point of view, acknowledges the intrinsic value of biological diversity in its preamble\textsuperscript{194}. UNFSA improves UNCLOS in the sense that it provides for conservation and management measures for species belonging to the same ecosystem, such as the protected straddling and highly migratory fish stocks. Therefore, Parties to CBD are obliged to implement an ecosystem approach when regulating fisheries.

For the purposes of this analysis, the sustainable use of marine and coastal living resources and the marine and coastal protected areas are of relevance from the five areas of work identified in the Jakarta Mandate.

To ensure the conservation and sustainable use of marine and coastal living resources is the goal of the marine and coastal living resources area which requires the promotion of ecosystem approaches. The programme of work suggested the implementation of the FAO Code for Responsible Fisheries and their correspondent IPOA including IPOA-Shark and to eliminate destructive fishing practices. But our view is that signatories to this convention are obliged to develop a NPOA-Shark in compliance with article 6 of the Convention.

Marine and coastal protected areas contribute to the protection of biodiversity and the sustainable use of its components. Critical habitats for marine living resources are an important criterion for the selection of marine and coastal protected areas. The establishment of marine and coastal protected areas can contribute to the protection of sharks. However, it is necessary to continue the studies to improve knowledge on their habitats. The management of the marine and coastal biodiversity includes the establishment of areas where extractive uses are allowed but subject to controls such as on fishing methods (e.g., restricting bottom trawling) and controls on the removal of certain species and rotational closures. Sustainable management practices over the wider marine and coastal environment include general restrictions that apply to the entire area (e.g., bans on certain destructive fishing methods).

### 3.2. The Convention on Migratory Species

The Convention on Migratory Species (CMS), adopted in 1979 in Bonn, has as its objective the conservation and effective management of migratory species at the global level with emphasis on endangered migratory species and on migratory species which have an unfavourable conservation status\textsuperscript{195}.

\textsuperscript{192} Iudicello S. y Lytle, M., \textit{Marine biodiversity and international law: instruments and institutions that can be used to conserve marine biological diversity internationally}, TELJ 8 (1994), p. 124.


\textsuperscript{194} \textit{Ibidem}.

\textsuperscript{195} According to article 1 (c): “Conservation status” will be taken as “favourable” when:
Only eleven countries of the twenty top shark catch and ten top trading shark countries are Parties to this Convention: Argentina, Chile, France, Ireland, New Zealand, Nigeria, Pakistan, Portugal, Spain, Sri Lanka, United Kingdom as well as the EC¹⁹⁶.

Migratory species are defined as

the entire population or any geographically separate part of the population of any species or lower taxon of wild animals, a significant proportion of whose members cyclically and predictably cross one or more national jurisdictional boundaries¹⁹⁷.

National jurisdictional boundaries include national land borders and the outer 200 mile EEZ boundary of each nation. A study of the CMS indicates that “while it is easy to identify many shark species that are clearly migratory, data is currently inadequate to identify conclusively all migratory sharks. Several species are considered to be “possibly migratory” where there is evidence suggesting that migrations occur but their nature remains uncertain”¹⁹⁸. As per the definition of migratory species, this Convention applies to highly migratory, straddling and transboundary fish stocks while high seas stocks are excluded from its scope of application.

To avoid that migratory species becomes endangered the Parties to CMS¹⁹⁹:

a) should promote, co-operate in and support research relating to migratory species;
b) shall endeavour to provide immediate protection for migratory species included in Appendix I (Endangered migratory species); and
c) shall endeavour to conclude Agreements covering the conservation and management of migratory species included in Appendix II (Migratory species conserved through Agreements).

To protect endangered migratory species²⁰⁰ listed in Annex I, Parties that are range states shall endeavour:

a) to conserve and, where feasible and appropriate, restore those habitats of the species which are of importance in removing the species from danger of extinction;

---

¹⁹⁶ population dynamics data indicate that the migratory species is maintaining itself on a long-term basis as a viable component of its ecosystems;
¹⁹⁷ the range of the migratory species is neither currently being reduced, nor is likely to be reduced, on a long-term basis;
¹⁹⁸ there is, and will be in the foreseeable future sufficient habitat to maintain the population of the migratory species on a long-term basis; and
¹⁹⁹ the distribution and abundance of the migratory species approach historic coverage and levels to the extent that potentially suitable ecosystems exist and to the extent consistent with wise wildlife management;
²⁰⁰ According to article 1 d) "Conservation status" will be taken as "unfavourable" if any of the conditions set out in sub-paragraph (c) of this paragraph is not met."
²⁰¹ As of 1 April 2007. Source: [http://www.cms.int/about/Partylist_eng.pdf](http://www.cms.int/about/Partylist_eng.pdf)
²⁰² Article 1 a)
²⁰³ UNEP/CMS (2007) op.cit
²⁰⁴ Article II (2).
²⁰⁵ Endangered means that a migratory species is “in danger of extinction throughout all significant portion of its range” (Article I (1) (e)).
b) to prevent, remove, compensate for, or minimize, as appropriate, the adverse effects of activities or obstacles that seriously impede or prevent the migration of the species; and
c) to the extent feasible and appropriate, to prevent, reduce or control factors that are endangering or are likely to further endanger the species, including strictly controlling the introduction of, or controlling or eliminating, already introduced exotic species.

Range state parties must also prohibit the taking of Appendix I migratory species unless the taking is for scientific purposes, or to enhance the propagation or survival of a species or to accommodate the needs of subsistence users, or where extraordinary circumstances require, and subject to notification of the secretariat of any such taking.

CMS also provides a framework within which to conclude formal legally binding agreements for the conservation and management of migratory species with an unfavourable conservation status and that would benefit from international cooperation. They may also cover species that would benefit significantly from international cooperation. Parties can also conclude less formal agreements for any population or any geographically separate part of the population of any species or lower taxon of wild animals, members of which periodically cross one or more national jurisdiction boundaries.

So far six formal Agreements for marine species listed on the Appendices and ten less formal Memoranda of Understanding have been signed.

The Appendix I lists *Carcharodon carcharias* white shark and *Cetorhinus maximus* basking shark which are also included in Appendix II together with the *Rhincodon typus* whale shark. The Sixth Meeting of the CMS COP (1999, Cape Town) called for cooperative actions to be undertaken for the whale shark. At the Eight CMS COP (November 2005, Nairobi) Australia, New Zealand and the Seychelles successfully cosponsored a Recommendation calling on range states to develop a global conservation instrument for migratory sharks. However, CMS has considered other options for cooperation: a WSSD Type II partnership arrangement, an action plan, a MoU. This recommendation also requested all Parties to strengthen measures to protect

---

201 "Range" means all the areas of land or water that a migratory species inhabits, stays in temporarily, crosses or overflies at any time on its normal migration route (Article 1 (f)).
202 Article III (5) and (7).
203 Article IV (4).
204 Agreement on Wadden Sea Seals, Agreement on Small Cetaceans of the Baltic and North Sea (ASCOBANS), Agreement on the Conservation of Cetaceans of the Black Sea, Mediterranean Sea and Contiguous Atlantic Area (ACCOBAMS) and Agreement on the Conservation of Albatrosses and Petrels (ACAP).
205 MoU on the Conservation and Management of Marine Turtles and their Habitats of the Indian Ocean and South-East Asia, the African Atlantic Coast Marine Turtles MoU, and the Pacific Island Cetaceans MoU.
206 Recommendation 8.16
207 The discussions on this instrument could consider the potential value of developing subsidiary regional and /or species specific conservation management plans to the instrument; identify, as appropriate, effective mechanisms to mitigate threats such as bycatch, entanglement in marine debris, and IUU fishing; identify viable and practical alternatives to consumptive uses of migratory sharks while recognising the cultural and economic importance of these species for some communities; and develop mechanisms to facilitate developing country participation in the implementation of the future instrument.
migratory shark species against threatening processes, including habitat destruction, IUU fishing, and fishing bycatch and for cooperation between FAO, CITES, and CMS.

The CMS has convened a meeting to identify and elaborate an option for international cooperation on migratory sharks to be celebrate on December 2007.

3.3. UNEP Regional Seas Programme: The Barcelona Convention

The scope of this programme is global, aiming to address the degradation of the world’s oceans and coastal areas through the sustainable management and use of the marine and coastal environment. It is implemented through a series of regional action plans and conventions. These instruments represent an excellent framework where to adopt measures for shark protection. However, only within the framework of the Mediterranean Action Plan208 and the Convention for the Protection of the Marine Environment and the Coastal Region of the Mediterranean (Barcelona Convention)209 have measures for the protection of sharks been taken.

The Mediterranean Action Plan was the first regional programme. It comprises four basic components: environmental assessment, environmental management, institutional arrangements, and regional legal instruments.

The Barcelona Convention aims to protect and enhance the marine environment in the Mediterranean Sea area. The EC is Party to this Convention as well as EU Member States belonging to the Mediterranean basin210. Under its 1995 Protocol, concerning specially protected areas and biological biodiversity in the Mediterranean, eight species of sharks are protected. Annex II lists as endangered or threatened shark species *cetorhinus maximus* basking shark, *carcharodon carcharias* great white shark and *mobula mobular* Mediterranean devil ray. Annex III lists as shark species whose exploitation is regulated *Isurus oxyrinchus* shortfin mako, *lamna nasus* porbeagle, *prionace glauca* blue shark, *raja alba* white skate and *squatina squatina* angel shark. For these listed species Parties of the Protocol must establish cooperative measures for its protection and conservation211.

The Parties to this Protocol are obliged to take measures to protect, preserve and manage threatened and endangered species of fauna and flora212. Parties for all shark species must:

- manage with the aim of maintaining them in a favourable state of conservation;
- in the zones subject to their sovereignty or national jurisdiction, identify and compile lists of the endangered or threatened species of sharks and accord protected status to such species. They must also regulate and, where appropriate, prohibit activities having adverse effects on shark species or their habitats, and

---

208 It was established in 1975.
209 It was adopted in 1976 as Convention for the Protection of the Mediterranean Sea against Pollution and replace in 1995 by this Convention.
210 Croatia, Cyprus, France, Greece, Italy, Malta, Slovenia and Spain. Source: [www.unepmap.org](http://www.unepmap.org)
211 Article 12.
212 Article 3.
carry out management, planning and other measures to ensure a favourable state of conservation of such species.

For species listed in Annex II the Parties must:

- ensure the maximum possible protection and recovery by adopting at the national level measures for cooperation, for controlling and, where appropriate, prohibiting the taking, possession, or killing, the commercial trade, the transport and the exhibition for commercial purposes of these species, their eggs, parts or products as well as its disturbance, particularly during the period of breeding, incubation, hibernation or migration, as well as other periods of biological stress.
- prohibit the destruction of and damage to their habitat and formulate and implement action plans for their conservation or recovery.

For species listed in Annex III the Parties must:

- in cooperation with competent international organisations, take all appropriate measures to ensure their conservation while at the same time authorising and regulating the exploitation of these species, so as to ensure and maintain their favourable state of conservation.

The Parties may grant exemptions to the prohibitions prescribed for the protection of the shark species listed in the annexes to this Protocol for scientific, educational or management purposes necessary to ensure the survival of the species or to prevent significant damage.

The Action Plan for the Conservation of Chondrichthyan marine species in the Mediterranean213 was adopted in 2003 within the framework of the Mediterranean Action Plan and the Barcelona Convention. It is a non-legally binding document which proposes the setting up of regional strategies, and sets out priorities and actions to be undertaken at national and regional level.

This Action Plan has among its objectives the promotion of national and regional programmes for sustainable shark fisheries of commercial stocks (directed and non-targeted) as well as the protection of selected species whose populations are considered endangered. Thus, contracting Parties to the Barcelona Convention are strongly urged to elaborate national action plans. Conservation measures should not only target particular species but also the whole ecosystem. That is why the habitat and environmental parameters must be included in the Action Plan. The Plan provides a series of guidelines to take into consideration when elaborating an Action Plan:

- Conservation of species
- Maintaining biodiversity
- Protecting the habitat
- Management for sustainable use
- Scientific research
- Monitoring
- Funding for research, implementation and monitoring

• Public awareness International cooperation for high sea monitoring

Among its priorities it calls for the adoption of fisheries management programmes for sustainable fisheries catching (as target and bycatch) initially for the main commercial species: dogfish (Squalus acantbias), thresher sharks (Alopias spp.), the makos (Isurus spp.), porbeagle (lamna nasus) and the blue shark (prionace glauca) within two years after the adoption of the Action Plan. It also calls the adoption of legal measures at the national and regional levels for the protection of sawfishes (Pristis spp.), sand tiger sharks (Carcharias taurus and Odontaspis ferox) and gray skate (Dipturus batis). Contracting parties should adopt these measures within a year after the adoption of this Action Plan. It emphasises the importance of identifying critical habitats for sharks to protect them within four years after the adoption of the Plan. The responsibility to adopt these measures lays on the authorities of the contracting parties to the Barcelona Convention.

The Convention for the Protection of the Marine Environment of the North-East Atlantic (OSPAR Convention)\textsuperscript{214} establishes the need to take measures to protect and conserve the ecosystems and biological diversity of the maritime area\textsuperscript{215}. Under its Biological Diversity and Ecosystems Strategy adopted in 1998, a list threatened and/or declining species was prepared to guide the OSPAR Commission in setting priorities for its work on the conservation and protection of marine biodiversity. The inclusion of a species or of a type of habitat on this list has no other significance. The 2004\textsuperscript{216} Initial OSPAR List of Threatened and/or Declining Species and Habitats lists the basking shark.

\textbf{3.4. The Convention on the Conservation of European Wildlife and their Natural Habitats}

Signed in Berne (1979), this convention was negotiated under the auspices of the Council of Europe but today covers the whole of the natural heritage of the European continent and extends to some States of Africa. All members of the EC and the EC itself are Parties to this Convention\textsuperscript{217}. It has three objectives:

1. to conserve wild flora and fauna and their habitats
2. to promote cooperation between states
3. to give particular attention to endangered and vulnerable species, including endangered and vulnerable migratory species

It applies to all species and their habitats, regardless of their scarcity, and is applicable to visiting migratory species that are not confined to Europe and to European species of flora and fauna found outside the European continent.

\textsuperscript{214} Adopted in 1992 it replaced the 1972 Oslo Dumping Convention and the 1974 Paris Convention
\textsuperscript{215} Annex V.
\textsuperscript{216} Note: OSPAR 2003 adopted the Initial List of Threatened and/or Declining Species and Habitats. OSPAR 2004 updated this list with the addition of two further fish species and four further habitats and made some further editorial changes. The list was further updated by OSPAR 2006 (OSPAR 2006 Summary Record (OSPAR 06/23/1 § 5.8).
\textsuperscript{217} Source: \url{http://conventions.coe.int/Treaty/Commun/ChercheSig.asp?NT=104&CM=8&DF=2/15/2007&CL=ENG}
Parties must take special measures to ensure the conservation of habitats of wild flora and fauna species that are listed as strictly protected in Appendices I and II, and give “special attention” to the protection of areas of importance to migratory species specified in Appendices II and III.  

Appendix II lists as strictly protected in the Mediterranean: Cetorhinus maximus basking shark, Carcharodon carcharias white shark, and Mobula mobular Mediterranean Manta ray. For these species contracting Parties must take appropriate and necessary legislative and administrative measures to ensure special protection. The following is prohibited for these species:

a) all forms of deliberate capture and keeping or deliberate killing;
b) the deliberate damage to or destruction of breeding or resting sites;
c) the deliberate disturbance of wild fauna, particularly during the period of breeding, rearing and hibernation, insofar as disturbance would be significant in relation to the objectives of this Convention;
d) the possession of and internal trade in these animals, alive or dead, including stuffed animals and any readily recognisable part or derivative thereof.

Appendix III list as protected in the Mediterranean; Isurus oxyrinchus shortfin mako, Lamna nasus porbeagle, Prionace glauca blue shark, Squatina squatina angel shark, Raja alba, white skate. For these species Contracting Parties must take appropriate and necessary legislative and administrative measures to ensure its protection. Its exploitation must be regulated and measures include:

a) closed seasons and/or other procedures regulating the exploitation;
b) the temporary or local prohibition of exploitation, as appropriate, in order to restore satisfactory population levels;
c) the regulation as appropriate of sale, keeping for sale, transport for sale or offering for sale of live and dead wild animals.

All indiscriminate means of capture and killing and all means capable of causing local disappearance or serious disturbance to populations are prohibited. The Convention permits exceptions to the prohibitions which it established but they are subject to the fulfilment of general and specific conditions. Among the conditions that permit exceptions are to prevent serious damage to fisheries and for research and education.

3.5. The Protection of Biodiversity at the EC and Sharks

Together with the CFP, the main policies on marine biodiversity are the biodiversity strategy which counts with a biodiversity action plan on fisheries and the Birds and Habitat Directives. To the purpose of this study it is of interest to analyse the possibilities offered by the Habitats Directive to protect sharks.

---

218 Articles 4 and 10.
219 Article 6.
220 Article 8.
221 Article 9.

This Directive sets forth substantive and procedural rules to establish a coherent European ecological network of special areas of conservation (Natura 2000). This network is formed by of sites hosting natural habitats included in Annex I and to habitats of species listed in Annex II. It comprises “special areas of conservation” designated by Member states in accordance with the Directive as well as special protection areas classified by the Member States pursuant to Birds Directive 79/409/EEC.

Annexes I (natural habitats types of community interest) and II (animal and plant species of community interest) provide guidance on the types of habitats and species whose conservation requires the designation of special conservation areas. Due to the scarce knowledge on shark habitats, Annex II does not list any chondrichthyan. Annex IV list animal and plant species in need of strict protection measures and Annex V lists animal and plant species of community interest whose taking in the wild and exploitation may be subject to management measures. However, these lists do not include any chondrichthyan.

The designation of special conservation areas follows three steps. First, Member states prepares a list of habitats and species sites. After, the Commission prepares a list of sites of community importance (SCI). Finally, at the latest, six years after the designation

---

223 OJ L 206, 22.07.1992
224 “Natural habitats” are defined as “terrestrial or aquatic areas distinguished by geographic, abiotic and biotic features, whether entirely natural or semi-natural”. Article 1 (b); “habitat of a species” is defined as “an environment defined by specific abiotic and biotic factors, in which the species lives at any stage of its biological cycle”.
225 Article 1 (a). Conservation status of a natural habitat means the sum of the influences acting on a natural habitat and its typical species that may affect its long-term natural distribution, structure and functions as well as the long-term survival of its typical species within the territory of the EC. The conservative status of a natural habitat will be taken as "favourable" when:
- its natural range and areas it covers within that range are stable or increasing, and
- the specific structure and functions which are necessary for its long-term maintenance exist and are likely to continue to exist for the foreseeable future, and
- the conservation status of its typical species is favourable (Article 1 (e)).
Conservation status of a species means the sum of the influences acting on the species concerned that may affect the long-term distribution and abundance of its populations within the territory of the EC; The conservation status will be taken as "favourable" when:
- population dynamics data on the species concerned indicate that it is maintaining itself on a long-term basis as a viable component of its natural habitats, and
- the natural range of the species is neither being reduced nor is likely to be reduced for the foreseeable future, and
- there is, and will probably continue to be, a sufficiently large habitat to maintain its populations on a long-term basis. (Article 1 (i)).
226 Site of Community importance means a site which, in the biogeographical region or regions to which belongs, contributes significantly to the maintenance or restoration at a favourable conservation status of a natural habitat type in Annex I or of a species in Annex II and may also contribute significantly to the coherence of Natura 2000 referred to in Article 3, and/or contributes significantly to the maintenance of biological diversity within the biogeographic region or regions concerned. Article 2 (k).
of a site as of community importance, the Member state designates the site as a special conservation area.

Member states must take special conservation measures in a special conservation area, including management plans, which correspond to the “ecological requirements” of the site. For sites of community importance and for special conservation areas Member states first must avoid the deterioration of natural habitats and the habitats of species as well as disturbance of species. Secondly, they must conduct appropriate assessment of the implications for the site of any plan or project not directly connected with or necessary to the site’s management but which is likely to have significant effects for it. Thirdly, if the plan or project goes ahead after the assessment shows “negative” implications, there are no alternative solutions, and there are “imperative reasons of overriding public interest, including those of a social or economic nature”, the member state must take “all compensatory measures necessary to show that the overall coherence of Natura 2000 is protected” and inform the Commission of the compensatory measures adopted.

The Directive adopts a more traditional approach to the protection of species. Member states must establish a system of strict protection for the animals listed in Annex IV(a), including prohibitions on all forms of deliberate capture or killing of wild specimens, deliberate disturbance, deliberate destruction or taking of eggs, and deterioration or destruction of breeding sites as well as keeping, transport and sale or exchange. They must also monitor the incidental capture and killing of these species. For fauna species listed in Annex V Member states must take measures to ensure that their taking in the wild and their exploitation is compatible with their being maintained at a favourable conservation status.

The application of protection measures provided in the Habitat Directive to sharks would represent a positive impact. Thus, the revision process of this Directive must take into consideration the inclusion of sharks’ habitats as well as of shark species in their respective annexes.

### 3.6. National measures for the conservation of sharks

Many states have taken measures to protect certain shark species though many of these measures are merely fulfilments by Parties of prior international commitments, which have been previously analysed.

**Australia**

Under the Environment Protection and Biodiversity Conservation Act 1999 (EPBC Act):

- *Carcharias taurus (east coast population)* — Grey Nurse Shark (east coast population) is listed as critically endangered. A Recovery Plan for the Grey Nurse Shark (*Carcharias taurus*) have been adopted.

---

227 Article 6.2.
228 Article 6.3.
229 Article 6.4.
231 Article 12.
• **Carcharias taurus** (west coast population) - Grey Nurse Shark (west coast population) is listed as vulnerable.
• Carcharodon carcharias — Great White Shark is listed as vulnerable and counts with a Recovery Plan
• **Rhincodon typus** — Whale Shark is listed as vulnerable and a Recovery Plan have been adopted
• **Raja sp. L** — Maugean Skate, Port Davey Skate is listed as endangered

**Canada**

The Committee on the Status of Endangered Wildlife (COSEWIC) in Canada has designated the porbeagle as endangered species of shark in 2004, the winter skate (southern gulf population) in 2005, and the white shark (atlantic population) in 2006. Porbeagle might be added to Schedule 1 of the Species at Risk Act after public consultation. COSEWIC designated in 2005 the winter skate (Eastern Scotian Shelf population) as a threatened species. Winter skates (Georges Bank-Western Scotian Shelf-Bay of Fundy population) in 2005 and blue sharks (Atlantic population) in 2006 were designated as species of special concern by COSEWIC in 2006.

**Malta**

The 1999 Amendments to the Maltese Environment Protection Act (Act No. V of L-1991) included in Schedule II on Protected Fauna three elasmobranch species: the white shark (Carcharodon carcharias), basking shark (Cetorhinus maximus), and manta ray (Mobula mobular).

**Mexico**

The Mexican Framework Law on Ecological Balance and Environmental Protection provides the framework for the protection and conservation of natural resources. In this context, the SEMARNAT passed the Mexican Official Norm NOM-059-ECOL-2000 (DOF, 2000) on Environmental Protection: Mexican Native Flora and Fauna Species-Risk Categories and Specifications for its listing, delisting or modifications-list of endangered species. This NOM included the *Cetorhinus maximum*, *Carcharodon carcharias* and *Rhincodon typus* as threatened species in Mexico.

**New Zealand**

Under the Wildlife Act in effect since April 2007, it is illegal to hunt, kill or harm a great white shark within New Zealand's Exclusive Economic Zone, 200 nautical miles from shore. It is also illegal in New Zealand to possess or trade in any part of a great white shark. The Wildlife Act provides a strong deterrent against targeting great whites with a NZ$250,000 (US$172,000) fine and up to six months imprisonment as a maximum penalty.

This species is further protected on the high seas (outside the EEZ) under the Fisheries Act where New Zealand-flagged boats are prohibited from taking great white sharks while fishing outside the EEZ.
United Kingdom

Schedule 5 of the Wildlife and Country Side Act (1981), which is applicable to 12 miles offshore, lists the basking shark. The Act makes it an offence (subject to exceptions) to intentionally kill, injure, take, possess, or trade in any wild animal listed in Schedule 5, and prohibits interference with places used for shelter or protection, or intentionally disturbing animals occupying such places. The Act also prohibits certain methods of killing, injuring, or taking wild animals. This protection extends to the Isle of Man and Guernsey.

To develop the British Biodiversity Action Plans three types of Action Plans have been developed which set priorities for nationally and locally important habitats and wildlife. Each plan includes actions and targets and reporting on the targets is done on a 3 - 5 year cycle. One of the Species Plan is devoted to basking shark\(^{232}\).

United States

The US Endangered Species Act lists as species of special concern barndoor skate (Dipturus laevis), dusky shark (Carcharhinus obscurus), night shark (Carcharinus signatus), porbeagle shark (Lamna nasus), sand tiger shark (Carcharias taurus) and thorny skate Amblyraja radiata

National Regulations on Whale Shark

In addition we have identified protection measures for the whale shark in Belize (habitat protection, Decree No. 68 of 2000). The fisheries of this species are banned in Honduras, Malaysia (Fisheries (Control of Endangered Species of Fish) Regulations 1999), Maldives, Philippines (Fisheries Administrative Order no. 193), Thailand (Section 32 (7) of the Fishing Act B.E. 2490), India (listed under Schedule I of the Wildlife Act), and in the USA on the Eastern seaboard.

Finally, we must recall that under Council Regulation (EC) No. 41/2006 of 21 December 2006 it is prohibited to fish for, to retain on board, to tranship, and to land the Basking shark (Cetorhinus maximus) and the White shark (Carcharodon carcharias) in all Community and non-Community waters as well as for third-countries vessels in all community waters.

4. The Regime for Shark Trading

In this section we concentrate on the main international instrument that introduces trading controls for the protection of species: CITES. However, there are national measures that introduce restriction on importation of fishery or wildlife products from countries which violate international fishery or endangered or threatened species programs such as the Pelly Amendment, but which could be questioned on extraterritoriality arguments and their legality under the WTO rules aspects which are out of the scope of this study.

4.1. CITES

The Convention on International Trade in Endangered Species signed in 1973 is a multilateral environmental agreement that makes use of restrictions on export or import between parties. It was designed to protect endangered species of flora and fauna from over-exploitation through international cooperation by regulating their international trade and reducing their economic value.

CITES operates by listing endangered species on one of its three Appendices. A “species” is any “species, sub-species, or geographically separate population thereof.” A specimen is defined as:

(i) any animal or plant, whether alive or dead;
(ii) in the case of an animal: for species included in Appendices I and II, any readily recognizable part or derivative thereof; and for species included in Appendix III, any readily recognizable part or derivative thereof specified in Appendix III in relation to the species; and
(iii) in the case of a plant: for species included in Appendix I, any readily recognizable part or derivative thereof; and for species included in Appendices II and III, any readily recognizable part or derivative thereof specified in Appendices II and III in relation to the species.

The level of protection afforded to the species depends upon which Appendix if any, a species is listed on. In 1994 CITES called attention on the need to protect sharks requesting FAO to gather necessary information on sharks to develop and propose guidelines leading to a plan of action for the conservation and management of sharks. Three sharks species are listed on Appendix II of CITES: basking shark (*Cetorhinus maximus*), whale shark (*Rhincodon typus*), and white shark (*Carcharodon carcharias*).

Appendix II lists species that are not necessarily now threatened with extinction but that may become so unless trade is closely controlled. It also includes so-called "look-alike species", i.e. species of which the specimens in trade look like those of species listed for conservation reasons. International trade in specimens of Appendix-II species may be authorized by the granting of an export permit or re-export certificate. No import permit is necessary for these species under CITES (although a permit is needed in some countries that have taken stricter measures than CITES requires). Permits or certificates should only be granted if the relevant authorities are satisfied that certain conditions are met, above all that trade will not be detrimental to the survival of the species in the wild.

Germany on behalf of the European Community Member States has proposed to the fourteenth meeting of the COP the inclusion of spiny dogfish (*Squalus acanthias*) and porbeagle shark (*Lamna nasus*) in Appendix II.

---

233 Article I (a).
234 Article I (b).
235 CITES Conference Resolution 9.17.
5. Conclusions

This analysis shows that in the recent years some measures have been slowly introduced to protect sharks through a combination of fisheries, conservation, and trade measures but there has not been much progress in light of the data on the state of this species.

The fisheries measures focus on management instead of protection. Until now, the precautionary and ecosystem approaches have hardly been taken into consideration in the development of measures. It is necessary to foster fisheries’ measures that focus on shark bycatch.

From this study, we can confirm that up until now wildlife tools have been more successful in introducing measures for the protection of the shark. This is due to their emphasis on conservation and the great acceptance of these instruments among members of the international community. In addition, these tools help to implement the precautionary and ecosystem approaches as well as promote sustainable use but also provide for strict protection for those species in need.

This study shows us that most shark fisheries are unmanaged. In addition trade in shark products is hardly regulated.

Though IPOA-Sharks is a voluntary instrument, we must emphasise that the CBD includes an obligation to prepare national strategies, plans, and programmes for the conservation and sustainable use of biological diversity what leads to the obligation of Parties to prepare national action plans for the management and conservation of sharks.

The EC as a Party of all the international conventions analysed in this study must:

- ensure through conservation and management measures in community waters that sharks are not endangered by overexploitation in the case of directed fisheries. When taking measures for single or multiple fisheries, it must take into consideration the need to keep associated sharks species above a level where those sharks would be seriously threatened;
- cooperate in RFMOs to introduce measures to ensure conservation and optimal utilization of shark straddling species within and beyond the EEZ;
- minimize catch of non-target sharks and impacts on associated or dependent shark species, in particular shark endangered species in order to conserve and manage straddling shark stocks and highly migratory shark stocks;
- adopt an Action Plan for the management and conservation of sharks as required by the CBD;
- introduce habitats for the protection of shark species in the Annexes of the Habitat Directive revision.

Based on the CBD, the EC and their Member states Parties to the Barcelona Convention must adopt fisheries management programmes for sustainable fisheries catching (as target and bycatch) for dogfish (Squalus acanthias), thresher sharks (Alopias spp.), the makos (Isurus spp.), porbeagle (lamna nasus), and the blue shark (prionace glauca) within two years after the adoption of the Action Plan.
A successful strategy for the protection of sharks requires the strengthening, compliance, and enforcement of fisheries, conservation, and trade tools.
Bibliography

Australian Government, Department of Agriculture, Fisheries and Forestry (2004), National Plan of Action for the Conservation and Management of Sharks (Shark-Plan).


Iudicello S. and Lytle, M. (1994). Marine biodiversity and international law: instruments and institutions that can be used to conserve marine biological diversity internationally, Tulene Environmental Law Journal 8


Annex: National measures for the protection of sharks
Canada

Canadian Integrated Fisheries Management Plans\(^{237}\)

- **Canadian Atlantic Pelagic Shark Integrated Fisheries Management Plan**
  - Management Issues
    - Sharks are considered less capable of rebounding from overfishing, therefore all commercial sharks shall be treated in a very conservative manner
    - Conflicts between different industries, largely between oil and fishing, must be resolved
    - Habitat disruption does not seem to be a major issue
  - Objectives
    - Conservation
      - No by-catch of tuna or swordfish
      - No direct fishing for shortfin mako or shark species other than porbeagle and blue shark
    - Precautionary Approach
    - International Considerations and Obligations
    - Domestic Considerations
  - Management Measures
    - Establishment of fishing seasons
    - Quota allocations
  - Control and Monitoring of commercial fishing
- **Integrated Fisheries Management Plan Atlantic Mackerel**
  - Holding a shark license qualifies a fisher to apply for a license to use mackerel as bait
- **Integrated Fisheries Management Plan Atlantic Bluefin Tuna**
  - The same committee, Atlantic Large Pelagics Advisory Committee, advises on sharks as well
  - A fisherman may not hold a bluefin license and a shark license and fish for both concurrently
  - The retention of an incidental catch of shark is authorized. However, special provisions, which are outlined on licence conditions, will apply.
- **Canadian Atlantic Swordfish and Other Tunas Integrated Fisheries Management Plan**
  - Large Pelagic Longline Licenses - shark, swordfish, and other tunas are not permitted to fish concurrently.
- **Dogfish Management Plan for Maritimes Region**
  - A cap of 2,500t on the harvest is established for vessels under 45 feet using fixed gear in the groundfish fleet in 4VWX and 5Y
  - All other fleets are limited to a bycatch only up to a maximum level consistent with historical landings.
- **Groundfish Management Plan Scotia-Fundy Fisheries Maritimes Region**
  - Retention of incidental shark catches are permitted

The Protection of Sharks: A Legal and Policy Analysis - IIDMA

- Finning is allowed after the ship has docked
- Direct fishing for sharks is prohibited

- Integrated Groundfish Management Plan for the Gulf of St-Lawrence
  - There appears to be little difference between this plan and the one immediately above

- Pacific Region Integrated Fisheries Management Plan Groundfish
  - Not Found

**Malaysia**

Under the Fisheries (Control of Endangered Species of Fish) Regulations the whale shark (*Rhincodon typus*) is listed as endangered marine animals in Malaysia. The regulation stipulates that no person shall fish or, disturb, harass, catch, kill, take, posses, sell, buy, export or transport any endangered species except with the written permission from Director General of Fisheries Malaysia. Any person who contravenes the regulations is committing an offence under Section 25(b) Fisheries Act 1985 and can be fined not exceeding RM 20,000 (US$ 5,229) or a term of imprisonment not exceeding two years or both.

**Philippines**

In the Philippines it is unlawful to catch, sell, purchase, possess, transport and export whale sharks (scientific name: *Rhincodon typus*) and manta rays (*Manta birostris*). These species have been declared protected creatures under Fisheries Administrative Order 193, Series of 1998.

**United States**

NEFMC has developed its own plan for skates which applies to seven species of skates are included in the Northeast complex: winter skate, barndoor skate, thorny skate, smooth skate, little skate, clearnose skate, and rosette skate. This plan has seven main objectives:

8. Evaluate the status of skate fisheries in Atlantic waters and the effectiveness of previously employed management policies
9. Protect and increase the number of 2 overfished species (barndoor and thorny) of skates as well as prevent future overfishing of other skates
10. Develop a skate permit system and an effective catch reporting system
11. Minimize the mortality rate of skates caught by accident and discarded
12. Promote and encourage research for biological, ecological and fishery information as well as develop and distribute a skate species identification guide
13. Minimize the effects of skate management on other marine life
14. Manage clearnose and rosette skates separately as they are distributed primarily in the Mid-Atlantic and South Atlantic regions
MAFMC has in place a joint plan for dogfish\(^{238}\). The management unit for this FMP is defined as the entire spiny dogfish (\textit{Squalus acanthias}) population along the Atlantic coast of the United States. The overall goal of this FMP is to conserve spiny dogfish in order to achieve optimum yield from this resource. The objectives of this FMP are:

1. Reduce fishing mortality to ensure that overfishing does not occur.
2. Develop compatible plans between state and council jurisdictions as well as between the USA and Canada.
3. Promote uniform and effective enforcement of regulations.
4. Minimize regulations while achieving the management objectives stated above.
5. Minimize the effects of dogfish regulation on the regulation of other marine species.
6. Contribute to the protection of biodiversity and ecosystem structure and function.

The fishing year for spiny dogfish is the twelve (12) month period beginning 1 May.

The Councils adopted a number of measures to meet the objectives of the FMP. These preferred alternatives are as follows:

- a) Permit and reporting requirements for commercial vessels, operators and dealers
- b) The establishment of a Spiny Dogfish FMP Monitoring Committee.
- c) The implementation of a framework adjustment process.
- d) A five year stock rebuilding schedule.
- e) A commercial quota.
- f) Seasonal (semi-annual) allocation of the quota.
- g) Prohibition on finning.

The PFMC has established an FMP for “highly migratory species” (HMS)\(^{239}\), in which sharks are included. National Marine Fisheries Service (NMFS) partially approved the fishery management plan for West Coast highly migratory species fisheries on February 4, 2004. The provisions rejected by NMFS pertained to swordfish and does not affect sharks or other cartilaginous fish. The objectives of this FMP are:

1. Promote and actively contribute to international efforts for the long-term conservation and sustainable use of HMS
2. Provide a long-term, steady supply of fish to the public
3. Minimize economic waste and adverse impacts on the fishing community owing to conservation and management measures
4. Provide viable and diverse commercial fisheries and recreational fishing opportunity for HMS
5. Implement harvest strategies which achieve optimum yield for long-term sustainable harvest levels
6. Provide foundation to support the State Department in international management of HMS
7. Promote inter-regional collaboration in management of fisheries
8. Minimize inconsistencies among federal and state regulations for HMS fisheries

\(^{239}\) [http://www.pcouncil.org/hms/hmsfmp.html](http://www.pcouncil.org/hms/hmsfmp.html)
9. Minimize the amount of accidental catch and discard mortalities
10. Prevent overfishing and rebuild overfished stocks
11. Acquire biological information and develop long term research programs
12. Promote effective monitoring and enforcement
13. Minimize gear conflicts
14. Maintain, restore, or enhance the current quantity and productive capacity of
    HSM habitats
15. Establish procedures to facilitate rapid implementation of future management
    actions
16. Promote outreach and education efforts
17. Manage fisheries to prevent adverse effects on protected species
18. Allocate harvest equally and fairly between HMS fisheries, if necessary

The WPFMC does have a FMP established for “highly migratory species”, under which
many cartilaginous fish fall. The actions proposed by the FMP are the following:

1. Closure of certain areas to foreign longline vessels
2. Foreign longline vessels are required to obtain a permit prior to fishing in the
    EEZ
3. Foreign longline vessels are required to file effort plans two months prior to
    entering EEZ for fishing purposes
4. No limit on the amount of fishing or the amount of catch made and retained
5. Foreign longline vessels would be required to collect catch and effort data as
    well as other data regarding sea turtles and marine mammals
6. Foreign longline vessels would be required to carry observers when so directed.
7. Foreign vessels are prohibited to fish with drift-gillnets within the EEZ.
8. Domestic vessels are required to obtain a permit prior to fishing with drift-
    gillnets and must collect data of their catch.
9. No other restrictions shall be placed on domestic vessels.

The ASMFC Commission does have an interstate FMP set up for spiny dogfish and
other coastal sharks. The objectives of this FMP are:

1. Reduce fishing mortality, rebuild stock biomass, and support a more sustainable
    fishery
2. Coordinate management activities between state, federal, and Canadian authorities
3. Minimize the amount of catch accidentally caught and discarded
4. Allocate the available resources in a sustainable manner to all fishers
5. Obtain biological and fishery related data

The management measures included in the plan are:

1. The dogfish fishing year will go from May 1 – April 30
2. The quote allocation will be divided into two periods of May 1–Oct 31 and Nov 1–
    April 30. 57.9% of the coastwide annual quota shall be allocated to the first period
    while 42.1% shall be allocated to the second.

240 http://www.pcouncil.org/hms/hmsfmp.html
241 http://www.asmfc.org/speciesDocuments/dogfish/fmps/spinyDogfishFMP.pdf
3. Defined process of establishing dogfish regulation between the Technical Committee and the Management Board
4. The prohibition of the landing, harvest, and possession of spiny dogfish after the quota for a given period has been reached
5. No portion of the quota of a given period shall be “rolled over” until the stock has rebuilt to the target SSB
6. The coastal states shall work with the NMFS to administer quotas, coordinate coastwide closures, and enforce state and federal regulations
7. Possession limits will be set annually through the fishing year specifications provided above
8. States may issue spiny dogfish exempted fishing permits for biomedical supply, but each state is restricted to 1,000 spiny dogfish per year.
9. Finning (removing the fins and returning the fish to water) is prohibited.
### Table 9. The regional and national legal and management status of migratory sharks.

(This table was drawn up with the assistance of the IUCN Shark Specialist Group network and is not comprehensive. National species-specific conservation and management initiatives may apply to EEZ in more than one ocean basin. Marine initiatives focus on sea areas – ICCAT is Atlantic, IATTC Pacific.)

<table>
<thead>
<tr>
<th>Species</th>
<th>Africa</th>
<th>Australasia</th>
<th>Central America &amp; Caribbean</th>
<th>Central &amp; South America</th>
<th>Europe</th>
<th>North America (US HMSFMP covers Atlantic only)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Alopias pelagicus</td>
<td>SA: bycatch limit, Recreational bag limit.</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Alopias superalbus</td>
<td>SA: bycatch limit, Recreational bag limit.</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Alopias vulpinus</td>
<td>SA: bycatch limit, Recreational bag limit.</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Carcharhinus acronaetus</td>
<td>SA: Recreational bag limit.</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>Small Coastal Shark on U.S. HMSFMP</td>
</tr>
<tr>
<td>Carcharhinus albinigerinus</td>
<td>SA: Recreational bag limit.</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Carcharhinus altimus</td>
<td>SA: Recreational bag limit.</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>Prohibited Species on U.S. HMSFMP</td>
</tr>
<tr>
<td>Carcharhinus amblyrhynchos</td>
<td>SA: Recreational bag limit.</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Carcharhinus brevirostris</td>
<td>SA: Recreational bag limit.</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Carcharhinus brevipinna</td>
<td>SA: Recreational bag limit.</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Carcharhinus falciformis</td>
<td>ICCAT: finning ban.</td>
<td></td>
<td>ICCAT and IATTC: finning ban.</td>
<td>ICCAT and IATTC: finning ban.</td>
<td>ICCAT: finning ban.</td>
<td>Large Coastal Shark on U.S. HMSFMP</td>
</tr>
<tr>
<td>Carcharhinus galapagensis</td>
<td>NZ: Protected in Kermadec Islands Marine Reserve.</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>Prohibited Species on U.S. HMSFMP</td>
</tr>
<tr>
<td>Carcharhinus isodon</td>
<td>SA: Recreational bag limit.</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>Small Coastal Shark on U.S. HMSFMP</td>
</tr>
<tr>
<td>Carcharhinus leucas</td>
<td>SA: Recreational bag limit.</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>Large Coastal Shark on U.S. HMSFMP</td>
</tr>
<tr>
<td>Carcharhinus melanopterus</td>
<td>SA: Recreational bag limit.</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>Prohibited Species on U.S. HMSFMP</td>
</tr>
<tr>
<td>Carcharhinus obscurus</td>
<td>SA: Recreational bag limit.</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Carcharhinus plumbeus</td>
<td>SA: Recreational bag limit.</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>Large Coastal Shark on U.S. HMSFMP</td>
</tr>
<tr>
<td>Carcharhinus signatus</td>
<td>SA: Recreational bag limit.</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>Prohibited Species on U.S. HMSFMP</td>
</tr>
<tr>
<td>Species</td>
<td>Africa</td>
<td>Australasia</td>
<td>Central America &amp; Caribbean</td>
<td>Central &amp; South America</td>
<td>Europe</td>
<td>North America</td>
</tr>
<tr>
<td>-------------------------</td>
<td>--------------------------</td>
<td>--------------------------------------------------</td>
<td>----------------------------</td>
<td>-------------------------</td>
<td>---------------------------------------------</td>
<td>---------------</td>
</tr>
<tr>
<td><em>Carcharodon cuvier</em></td>
<td>SA: Recreational bag limit.</td>
<td>Australia: Limited entry for gillnets and longlines, net length limit, TAC, nursery closed seasons, minimum gillnet meshsize. Closed areas to shark gillnets and longlines. Recreational bag limits.</td>
<td></td>
<td>Large Coastal Shark on U.S. HMSFMP</td>
<td></td>
<td></td>
</tr>
<tr>
<td><em>Hemipristis australis</em></td>
<td>SA: Recreational bag limit.</td>
<td>Mediterranean sea: San Francisco Bay: recreational fishery quota set for fish per person per pole – problematic.</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><em>Hexanchus griseus</em></td>
<td>SA: Recreational bag limit.</td>
<td>Mediterranean sea: General ban on bottom-trawling below 1000m.</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Species</td>
<td>Africa</td>
<td>Australasia</td>
<td>Central America &amp; Caribbean</td>
<td>Central &amp; South America</td>
<td>Europe</td>
<td>North America (US HMSFMP covers Atlantic only)</td>
</tr>
<tr>
<td>------------------</td>
<td>-------------------------------</td>
<td>----------------------------------</td>
<td>-----------------------------</td>
<td>-------------------------</td>
<td>-----------------------------</td>
<td>-----------------------------------------------</td>
</tr>
<tr>
<td><em>Mesophisma pedagios</em></td>
<td>SA: Recreational bag limit.</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>Prohibited Species on U.S. HMSFMP.</td>
</tr>
<tr>
<td><em>Neposphyra hexadactyla</em></td>
<td>SA: Recreational bag limit.</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>Prohibited Species on U.S. HMSFMP.</td>
</tr>
<tr>
<td><em>Notorynchus cepedianus</em></td>
<td>SA: Recreational bag limit.</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>Prohibited Species on U.S. HMSFMP.</td>
</tr>
<tr>
<td>Species</td>
<td>Africa</td>
<td>Australasia</td>
<td>Central America &amp; Caribbean</td>
<td>Central &amp; South America</td>
<td>Europe</td>
<td>North America</td>
</tr>
<tr>
<td>--------------------------</td>
<td>-------------------------------</td>
<td>------------------------------------------------------------------------------</td>
<td>-----------------------------</td>
<td>-------------------------</td>
<td>---------------------------------------------</td>
<td>---------------------------------------------------</td>
</tr>
<tr>
<td>Prionace glauca</td>
<td>SA: bycatch limit. Recreational bag limit.</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>Prohibited Species on U.S. HMFSP.</td>
</tr>
<tr>
<td>Pseudocarcharias karnofari</td>
<td>SA: Recreational bag limit.</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Rhizoponodon scutus</td>
<td>SA: Recreational bag limit.</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Rhizoponodon turrerovae</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>Small Coastal Shark on U.S. HMFSP.</td>
</tr>
<tr>
<td>Somniosus antarcticus</td>
<td></td>
<td>Australia: bycatch in toothfish fishery released - survival rates unknown.</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Species</td>
<td>Africa</td>
<td>Australasia</td>
<td>Central America &amp; Caribbean</td>
<td>Central &amp; South America</td>
<td>Europe</td>
<td>North America</td>
</tr>
<tr>
<td>-------------------</td>
<td>---------------------------------------</td>
<td>-----------------------------------</td>
<td>-----------------------------</td>
<td>-------------------------</td>
<td>---------------------------------</td>
<td>-----------------------------------</td>
</tr>
<tr>
<td>Somniosus microcephalus</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>Canada: monitoring commercial bycatch through fishery observer data.</td>
</tr>
<tr>
<td>Somniosus pacificus</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>Prohibited Species on U.S. HMSFMP</td>
</tr>
<tr>
<td>Sphyrna lewini</td>
<td>SA: Recreational bag limit.</td>
<td></td>
<td>ICCAT and IATTC: finning ban</td>
<td>ICCAT and IATTC: finning ban</td>
<td>Large Coastal Shark on U.S. HMSFMP</td>
<td></td>
</tr>
<tr>
<td>Sphyrna mokarran</td>
<td>SA: bycatch limit.</td>
<td>Recreational bag limit.</td>
<td>ICCAT and IATTC: finning ban</td>
<td>ICCAT and IATTC: finning ban</td>
<td>Large Coastal Shark on U.S. HMSFMP</td>
<td></td>
</tr>
<tr>
<td>Sphyrna tiburo</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>Small Coastal Shark on U.S. HMSFMP</td>
</tr>
<tr>
<td>Sphyrna zygaena</td>
<td>SA: bycatch limit.</td>
<td>Recreational bag limit.</td>
<td></td>
<td></td>
<td></td>
<td>Large Coastal Shark on U.S. HMSFMP</td>
</tr>
<tr>
<td>Squalus acanthias</td>
<td>SA: bycatch limit.</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>IICES Area IIa and IV: TAC. IICES recommended a zero quota in 2006, but advice not heeded by EU.</td>
</tr>
</tbody>
</table>