

United Nations Environment Programme  
Mediterranean Action Plan  
Regional Activity Centre for Specially Protected Areas

# Guidelines for shark and ray recreational fishing in the Mediterranean







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# **Guidelines for shark and ray recreational fishing in the Mediterranean**

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## GLOSSARY

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### **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

### **PAT tag**

Pop-up Archival Transmitting tag

### **RAC/SPA**

Regional Activity Centre for Specially Protected Areas

### **SPOT tag**

Smart Position or Temperature Transmitting tag

### **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 Cartilaginous<sup>1</sup> Fishes in the Mediterranean Sea (UNEP-MAP RAC/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.



Blackchin guitarfish/Raie guitare fousseuse, *Glaucostegus (Rhinobatos) cemiculus* (© Tahsin Ceylan)

<sup>1</sup> Cartilaginous 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.

## DEFINITIONS OF RECREATIONAL FISHING (under revision by the GFCM)

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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.”



© Alen Soldo



## 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 (Cavanagh and Gibson 2007, Ferretti *et al.*, 2008, 2010, Fowler *et al.*, in preparation, Annex III). 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*, or silky shark *Carcharhinus falciformis* (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 oxyrinchus*, porbeagle shark *Lamna nasus*, blue shark *Prionace glauca*, white skate *Rostroraja alba* and angelshark *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.



Rough skate/Raie-râpe, *Raja radula* (© Tahsin Ceylan).

Table 1. Sharks and rays listed in Annexes of the Protocol concerning Specially Protected Areas and Biological Diversity in the Mediterranean (from 8 August 2012)

Annex II, Endangered or Threatened Species <sup>1</sup>		Annex III, Species whose Exploitation is Regulated <sup>2</sup>	
<i>Carcharias taurus</i>	Sand tiger shark	<i>Alopias vulpinus</i>	Thresher shark
<i>Carcharodon carcharias</i>	Great white shark	<i>Carcharhinus plumbeus</i>	Sandbar shark
<i>Cetorhinus maximus</i>	Basking shark	<i>Centrophorus granulosus</i>	Gulper shark
<i>Dipturus batis</i>	Common skate	<i>Heptranchias perlo</i>	Sharpnose sevengill shark
<i>Galeorhinus galeus</i>	Tope shark	<i>Mustelus asterias</i>	Starry smoothhound
<i>Glaucoctegus (Rhinobatos) cemiculus</i>	Blackchin guitarfish <sup>3</sup>	<i>Mustelus mustelus</i>	Smoothhound
<i>Gymnura altavela</i>	Spiny butterfly ray	<i>Mustelus punctulatus</i>	Blackspot smoothhound
<i>Isurus oxyrinchus</i>	Shortfin mako	<i>Prionace glauca</i>	Blue shark
<i>Lamna nasus</i>	Porbeagle shark	<i>Squalus acanthias</i>	Spiny dogfish
<i>Leucoraja circularis</i>	Sandy skate		
<i>Leucoraja melitensis</i>	Maltese skate	<sup>1</sup> 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.	
<i>Mobula mobular</i>	Giant devilray		
<i>Odontaspis ferox</i>	Smalltooth sand tiger	<sup>2</sup> 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.	
<i>Oxynotus centrina</i>	Angular roughshark		
<i>Pristis pectinata</i>	Smalltooth sawfish		
<i>Pristis pristis</i>	Common sawfish	<sup>3</sup> Tunisia has notified an exemption for management purposes on the Annex II listing of the guitarfishes in their waters, maintaining them in Annex III at its national level.	
<i>Rhinobatos rhinobatos</i>	Common guitarfish <sup>3</sup>		
<i>Rostroraja alba</i>	White skate		
<i>Sphyrna lewini</i>	Scalloped hammerhead		
<i>Sphyrna mokarran</i>	Great hammerhead		
<i>Sphyrna zygaena</i>	Smooth hammerhead		
<i>Squatina aculeata</i>	Sawback angelshark		
<i>Squatina oculata</i>	Smoothback angelshark		
<i>Squatina squatina</i>	Angelshark		

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

Scientific name	Common name
<i>Leucoraja melitensis</i>	Maltese skate
<i>Raja asterias</i>	Starry skate
<i>Raja polystigma</i>	Speckled skate
<i>Raja radula</i>	Rough ray
<i>Mobula mobular</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 they are not protected by the internal skeleton. 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.



Using a dehooker alongside the boat (© Carl Safina)

## 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 IV) 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 deep set, 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.

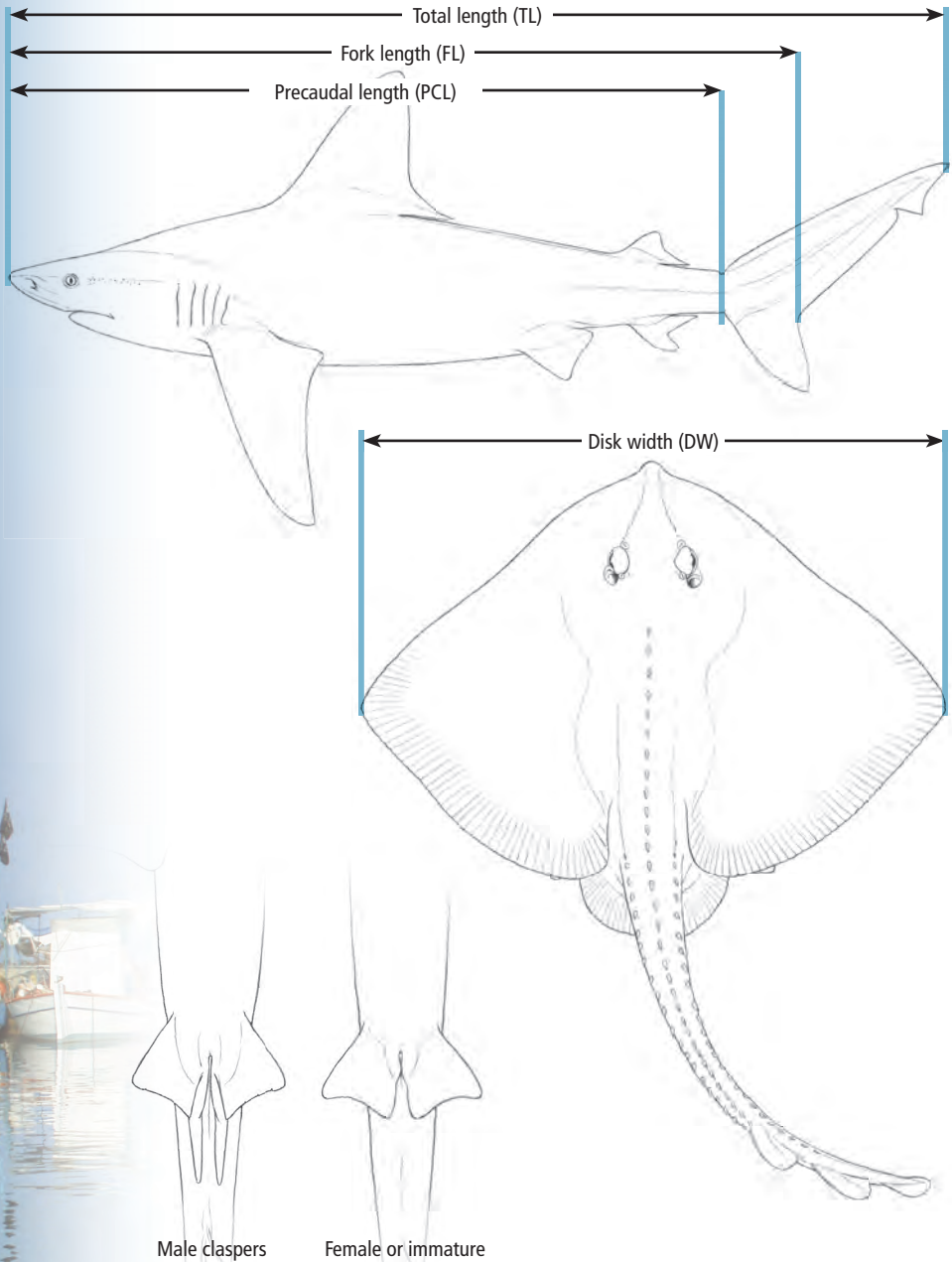
Recreational catch data for large pelagic sharks in the Mediterranean can be submitted to ICCAT and/or MEDLEM, either online or using the data sheets provided. The GFCM is developing a data collection framework for recreational fisheries that will include procedures for providing recreational catch records 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 13, and links to tagging programmes on page 17.

Figure 1. How to measure the size and identify the sex of sharks and rays.



## 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 17.

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:

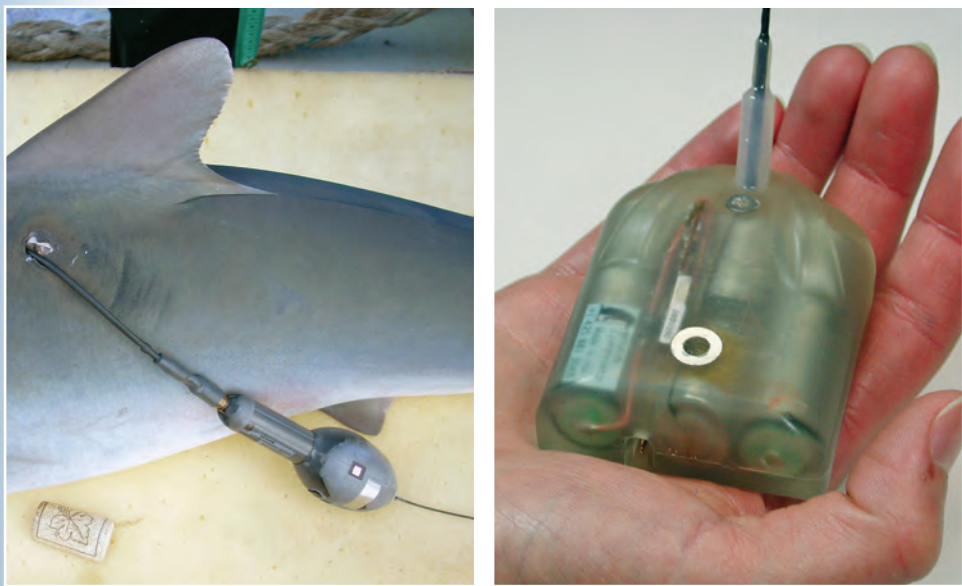
**Marker tags:** small numbered tags that come in a variety of shapes and sizes (including streamer or spaghetti tags and plastic discs). Some include a capsule with instructions on how and where to report recaptures. Others rely upon the tag or tag number being sent with recapture information to the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

Figure 2: Examples of marker tags. Top, 'Spaghetti' tag (courtesy David Hall, Hallprint); bottom, Thornback ray/Raie bouclée, *Raja clavata*, tagged with a yellow Peterson disc (© Jim Ellis/Cefas).



**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. PAT tags (Pop-up Archival Transmitting 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. Left, insertion of a tagging unit (anchor, tether and Mini-PAT) into the dorsal musculature of a shark (© François Poisson, MADE project) and right, a SPOT tag (© Wildlife Computers).



**Archival tags:** these record similar information to PAT 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. Example of an implanted archival tag (© Wildlife Computers).





## 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 forms in Annexes I and II) **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 with a new tag
  - released alive with no 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 light<sup>2</sup>, and freeze a section of the backbone from over the gills. Report that this has been done when reporting the tag and 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.

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



Pelagic stingray/Pastenague violette, *Pteroplatytrygon violacea* (© Tahsin Ceylan)

## 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.

Diver with Angel shark/Ange de mer, *Squatina squatina* (© Save Our Seas Foundation/Peter Verhoog)



## BIBLIOGRAPHY

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- Anonymous. 2011. Report of the Transversal Workshop on the Monitoring of Recreational Fisheries in the GFCM Area, Palma de Mallorca, Spain, 20-22 October 2010. Inf. doc. 18 to the Thirteenth Session of the Scientific Advisory Committee of the General Fisheries Commission for the Mediterranean, Marseille, France, 7-11 February 2011. GFCM: SAC13/2011/Inf.18. 30 pp. <http://www.gfcm.org/fishery/nems/39521/en>
- Cailliet, G.M., J.A. Musick, C.A. Simpfendorfer, J.D. Stevens. 2005. Ecology and Life History Characteristics of Chondrichthyan Fish. In *Sharks, Rays and Chimaeras: the Status of the Chondrichthyan Fishes*, S.L. Fowler *et al.*, Eds. IUCN/SSC Shark Specialist Group, Gland, Switzerland. Pp. 12-18.
- Cavanagh, R.D. and C. Gibson. 2007. *Overview of the Conservation Status of Cartilaginous Fishes (Chondrichthyans) in the Mediterranean Sea*. IUCN, Gland, Switzerland and Malaga, Spain. vi+42pp.
- Ferretti, F., B. Worm, G.L. Britten, M.R. Heithaus and H.K. Lotze. 2010. Patterns and ecosystem consequences of shark declines in the ocean. *Ecology Letters*, doi: 10.1111/j.1461-0248.2010.01489.x.
- Ferretti, F., R.A. Myers, F. Serena, and H.K. Lotze. 2008. Loss of Large Predatory Sharks from the Mediterranean Sea. *Conservation Biology* 22: 952-964.
- Fowler, S.L., N.K. Dulvy, R.D. Cavanagh, P.M. Kyne, L.J.V. Compagno, G.H. Burgess, A. Domingo, D.A. Ebert, S. Fordham, M.P. Francis, C. Gibson, M.R. Heupel, S.R. Livingstone, C.M. Pollock, J.C. Sanciangco, C.A. Simpfendorfer, J.D. Stevens, S. Valenti, W.T. White, and J.A. Musick. In preparation. Global threat status of sharks, rays and chimaeras.
- Gaudin, G. and C. de Young. 2007. Recreational fisheries in the Mediterranean countries: a review of existing legal frameworks. *Studies and Reviews; General Fisheries Commission for the Mediterranean*. No. 81. FAO, Rome, Italy. 85 pp.
- Heithaus, M.R., A. Frid, A.J. Wirsing, B. Worm. 2008. Predicting ecological consequences of marine top predator declines. *Trends Ecol. Evol.* 23, 202-210.
- Stevens, J.D., R. Bonfil, N.K. Dulvy, P. Walker. 2000. The effects of fishing on sharks, rays and chimaeras (Chondrichthyans), and the implications for marine ecosystems. *ICES J. Mar. Sci.* 57, 476-494.
- UNEP MAP. RAC/SPA 2003. *Action Plan for the Conservation of Cartilaginous Fishes (Chondrichthyans) in the Mediterranean Sea*. Ed. RAC/SPA, Tunis, 56 pp.

## OTHER IMPORTANT SOURCES CONSULTED

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- ICCAT. 2006- 2009. *ICCAT Manual. International Commission for the Conservation of Atlantic Tuna*. In: *ICCAT Publications* [on-line]. Updated 2009. <http://www.iccat.int/en/ICCATManual.htm>.
- Jones, B. & Mann, B.Q. 2007. Releasing your catch: how to return fish safely to the sea. *Ski-boat* 23(2): 49, 51-52.
- Kohler, N. E., Turner, P. A., Hoey, J. J., Natanson N, L. J. and R. Briggs. 2002. Tag and recapture data for three pelagic sharks species: blue shark (*Prionacea glauca*), shortfin mako (*Isurus oxyrinchus*), and porbeagle (*Lamna nasus*) in the North Atlantic Ocean. *International Commission for the Conservation of Atlantic Tuna (ICCAT)* 54(4):1231–1260.
- Mann, B.Q. & Bullen, E. 2006 – Marine linefish conservation in South Africa, how has tagging helped? *Africa Wild Magazine*, 32-35.
- Mann, B.Q. & Bellis, M. 2006 – Why barbless hooks for sport angling? *Extreme Sports Angling Magazine*, December 2006: 64.
- Mann, B.Q. 2007. Are you tagging your fish correctly? Some simple reminders to make sure you are doing it right. *Tight Lines Magazine*, December 2007: 62-63.
- NOAA/NMFS. Undated. Tagging and reporting instruction package. 10 pp. Cooperative Shark Tagging Program, NOAA's National Marine Fisheries Service, Narragansett, USA.
- NOAA/NMFS. Undated. *Careful Catch and Release Guidelines*. Brochure. 2 pp. Cooperative Shark Tagging Program, NOAA's National Marine Fisheries Service, Narragansett, USA.
- Scottish Sea Angling Conservation Network. 2010. *Shark-A-Tag2 welcome pack*. 20 pp. Scottish Shark Tagging Programme.

Serena, F. 2005. Field identification guide to the sharks and rays of the Mediterranean and Black Sea. FAO Species Identification Guide for Fishery Purposes. Rome, FAO. 2005. 97p. 11 colour plates + egg cases.

Shark Trust. 2011. *Sharks, Skates and Rays: Anglers Recording our Natural Heritage*. 12 pp. Shark Trust, Plymouth, UK.

Shine, C. 2009. Draft Guidelines for reinforcing laws and Regulations for the conservation and management of Cartilaginous Fish. UNEP-MAP RAC/SPA,

South African Shark Conservancy. 2010. Responsible Angling Guidelines: Sharks. 4 pp. <http://www.sharkconservancy.org>

Getting ready to attach a PAT tag to track migrations (© Edward Parker/WWF-Canon).



## LINKS

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

**Alop.** Studying thresher sharks (*Alopias vulpinus*) and implementation of a small scale tagging programme to clarify residency times for blue sharks (*Prionace glauca*) in the Gulf of Lions, in collaboration between Ifremer-IRD, the seaquarium of Grau du Roi, and recreational anglers, France. Contact [Francois.Poisson@ifremer.fr](mailto:Francois.Poisson@ifremer.fr)

**Big Game Italia.** Undertakes shark tagging in cooperation with NOAA CSTP. [www.biggameitalia.it](http://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](http://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](http://www.cips-fips.com)

**Elasmoit Italy.** Project collecting information on the exploitation and conservation of elasmobranch fishes in Italian seas. Contact [f.seren@arp.toscana.it](mailto:f.seren@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](mailto: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.eaa-europe.org](http://www.eaa-europe.org)

**European Elasmobranch Association** <http://www.eulasmo.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](http://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](http://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](http://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](http://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.arp.toscana.it/progetti/medlem/pr-medlem\\_en.html](http://www.arp.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](http://www.mnhn.fr) Online key and photographic guide to the sharks and rays of the Atlantic and Mediterranean <http://www.mnhn.fr/iccanam>.

## LINKS (cont.)

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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 [www.projectaware.org](http://www.projectaware.org). 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.

Pelagic Shark Research Foundation [www.pelagic.org](http://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](http://www.pewtrusts.org/our_work_detail.aspx?id=140).

Shark Alliance [www.sharkalliance.org](http://www.sharkalliance.org). The Shark Alliance is a partner in the UNEP Action Plan for Cartilaginous Fishes.

Shark Trust [www.sharktrust.org](http://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> 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.



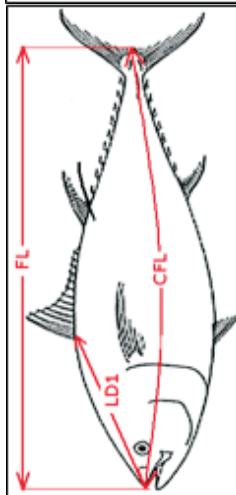
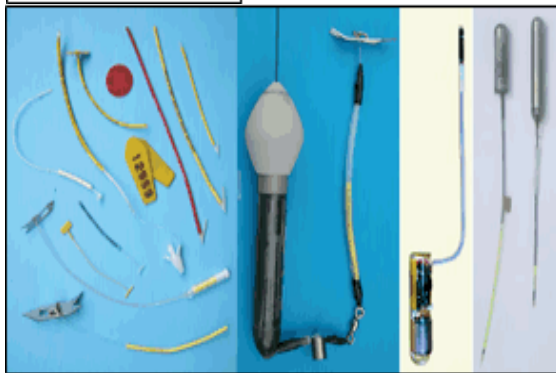
© Alen Soldo

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

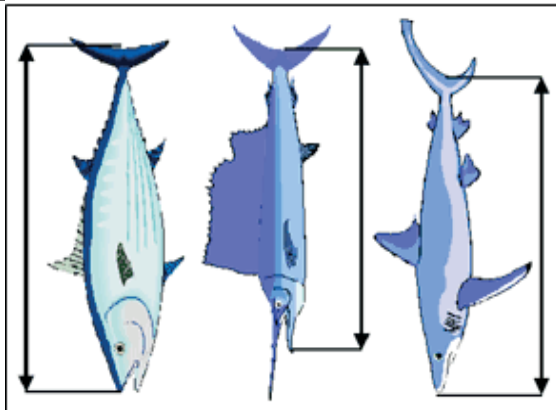
Submit by Email

<b>PLEASE RETURN THE TAG</b>	<b>Tag data</b>	<b>PLEASE RETURN THE TAG</b>
TAG CODE (letters and numbers)		
TAG TYPE and COLOR (see figure below)		
ADDRESS ON THE TAG		
	<b>Fish data</b>	
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



Type of measurements: Straight Fork Length (FL), First Dorsal (LD1), Curved Fork Length (CFL) following the curvature of the fish.



Tag types: Streamer or Conventional, Popup and Internal Archival (at left, from top to bottom)

How to measure straight fork length of different species (at right).



HOW LENGTH WAS MEASURED:  Calliper  Metric tape  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:  Total  Gutted  Dressed  Other \_\_\_\_\_

HOW WEIGHT WAS MEASURED:  Scale  Dynamometer  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:  Observer  Skipper  Owner  Crew member  Other \_\_\_\_\_

Data were checked by the Observer? In Observer's opinion the quality of the information is:



Excellent  Good  Average  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, ...)



**1. Important information about the fish**

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

**2. Important information about you**

<b>Your name</b>	
<b>Address</b>	

Telephone		Email	
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### 3. Other useful information






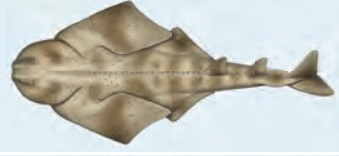


<b>Size of fish</b> Was this estimated <input type="checkbox"/> or measured <input type="checkbox"/>	Precaudal length:	Fork length:	Total length:
Ray disc width:		Weight (whole <input type="checkbox"/> or gutted <input type="checkbox"/> ) (please do not weigh it if the fish will be released)	<input type="text"/>
<b>Other observations</b>			
<b>Water depth</b>		<b>Water temperature:</b>	
<b>Weather conditions</b>			
<b>Capture gear &amp; bait used</b>			


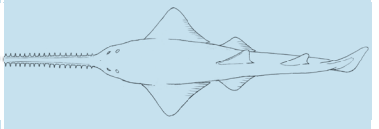

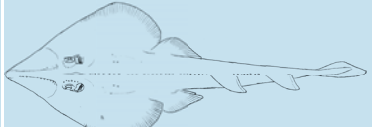


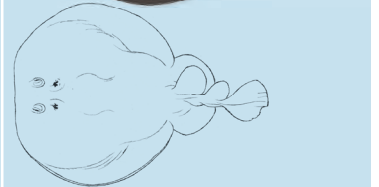



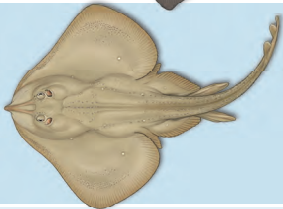

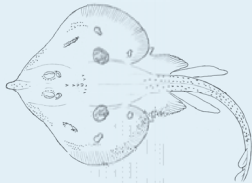
## Annex III. Species information

Readers are reminded that the status of these species is updated regularly. Please consult the [www.iucnredlist.org](http://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. The illustrations in this table are used with the kind permission of Marc Dando [www.wildlifeillustrator.com](http://www.wildlifeillustrator.com).

FAMILY	SCIENTIFIC NAME	COMMON NAME	IUCN Red List Assessment <sup>a</sup>	Barcelona Convention status	
<b>CHIMAERIDAE</b> Shortnose Chimaeras Chimères à nez court	<i>Chimaera monstrosa</i>	Rabbitfish Chimère commune	<b>CR</b>	-	
<b>HEXANCHIDAE</b> Six and Sevengill sharks Requins grisets et perlons	<i>Heptranchias perlo</i>	Sharpnose sevengill shark Requin perlon	<b>VU</b>	<b>Annex III</b>	
	<i>Hexanchus griseus</i>	Bluntnose sixgill shark Requin grislet	<b>NT</b>	-	
	<i>Hexanchus nakamurai</i>	Bigeye sixgill shark Requin-vache	<b>DD (NT)</b>	-	
<b>ECHINORHINIDAE</b> Bramble sharks Squales bouclés	<i>Echinorhinus brucus</i>	Bramble shark Squale bouclé	<b>DD</b>	-	
<b>SQUALIDAE</b> Dogfish sharks Requins épineux	<i>Squalus acanthias</i>	Spiny dogfish Aiguillat commun	<b>EN</b>	<b>Annex III</b>	
	<i>Squalus blainvillei</i>	Longnose spurdog Aiguillat coq	<b>(DD)</b>	-	
	<i>Squalus megalops</i>	Shortnose spurdog Aiguillat nez court	<b>(DD)</b>	-	





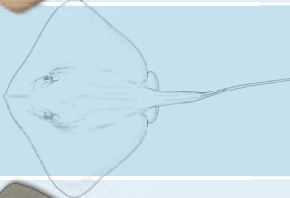


FAMILY	SCIENTIFIC NAME	COMMON NAME	IUCN Red List Assessment*	Barcelona Convention status	
<b>CENTROPHORIDAE</b> Gulper sharks Requins chagrins	<i>Centrophorus granulosus</i>	Gulper shark Squale chagrin	VU	Annex III	
<b>SOMNIOSIDAE</b> Sleepers sharks Requins dormeurs	<i>Centroscymnus coelolepis</i>	Portuguese dogfish Pailona commun	LC	-	
	<i>Somniosus rostratus</i>	Little sleeper shark Laimargue de la Méditerranée	LC	-	
<b>OXYNOTIDAE</b> Roughsharks Centrines	<i>Oxynotus centrina</i>	Angular roughshark Centrine commune	CR	Annex II	
<b>DALATIIDAE</b> Kitefin sharks	<i>Dalatias licha</i>	Kitefin shark Squale-liche	DD (NT)	-	
<b>SQUATINIDAE</b> Angel sharks	<i>Squatina aculeata</i>	Sawback angelshark Ange de mer épineux	CR	Annex II	
	<i>Squatina oculata</i>	Smoothback angelshark Ange de mer ocellé	CR	Annex II	
	<i>Squatina squatina</i>	Angelshark Ange de mer	CR	Annex II	


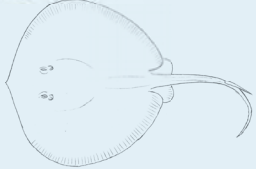




FAMILY	SCIENTIFIC NAME	COMMON NAME	IUCN Red List Assessment <sup>1</sup>	Barcelona Convention status	
<b>PRISTIDAE</b> Modern sawfishes	<i>Pristis pectinata</i>	Smalltooth sawfish Poisson-scie	CR	Annex II	
	<i>Pristis pristis</i>	Common sawfish Poisson-scie	CR	Annex II	
<b>RHINOBATIDAE</b> Guitarfishes	<i>Glaucostegus (Rhinobatos) cemiculus</i>	Blackchin guitarfish Raie guitare fousseuse	EN	Annex II	
	<i>Rhinobatos rhinobatos</i>	Common guitarfish Guitare de mer commune	EN	Annex II	
<b>TORPEDINIDAE</b> Torpedo rays	<i>Torpedo marmorata</i>	Spotted torpedo Torpille marbrée	LC	-	
	<i>Torpedo nobiliana</i>	Great torpedo Torpille noire	DD	-	
	<i>Torpedo sinuspersici</i>	Marbled electric ray Raie torpille auréolée	(DD)	-	








FAMILY	SCIENTIFIC NAME	COMMON NAME	IUCN Red List Assessment*	Barcelona Convention status	
	<i>Torpedo torpedo</i>	Ocellate torpedo Torpille ocellée	LC	-	
<b>RAJIDAE</b> Skates Raies	<i>Dipturus batis</i>	Common skate Pocheteau gris	CR	Annex II	
	<i>Dipturus oxyrinchus</i>	Sharpnose skate Pocheteau noir	NT	-	
	<i>Leucoraja circularis</i>	Sandy skate Raie circulaire	EN	Annex II	
	<i>Leucoraja fullonica</i>	Shagreen skate Raie chardon	DD (NT)	-	
	<i>Leucoraja melitensis</i>	Maltese skate Raie de Malte	CR	Annex II	

FAMILY	SCIENTIFIC NAME	COMMON NAME	IUCN Red List Assessment <sup>1</sup>	Barcelona Convention status	
	<i>Leucoraja naevus</i>	Cuckoo skate Raie fleurie	NT	-	
	<i>Raja asterias</i>	Starry skate Raie étoilée	LC	-	
	<i>Raja brachyura</i>	Blonde skate Raie lisse	DD (NT)	-	
	<i>Raja clavata</i>	Thornback skate Raie bouclée	NT	-	
	<i>Raja miraletus</i>	Twineye skate Raie miroir	LC	-	
	<i>Raja montagui</i>	Spotted skate Raie douce	LC	-	
	<i>Raja polystigma</i>	Speckled skate Raie tachetée	NT	-	












FAMILY	SCIENTIFIC NAME	COMMON NAME	IUCN Red List Assessment*	Barcelona Convention status	
	<i>Raja radula</i>	Rough skate Raie-râpe	DD	-	
	<i>Raja undulata</i>	Undulate skate Raie brunette	DD (EN)	-	
	<i>Rostroraja alba</i>	White skate Raie blanche	CR	Annex II	
<b>DASYATIDAE</b> Whiptail Stingrays Raies pastenagues	<i>Dasyatis centroura</i>	Roughtail stingray Raie pastenague épineuse	NT	-	
	<i>Dasyatis chrysonota</i>	Blue stingray Pastenague marbrée	DD	-	
	<i>Dasyatis pastinaca</i>	Common stingray Pastenague commune	NT	-	
	<i>Himantura uarnak</i>	Honeycomb whipray Pastenague léopard	DD (VU)	-	

FAMILY	SCIENTIFIC NAME	COMMON NAME	IUCN Red List Assessment <sup>2</sup>	Barcelona Convention status	
	<i>Pteroplatytrygon violacea</i>	Pelagic stingray Pastenague violette	NT	-	
	<i>Taeniura grabata</i>	Round fantail stingray Pastenague africaine	DD	-	
<b>GYMNURIDAE</b> Butterfly rays Raies papillons	<i>Gymnura altavela</i>	Spiny butterfly ray Raie-papillon épineuse	CR	Annex II	
<b>MYLIOBATIDAE</b> Eagle rays Raies-aigles	<i>Myliobatis aquila</i>	Common eagle ray Aigle de mer commun	NT	-	
	<i>Pteromylaeus bovinus</i>	Bullray Aigle-vachette		-	
<b>RHINOPTERIDAE</b> Cownose rays Raies chauve-souris	<i>Rhinoptera marginata</i>	Lusitanian cownose ray Mourine échancrée	NT	-	

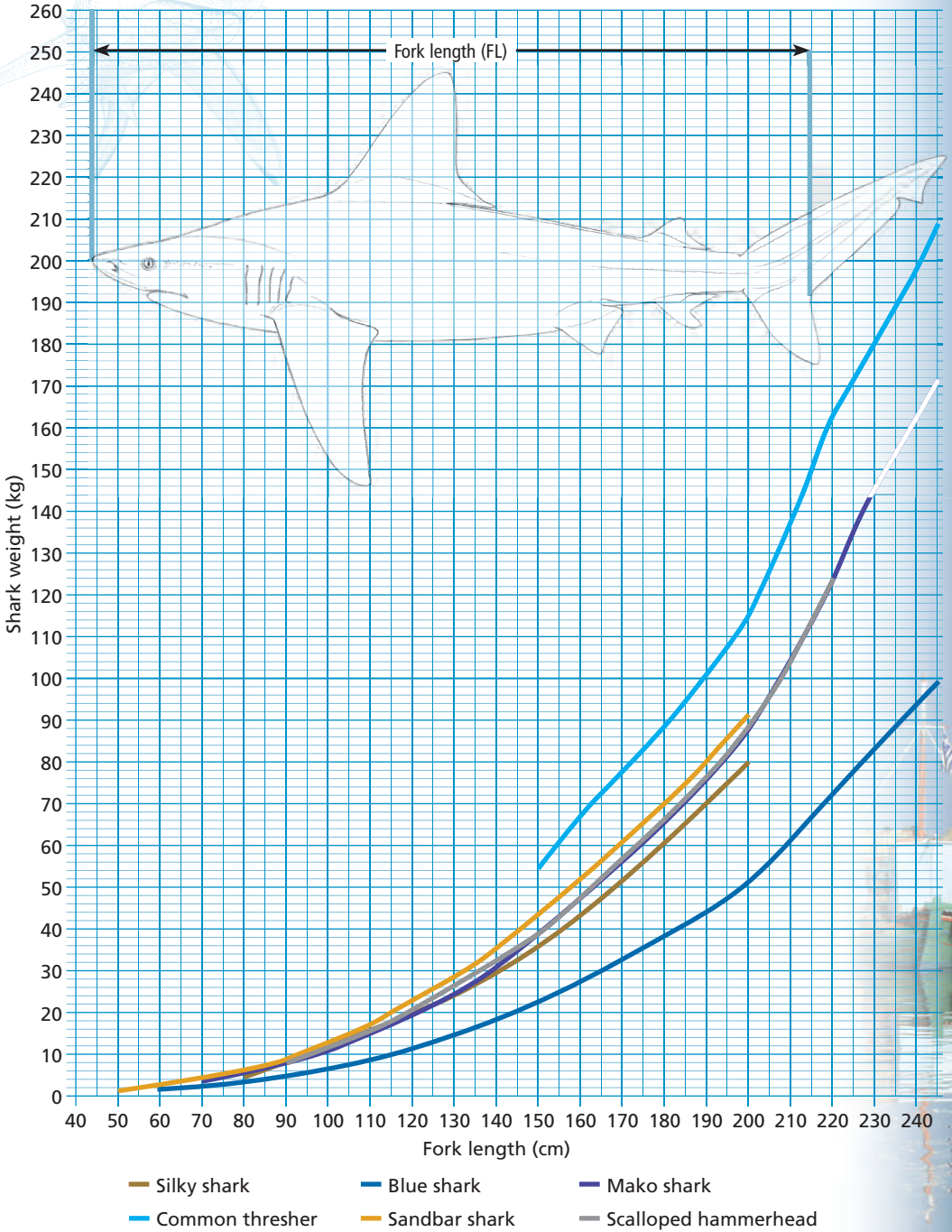
FAMILY	SCIENTIFIC NAME	COMMON NAME	IUCN Red List Assessment <sup>1</sup>	Barcelona Convention status	
<b>MOBULIDAE</b> Devil rays Mantes et diables de mer	<i>Mobula mobular</i>	Giant devilray Diable de mer	EN	Annex II	
<b>ODONTASPIDAE</b> Sand tiger sharks Requins-taureaux	<i>Carcharias taurus</i>	Sandtiger shark Requin-taureau	CR	Annex II	
	<i>Odontaspis ferox</i>	Smalltooth sandtiger Requin féroce	EN	Annex II	
<b>ALOPIIDAE</b> Thresher sharks Requins-renards	<i>Alopias superciliosus</i>	Bigeye thresher Requin-renard à gros yeux	DD (VU)	-	
	<i>Alopias vulpinus</i>	Thresher shark Requin-renard commun	VU	-	
<b>CETORHINIDAE</b> Basking shark Requin-pélerin	<i>Cetorhinus maximus</i>	Basking shark Requin-pélerin	VU	Annex II	
<b>LAMNIDAE</b> Mackerel sharks Requins-taupes	<i>Carcharodon carcharias</i>	Great white shark Grand requin-blanc	EN	Annex II	

FAMILY	SCIENTIFIC NAME	COMMON NAME	IUCN Red List Assessment <sup>2</sup>	Barcelona Convention status	
	<i>Isurus oxyrinchus</i>	Shortfin mako Requin-taupe bleu	CR	Annex II	
	<i>Isurus paucus</i>	Longfin mako Requin petite taupe		-	
	<i>Lamna nasus</i>	Porbeagle shark Requin-taupe commun	CR	Annex II	
<b>SCYLIORHINIDAE</b> Catsharks Roussettes	<i>Galeus atlanticus</i>	Atlantic catshark Chien espagnol atlantique	NT	-	
	<i>Galeus melastomus</i>	Blackmouth catshark Chien espagnol	LC	-	
	<i>Scyliorhinus canicula</i>	Smallspotted catshark Petite roussette	LC	-	
	<i>Scyliorhinus stellaris</i>	Nursehound Grande roussette	NT	-	
<b>TRIAKIDAE</b> Houndsharks Emissoles	<i>Galeorhinus galeus</i>	Tope shark Requin hâ	VU	Annex II	
	<i>Mustelus asterias</i>	Starry smoothhound Émissole tachetée	VU	Annex III	

FAMILY	SCIENTIFIC NAME	COMMON NAME	IUCN Red List Assessment*	Barcelona Convention status	
	<i>Mustelus mustelus</i>	Smoothhound Émissole lisse	VU	Annex III	
	<i>Mustelus punctulatus</i>	Blackspot smoothhound Émissole pointillée	DD	Annex III	
<b>CARCHARHINIDAE</b> Requiem sharks Requins requiem	<i>Carcharhinus altimus</i>	Bignose shark Requin babosse	DD	-	
	<i>Carcharhinus brachyurus</i>	Bronze whaler shark Requin cuivre	DD	-	
	<i>Carcharhinus brevipinna</i>	Spinner shark Requin tisserand	DD	-	
	<i>Carcharhinus falciformis</i>	Silky shark Requin soyeux	(NT)	-	
	<i>Carcharhinus limbatus</i>	Blacktip shark Requin bordé	DD	-	
	<i>Carcharhinus melanopterus</i>	Blacktip reef shark Requin à pointes noires	(NT)	-	

FAMILY	SCIENTIFIC NAME	COMMON NAME	IUCN Red List Assessment <sup>1</sup>	Barcelona Convention status	
	<i>Carcharhinus obscurus</i>	Dusky shark Requin sombre	DD	-	
	<i>Carcharhinus plumbeus</i>	Sandbar shark Requin gris	EN	Annex III	
	<i>Prionace glauca</i>	Blue shark Requin peau bleu	VU	-	
	<i>Rhizoprionodon acutus</i>	Milk shark Requin à museau pointu	(LC)	-	
<b>SPHYRNIDAE</b> Hammerhead sharks Requins-marteaux	<i>Sphyrna lewini</i>	Scalloped hammerhead Requin-marteau halicorne	(EN)	Annex II	
	<i>Sphyrna mokarran</i>	Great hammerhead Grand requin-marteau	(EN)	Annex II	
	<i>Sphyrna zygaena</i>	Smooth hammerhead Requin-marteau commun	VU	Annex II	

# Annex IV. Length/weight conversion tables



## Annex V. National Focal Points for the Protocol concerning Specially Protected Areas and Biological Diversity in the Mediterranean ([www.rac-spa.org/focal\\_points](http://www.rac-spa.org/focal_points) [www.rac-spa.org/fr/points\\_focaux](http://www.rac-spa.org/fr/points_focaux))

Country	Name	Government department	Postal address	Telephone & e-mail address
<b>Albania</b>	Dr. Sajmir Hoxha, Director of Nature Protection Policies Directorate.	Ministry of Environment, Forest and Water Administration	Rruga e Durrësi, N°. 27 – Tirana	<b>Tel:</b> 355 4 22 39849 <b>E-mail:</b> <a href="mailto:shoxha@moe.gov.al">shoxha@moe.gov.al</a>
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