



**MEMORANDUM OF  
UNDERSTANDING ON THE  
CONSERVATION OF MIGRATORY  
SHARKS**

CMS/Sharks/MOS3/Doc.8.1  
3 December 2018  
Original: English

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3<sup>rd</sup> Meeting of the Signatories (Sharks MOS3)  
Monaco, 10 – 14 December 2018  
Agenda Item 8

**ANALYSIS OF NATIONAL REPORTS**

*(Prepared by the Secretariat)*

**Introduction**

1. The present document provides an analysis of all National Reports from Signatories that have been received by the Secretariat by 15 November 2018.
2. In accordance with paragraph 15(b) of the MOU, Signatories are required to report on the implementation of the MOU and its Conservation Plan to each Meeting of the Signatories (MOS).
3. To facilitate and harmonize the reporting process, MOS2 adopted a format for national reports ([CMS/Sharks/Outcome2.10](#)) and instructed the Secretariat to set up an online reporting page based on this format in three languages. To this end the Secretariat has used the CMS Online Reporting Tool.
4. The Secretariat received 26 National Reports from Signatory States, including the EU, which were uploaded to the meeting website as they were submitted. The European Union (EU) and its Member States have submitted their reports jointly in one document, which includes separate reports from the EU and several Member States.<sup>1</sup>
5. Many Signatories informed the Secretariat that they had technical problems in using the online reporting tool. Some also reported that data were not available to answer some of the questions included.
6. Approximately 50 per cent of Signatories that have submitted a national report used the online form. The remaining Signatories submitted their reports in various formats to the Secretariat. All but one of these were based on the agreed format. Since the online version included multiple options not captured in the word version, this resulted in some information loss.
7. The heterogeneity of reports and the fact that the level of detail varied significantly across the different reports received, made it difficult to analyze the results. The Secretariat has therefore based its analysis on information categories that were included in most reports. In addition, the Secretariat would like to note, that due to the diversity of formats, some of the

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<sup>1</sup> Some Members States that have reported to MOS3 have not signed the MOU individually.

information provided by Signatories may have been misinterpreted. Therefore, Signatories are invited to highlight any inconsistencies between the information contained in this analysis and their reported information.

8. The report is split into six main sections which present the analysis of the data in a combination of tables and prose. Also attached at the end of the report are Annexes 1-3 which include further information for some questions.

Action requested:

The Meeting is requested to:

- a) Take note of the analysis of National Reports;
- b) Provide guidance to the Secretariat on future reporting.

## Analysis of National Reports

### Species in National Waters

Question II A1: Which of these Annex 1 species are found in your waters?

Question II A2: Is your government compiling relevant data for improving understanding of migratory shark populations through research, monitoring and information exchange for species in Annex 1?

1. Question A1 was answered by 88 per cent of respondents. Of those, a further 59 per cent indicated that they were compiling relevant data to improve the understanding of migratory shark species.
2. The EU reported that it has measures in place for all Annex 1 species. They come in the form of frameworks and regulations. In relation to monitoring, these regulations provide information such as the number of sharks landed and how frequently. The EU also indicated that it supports scientific bodies and scientific research. It also indicated that it takes part in capacity-building activities.
3. Ecuador has state policy that protects all sharks generally and they can only be landed as incidental catch. A national action plan has been implemented since 2008. Projects and programmes have been developed to monitor landings and biological aspects of sharks which have been implemented by universities and NGOs.
4. Samoa has for the first time researched into the population status of sharks. The research took place at two identified sites on the southern side of Upolu Island in 2017. The baseline surveys collected data using the Baited Remote Underwater Video System method for analysis of their abundance and distribution. The research was not intended to target specific shark species but for any shark species encountered to identify their diversity, abundance and distribution.
5. The United Kingdom has several projects and plans that relate to the research and monitoring of shark species. For example, it has the Spurdog By-catch Avoidance Programme which is an innovative by-catch avoidance tool that has been developed and is currently being trialed in the UK.
6. Senegal has participatory monitoring being carried out in MPAs and Marine Parks and Reserves for all species including ray and shark species.
7. Italy's CNR-Mazara Institute is carrying out extensive research on shark species and the main monitoring activity is the MEDLEM (MEDiterranean Large Elasmobranchs Monitoring).
8. In Spain all Annex I species and some other migratory sharks protected by the law LESPRES for species protected under Spanish Royal Decree 139/2011.
9. Costa Rica and New Zealand provided species-specific information on several species. Please see [Annex 1](#) to this document for further details.

**Table 1:** Annex 1 species found in national waters and those for which relevant data have been compiled as reported by each Signatory.

(A = species found in national waters and action is being taken in relation to question A2, X = species found in national water)

Signatory	<i>Rhincodon typus</i>	<i>Cetorhinus maximus</i>	<i>Carcharodon carcharias</i>	<i>Isurus oxyrinchus</i>	<i>Isurus paucus</i>	<i>Lamna nasus</i>	<i>Alopias pelagicus</i>	<i>Alopias superciliosus</i>	<i>Alopias vulpinus</i>	<i>Carcharhinus falciformis</i>	<i>Sphyrna lewini</i>	<i>Sphyrna mokarran</i>	<i>Squalus acanthias</i>	<i>Anoxypristis cuspidata</i>	<i>Pristis clavata</i>	<i>Pristis pectinata</i>	<i>Pristis zijsron</i>	<i>Pristis pristis</i>	<i>Manta alfredi</i>	<i>Manta birostris</i>	<i>Mobula mobular</i>	<i>Mobula japanica</i>	<i>Mobula thurstoni</i>	<i>Mobula tarapacana</i>	<i>Mobula eregoodootenkee</i>	<i>Mobula kuhlii</i>	<i>Mobula hypostoma</i>	<i>Mobula rochebrunei</i>	<i>Mobula munkiana</i>	
Australia	A	A	A	A	A	A	A	A	A	A	A			A	A		A	A	A	A		A	A		A					
Brazil	X	X	X	X	X	X		X	X	X	X	X				X		X		X		X	X	X				X	X	
Bulgaria													A																	
Colombia	X	X	X	X	X					A	A																			
Costa Rica	A			X			X	X	X	A	A	X			A		A		X		X		X							A
Côte d'Ivoire				A					A	A	A																			
Denmark						X			X				X																	
Ecuador	X	X		X			X	X		X	A						X		A	X	X	X	X	X						X
European Union	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A
Germany		A				A							A																	
Greece		A	A	A		A		A	A		A	A	A		A		A			A										
Guinea																							X					X		

Signatory	<i>Rhincodon typus</i>	<i>Cetorhinus maximus</i>	<i>Carcharodon carcharias</i>	<i>Isurus oxyrinchus</i>	<i>Isurus paucus</i>	<i>Lamna nasus</i>	<i>Alopias pelagicus</i>	<i>Alopias superciliosus</i>	<i>Alopias vulpinus</i>	<i>Carcharhinus falciformis</i>	<i>Sphyrna lewini</i>	<i>Sphyrna mokarran</i>	<i>Squalus acanthias</i>	<i>Anoxypristis cuspidata</i>	<i>Pristis clavata</i>	<i>Pristis pectinata</i>	<i>Pristis ziisron</i>	<i>Pristis pristis</i>	<i>Manta alfredi</i>	<i>Manta birostris</i>	<i>Mobula mobular</i>	<i>Mobula japanica</i>	<i>Mobula thurstoni</i>	<i>Mobula tarapacana</i>	<i>Mobula eregodootenkee</i>	<i>Mobula kuhlii</i>	<i>Mobula hypostoma</i>	<i>Mobula rochebrunei</i>	<i>Mobula munkiana</i>
Italy		A	A	A	A	A						A																	
New Zealand	A	A	A	A		A		A	A											A	A	A							
Portugal	X	X	X	X	X	X		X	X	X		X								X	X			X					
Romania												A																	
Samoa	A			X			X	X		A	X	X						X				X				X			
Saudi Arabia	A		A	A			A			A	A	A		A				A	A		A	A	A	A	A	A			
Senegal	X			X		X	X	X	X	X	A	A			X		X		A				A					A	
Spain	X	X	X	X	X	X		X		X		X	X		X		X	X	X	X	X			X					
United Kingdom		X							X																				
Vanuatu										A																			
Yemen	X			X	X		X	X	X	X	X									X									

## Catch of Annex 1 Species

Question II B1: Are species listed in Annex 1 caught in your nation's waters (as target or incidental catch) and in what quantity?

10. Question B1 was answered by 92 per cent of respondents. The most commonly caught species, in either incidental or targeted catch, are *Isurus oxyrinchus* (reported by 8 countries), *Alopias vulpinus*, *Sphyrna lewini* and *Squalus acanthias* (reported by 6 countries), and *Cetorhinus maximus* and *Carcharhinus falciformis* (reported by 5 countries).
11. Of the twenty countries that replied 'yes' to this question, eleven provided further detailed information on the fate of targeted and incidentally caught specimens which has been included in [Annex 2](#) to this document. Bulgaria reported targeted catch for *Squalus acanthias*. *Mobula rochebrunei* is caught as both targeted and incidental catch in Brazil. *Sphyrna lewini* is caught as both targeted and incidental catch in Costa Rica. Costa Rica also reported that *Isurus oxyrinchus*, *Pristis pectinata* and *Pristis pristis* are traded nationally. Ecuador has targeted fisheries for *Mobula japonica*, *Mobula mobular*, *Mobula munkiana* and *Mobula thurstoni*, all traded internationally. Senegal has targeted fisheries for *Mobula thurstoni*, *Sphyrna lewini* and *Sphyrna mokarran*. Spain reported landing incidental catch of *Cetorhinus maximus* and *Pristis clavata*.
12. For further detailed information on the fate of shark species caught please refer to [Annex 2](#) to this document.

**Table 2:** Species caught in national waters as target or incidental catch as reported by each Signatory

(X = Yes or No; I = Incidental catch; T = Targeted catch; B = Both incidental and targeted catch).

Signatory	Yes	No	<i>Rhincodon typus</i>	<i>Cetorhinus maximus</i>	<i>Carcharodon carcharias</i>	<i>Isurus oxyrinchus</i>	<i>Isurus paucus</i>	<i>Lamna nasus</i>	<i>Alopias pelagicus</i>	<i>Alopias superciliosus</i>	<i>Alopias vulpinus</i>	<i>Carcharhinus falciformis</i>	<i>Sphyrna lewini</i>	<i>Sphyrna mokarran</i>	<i>Squalus acanthias</i>	<i>Anoxypristis cuspidata</i>	<b>Pristis</b>	<i>Pristis pectinata</i>	<i>Pristis zijsron</i>	<i>Pristis pristis</i>	<i>Manta alfredi</i>	<i>Manta birostris</i>	<i>Mobula mobular</i>	<i>Mobula japanica</i>	<i>Mobula thurstoni</i>	<i>Mobula tarapacana</i>	<i>Mobula eregoodootenkee</i>	<i>Mobula kuhlii</i>	<i>Mobula hypostoma</i>	<i>Mobula rochebrunei</i>	<i>Mobula munkiana</i>
Australia	X				I	I	I	I	I	I	I	I	I	I	I	I	I		I	I	I	I		I	I		I				
Belgium		X																													
Brazil	X		I	I	I	I	I			I	I	I	I	I				I		I		I		I	I	I			I	B	
Bulgaria	X <sup>2</sup>														T																
Colombia	X					I																									
Costa Rica	X <sup>3</sup>					I			I	I	I	I	B	I				I		I											
Côte d'Ivoire	X <sup>4</sup>					I					I	I	I																		
Denmark	X <sup>5</sup>																														
Ecuador	X		I																			I	T	T	T	I					T
European Union	X <sup>6</sup>																														
Germany	X														I																
Greece	X			I	I	I		I		I	I		I	I	I			I		I			I								

<sup>2</sup> Amount reported: 133.04 mt (2015), 83.49 mt (2016), and 50.50 mt (2017) of *Squalus acanthias*.

<sup>3</sup> Amount reported: 580,325.13kg of *Alopias pelagicus*, 10,503.7kg of *Alopias superciliosus*, 2,414,022.68kg of *Carcharhinus falciformis*, and 85,965.91kg of *Sphyrna lewini*.

<sup>4</sup> Amount reported: 0.61-26.84 tonnes of *Alopias vulpinus*, 2.83-44.48 tonnes of *Carcharhinus falciformis*, 27.57-40.01 tonnes of *Isurus oxyrinchus*, and 0.41-9.21 tonnes of *Sphyrna lewini*.

<sup>5</sup> Amount reported: Approximately 30 tons of incidental catch landed.

<sup>6</sup> Amount reported: 89% of total captures by EU operators are of Blue Shark (*Prionace glauca*) and 8.5% are of Shortfin Mako (*Isurus oxyrinchus*).

Signatory																																			
	Yes	No	<i>Rhincodon typus</i>	<i>Cetorhinus maximus</i>	<i>Carcharodon carcharias</i>	<i>Isurus oxyrinchus</i>	<i>Isurus paucus</i>	<i>Lamna nasus</i>	<i>Alopias pelagicus</i>	<i>Alopias superciliosus</i>	<i>Alopias vulpinus</i>	<i>Carcharhinus falciformis</i>	<i>Sphyrna lewini</i>	<i>Sphyrna mokarran</i>	<i>Squalus acanthias</i>	<i>Anoxypristis cuspidata</i>	<b>Pristis</b>	<i>Pristis pectinata</i>	<i>Pristis zijsron</i>	<i>Pristis pristis</i>	<i>Manta alfredi</i>	<i>Manta birostris</i>	<i>Mobula mobular</i>	<i>Mobula japonica</i>	<i>Mobula thurstoni</i>	<i>Mobula tarapacana</i>	<i>Mobula eregoodootenkee</i>	<i>Mobula kuhlii</i>	<i>Mobula hypostoma</i>	<i>Mobula rochebrunei</i>	<i>Mobula munkiana</i>				
Italy	X																																		
Lithuania		X																																	
New Zealand	X <sup>7</sup>																																		
Portugal		X <sup>8</sup>																																	
Romania	X																																		
Samoa	X																																		
Saudi Arabia	X																																		
Senegal	X <sup>9</sup>												T													T									
Spain	X <sup>10</sup>																																		
United Kingdom	X <sup>11</sup>																																		
Vanuatu	X																																		
Yemen		X																																	

<sup>7</sup> Amount reported: Over the last 3 years, average catch of *Alopias superciliosus* was 0.25 tonnes, average annual catch of *A. vulpinus* was just under 50 tonnes, the average annual catch of *I. oxyrinchus* was around 105 tonnes and the average annual catch of *Lamna nasus* was around 95 tonnes. In the past 3 years, there have been 14 captures of *Carcharodon carcharias*, 6 reported captures of *Cetorhinus maximus*, one incidental capture of *Manta birostris*, and 21 reported captures of *Mobula mobular/Mobula japonica*.

<sup>8</sup> Amount reported: 117.14 tons of *Isurus oxyrinchus* and 1.45 tons of *Squalus acanthias*.

<sup>9</sup> It was noted that catch of *Sphyrna lewini* includes specimens of *Sphyrna mokarran*. Amount reported: 180 tonnes (2016), 51.6 tonnes (2017) of *Mobula thurstoni* and 551 tonnes (2016), 669 tonnes (2017) of *Sphyrna lewini/Sphyrna mokarran*.

<sup>10</sup> Amount reported: 106.6kg of *Cetorhinus maximus*, 30kg of *Pristis clavata*, and 39kg of *Pristis zijsron*.

<sup>11</sup> Amount reported: 3.3 tonnes, live weight (average from 2012-2016) of *Alopias vulpinus*.

## Management and Habitat Protection Measures for Sharks MOU Annex 1 Species

Question II B2: What management measures are in place for species listed on Annex 1 of the MOU, and when were they implemented?

Question II C1: Does your country protect habitats of species listed on Annex 1 of the MOU?

13. Question B2 was answered by 81 per cent of respondents. This was done to varying levels of detail. Lithuania and Yemen answered no to this question and did not provide any further details. Most management measures described by Signatories included laws, regulations and decrees and management plans, the details of which can be found in their national reports. The regulations highlighted a trend towards limiting landing and catch size and the prohibition of the taking of species. For example, in Australia 16 of the 21 listed species are covered by the Environment Protection and Biodiversity Conservation Act 1999 and are afforded total protection in Commonwealth waters.

14. Question C1 was answered by 69 per cent of respondents. Then 66 per cent of these stated that they had measures in place. Ecuador has protected marine sanctuaries. In 2018 Samoa has established a Shark Sanctuary that covers the entire EEZ (128,000 sq.km). All shark species are protected under the UK law. Spain, Italy, and Australia noted they have MPAs and Senegal wishes to create them. Germany has exclusion fisheries and has highlighted its legal obligation to put in protection measures under EU law. Costa Rica has protections in place for coastal habitats such as wetlands and mangroves, while coastal and oceanic Islands are also protected. Brazil created the National System for the Conservation of Nature which protects waters within its national jurisdiction.

**Table 3:** Management and habitat protection measures in place as reported by Signatories.

Signatories	Management Measures		Habitat Protection	
	Yes	No	Yes	No
Australia	X		X	
Belgium				X
Brazil	X		X	
Bulgaria	X			X
Colombia	X		X	
Costa Rica	X		X	
Côte d'Ivoire	X		X	
Denmark	X			X
Ecuador			X	
European Union	X			
Germany	X			
Greece	X			X
Italy	X		X	
Lithuania		X		
New Zealand	X			
Romania	X		X	
Samoa	X		X	
Saudi Arabia	X			X
Senegal	X		X	
Spain	X		X	
United Kingdom			X	
United States	X			
Vanuatu	X			X
Yemen		X		

## Taking of CMS Appendix I Species

Question B3: Has your country prohibited the taking of species listed in CMS Appendix I?

15. Question B3 was answered by 92 per cent of respondents. Of those, 79 per cent indicated that they have prohibited taking of species listed in CMS Appendix I.
16. Some EU Member States reported that taking of species listed in Appendix I of the Convention was not prohibited, although the EU reported that legal prohibition of taking was in place for all Member States.
17. Yemen and Colombia reported they have no legal protection in place for CMS Appendix I species. Colombia, however, provided information about other laws that indirectly aid in the protection of such species. Costa Rica reported it has protections in place for two Appendix I species, but not all.
18. All the countries that answered “yes” have implemented national laws. Some offer blanket protection for all species listed while others mention measures for specific species.

**Table 4:** Indication of whether Signatories have prohibited the taking of CMS Appendix I species.

Signatories	Yes	No
Australia	X	
Belgium	X	
Brazil	X	
Bulgaria		X
Colombia		X
Costa Rica	X	
Côte d'Ivoire	X	
Denmark	X	
Ecuador	X	
European Union	X	
Germany	X	
Greece	X	
Italy	X	
Lithuania		X
New Zealand	X	
Portugal	X	
Romania		X
Samoa	X	
Saudi Arabia	X	
Senegal	X	
Spain	X	
United Kingdom	X	
Vanuatu	X	
Yemen		X

## Public Knowledge and Awareness

Question II D1: Is your government taking steps to improve public knowledge of migratory sharks?

19. Question D1 was answered by 85 per cent of respondents. The EU, Germany, Greece, Portugal and Spain provide online information such as recommended articles and scientific papers, informational handbooks, shark identification guides, and a webpage dedicated to sharks and fisheries. Romania, Colombia and Brazil reported that they provide education and public awareness activities in schools directly. The UK has developed a few initiatives centered on providing information for fishermen on prohibited and protected elasmobranchs, in line with the European Union Total Allowable Catches and Quota Regulations.
20. The areas of knowledge highlighted in Table 5 evidenced a wide cross section of issues are being covered by States in their outreach material. A number of Signatories also indicated that more efforts need to be focused on the promotion of the MOU and what it represents to the public.

**Table 5:** Areas of knowledge regarding migratory sharks for which Signatories have taken steps to make the public aware.

Signatory	Yes	No	Sharks Importance to the Ecosystem	Threats to Sharks	Threats to Marine and Coastal Habitats	The Sharks MOU	International Conservation Policies Regarding Sharks	Other
Australia	X		X	X	X	X	X	
Belgium		X						
Brazil	X		X	X				
Bulgaria		X						
Colombia	X		X	X	X		X	
Costa Rica	X		X	X	X		X	
Côte d'Ivoire		X						
Denmark		X						
Ecuador		X						
European Union	X		X	X	X	X	X	X
Germany	X							
Greece	X						X	X
Italy	X			X	X	X	X	X
New Zealand	X							
Portugal	X		X	X	X			
Romania	X							
Samoa	X		X	X	X	X	X	
Saudi Arabia	X		X	X			X	
Senegal	X		X	X	X	X	X	
Spain	X							
United Kingdom	X							
Vanuatu	X				X	X		

## Cooperation

Questions II E1: Has your country identified areas where cooperation among States is required for successful conservation and management activities?

Question II E2: Has your country engaged with other States to address these areas?

21. Of the Signatories that answered question E1, 63 per cent stated that they had identified areas where cooperation with other states was required for successful conservation management activities. Italy, Germany, and Colombia mentioned specific geographic areas. Costa Rica and Brazil mentioned the importance of cooperation for migration routes. Romania highlighted the importance of cooperation for research and understanding. Senegal, Romania, and Côte d'Ivoire mentioned specific issues such as improving awareness, data collection and monitoring as areas of importance. Please refer to [Annex 3](#) to this document for further information.

**Table 6:** Responses provided to questions E1 and E2 regarding cooperation among States.

Signatory	E1		E2	
	Yes	No	Yes	No
Australia	X		X	
Belgium		X		X
Brazil		X		X
Bulgaria		X		X
Colombia	X		X	
Costa Rica	X		X	
Côte d'Ivoire	X			X
Denmark		X		X
Ecuador	X		X	
European Union	X			
Germany	X		X	
Greece		X		
Italy	X		X	
Lithuania		X		X
Romania	X		X	
Saudi Arabia		X		X
Senegal	X		X	
United Kingdom	X			
Vanuatu	X		X	

22. Of the Signatories that answered question E2, 56 per cent responded that they had acted in cooperation with other States. Australia, Colombia, Germany, Senegal and the United Kingdom stated that this took place through regulations and laws, either national, regional or international. Some mentioned using RFMOs. Romania highlighted that this cooperation took place through workshops and consultations and Brazil stated that this should be discussed at the next meeting of the Mercosur trade bloc. Please see the national reports for further detailed information.

Question II E3: Has there been any cooperation between your country and other countries on developing institutional capacity and/or competencies?

23. Question E3 was answered by 62 per cent of respondents. Of those, 75 per cent replied that they are cooperating with other countries. Most emphasized cooperation within the framework of CITES and relevant RFMOs. Work done through CITES includes capacity-building workshops for shark identification, and workshops on drafting proposals for science-based Non-Detriment Findings and Risk-Assessment Methods for Marine Species included in Appendix II of CITES. The EU also highlighted a project carried out through CITES which includes several actions addressing shark fishing and international trade in sharks and shark products. Another project aims to support the Barcelona Convention to expand the state of knowledge of vulnerable species. To aid in shark identification, Côte d'Ivoire has created a Guide for Identification of Sharks in the Atlantic Ocean in partnership with ICCAT.

**Table 7:** Cooperation on developing institutional capacity and/or competencies as reported by countries.

Signatory	Yes	No	Shark identification	Management & conservation techniques	Habitat protection	Coordination with other stakeholders	Implementation of this MOU	Other
Australia	X		X	X	X	X	X	
Brazil		X						
Colombia	X		X	X	X	X		X
Costa Rica	X		X			X		
Côte d'Ivoire	X							
Denmark		X						
European Union	X		X	X	X	X	X	X
Germany	X				X			
Italy	X		X	X				
Lithuania		X						
Portugal	X							X
Romania	X							X
Saudi Arabia		X						
Senegal	X		X	X	X	X	X	
Spain	X							X
Vanuatu	X		X		X			

24. The information provided shows that most cooperation between countries centers on habitat protection and shark identification. Only a few States reported that there has been cooperation regarding implementation of the Sharks MOU. This highlights a gap in cooperation and developing institutional capacity and competencies.

### Additional Information

Question III. Please provide any additional information relevant to the Conservation Plan for species listed on Annex 1, or in general, provide any information about what you know about sharks in your waters.

25. Question III was answered by 50 per cent of respondents. A short overview of the information that each country provided is highlighted below:
- Australia and New Zealand have each implemented a national action plan.
  - Costa Rica banned the capture of sawfishes in 2017.
  - Côte d'Ivoire noted it has three species of migratory shark and has a significant incidental catch of *Carcharhinus brevipinna*.
  - Ecuador has the largest aggregation of *Mobula birostris* in the world. Its law generally protects manta rays. It carries out general monitoring activities for *Rhincodon typus*. The Blue Shark (*Prionace glauca*) is protected within the convention area of the Inter-American Tropical Tuna Commission (IATTC), under resolution C-05-03.
  - The EU has several websites that contain detailed information about sharks, please see its national report for further detail.
  - Greece has indicated that there is literature highlighting that elasmobranchs found in Greek waters form a separate genetic stock.
  - Italy has a draft action plan for the conservation of sharks and rays which is yet to be finalized.
  - Romania has indicated detailed information on the Spiny Dogfish (*Squalus acanthias*) regarding its spawning and distribution.
  - Samoa has held several workshops and has developed several outreach materials. It has also established a shark sanctuary in their waters.
  - Saudi Arabia had recently signed the Sharks MOU (2017) and has carried out a primary survey on shark species with the view to develop a national conservation survey.
  - Senegal has indicated that landed sharks are monitored by species or groups of species.
  - Vanuatu has indicated that there are no shark fisheries in their waters. Any sharks caught are caught incidentally. Not all flagged vessels for the country have observers and this is currently under review.
  - Yemen has indicated that it has taken additional measures to preserve the fisheries in the Arabian Sea.

Question IV. Have you identified any gaps or needs in the field of research, capacity-building, training, data collection etc. relevant to the conservation of Annex 1 species?

26. Question IV was answered by 54 per cent of respondents. The primary gap identified by states is a lack of funding. A short overview of the information that each country provided is highlighted below:

- Brazil has indicated that there is a lack of information on elasmobranch species. Some research is taking place, but a lack of funding is an issue.
- Colombia has indicated that a lack of funding and capacity is an issue for research. It has also indicated that this effects control and surveillance.
- Costa Rica has highlighted that illegal trafficking of CITES (and CMS) species such as hammerhead sharks and sawfish products continues to be a major threat. It has noted that capacity-building and forming regional networks could help with this issue.
- Côte d'Ivoire has noted that a lack of funding is the largest gap for research and surveillance.
- Ecuador has noted that a lack of funding effects its research and conservation efforts.
- Germany has noted that there are existing knowledge gaps for chondrichthyan species in German waters and that it would support the elaboration of further measures for the improvement of their conservation status.
- Greece has noted the lack of funding for genetic research to identify population structure in the Mediterranean Sea. Additionally, there is an imperative need for correct taxonomic identification for certain genera.
- Italy noted the difficulties in sharing data collected during scientific campaigns.
- Romania noted lack of financial resources for implementing the Management Plans of Marine Protected Areas and several other gaps such as coordination and capacity.
- The UK has commissioned research to address important data gaps. This is with regard to its ability to assess and manage elasmobranch stocks while continuing to ensure the sustainability of their fisheries. It will also provide scientific evidence to influence emerging policy.
- Saudi Arabia has noted that there are gaps in the field of research, capacity-building, training and data collection.
- Senegal has noted gaps at the research level as only abundances are monitored. There is a significant deficit in research on species biology and ecology. Regarding capacity-building, few scientists are trained specifically on sharks.
- Vanuatu's offshore fisheries include RFMOs that have a well-established system to collect data, mostly in the field of research. There are gaps however in enforcement and monitoring.
- Yemen has noted the need for training courses for the conservation of sharks, a census center for the quantities which will be harvested and the need to issue national legislation on protection of sharks.
- For further details please see the national reports.

## Conclusions

27. While it is difficult to draw many overarching conclusions from the information presented, there are a few trends that should be noted:
28. It should be a matter of concern that seven Signatories, all of which are CMS Parties, indicated that there was catch of CMS Appendix I species. While most of these catches were reported as incidental, targeted catch was also reported for four species of mobulids. Furthermore, five Signatories, four of which are a Party to CMS, have reported that they do not explicitly prohibit the taking of CMS Appendix I species.
29. Some Signatories have no legal protection and others only have partial protection in place for CMS Appendix I species. They should be encouraged to develop suitable comprehensive protection measures for all Appendix I species as soon as possible.
30. Question D1 regarding efforts to improve public knowledge and awareness of migratory sharks evidenced a cross section of issues is being covered by States in their outreach material. A number of Signatories also highlighted a need to improve the promotion of the MOU to the public.
31. Generally, there is a high level of cooperation between States, often facilitated by the EU, CITES or RFMO related activities. However, there is a need for further collaboration to allow for more successful conservation approaches.
32. Only a few States reported that there has been cooperation regarding implementation of the Sharks MOU, suggesting that this is an area where further support could be offered / work may need to be done. This highlights a gap in cooperation and developing institutional capacity and competencies.
33. It was not possible to draw any definitive further conclusions in relation to other issues presented in the national report questionnaire due to a low response rate to the questions and variations in the response format. Responses were often general and lacked further specific information on matters such as management measures and quantity of incidental or targeted catch.

**Annex 1**

Question II A2: Is your government compiling relevant data for improving understanding of migratory shark populations through research, monitoring and information exchange for species in Annex 1?

**Table 1:** All countries that provided specific information regarding data compiled for each species are listed below.

Species	Population Demographics	Critical Seasons	Critical Life Stages	Essential Marine Habitats	Distributional Range	Migration Corridors	Behaviour and Ecology	Threats to Conservation	Identifying Species Most Vulnerable to Human Activities & Fisheries
<i>Rhincodon typus</i>									
Australia	X	X	X	X	X	X	X	X	X
Costa Rica	X	X		X	X		X		
New Zealand					X				
Saudi Arabia				X	X				X
<i>Cetorhinus maximus</i>									
Australia	X				X		X	X	X
Germany					X				
Greece			X		X	X	X	X	X
Italy		X			X			X	X
New Zealand	X				X				X

Species	Population Demographics	Critical Seasons	Critical Life Stages	Essential Marine Habitats	Distributional Range	Migration Corridors	Behaviour and Ecology	Threats to Conservation	Identifying Species Most Vulnerable to Human Activities & Fisheries
<i>Carcharodon carcharias</i>									
Australia	X	X	X	X	X	X	X	X	X
Greece			X		X	X	X	X	X
Italy				X					X
New Zealand	X	X		X	X	X	X	X	X
<i>Isurus oxyrinchus</i>									
Australia	X	X	X	X	X	X	X	X	X
Côte d'Ivoire	X								
Greece			X		X	X	X	X	X
Italy									X
New Zealand	X	X		X	X	X	X		X
Saudi Arabia				X	X				X
<i>Isurus paucus</i>									
Australia	X				X		X	X	X
<i>Lamna nasus</i>									
Australia	X				X		X	X	X
Germany					X				

Species	Population Demographics	Critical Seasons	Critical Life Stages	Essential Marine Habitats	Distributional Range	Migration Corridors	Behaviour and Ecology	Threats to Conservation	Identifying Species Most Vulnerable to Human Activities & Fisheries
Greece			X		X	X	X	X	X
Italy									X
New Zealand	X	X		X	X	X	X		X
<i>Alopias pelagicus</i>									
Australia	X				X		X	X	X
Saudi Arabia					X				X
<i>Alopias superciliosus</i>									
Australia	X				X		X	X	X
Greece			X		X	X	X	X	X
New Zealand	X				X				X
<i>Alopias vulpinus</i>									
Australia	X				X		X	X	X
Côte d'Ivoire	X								
Greece			X		X	X	X	X	X
New Zealand	X				X				X
<i>Carcharhinus falciformis</i>									
Australia	X				X		X	X	X

Species	Population Demographics	Critical Seasons	Critical Life Stages	Essential Marine Habitats	Distributional Range	Migration Corridors	Behaviour and Ecology	Threats to Conservation	Identifying Species Most Vulnerable to Human Activities & Fisheries
Colombia	X	X	X	X	X	X	X	X	
Costa Rica	X				X		X		
Côte d'Ivoire	X								
Samoa				X					
Saudi Arabia				X	X				X
<i>Sphyrna lewini</i>									
Australia	X	X	X	X	X	X	X	X	X
Colombia	X	X	X	X	X	X	X	X	
Costa Rica	X	X		X	X	X	X	X	X
Côte d'Ivoire	X								
Greece			X		X	X	X	X	X
Saudi Arabia				X	X				X
Senegal	X	X		X				X	
<i>Sphyrna mokarran</i>									
Australia	X	X	X	X	X	X	X	X	X
Greece			X		X	X	X	X	X
Saudi Arabia				X	X				X

Species	Population Demographics	Critical Seasons	Critical Life Stages	Essential Marine Habitats	Distributional Range	Migration Corridors	Behaviour and Ecology	Threats to Conservation	Identifying Species Most Vulnerable to Human Activities & Fisheries
Senegal	X	X		X				X	
<i>Squalus acanthias</i>									
Germany					X				
Greece			X		X	X	X	X	X
Italy	X							X	X
<i>Anoxypristis cuspidata</i>									
Australia	X				X		X	X	X
Saudi Arabia				X	X				X
<i>Pristis clavata</i>									
Australia	X	X	X	X	X		X	X	X
<i>Pristis pectinata</i>									
Costa Rica	X	X		X	X			X	X
Greece			X		X	X	X	X	X
<i>Pristis zijsron</i>									
Australia	X	X	X	X	X		X	X	X
<i>Pristis pristis</i>									
Australia	X	X	X	X	X		X	X	X

Species	Population Demographics	Critical Seasons	Critical Life Stages	Essential Marine Habitats	Distributional Range	Migration Corridors	Behaviour and Ecology	Threats to Conservation	Identifying Species Most Vulnerable to Human Activities & Fisheries
Costa Rica	X	X		X	X			X	X
Greece			X		X	X	X	X	X
<i>Manta alfredi</i>									
Australia	X				X		X	X	X
Saudi Arabia				X	X				X
<i>Manta birostris</i>									
Australia	X				X		X	X	X
New Zealand					X				X
Saudi Arabia				X	X				X
Senegal	X			X				X	
<i>Mobula mobular</i>									
Greece			X		X	X	X	X	X
<i>Mobula japanica</i>									
Australia	X				X		X	X	X
New Zealand <sup>12</sup>	X	X		X	X	X	X	X	X
Saudi Arabia				X	X				X

<sup>12</sup> New Zealand considers *Mobular mobular* and *Mobular japanica* as the same species.

Species	Population Demographics	Critical Seasons	Critical Life Stages	Essential Marine Habitats	Distributional Range	Migration Corridors	Behaviour and Ecology	Threats to Conservation	Identifying Species Most Vulnerable to Human Activities & Fisheries
<i>Mobula thurstoni</i>									
Australia	X				X		X	X	X
Saudi Arabia				X	X				X
Senegal	X			X				X	
<i>Mobula tarapacana</i>									
Saudi Arabia				X	X				X
<i>Mobula eregoodootenkee</i>									
Australia	X				X		X	X	X
Saudi Arabia				X	X				X
<i>Mobula kuhlii</i>									
Saudi Arabia				X	X				X
<i>Mobula rochebrunei</i>									
Senegal	X			X				X	
<i>Mobula munkiana</i>									
Costa Rica	X	X		X					

## Annex 2

Question II B1: Are species listed in Annex 1 caught in your nation's waters (as target or incidental catch) and in what quantity?

**Table 1:** All countries that provided specific information regarding the fate of caught species have been listed below (X=action as indicated by the Signatory).

Species	Targeted catch	Incidental catch	Fates of caught specimens					Traded internationally
			Safe release alive	Discard dead	Retained on board	Landed	Traded nationally	
<i>Rhincodon typus</i>								
Ecuador		X	X	X				
<i>Cetorhinus maximus</i>								
New Zealand		X	X	X				
Spain		X				X		
United Kingdom		X	X					
<i>Carcharodon carcharias</i>								
Australia		X	X	X				
New Zealand		X	X	X				
<i>Isurus oxyrinchus</i>								
Australia		X	X		X	X	X	
Colombia		X					X	
Costa Rica		X					X	
Côte d'Ivoire		X					X	
New Zealand		X	X	X		X		
<i>Isurus paucus</i>								
Australia		X	X		X	X	X	

Species	Targeted catch	Incidental catch	Fates of caught specimens					Traded internationally
			Safe release alive	Discard dead	Retained on board	Landed	Traded nationally	
<i>Lamna nasus</i>								
Australia		X	X		X	X	X	
New Zealand		X	X	X		X		
<i>Alopias pelagicus</i>								
Costa Rica		X			X		X	
<i>Alopias superciliosus</i>								
Australia		X	X	X				
Costa Rica		X			X		X	
Greece		X				X		
New Zealand		X		X				
<i>Alopias vulpinus</i>								
Australia		X	X	X				
Costa Rica		X			X		X	
Côte d'Ivoire		X					X	
Greece		X				X		
New Zealand		X		X		X		
United Kingdom		X				X	X	
<i>Carcharhinus falciformis</i>								
Australia		X	X	X				
Costa Rica		X						
Côte d'Ivoire		X					X	

Species	Targeted catch	Incidental catch	Fates of caught specimens					Traded internationally
			Safe release alive	Discard dead	Retained on board	Landed	Traded nationally	
Samoa		X	X	X				
Saudi Arabia		X						X
<i>Sphyrna lewini</i>								
Australia		X	X	X	X	X	X	X
Costa Rica	X	X			X	X	X	X
Côte d'Ivoire		X					X	
Saudi Arabia		X					X	
<i>Sphyrna mokarran</i>								
Australia		X	X	X	X	X	X	X
Costa Rica		X				X	X	X
Saudi Arabia		X					X	
<i>Squalus acanthias</i>								
Greece		X				X		
<i>Anoxypristis cuspidata</i>								
Australia		X	X	X			X	
<i>Pristis clavata</i>								
Australia		X	X	X				
Spain		X				X		
<i>Pristis pectinata</i>								
Costa Rica		X	X					
<i>Pristis zijsron</i>								

Species	Targeted catch	Incidental catch	Fates of caught specimens					Traded internationally
			Safe release alive	Discard dead	Retained on board	Landed	Traded nationally	
Australia		X	X	X				
Spain		X	X					
<i>Pristis pristis</i>								
Costa Rica		X	X				X	
<i>Manta alfredi</i>								
Saudi Arabia		X					X	
<i>Manta birostris</i>								
Ecuador		X	X	X				
New Zealand		X	X					
Saudi Arabia		X					X	
<i>Mobula mobular</i>								
Ecuador	X							X
New Zealand		X	X	X				
<i>Mobula japanica</i>								
Australia		X	X	X				
Ecuador	X							X
New Zealand		X	X	X				
Saudi Arabia		X					X	
<i>Mobula thurstoni</i>								
Australia		X	X	X				
Ecuador	X							X

Species	Targeted catch	Incidental catch	Fates of caught specimens					Traded internationally
			Safe release alive	Discard dead	Retained on board	Landed	Traded nationally	
Saudi Arabia		X					X	
<i>Mobula tarapacana</i>								
Ecuador		X	X	X				X
Saudi Arabia		X					X	
<i>Mobula eregoodootenkee</i>								
Australia		X	X	X				
Saudi Arabia		X					X	
<i>Mobula kuhlii</i>								
Saudi Arabia		X					X	
<i>Mobula munkiana</i>								
Ecuador	X							X

## Annex 3

E1: Has your country identified areas where cooperation among States is required for successful conservation and management activities?

### **Australia**

Internationally, Australia has encouraged the adoption of best practice shark management in Regional Fisheries Management Organizations (RFMOs). This includes promoting internationally anti-finning measures, such as encouraging the full utilization of harvested sharks. Australia also strongly advocates for improving the understanding of the markets for and trade in shark products.

Australia will host the 5<sup>th</sup> International Whale Shark Conference 28-31 May 2019.

### **Brazil**

The south of Brazil is an area of great importance for migratory species.

### **Colombia**

Cooperation is required in the Pacific Region, where priority areas have been identified in the Eastern Pacific, South-east Pacific, and Tropical Eastern Pacific Sections. Cooperation is also required in the Caribbean Region, where actions are prioritized in certain areas of the Insular Caribbean (Seaflower Biosphere Reserve) and Colombia's Continental Caribbean.

### **Costa Rica**

A regional effort involving Costa Rica, Ecuador, Panama, and Colombia has been proposed to protect migratory routes (and their connectivity) for pelagic shark species that move between oceanic islands. This effort has been spearheaded by MigraMar, Fundación Pacifico, Fundación Costa Rica por Siempre, and the University of Costa Rica.

### **Côte d'Ivoire**

The areas that have been identified are scientific research and monitoring.

### **Ecuador**

In the Eastern Pacific there is no assessment of these resources and it is a gap. Most of the Parties in the region are requesting the assessment.

### **European Union**

At international level, cooperation on conservation issues of sharks in the Mediterranean and Black Sea is under the auspice of the GFCM. The relative legislative acts currently in place are:

- Recommendation GFCM/36/2012/3 on fisheries management measures for the conservation of sharks and rays in the GFCM area of application
- The UNEP/MAP in 2003 included also an Action Plan for the Conservation of Cartilaginous Fishes (chondrichthyans) in the Mediterranean Sea
- At present there is a pending proposal for a 2018 recommendation on fisheries management measures for the conservation of sharks and rays in the GFCM area of

application, amending Recommendation GFCM/36/2012/3. This will be discussed under the 42nd GFCM Annual Session in Oct 2018

### **Germany**

A scientific study by Zidowitz et al. (2017) was conducted between July 2013 and February 2016 on the collection and evaluation of historical and current data concerning the occurrence of chondrichthyan species in the North and Baltic Seas.

Close ecological connectivity exists between the German and adjacent areas of the Dogger Bank. Therefore, according to Zidowitz et al. (2017) conservation measurements for chondrichthyans in the Natura 2000 Site Dogger Bank should be based on a cross-border concept. An international network of protected sites in the North Sea area could also be helpful for re-introductions of extinct and critically endangered species.

### **Italy**

The main area identified is the Pelagos Sanctuary between Italy, France and the Principality of Monaco.

### **Romania**

Natura 2000 network is a key instrument for biodiversity loss halting and ecosystems protection. The success of Natura 2000 network depends on the implementation of measures recommended through Black Sea regional legal/policy documents, following the short-, medium- and long-term activities assumed by the international conventions and agreements.

A BlackSea4Fish project was developed under the General Fisheries Commission for the Mediterranean (GFCM), for ensuring the coordination at the Black Sea level, taking into account the priorities related to the midterm strategy. A brainstorming meeting on the GFCM BlackSea4Fish project, including a session on scientific surveys at sea was held in 2016, in Burgas, Bulgaria. A few components were proposed: data collection and analysis on Black Sea fisheries and ecosystems; stock assessment; joint surveys; regional cooperation, institutional strengthening, staff training and dissemination of results.

The NIMRD has been working closely with relevant stakeholders (local, central, regional authorities, Fishermen Associations, research institutes and civil society) concerning better identification of bycaught individuals and data collection. The project “Co-development of Climate services for adaptation to changing Marine Ecosystems” has been implementing with eleven partners from seven countries (France, Germany, Ireland, Norway, Spain, Sweden and Romania) during the period September 2017-August 2020. The CoCliME project has been developing and producing a set of regionally focused climate services, to address key impact areas including human health, aquaculture, fisheries and tourism across the regional seas of Europe.

The developed services and associated decision support tools, empower and support vulnerable coastal sectors, to accelerate adaptive decision-making and feed into key governance mechanisms such as the Marine Strategy Framework Directive, Marine Spatial Planning and local, national and European adaptation planning. The project team brings together a newly established consortium of boundary organization experts in co-development of climate services with leaders in marine ecosystem research, regional ocean climate modelers and a number of targeted users and decision makers in each region. The project offers an innovative and user-focused approach and the development of a societally relevant climate service framework, in

addition to the bespoke climate services, that will be transferable to other regions, impact areas, users and marine ecosystem vulnerabilities.

**Senegal**

Instruction to improve awareness, species identification, understanding of biology, plans for organization and management of shark and ray fisheries, and the monitoring of fisheries.