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**DRAFT GUIDELINES FOR SHARK AND RAY
RECREATIONAL FISHING IN THE MEDITERRANEAN**

*In the framework of a sustainable development approach, this document will be available only
in electronic format during the meeting*

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Mediterranean Action Plan
Regional Activity Centre for Specially Protected Areas (RAC/SPA)
Boulevard du leader Yasser Arafat
B.P. 337 – 1080 Tunis CEDEX
Mail : car-asp@rac-spa.org

The original version (English) of this document has been prepared for the Regional Activity Centre for Specially Protected Areas (RAC/SPA) by:

Sarah Fowler & Eleanor Partridge. NatureBureau .

With the participation of :

Daniel Cebrian, Ian Cowx, Sheldon Dudley, Edgardo Di Giacomo, Samuel Gruber, Lucy Harrison, Pilar Hernandez, Ali Hood, Steve Kessel, Nancy Kohler, Bruce Mann, Meaghen McCord, Gabriel Morey, Jack Musick, Lisa Natanson, Gemma Parkes, Richard Pierce, Scottish Sea Angling Conservation Network, Fabrizio Serena, Bernard Seret, Rowland Sharp, Sean van Sommeran, Charlott Stenberg, Alen Soldo, Sergi Tudela, Daniel Turner.

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Glossary

CSTP	Cooperative Shark Tagging Program of the US National Marine Fisheries Service
DNA	Deoxyribonucleic acid, a nucleic acid, contains the hereditary genetic instructions used in the development and functioning of living organisms. DNA markers may be used by scientists to distinguish between species, populations and individuals.
FAO	United Nations Fisheries and Agriculture Organization
GFCM	General Fisheries Commission for the Mediterranean
ICCAT	International Commission for the Conservation of Atlantic Tunas
MEDLEM	Mediterranean Large Elasmobranchs Monitoring Programme
PADI	Professional Association of Diving Instructors
RAC/SPA	Regional Activity Centre for Specially Protected Areas
SPOT tag	Smart Position or Temperature Transmitting tags
UNEP-MAP	United Nations Environment Programme's Mediterranean Action Plan

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Introduction

These guidelines for recreational fishers have been prepared by RAC/SPA as a contribution to the Action Plan for the Conservation of Cartilaginous¹ Fishes in the Mediterranean Sea (UNEP-MAPRAC/SPA 2003). They aim to:

- reduce the potentially harmful impacts of recreational fishing activities upon Mediterranean populations of sharks and rays by promoting catch and release,
- disseminate protocols for the handling of catches to improve post-release survival,
- encourage the participation of recreational fishers in data collection and management activities, including tag and release programmes, and
- raise public awareness and scientific knowledge of the status, biodiversity and ecological importance of sharks and rays in the Mediterranean.

Box1. Definitions of Recreational Fishing (under revision by the GFCM)

Recreational fishing is defined by the General Fisheries Commission for the Mediterranean (GFCM) as: *“Non commercial fishing activities exploiting marine living aquatic resources. For Mediterranean fisheries management purposes it comprises four independent segments: leisure, sport, underwater and charter fisheries.”*

Further definitions were developed by a GFCM Workshop on the monitoring of recreational fisheries in the GFCM Area (Anonymous 2011):

Non commercial fishing: *“Fishing activities exploiting marine living aquatic resources from which it is prohibited to sell or trade the catches obtained.”*

Leisure fishing: *“Fishing practiced for pleasure.”*

Sports fishing: *“Fishing contest practiced within an established institutional framework which sets rules collects data on catches and informs on the outcomes of the event.”*

Charter fishing: *“Recreational fishing practiced from a rented boat, with a captain or fishing guide on board, for leisure or sport purposes.”*

Underwater fishing: *“Fishing activity practiced as a sport or for leisure by snorkeling techniques without the help of mechanical devices (e.g. scooter).”*

Recreational Angling: *“Recreational angling is the activity of catching or attempting to catch fish, principally by rod and line, pole or hand-held line, for non-commercial purposes.”*

¹Cartilaginous fishes include the sharks, rays (including skates and guitarfishes) and chimaeras. The latter live in very deep water and are unlikely to be caught by anglers.

Rationale

Recent scientific studies have concluded that the Mediterranean is the world's most dangerous sea, not for mankind but for its populations of sharks and rays. Over 40% of the 71 species resident here are threatened with extinction; a larger percentage than any other region that has been reviewed (Cavanagh and Gibson 2007, Ferretti *et al.*, 2008, 2010, Fowler *et al.*, in preparation, Annex II). This high level of risk has been recognized through the inclusion of many shark and ray species in Annexes II and III of the Barcelona Convention Protocol concerning Specially Protected Areas and Biological Diversity in the Mediterranean (Table 1). These threatened species are recognized to require protection, which should be implemented through the legal instruments of the Parties to the Barcelona Convention.

The Regional Fisheries Commissions also recognise the importance of shark conservation and management measures. The International Commission for the Conservation of Atlantic Tunas (ICCAT) prevents the targeting of all species of thresher sharks, Genus *Alopias*, and the retention of any hammerhead shark, Genus *Sphyrna* (with the exception of coastal fisheries for domestic consumption in developing countries). The General Fisheries Commission for the Mediterranean's list of priority fish species includes shortfin mako *Isurus paucus*, porbeagle shark *Lamna nasus*, blue shark *Prionace glauca*, white skate *Rostroraja alba* and angel shark *Squatina squatina*.

The greatest threat to sharks and rays is from bycatch in intensive fisheries in coastal waters and the open ocean, although some species are also targeted for their meat and fins. Sharks and rays are particularly vulnerable to overfishing because of their biology: they are generally slow growing, mature late, and produce only small litters of large pups after a long gestation period (Cailliet *et al.*, 2005). Such 'slow' life histories are very successful under natural conditions, where mortality of these long-lived animals is low, but unfortunately mean that depleted populations cannot recover rapidly from overfishing. Sharks and rays with the largest body size, and those occurring in pelagic and coastal habitats tend to be most seriously threatened. There is increasing concern that removing large predatory sharks from the top of the food chain may damage marine ecosystem functions (e.g. Stevens *et al.*, 2000, Heithaus *et al.*, 2008, Ferretti *et al.*, 2010).

Commercial trawl and longline, small-scale line and net, and various subsistence fisheries are responsible for most declines in Mediterranean shark and ray populations (e.g. Cavanagh and Gibson 2007, Ferretti *et al.*, 2010). However, recreational fisheries may also deplete stocks in some areas, particularly where nursery grounds are fished or the largest animals (often mature females) are targeted for trophies. These guidelines for recreational fishing have been developed to encourage fishers to release their catches of sharks and rays and to improve their survival by adopting handling techniques that minimize stress, damage, and hence post-release mortality.

Recreational fishers can also collect valuable information to improve our understanding of the distribution and migration patterns, growth rates and life cycles of sharks and rays. This information can help to improve advice on fisheries management and rebuilding stocks. These guidelines explain how members of the public can provide data for these purposes.

Table 1. Sharks and rays listed in Annexes of the Protocol concerning Specially Protected Areas and Biological Diversity in the Mediterranean

Annex II, Endangered or Threatened Species ¹		Annex III, Species whose Exploitation is Regulated ²	
<i>Carchariastaurus</i>	Sand tiger shark	<i>Carcharhinus plumbeus</i>	Sandbar shark
<i>Carcharodon carcharias</i>	Great white shark	<i>Centrophorus granulosus</i>	Gulper shark
<i>Cetorhinus maximus</i>	Basking shark	<i>Galeorhinus galeus</i>	Tope shark
<i>Dipturus batis</i>	Common skate		
<i>Gymnura altavela</i>	Spiny butterfly ray	<i>Heptranchiasperlo</i>	Sharpnoses evengill shark
<i>Mobulamobular</i>	Giant devilray	<i>Isurus oxyrinchus</i>	Shortfin mako
<i>Odontaspis ferox</i>	Smalltooth sand tiger	<i>Lamna nasus</i>	Porbeagle shark
<i>Oxynotus centrina</i>	Angular roughshark	<i>Leucoraja circularis</i>	Sandy skate
<i>Pristispectinata</i>	Smalltooth sawfish	<i>Leucorajamelitensis</i>	Maltese skate
<i>Pristis pristis</i>	Common sawfish	<i>Mustelus asterias</i>	Starry smoothhound
<i>Rostroraja alba</i>	White skate	<i>Mustelus mustelus</i>	Smoothhound
<i>Squatina aculeata</i>	Sawback angel shark	<i>Mustelus punctulatus</i>	Blackspot smoothhound
<i>Squatina oculata</i>	Smoothback angel shark	<i>Prionace glauca</i>	Blue shark
<i>Squatina squatina</i>	Angel shark	<i>Rhinobatos cemiculus</i>	Blackchin guitarfish
		<i>Rhinobatos rhinobatos</i>	Common guitarfish
		<i>Sphyrnalewini</i>	Scalloped hammerhead
		<i>Sphyrnamokarran</i>	Great hammerhead
		<i>Sphyrnazygaena</i>	Smooth hammerhead
		<i>Squalus acanthias</i>	Spiny dogfish
The hammerheads, porbeagle, shortfin mako and tope sharks, the guitarfishes, as well as the sandy and Maltese skates, are being proposed in 2011 for uplifting from Annex III to Annex II			
¹ States that are Party to the Barcelona Convention are required to ensure maximum protection for and aid the recovery of species listed in Annex II.		² States that are Party to the Barcelona Convention are required to protect the species listed in Annex III, but a certain amount of exploitation is permitted if population levels allow.	

Table 2. Endemic or possibly endemic Mediterranean species of sharks and rays

Scientific name	Common name
<i>Leucorajamelitensis</i>	Maltese skate
<i>Raja asterias</i>	Starry skate
<i>Raja polystigma</i>	Speckled skate
<i>Raja radula</i>	Rough ray
<i>Mobulamobular</i>	Giant devilray
Endemic species are restricted to the Mediterranean Sea, and are therefore of special conservation and management interest.	

Code of conduct for the capture and handling of sharks and rays

Sharks and rays are more fragile than many fishers realise. The gills and other internal organs are very easily damaged once the animal has been removed from the water, because there is no internal skeleton to protect them. Injury to the spinal column and internal organs is particularly likely to occur if the animal is lifted by its head or tail, or forced down onto a hard, dry surface. Gaffing eventually causes the death of many sharks and rays. Deep hooking in the gills or gut causes permanent damage to internal organs. Playing the fish for a long time can also result in sufficient stress and damage to muscle tissues to cause mortality sometime after it has been returned to the sea.

This code of conduct aims to provide guidance on best practice when catching and handling sharks and rays. The objective is to minimise physical damage, internal and external, and therefore to maximise long-term survival after capture and release. This can be achieved by making the welfare of the catch the primary concern for fishers and by following these handling protocols. Capture and release also makes recreational fishing more sustainable and interesting.

Essential equipment

Recommendation	Explanation
Strong fishing tackle to bring the fish to the boat as quickly as possible after hooking	Using the appropriate tackle reduces exhaustion of the fish, depletion of energy reserves and risk of lactic acid building up in its tissues. These factors increase recovery time and can result in the fish's death after it has been released.
Corroding bronze-finished hooks, preferably circle hooks, barbless or with flattened barbs	'J' hooks can result in deep hooking, causing internal damage. Circle hooks usually catch in the side of the mouth and are much easier to remove. Non-stainless hooks that cannot be removed will corrode and fall out; steel hooks will not.
De-hooker	This is used to remove hooks (but does not work well with deep set hooks), while minimising damage to the fish.
Measuring stick	To record the length of sharks, or the disc width of rays. A measuring stick is easier to use than a tape measure when the animal stays in the water alongside the boat.
Sling or stretcher, if fish must be removed from the water	It's best not to lift fish out of the water, but if this must be done, a sling should be used to support the body and minimise damage to the animal.
Foam mat, damp towel and bucket for seawater, if fish must be removed from the water	See above. Damage will be minimised if the fish is laid onto a soft damp surface and it may be calmer if a wet cloth is laid over the head.
Recording forms and pencil	Get these ready for use before starting fishing, to reduce the time needed to record and release the catch.
Species identification guides	It is important to record species accurately!
Camera	For unusual catches, or if identification is uncertain.
Tags, applicator and recording cards	See guidelines for tagging sharks and rays.
Equipment for collecting tissue samples	Scientists use small tissue samples for DNA studies. They will provide the equipment and explain sampling methods.

Handling protocols

Recommendation	Explanation
Check relevant fisheries regulations carefully when planning fishing trips	It's important to know where, how, when and what you can fish. Regulations vary considerably around the Mediterranean (Gaudin and de Young 2007). For example, you may need a permit; certain species (Table 1) or areas may be strictly protected; size limits or bag limits may apply, or there may be restrictions on the size or number of fish that can be retained.
Prepare all release and data reporting equipment before starting fishing	It is important to handle and to release the catch as quickly as possible to minimise risk of stress, physical damage and mortality. Don't waste time looking for crucial equipment after the fish has been hooked.
Use circle hooks, or barbless hooks. If using a barbed hook, use pliers to flatten the barb	J hooks are more likely to be swallowed than circle hooks. Barbed hooks are difficult to remove, and may cause damage to internal organs. Circle hooks are designed for self-hooking.
Strike early when a fish takes the bait, to avoid deep-hooking	Deep-set hooks are difficult to remove, and may cause damage to internal organs. It is unnecessary to strike when using circle hooks.
Keep a tight trace line at all times once a fish has been hooked, and keep it away from the body	This minimises the potential for entanglement in the fishing gear.
Minimise fight time by using heavy tackle	Lactic acid builds up in the muscle tissue once all energy reserves have been used up by the fish fighting the line. This increases recovery time and can result in post-release mortality.
Minimise all handling of the catch; where possible keep sharks and rays in the water and release as quickly as possible	Removing fish from the water requires very careful handling to avoid causing lethal damage and post-release mortality. If possible, it's best to remove the tackle, make measurements and take photos while the fish remains in the sea. Sharks are easy to handle while turned belly-up in the water.
Never use a gaff; never lift or drag a shark or ray by its tail, eyes, gills or spiracles, or stand on it	This treatment is very likely to cause the death of the animal. Use a sling or stretcher to lift the animal in a horizontal position if it is really necessary to take the fish out of the water. If necessary, use pressure on the pectoral fins to restrain large fish.
If removed from the sea, keep the fish damp and shaded	This is particularly important in hot sunny weather. Lay the fish onto a soft wet mat, keep the skin damp, and if not released immediately, run seawater through the mouth to oxygenate the gills.
Measure length or disc width instead of weighing the catch	This requires far less handling and can be done while the animal remains in the water. Length-weight conversion ratios (Annex III) can be used to estimate the weight of many common shark species.
Remove all hooks and line, or cut the trace as short/close to the body as possible	Use a de-hooking device to remove hooks, unless they are deepest, in which case it may cause less damage to cut the trace as close to the mouth as possible. Leaving hooks embedded and lines trailing can cause long-term damage to the animal, and increase post-release mortality.
Ensure that the fish has recovered sufficiently before releasing it	If the fish is unresponsive in the water, hold it facing into the current whilst the boat is underway, or run seawater over its gills, until it has recovered sufficiently to swim off.

Guidelines for reporting catches of sharks and rays

Accurate catch reporting can provide valuable information about shark and ray populations in the Mediterranean. These guidelines aim to increase the volume and usefulness of the catch data provided by the recreational angling sector, so that this information can be applied to fisheries research, conservation and management. It is widely recognised that data from Mediterranean fisheries urgently need to be improved so that fisheries can be managed sustainably. If a larger number of the millions of recreational anglers who fish in European and Mediterranean waters reported their catches, fisheries research and management could be enhanced significantly, enabling fish stocks to recover and making angling a more productive and stimulating activity.

Recreational catch data for large pelagic sharks in the Mediterranean can be submitted to ICCAT and/or MEDLEM, either online or using the data sheets provided. The GFCM is developing a data collection framework for recreational fisheries that will include procedures for providing recreational catch records for small demersal and coastal sharks and rays.

Records of recreational catches should include as much information as possible, including the following data (headings listed in bold are most important):

- **Time and date** of capture
- **Location** (ideally latitude and longitude) and depth
- Water temperature and weather conditions
- **Name, address, telephone number and/or email address** (of person who caught the fish or the person who is submitting the record)
- **Species** and sex (where possible specify if juvenile, mature, or a pregnant female)
- **Numbers of fish** of each species/sex/maturity caught (if one record is being used to report several fish)
- Length (pre-caudal length, fork length, or total length of shark; disc width of ray; estimated or measured)
- Weight, only if shark is not released (whole or gutted; estimated or measured)
- Scars or other distinguishing marks
- Capture gear and bait used
- Is there a photograph?
- Was a tissue sample collected?
- Other observations (e.g. release of egg cases or pups)

Reporting guidelines for tagged fish are given on page X, and links to tagging programmes on page Y.

Figure 1. How to measure the size and identify the sex of sharks and rays (To be added).

Tagging sharks and rays

Several fish tagging programmes are underway in the Mediterranean and adjacent Atlantic Ocean, or have been undertaken in the past and may still yield tagged fish. They range from the huge numbers of simple numbered marker tags that have been applied to sharks and rays, to small numbers of highly expensive and complex electronic tags.

The ICCAT website provides an inventory of all major known tagging programmes undertaken in the Atlantic Ocean and Mediterranean Sea, instructions for reporting tagged fish, and information on the rewards available for doing so. Several of these tagging programmes offer opportunities for commercial and recreational fishers to become involved by tagging fish – see links on page X.

This leaflet does not attempt to provide instructions on how to tag sharks and rays, these are provided by each tagging programme (for example, the US National Marine Fisheries Service Cooperative Shark Tagging Program). Instead, this leaflet focuses on providing advice on what to do if you find a tagged fish.

Please always check all fish that you catch for tags – these are likely to be found alongside the dorsal fin.

Types of tags

Three types of tags are used:

Marker tags: small numbered tags that come in a variety of shapes and sizes (including streamer or spaghetti tags and plastic discs). Some include a capsule with instructions on how and where to report recaptures. Others rely upon the tag or tag number being sent with recapture information to the nearest fisheries agency office or to ICCAT.

Figure 2. Examples of marker tags (To be added).

Satellite tags: large external electronic data-recording devices. There are two main types of satellite tags in use. SPOT tags (Smart Position or Temperature Transmitting tags) track fishes in real time, signalling the tag's position every time it is on the surface. Archival tags record and store information such as swimming depth and temperature and light intensity (which is used to estimate their location). They are designed to pop up after a designated time, when their aerial will transmit the stored data to a satellite. They are sometimes found washed up on beaches. There can be large rewards for returning them.

Figure 3. Examples of SPOT and archival satellite tags (To be added).

Archival tags: these record similar information to satellite tags, but are implanted inside the fish. They must be returned before the data that they have stored can be retrieved. Fish containing an archival tag will also have an external marker tag stating that an internal tag is present.

Figure 4. An archival tag (To be added).

What to do if you find a tagged shark or ray

Record as much as possible of the following information immediately (you could write straight onto copies of the form in Annex I) **BEFORE** pulling out the tag (please note that some tags should not be removed at all). Information requested **in bold** is essential.

- **Tag code** (letters and numbers)
- **Tag colour and type**
- **Address on tag** (if any)
- **Time and date of recapture**
- **Location** (ideally latitude and longitude) and depth caught
- Species and sex of fish
- Length (fork length or total length; estimated or measured)
- Weight, only if shark is not released (whole or gutted; estimated or measured)
- Capture gear used
- **Name, address, telephone number and/or email address** (of person who caught the fish or the person who is submitting the record)
- Is there a photograph?
- **Was the animal:**
 - released alive with the same tag
 - released alive with no tag
 - released with a new tag
 - not released alive.
- If released, was it in excellent, good, fair or poor condition?
- Other observations (e.g. release of egg cases or pups)

Some simple numbered tags do not have to be removed from the fish if it is going to be released alive – returning the fish still tagged may enable more than one recapture location to be reported. Other tags may specifically ask that the animal, or part of it, is kept for the research study.

ONLY if the animal is not going to be released, either freeze the fish intact until you have discovered whether the research programme would like to obtain the whole animal for study or, if it is too large, cut out, wrap in tinfoil to exclude light², and freeze a section of the backbone from over the gills. Report that this has been done when reporting the tag and

²This is very important to preserve the record of growth if the animal was injected with a growth marker when originally tagged.

keep these specimens preserved until you have received a reply from the relevant research group.

The tag return information can be sent to the local fisheries office, or to ICCAT. The ICCAT website provides an online form for electronic reporting of tag returns.

Underwater observations

Divers and snorkelers can also assist by reporting tags, providing as much information as possible from their observations. The recording forms designed for recreational fishers may be used, or special forms developed specifically for divers' observations may be available through PADI or local dive centres.

Spear fishing, even if undertaken carefully, is more likely to kill sharks and rays than is capture by hook and line, or net. Spear fishers who see tagged sharks or rays should not attempt to spear the animals, but please to try to record as much information as possible from their sighting and provide this as suggested above.

Figure 5. Examples of tagged sharks and rays (To be added).

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Links

(Many of these organisations have collaborated in the preparation of these guidelines.)

Alop Studying *Alopias* species (thresher sharks), in collaboration between Ifremer and IRD, France. Contact Francois.Poisson@ifremer.fr

Big Game Italia. Undertakes shark tagging in cooperation with NOAA CSTP. www.biggameitalia.it

Confederación Española de Pesca Recreativa Responsable. a non-governmental, non-profit organization that brings together various associations and federations of Spanish recreational sea fishing. www.pescarecreativaresponsable.es

Confédération Internationale de la Pêche Sportive (CIPS). Aims to promote, develop and coordinate all activities affecting recreational fisheries. www.cips-fips.com

Elasmoit Italy. Project collecting information on the exploitation and conservation of elasmobranch fishes in Italian seas. Contact f.serena@arp.toscana.it

Elasmomed consortium. Scientific project based in the University of Bologna undertaking bar-coding of chondrichthyan fish DNA in the Mediterranean. Contact fausto.tinti@unibo.it

European Anglers Alliance. Represents 14 recreational angling organizations from 11 European countries. Works in close co-operation with the European Fishing Tackle Trade Association. <www.eea-europe.org>

European Elasmobranch Association<<http://www.eulasmob.org>> The EEA coordinates the activities of national European organisations dedicated to the study, management or conservation of sharks and rays. Links are provided to the websites of several member bodies in Mediterranean countries.

Federaciones Española y Catalana de Actividades subacuáticas

General Fisheries Commission for the Mediterranean<www.gfcm.org>The GFCM promotes the development, conservation, rational management and best utilization of living marine resources in the Mediterranean and Black Sea. It coordinates efforts by governments to manage fisheries, including recreational fisheries in regional waters. GFCM usually adopts the fisheries conservation and management recommendations agreed by ICCAT.

International Commission for the Conservation of Atlantic Tunas<www.iccat.int> ICCAT is responsible for the conservation of tunas and tuna-like species (including pelagic sharks) in the Atlantic Ocean and its adjacent seas. The ICCAT website <<http://www.iccat.int/en/Tag-Program.htm>> lists all known recent and on-going tagging programmes in various regions of the Atlantic, including information on the rewards offered for tag returns. Instructions are provided for reporting tags to ICCAT (see Annex I).

International Game Fishing Association. IGFA is a not-for-profit organization committed to the conservation of game fish and the promotion of responsible, ethical angling practices through science, education, rule making and record keeping. www.igfa.org

Istituto Superiore per la Protezione e la Ricerca Ambientale, ISPRA. Bycatch programme, Italy.

IUCN Species Survival Commission Shark Specialist Group<www.iucnssg.org> The IUCN Shark Specialist Group is a partner in UNEP's *Action Plan for Cartilaginous Fishes*.

Mediterranean Large Elasmobranchs Monitoring. <http://www.arpat.toscana.it/progetti/medlem/pr_medlem_en.html> MedLEM monitors the captures and sightings of the large cartilaginous fishes occurring in the Mediterranean Sea.

Muséum national d'Histoire naturelle. <www.mnhn.fr> Online key and photographic guide to the sharks and rays of the Atlantic and Mediterranean <<http://www.mnhn.fr/iccanam>>

NOAA National Marine Fisheries Service Cooperative Shark Tagging Program, USA <<http://na.nefsc.noaa.gov/sharks/tagging.html>> NMFS CSTP enables recreational anglers to tag sharks in order to contribute to research into the biology of large Atlantic (and Mediterranean) sharks. It works with over 6,500 North American and European volunteers.

Oceanographic Research Institute, South Africa. ORI's Marine Linefish Tagging Project <<http://www.ori.org.za/prog.html#Linefish>> is undertaken in collaboration with volunteer recreational and commercial fishers and scientists. It collects information on fish movements, growth, fishing mortality and stock size. ORI has produced an excellent instructional video for this project, describing how to tag fishes and report catches.

PADI Project Aware Foundation Project AWARE's Protect the Shark Campaign focuses on reducing existing threats to sharks. It is working with scuba divers and volunteers to take action, conduct research and raise awareness worldwide. www.projectaware.org

Pelagic Shark Research Foundation<www.pelagic.org> PSRF promotes low impact catch, tag and release techniques for anglers and researchers in the Northeast Pacific.

Pew Environment Group. <<http://www.pewtrusts.org/>> The Pew Environment Group is an associate in the UNEP *Action Plan for Cartilaginous Fishes*. Pew's Shark Conservation Campaign is described at <http://www.pewtrusts.org/our_work_detail.aspx?id=140>


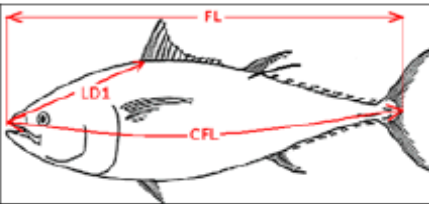
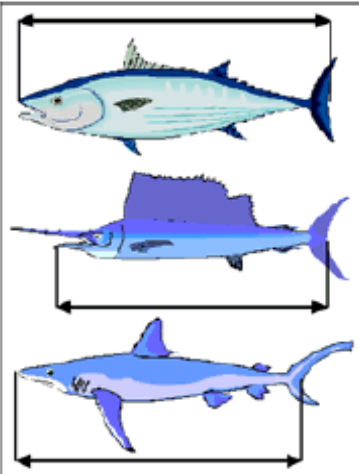
Shark Alliance<www.sharkalliance.org> The Shark Alliance is a partner(??) in the UNEP *Action Plan for Cartilaginous Fishes*.

Shark Trust<www.sharktrust.org> The Shark Trust works in close collaboration with recreational anglers to produce best practice handling guides for sharks and rays, promote tagging projects, and to encourage the recording of catches from around the UK.

South African Shark Conservancy. <<http://www.sharkconservancy.org/anglers.html>> is the Anglers' Corner, with links to the SASC Green Marine Programme: Angling for the Future, Responsible Shark Angling Guidelines, and instructions for catch data collection

UNEP Regional Activity Centre for Specially Protected Areas<<http://www.rac-spa.org/>> RAC/SPA's cartilaginous fishes page provides links to the Mediterranean Action Plan on Cartilaginous Fishes and other documents and activities, including these guidelines.

Annex I. ICCAT Data collection and reporting sheet for large pelagic sharks

PLEASE RETURN THE TAG	Tag data	PLEASE RETURN THE TAG
TAG CODE (letters and numbers)		
TAG TYPE and COLOR (see figure below)		
ADDRESS ON THE TAG		
Fish data		
SPECIES (common name/ scientific name)		
SEX		
Type of measurement (see below), length and unit (m, cm, mm, inches, feet...)		
The type of measurement and units must be clearly specify		
	 <p>Type of measurements: Straight Fork Length (FL), First Dorsal (LD1), Curved Fork Length (CFL) following the curvature of the fish.</p> <p>Tag types: Streamer or Conventional, Pop-up and Internal Archival (at left, from top to bottom)</p> <p>How to measure straight fork length of different species (at right).</p>	
HOW LENGTH WAS MEASURED: <input type="checkbox"/> Calliper <input type="checkbox"/> Metric tape <input type="checkbox"/> Estimated Other _____		
Note: If another type of measurement was taken please specify or draw.		
FISH WEIGHT AND UNITS (as exact as possible): _____		
TYPE OF WEIGHT: <input type="checkbox"/> Total <input type="checkbox"/> Gutted <input type="checkbox"/> Dressed Other _____		
HOW WEIGHT WAS MEASURED: <input type="checkbox"/> Scale <input type="checkbox"/> Dynamometer <input type="checkbox"/> Estimated Other _____		
Estimated accuracy of the weighing: _____		
Catch data		
DATE OF CATCH _____		DATE OF LANDING _____
LOCATION OF CATCH (latitude/longitude) _____		
SEA SURFACE TEMPERATURE (catch area) _____		
OTHER REMARKS _____		
Vessel and Finder data		
VESSEL NAME, BASE PORT, COUNTRY _____		
FISHING GEAR _____		
RECAPTURER or FINDER'S NAME _____		
RETURN ADDRESS: (Street) _____		
City or Town/Postal code _____	Province/Country _____	Phone/Email _____
QUALITY OF THE INFORMATION PROVIDED:		
Data obtained directly by: <input type="checkbox"/> Observer <input type="checkbox"/> Skipper <input type="checkbox"/> Owner <input type="checkbox"/> Crew member Other _____		
<input type="checkbox"/> Data were checked by the Observer? In Observer's opinion the quality of the information is:		
<input type="checkbox"/> Excellent <input type="checkbox"/> Good <input type="checkbox"/> Average <input type="checkbox"/> Bad		
Name, address and phone of the person to receive reward (if different from finder)		

Please provide as much information as you have available: (fish condition, wounded, ...) _____		

Data collection and reporting sheet for coastal and demersal sharks and rays

1. Important information about the fish

Date (dd/mm/yy)	Time (hh:mm)
Location	Country
Latitude	Longitude
Common name	Scientific name
How many fish	Sex of fish
Any photographs?	

2. Important information about you

Your name	
Address	
Telephone	Email

3. Other useful information

Size of fish Was this estimated <input type="checkbox"/> or measured <input type="checkbox"/>	Precaudal length:	Fork length:	Total length:
	Ray disc width:	Weight (whole <input type="checkbox"/> , or gutted <input type="checkbox"/>): (please do not weigh it if the fish will be released)	
Other observations			

Water depth	Water temperature:
Weather conditions	
Capture gear & bait used	

Sex



Annex II. Species information

Readers are reminded that the status of these species is updated regularly. Please consult the www.iucnredlist.org and <http://www.rac-spa.org/> for information on the most recent Red List and Barcelona Convention listings for all Mediterranean species. *NOTE: Some consultees stressed the importance of including valuable information for fishers that will encourage them to retain the guidelines for reference. This Annex will present the Mediterranean species list, with columns for Red List Assessment, Barcelona Convention status, and maximum size recorded for each species, and a small drawing of a selection (reproduced from the FAO guide, with acknowledgement).*

Family	Scientific name	Common name	Red List Assessment ³	Barcelona Convention status	Picture
CHIMAERIDAE Shortnose Chimaeras	<i>Chimaera monstrosa</i>	Rabbitfish	CR	-	
HEXANCHIDAE Six and Sevengill sharks	<i>Heptranchiasperlo</i>	Sharpnosesevengill shark	VU	Annex III	
	<i>Hexanchusgriseus</i>	Bluntnosesixgill shark	NT	-	
	<i>Hexanchusnakamurai</i>	Bigeyesixgill shark	DD (NT)	-	
ECHINORHINIDAE Bramble sharks	<i>Echinorhinusbrucus</i>	Bramble shark	DD	-	
SQUALIDAE Dogfish sharks	<i>Squalusacanthias</i>	Spiny dogfish	EN	Annex III	
	<i>Squalusblainvillei</i>	Longnosespurdog	(DD)	-	
	<i>Squalusmegalops</i>	Shortnosespurdog	(DD)	-	
CENTROPHORIDA E Gulper sharks	<i>Centrophorusgranulosus</i>	Gulper shark	VU	Annex III	
SOMNIOSIDAE Sleepers sharks	<i>Centroscyrnuscoelolepis</i>	Portuguese dogfish	LC	-	
	<i>Somniosusrostratus</i>	Little sleeper shark	LC	-	

³Mediterranean regional Red List assessments are provided where available, a global assessment is given in brackets. CR: Critically Endangered, EN: Endangered, VU: Vulnerable, NT: Near Threatened, LC: Least Concern, DD: Data Deficient.

OXYNOTIDAE Roughsharks	<i>Oxynotus centrina</i>	Angular roughshark	CR	Annex II
DALATIIDAE Kitefin sharks	<i>Dalatias licha</i>	Kitefin shark	DD (NT)	-
SQUATINIDAE Angel sharks	<i>Squatina aculeata</i>	Sawback angel shark	CR	Annex II
	<i>Squatina oculata</i>	Smoothback angel shark	CR	Annex II
	<i>Squatina squatina</i>	Angel shark	CR	Annex II
PRISTIDAE Modern sawfishes	<i>Pristispectinata</i>	Smalltooth sawfish	CR	Annex II
	<i>Pristis pristis</i>	Common sawfish	CR	Annex II
RHINOBATIDAE Guitarfishes	<i>Rhinobatos cemiculus</i>	Blackchin guitarfish	EN	Annex III
	<i>Rhinobatos rhinobatos</i>	Common guitarfish	EN	Annex III
TORPEDINIDAE Torpedo rays	<i>Torpedo marmorata</i>	Spotted torpedo	LC	-
	<i>Torpedo nobiliana</i>	Great torpedo	DD	-
	<i>Torpedo sinuspersici</i>	Marbled electric ray	(DD)	-
	<i>Torpedo torpedo</i>	Ocellate torpedo	LC	-
RAJIDAE Skates	<i>Dipturus batis</i>	Common skate	CR	Annex II
	<i>Dipturus oxyrinchus</i>	Sharpnose skate	NT	-
	<i>Leucoraja circularis</i>	Sandy skate	EN	Annex III
	<i>Leucoraja fullonica</i>	Shagreen skate	DD (NT)	-
	<i>Leucorajamelitensis</i>	Maltese skate	CR	Annex III
	<i>Leucorajanaevus</i>	Cuckoo skate	NT	-
	<i>Raja asterias</i>	Starry skate	LC	-
	<i>Raja brachyura</i>	Blonde skate	DD (NT)	-
	<i>Raja clavata</i>	Thornback skate	NT	-
	<i>Raja miraletus</i>	Twineye skate	LC	-
	<i>Raja montagui</i>	Spotted skate	LC	-
<i>Raja polystigma</i>	Speckled skate	NT	-	
<i>Raja radula</i>	Rough skate	DD	-	

	<i>Raja undulata</i>	Undulate skate	DD (EN)	-
	<i>Rostroraja alba</i>	White skate	CR	Annex II
DASYATIDAE	<i>Dasyatiscentrourea</i>	Roughtail stingray	NT	-
Whiptail Stingrays	<i>Dasyatischrysonota</i>	Blue stingray	DD	-
	<i>Dasyatispastinaca</i>	Common stingray	NT	-
	<i>Himanturuarnak</i>	Honeycomb whipray	DD (VU)	-
	<i>Pteroplatytrygonviolacea</i>	Pelagic stingray	NT	-
	<i>Taeniuragrabata</i>	Round fantail stingray	DD	-
GYMNURIDAE	<i>Gymnuraaltavela</i>	Spiny butterfly ray	CR	Annex II
Butterfly rays				
MYLIOBATIDAE	<i>Myliobatisaquila</i>	Common eagle ray	NT	-
Eagle rays	<i>Pteromylaeusbovinus</i>	Bullray		-
RHINOPTERIDAE	<i>Rhinopteramarginata</i>	Lusitanian cownose ray	NT	-
Cownose rays				
MOBULIDAE	<i>Mobulamobular</i>	Giant devilray	EN	Annex II
Devil rays				
ODONTASPIDIDAE	<i>Carchariastaurus</i>	Sand tiger shark	CR	Annex II
Sand tiger sharks	<i>Odontaspisferox</i>	Smalltooth sand tiger	EN	Annex II
ALOPIIDAE	<i>Alopiassuperciliosus</i>	Bigeye thresher	DD (VU)	-
Thresher sharks	<i>Alopiasvulpinus</i>	Thresher shark	VU	-
CETORHINIDAE	<i>Cetorhinusmaximus</i>	Basking shark	VU	Annex II
Basking sharks				
LAMNIDAE	<i>Carcharodoncarcharias</i>	Great white shark	EN	Annex II
Mackerel sharks	<i>Isurusoxyrinchus</i>	Shortfinmako	CR	Annex III
	<i>Isuruspaucus</i>	Longfinmako		-
	<i>Lamna nasus</i>	Porbeagle shark	CR	Annex II
SCYLIORHINIDAE	<i>Galeusatlanticus</i>	Atlantic catshark	NT	-
Catsharks	<i>Galeusmelastomus</i>	Blackmouthcatshark	LC	-
	<i>Scyliorhinuscanicula</i>	Smallspottedcatshark	LC	-
	<i>Scyliorhinusstellaris</i>	Nursehound	NT	-

TRIAKIDAE Houndsharks	<i>Galeorhinusgaleus</i>	Tope shark	VU	Annex II
	<i>Mustelusasterias</i>	Starry smoothhound	VU	Annex II
	<i>Mustelustumelus</i>	Smoothhound	VU	Annex II
	<i>Musteluspunctulatus</i>	Blackspotsmoothhound	DD	Annex II
CARCHARHINIDAE Requiem sharks	<i>Carcharhinusaltimus</i>	Bignose shark	DD	-
	<i>Carcharhinusbrachyurus</i>	Bronze whaler shark	DD	-
	<i>Carcharhinusbrevipinna</i>	Spinner shark	DD	-
	<i>Carcharhinusfalciformis</i>	Silky shark	(NT)	-
	<i>Carcharhinuslimbatus</i>	Blacktip shark	DD	-
	<i>Carcharhinusmelanopterus</i>	Blacktip reef shark	(NT)	-
	<i>Carcharhinusobscurus</i>	Dusky shark	DD	-
	<i>Carcharhinusplumbeus</i>	Sandbar shark	EN	Annex II
	<i>Prionaceglauca</i>	Blue shark	VU	-
SPHYRNIDAE Hammerhead sharks	<i>Rhizoprionodonacutus</i>	Milk shark	(LC)	-
	<i>Sphyrnalewini</i>	Scalloped hammerhead	(EN)	Annex II
	<i>Sphyrnamokarran</i>	Great hammerhead	(EN)	Annex II
	<i>Sphyrnazygaena</i>	Smooth hammerhead	VU	Annex II

Annex III. Length/weight conversion tables

[for inclusion in final publication].

Annex IV. National contacts for shark and ray fisheries data[TO BE PROVIDED BY SPA FOCAL POINTS]

Country	Name	Institute	Postal address	E-mail address
Albania				
Algeria				
Croatia				
Cyprus				
Egypt				
France				
Greece				
Israel				
Lebanon				
Libyan A.J.				
Italy				
Malta				
Morocco				
Serbia-Montenegro				
Slovenia				
Spain				
Syrian A.R.				
Tunisia				
Turkey				

ICCAT				
GFCM				