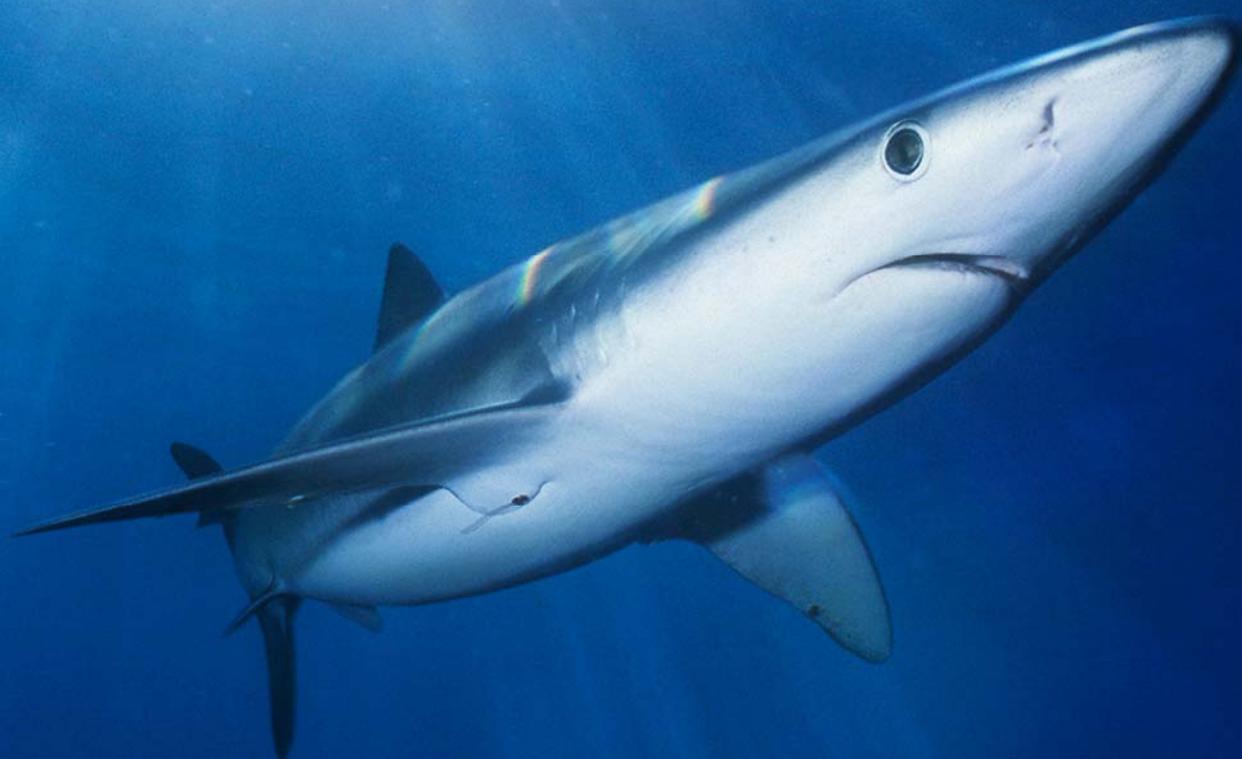


Shark, Skate and Ray Conservation Plan



Introduction

Sharks, skates and rays, collectively known as elasmobranchs are caught in fisheries worldwide, including in EU and UK waters. Many have been depleted rapidly and extensively by fishing pressure and now exist at very low levels when compared to their historic maximum. They are also often highly migratory and move across national and international boundaries with regularity, which poses an additional challenge for their management.

This Plan explains the role of elasmobranchs in the ecosystem, their characteristics, and the pressures facing them. It summarises current management and conservation measures to protect sharks, skates and rays and sets out policy objectives. Defra will aim to meet these policy objectives by pursuing work on all the areas in the fields of action, in line with the timetable.

This Plan will help us to secure our overarching aim of managing elasmobranch stocks sustainably so that depleted stocks recover and that those faring better are fished sustainably.

Defra will review and report on progress against the objectives and fields of action in the Plan by the end of 2012.

Role in the ecosystem, characteristics and pressures

Importance – role in the ecosystem

Sharks are often top predators and as such depletion or removal of their populations is likely to have a range of unpredictable effects on marine ecosystems and fish populations.

Although still a little understood area, it is believed that sharks and other ‘apex’ marine predators are vital in maintaining marine biodiversity, fulfilling a crucial role in managing the species on which they predate, shaping the evolution and abundance of prey species that we often rely on for food. Removal of such species from the marine ecosystem could have a significant unbalancing effect on ecosystems, with explosions of a particular species when unpredated leading to a less diverse and productive marine environment. It is possible, if nothing is done, that many shark species could become extinct before we understand their full importance in the marine ecosystem.

It is essential, therefore that these species are carefully managed and given adequate protection so they remain in their crucial position, near the top of the marine ecosystem.

Characteristics

Elasmobranchs are, when compared to other fish species, rapidly depleted by overfishing and slow to recover due to their specific biological characteristics. They typically grow very slowly, reach sexual maturity late, recover very slowly from overexploitation and have very few young. Even with many of the measures proposed in this Plan in place, the recovery of populations will take several decades for many species.

For example, Porbeagle sharks have been depleted to very low levels by overfishing in targeted fisheries in the North East Atlantic and are now classified as critically endangered on the IUCN Red List of threatened species. Only 50% of females are mature at 13 years old, they give birth to litters of one to five young after a gestation of 8–9 months. Other commercially targeted fish species, such as cod or plaice, can mature comparatively quickly and produce many more young, making them less vulnerable to overexploitation and quicker to recover when protected.

Many elasmobranch species, such as Spurdog, aggregate seasonally in large groups. This behaviour can lead to large numbers being caught and killed unintentionally in mixed fisheries. As

these aggregations can often include large numbers of mature females, this can have a significant effect on population recovery, even when targeted fisheries are banned.

Elasmobranchs are, however, robust when compared to other fish species and do not have a swim bladder, so unlike most other fish species whose bladders often fatally rupture when caught, elasmobranchs can have significantly higher survivability, so releasing them alive is often possible depending on the gear type used. Scientific studies indicate that around 50% of skates and rays survived being caught and released in the Bristol Channel fishery – one of the most significant elasmobranch fisheries in the North East Atlantic. When modified gear types are used this survivability can increase even further.

The biological characteristics outlined here result in elasmobranch species presenting unique challenges for the management and restoration of their populations and measures must be tailored accordingly.

Pressures

Elasmobranch fisheries worldwide have, in general followed a ‘boom and bust’ pattern. Historically, elasmobranchs such as the Common Skate, Spurdog and Porbeagle were targeted in commercial fisheries in European Waters. However, due to overexploitation and their inherent vulnerability, these fisheries have collapsed and these species now exist at very low levels, being caught only as bycatch in mixed fisheries.

Elasmobranchs are caught in a range of fisheries. In coastal areas, where fishers are targeting a variety of fish species using commercial trawls, gillnets and long lines, they are typically caught as bycatch. Species that are commonly caught in these mixed fisheries are Spurdog, Porbeagle, Catsharks and most skate and ray species.

In pelagic fisheries on the high seas, elasmobranchs are predominantly caught by long lines where the main target species is likely to be tuna or swordfish (although sometimes a very large percentage of the catch can be pelagic sharks) and fishers will commonly encounter Shortfin Mako, Blue Sharks, Hammerhead and Thresher Sharks. In deep sea fisheries, again they are predominantly taken as bycatch and will include Gulper Sharks and Portuguese Dogfish.

Shark, skate and ray meat is consumed in many countries in Europe and worldwide. There is also huge demand for shark fins for shark fin soup from Asia, as well as heavy demand for cartilage from sharks for use in some forms of herbal medicine.

Owing to the high demand, shark fins can be worth at least ten times the value of the meat. This serves as an incentive in some fisheries to cut the fins from sharks and discard the rest of the body, often while the shark is still alive – a practice known as shark finning. It also provides an incentive to catch sharks wherever possible. For some species in international waters, where no quotas have been set, this has led to unsustainably high levels of sharks being caught.

Shark finning is a wasteful practice that leads to overexploitation of shark populations to produce a ‘luxury’ consumer item, with the trade in shark fins being a key driver in pushing many shark species towards extinction.

Current management and conservation measures

There are a number of existing measures in place to manage and conserve elasmobranchs. These are summarised below, followed by industry-led measures.

Fisheries management measures

TACs and Quotas

European fisheries are managed under the Common Fisheries Policy (CFP). Total Allowable Catches (TACs) and Quotas are set annually under the CFP for commercially exploited fish species, including elasmobranchs. In setting TACs, the Commission uses scientific advice prepared biannually by the International Council for the Exploration of the Sea (ICES) working group on elasmobranchs.

In recent years, and following many years of overexploitation, the scientific advice has, in general, been followed and these species have been subject to the reduced quotas that they urgently need. Many quotas have been reduced significantly, and there are now zero TACs in place for Spurdog and Porbeagle. The Commission has also afforded the highest level of protection to some species such as the Angel Shark, Basking Shark, White Skate, Common Skate and Undulate Ray by prohibiting them from being targeted, retained on board or landed.

Data on skates and rays are now being collected on a species specific basis to gain a better understanding on the state of all species. This will also enable TACs to be set on a species specific basis once sufficient data has been collected.

Maximum and Minimum landing sizes are used to protect these species in European waters. Minimum Landing Sizes (MLS) are used to protect juvenile fish, allowing them to reach breeding age and so add to the stock before they are caught, an example of this being regional MLS in place for skates and rays around the UK. Maximum Landing Lengths offer protection to mature individuals within a population, so reducing the impact of fishing on mature females, this is especially important for elasmobranchs, which typically take a very long time to mature and so reproduce, this measure has already been used for Porbeagle and Spurdog in EU waters.

Setting appropriate TACs for elasmobranchs is an essential part of their management and we support the direction that the Commission is taking on this. However, additional and more bespoke measures are likely to be needed to effectively manage these stocks, and ensure those that are caught in non-directed fisheries can be safely returned alive.

EU Shark Plan of Action

The European Community's Plan of Action for sharks, skates, rays and chimaeras was released on the 6 February 2009. The Plan is not a Regulation; it is a framework document that sets out a range of potential measures (both mandatory and voluntary) to be implemented at Member State or European Community level and within Regional Fisheries Management Organisations. The European Commission has committed to introducing a number of the measures through new legislative proposals, or by amending existing legislation.

Regional Fishery Management Organisations

To date Regional Fishery Management Organisations (RFMOs), such as the Indian Ocean Tuna Commission (IOTC) and the International Commission for the Conservation of Atlantic Tunas (ICCAT), have primarily focused their work on the management of the commercially significant tuna and billfish stocks.

However, on the high seas within their areas of jurisdiction, they are the competent authority for the management of all shark species caught as bycatch in these fisheries. To date, very few elasmobranch species are subject to target or bycatch quotas or bespoke measures that manage their exploitation on the high seas, with many heavily depleted species still unprotected.

In recognition of the migratory nature of many elasmobranch species a key aspect of the EC Shark Plan of Action is the Commission and Community's commitment to work through and with

Regional Fisheries Management Organisations. We strongly support this and will continue to support the Commission in seeking effective management of stocks by RFMO's.

Shark Finning – Council Regulation 1185/2003

In order to address this issue the EU introduced Council Regulation 1185/2003. Under the Regulation Member states are allowed to permit the removal of shark fins at sea provided certain provisions are complied with; these are designed to prevent shark finning and include a complex ratio of fin to carcass weight. Unfortunately, the permit system is not considered water tight and could allow carcasses to be discarded and so a review is considered necessary.

The UK has, and will continue to take a strong line on finning and has ceased issuing permits under Regulation 1185/2003. All sharks caught by UK registered vessels must now be landed with their fins naturally attached – this not only reduces any risk of finning but also provides better data on the species caught.

Council Regulation 1185/2003 will be reviewed in 2011. We will take this opportunity to use our firm stance on this measure domestically to lead the way in Europe and strive to make fin on landings mandatory for all EU vessels.

Successful Industry-led measures to date

A range of measures to better manage these species have been developed by the fishing industry, this is an essential part of our efforts in this area and such forward thinking measures are key to meeting our joint aims of sustainable, economically viable fisheries.

Examples of these measures are:

- The development of working groups on elasmobranch issues, leading to improved communications between sectors of industry, conservation and policy.
- The adoption of minimum landing sizes for a range of species.
- Voluntary moves to species specific identification of skates and rays ahead of government/EU requirements resulting in us leading the way in Europe on this key measure.
- Voluntary closed areas offering protection to elasmobranchs.
- Strong engagement with Fisheries Science Partnership activities that aim to better understand the problems facing these species and the potential solutions.

Conservation agreements and legislation

The Convention on International Trade in Endangered Species

Through the Convention on International Trade in Endangered Species (CITES), 175 countries work to protect endangered species of plants and animals by restricting and monitoring international trade in them. The objective of CITES is not to prohibit all trade in animals and plants, but to ensure that it is carried out in a sustainable way that ensures the long-term survival of all species.

CITES works by placing endangered species on one of three appendices, each offering a different level of protection. Appendix I contains species threatened with extinction and therefore international, commercial trade is only permitted in exceptional circumstances. Appendix II contains species whose trade must be carefully monitored to prevent the threat of extinction.

Appendix III contains species who are protected in some countries and so trade is monitored with the help of other Parties to CITES.

Traditionally fish species have rarely been listed on CITES, however in recent years a number have been added to the CITES Appendices, with the White Shark, the Basking Shark and the Whale shark all listed on appendix II and the Sawfish listed on Appendix I.

There have, in recent years been measures proposed to list several additional species of shark on CITES, and at the Conference of Parties in 2010 eight species of shark including Spurdog and Porbeagle were considered for addition to Appendix II of the Convention although none were successful.

The UK continues to support these proposals, which narrowly failed to gain adequate support to be successful. We believe that CITES has a complementary role to fisheries management, but that it should not be an alternative to it, and that carefully designed fisheries management measures (to limit the impact of fisheries related mortality of these species) are still needed within European and international Waters.

The Convention on Migratory Species

The Convention is a unique intergovernmental framework treaty which seeks to conserve migratory species throughout their range. One of the key objectives of the Convention is to help meet the World Summit on Sustainable Development's target of reducing the rate of biodiversity loss by 2010. Species are listed on two appendices of the Convention and daughter agreements are set up to work on species specific issues.

Seven sharks are listed on the appendices of the Convention, with several more proposed to be added in the near future. As well as supporting the Convention's listings of several shark species the UK has been heavily involved with the development of the Convention's Memorandum of Understanding for the protection of Migratory Sharks agreed in February 2010.

We feel that this new agreement will be extremely beneficial in co-ordinating the conservation and management of sharks worldwide and the UK will look to sign the Memorandum before its first meeting of parties in late 2011.

The Oslo-Paris Convention

The Oslo-Paris Convention (OSPAR), which is an international body through which countries and organisations co-operate to protect the marine environment of the North East Atlantic, has drawn up a list of species in need of protection in the OSPAR area, this includes over 10 elasmobranch species.

OSPAR Ministerial Meetings adopt actions or measures in terms of Decisions or Recommendations for habitats and species. On fisheries issues OSPAR does not have management power directly, but can communicate its concerns over a species' conservation status to the appropriate management authority: the European Commission or North East Atlantic Fisheries Commission (NEAFC)/ICCAT as RFMOs.

The Wildlife and Countryside Act

The Wildlife and Countryside Act (1981) consolidates a range of conservation commitments in England and Wales, including the Bern Convention and the EC Habitats Directive.

Listing of a species under the Act makes it an offence (subject to exceptions) to intentionally kill, injure, take, possess, or trade in that animal in English and Welsh Waters. The Angel Shark is

already listed in the Act due to its adverse conservation status. Fishers are already prohibited from landing this species under the CFP, however listing under the Act extends this prohibition to recreational fisheries. The Basking Shark is also listed, as its population is thought to be much depleted and targeted fisheries have been prohibited for a number of years. These listings are in line with ICES advice that these species should receive the highest possible protection.

Additional species can be added to the Act as part of a four yearly review, whereby the Joint Nature Conservation Committee (JNCC) proposes species in need of protection, on which Defra consults. Through this process we will consider the listing of additional elasmobranch species on the act, where these listings would be in line with scientific advice and offer a real conservation benefit.

Policy objectives

Owing to the migratory nature of many elasmobranchs effective management can rarely be achieved by any one country alone. As a priority, therefore, Defra will work collaboratively with devolved administrations, International and EU partners to protect and sustainably manage elasmobranch stocks. At the national level, we have, and will continue to take action where it will deliver real benefits.

This work will contribute to Defra's key aims by ensuring the maintenance of our marine biodiversity and allow us to spearhead international progress on conservation/endangered species protection.

The overall aim of Defra's work through this Plan is:

To manage elasmobranch stocks sustainably so that depleted stocks recover and that those faring better are fished sustainably.

To achieve this aim we have identified the following four outcomes as key:

- 1. Catches (targeted and bycatch) of elasmobranchs are sustainable and that action is taken to protect and restore those species most at risk as a matter of priority.**
- 2. Knowledge on elasmobranch fisheries and species is improved through better data collection and scientific research. Information is used to more effectively manage elasmobranchs.**
- 3. International conservation bodies adopt and promote effective conservation measures for elasmobranchs.**
- 4. Increased understanding, education and awareness of elasmobranch issues.**

Fields of action

To meet these challenging outcomes we have identified the following actions as key:

Outcome 1: Catches (targeted and bycatch) of elasmobranchs are sustainable and that action is taken to protect and restore those species most at risk as a matter of priority.

- Our goal is to achieve sustainable fisheries on all elasmobranch stocks (wherever they are caught). Viable stocks can be subject to commercial exploitation, but this should be on a carefully managed, sustainable basis.
- Species classified as at threat of global or local extinction must be allowed to recover as rapidly as possible. These species should be given additional, bespoke protection, following scientific advice at all times, including measures such as bans on targeted commercial fisheries, legal protection that covers all forms of angling and disturbance and prohibitions on landings and trade.

Action required	What it will achieve	What we will do	Partners	Timetable
<p>A. Bespoke management measures for the conservation and management of elasmobranchs need to be brought forward by the European Commission under the Shark Plan of Action.</p>	<p>This will better protect individual species on a case by case basis, so preventing the mismanagement of elasmobranchs seen in the past.</p>	<p>We will continue to encourage, and work with the European Commission to fulfil the aims it laid out in the Shark Plan of Action.</p> <p>Where possible we will also work with stakeholders, fishers and scientists in the UK, along with European colleagues to draw up more bespoke measures to be adopted community-wide where appropriate.</p>	<p>EC, other Member States, Fishers.</p>	<p>Ongoing</p>

<p>B. Scientific advice should be followed in European TAC and Quota negotiations and the domestic management of elasmobranchs.</p>	<p>This will ensure that depleted species are protected and stable stocks are sustainably managed at all times. Species specific quotas should be set, with plans to collect the data needed for species where it is insufficient to set quotas.</p>	<p>We will seek to follow ICES advice for elasmobranch species at annual TAC and Quota negotiations and in any domestic legislation.</p>	<p>Cefas, EC, other Member States.</p>	<p>Ongoing</p>
<p>C. EU-wide Review of Regulation 1185/2003 (on shark 'finning') should be a priority.</p>	<p>A strengthened Regulation, with mandatory fin naturally attached landings will both protect sharks from overexploitation and allow the EU to lead international discussions on the issue.</p>	<p>We will continue to encourage and work with the European Commission and other Member States on this, and lead work in Europe on the issue to seek a total ban of the removal of shark fins at sea (as is already the case in the UK) for EU Registered vessels.</p>	<p>EC, NGOs, other Member States.</p>	<p>1-3 years</p>
<p>D. Regional Fisheries Management Organisations adopt fin on landings</p>	<p>Greater protection from overexploitation and species specific identification and associated data.</p>	<p>We will work towards this aim strongly at all RFMO/EU meetings on the subject, looking to work collaboratively with the EU Commission and other EU partners to bring forward strong, effective proposals.</p>	<p>EC, other Member States, RFMOs, Fishers, MMO</p>	<p>3-5 years</p>

<p>E. RFMOs should focus a much larger part of their work on sharks and bring forward a range of specific measures on elasmobranch species.</p>	<p>Sharks are caught in large numbers in RFMO areas with little or no formal management. Additional work in terms of data collection, and management/protection of individual shark species within RFMOs is the principle means of ensuring sustainable fisheries and conserving threatened species on the high seas</p>	<p>We will champion and encourage work with the EU Commission and other EU partners to ensure that elasmobranch conservation and management is given the time and priority required at RFMO meetings.</p> <p>We will bring forward proposals at annual Commission meetings to protect species identified by the scientific committees as at most risk</p>	<p>RFMOs, EC, other Contracting Parties, other Member States, Fishers</p>	<p>3-5 years</p>
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Outcome 2: Knowledge on elasmobranch fisheries and species is improved through better data collection and scientific research. Information is used to more effectively to manage elasmobranchs.

- Further scientific research on elasmobranchs should be focused on the key actions laid out below, and existing research worldwide collated and analysed to best inform fisheries managers and scientists of the state of elasmobranch stocks. The precautionary principle should be applied where scientific advice is uncertain to prevent the depletions seen in previous targeted fisheries given their vulnerability to overexploitation.

Action required	What it will achieve	What we will do	Partners	Timetable
<p>A. For depleted, vulnerable species additional scientific information should be collected on the life history, rate of reproduction and habitat types</p>	<p>This research will allow fishery managers to implement appropriate measures in a timely fashion, to prevent further depletion and allow depleted populations to recover as rapidly as possible.</p>	<p>Additional research is already underway, that, along with existing information will be collated and organised, so that the information obtained is used to help better manage and conserve these species in a bespoke way. This will be used to help develop domestic measures, and influence management in the EU and Internationally.</p>	<p>Cefas, Fishers, OSPAR</p>	<p>3-5 years</p>

<p>B. Further research into the survivability of elasmobranchs should be undertaken.</p>	<p>Elasmobranchs often have significantly higher survivability when caught in commercial fishing gear when compared to other fish species.</p> <p>Knowledge on the extent of this survivability will allow fishery managers to set appropriate management measures such as bycatch only quotas or landing prohibitions.</p>	<p>Additional studies are underway and will continue, along with the co-ordination of existing work on survivability for different fisheries, gear types and species. We will work with stakeholders to best implement these measures.</p>	<p>Cefas, Fishers</p>	<p>3-5 years</p>
<p>C. Further research should be undertaken into the areas, gear types and fishing methods that impact highly on Porbeagle and Spurdog, and look at potential mitigation measures.</p>	<p>Porbeagle and Spurdog are two of the most threatened marine species found in UK waters, both being assessed as Critically Endangered by the International Union for the Conservation of Nature (IUCN) in the North East Atlantic, stringent but bespoke measures are therefore needed to allow their recovery in a rapid and effective way, while dealing with the issue of incidental bycatch.</p>	<p>Defra is already undertaking focused research in collaboration with fishers to identify management measures that will allow these species to recover and help mitigate their incidental catch in mixed fisheries without causing excessive discards.</p>	<p>Cefas, Fishers, NGOs</p>	<p>3- 5 years</p>
<p>D. Relevant management bodies and contracting parties should collect the best possible catch and landings data in all fisheries.</p>	<p>This will allow scientific advice to be set and followed on a species by species basis in all fisheries and for all species. This will ensure that the data required to manage stocks sustainably is available.</p>	<p>Domestically we will work to ensure that our vessels collect the best possible data, in terms of quantity and quality and press the relevant bodies to encourage all Contracting Parties to do the same.</p>	<p>EC, other Member States, RFMOs, Fishers, MMO</p>	<p>1-5 years</p>

Objective 3: International conservation bodies adopt and promote effective conservation measures for elasmobranchs.

- Elasmobranchs should be subject to careful management and appropriate conservation on a global basis through cooperation in the form of international conservation agreements.

Action required	What it will achieve	What we will do	Partners	Timetable
<p>A. CITES listing for elasmobranch species for those species under pressure and suffering depletion from international trade pressures.</p>	<p>This will monitor and control the international trade in products such as shark fins, where high demand for shark products is severely impacting on shark population</p>	<p>Listing proposals should be supported, where there is adequate scientific justification for their listing.</p>	<p>NGOs, JNCC, other Member States, EU</p>	<p>3-5 years</p>
<p>B. Conservation of elasmobranch species in the North East Atlantic through the OSPAR Convention.</p>	<p>OSPAR is another supporting tool in the management and conservation of elasmobranchs in the North East Atlantic - OSPAR can raise the profile of species in need of priority action, and propose practical management measures for these species.</p>	<p>We will continue to work on species within OSPAR, ensuring that accurate, constructive advice is given by OSPAR to the appropriate management authorities on species in need of better conservation or management.</p>	<p>Other Contracting Parties, NGOs</p>	<p>1-5 years</p>

<p>C. The Convention on Migratory Sharks Memorandum of Understanding on the conservation of migratory sharks agreed upon in 2010 focuses its work on setting strong conservation measures for migratory sharks worldwide.</p>	<p>This Memorandum will help countries and management bodies co-ordinate their work on sharks, pushing for joined-up measures to protect sharks worldwide, including fishing bans, alternative gear types and protected areas. It will require work domestically in UK/EU waters and through Regional Fisheries Management Organisations (RFMOs).</p>	<p>We will sign the CMS agreement and will work with other European Member States to reach as strong as possible a common position at subsequent meetings under this MoU.</p>	<p>Other Contracting Parties, Other Member States, EC, NGOs, JNCC</p>	<p>1-3 years</p>
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Outcome 4: Increased understanding, education and awareness of elasmobranch issues.

- All of the measures proposed in this plan will be undertaken in a joined up manner, working in partnership with the fishing industry and Non Governmental Organisations, The following however will be key areas of partnership work that will be needed to meet the aims outlined in all of the previous objectives.

Action required	What it will achieve	What we will do	Partners	Timetable
A. Educational initiatives such as ID guides should be developed further.	These will help gather fuller, more accurate data on elasmobranch species that will allow for more precise, species specific quotas for all species to be set, and so allow stocks to be managed sustainably.	Working in partnership with Enforcement bodies, scientists, fishermen and NGO's to produce ID guides where possible. In particular looking at how this can be achieved and funded collaboratively across the EU.	NGOs, MMO, Fishers, Cefas	1-3 years
B. Live release guidance is provided to the fishing industry	For elasmobranch species that are protected live release guidance will inform fishers of how best to release these species, so increasing their survival chances once released..	Work with our enforcement partners, NGOs and fishermen to draw up guidance that is practical and useful on a species by species basis and ensure that this guidance is distributed to all fishers likely to encounter these species.	MMO, NGOs, Fishers	1-3 years

Defra Marine Programme
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Credit: Cover photo courtesy of Shark Trust – photographer: Linda Pitkin