

# IDENTIFICATION GUIDE OF VULNERABLE SPECIES

INCIDENTALLY CAUGHT  
IN MEDITERRANEAN  
FISHERIES



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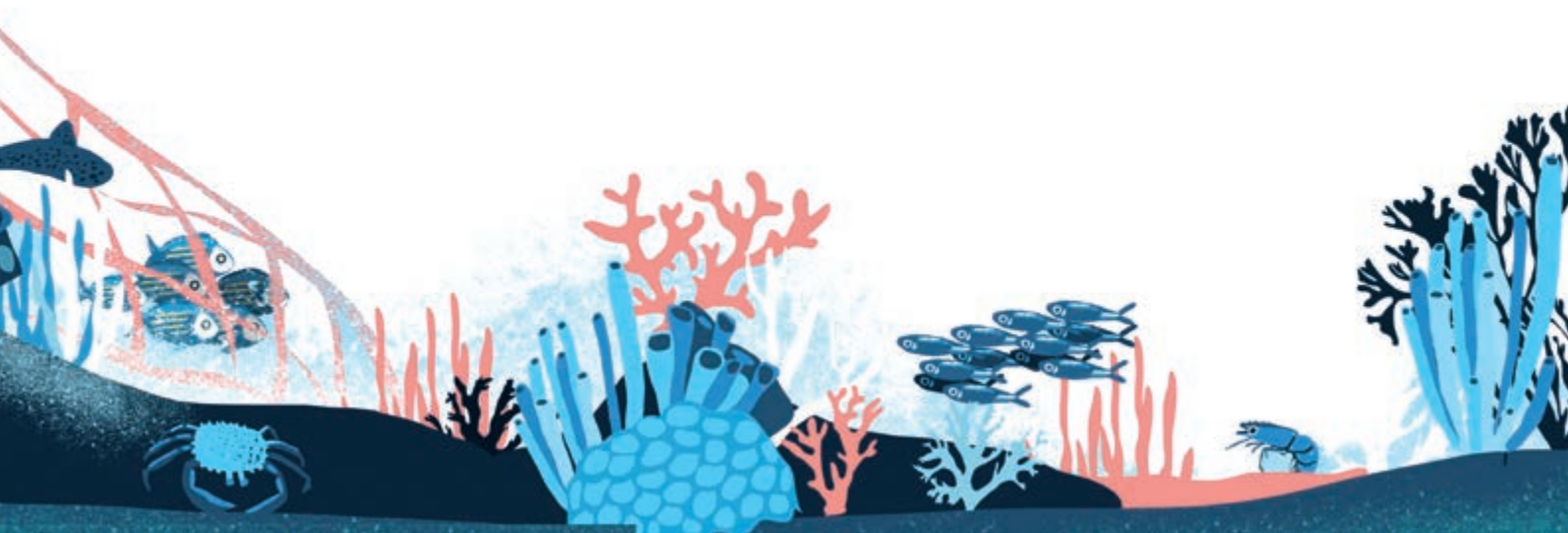
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# Identification guide of vulnerable species incidentally caught in Mediterranean fisheries







# Introduction

This identification guide has been developed to support the monitoring of bycatch of vulnerable species in Mediterranean fisheries. The work has been produced within the context of the project **“Understanding Mediterranean multi-taxa ‘bycatch’ of vulnerable species and testing mitigation- a collaborative approach”** funded by MAVA Foundation through a partnership between the Agreement on the Conservation of Cetaceans of the Black Sea, Mediterranean Sea and contiguous Atlantic area (ACCOBAMS), the General Fisheries Commission for the Mediterranean (GFCM) of the Food and Agriculture Organization of the United Nations (FAO), the Regional Activity Centre for Specially Protected Areas of the United Nations Environment/Mediterranean Action Plan (SPA/RAC), International Union for Conservation of Nature – Centre for Mediterranean Cooperation (IUCN-Med), BirdLife Europe and Central Asia (BL ECA) and the Mediterranean Association to Save the Sea Turtles (MEDASSET).

The compilation and final editing of the guide has been coordinated by IUCN with the support of all the involved partners and Mediterranean experts acknowledged in the document. Origin of text sources and materials used are described for each group taxa at the beginning of each chapter. The vulnerable species are grouped taxonomically into marine mammals, seabirds, sea turtles, chondrichthyans (sharks, rays and chimaeras), sponges and corals.

The guide with the species descriptions has been developed to provide observers on board fishing vessels and fishers with identification assistance and general information about vulnerable species potentially caught as bycatch. Complementary to this, is the document *Monitoring the incidental catch of vulnerable species in Mediterranean and Black Sea fisheries - methodology for data collection* prepared by FAO/GFCM<sup>1</sup> with the inputs provided by partner organizations.

Each species description contains photographs, illustrations and narrative descriptions to highlight important anatomical structures and features of a particular species. Considering the difficulties of identification of some coral and sponge species living in the Mediterranean, these taxa groups have been grouped into morphological groups to allow easier identification, although it is recommended they are identified at species level when possible.

For each species, there is a description of the main characteristics that can be used to identify the species (or for the case of sponges and corals, the morphological groups), together with its common name in several languages (English, Spanish, French and Arabic). Information is also provided if the species is protected under Appendix I (Endangered migratory species) and/or Appendix II (Migratory species conserved through Agreements) of the Convention on the Conservation of Migratory Species of Wild Animals (**CMS**); Appendix I (Species threatened with extinction) of the Convention on International Trade in Endangered Species of Wild Fauna and Flora (**CITES**); the Agreement on the Conservation of Cetaceans of the Black Sea, Mediterranean Sea and contiguous Atlantic area (**ACCOBAMS**); or under Annex II (List of Endangered or Threatened Species) or III (List of Species Whose Exploitation is Regulated) of the **SPA/ BD Protocol** (Specially Protected Areas and Biological Diversity in the Mediterranean) **of the Barcelona Convention**.

Additionally, it is provided if the species is included at any **GFCM** (General Fisheries Commission for the Mediterranean) recommendations on fisheries management measures for conservation of the species in the GFCM area as well as the management recommendations and resolutions adopted by **ICCAT** (International Commission for the Conservation of Atlantic Tunas) on bycatch in tuna and tuna-like fisheries.

Finally is given the conservation status following **IUCN** conservation categories in 2019.

<sup>1</sup> FAO. 2019. Monitoring the incidental catch of vulnerable species in Mediterranean and Black Sea fisheries: Methodology for data collection. FAO Fisheries and Aquaculture Technical Paper No. 640. Rome, FAO.

## Acronyms and abbreviations

**ACCOBAMS:** Agreement on the Conservation of Cetaceans of the Black Sea, Mediterranean Sea and contiguous Atlantic area

**SPA/BD Protocol:** Protocol of the Barcelona Convention concerning the Specially Protected Areas and Biological Diversity in the Mediterranean

**CITES:** Convention on International Trade in Endangered Species of Wild Fauna and Flora.

**CMS:** Convention on the Conservation of Migratory Species of Wild Animals.

**GFCM:** General Fisheries Commission for the Mediterranean.

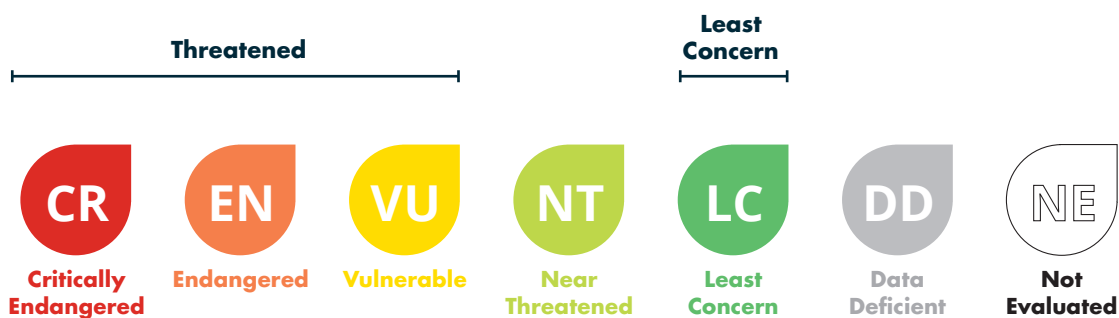
**ICCAT:** International Commission for the Conservation of Atlantic Tunas.

**Languages:** **EN** English **SP** Spanish **FR** French **AR** Arabic

In any case, when the information is not available, the cells are blank.

### Key to IUCN Red List category symbols

For each species sheets, the IUCN categories relating to the conservation status both globally and Mediterranean level are reported, according to the following scheme:



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MARINE  
MAMMALS

SEABIRDS

SEA TURTLES

SHARKS  
RAYS  
CHIMAERAS

SPONGES

CORALS



# Marine Mammals



Twelve cetaceans species of two sub-orders and five families occur regularly in the Mediterranean and might have some interactions with fisheries (e.g. fish depredation, incidentally caught as bycatch). A few other species whose occurrence is rare are listed at the end of this section. Even if rare, *Sousa plumbea* has been included in this document as some individuals have been observed interacting with fisheries. One phocid (earless seal) occurs in the Eastern basin mainly (few sightings are reported in the Western basin). All of these are of conservation concern.

## Source reference materials

ACCOBAMS, 2015. Teaching module for the conservation of cetaceans, Cetaceans -Identification of species occurring in the ACCOBAMS area. 46 pages

IUCN, 2012. Marine Mammals and Sea Turtles of the Mediterranean and Black Seas. Gland, Switzerland and Malaga, Spain: IUCN. 32 pages

Artwork by: Jessica Sanchez. Conservation status details are taken from the IUCN red list of threatened species database 2018.

For *Sousa plumbea* illustration from Artescienza-M.Würtz and Massimo Demma.

## MARINE MAMMAL CHECKLIST

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## CETACEANS

# Balaenopteridae



© Jessica Sanchez

### BALAENOPTERIDAE

## *Balaenoptera physalus*, Fin whale

EN Fin whale

SP Rorcual común

FR Rorqual commun

AR الحوت الشائع

EN

VU

ACCOBAMS

SPA/BD PROTOCOL: Annex II

CITES: Appendix I

CMS: Appendix I

GFCM: GFCM/36/2012/2

Global

Med

**Size:** Male: 18-20 m

Female: 20-22 m

New born: 6-6.5 m

**Head:** Triangular from above, narrow and pointed snout – 20-25% of body. A median ridge from the rostrum to the two blowholes.

**Body:** Slender and spindle shaped, dark grey on the back, sometimes brownish, white on the ventral side. A saddle-shaped chevron on the back in front of the dorsal fin. The shape of the dorsal fin and chevron are used in photo-identification. Characteristics: asymmetrical colouration on the head. The right jaw is light-coloured while the left is dark. Baleen plates, the inside of the mouth and the lower lip are also light-coloured on the right side.

**Dorsal fin:** Located posteriorly, never exceeds 60 cm in height.

**Pectoral fins:** Rather short

**Tail:** Relatively large (about ¼ the body length), upper side dark like the back, underside white, rimmed in dark grey. Rarely visible.

**Blow:** Vertical, narrow and very visible (4 - 5 m high), often audible at several hundred metres.

## Physeteridae



### PHYSETERIDAE

## *Physeter macrocephalus*, Sperm whale

EN Sperm whale

SP Cachalote

FR Grand cachalot

AR حوت العنبر



ACCOBAMS SPA/BD PROTOCOL: Annex II CITES: Appendix I CMS: Appendix I GFCM: GFCM/36/2012/2 Global Med

Size: Male: 16-18 m	Female: 11-12 m	New born: 3.3-4.2 m
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**Head:** Square and massive, about 1/4 to 1/3 of total body length. Characteristic lower jaw: narrow and slim (0.5 x 3 m long), with 17-30 conical teeth, 10-20 cm long, on each side. No teeth on the upper jaw. Small eyes. A single S-shaped blowhole, in front of the head to the left.

**Body:** Squat and massive. Skin wrinkled, particularly in the posterior 2/3 of the body. Colouration from dark grey to brown, the skin around the mouth and the throat are often white, with lighter patches of variable size and shape on the belly.

**Dorsal fin:** A ridge, more or less marked, followed by 4-8 knobs decreasing in size towards the tail.

**Tail:** Triangular with a deep median notch. Sperm whales dive vertically with the head down and lift the tail out of the water, which is useful for photo-identification.

**Blow:** Characteristic blow, powerful and bushy, 5-7 m high, inclined by 45° forward and to the left.

# Ziphiidae



## ZIPHIIDAE

### *Ziphius cavirostris*, Cuvier's beaked whale

**EN** Cuvier's beaked whale    **SP** Zifio de Cuvier    **FR** Baleine de Cuvier    **AR** زيفيوس (حوت كوفبير المنقاري)

LC

DD

**ACCOBAMS**    **SPA/BD PROTOCOL:** Annex II    **CITES:** Appendix II    **CMS:** Appendix I    **GFCM:** GFCM/36/2012/2    **Global**    **Med**

<b>Size:</b> Male: up to 7.5 m	Female: up to 7 m	New born: 2 -2.7 m
--------------------------------	-------------------	--------------------

**Head:** Small relative to body. Receding forehead, nose slightly marked. Lower jaw exceeds the upper one. 2 large conical teeth, 7-8 cm long at the tip of the lower jaw in adult males, smaller in adult females, often embedded in the gums. 2 throat grooves forming an open V.

**Body:** Long and robust, relatively cylindrical. Colouration: relatively dark on the dorsal side from bluish grey to brown, lighter on the ventral side. In older specimens, the forehead and snout are white and the body is often strewn with whitish spots and linear scars caused by social interactions. Colouration is variable depending on location, age and sex. Lighter-coloured scars and spots on the ventral side and flanks.

**Dorsal fin:** Small (less than 40 cm), sickle-shaped to triangular, located in the posterior 2/3<sup>rd</sup> of the body.

**Pectoral fins:** Short and oval.

**Tail:** Wide with a shallow or absent median notch.

**Blow:** Very inconspicuous, oriented slightly forward and to the left.

Note: Can be confused with other beaked whales (*Mesoplodon* spp.) which are very rare. In the event that species identification is not possible, try to take a good photo from the lateral side of the head.

## Delphinidae



### DELPHINIDAE

## *Orcinus orca*, Killer whale

EN Killer whale

SP Orca

FR Orque, épaulard

AR أركة (الحوث القاتل)



ACCOBAMS

SPA/BD PROTOCOL: Annex II

CITES: Appendix II

CMS: Appendix II

GFCM: GFCM/36/2012/2

Global

Med

<b>Size:</b> Male: 8.5 - 9.8 m	Female: 6-7 m	New born: around 2 m
--------------------------------	---------------	----------------------

**Head:** Rounded and bulky, with a well-marked melon and diminutive snout. 10 to 12 conical teeth, 4-8 cm long on either side of both jaws.

**Body:** Heavy and robust. Colouration: characteristic, black with an oval spot behind the eye, a lighter spot (saddle) behind the dorsal fin and a white area from the lower jaw to the underside of tail, widening in the genital region. This white genital area is long and narrow in males and wide and almost rounded in females. The shape of the saddle and the post-ocular spot is used in photo-identification.

**Dorsal fin:** Major sexual dimorphism: in adult males, it is triangular and may reach 2 m in height; in females and young, it is sickle-shaped and less than 80 cm in height.

**Pectoral fins:** Very large, wide and rounded, paddle-shaped, and black.

**Tail:** Black on top, white below, with a well-marked notch.

**Blow:** Low and bushy



#### DELPHINIDAE

### *Globicephala melas*, Long-finned pilot whale

**EN** Long-finned pilot whale

**SP** Calderón común

**FR** Globicéphale noir, dauphin pilote

**AR** كروي الرأس الشائع (الحوث القائد)

LC

DD

**ACCOBAMS**

**SPA/BD PROTOCOL:** Annex II

**CITES:** Appendix II

**CMS:** No listed

**GFCM:** GFCM/36/2012/2

**Global**

**Med**

**Size:** Male: 5.5-6.2 m

Female: 4.5-5.5 m

New born: 1.7-1.8 m

**Head:** Large and round. Rounded, globoid melon, increasingly so with age. Diminutive snout. 8-13 pairs of conical teeth about 5 cm long in both upper and lower jaws.

**Body:** Long and relatively slim, thicker anteriorly. Colouration: Black and may be brownish with a white anchor-shaped spot under the throat and belly. Calves are grey.

**Dorsal fin:** Low and with a wide base (about twice its height), thick and relatively rounded, located mid-body. In old and larger males, dorsal fin is located anteriorly. Allows easy identification of the species.

**Pectoral fins:** Very long and slender, curving posteriorly.

**Tail:** Marked median notch, thick keel.

**Blow:** At times visible in calm weather. Powerful, may exceed 1 m in height.



## DELPHINIDAE

***Grampus griseus*, Risso's dolphin**

EN Risso's dolphin

SP Calderón gris, delfín de Risso

FR Dauphin de Risso

AR دلفين ريسو (غرامبوس)

LC

DD

ACCOBAMS SPA/BD PROTOCOL: Annex II CITES: Appendix II CMS: Appendix II GFCM: GFCM/36/2012/2 Global Med

<b>Size:</b> Adult: 3 – 4 m	New born: 1.2 – 1.5 m
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**Head:** Massive, with a globoid forehead descending abruptly towards the mouth. The melon is divided into two hemispheres by a shallow longitudinal groove, only visible in good observational conditions. The corner of the mouth slopes up at 45° towards the eye. 3-7 pairs of conical teeth in the lower jaw, no teeth in the upper jaw. No snout.

**Body:** Massive and powerful. Colouration: dark grey. A white, heart-shaped pattern is present under the throat and extends backwards towards the genital region. Calves are light grey and darken with time. Characteristic: the body is covered progressively with linear whitish scars caused by social interactions, lasting several years. Eventually, the whole body turns light grey-whitish in older individuals. These scars are useful for photo-identification of individuals.

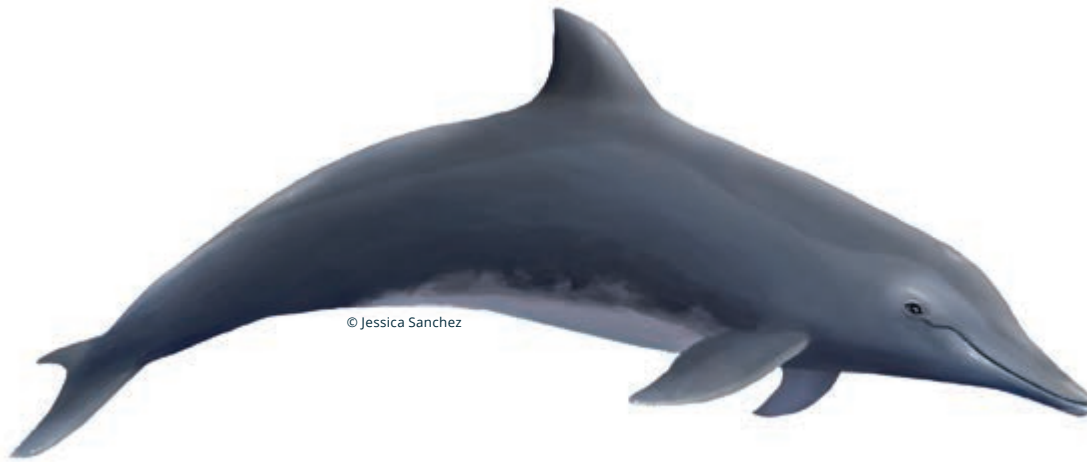
**Dorsal fin:** Long and pointed, sickle-shaped, immediately recognisable mainly by its whitish scars.

**Pectoral fins:** Long and pointed, sickle-shaped.

**Tail:** Wide and very indented.

**Blow:** Inconspicuous, bushy, 0.5-1 m, leaning slightly towards the front.





## DELPHINIDAE

***Steno bredanensis*, Rough-toothed dolphin****EN** Rough-toothed dolphin**SP** Delfín de hocico estrecho**FR** Sténo**AR** الدلفين ذو الأسنان الخشنة (ستينو)**ACCOBAMS****SPA/BD PROTOCOL:** Annex II**CITES:** Appendix II**CMS:** Not listed**GFCM:** GFCM/36/2012/2**Global****Med****Size:** Adult: 2.2 – 2.5 m

New born: About 1m

**Head:** Rather peculiar, slender, tapering towards the snout, which is long and narrow. No crease between the snout and the low melon. Large and prominent eyes. 19-28 conical teeth, corrugated, with vertical grooves, on either side of both jaws.

**Body:** Robust in front of the dorsal fin, more slender posteriorly. Colouration: dark bluish grey on top, white/pinkish to greyish at the tip of snout and belly. Large light-coloured patches on the sides, more numerous in older individuals.

**Dorsal fin:** Located mid-body with a large base and a pointed tip, with the trailing edge at times almost vertical.

**Pectoral fins:** Long and relatively large at the base and pointed at the tips.

**Tail:** Wide with a well-marked median notch.

**DELPHINIDAE*****Tursiops truncatus*, Common bottlenose dolphin****EN** Common bottlenose dolphin**SP** Delfin mulár**FR** Grand dauphin, dauphin souffleur**AR** الدلفين الكبير (ذو الانف الزجاجي)**ACCOBAMS SPA/BD PROTOCOL:** Annex II **CITES:** Appendix II **CMS:** Appendix II **GFCM:** GFCM/36/2012/2**Global****Med**

<b>Size:</b> Male: 2.5 - 3.9 m	Female: 2.2-3.2	New born: 1-1.2 m (Black Sea animals are smaller)
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**Head:** Snout rather short and thick, rounded melon. 18-26 conical teeth, 1-3 cm long on either side of both jaws, often worn down in older individuals.

**Body:** Squat and massive. Anterior portion broad and well developed. Its powerful frame distinguishes it from other dolphins in the Mediterranean. Colouration: dark grey back, at times bluish or brownish grey, with lighter sides, the belly white, light grey or pinkish. Body size and colouration in bottlenose dolphins vary greatly amongst different populations.

**Dorsal fin:** Prominent and sickle-shaped, wide at the base, the tip occasionally claw-shaped. Located mid-body.

**Pectoral fins:** Medium-sized, dark and slim, wide at the base, pointed tips.

**Tail:** Concave with a well-marked median notch.

**Blow:** Audible in calm conditions.

Note: The **Black Sea Bottlenose Dolphin**, *Tursiops truncatus ponticus* is listed as Endangered in the IUCN Red list.



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**DELPHINIDAE**

***Stenella coeruleoalba*, Striped dolphin**

**EN** Striped dolphin

**SP** Delfín listado

**FR** Dauphin bleu et blanc

**AR** الدلفين الأزرق والأبيض (المخطط)



**ACCOBAMS**

**SPA/BD PROTOCOL:** Annex II

**CITES:** Appendix II

**CMS:** Appendix II

**GFCM:** GFCM/36/2012/2

**Global**

**Med**

<b>Size:</b> Adult: 1.8-2.6 m	New born: 85-95 cm
-------------------------------	--------------------

**Head:** Long beak clearly separated from melon. 35-50 pairs of sharp and conical teeth in each jaw.

**Body:** Slender and spindle shaped. Complex colouration: the dorsal side is dark grey or black with blue shades, the ventral side and flanks are white. Characteristic: a diagonal, light-coloured chevron extending from the thoracic field towards the base of the dorsal fin. Four dark stripes start at the eye: two of these, one wide and dark and the other narrower, run in parallel to the flipper; a lighter stripe extends towards the genital region where it becomes wider; the fourth stops on the side just behind the flipper. Several variants of the typical colouration can be observed.

**Dorsal fin:** High and curved, located mid-body, dark-coloured, as per dorsal surfaces.

**Pectoral fins:** Short and sickle-shaped, with pointed tips. Darker above than below.

**Tail:** Very concave, with a well-marked median notch.



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**DELPHINIDAE*****Delphinus delphis*, Short-beaked common dolphin****EN** Short-beaked  
common dolphin**SP** Delfín común oceánico**FR** Dauphin commun**AR** الدلفين الشائع**ACCOBAMS SPA/BD PROTOCOL:** Annex II **CITES:** Appendix II **CMS:** Appendix II **GFCM:** GFCM/36/2012/2**Global****Med**

<b>Size:</b> Male: 2.0-2.6 m	Female: 2.4 m	New born: 80-90 cm (Black Sea animals are smaller)
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**Head:** Beak clearly separated from melon. 45-55 pairs of sharp conical teeth in each jaw.**Body:** Slender and spindle shaped. Complex colouration: the dorsal side is dark grey or black with blue shades, the ventral side and flanks are white. Characteristic: a diagonal, cream-coloured chevron extending from the thoracic area towards the base of the dorsal fin. Four dark stripes start at the eye: two of these, one wide and dark and the other narrower, run in parallel to the flipper; a lighter stripe extends towards the genital region where it becomes wider; the fourth stops on the side just behind the flipper. Several variants of the typical colouration can be observed.**Dorsal fin:** High and curved, located mid-body, dark-coloured but the middle part can be pale as per the figure above.**Pectoral fins:** Short and sickle-shaped, with pointed tips. Darker above than below.**Tail:** Very concave, with a well-marked median notch.Note: The **Black Sea Common Dolphin**, *Delphinus delphis ponticus* is listed as Vulnerable in the IUCN Red list.

# Phocoenidae



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## PHOCOENIDAE

### *Phocoena phocoena*, Harbour porpoise

EN Harbour porpoise

SP Marsopa común

FR Marsouin commun

AR خنزير البحر الشائع



ACCOBAMS

SPA/BD PROTOCOL: Annex II

CITES: Appendix II

CMS: No listed

GFCM: GFCM/36/2012/2

Global

Med

**Size:** 2m, females slightly larger than male

New born: 50-70 cm (Black Sea porpoise are smaller)

**Head:** Small, no beak. Corners of mouth point up towards the eye. 19-28 small spatulate teeth on either side of jaws.

**Body:** Robust. Colouration: little contrast; the dorsal side is brownish-black, very dark grey or grey and the flanks and belly are light-coloured occasionally with a spotted area in between. A more or less evident black line extends from the corner of mouth to the insertion of flipper.

**Dorsal fin:** Triangular, not so high like delphinids, placed at mid-body.

**Pectoral fins:** Small, wide and sickle-shaped, slightly rounded, dark in colour. Occasionally small tubercles on the leading edge.

**Tail:** Marked median notch.

**Blow:** Inconspicuous.

Note: The **Black Sea Harbour Porpoise**, *Phocoena phocoena* ssp. *relicta*, is listed as Endangered (EN) in the IUCN Red list.

## SEALS

## Phocidae



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## PHOCIDAE

**Monachus monachus, Mediterranean monk seal**

EN Mediterranean monk seal

SP Foca monje

FR Phoque moine

AR الفقمّة الراهب المتوسطة

EN

CR

SPA/BD PROTOCOL: Annex II

CITES: Appendix I

CMS: Appendix I, II

GFCM: GFCM/35/2011/5

Global

Med

**Size:** Males are slightly larger than females. They can go up to 2,90m but in average for adult males: 251cm and 242cm for females.

New born: 100cm

**Head:** The head is rounded with a protruding muzzle.

**Body and flippers:** The fore and hind-flippers are inserted more laterally than in the eared seals. Their fore flipper is short and haired, with a small claw on each of five digits. Nails are present on both flippers and are reduced compared with other seals. Claws and hair with thin webbing connect the digits. The tail is short and wide.

They have four nipples, in contrast with most pinnipeds which have only two. Adults exhibit marked sexual dimorphism in pelage colour.

**Other:** Only seal occurring in the region. However, in the Black Sea, there have been reports of some pinnipeds, such as California sea lion *Zalophus californianus*, which escaped from the captivity. Even if in very rare occasions, some individuals of harbour seal (*Phoca vitulina*) and hooded seal (*Cystophora cristata*) were reported in some areas of the Mediterranean sea.



## RARE/VAGRANT SPECIES

These species have been reported from the Mediterranean Sea but are considered rare or vagrant:



### *Balaenoptera acutorostrata*, Common minke whale

**EN** Common minke whale      **SP** Rorcual aliblanco, ballena de minke común      **FR** Baleine de Minke      **AR** الحوت القزم (حوت منكي)

LC

**ACCOBAMS**    **SPA/BD PROTOCOL:** Annex II    **CITES:** Appendix I    **CMS:** No listed    **GFCM:** GFCM/36/2012/2    **Global**



### *Balaenoptera borealis*, Sei whale

**EN** Sei whale      **SP** Rorcual norteño      **FR** Baleinoptère de Rudolphi, Rorqual boréal      **AR** الحوت الشمالي

EN

**ACCOBAMS**    **SPA/BD PROTOCOL:** Annex II    **CITES:** Appendix I    **CMS:** Appendix I    **GFCM:** GFCM/36/2012/2    **Global**



### *Pseudorca crassindens*, False killer whale

**EN** False killer whale      **SP** Falsa orca u orca negra      **FR** Fausse orque, faux épaulard      **AR** أركة مزيفة

NT

**ACCOBAMS**    **SPA/BD PROTOCOL:** Annex II    **CITES:** Appendix II    **CMS:** Not listed    **GFCM:** GFCM/36/2012/2    **Global**



## *Megaptera novaeangliae*, Humpback whale

**EN** Humpback whale    **SP** Ballena jorobada    **FR** Baleine à bosse, jubarte ou rorqual à bosse    **AR** الحوت الاحدب

LC

**ACCOBAMS**    **SPA/BD PROTOCOL:** Annex II    **CITES:** Appendix I    **CMS:** Appendix I    **GFCM:** GFCM/36/2012/2    **Global**



## *Sousa plumbea*, Indian Ocean humpback dolphin

**EN** Indian Ocean humpback dolphin    **SP** Delfín giboso índico    **FR** Dauphin à bosse de l'océan Indien    **AR** الدلفين الاحدب

EN

**ACCOBAMS**    **SPA/BD PROTOCOL:** Not listed    **CITES:** Appendix I    **CMS:** Not listed    **GFCM:** GFCM/36/2012/2    **Global**



## *Eubalaena glacialis*, North Atlantic right whale

**EN** North Atlantic right whale    **SP** Ballena franca glacial o ballena de los vascos    **FR** baleine franche de l'Atlantique nord    **AR** الحوت الحقيقي

EN

**ACCOBAMS**    **SPA/BD PROTOCOL:** Annex II    **CITES:** Appendix I    **CMS:** Appendix I    **GFCM:** GFCM/36/2012/2    **Global**



## *Kogia sima*, Dwarf Sperm Whale

**EN** Dwarf Sperm Whale    **SP** Cachalote enano    **FR** Cachalot nain    **AR** حوت العنبر القزم

DD

**ACCOBAMS**    **SPA/BD PROTOCOL:** Annex II    **CITES:** Appendix II    **CMS:** Not listed    **GFCM:** GFCM/36/2012/2    **Global**



## *Mesoplodon densirostris*, Blainville's beaked whale

**EN** Blainville's beaked whale    **SP** Zifio de Blainville    **FR** Baleine à bec de Blainville    **AR** حوت بلانيفيل المنقاري

DD

**ACCOBAMS**    **SPA/BD PROTOCOL:** Annex II    **CITES:** Appendix II    **CMS:** Not listed    **GFCM:** GFCM/36/2012/2    **Global**





# Seabirds



Twenty-seven species of seven families are listed here as seabird taxa typical of the Mediterranean sea, which may either be encountered as bycatch in Mediterranean fisheries or could follow fishing vessels (at different ranges).

## Source materials and references

Text and artwork modified from:

Lars Svensson (Author), Killian Mullarney (Illustrator), Dan Zetterström (Illustrator), Peter J. Grant (Contributor), David A. Christie. 2011. Field Guide to Birds of Britain and Europe. Publisher HarperCollins, 448 pages.

Bergier, P.; Thévenot, M.; Rihane, A.; El Agbani, M.A. & Qninba, A. 2017. Liste des oiseaux du Maroc. Mise à jour mai 2017 (rév. 4.0). Go-South Bulletin 14 : 43-68.

del Hoyo, J. and Collar, N. J. (2014). HBW and BirdLife International Illustrated Checklist of the Birds of the World. Lynx Edicions and BirdLife International, Barcelona, Spain and Cambridge, UK.

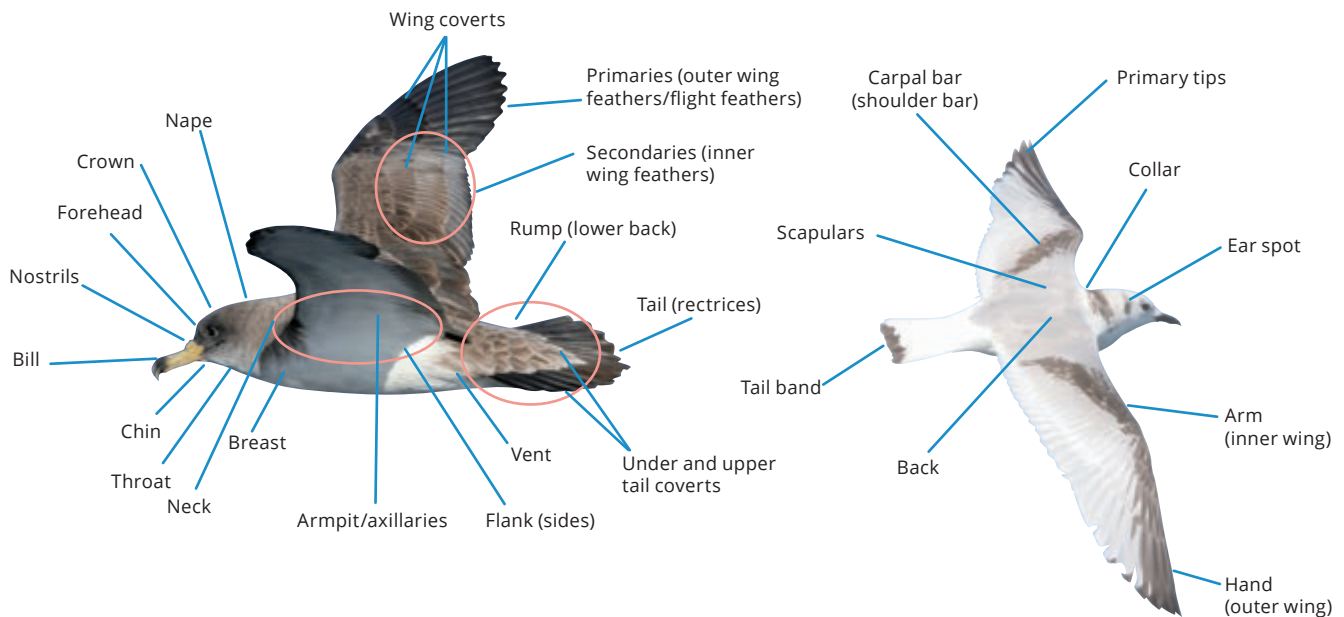
Topography pictures by José Manuel Arcos.

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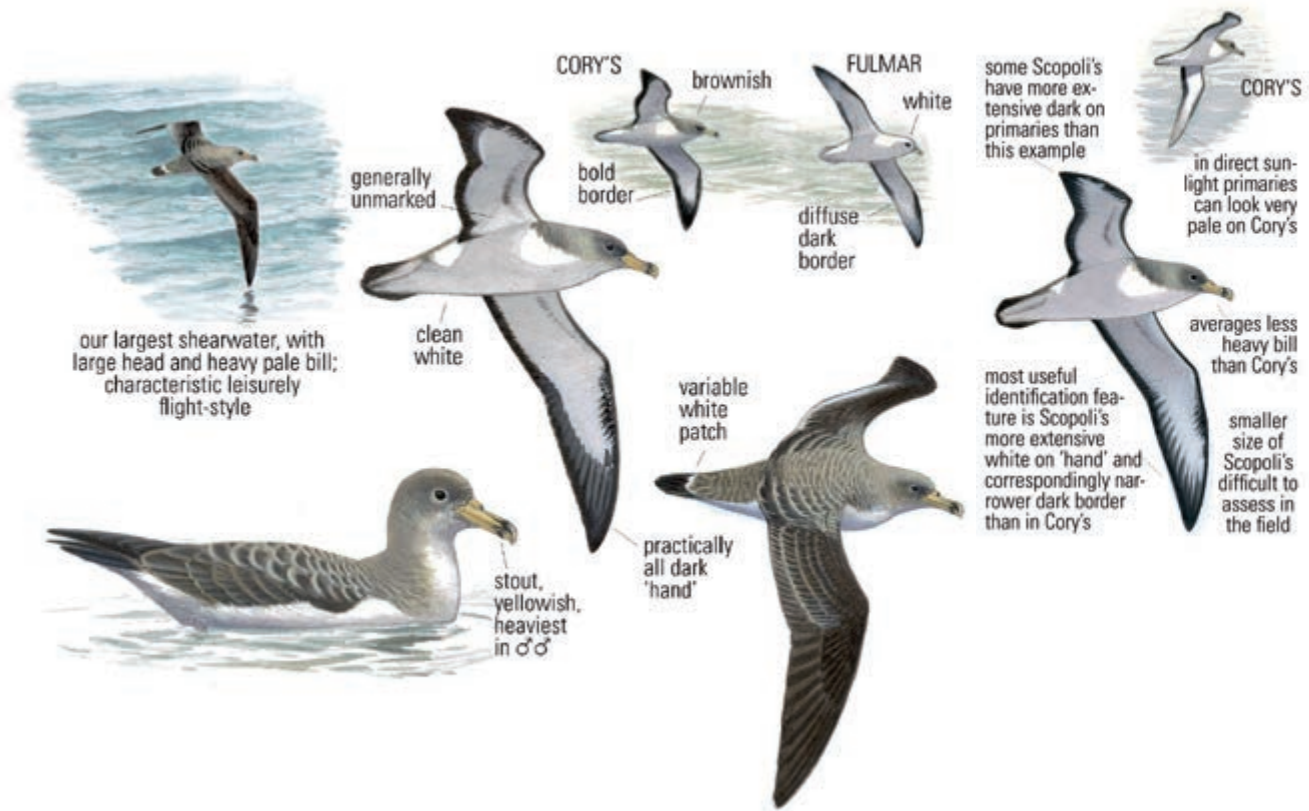
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## Seabirds 'topography'





# Procellariidae



## PROCELLARIIDAE

### *Calonectris diomedea*, Scopoli's shearwater

EN Scopoli's shearwater

SP Pardela cenicienta mediterránea

FR Puffin de Scopoli AR جلم ماء سكربولي

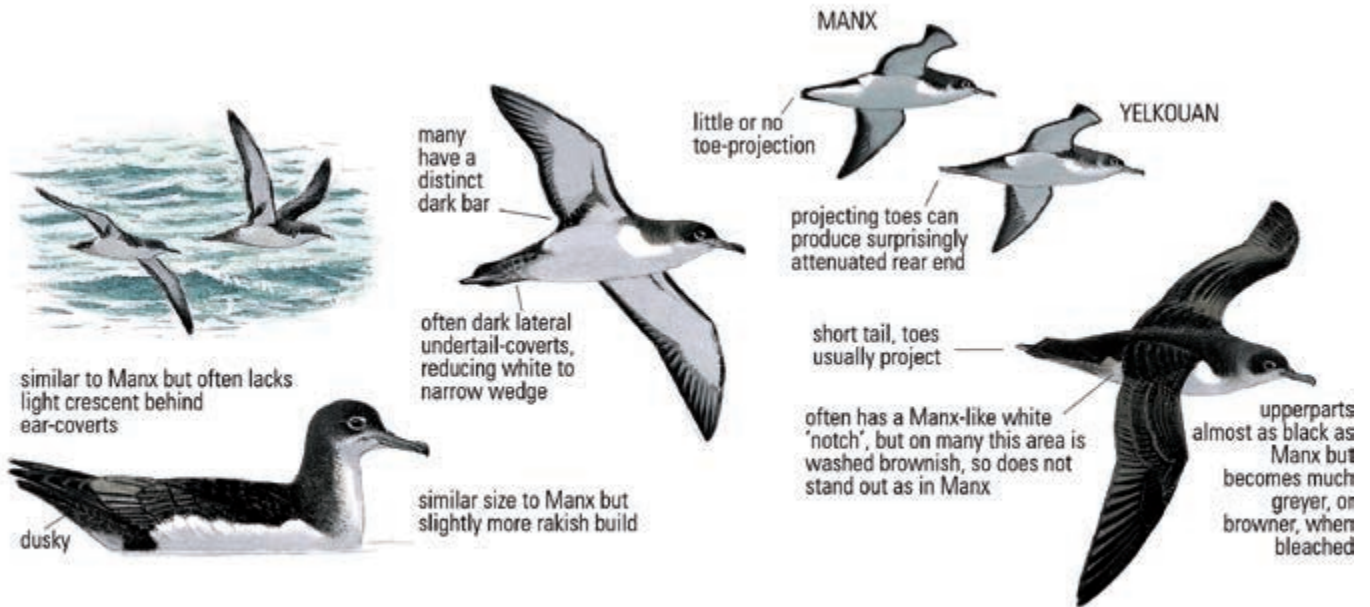
LC

SPA/BD PROTOCOL: Annex II CITES: NA CMS: Not listed GFCM: GFCM/35/2011/3 Global

**Wingspan:** 112 – 122 cm

**Description:** Roughly the size of a Lesser Black-backed Gull, characterised by long, flexible wings which at all times are held slightly or distinctly bowed. Brownish-grey above 'hand' (outer wing) somewhat darker, with diffusely paler upper tail-coverts (normally seen only at close range). White below, except for dark primaries (outer wing feathers) and secondaries (inner wing feathers) and tail; pale yellow bill with dark near tip; in good light, pale bill can be seen at long range. Tube-shaped nostrils accompanied by large external growths at the start of the bill.

**Flight:** Flies with long glides close to the water surface, relieved by 3-4 (rarely up to 6-7) relaxed, flexible beats of the bowed wings. May ascend several meters above sea level with strong winds.



**PROCELLARIIDAE**

***Puffinus yelkouan*, Yelkouan shearwater**

**EN** Yelkouan shearwater    **SP** Pardela mediterránea    **FR** Puffin yelkouan    **AR** جلم ماء متوسطي



**SPA/BD PROTOCOL:** Annex II    **CITES:** NA    **CMS:** Not listed    **GFCM:** GFCM/35/2011/3    **Global**

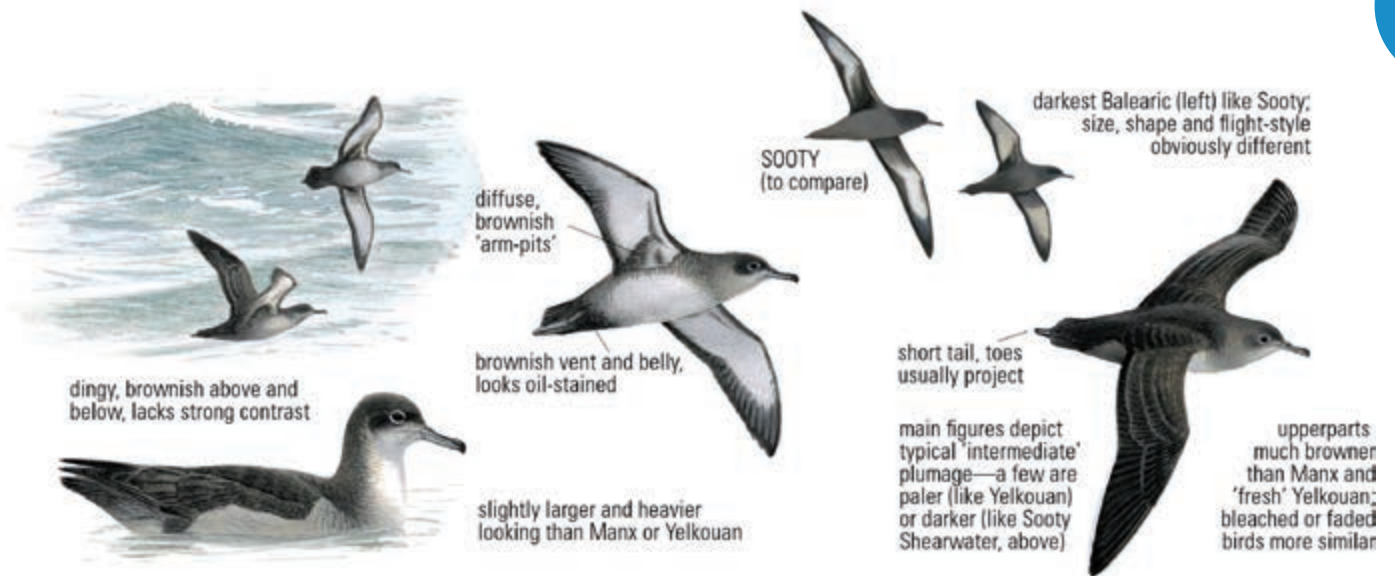
**Wingspan:** 70 - 84 cm

**Description:** Contrastingly dark upper-parts and white under-parts. Bill relatively thin, usually showing a pronounced angle with steep forehead.

Upper-parts brown-grey (though may look blackish in overcast weather); feet protrude beyond tail; straight division on head and neck between dark and pale. Sometimes with a hint of a paler eye-ring. Flanks (sides) white, or with a thin dark line at most; underwing white, with dark trailing edge (rear edge), and a diagonal, neat dark bar on the armpits (axillaries), sometimes missing. Tube-shaped nostrils accompanied by external growths at the start of the bill, though not particularly obvious.

**Flight:** Alternates fast wingbeats with glides, close to the water surface. May ascend several meters above sea level with strong winds. Often gathers in large flocks.





## PROCELLARIIDAE

### *Puffinus mauretanicus*, Balearic shearwater

EN Balearic shearwater

SP Pardela balear

FR Puffin des Baléares

AR جلم ماء موريطاني



SPA/BD PROTOCOL: Annex II

CITES: NA

CMS: Appendix I

GFCM: GFCM/35/2011/3

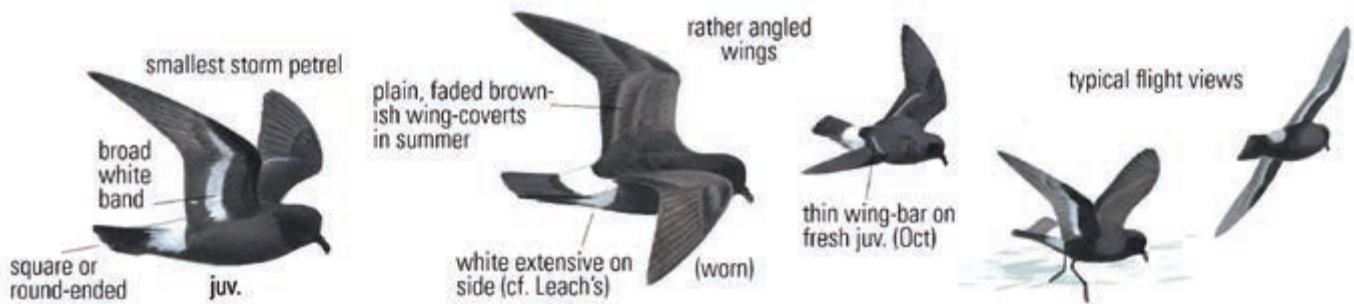
Global

**Wingspan:** 78 – 90 cm

**Description:** Slightly larger than Yelkouan shearwater, and often appearing pot-bellied and heavy. Short tail makes feet protrude beyond tail. Greyish-brown above and variably dirty brownish-white below, lacking sharp contrast between upper and underparts. Underwing lacks contrasts, always with dark, dirty armpits (axillaries). Bill stronger than in Yelkouan shearwater, showing little angle with sloping forehead. Undertail-coverts, sides of lower back and side flanks invariably dusky. Darkest birds invite confusion with Sooty Shearwater *Ardenna grisea*, which can occur as a vagrant in the Mediterranean, but the latter is slender and slightly larger, with longer and narrower wings. Tube-shaped nostrils accompanied by external growths at the start of the bill, though not particularly obvious.

**Flight:** Alternates fast wingbeats (not as fast as the Yelkouan shearwater) with glides, close to the water surface. May ascend several meters above sea level with strong winds. Often gathers in large flocks.

# Hydrobatidae



## HYDROBATIDAE

### *Hydrobates pelagicus*, European storm petrel

EN European storm petrel    SP Paíño europeo    FR Océanite tempête    AR NA



SPA/BD PROTOCOL: Annex II    CITES: NA    CMS: Not listed    GFCM: GFCM/35/2011/3    Global

**Wingspan:** 37 – 41 cm

**Description:** The smallest storm petrel in European waters, and with more fluttering and ‘busier’ flight than its relatives (which only occur as vagrants in the Mediterranean). Overall dark, with white rump (lower back) and underwing bar. Nostrils accompanied by large external growths at the start of the bill.

**Flight:** Erratic, fluttering, and always close to the water surface.

# Sulidae



## SULIDAE

### *Morus bassanus*, Northern gannet

EN Northern gannet SP Alcatraz atlántico FR Fou de Bassan AR أطيش شمالي

LC

SPA/BD PROTOCOL: Not listed CITES: NA CMS: Not listed GFCM: Not listed Global

**Wingspan:** 170 – 192 cm

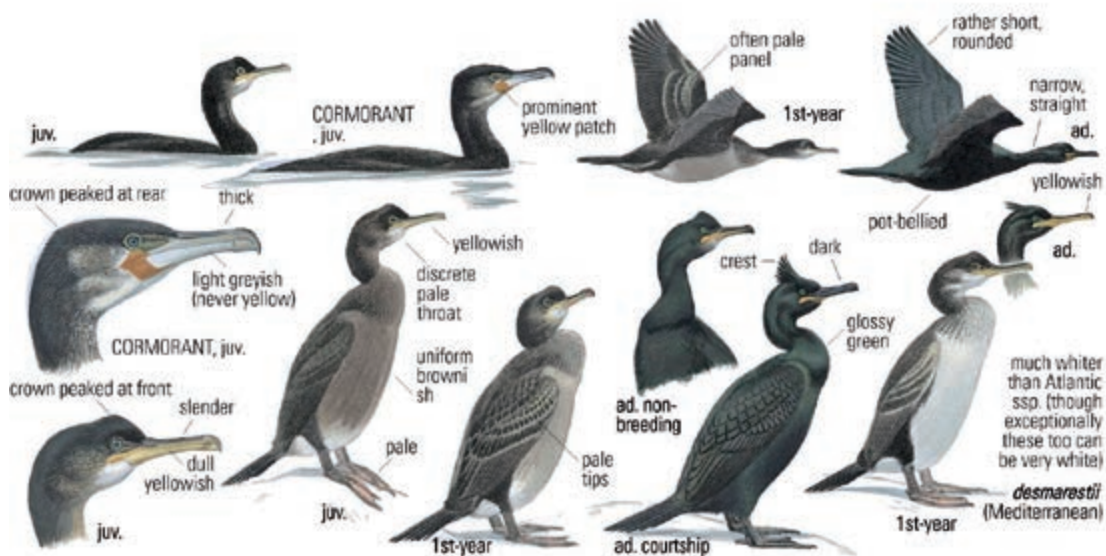
**Description:** Considerably large (almost 2 m wingspan) with long, narrow wings and characteristic flight. Compared to shearwaters, the Northern gannet is much bigger and has a more projecting, wedge-shaped tail and longer head/neck. Wings held straight in gliding flight, gives the impression of a “cross” at distance.

**Adult:** White, with head tinged yellow and black wing-tips.

**Juvenile:** Plumage wholly grey-brown except for whitish upper tail feathers. At close range, entire plumage appears finely spotted white. Acquires progressive white with age, starting on head, wing coverts and underparts. Adult plumage is reached on 5<sup>th</sup> year.

**Flight:** Quite fast, shallow and uniform wingbeats alternated with short glides. In very windy conditions inclined to shear like a shearwater and, especially in the case of immatures, may be mistaken for one of the large shearwater species, such as Scopoli’s shearwater. Makes stunning steep, diagonal dives for fish from height of 10-40 m, wings thrown back just prior to striking surface.

## Phalacrocoracidae



### PHALACROCORACIDAE

## *Gulosus aristotelis desmarestii*, European shag (Mediterranean sub-species)

EN European shag

SP Cormorán  
moñudo

FR Cormoran huppé  
(de Méditerranée)

AR غاق أرسطو



SPA/BD PROTOCOL: Annex II

CITES: NA

CMS: Not listed

GFCM: GFCM/35/2011/3

Global

Wingspan: 95 – 110 cm

**Description:** Smaller and slimmer than the Great cormorant, with thinner neck, smaller, more rounded head and thinner bill.

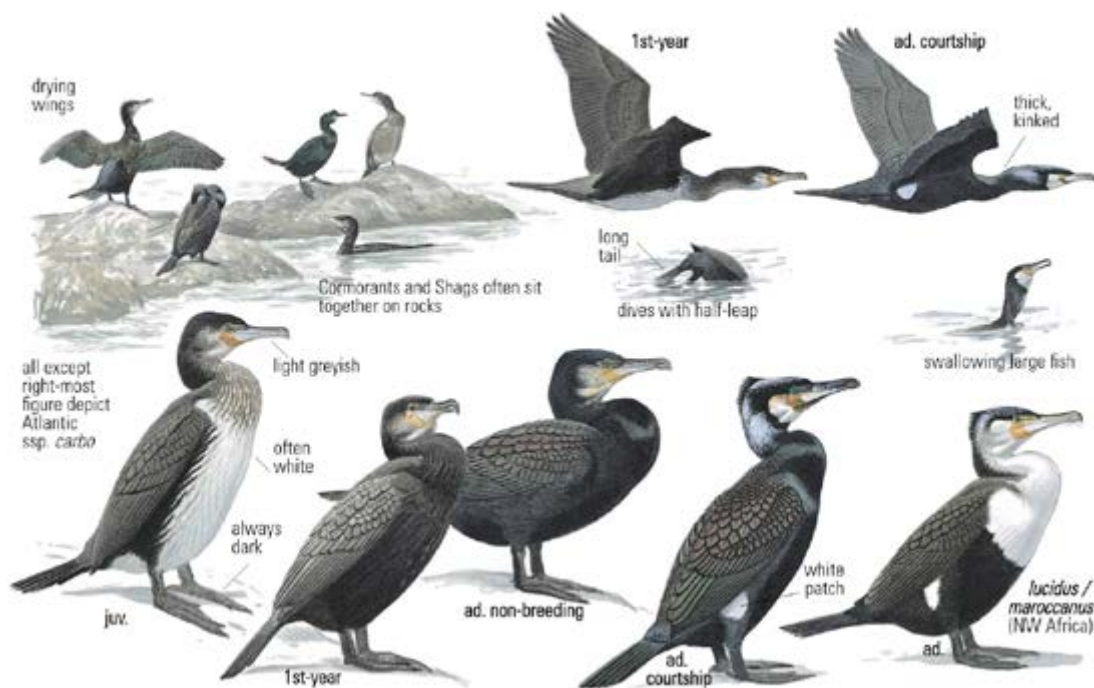
**Adult breeding:** Black plumage with green gloss, with wings tinged purplish, scaled black. Gape prominently yellow, contrasting with dark surround; otherwise bill darkish. During early breeding has upcurved, black crest of forehead, less marked than on Atlantic subspecies.

**Adult non-breeding:** Slightly duller, less glossy. Chin pale. Yellowish bill, particularly on lower mandible (bottom part of the bill).

**Juvenile:** Pale (sandy) brown above and almost white below, with extensive pale upper wing coverts. The Mediterranean subspecies is much paler and whiter compared to the Atlantic one (main difference). Immature: Gradually darker and glossier until adult plumage is reached.

**Flight:** Differs from Great Cormorant in flight with neck being straighter, outer wing slightly blunter, slender silhouette with potbelly, flight path lower (usually close to water), wingbeats somewhat more elastic and fast without alternated brief glides. Dives with a pronounced leap.

**Note:** *G. a. desmarestii* is the Mediterranean subspecies of *G. aristotelis*. IUCN Red list status refers to the species *G. aristotelis*.



**PHALACROCORACIDAE**

***Phalacrocorax carbo*, Great cormorant**

**EN** Great cormorant **SP** Cormorán grande **FR** Grand Cormoran **AR** غاق كبير



**SPA/BD PROTOCOL:** Not listed **CITES:** NA **CMS:** Not listed **GFCM:** Not listed

**Global**

**Wingspan:** 77- 94 cm

**Description:** Large with long, thick neck. Light-greyish strong bill, with white patch around the base. Dark legs. Long tail.

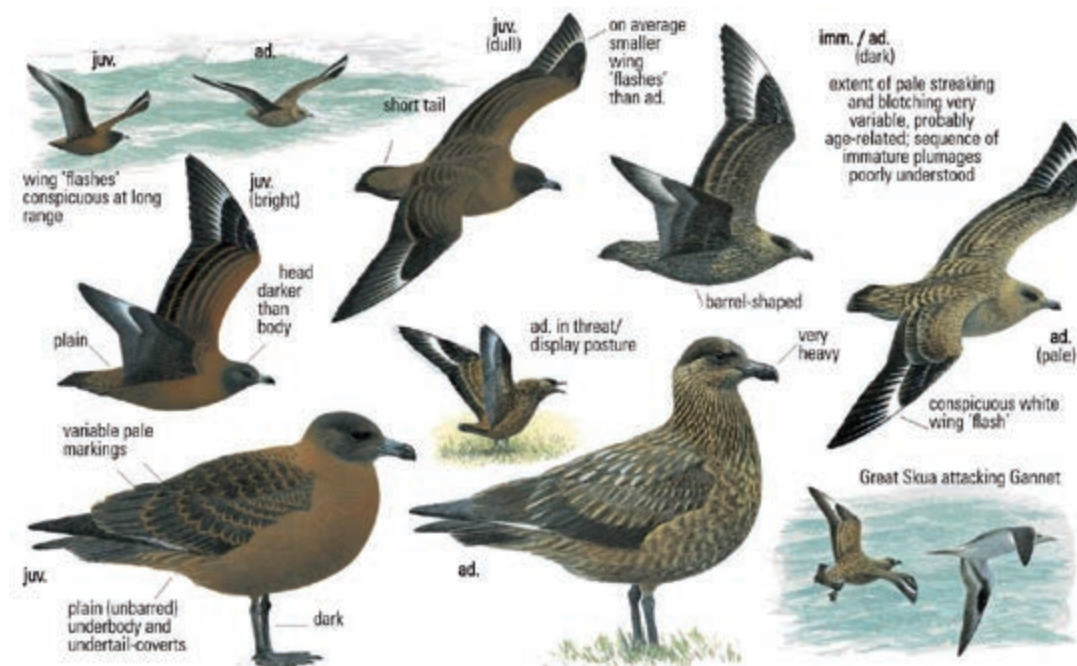
**Adult:** Black with bluish and some green gloss, wings tinged bronze and scaled black. Bare skin at base of lower mandible (bottom part of the bill) yellow, surrounded by white area. White femoral patch (hip patch) in early breeding season only. Crown and back part of the neck with some white feathers, usually lost in summer. In winter less glossy, and white on cheeks and throat becomes duller.

**Juvenile:** Dark brown above, underparts with varying amount of white. Immature: Gradually darker and glossier over two years until adult plumage is reached.

**Flight:** Alternates brief glides breaking-active flight with slightly shallower wingbeats. Neck outstretched, often flying at some height, generally in formation when in flock. Single birds often fly low over the water. Dives with half-leap, with head submerged in water.



## Stercorariidae



### STERCORARIIDAE

## *Stercorarius skua*, Great skua

**EN** Great skua    **SP** Págallo grande o skúa    **FR** Grand Labbe    **AR** NA

**SPA/BD PROTOCOL:** Not listed    **CITES:** NA    **CMS:** Not listed    **GFCM:** Not listed

LC

Global

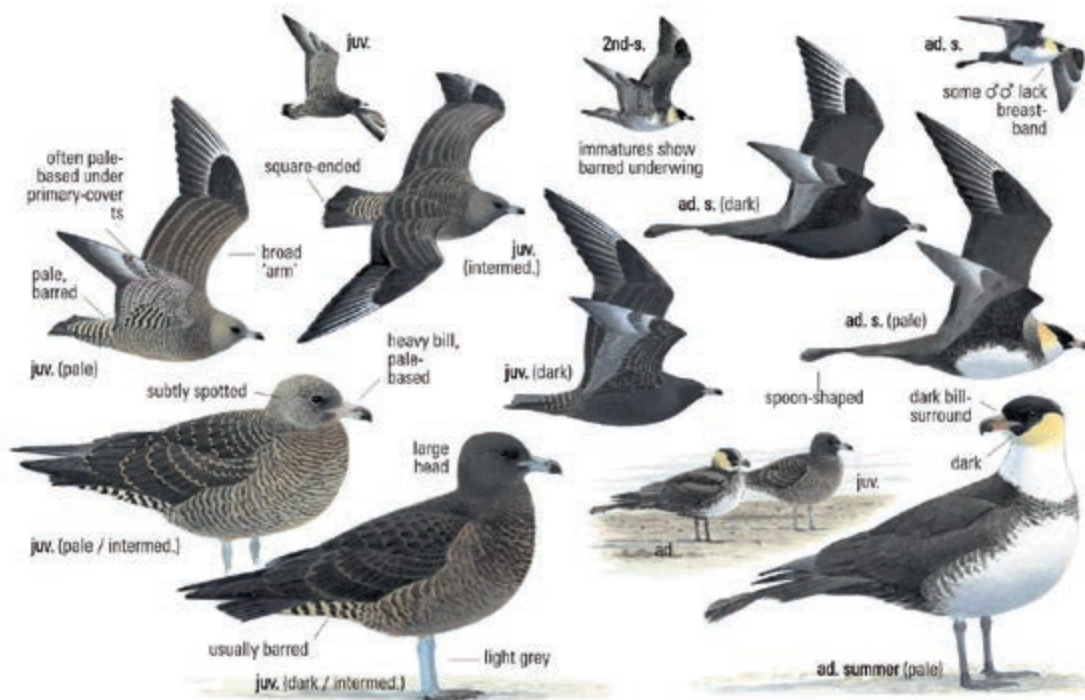
**Wingspan:** 125 -140 cm

**Description:** Large and heavy, roughly the size of a Yellow-legged gull, but bulkier, with broader wings and a shorter tail. In flight, all dark with large white patches on the base of the outer wing feathers, under and upper wings. Bill heavy (thick). Head and neck powerful. Central tail feathers broad, with rounded tips, not or only slightly projecting.

**Adult summer:** Streaked yellow-brown on the neck and upperparts.

**Juvenile:** More uniformly brown than the adult and tinted reddish-brown, especially below, and often less extensive white wing patches. Main risk of confusion is with young large gulls.

**Flight:** Glides high above the sea. Flight is steadier than young gulls. Wings beat more flexibly, with powerful beats. Often seen chasing gulls and other seabirds.



**STERCORARIIDAE**

***Stercorarius pomarinus*, Pomarine Jaeger**

EN Pomarine jaeger SP Págallo pomarino FR Labbe Pomarin AR كركر بوماريني (شمالی)



SPA/BD PROTOCOL: Not listed CITES: NA CMS: Not listed GFCM: Not listed Global

**Wingspan:** 115—125 cm

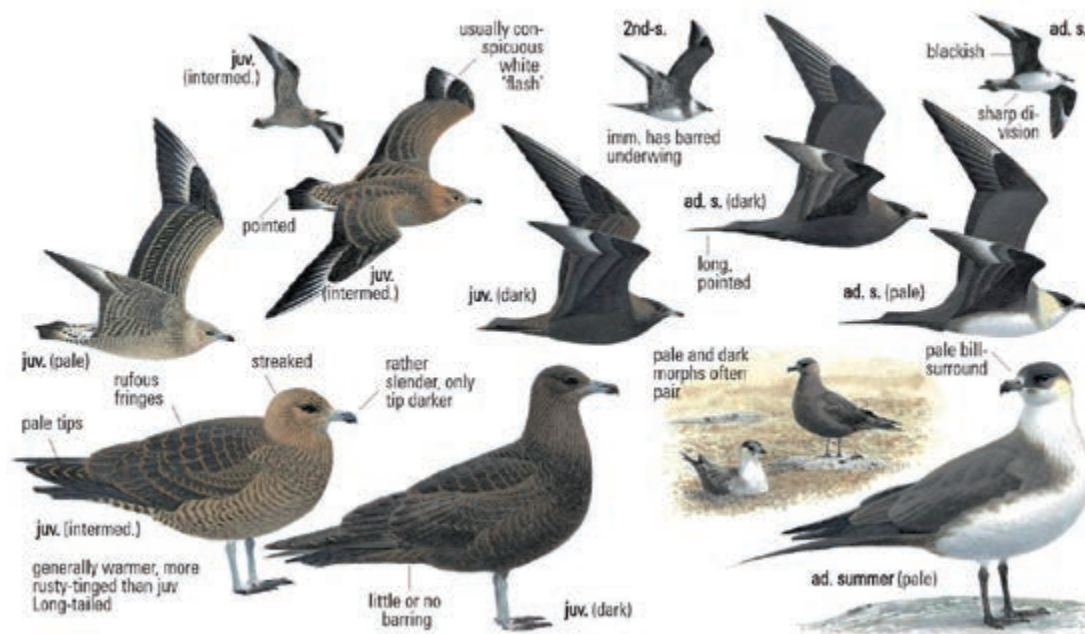
**Description:** Long-winged; ‘arm’ (inner wing) rather broad, wingtips pointed. In all plumages the light patches on the base of the primaries (outer wing feathers) on the under and upper wings are considerably less conspicuous than on Great skua.

**Adult summer:** Long and broad central tail feathers, shaped like a spoon, that project well beyond the rest of the tail. Has two morphs: dark (bird is all-dark except for wing patches) and light (more common – white underparts with dark breast-band and flanks (sides); dark cap).

**Adult winter:** Variable, similar to adult summer but less neat plumage, and with shorter (or lacking) central primary projection.

**Juvenile:** Varying from mid brown with brownish-yellowish bars, to uniform dark blackish-brown. Immatures show barred underwings, which become darker as the bird matures.

**Flight:** Flight steady, with regular wingbeats.



**STERCORARIIDAE**

***Stercorarius parasiticus*, Arctic jaeger**

**EN** Arctic jaeger    **SP** Págalo parásito    **FR** Labbe parasite    **AR** كركر قطبي



**SPA/BD PROTOCOL:** Not listed    **CITES:** NA    **CMS:** Not listed    **GFCM:** Not listed

**Global**

**Wingspan:** 108 - 118 cm

**Description:** Like a dark mid-sized gull with pointed wings, somewhat falcon-like. At closer range, light patches on base of primaries (outer wing feathers). Bill a little finer than on the Pomarine jaeger. Plumages similar to the Pomarine jaeger.

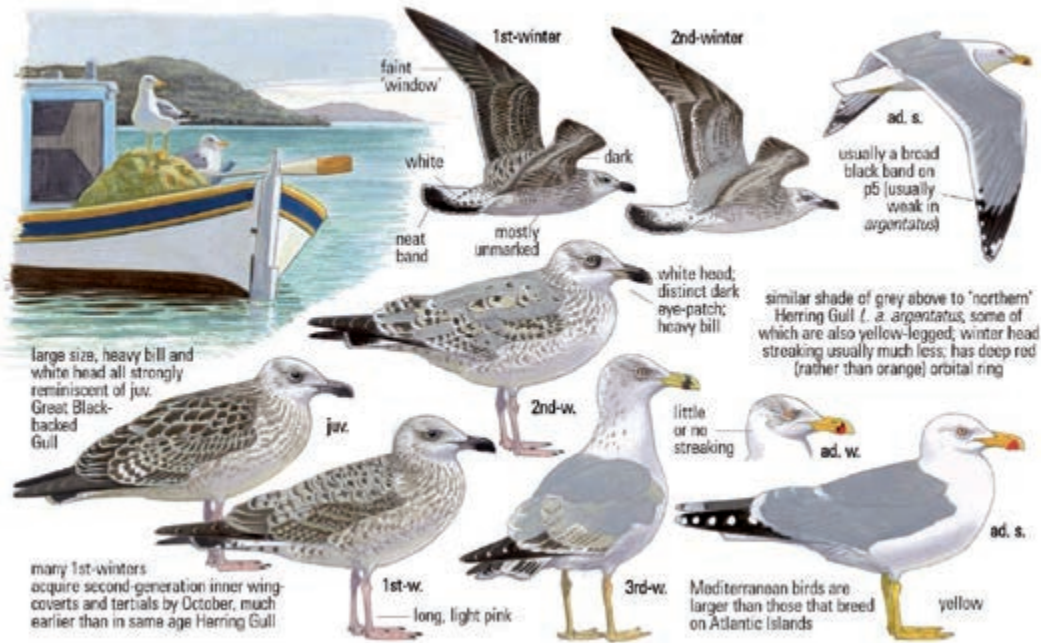
**Adult:** Pale morph shows dark cap less black than on the Pomarine jaeger, and bill surround is pale; if breast-band is present it is usually a dark ill-defined shade. Central tail feathers are pointed and extend well beyond the rest of the tail.

**Juvenile:** Has contrasting light head, and neck (finely striped discernible at close range) and often belly.

**Flight:** Fast, flexible flight, falcon-like. Different from Pomarine jaeger, which is heavier and more steady, like a large gull.



# Laridae



## LARIDAE

### *Larus michahellis*, Yellow-legged gull

EN Yellow-legged gull SP Gaviota patiamarilla FR Goéland Leucophée AR نورس ميكائيل



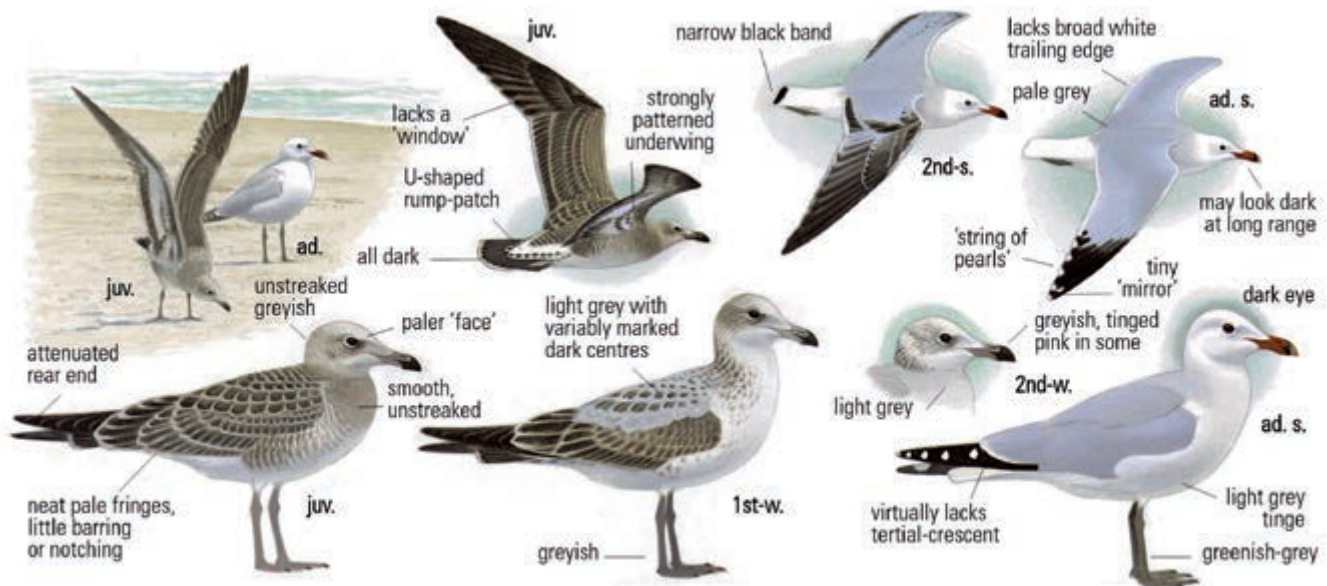
SPA/BD PROTOCOL: Not listed CITES: NA CMS: Not listed GFCM: Not listed Global

**Wingspan:** 120 – 140 cm

**Description:** The largest and most common gull in the region, it should be the reference against which to compare other large gulls.

**Adult:** Overall white with steel-grey mantle and upperwings. Primaries (outer wing feathers) largely black, with smaller white spots towards the wing tip; yellow bill with red spot in gonyx. Pale iris, reddish to orange eye-ring; bright yellow legs.

**Juvenile:** Overall brown appearance over a whitish background. Pale head with suggestion of a dark 'mask', all-black heavy bill, pale rump (lower back) and neat black tail-band, pale underparts, rather dark underwing feathers.



## *Larus audouinii*, Audouin's gull

EN Audouin's gull

SP Gaviota de Audouin

FR Goéland d'Audouin

AR نورس أودوين



SPA/BD PROTOCOL: Annex II

CITES: NA

CMS: Appendix I and Appendix II

GFCM: GFCM/35/2011/3

Global

**Wingspan:** 117 – 128 cm

**Description:** Slightly smaller and more elegant than the Yellow-legged Gull with a slender bill, more elongated, sloping forehead, and longer, narrower wings.

It can be distinguished from the Yellow-legged gull by its blood-red bill with black and yellow tip (sometimes hard to appreciate), very dark iris, dark grey or greenish legs (often visible in flight), much paler grey upper-wing with only a tiny white patch at the wing-tip and small white tips to the wing feathers (appears like a 'string of pearls').

**Juvenile:** Similar to a juvenile Yellow-legged Gull, but with a more strongly patterned underwing and dark wing feathers separated by a light grey section in the middle of the wing. It has a darkish rump (lower back) and white feathers on the upper tail that form a U-shape pattern; largely black tail-feathers with white tips; lower sides are usually uniformly dark; dark grey legs; grey bill with black tip. Wings become progressively grey as the bird matures. 2<sup>nd</sup> year (immature) - narrow black band develops at the end of the tail feathers and also inner wing feathers, progressively disappearing as the bird reaches the adult age.

**Flight:** More gliding compared to the Yellow-legged gull.



LARIDAE

**Larus armenicus, Armenian gull**

EN Armenian gull    SP Gaviota Armenia    FR Goéland d'Arménie    AR نورس أرمني



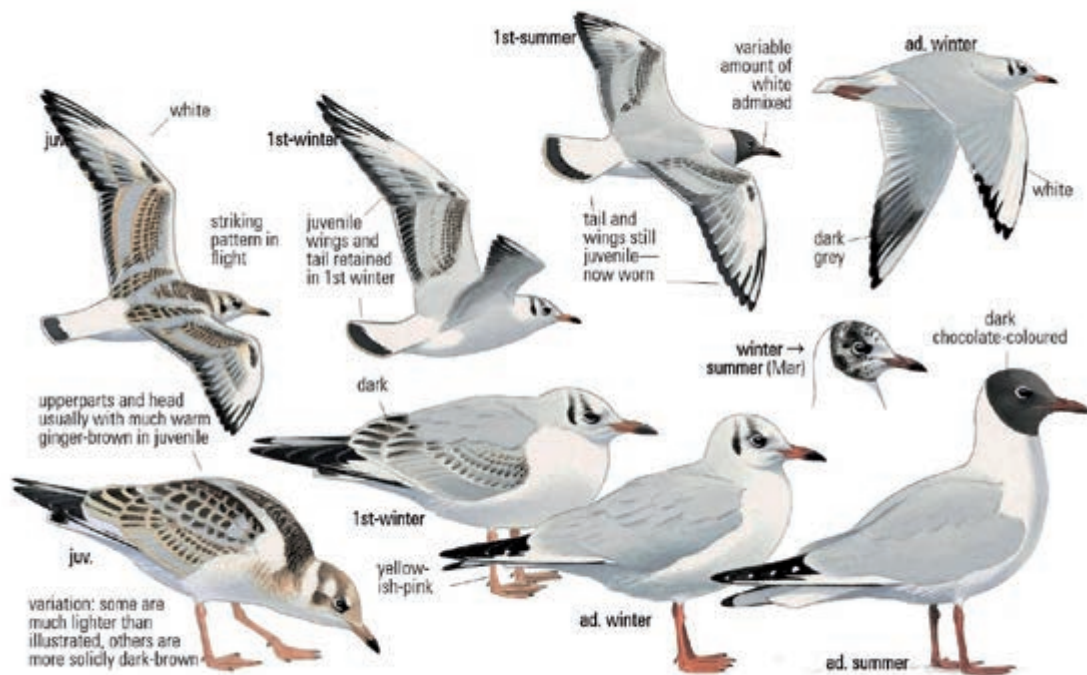
SPA/BD PROTOCOL: Annex II    CITES: NA    CMS: Appendix II    GFCM: GFCM/35/2011/3    Global

**Wingspan:** 115 – 135 cm

**Description:**

**Adult:** Slightly smaller than the Yellow-legged gull with proportionately shorter, stubbier-looking bill, more rounded head and slightly longer legs. Frequently retains the black bar near the bill-tip, and develops it more frequently than Yellow-legged gull, being more prominent in winter. Iris on average darker than Yellow-legged gull. Upper wings and body subtly darker grey than Yellow-legged gull, white patch usually only on the outermost feather of the wing-tips.

**Juvenile:** Very similar to the Yellow-legged gull, differing mainly in size and structure (small, round-headed, short-billed, long-legged).



## LARIDAE

### *Larus ridibundus*, Black-headed gull

EN Black-headed gull SP Gaviota reidora FR Mouette rieuse AR نورس أسود الرأس

LC

SPA/BD PROTOCOL: Not listed CITES: NA CMS: Not listed GFCM: Not listed

Global

Wingspan: 86 – 99 cm

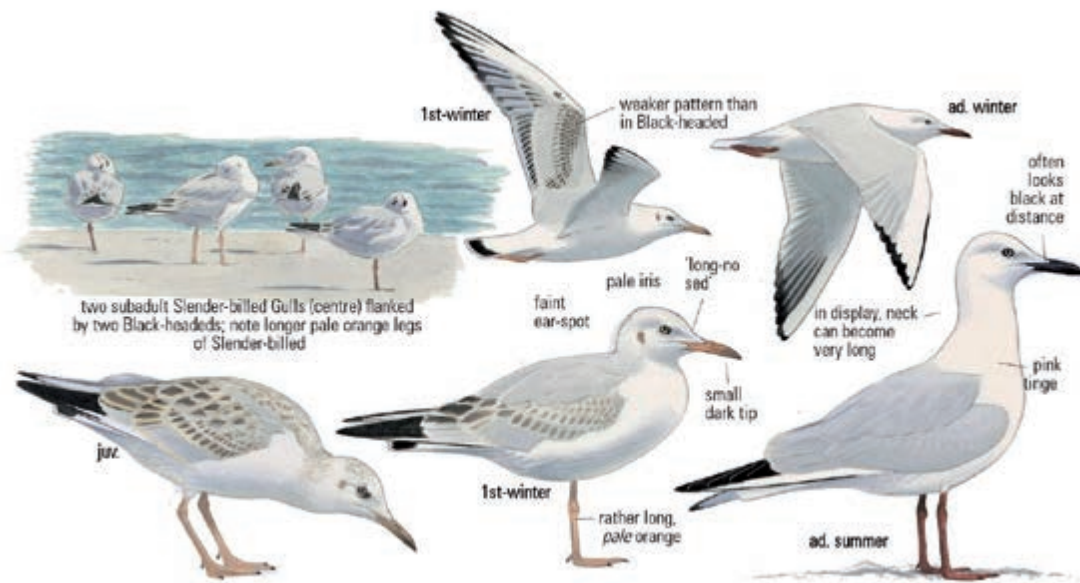
**Description:** Medium to small-sized gull. In flight, it can be distinguished instantly from other common gulls by the white leading edge to the outer wing (on adult), with black trailing edge (rear edge) on the tip of the primaries (outer wing feathers), which is often visible at extremely long range. Similar wing pattern to the Slender-billed Gull. Wings are pointed (rather tern-like, though broader at the base).

**Adult summer:** Dark brown hood (often looks black) and dark, dull red bill and legs.

**Adult winter:** Bold dark ear-spot and red or brown-red legs and bill (with dark tip).

**Juvenile:** It has extensive ginger-brown upperparts and head markings, brown wing markings, black tail-band, and yellowish-flesh legs and bill. Bill has a dark tip. 1<sup>st</sup> winter (immature): juvenile wings, tail, and bill and leg colour retained, but head and body like adult winter. 1<sup>st</sup> summer (immature): like 1<sup>st</sup> winter, but many acquire partial hood (at times full hood); brown on wings often faded and much reduced in extent; bill-base and legs more orange-red.





**LARIDAE**

**Larus genei, Slender-billed gull**

EN Slender-billed gull SP Gaviota picofina FR Goéland railleur AR نورس دقيق المنقار



SPA/BD PROTOCOL: Annex II CITES: NA CMS: Appendix II GFCM: GFCM/35/2011/3 Global

**Wingspan:** 90 – 102 cm

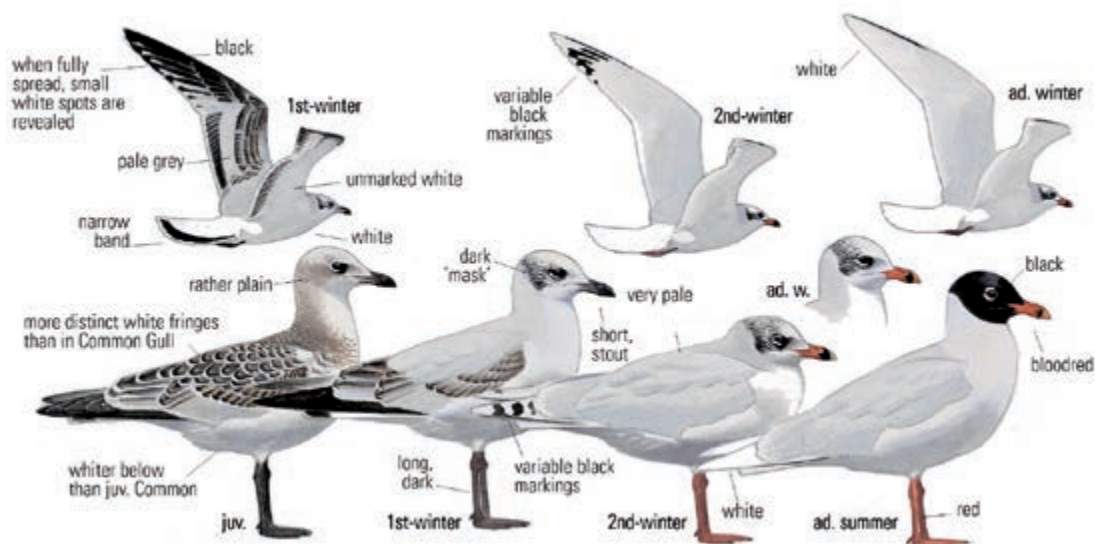
**Description:** A little larger than the Black-headed gull, which it closely resembles in wing pattern and general appearance, but head white (lacks hood) in summer; has only a faint ear-spot, if any, in winter; and has usually obvious yellowish or whitish iris.

Very important for identification is its peculiar head-and-bill shape, produced jointly by longer (but actually not more slender) bill, more elongated forehead, and very long neck when fully extended. Legs comparatively long.

**Adult summer:** Can be distinguished by its usually strong pink tinge on underparts and darker red bill (often looking blackish; darker than Audouin’s gull) and legs.

**Adult winter:** Has less or no pink, has a pale grey ear-spot (if any), and less dark red bill and legs.

**Juvenile:** Compared to the Black-headed gull it usually has paler brown wing markings; paler ear-spot (if any); paler yellowish-brown or orange-flesh bill and legs, and bill with a small (or no) dark tip.



## LARIDAE

### *Larus melanocephalus*, Mediterranean gull

EN Mediterranean gull

SP Gaviota cabecinegra

FR Mouette m lanoc phale

AR نـورس مـتـوسـطـي



SPA/BD PROTOCOL: Annex II

CITES: NA

CMS: Appendix II

GFCM: GFCM/35/2011/3

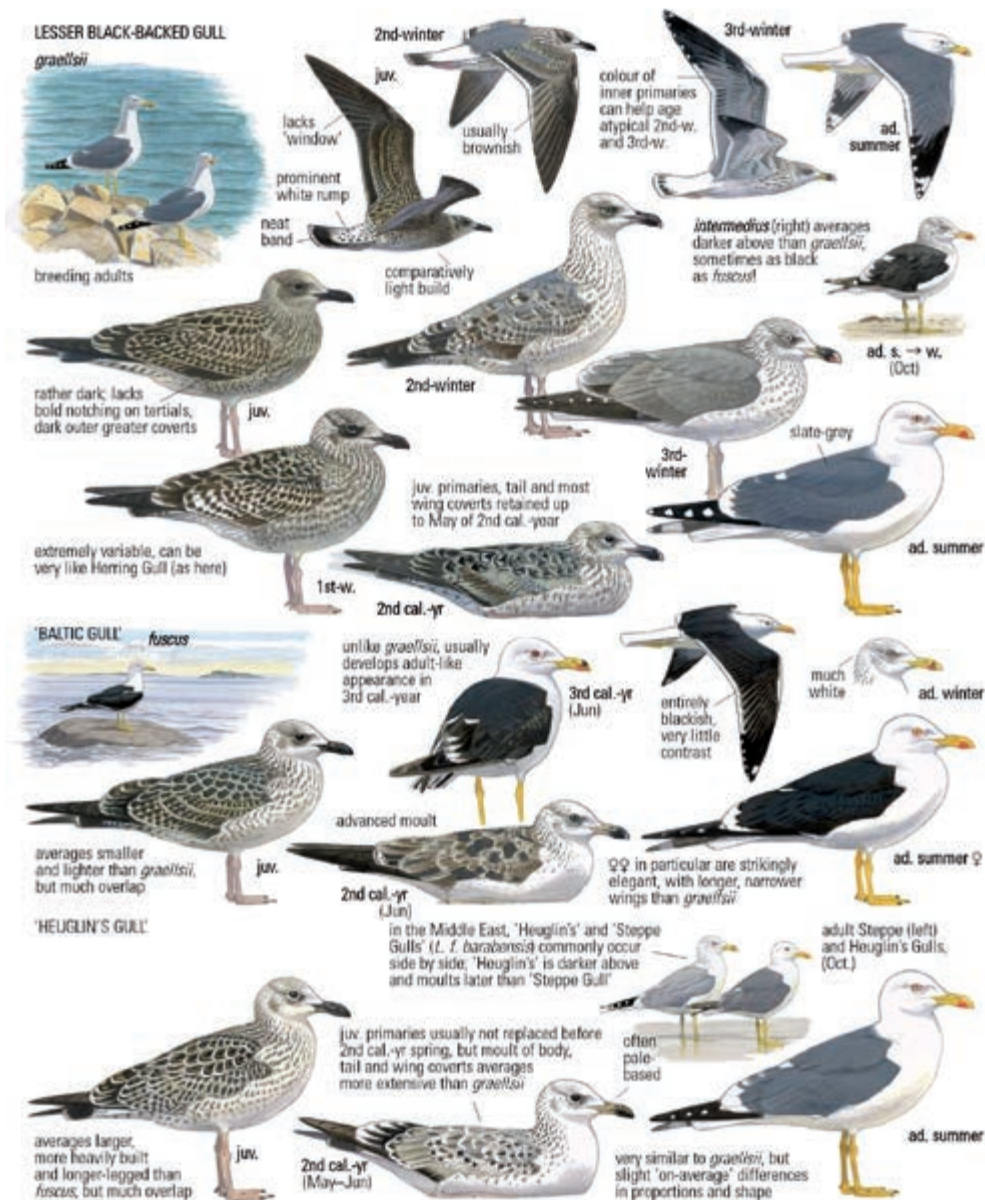
Global

**Wingspan:** 94 – 102 cm

**Description:** Slightly larger than the Black-headed gull, with shorter and thicker bill; less pointed, broader, slightly shorter wings; and longer legs.

**Adult:** All-white wing feathers, very pale grey upperparts (silvery-white at distance), scarlet bill and legs (less bright in winter), and a large black hood (dark 'mask' in winter).

**Juvenile/1<sup>st</sup> year (immature):** Reminiscent of a small version of immature Yellow-legged gull, whitish-grey with brownish upperparts, dark outer wing feathers, secondaries, shoulder and tail bars. Reddish based dark or wholly black bill, reddish or black legs, and (from September) paler grey upperparts, dark 'mask' (or partial hood in 1<sup>st</sup> summer) and white underparts. 2<sup>nd</sup> year (immature): As adult, but with remains of black on the tip of the primaries (outer wing feathers).



**LARIDAE**

**Larus fuscus, Lesser black-backed gull**

**EN** Lesser black-backed gull    **SP** Gaviota sombría    **FR** Goéland Brun    **AR** نورس أسمر



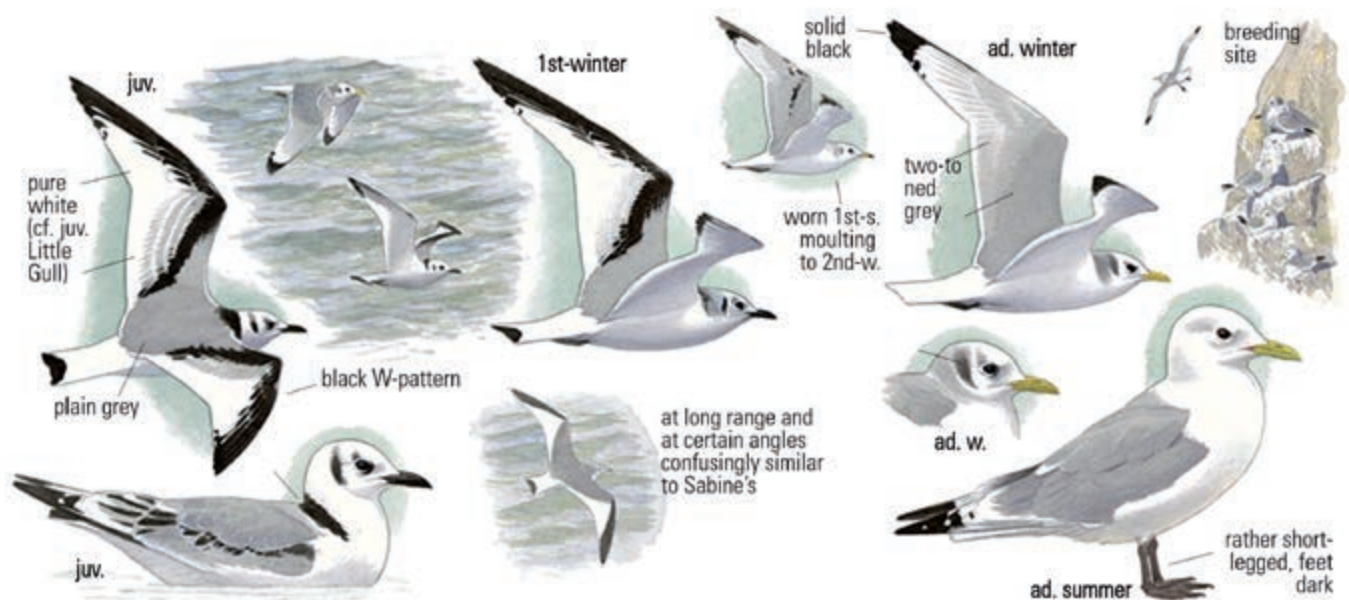
**SPA/BD PROTOCOL:** Not listed    **CITES:** NA    **CMS:** Not listed    **GFCM:** GFCM/35/2011/3    **Global**

**Wingspan:** 144 – 166 cm

**Description:** Similar to Yellow-legged gull, but slightly smaller and slender; blackish upperparts develop from 2<sup>nd</sup> winter onwards, instantly narrowing identification to this species (except for Great Black-backed Gull, rare visitor to the Mediterranean region). Adults have yellow legs. Bare parts develop gradually: bill from all black on juvenile to yellow with red spot on adult; iris from dark to yellow (with red orbital ring); and legs from flesh-pink to yellow.

**Juvenile:** Whole plumage neat; mantle and upper wing feathers mainly solidly dark-centred, turn extensively blackish as bird matures. Mantle and wing-coverts become less strongly chequered and blackish as the bird matures. Bill with pale base starting from 2<sup>nd</sup> winter (immature).

Some variability in the intensity of the grey/black of the upperparts exists.



## LARIDAE

***Rissa tridactyla*, Black-legged kittiwake**

EN Black legged kittiwake

SP Gaviota tridáctila

FR Mouette tridactyle

AR نورس ثلاثي الأصابع



SPA/BD PROTOCOL: Not listed

CITES: NA

CMS: Not listed

GFCM: Not listed

Global

Wingspan: 93 – 105 cm

**Description:** Slightly larger than the Black-headed gull, with a slight notch in tail and short legs.

**Adult summer:** dark grey upper-body and wings slightly fading to whitish towards extremes, with jet-black wingtips; yellowish bill; dark and rather short legs; head white, with dark eye.

**Adult winter:** Similar to summer, but grey hind neck (back part of the neck) and crescent-shaped blackish ear-spot.

**Juvenile:** Dark 'W-pattern' across wings; black band at end of the tail; white head with black ear-spot and black half-collar on the back of the neck; black bill. 'W-pattern' often much faded by 1<sup>st</sup> summer (immature), and bill becomes dull yellowish with dark marking at the tip.

**Flight:** With quick wingbeats and narrow outer wing, it more closely resembles a tern than other gulls.





LARIDAE

**Sternula albifrons, Little tern**

EN Little tern      SP Charrancito común      FR Sterne naine      AR خرشنة صغيرة



SPA/BD PROTOCOL: Annex II      CITES: NA      CMS: Appendix II      GFCM: GFCM/35/2011/3      Global

**Wingspan:** 41- 47 cm

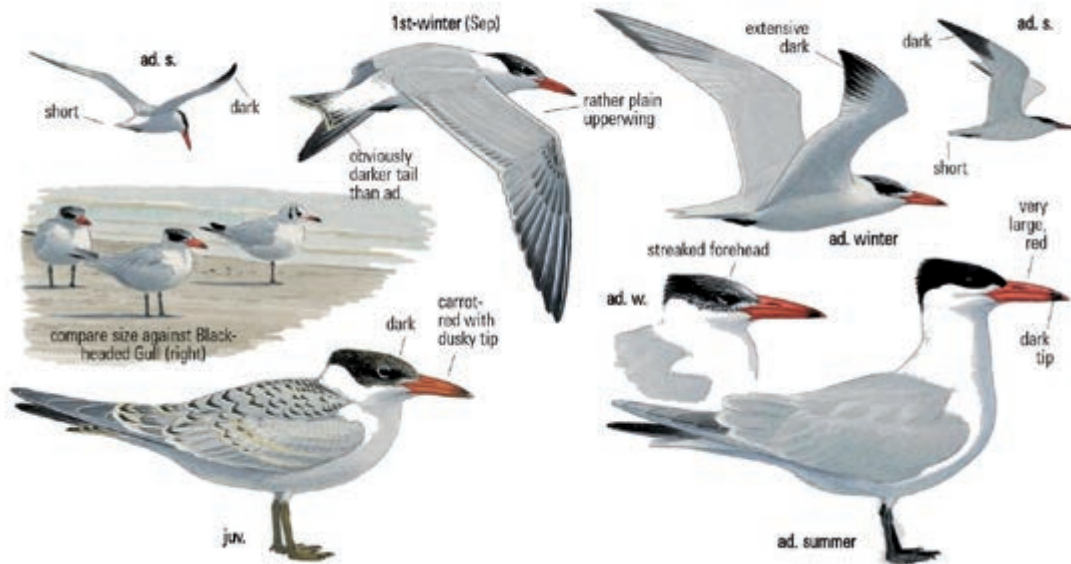
**Description:** Tiny tern, about half the size of the Common Tern, with noticeably narrow and pointed wings.

**Adult summer:** Black cap with white forehead; yellow bill with small black tip; orange yellow legs; 2-3 outer wing feathers blackish.

**Adult winter:** Like adult summer, but from August has a whiter central cap and black bill.

**Juvenile:** Dark bill (with dirty yellow base), mantle with dark scaly pattern. Best identified by flight action and small size.

**Flight:** Fast wingbeats; low prolonged flight over the surface, then plunges (with quick repeated dives) to catch fish.



LARIDAE

**Hydroprogne caspia, Caspian tern**

EN Caspian tern    SP Pagaza piquirroja    FR Sterne Caspienne    AR خرشنة قزوينية



SPA/BD PROTOCOL: Annex II    CITES: NA    CMS: Appendix II    GFCM: GFCM/35/2011/3    Global

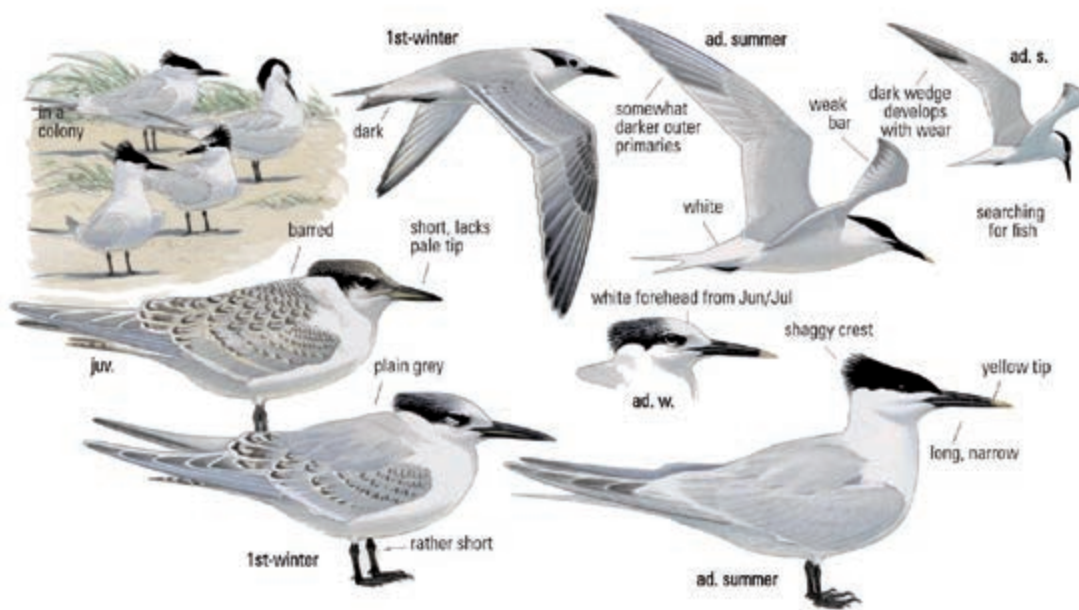
**Wingspan:** 96 – 111 cm

**Description:** Largest tern; very large red bill and extensive dark (blackish) under outer wing feathers at all ages; slightly forked tail.

**Adult:** Bright red bill with dark tip; black legs. Black cap, streaked white in winter (white on head in winter is less extensive than in other terns).

**Juvenile:** Dusky-tipped orange bill; pale legs, which quickly turn dark during first autumn; faint dark markings on upperparts and tail; inner wings rather uniformly pale.

**Flight:** Slow wingbeats and flight heavier than other terns, more gull-like.



**LARIDAE**

***Thalasseus sandvicensis*, Sandwich tern**

**EN** Sandwich tern    **SP** Charrán patinegro    **FR** Sterne Caugek    **AR** خرشنة ساندويتش



**SPA/BD PROTOCOL:** Annex II    **CITES:** NA    **CMS:** Appendix II    **GFCM:** GFCM/35/2011/3    **Global**

**Wingspan:** 85 – 97 cm

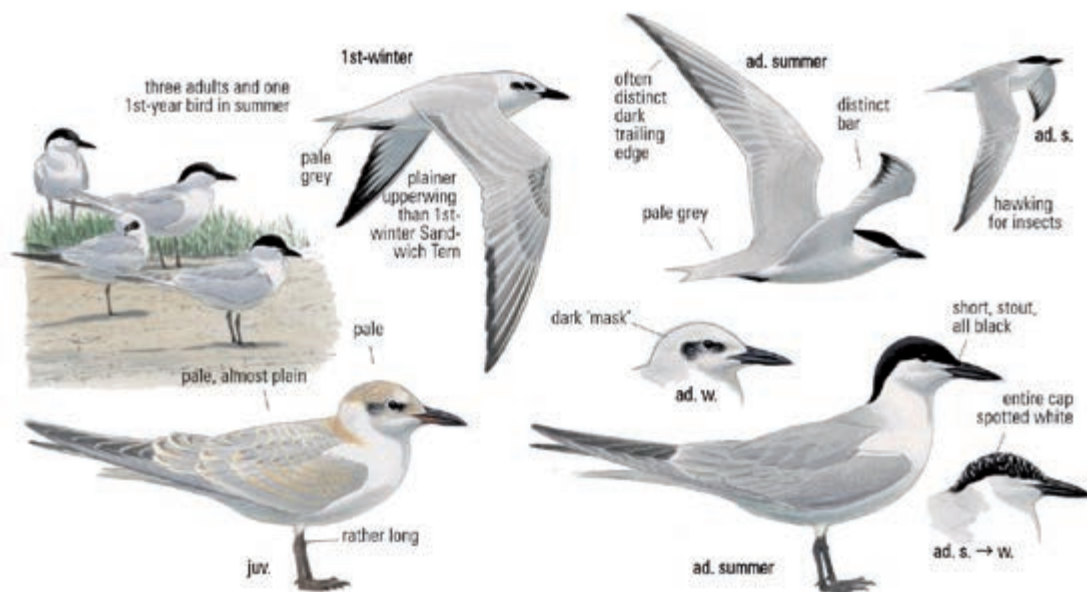
**Description:** Relatively large tern (about same size as a Black-headed Gull, but certainly slimmer) with a distinctive long and pointed bill (pencil shape), wings slightly flexed, long and evenly narrow, pointed; forked tail.

**Adult summer:** Pale grey upperparts, white underparts and broad white trailing edge (rear edge) give a very whitish impression; outer 4-5 primaries (outer wing feathers) darken to form a blackish tip; black legs and black bill with small yellow tip; black cap.

**Adult winter:** White forehead and crown (from June onwards), leaving a thin dark 'mask'.

**Juvenile:** Bold scaly pattern above, especially on mantle; complete dusky cap; bill usually dark. Dark markings on inner wing feathers and tail. During the 1<sup>st</sup> year the head and body are as the adult winter, and the outer wing feathers and tail-feathers worn, becoming blackish by spring.

**Flight:** Rapid fishing flight with measured, forceful wingbeats. When feeding often patrols at greater height than the Common Tern, with bill pointing down, making sudden dives to catch fish.



## LARIDAE

***Gelochelidon nilotica*, Common Gull-billed tern**EN Common  
Gull-billed tern

SP Pagaza piconegra

FR Sterne hansel

AR خرشنة نورسية المنقار

LC

SPA/BD PROTOCOL: Annex II

CITES: NA

CMS: Appendix II

GFCM: GFCM/35/2011/3

Global

Wingspan: 76 – 86 cm

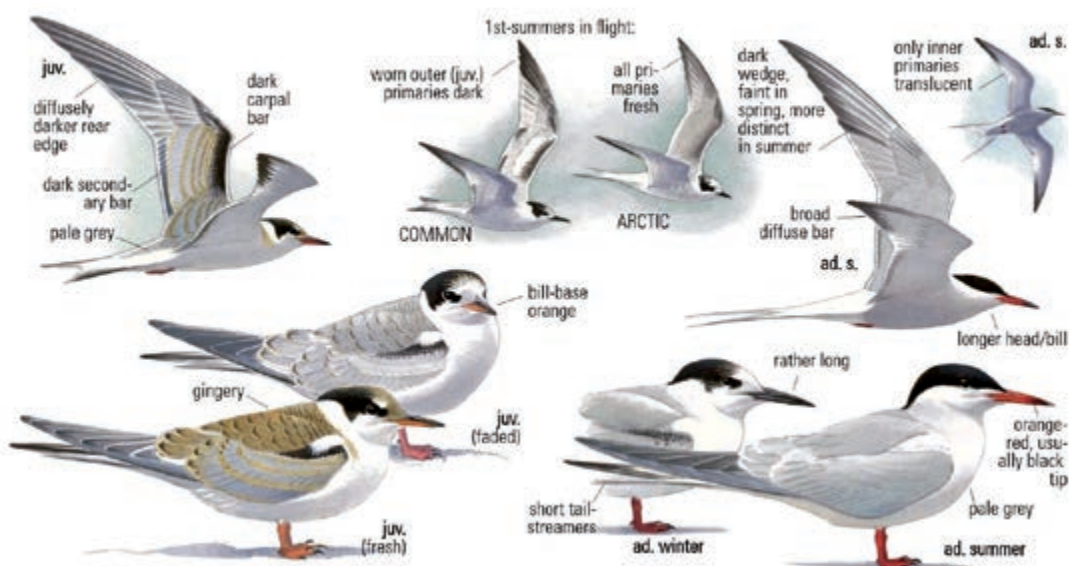
**Description:** Distinguished from the Sandwich Tern at all ages by its short, thick, all-black bill only half the length of the cap; slightly broader wing-bases (though wings still both long and pointed); shorter neck and less conspicuously forked tail.

**Adult summer:** Uniform frosty-grey upper-parts, including rump (lower back) and white-sided tail; outer wing feathers often uniform, with outer 4-5 often creating a distinct dark trailing edge (rear edge); black cap.

**Adult winter:** Head mainly white, with isolated patch or stripe behind eye.

**Juvenile:** Bill slightly slimmer and paler than adult's; less patterned upperparts and wings than juvenile Sandwich tern. During the summer (immature), the head and body are as the adult winter but retained juvenile wings.

**Flight:** More buoyant and elegant than the Sandwich tern; hawks insects in the air, or swoops to pluck prey from the water surface.



LARIDAE

**Sterna hirundo, Common tern**

EN Common tern    SP Charrán común    FR Sterne pierregarin    AR خرشنة خطافية



SPA/BD PROTOCOL: Not listed    CITES: NA    CMS: Appendix II    GFCM: Not listed    Global

**Wingspan:** 70- 80 cm

**Description**

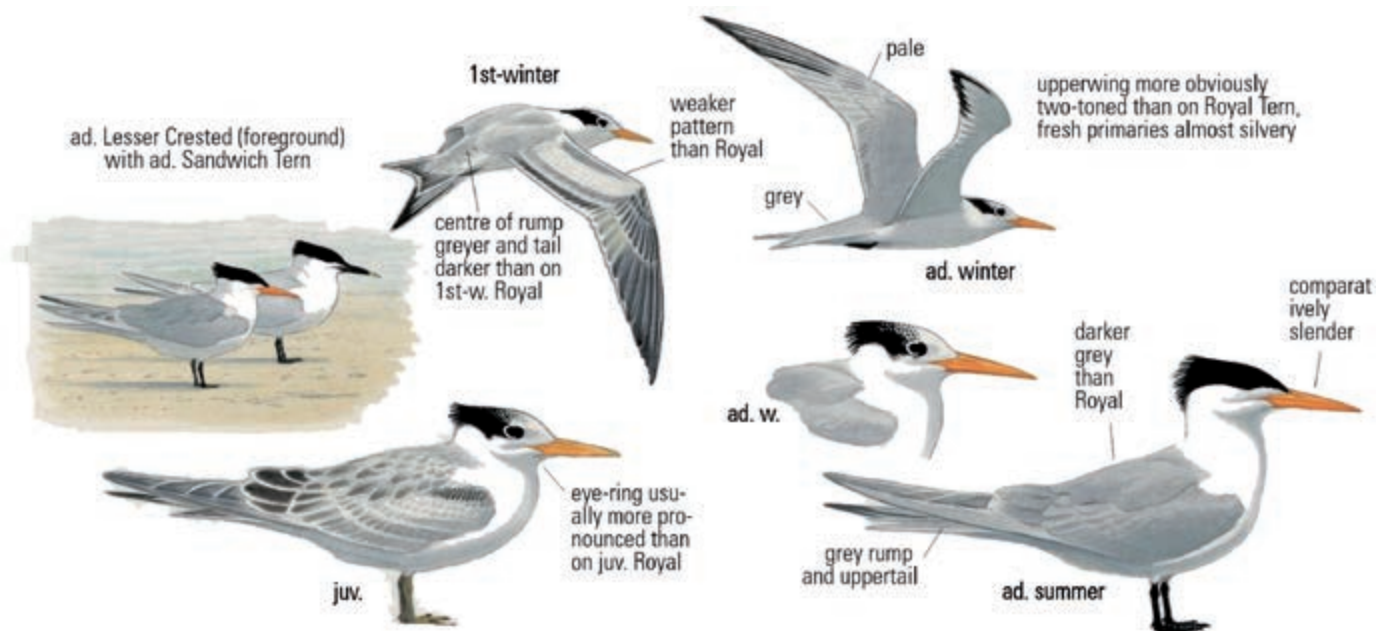
**Adult summer:** Orange-red bill with black tip (sometimes hard to discern); black cap; white underparts with pale grey tinge; conspicuous forked tail; outer 4-6 primaries (outer wing feathers) darker than rest, becoming obvious by midsummer; from below, outer wing feathers white with faint dark edge.

**Adult winter:** White forehead and underparts, dark carpal bar (shoulder bar), and black bill (similar to immature).

**Juvenile:** Upper wing greyish tinged brown, with dark carpal bar (shoulder bar); dark bill with slightly orange base; forehead and upperparts obviously gingery (orange brown) when recently fledged.

**Flight:** Hovers, and dives directly for fish. Slower and more buoyant flight than Sandwich tern.





**LARIDAE**

***Thalasseus bengalensis*, Lesser crested tern**

**EN** Lesser crested tern

**SP** Charrán bengalí

**FR** Sterne voyageuse

**AR** خرشنة البنغال



**SPA/BD PROTOCOL:** Annex II

**CITES:** NA

**CMS:** Appendix II

**GFCM:** GFCM/35/2011/3

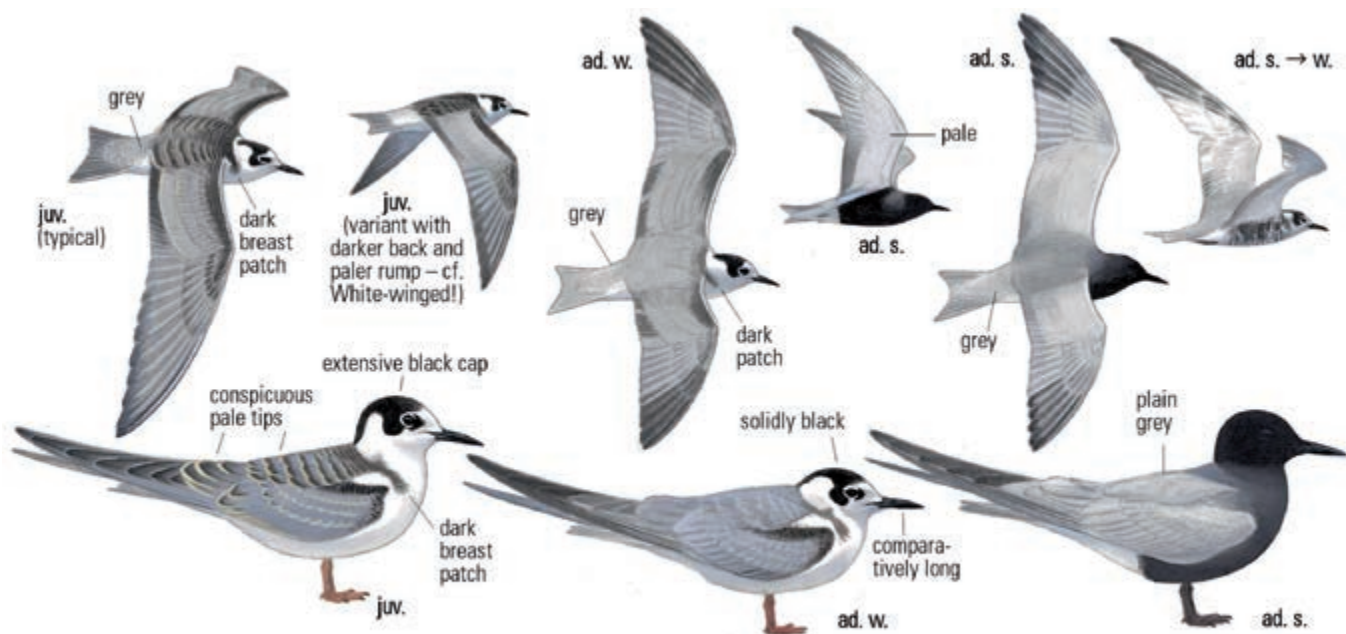
**Global**

**Wingspan:** 76 – 82 cm

**Description:**

**Adult:** Bill is bright orange; similar to the Sandwich Tern but with more uniform upperparts and slightly darker grey, including rump (lower back) and tail-centre.

**Juvenile:** Like the Sandwich Tern but with a yellowish-orange bill.



LARIDAE

## *Chlidonias niger*, Black tern

EN Black tern    SP Fumarel común    FR Guifette noire    AR خرشنة سوداء



SPA/BD PROTOCOL: Not listed    CITES: NA    CMS: Appendix II    GFCM: Not listed    Global

**Wingspan:** 56 - 62 cm

**Description:**

**Adult summer:** All-black head and body, rather uniform dark grey upperparts, white undertail, and dark legs and bill; slightly forked tail; head and underparts patched with white on moulting adults (moult is the replacement of old feathers with new ones) in spring (before May) and summer/autumn.

**Adult winter** (head and body plumage fully acquired from September onwards): Similar to juvenile, but upperparts plain grey, and outer 5-7 outer wing feathers darker.

**Juvenile:** Extensive black cap and obvious dark breast-side patches; scaly pattern on darkish upperparts and wing-coverts; darker carpal (shoulder) and secondary bars.

**Flight:** Typically feeding low over water with an erratic flight and dipping delicately to the surface.

## Alcidae



### ALCIDAE

## *Fratercula arctica*, Atlantic puffin

EN Atlantic puffin    SP Frailecillo atlántico    FR Macareux Moine    AR مقار قطبي



SPA/BD PROTOCOL: NA    CITES: NA    CMS: Not listed    GFCM: Not listed

Global

**Wingspan:** 50 – 60 cm

### Description:

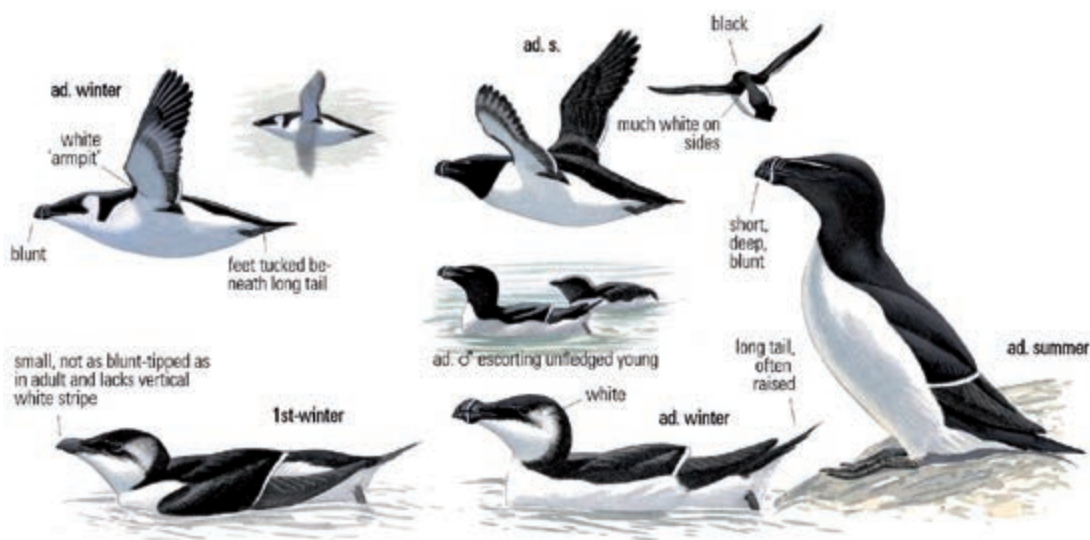
**Adult summer:** Huge, colourful, parrot-like bill. At close range, unmistakable combination of bill, large, pale, rounded 'cheek patch' and dark unbroken breast-band. At distance in flight can be distinguished from the Razorbill by shorter more compact body, darker plumage at both head and tail ends, dark underwings and complete breast-band; lower back lacks white sides; orange feet often surprisingly obvious.

**Adult winter:** Bill smaller, eye-surround dark greyish.

**Juvenile:** Resembles adult winter, but bill much smaller and darker.

**Flight:** Flies relatively high above the water. Floats high on the water surface, and at some distance may result unexpectedly inconspicuous (small dark bird, often hidden by the waves; hard to notice the bill).





**ALCIDAE**

***Alca torda*, Razorbill**

**EN** Razorbill

**SP** Alca común

**FR** Petit Pingouin/  
Pingouin torda

**AR** بطريق أبو موسى



**SPA/BD PROTOCOL:** NA

**CITES:** NA

**CMS:** Not listed

**GFCM:** Not listed

**Global**

**Wingspan:** 60 – 69 cm

**Description:** Distinctive combination of deep, blunt bill, flattened laterally, black with white lines (bill shape difficult to discern at some range); dark blackish upper-body and wings with white underwing and armpits and neatly defined white sides, extending to the sides of the rump (lower back); powerful neck; long, pointed tail. Long tail covers feet when flying and it is often raised when rafting.

**Adult summer:** White line across tip of bill; head black, with white loreal line (region between the eye and bill on the side of the bird’s head).

**Adult winter:** Generally retains white bill line but lacks loreal line (region between the eye and bill on the side of the bird’s head); face and throat white.

**Juvenile:** Similar to adult winter, with considerably weaker and more pointed bill.





The green sea turtle (*Chelonia mydas*)  
caught by long line fishing.  
© Jonathan R. Green | Dreamstime.com









# Sea Turtles



With just seven species worldwide, sea turtles are the least diverse taxon of vulnerable marine megavertebrates and it is highly unlikely that species other than *Caretta caretta* or *Chelonia mydas* will be observed by onboard observers. Both species have resident breeding populations in the Eastern basin with juvenile loggerheads and some juvenile green turtles (rarely) using Western basin waters. Juvenile loggerhead turtles from Atlantic breeding populations regularly occur in the Western basin and leatherback turtles also enter the Mediterranean from the Atlantic to forage, though none breed, and encounters are scarce. The other three species listed enter the basin very scarcely. Loggerhead turtles are incidentally caught by some fisheries in all Mediterranean subregions whereas green turtles are caught mainly in the Eastern basin. Additionally, a Mediterranean subpopulation of a freshwater species, the African softshell turtle *Trionyx triunguis*, may be encountered in coastal and estuarine fisheries of Southern Turkey and the Levant.

## Source materials and references

The artwork is of Tom McFarland and Dawn Witherington, originally commissioned for:

Eckert, K. L., K. A. Bjorndal, F. A. Abreu-Grobois, and M. Donnelly (Editors). 1999. Research and Management Techniques for the Conservation of Sea Turtles. IUCN/SSC Marine Turtle Specialist Group Publication No. 4

## TURTLES CHECKLIST (By Family)

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7. *Trionyx triunguis*, African softshell turtle ..... 57

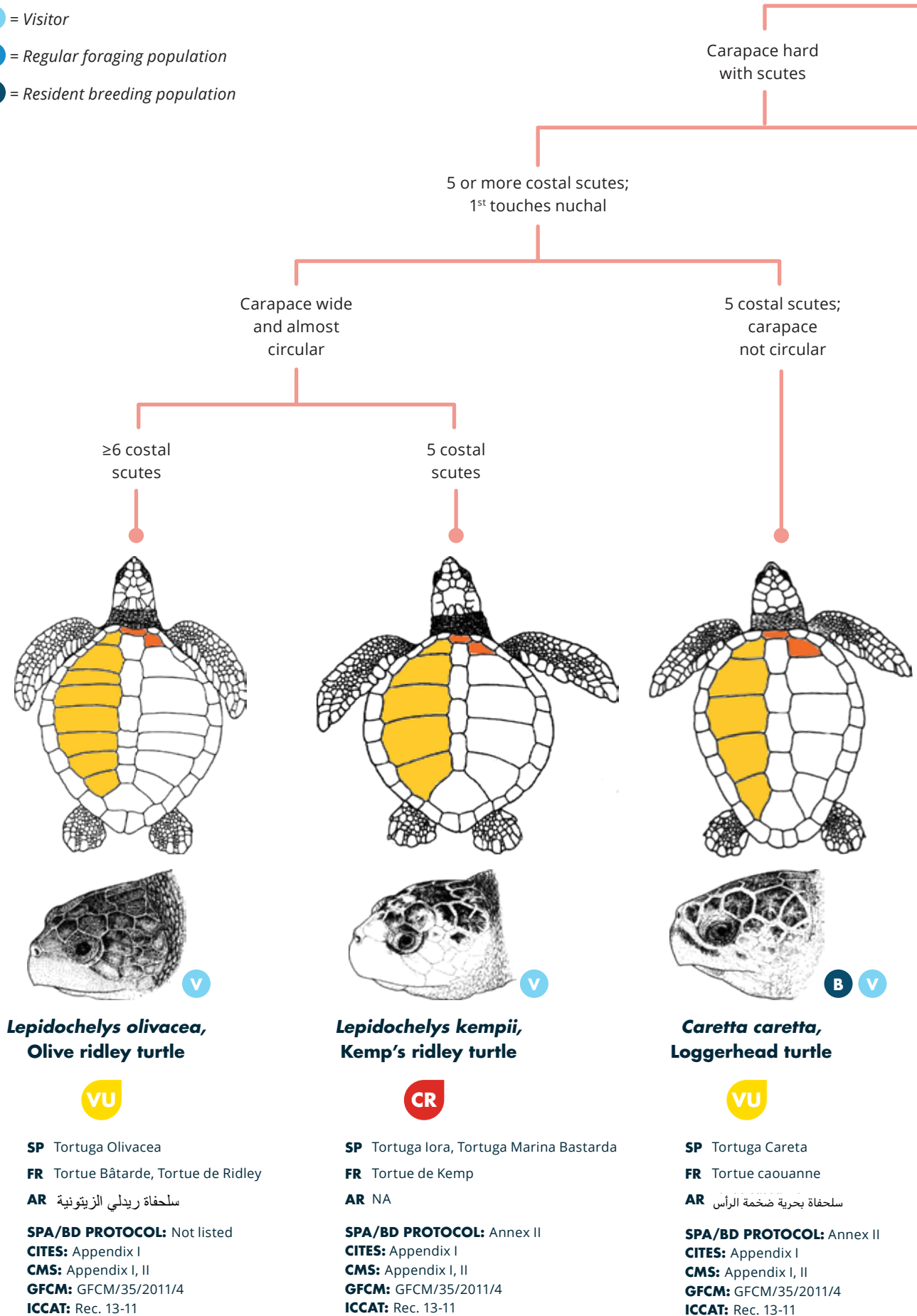


Mediterranean subpopulation of the freshwater species, the African softshell turtle (*Trionyx triunguis*).





- V** = Visitor
- F** = Regular foraging population
- B** = Resident breeding population



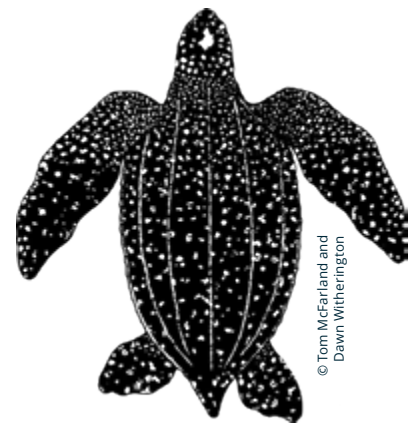
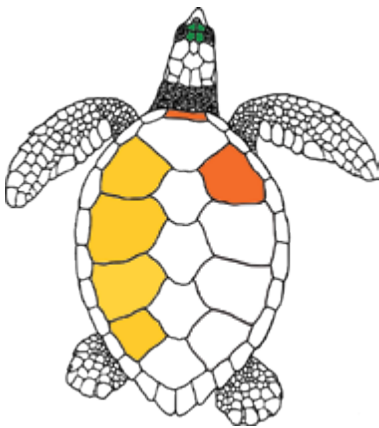


Leathery;  
No scutes;  
5 ridges

4 costal scutes and 1<sup>st</sup>  
does not touch nuchal

Two pairs  
pre-frontal scales;  
scutes overlap

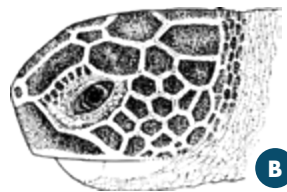
One pair  
pre-frontal  
scales



© Tom McFarland and Dawn Witherington



V



B



F

***Eretmochelys imbricata*,  
Hawksbill turtle**

**CR**

**SP** Tortuga de Carey

**FR** Tortue Caret

**AR** سلحفاة صقرية المنقار

**SPA/BD PROTOCOL:** Annex II

**CITES:** Appendix I

**CMS:** Appendix I, II

**GFCM:** GFCM/35/2011/4

**ICCAT:** Rec. 13-11

***Chelonia mydas*,  
Green turtle**

**EN**

**SP** Tortuga Verde

**FR** Tortue franche, Tortue verte

**AR** السلحفاة الخضراء

**SPA/BD PROTOCOL:** Annex II

**CITES:** Appendix I

**CMS:** Appendix I, II

**GFCM:** GFCM/35/2011/4

**ICCAT:** Rec. 13-11

***Dermochelys coriacea*,  
Leatherback turtle**

**VU**

**SP** Tortuga Laud

**FR** Tortue luth

**AR** سلحفاة المحيط جلدية الظهر

**SPA/BD PROTOCOL:** Annex II

**CITES:** Appendix I

**CMS:** Appendix I, II

**GFCM:** GFCM/35/2011/4

**ICCAT:** Rec. 13-11



Signs of Great white shark, *Carcharodon carcharias* interacting with fishing gear © Nicolò Tonachella







# Chondrichthyans

## (sharks, rays, skates and chimaeras)

Fabrizio Serena<sup>1</sup>, Monica Barone<sup>1</sup>, Maria del Mar Otero<sup>2</sup>.

<sup>1</sup> IUCN Shark Specialist Group

<sup>2</sup> IUCN Center for Mediterranean Cooperation

The Mediterranean hosts a rich chondrichthyans diversity, at least 48 species of sharks, 38 of rays and two of chimaeras, even if some of them have to be confirmed. Some of these species which are not considered rare or endangered, have a commercial value and are sold at fish market. Due to their reproductive strategy and the overall overexploitation of the stocks, many species have become rare or are in unfavorable conservation status. The most significant species to be found on bycatch are presented below, including the rare species and those whose identification is still questionable.

### Source materials and references

Texts are modified from the catalogues of FAO and the Catalogue of fish of the Californian Academy ([www.FAO.org](http://www.FAO.org); [www.catalogfish.org](http://www.catalogfish.org)). Distribution information and conservation status are taken from the IUCN Red List on the basis general bibliographic literature and monitoring program such as Data Collection Framework of the EU, MEDLEM, etc.

Illustrations Source: Food and Agriculture Organization of the United Nations, Original Scientific Illustrations Archive. Reproduced with permission

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. 97p. 11 colour plates + egg cases.

FAO, 2018. Species Photographic Plates. Mediterranean Sharks, by Monica Barone, Fabrizio Serena and Mark Dimech. Rome, Italy.

FAO, 2018. Species Photographic Plates. Mediterranean skates, rays and chimaeras, by Monica Barone, Fabrizio Serena and Mark Dimech. Rome, Italy.

Dulvy, N.K., Allen, D.J., Ralph, G.M. and Walls, R.H.L. (2016). The conservation status of Sharks, Rays and Chimaeras in the Mediterranean Sea [Brochure]. IUCN, Malaga, Spain.

Fricke R. Ed. 2020. Eschmeyer's Catalog of Fishes: References (<http://researcharchive.calacademy.org/research/ichthyology/catalog/fishcatmain.asp>). Electronic version accessed 04 May 2020.

Serena et al. Species diversity, taxonomy and distribution of Chondrichthyes in the Mediterranean and Black Sea. Italian Journal of Zoology, In press.

### Acknowledgements

Many colleagues have collaborated in order to provide the necessary images, for each of them the credit is guaranteed.

We would like also to thank Mohamed N. Bradai for its suggestions during the preparation of this chapter.



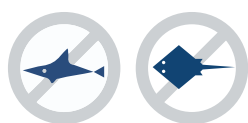
## How to read the contents of the factsheet at the beginning in each page:

Two images in each specific sheet have been attached, the first is the FAO technical drawing where the most important features are indicated, the second one is a picture of the fish after its capture. The shorthand ASFIS code for each species are also provided to allow a quicker classification and take notes faster on the bycatch note sheets (e.g. *Hexanchus griseus* – SBL).

The sheet also includes the essential characteristics of the species such as the maximum **Size** reached, a synthetic **Description** of the morphology of the species with the addition of synthetic information related to the reproductive strategy, i.e. if the species is viviparous or oviparous; number of litters produced and the size of the young at birth. It has not always been possible to define the features mentioned utilizing Mediterranean information only. In this sense, in the absence of information, the Atlantic reference or global was used.

**Habitat** paragraph provides information on the environment in which the species lives, as well as the maximum depth at which it was observed. The **Distribution** suggests the places where the species lives with particular reference to the Mediterranean, as well as the Black Sea. Lastly, considering the difficulties to identify some species living in the Mediterranean a small paragraph concerning **Remarks** has been added at the end of the descriptions of the species

## Symbols



These symbols mean that the species have to be released alive. The species cannot be retained on board, transhipped, landed, transferred, stored, sold or displayed or offered for sale.



This symbol refers to the species that are very rare or the species whose presence in Mediterranean is considered questionable by the authors, thus their presence need to be confirmed in the region. It is extremely important to look carefully at these species, and taking photographic and genetic samples.

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## Chimaeras

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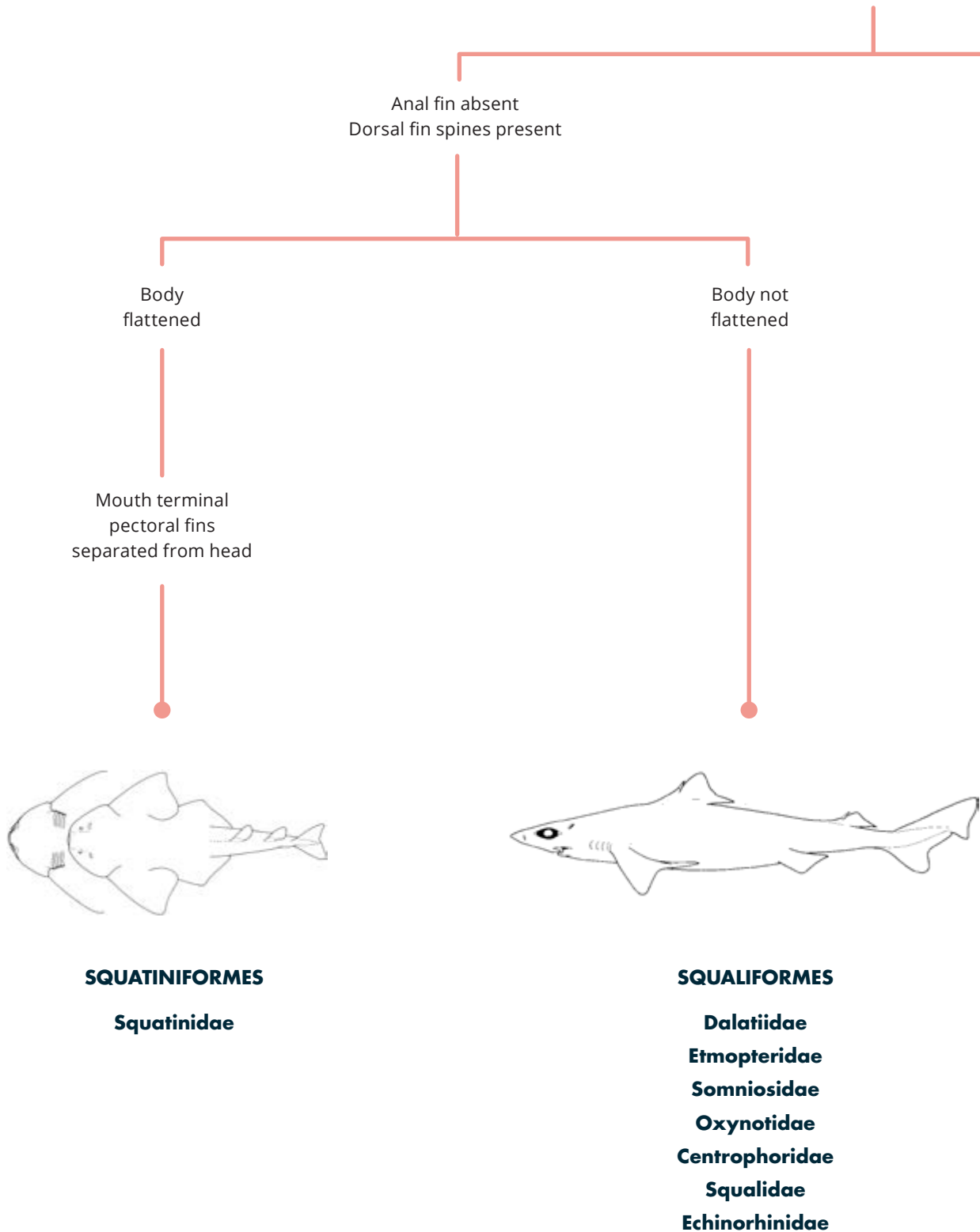
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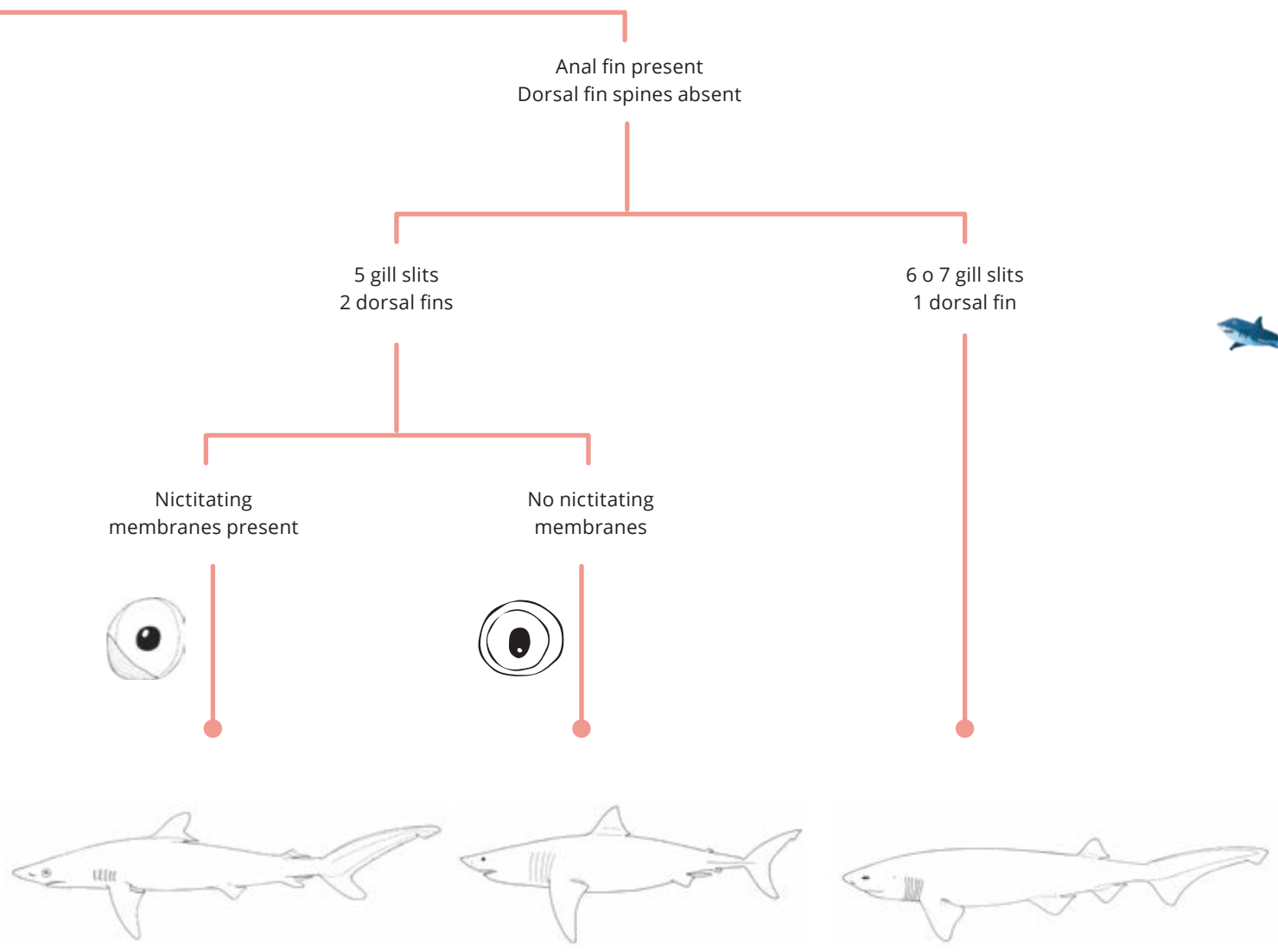


## Sharks, rays and chimaeras of the Mediterranean and Black seas

### Sharks

#### ORDERS





**CARCHARHINIFORMES**

- Pentanchidae**
- Scyliorhinidae**
- Triakidae**
- Carcharhinidae**
- Sphyrnidae**

**LAMNIFORMES**

- Odontaspidae**
- Lamnidae**
- Cetorhinidae**
- Alopiidae**

**HEXANCHIFORMES**

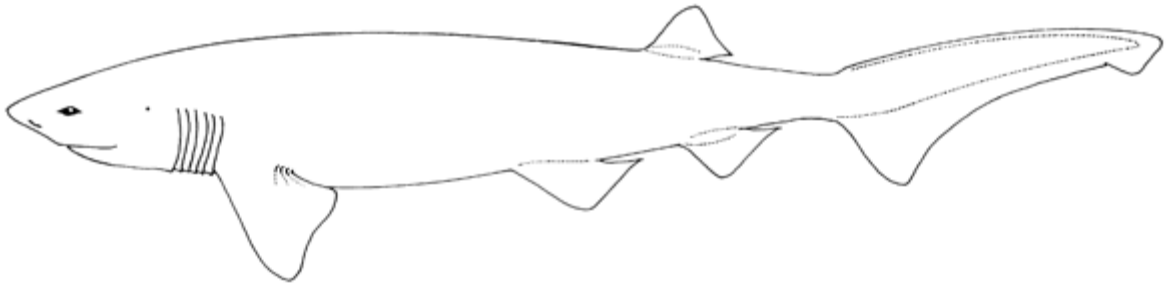
- Hexanchidae**

## Sharks

### HEXANIFORMES

#### Hexanchidae

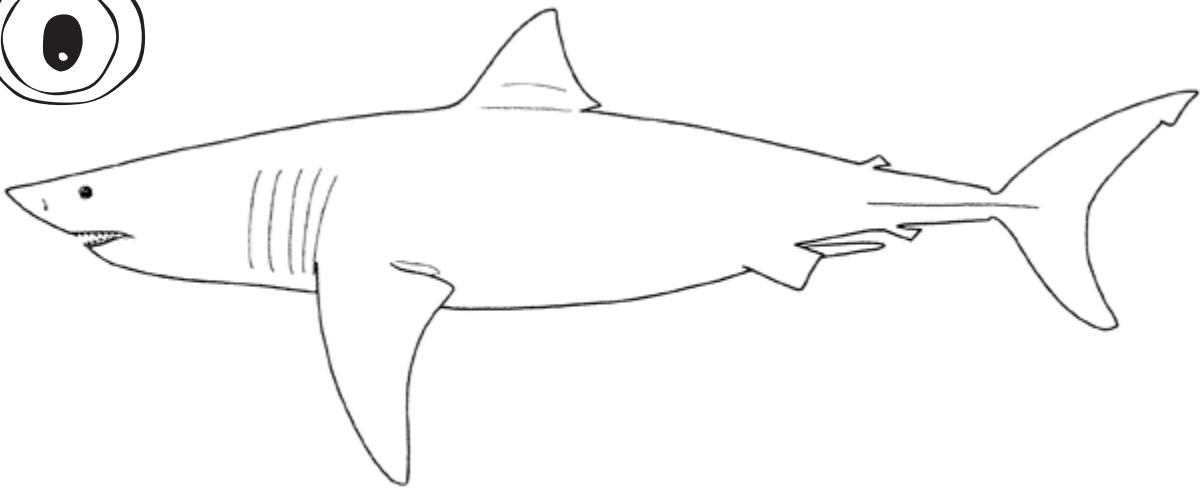
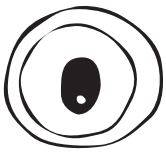
6 or 7 gill slits, 1 dorsal fin



### LAMNIFORMES

#### Odontaspidae, Lamnidae, Cetorhinidae, Alopiidae

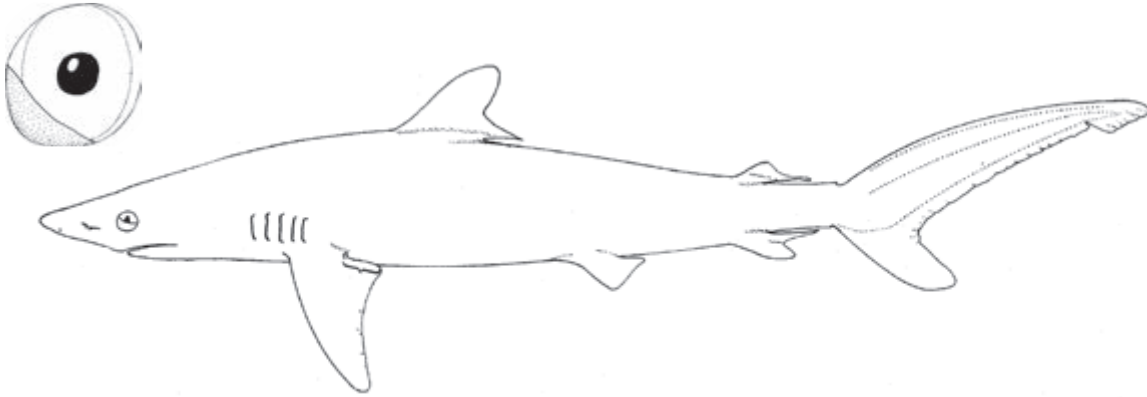
5 gill slits, 2 dorsal fins, no nictitating/blinking eyelid



**CARCHARHINIFORMES**

**Pentanchidae, Scyliorhinidae, Triakidae, Carcharhinidae, Sphyrnidae**

5 gill slits, 2 dorsal fins without spines. Nictitating eyelid



**SQUALIFORMES**

**Dalatiidae, Etmopteridae, Somniosidae, Oxynotidae, Centrophoridae, Squalidae, Echinorhinidae**

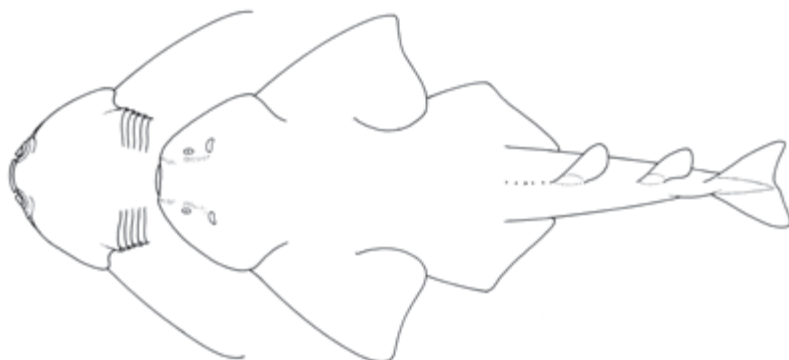
5 gill slits, no anal fin, 2 dorsal fins with spines: Body not ray-like



**SQUATINIFORMES**

**Squatinae**

Body flattened, ray-like mouth, pectoral fins not attached to head

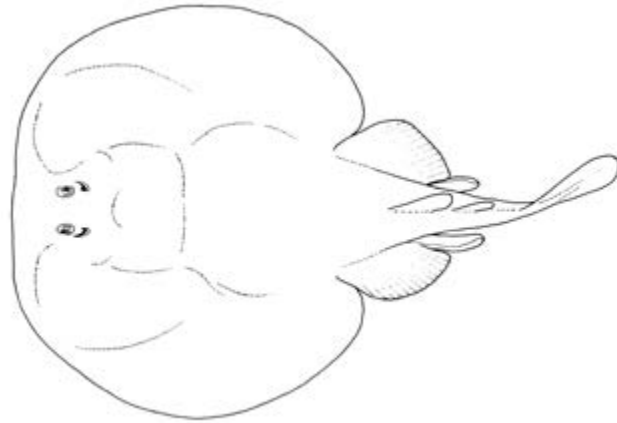


## Rays

### TORPEDINIFORMES

#### Torpedinidae

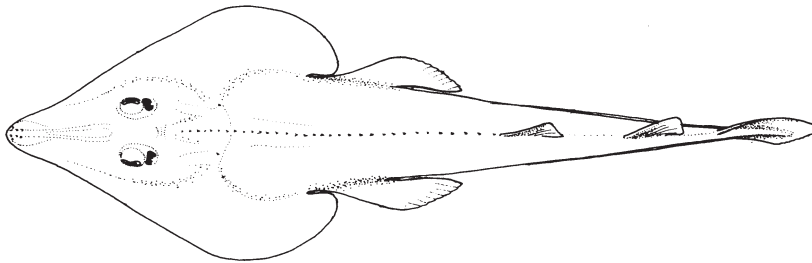
Tail thick with fins, fleshy body, smooth skin.



### RHINOPRISTIFORMES

#### Rhinobatidae, Glaucostegidae, Pristidae

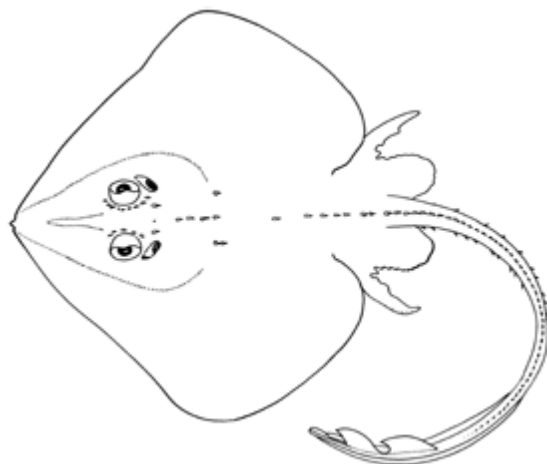
Snout greatly elongated, wedge-shaped.



### RAJIFORMES

#### Rajidae

Tail thick with fins hard body, denticles (small tooth-like projections) sometimes present

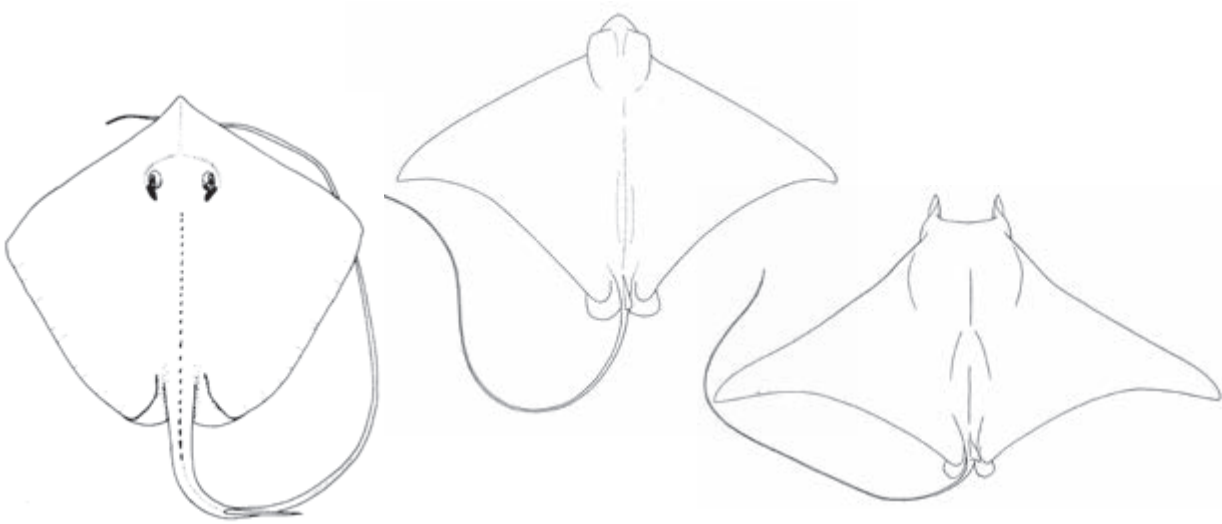




**MYLIOBATIFORMES**

**Dasyatidae, Gymnuridae, Aetobatidae, Myliobatidae, Rhinopteridae, Mobulidae**

Tail thin with stinger, head protrude from disc or not, cephalic fins absent or present



**Chimaeras**

**CHIMAERIFORMES**

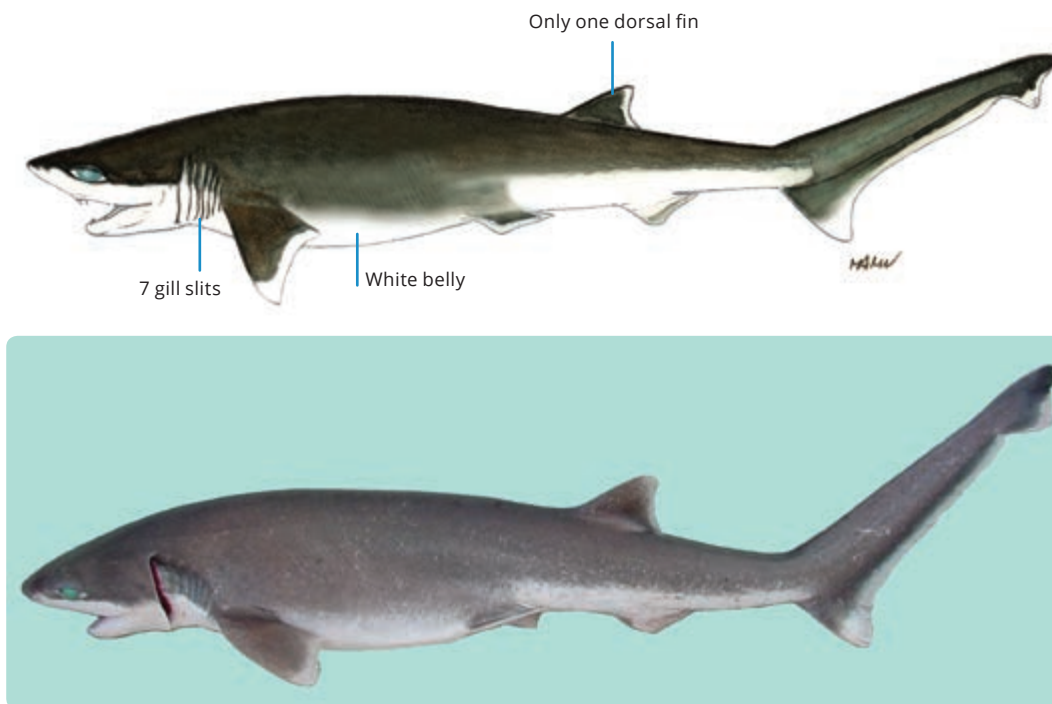
**Chimaeridae**

Unique gill opening on each side of head; naked skin; first dorsal fins long spine; elongate tapering tail



SHARKS  
RAYS  
CHIMAERAS

## Sharks



© F. Serena

### HEXANCHIDAE

## *Heptranchias perlo*, Sharpnose seven-gill shark – HXT

**EN** Sharpnose  
seven-gill shark

**SP** Cañabota  
bocadulce

**FR** Requin perlon

**AR** كلب أبو سبعة

NT

DD

**SPA/BD PROTOCOL:** Annex III    **CITES:** Not listed    **CMS:** NA    **GFCM:** GFCM/42/2018/2

**Global**    **Med**

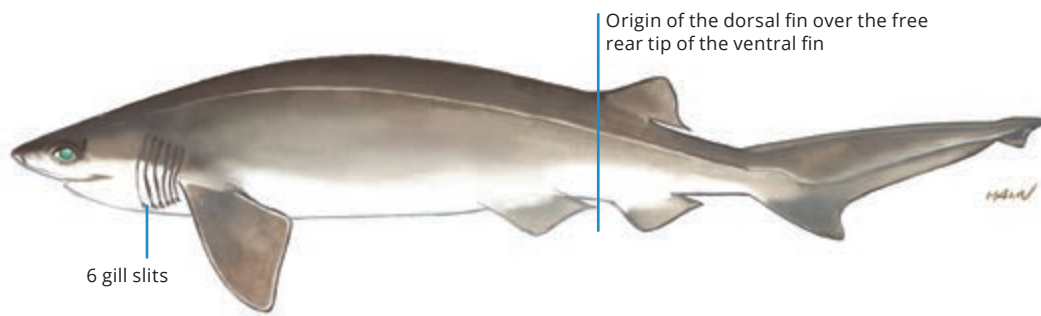
**Size:** up to 140 cm in total length (TL).

**Description:** Species with a narrow-headed and relatively big-eyed; seven gill slits. Body fusiform and slender; dorsal fin small, originating over inner margins of pelvic fins; anal fin small. Teeth wide, low and comb-shaped. Brownish grey above, paler below, sometimes with indistinct dark blotches on body; juveniles with dark-tipped dorsal and caudal fins, adults with light fin margins. Live specimens with fluorescent green eyes. Viviparous, about 9-20 litters; about 26 cm in TL at birth.

**Habitat:** benthic species (30-400 m, occasionally to 1000 m), frequently near edge of shelf, in temperate and warmer waters.

**Distribution:** Atlantic coast also beyond Bay of Biscay. It is found also in the Mediterranean, with the exception of North Adriatic and Black Sea.

Note: considered a commercial species throughout several parts of its distribution in the Mediterranean.



© F. Serena

#### HEXANCHIDAE

### *Hexanchus griseus*, Bluntnose six-gill shark – SBL

**EN** Bluntnose six-gill shark

**SP** Cañabota gris

**FR** Requin griset

**AR** كلب أبو ستة (الدودة)

**NT**

**LC**

**SPA/BD PROTOCOL:** Not listed

**CITES:** Not listed

**CMS:** NA

**GFCM:** Not listed

**Global**

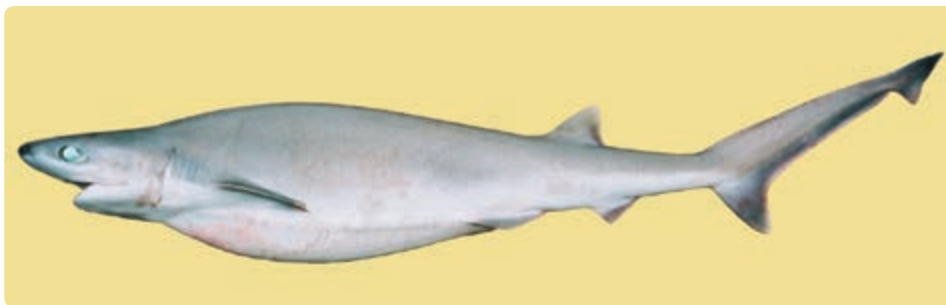
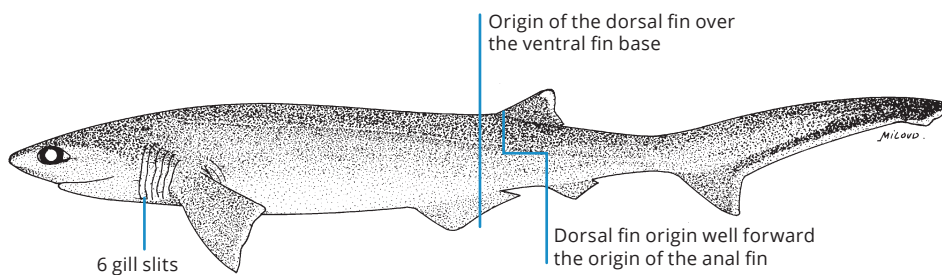
**Med**

**Size:** up to 500 cm in total length (TL)

**Description:** snout rounded, heavy body and fusiform, broad headed with six gill slits. Mouth ventral with 6 rows of lower, bladelike, comb-shaped teeth on each side. Only one dorsal fin bigger than the anal one. Brown or grey above, clear below, with a light stripe along side. Fins with white edges. Live specimens with fluorescent green eyes. Viviparous, about 20-50 litters, maybe even 100 embryos; 60-70 cm in TL at birth.

**Habitat:** usually in deep waters (100-2500 m) close to bottom, rising to surface at night, but also epipelagic; rarely in shallow waters.

**Distribution:** Atlantic coasts northward to the Norway and Iceland, southward to the Mauritania; It is common in the Mediterranean, although absent in the North Adriatic. It is also reported close to the Bosphorus Channel but no in the Black Sea.



© S.P.Iglesias

**HEXANCHIDAE**

**Hexanchus nakamurai, Bigeyed six-gill shark – HXN**

**EN** Bigeyed six-gill shark    **SP** Cañabota ojigrande    **FR** Requin-vache    **AR** NA



**SPA/BD PROTOCOL:** Not listed    **CITES:** Not listed    **CMS:** NA    **GFCM:** Not listed

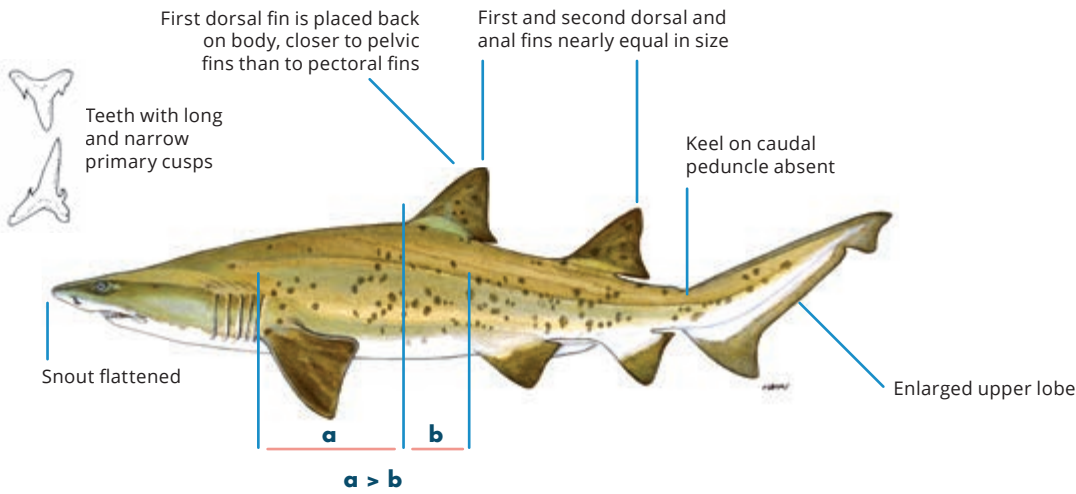
**Global**    **Med**

**Size:** up to 180 cm in total length (TL)

**Description:** narrower head, relatively larger eyes of the congener (*H. griseus*). Five large lower comb-shaped anterolateral teeth. Body uniformly pale brown on the back, without a light line along the lateral side of the trunk. Ventral surface is light brown. Viviparous, up to 26 embryos about 40-45 cm in TL at birth.

**Habitat:** mesopelagic and/or benthic in deep waters (from 90 to 600 m), probable excursions to the surface.

**Distribution:** Florida, Gulf of Mexico, Caribbean area, Southern Atlantic, South-Western Indian Ocean and Taiwan. Very rare in the Mediterranean.



© G.H. Burgess

**ODONTASPIDIDAE**

***Carcharias taurus*, Sandtiger shark – CCT**

**EN** Sandtiger shark    **SP** Toro bacota    **FR** Requin-taureau    **AR** القرش الثور (كلب بحر)



**SPA/BD PROTOCOL:** Annex II    **CITES:** Not listed    **CMS:** Not listed    **GFCM:** GFCM/42/2018/2

**Global**

**Med**

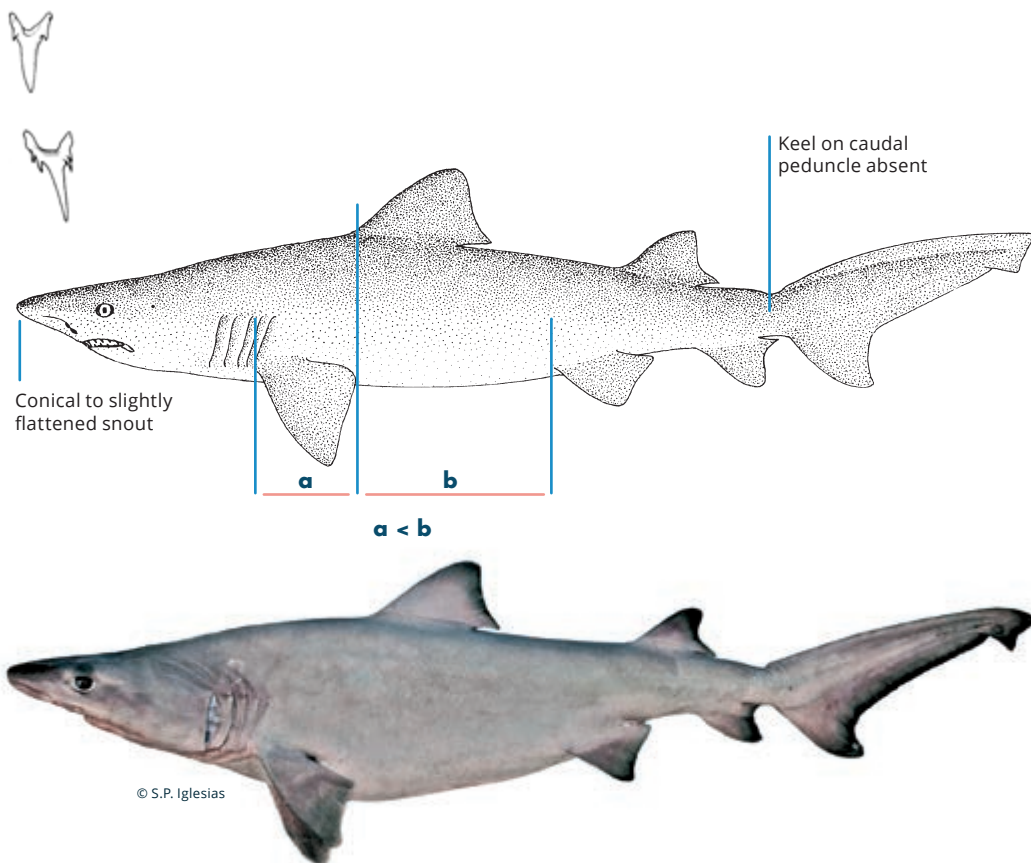
**Size:** up to 320 cm in total length (TL)

**Description:** short, pointed snout, prominent spike-like teeth. Equal sized dorsal and anal fins; 1<sup>st</sup> dorsal fin closer to pelvic than to pectoral fins. Caudal fin with a pronounced subterminal notch and a short ventral lobe. Dorsal side pale brown or grey, paler below, with dark spots that appear faded in adults. Viviparous, usually with two young, sometimes only one; 95-105 cm in TL at birth.

**Habitat:** coastal species, living mostly on or close to bottom. From the surface to 200 m of depth, mainly less than 70 m.

**Distribution:** Atlantic, from Gulf of Guinea to the Canaries; Western Indian and Western Pacific oceans. All around the Mediterranean and excluded from the Black Sea.





**ODONTASPIDIDAE**

***Odontaspis ferox*, Smalltooth Sandtiger shark – LOO**

**EN** Smalltooth Sandtiger shark

**SP** Solrayo

**FR** Requin-féroce

**AR** نمر رملي (كلب بحر)



**SPA/BD PROTOCOL:** Annex II

**CITES:** Not listed

**CMS:** Not listed

**GFCM:** GFCM/42/2018/2

**Global**

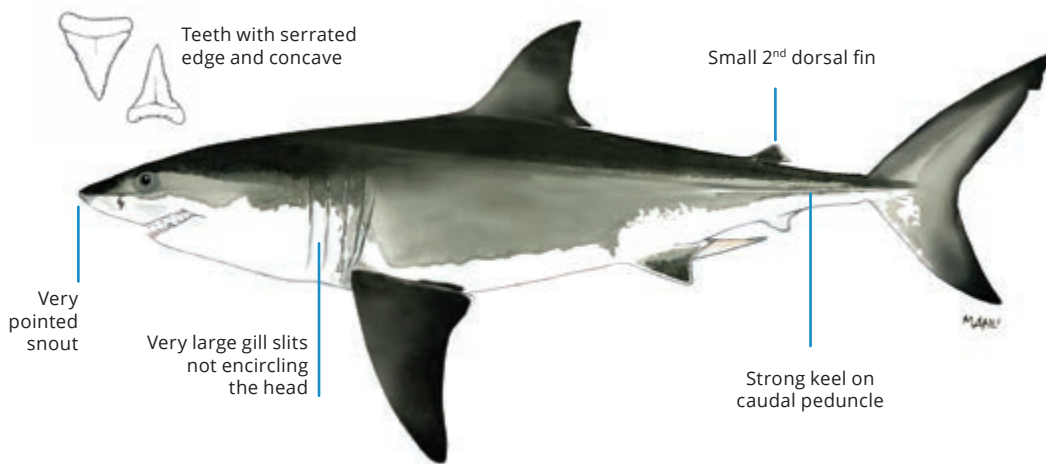
**Med**

**Size:** up to 450 cm in total length (TL)

**Description:** head depressed; second dorsal fin origin above or slightly behind anal fin origin; anal fin slightly smaller than second dorsal fin. Body light grey on the back, sometimes with irregular dark blotches, whitish below. Viviparous, about 105 cm in TL at birth.

**Habitat:** epipelagic or benthic on continental shelf, from 10 to 900 m of depth.

**Distribution:** Atlantic, from Morocco to Gulf of Biscay, also in the Mediterranean Sea not entering into the Black Sea. It is also reported from Western Indian Ocean, Western Central and Eastern Pacific.



© G.H. Burgess

**ODONTASPIDIDAE**

***Carcharodon carcharias*, Great white shark – WSH**

**EN** Great white shark    **SP** Jaqueton blanco    **FR** Grand requin-blanc    **AR** قرش أبيض كبير (قرش أبيض كبير)



**SPA/BD PROTOCOL:** Annex II    **CITES:** Appendix II    **CMS:** Appendix II    **GFCM:** GFCM/42/2018/2

**Global**

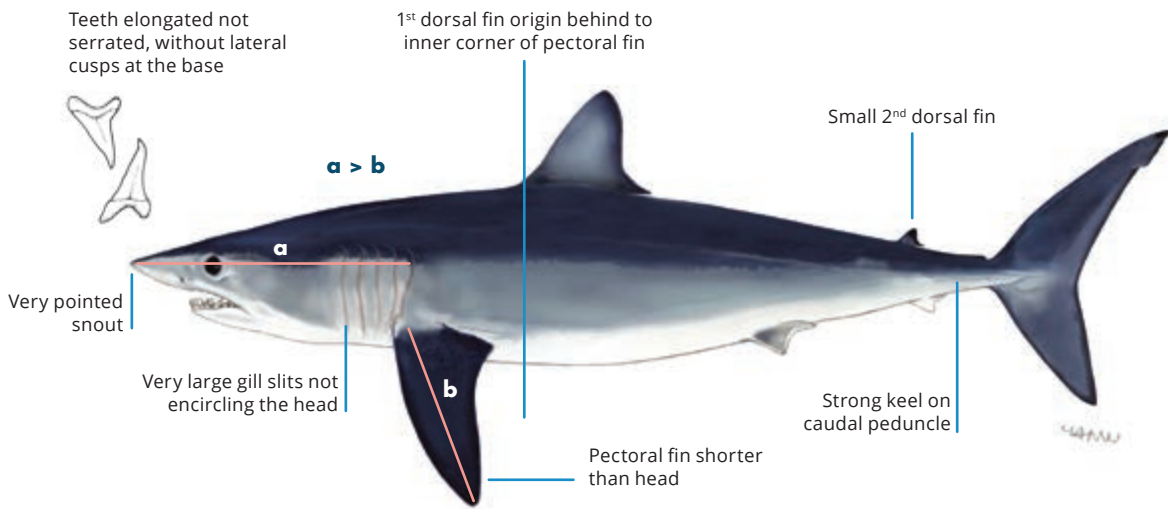
**Med**

**Size:** up to 650 cm in total length (TL)

**Description:** spindle-shaped shark with evident black eyes. Blunt, conical snout; large and triangular saw-edged teeth. Origin of first dorsal-fin usually over the pectoral-fin inner margins. Caudal fin strongly falcate. Lead-grey to brown or black above, lighter on sides, and abruptly white below. Black spot at rear pectoral fin base. Viviparous, very low fecundity with probable litter of 9-14 young, about 120-150 cm in TL at birth.

**Habitat:** epipelagic, often coastal, from the surface to at least 1300 m of depth, usually 0 - 250 m.

**Distribution:** probably cosmopolitan species in temperate cold seas. Rare in the Atlantic, more frequent in the South Africa. Present in the Mediterranean but not in the Black Sea.



© F. Serena

**LAMNIDAE**

***Isurus oxyrinchus*, Shortfin mako – SMA**

**EN** Shortfin mako      **SP** Marrajo dentuso      **FR** Requin-taupe bleue      **AR** زرقايا (زرقايا)



**SPA/BD PROTOCOL:** Annex II      **CITES:** Not listed      **CMS:** Appendix II      **ICCAT:** Rec. 07-06; Rec. 10-06, Rec. 14-06  
**GFCM:** GFCM/42/2018/2

**Global**

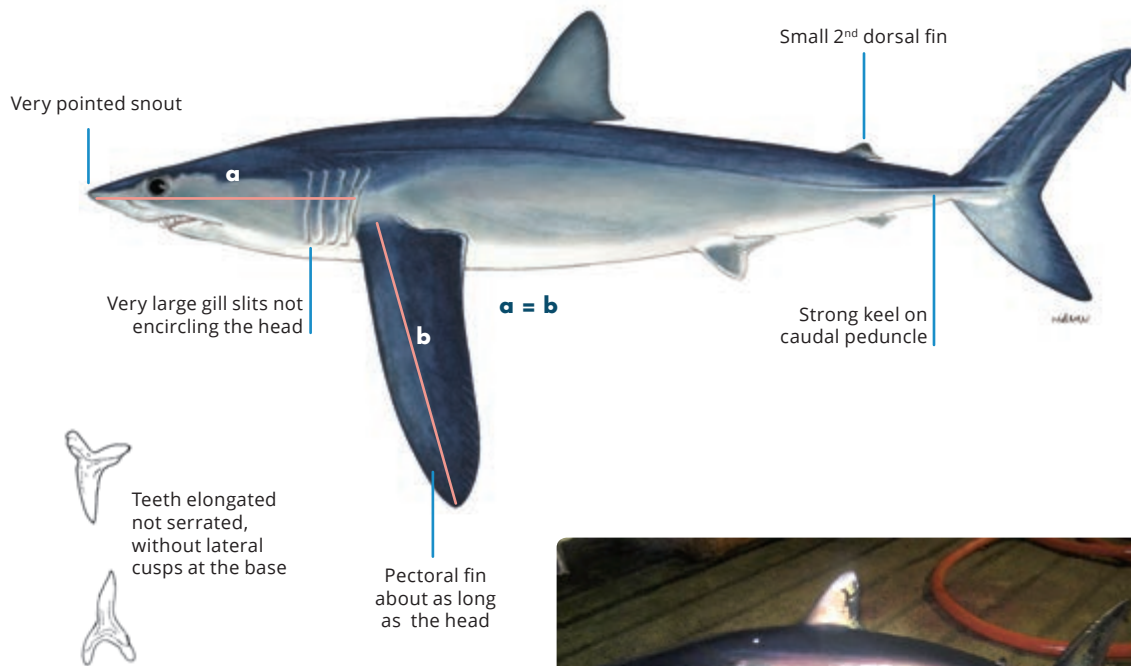
**Med**

**Size:** up to 450 cm in total length (TL)

**Description:** Spindle-shaped shark with large black eyes, a sharp snout. Large, narrow, hooked teeth with smooth edges without cusplets. Caudal fin lunate, lower lobe strongly developed. Dark blue above, white below. Very small second dorsal and anal fins. Viviparous, litter of 4-16 young, 60-70 cm in TL at birth.

**Habitat:** coastal and oceanic, from the surface or down to at least 600 m, usually between 50-150 m of depth.

**Distribution:** cosmopolitan species in temperate and tropical seas, included the Mediterranean but not the Black Sea.



© NOAA Observer programme

LAMNIDAE

***Isurus paucus*, Longfin mako – LMA**

EN Longfin mako    SP Marrajo carite    FR Petite-requin taupe    AR NA



SPA/BD PROTOCOL: Not listed    CITES: Not listed    CMS: Appendix II    GFCM: Not listed    Global    Med

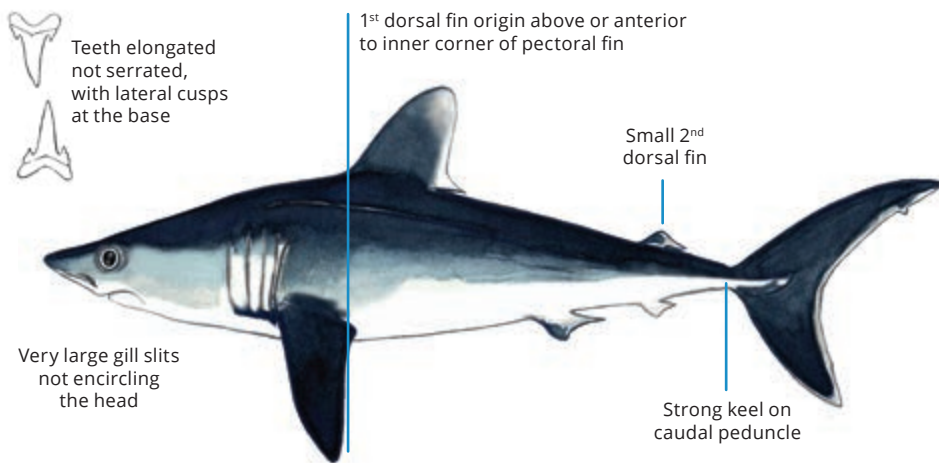
**Size:** up to 430 cm in total length (TL)

**Description:** body fusiform with pectoral fins about as long as head or longer; snout usually narrowly and pointed. Caudal fin falcate, with a long inferior lobe. Intense blue back, white belly, with dusky markings on underside of snout. Viviparous, litter of 2-8 young, at least 97 cm in TL at birth.

**Habitat:** oceanic species, pelagic-epipelagic

**Distribution:** Western and Eastern Atlantic; Western Indian and Pacific Ocean.

**Remarks:** the occurrence in the Mediterranean Sea needs confirmation.



© S.P. Iglesias

**LAMNIDAE**

***Lamna nasus*, Porbeagle – POR**

**EN** Porbeagle

**SP** Marrajo sardinero

**FR** Requin-taube commun

**AR** طوبية



**SPA/BD PROTOCOL:** Annex II  
**GFCM:** GFCM/42/2018/2

**CITES:** Appendix II

**CMS:** Appendix II

**ICCAT:** Rec. 07-06, Rec. 15-06, Rec. 13-10

**Global**

**Med**

**Size:** up to 350 cm in total length (TL)

**Description:** spindle-shaped shark and stout with large black eyes, sharp, conical snout, long gill slits, and small, smooth-edged, narrow teeth with side cusps. Strong keels on the caudal peduncle, short secondary keels on the caudal base, and a lunatic caudal fin; dark grey dorsally, white ventrally, without blotches. Viviparous, litter up to 4 young, at least 50-75 cm in TL at birth.

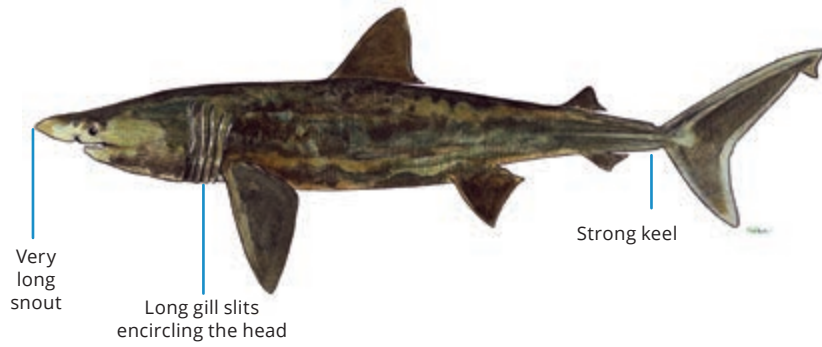
**Habitat:** epipelagic species, coastal and oceanic, generally found in deep midwaters at 200-700 m, but also occurring on the surface.

**Distribution:** Atlantic, from Morocco to Iceland and also in the Pacific and Indian Oceans. Present in the Mediterranean but not in the Black Sea.





Small hooked teeth



© M. Bradai

**CETORHINIDAE**

***Cetorhinus maximus*, Basking shark – BSK**

EN Basking shark

SP Peregrino

FR Pèlerin

AR كوسج رخالة



SPA/BD PROTOCOL: Annex II

CITES: Appendix II

CMS: Appendix I & II

GFCM: GFCM/42/2018/2

Global

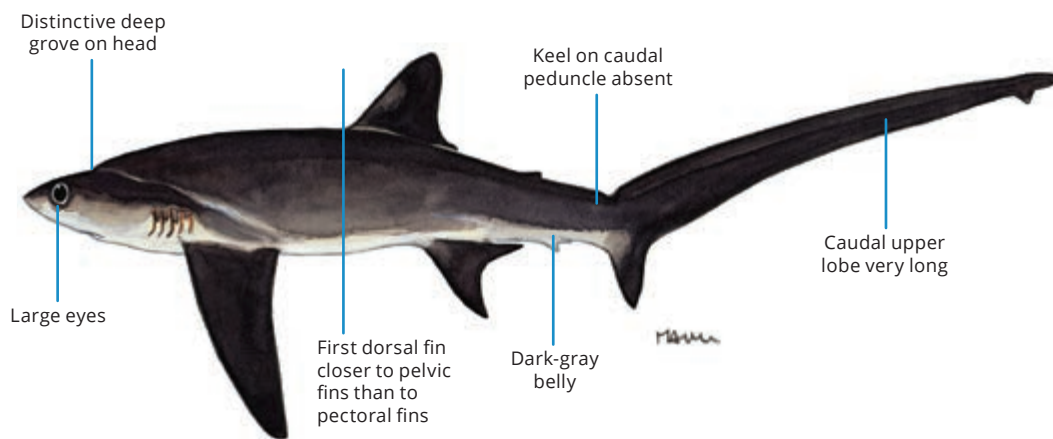
Med

**Size:** up to 1000 cm in total length (TL)

**Description:** huge gill slits almost encircling the head; pointed snout; large, sub-terminal mouth with very small teeth; caudal peduncle with strong lateral keels, and lunate caudal fin. Blackish to grey-brown, with large gray or bluish spots, often with irregular white blotches under the head and belly. Viviparous, apparently up to 160 cm in TL at birth; probably long gestation period (3.5 years).

**Habitat:** epipelagic species, oceanic, migrating towards the coast in spring and summer.

**Distribution:** cosmopolitan species, present in the Mediterranean but absent in the Black Sea.



© S. Chow

**ALOPIIDAE**

***Alopias superciliosus*, Bigeye thresher – BTH**

**EN** Bigeye thresher

**SP** Zorro ojón

**FR** Renard à gros yeux

**AR** ثعلب كبير العين



**SPA/BD PROTOCOL:** Not listed  
**GFCM:** Not listed

**CITES:** Appendix II

**CMS:** Appendix II

**ICCAT:** Rec. 09-07; Rec 13-10

**Global**

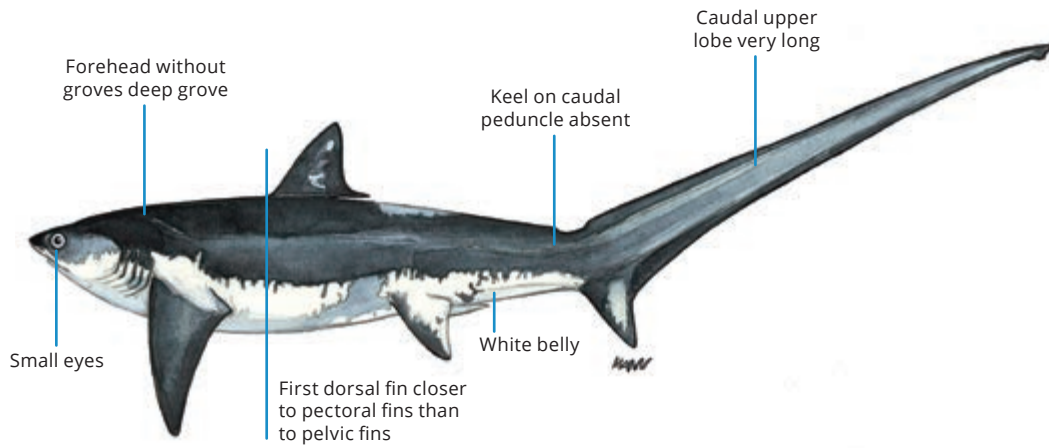
**Med**

**Size:** up to 480 cm in total length (TL)

**Description:** nape with a deep and long horizontal groove on each side; snout long with eyes very large. Broad caudal tip, curved tipped pectoral fins; 1<sup>st</sup> dorsal fin further back than in other threshers. Back dark blue to purplish-grey, belly cream to grey. Viviparous, litter up to 2 young, up to 100-130 cm in TL at birth.

**Habitat:** epipelagic species, oceanic and coastal in temperate and tropical waters, from the surface to 1000 m of depth.

**Distribution:** Atlantic, Pacific and Indian Oceans. Increasingly occurring in the Mediterranean but not in the Black Sea.



© F. Serena

**ALOPIIDAE**

***Alopias vulpinus*, Thresher shark – ALV**

**EN** Thresher shark

**SP** Zorro

**FR** Renard de mer

**AR** ثعلب أبو ذئب



**SPA/BD PROTOCOL:** Annex III  
**GFCM:** GFCM/42/2018/2

**CITES:** Appendix II

**CMS:** Appendix II

**ICCAT:** Rec 09-07; Rec 13-10

**Global**

**Med**

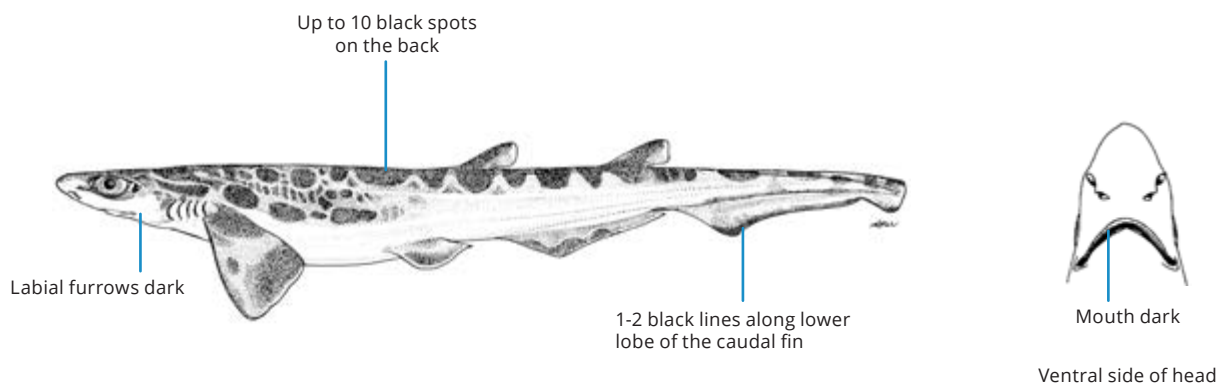
**Size:** up to 600 cm in total length (TL)

**Description:** nape without deep horizontal grooves; snout short, small eyes, curved, narrow-tipped pectoral fins, white patch over pectoral fin bases. Brown, grey, blue-grey, or blackish on back and underside of snout, white below; 1<sup>st</sup> dorsal fin well ahead. Viviparous, litter up to 2-4 young, up to 120 cm in TL at birth.

**Habitat:** epipelagic species, oceanic and coastal in temperate and tropical waters, from the surface to 400 m of depth.

**Distribution:** Atlantic, Pacific and Indian Oceans. Common in the Mediterranean. Recently a specimen was found just outside the Bosphorus Channel.

Note: considered a commercial species throughout several parts of its distribution in the Mediterranean.



© J. Rey

**PENTANCHIDAE**

***Galeus atlanticus*, Atlantic sawtail catshark – GHA**

**EN** Atlantic sawtail catshark    **SP** Pintarroja atlántica    **FR** Chien atlantique    **AR** NA



**SPA/BD PROTOCOL:** Not listed    **CITES:** Not listed    **CMS:** Not listed    **GFCM:** Not listed    **Global**    **Med**

**Size:** up to 47 cm in total length (TL)

**Description:** body slender; moderately long, flattened snout. First dorsal fin over the latter portion of the pelvic fin bases. 2<sup>nd</sup> dorsal fin over the posterior portion of the anal fin base. Both dorsal fins are angular and similar in size. Tailing margin of the caudal fin with 1-2 black lines along lower lobe, as is interior of mouth. The inside of the furrows at the corners of the mouth are dark, in contrast to *G. melastomus* where they are light. Oviparous with short hatching period.

**Habitat:** from continental slope at 300-800 m of depth.

**Distribution:** North Eastern Atlantic, from Spanish coasts to Morocco. It occurs also in the Mediterranean but is restricted to the Alboran Sea.

Note: considered a commercial species throughout several parts of its distribution in the Mediterranean.



Mouth dark

Ventral side of head



© F. Serena

**PENTANCHIDAE**

***Galeus melastomus*, Blackmouth catshark – SHO**

**EN** Blackmouth catshark    **SP** Pintarroja bocanegra    **FR** Chien espagnol    **AR** قط أسود الفم



**SPA/BD PROTOCOL:** Not listed    **CITES:** Not listed    **CMS:** Not listed    **GFCM:** Not listed

**Global**    **Med**

**Size:** up to 90 cm in total length (TL)

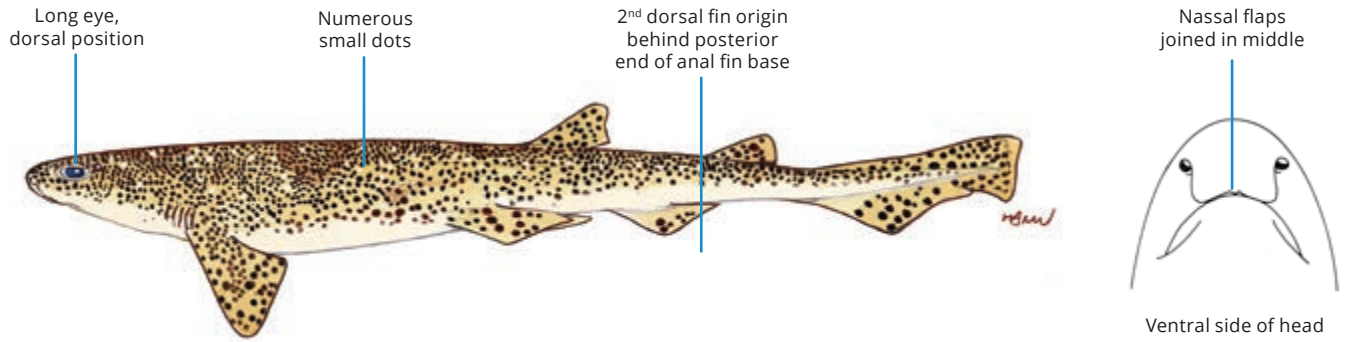
**Description:** body slender; moderately long, flattened snout. First dorsal fin over the latter portion of the pelvic fin bases. 2<sup>nd</sup> dorsal fin over the posterior portion of the anal fin base. Both dorsal fins are angular and similar in size. Tailing margin of the caudal fin black, as is interior of mouth. The inside of the furrows at the corners of the mouth light. Oviparous, spawning all year round, with a peak in the spring and summer.

**Habitat:** from continental slope at 200-1200 m of depth, occasionally on continental shelf before 200 m.

**Distribution:** Atlantic, from the Faroes islands to Senegal. Occur also in the Mediterranean but not in the north Adriatic. No present in the Black Sea.

Note: considered a commercial species throughout several parts of its distribution in the Mediterranean.





© F. Serena

SCYLORHINIDAE

***Scyliorhinus canicula*, Small-spotted catshark – SYC**

EN Small-spotted catshark    SP Pintarroja    FR Petite roussette    AR قِط صَغِير مَبْرَقَش (كاتارلي / نمر)

LC

LC

SPA/BD PROTOCOL: Not listed    CITES: Not listed    CMS: Not listed    GFCM: Not listed

Global

Med

**Size:** up to 100 cm in total length TL (60 cm in Mediterranean).

**Description:** snout short; the. Upper labial furrows absent, interior nasal flap pointed. Origin of second dorsal fin over the hind end of anal fin base. dorsal surface sandy or brown, covered by numerous small dark spots; ventral side cream. Oviparous, spawning all around the year with a peak on June - July on muddy bottoms at about 200 m depth. Fecundity for the northeast Atlantic to be at around 29-62 pups. Hatched pups are about 8-10 cm in total length.

**Habitat:** soft bottoms of the continental shelf and upper slope up to 400 m depth.

**Distribution:** Atlantic coasts from Norway to Senegal; all around the Mediterranean including the Black Sea.

Note: considered a commercial species throughout several parts of its distribution in the Mediterranean.

Long eye,  
dorsolateral position

Medium large  
blotches and dots

2<sup>nd</sup> dorsal fin origin  
before or above posterior  
end of anal fin base



Ventral side of head



© F. Serena

#### SCYLORHINIDAE

### *Scyliorhinus stellaris*, Nursehound – SYT

EN Nursehound    SP Alitán    FR Grande roussette    AR حرتوكة (كاتارلي / نمر)

NT

NT

SPA/BD PROTOCOL: Not listed    CITES: Not listed    CMS: Not listed    GFCM: Not listed

Global

Med

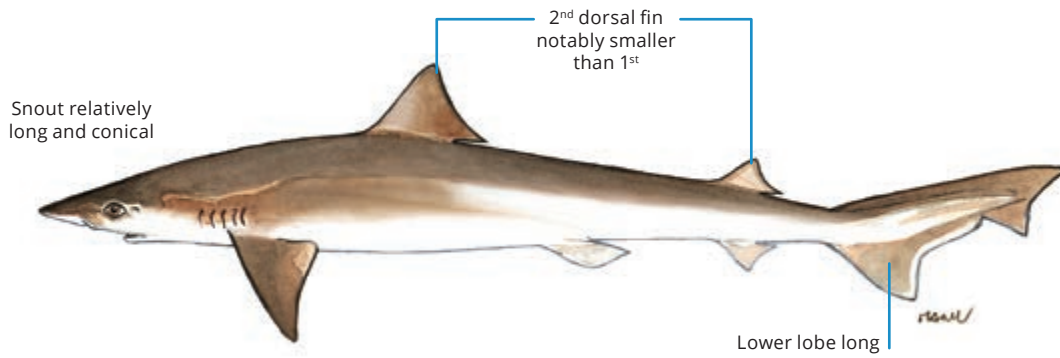
**Size:** up to 170 cm in total length (TL)

**Description:** stubby catshark with snout short, large and small black spots and sometimes white spots on the sides of the body and the back. Small anterior nasal flaps that do not reach the mouth. Origin of the second dorsal fin forward the posterior end of the anal fin base. Oviparous, size at hatching about 16 cm.

**Habitat:** hard bottoms of the coast from shallow waters to outer edge of the continental shelf (200 m of depth) and beyond.

**Distribution:** Atlantic coasts from Southern Scandinavia to Senegal; all around the Mediterranean but not in the Black Sea.

Note: considered a commercial species throughout several parts of its distribution in the Mediterranean.



© F. Serena

**TRIAKIDAE**

***Galeorhinus galeus*, Tope shark – GAG**

**EN** Tope shark

**SP** Cazón

**FR** Requin-hâ

**AR** مُتَسَوَّلَة (قطاط)



**SPA/BD PROTOCOL:** Annex II

**CITES:** Not listed

**CMS:** Not listed

**GFCM:** GFCM/42/2018/2

**Global**

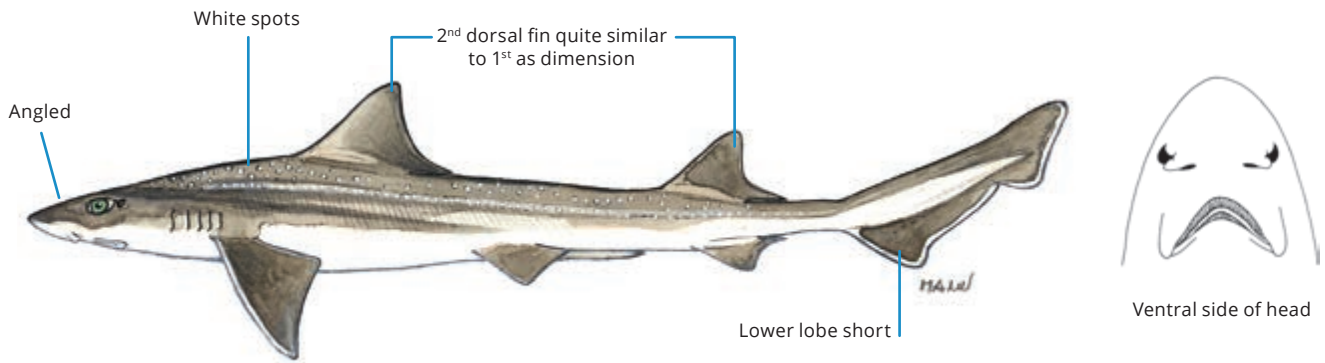
**Med**

**Size:** up to 160 cm, more rarely 195 cm in total length (TL)

**Description:** long and pointed snout, large mouth and small blade-like teeth; 2<sup>nd</sup> dorsal fin smaller than 1<sup>st</sup> and about as large as anal. Lower caudal lobe as long as rest of fin. From grey to brown on the back, white belly. Viviparous, litter up to 45 young, common 25-35; pups born up to 35 cm in TL.

**Habitat:** benthopelagic species, from surface to 500, exceptionally up to 1000 m of depth.

**Distribution:** world-wide in temperate waters included the Mediterranean.



© S.P. Iglesias

**TRIAKIDAE**

***Mustelus asterias*, Starry smooth-hound shark – SDS**

**EN** Starry smooth-hound shark

**SP** Musola estrellada

**FR** Émissole tachetée

**AR** كلب نجمي (قطاط)

**LC**

**VU**

**SPA/BD PROTOCOL:** Annex III

**CITES:** Not listed

**CMS:** Not listed

**GFCM:** GFCM/42/2018/2

**Global**

**Med**

**Size:** up to 140 cm in total length (TL)

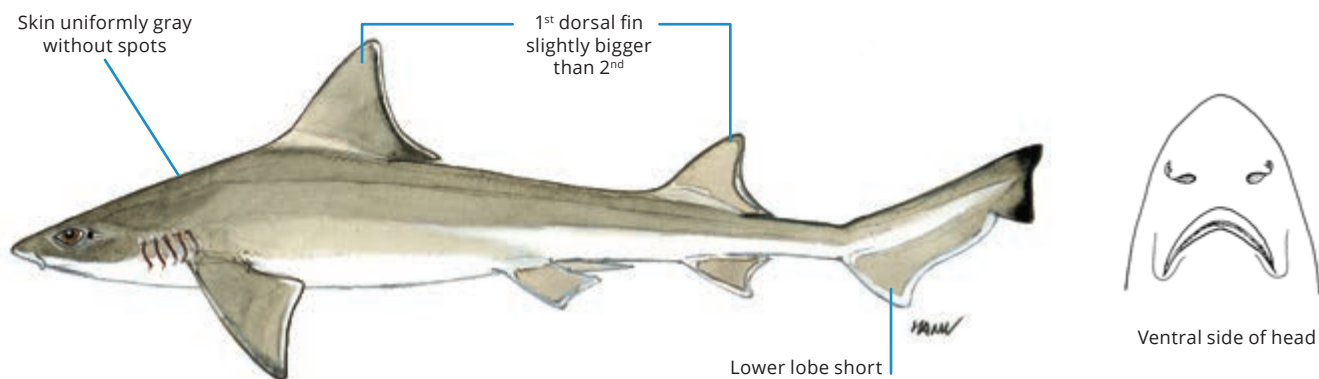
**Description:** snout rounded; upper labial folds longer than lowers. Teeth asymmetrical. Dorsal fins similar in size; notch on upper caudal lobe large. Grey to brownish on the back, with white spots, white belly. Viviparous, litter up to 20 young, pups born up to 30 cm in TL.

**Habitat:** coastal species in temperate waters from the surface to 350 m deep.

**Distribution:** Atlantic, from North Sea to Canary Islands, including the Mediterranean.

Note: considered a commercial species throughout several parts of its distribution in the Mediterranean.





© F. Serena

**TRIAKIDAE**

***Mustelus mustelus*, Smooth-hound – SMD**

**EN** Smooth-hound    **SP** Musola    **FR** Émissole lisse    **AR** كلب ناعم (قطاط)



**SPA/BD PROTOCOL:** Annex III    **CITES:** Not listed    **CMS:** Not listed    **GFCM:** GFCM/42/2018/2

**Global**    **Med**

**Size:** up to 200 cm in total length (TL)

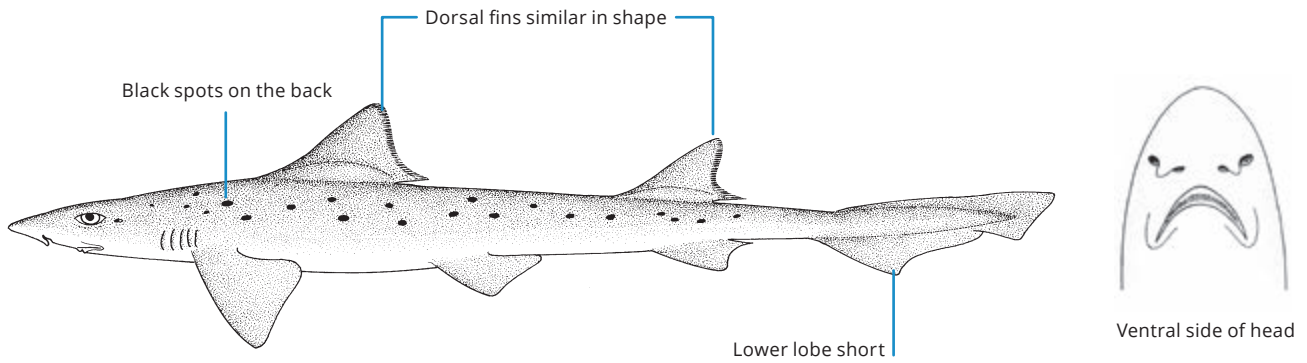
**Description:** snout rounded; upper labial furrows longer than lowers. Teeth asymmetrical. Gill slits almost equal in length. Dorsal fins similar in shape, the second is slightly smaller. Origin of the 1<sup>st</sup> dorsal fin over free rear pectoral tip; upper caudal lobe large with a notch. Back uniformly grey or brownish, white belly. Viviparous, litter up to 4-17 young, pups born up to about 40 cm in TL.

**Habitat:** coastal demersal species. From the surface to about 600 m of the depth

**Distribution:** Atlantic, from the British Isles to South Africa, included the Indian Ocean and the Mediterranean.

Note: considered a commercial species throughout several parts of its distribution in the Mediterranean.





© F. Serena

## TRIAKIDAE

### *Mustelus punctulatus*, Blackspotted smooth-hound – MPT

**EN** Blackspotted smooth-hound    **SP** Musola primienta    **FR** Émissole pointillée    **AR** كلب مُنقَط (قطاط)

DD

VU

**SPA/BD PROTOCOL:** Annex III    **CITES:** Not listed    **CMS:** Not listed    **GFCM:** GFCM/42/2018/2

Global

Med

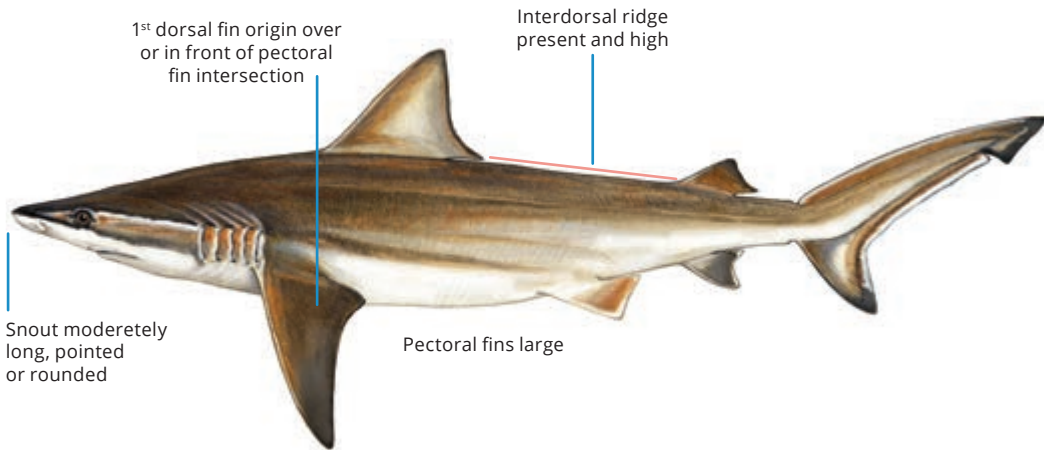
**Size:** up to 190 cm in total length (TL)

**Description:** snout rounded; upper labial folds longer than lowers. Teeth asymmetrical. Dorsal fins similar in shape with dark posterior edge, the second is slightly smaller. Back uniformly grey or brownish with small dark blotches, white belly. Viviparous, pups born up to 30-43 cm in TL.

**Habitat:** coastal species with benthic habits on the continental shelf up to 200 m depth.

**Distribution:** Atlantic, from Morocco to Southern Portugal. Also in the Mediterranean.

Note: considered a commercial species throughout several parts of its distribution in the Mediterranean.



© R. Bonfil

**CARCHARHINIDAE**

***Carcharhinus altimus*, Bignose shark – CCA**

**EN** Bignose shark    **SP** Tiburón baboso    **FR** Requin babosse    **AR** NA

**SPA/BD PROTOCOL:** Not listed    **CITES:** Not listed    **CMS:** Not listed    **GFCM:** Not listed



**Global**    **Med**

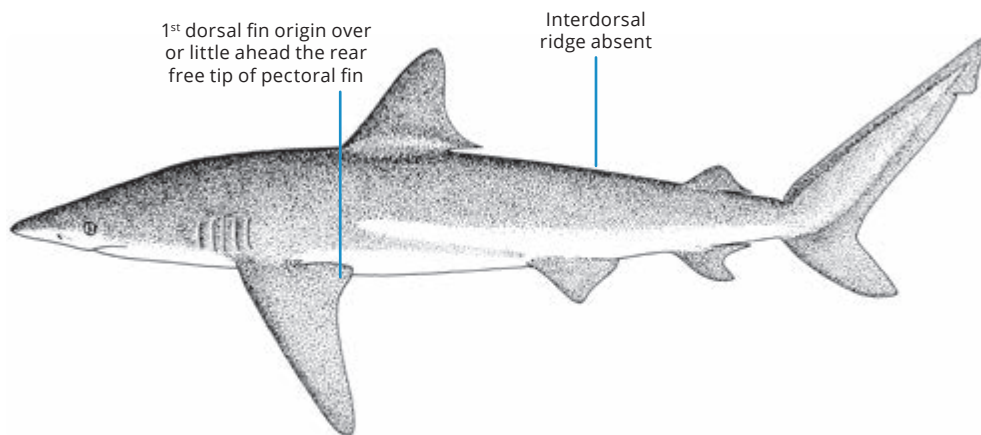
**Size:** up to 300 cm in total length (TL)

**Description:** heavily body with a long and broad snout, high triangular, saw-edged upper teeth without cusplets; moderately high and prominent Interdorsal ridge. Origin of the 1<sup>st</sup> dorsal fin over or in front of the axil. Light grey on the back, sometimes bronzy, white belly with no conspicuous markings. Viviparous, litter up to 3-15 young, pups born probably up to 70-90 cm in TL.

**Habitat:** common in offshore and in warm-temperate and tropical waters, usually near of the edge of the continental and insular shelves, between 90 - 430 m and beyond.

**Distribution:** Circumglobal species, irregular records in tropical and warm seas, included the Mediterranean with very few data.

**Remarks:** Its occurrence in the Mediterranean Sea needs confirmation.



© C. Duffy

**CARCHARHINIDAE**

***Carcharhinus brachyurus*, Copper shark – BRO**

**EN** Copper shark    **SP** Tiburón cobrizo    **FR** Requin cuivre    **AR** قرش نحاسي

**NT**

**DD**

**SPA/BD PROTOCOL:** Not listed    **CITES:** Not listed    **CMS:** Not listed    **GFCM:** Not listed

**Global**

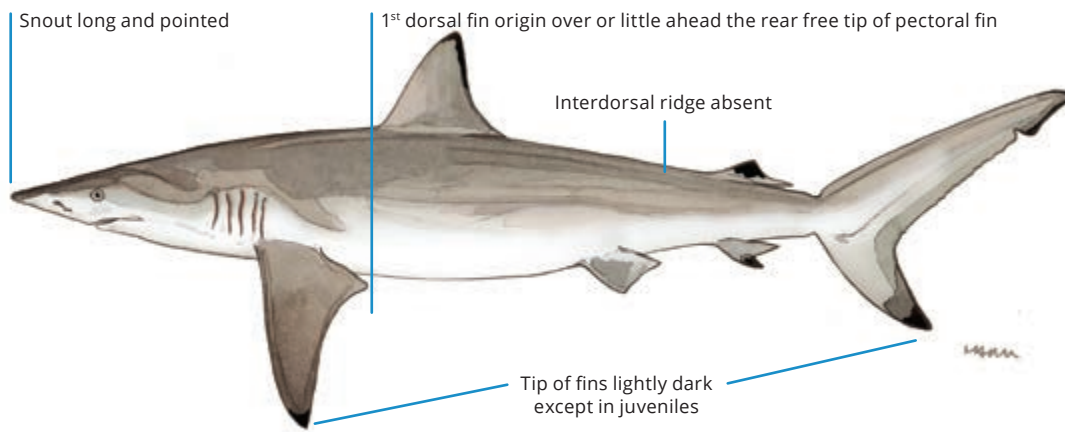
**Med**

**Size:** up to 325 cm in total length (TL)

**Description:** large shark with snout moderately long, rounded or bluntly pointed; no interdorsal ridge. Viviparous, litter up to 7-20 young, pups born probably up to 59-70 cm in TL.

**Habitat:** coastal species but also offshore in warm-temperate waters, from the surface to at least 100 m depth.

**Distribution:** Circumglobal species. It occurs also in the Mediterranean, all data from the Western basin.



© M. N. Bradai

**CARCHARHINIDAE*****Carcharhinus brevipinna*, Spinner shark – CCB**

**EN** Spinner shark    **SP** Tiburón aleta negra    **FR** Requin tisserand    **AR** قرش لولبي (وشة / بومنقار)



**SPA/BD PROTOCOL:** Not listed    **CITES:** Not listed    **CMS:** Not listed    **GFCM:** Not listed

Global

Med

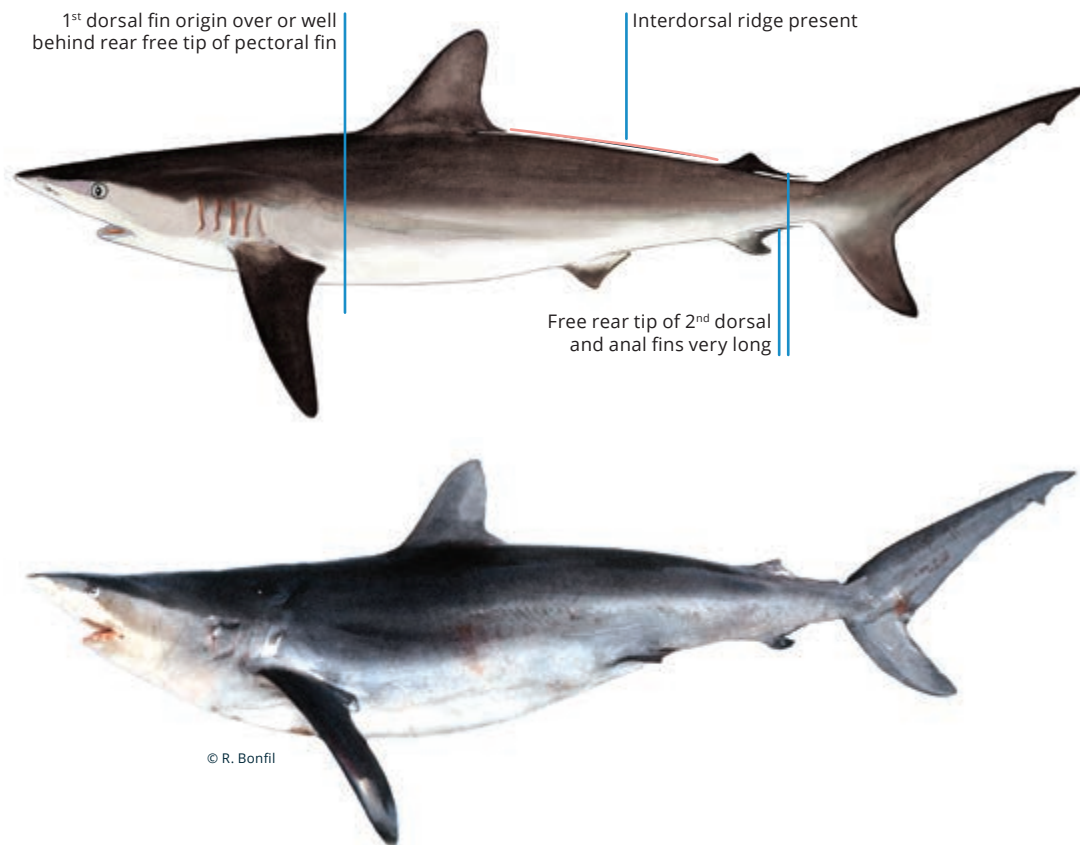
**Size:** up to 280 cm in total length (TL)

**Description:** slender shark with a long, narrow and pointed snout. Origin of the 1<sup>st</sup> dorsal fin above or behind the rear free tip of the pectoral fin. No interdorsal ridge. Grey on the back, white belly, with a conspicuous white band on each side. Viviparous, litter up to 3-20 young, pups born probably up to 60-80 cm in TL.

**Habitat:** coastal-pelagic species in warm-temperate and tropical waters of the continental shelf, close to the coasts and offshore; from the shallow waters up to at least 100 m of depth.

**Distribution:** Indo-West Pacific, Atlantic and Mediterranean; its presence in this sea seems limited to the North Africa coasts.

**Remarks:** erroneously recorded as non-native species, it is rare but indigenous of the Mediterranean.



© R. Bonfil

**CARCHARHINIDAE**

***Carcharhinus falciformis*, Silky shark – FAL**

**EN** Silky shark

**SP** Tiburón jaquetón

**FR** Requin soyeux

**AR** قرش حريري (كلب بحر)



**SPA/BD PROTOCOL:** Not listed  
**GFCM:** Not listed

**CITES:** Appendix II

**CMS:** Appendix II

**ICCAT:** Rec. 11-08; Rec. 13-10

**Global**

**Med**

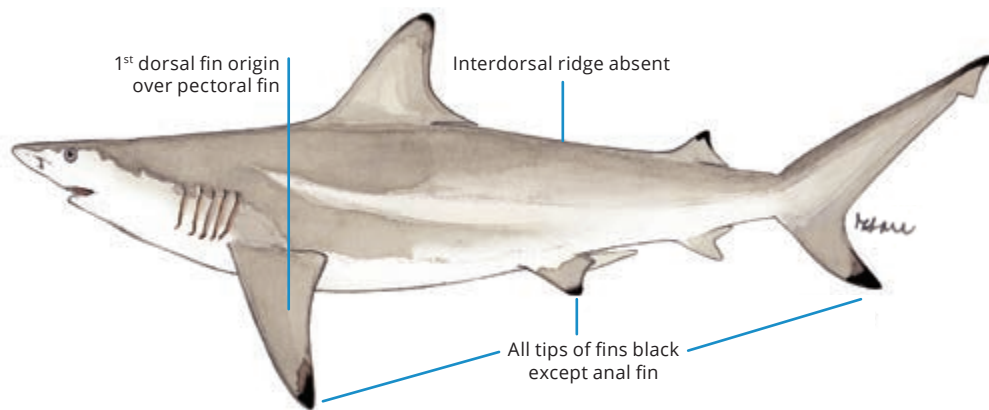
**Size:** up to 330 cm in total length (TL)

**Description:** large species but enough slender. Snout moderately long and rounded. 1<sup>st</sup> dorsal fin slightly falcate, with rounded apex; its origin well behind pectoral free rear tip. From greyish to brown or blackish on the back, white belly. Viviparous, litter up to 2-16 young, pups born probably up to 55-87 cm in TL.

**Habitat:** epipelagic species near the edge of continental shelves but also in open sea, generally in tropical waters. From surface up to 500 m of depth.

**Distribution:** circumtropical species in all oceans, including the Red Sea and the Mediterranean. Here, with very few records in the Western basin.





© R. Bonfil

**CARCHARHINIDAE**

***Carcharhinus limbatus*, Blacktip shark – CCL**

**EN** Blacktip shark    **SP** Tiburón macuira    **FR** Requin bordé    **AR** قرش مُكَلَّل (كَلب بجر)



**SPA/BD PROTOCOL:** Not listed    **CITES:** Not listed    **CMS:** Not listed    **GFCM:** Not listed

**Global**

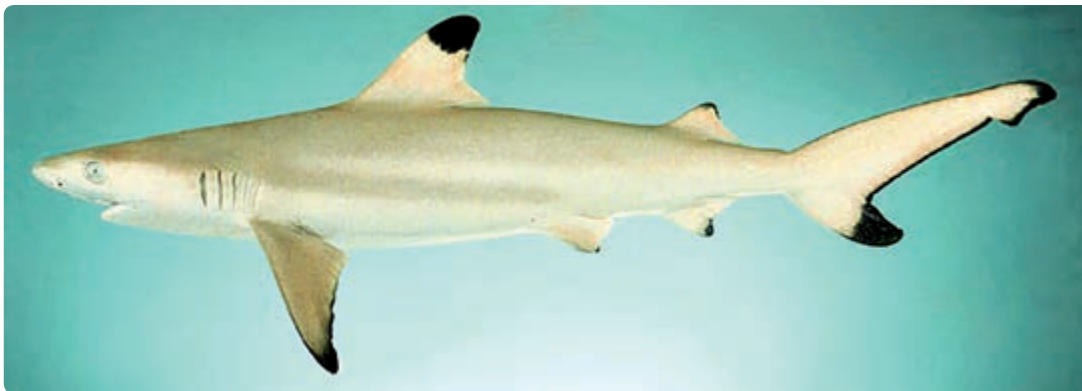
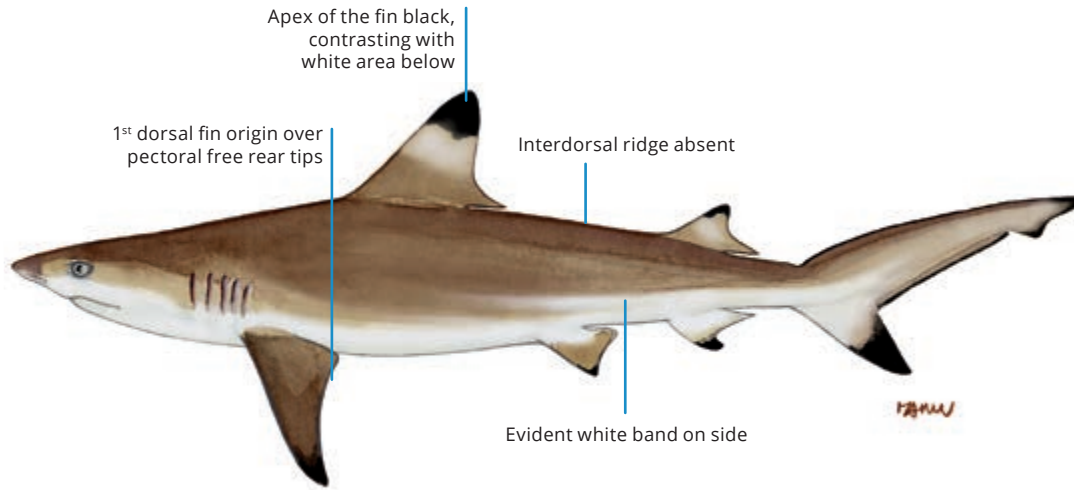
**Med**

**Size:** up to 255 cm in total length (TL)

**Description:** stocky shark with a moderately long and pointed snout. Origin of the 1<sup>st</sup> dorsal fin over the pectoral fin. No interdorsal ridge. grey or grey-brown on the back, white belly. An evident white band on sides of the body; apex of the fins dark but not the 1<sup>st</sup> dorsal. Viviparous, litter up to 1-10 young, pups born probably up to 38-72 cm in TL.

**Habitat:** pelagic species in tropical and warm-temperate waters. Occur adjacent to the continental shelves more rarely in the open sea. From the surface up to 100 m of depth.

**Distribution:** cosmopolitan species, just one record in the Western Mediterranean basin.



© J.E. Randall

#### CARCHARHINIDAE

### *Carcharhinus melanopterus*, Blacktip reef shark – BLR

**EN** Blacktip reef shark **SP** Tiburón de puntas negras **FR** Requin pointes noires **AR** NA



**SPA/BD PROTOCOL:** Not listed **CITES:** Not listed **CMS:** Not listed **GFCM:** Not listed

**Global**

**Med**

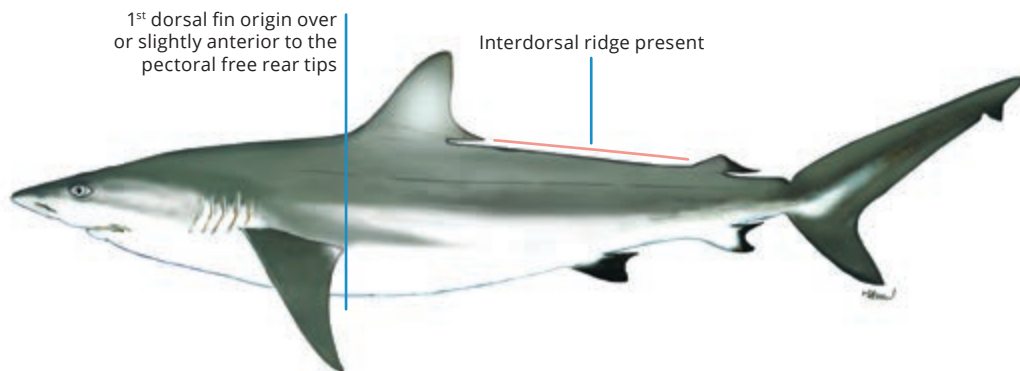
**Size:** up to 200 cm in total length (TL)

**Description:** relatively stubby species. Snout short and rounded. Large 1<sup>st</sup> dorsal fin, with a rounded black apex, its origin usually over pectoral free rear tips. origin of second dorsal over anal origin. Viviparous, litter up to 2-4 young, pups born probably up to 33-52 cm in TL.

**Habitat:** species of tropical area, prefers shallow water close to the coral reefs, from the surface to few metres of depth.

**Distribution:** Indo-Pacific species: East Africa to the Hawaiian Islands and the Tuamotu Archipelago. North to Japan and south to Australia. Also, in the Red Sea.

**Remarks:** Its occurrence in the Mediterranean Sea needs confirmation.



© F. Serena

**CARCHARHINIDAE**

***Carcharhinus obscurus*, Dusky shark – DUS**

**EN** Dusky shark      **SP** Tiburón arenero      **FR** Requin sombre      **AR** قرش أسود (كلب بحر)



**SPA/BD PROTOCOL:** Not listed      **CITES:** Not listed      **CMS:** Appendix II      **GFCM:** Not listed

**Global**

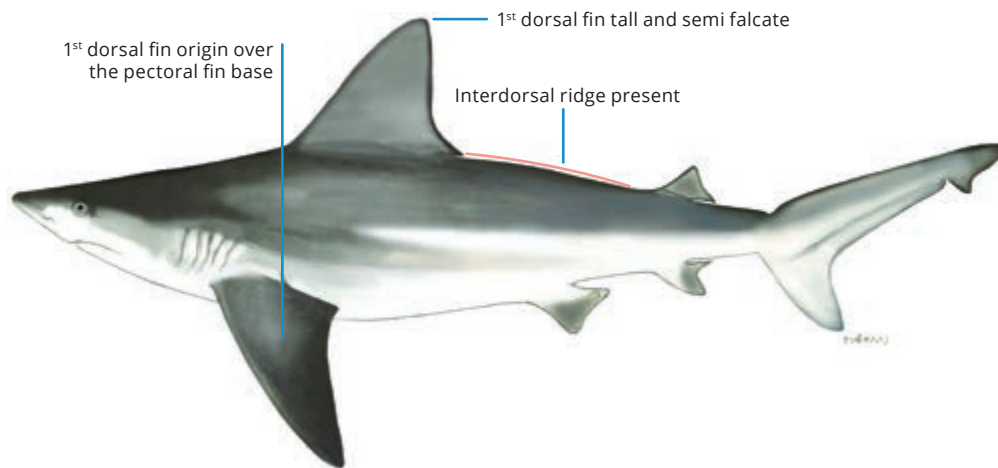
**Med**

**Size:** up to 420 cm in total length (TL)

**Description:** large and slender shark with snout short to moderately long and rounded. 1<sup>st</sup> dorsal fin semifalcated, its origin usually over or slightly anterior to the pectoral free rear tips. Interdorsal ridge present. Blue-grey, lead-grey on the back, white belly. Viviparous, litter up to 3-14 young, pups born probably up to 70-100 cm in TL.

**Habitat:** coastal-pelagic species. in warm temperate and tropical waters of the continental shelf but also in oceanic waters. From the surface to 400 m depth.

**Distribution:** It is cosmopolitan, including the Mediterranean with very few records in the Western basin.



© P. Consoli

**CARCHARHINIDAE**

***Carcharhinus plumbeus*, Sandbar shark – CCP**

**EN** Sandbar shark    **SP** Tiburón trozo    **FR** Requin gris    **AR** قرش رمادي (كلب بحر)



**SPA/BD PROTOCOL:** Annex III    **CITES:** Not listed    **CMS:** Not listed    **GFCM:** GFCM/42/2018/2

**Global**

**Med**

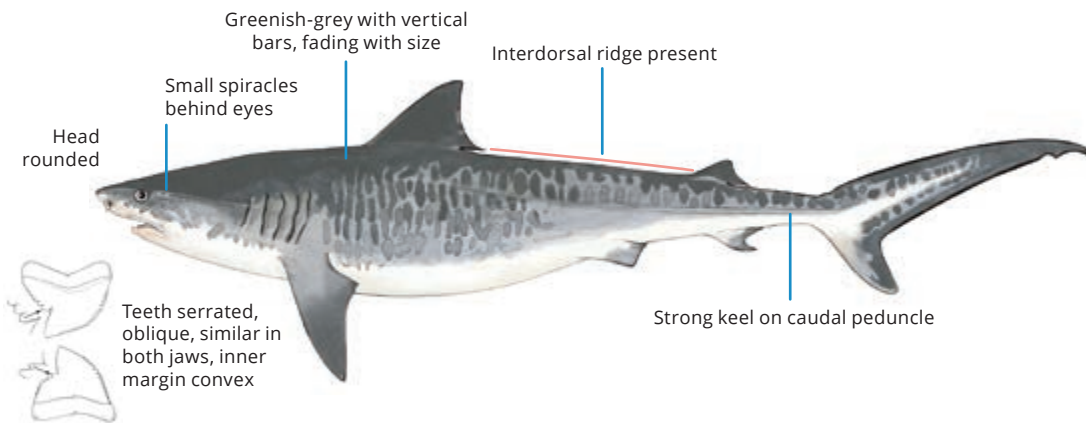
**Size:** up to 300 cm in total length (TL)

**Description:** medium-sized shark with snout short and rounded. 1<sup>st</sup> dorsal fin extremely tall, triangular, semifalcate with apex rounded, its origin over or anterior to the pectoral insertions. Interdorsal ridge present. Grey-brown on the back, white belly. Viviparous, litter up to 1-14 young, pups born probably up to 56-75 cm in TL.

**Habitat:** coastal-pelagic species. in warm temperate and tropical waters of the continental shelf but also in oceanic waters. From the surface to 280 m depth.

**Distribution:** cosmopolitan, also in the Mediterranean where it is common. Absent in the Black Sea.

Note: considered a commercial species throughout several parts of its distribution in the Mediterranean.



© R. Bonfil

#### CARCHARHINIDAE

### *Galeocerdo cuvier*, Tiger shark – TIG

EN Tiger shark

SP Tiburón tigre

FR Requin tigre  
commun

AR قرش نمر



SPA/BD PROTOCOL: Not listed

CITES: Not listed

CMS: Not listed

GFCM: Not listed

Global

Med

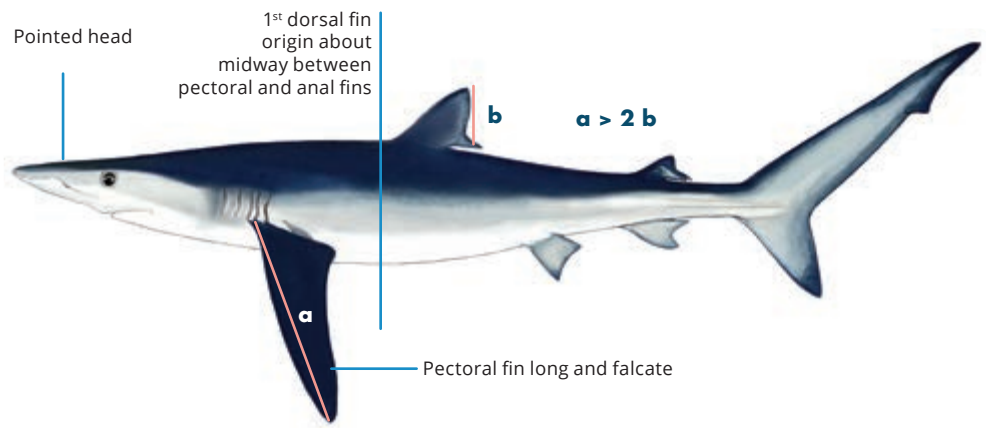
**Size:** up to 550 cm in total length (TL)

**Description:** trunk stout, tapering to slender caudal peduncle. Snout short and rounded; upper labial furrow as long as snout length. Head flattened dorsally and broad. Spiracle present behind and above eye. Apex of first dorsal fin rounded; inter-dorsal ridge present; strong lateral keels on caudal peduncle; upper caudal lobe long. Greenish-grey to brown on the back with well-defined dark spots in juveniles, becoming vertical bars in the adult. Viviparous, large litter up to 10-82 pups, born probably up to 60-90 cm in TL.

**Habitat:** coastal waters but also out off the coasts, usually found near bottom up to 140m depth, but also at surface.

**Distribution:** cosmopolitan, in temperate and tropical seas. Recently recorded also in the Mediterranean in the Gulf of Sirte.





© B.P.S.

**CARCHARHINIDAE**  
***Prionace glauca*, Blue shark – BSH**

EN Blue shark    SP Tiburón azul    FR Peau bleue    AR قرش أزرق (كلب بحر)    **NT**    **CR**

SPA/BD PROTOCOL: Annex III    CITES: Not listed    CMS: Appendix II    ICCAT: Rec 16-12    **Global**    **Med**  
 GFCM: GFCM/42/2018/2

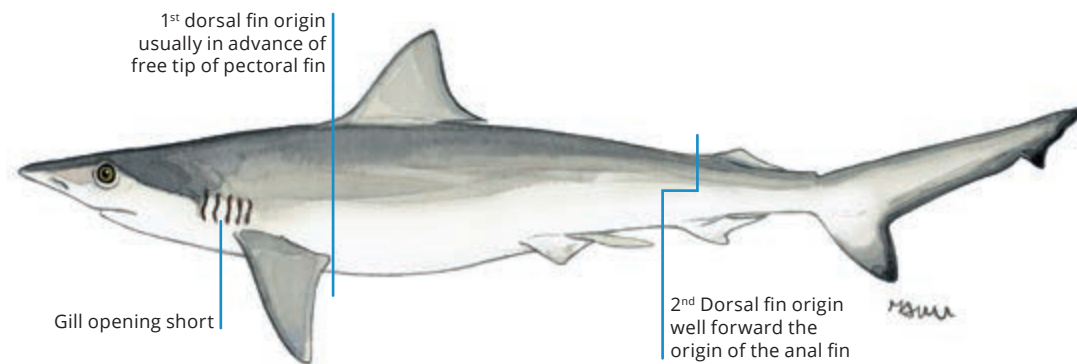
**Size:** up to 400 cm in total length (TL)

**Description:** very slender shark with head narrow and moderately depressed; snout very long; eyes large; spiracles absent. Interdorsal ridge absent; caudal peduncle with low keels. 1<sup>st</sup> dorsal fin origin well behind pectoral rear tips. Very narrow and long pectoral fins. Intense blue on the back, white belly, without a colour pattern. Viviparous, litter up to 4-135 (usually 15-30) young, pups born probably up to 35-44 cm in TL.

**Habitat:** oceanic and coastal-pelagic species. in warm temperate and tropical waters from very close to the coast to the open sea. From the surface to 350 m depth.

**Distribution:** circumglobal species, included the Mediterranean but not the Black Sea.

Note: considered a commercial species throughout several parts of its distribution in the Mediterranean.



© J.E. Randall

**CARCHARHINIDAE**

***Rhizoprionodon acutus*, Milk shark – RHA**

**EN** Milk shark    **SP** Tiburón lechoso    **FR** Requin à museau pointu    **AR** قرش ذو خرطوم مُقرن



**SPA/BD PROTOCOL:** Not listed    **CITES:** Not listed    **CMS:** Not listed    **GFCM:** Not listed    **Global**    **Med**

**Size:** up to 170 cm in total length.

**Description:** snout long. Gill openings short. First dorsal fin origin usually ahead of free tip of pectoral fin; inter-dorsal ridge present or absent; origin of the second dorsal fin over posterior third of anal base. Grey to brown on the back, white below. Viviparous, litter up to 3-8, pups born between 25-39 cm in TL.

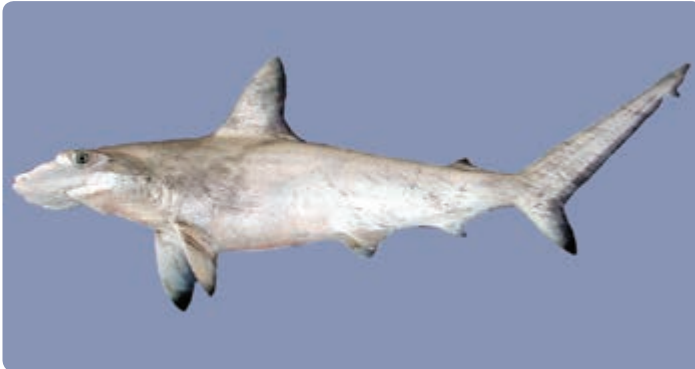
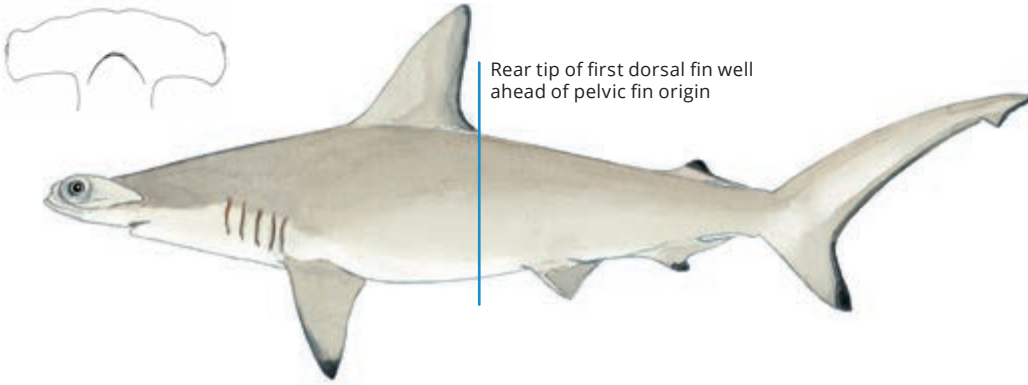
**Habitat:** mid waters on sandy and muddy bottoms between 1-200 m depth of the continental shelf.

**Distribution:** Eastern Atlantic from Senegal to Angola, including Madeira. Also occurs in the Indian Ocean, Red Sea and Japan. Two records in the Mediterranean Sea.

Distinctive indentation in centre of front margin of the head and nasal furrows



Rear tip of first dorsal fin well ahead of pelvic fin origin



© R. Bonfil



© SEFSC Pascagoula Laboratory; NOAA NMFS SEFSC

**SPHYRNIDAE**

***Sphyrna lewini*, Scalloped hammerhead – BSH**

**EN** Scalloped hammerhead

**SP** Cornuda común

**FR** Requi-marteau halicorne

**AR** أبو مطرقة مُحَرَّم



**SPA/BD PROTOCOL:** Annex II  
**GFCM:** GFCM/42/2018/2

**CITES:** Appendix II

**CMS:** Appendix II

**ICCAT:** Rec. 10-08; Rec 13-10

**Global**

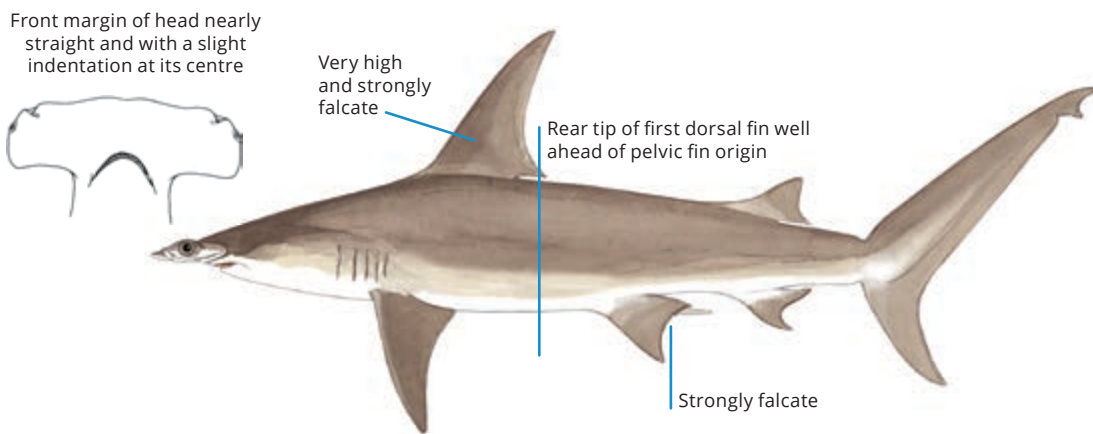
**Med**

**Size:** up to 430 cm in total length (TL)

**Description:** The head and the skull are flattened and wide (as a hammer) with eyes at the sides. Anterior contour of the head quite convex, with prominent median notch. Rear tip of first dorsal fin ahead of pelvic fin origin; pelvic fins low and not falcate. Grey, grayish brown, or olivaceous on the back, white belly; tip of the pectoral fins grey or black on ventral side. Viviparous, litter up to 12-41 young, pups born up to 39-57 cm in TL.

**Habitat:** epipelagic and semi-oceanic species, in tropical and warm areas over continental shelf from the coast to about 250 m depth, probably much more.

**Distribution:** circumglobal species in Atlantic, Pacific and Indian Oceans. It is also found in the Mediterranean but not in the Black Sea.



© SEFSC Pascagoula Laboratory; Collection of Brandi Noble, NOAA NMFS SEFSC

#### SPHYRNIDAE

### *Sphyrna mokarran*, Great hammerhead – SPK

**EN** Great hammerhead **SP** Comuda gigante

**FR** Grand requin-marteau

**AR** أبو مطرقة شائع



**SPA/BD PROTOCOL:** Annex II  
**GFCM:** GFCM/42/2018/2

**CITES:** Appendix II

**CMS:** Appendix II

**ICCAT:** Rec. 10-08; Rec 13-10

**Global**

**Med**

**Size:** up to 610 cm in total length (TL)

**Description:** The head and the skull are flattened and wide (as a hammer) with eyes at the sides. Head broad with anterior contour quite convex, scalloped in the midline and opposite each nostril; centre of eyes anterior to external line of the mouth; fifth gill opening shorter than other four and situated behind origin of pelvic fins; first dorsal fin very high and falcate as well as the pelvic fins. Grey or greyish brown on the back; ventral side white. Viviparous, litter up to 6-42 pups, size at birth 50-70 cm in TL.

**Habitat:** coastal pelagic and semi-oceanic over continental shelf from coast to 30 m. Usually up to 100 m depth.

**Distribution:** circumglobal species from the Atlantic, Pacific and Indian Oceans. Just a single old record from the Mediterranean.

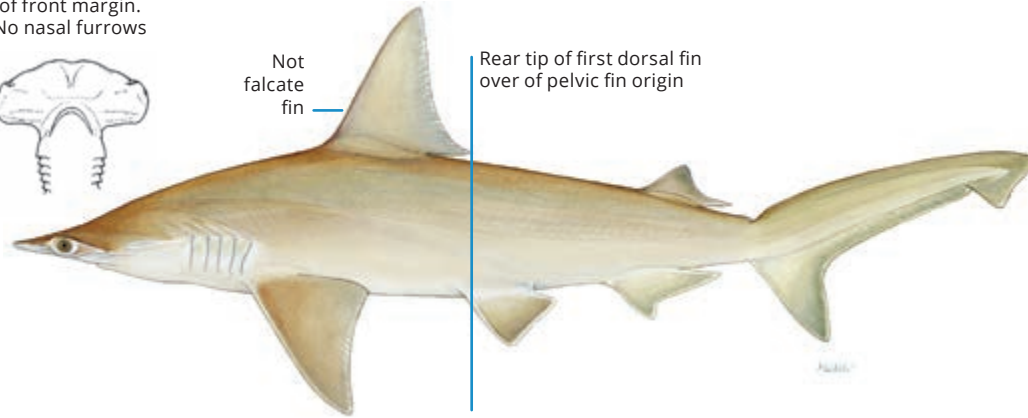
**Remarks:** Its occurrence in the Mediterranean Sea needs confirmation.

Indentation in centre of front margin. No nasal furrows



Not falcate fin

Rear tip of first dorsal fin over of pelvic fin origin



Aristide Takoukam (AMMCO)

#### SPHYRNIDAE

### *Sphyrna tudes*, Smalleye hammerhead – SPQ

**EN** Smalleye hammerhead

**SP** Comuda ojichica

**FR** Requi-marteau à petits yeux

**AR** أبو مطرقة صغيرة العينين



**SPA/BD PROTOCOL:** Not listed  
**GFCM:** Not listed

**CITES:** Not listed

**CMS:** Not listed

**ICCAT:** Rec. 10-08; Rec 13-10

**Global**

**Med**

**Size:** up to 150 cm in total length (TL)

**Description:** head broad with anterior contour fairly convex. Eyes small, centre of eyes fore to front of mouth; fifth gill opening above origin of pectoral fins. Dorsal surface grey to greyish-brown, shading to paler below. Viviparous, 5 to 12 pups per litter, size at birth 30 cm in TL.

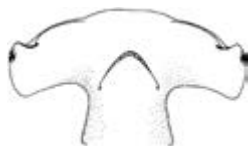
**Habitat:** on continental shelf from surface to 12 m depth.

**Distribution:** Eastern Atlantic, from Venezuela to Uruguay. Just a single old record in the Mediterranean.

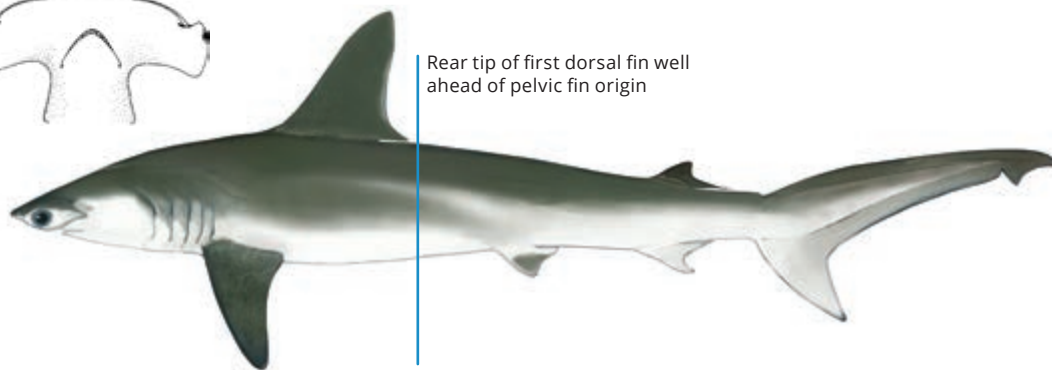
**Remarks:** Its occurrence in the Mediterranean Sea needs confirmation.



No indentation in centre of front margin



Rear tip of first dorsal fin well ahead of pelvic fin origin



© M. Dicken

#### SPHYRNIDAE

### *Sphyrna zygaena*, Smooth hammerhead – SPZ

**EN** Smooth hammerhead

**SP** Cornuda cruz

**FR** Requin-marteau commun

**AR** أبو مطرقة ناعم (قرش بومطرقة)



Global

Med

**SPA/BD PROTOCOL:** Annex II  
**GFCM:** GFCM/42/2018/2

**CITES:** Appendix II

**CMS:** Not listed

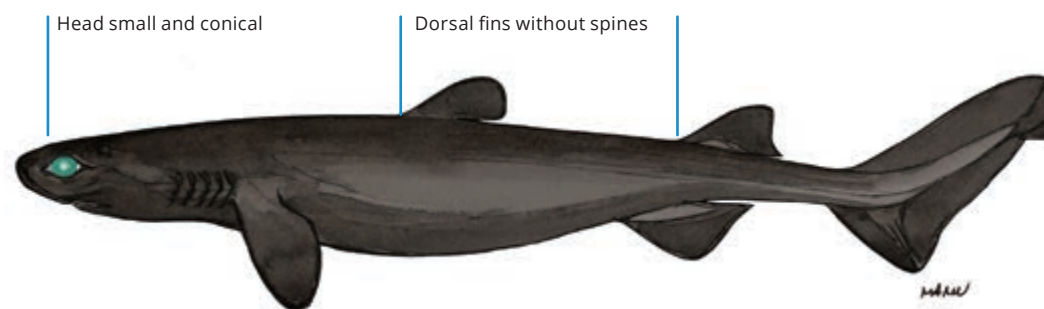
**ICCAT:** Rec. 10-08; Rec 13-10

**Size:** up to 500 cm in total length (TL)

**Description:** The head and the skull are flattened and wide (as a hammer) with eyes at the sides front contour of the head moderately convex, without median indentation. Rear tip of first dorsal fin well ahead of pelvic fin origin. Pelvic fins low and not falcate. From green dark to brownish-grey on the back, shading to white on the belly. Viviparous, litter up to 20-50 young, pups born up to 50-60 cm in TL.

**Habitat:** epipelagic in coastal waters of temperate areas from the surface up to 200 m depth, usually 0-20 m.

**Distribution:** widespread in temperate and tropical seas of the Atlantic and Indo-Pacific. Common in the Mediterranean, absent in the Black Sea.



© F. Serena

#### DALATIIDAE

### *Dalatias licha*, Kitefin shark – SCK

EN Kitefin shark

SP Carrocho

FR Squale liche

AR كوسج شراعي الزعنفة



SPA/BD PROTOCOL: Not listed

CITES: Not listed

CMS: Not listed

GFCM: Not listed

Global

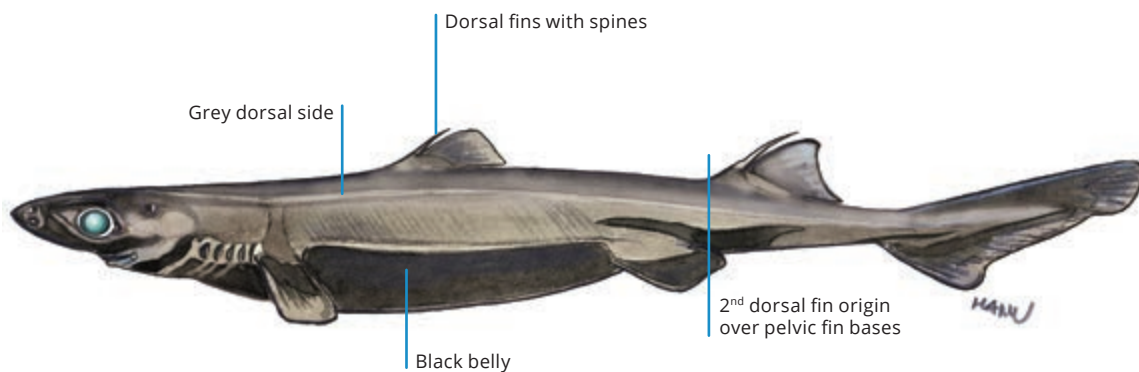
Med

**Size:** up to 182 cm in total length (TL)

**Description:** short snout thick and fleshy with tip rounded; nostrils close to snout top. Mouth lightly arched, lips thick and fleshy. Spiracles above and behind eye. Pectoral fins shape similar to a paddle, while the first dorsal fin is similar to a brush. Caudal fin broad, truncate at its end, without evident lower lobe. Body uniformly brown. Viviparous, litter up to 10-16 young, pups born up to 30-42 cm in TL.

**Habitat:** benthic and mesopelagic species in temperate waters, from 90 to 1000 m of deep, up to 1800 m, usually on the slopes at 300-600 m.

**Distribution:** Atlantic Ocean but also in New Zealand, Australia and Japan. Common but not abundant in the Mediterranean and Black Sea.



© F. Serena

#### ETMOPTERIDAE

### *Etmopterus spinax*, Velve belly – ETX

EN Velve belly

SP Negrito

FR Sagre commun

AR كلب مخملي البطن



SPA/BD PROTOCOL: Not listed

CITES: Not listed

CMS: Not listed

GFCM: Not listed

Global

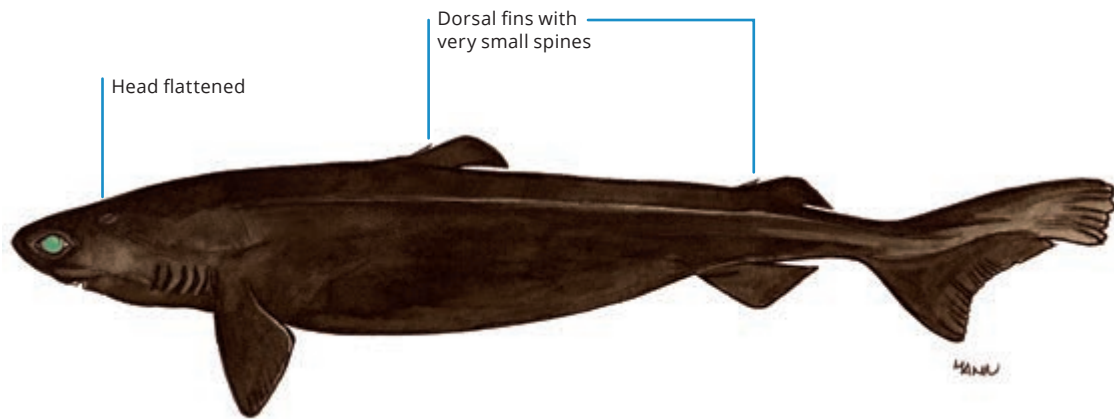
Med

**Size:** up to 60 cm in total length (TL)

**Description:** snout long and rounded. Spiracle above and behind eye. Origin of the 2<sup>nd</sup> dorsal fin over the pelvic fin bases; caudal fin with notch on the upper lobe little defined. Brown on the back, with a particular black pattern on the lateral body; black belly. Viviparous, litter up to 6-20 young, pups born about 9-14 cm in TL.

**Habitat:** demersal species on shelf and slopes, from 200 to 2500 m depth.

**Distribution:** Atlantic, from Iceland to South Africa. It is common in the Mediterranean but absent in the North Adriatic and Black Sea.



© F. Serena

SOMNIOSIDAE

**Centroscymnus coelolepis, Portuguese dogfish – CYO**

EN Portuguese dogfish

SP Pailona

FR Pailona commun

AR كلب برتغالي

NT

LC

SPA/BD PROTOCOL: Not listed

CITES: Not listed

CMS: Not listed

GFCM: Not listed

Global

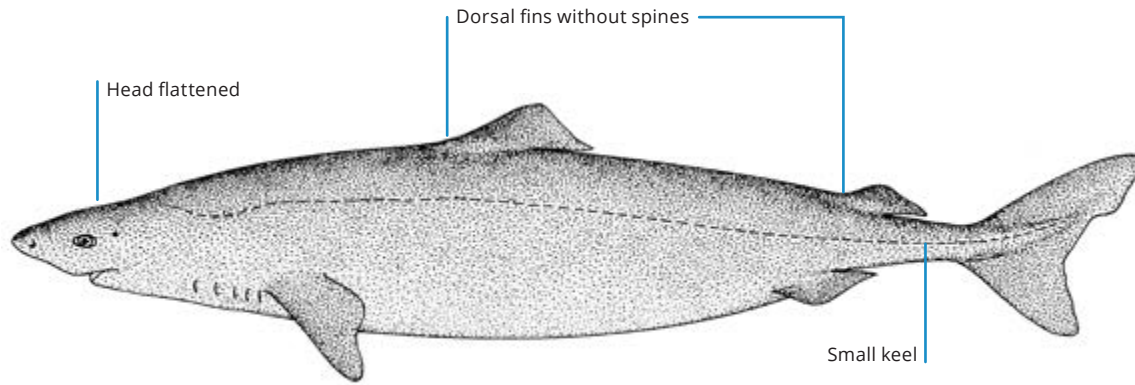
Med

**Size:** up to 120 cm in total length (TL)

**Description:** tip of the snout rounded. Large pouch at mouth corners. Spiracles at upper margin of eye level. Short and wide pectoral fins. Two equals in size dorsal fins and with very small spines, no anal fin. Caudal fin broad with apex truncate, peduncle without keels. Dark brown body. Viviparous, litter up to 13-29 young, pups born about 27-31 cm in TL.

**Habitat:** demersal species in deep waters, especially the bathyal zone, from 150 to 3700 m.

**Distribution:** Atlantic especially from Morocco to Iceland. Present also in the Western Mediterranean, probably absent in the Eastern.



© F. Garibaldi

**SOMNIOSIDAE**

***Somniosus rostratus*, Little sleeper shark – SOR**

**EN** Little sleeper shark **SP** Tollo boreal

**FR** Laimargue de la Méditerranée

**AR** قرش راقِد صغير



**SPA/BD PROTOCOL:** Not listed **CITES:** Not listed **CMS:** Not listed **GFCM:** Not listed

**Global Med**

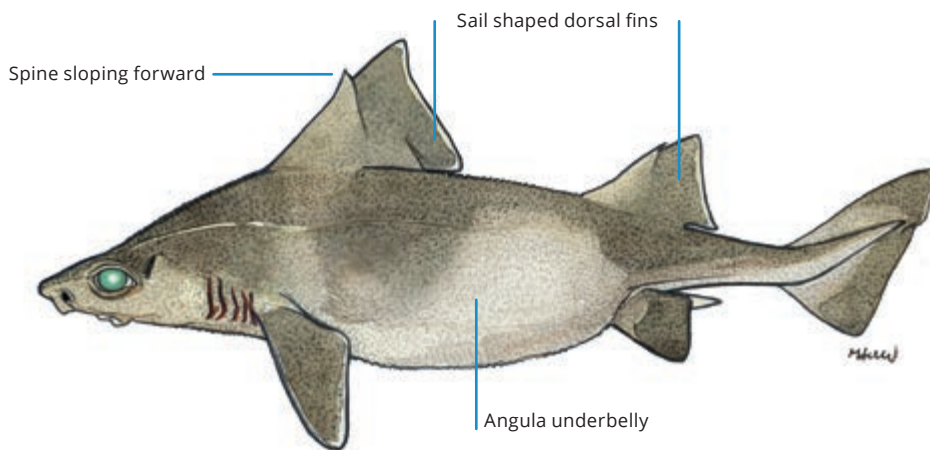
**Size:** up to 143 cm in total length (TL)

**Description:** rounded snout and short; two similar but not equal in size dorsal fins and without spines, no anal fin. Caudal fin with short keels. Dark brown body. Luminescent pores along lateral line. Viviparous, litter up to 6-9 young, pups born about 21-28 cm in TL.

**Habitat:** demersal species in deep waters, on outer continental shelves and on the zones of the upper slope, from 180 to 2200 m.

**Distribution:** Atlantic from the north to Madeira. Also distributed in the Western Mediterranean.





© F. Serena

#### OXYNOTIDAE

### *Oxynotus centrina*, Angular rough shark – OXY

**EN** Angular rough shark

**SP** Cerdo marino

**FR** Centrine commune

**AR** حمار البحر (نعجة)



**SPA/BD PROTOCOL:** Annex II

**CITES:** Not listed

**CMS:** Not listed

**GFCM:** GFCM/42/2018/2

**Global**

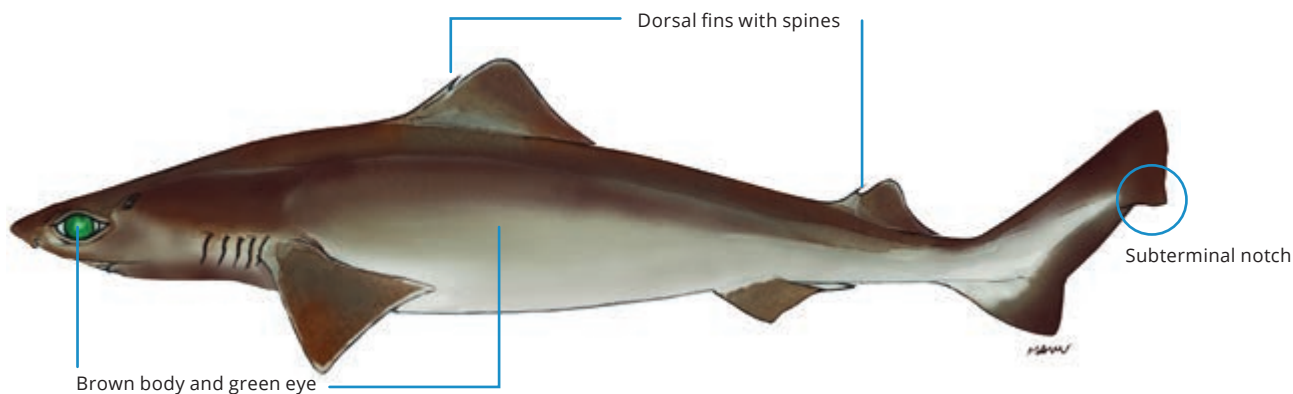
**Med**

**Size:** up to 150 cm in total length (TL)

**Description:** body with a triangular cross-section. Mouth very small with lips thick. Two high triangular dorsal fins with large spines. The spine of the first dorsal fin is inclined forward. Large and elongate vertical spiracles behind eyes. Dermal ridge between pelvic and pectoral fins bases. Black or grey-brown with dark blotches on the body. Viviparous, litter up to 7-8 young, pups born less than 25 cm in TL.

**Habitat:** demersal species on continental shelf and upper slope from 60 to 780 m.

**Distribution:** West Indian Ocean, east Atlantic from Norway to South Africa. It is found in the Mediterranean but not in the Black Sea.



© F. Serena

**CENTROPHORIDAE*****Centrophorus cf uyato*, Gulper shark – GUP****EN** Gulper shark**SP** Quelvacho**FR** Squale-chagrin  
commun**AR** كلب أبو عين**DD****CR****SPA/BD PROTOCOL:** Annex III**CITES:** Not listed**CMS:** Not listed**GFCM:** GFCM/42/2018/2**Global****Med****Size:** up to 120 cm in total length (TL)

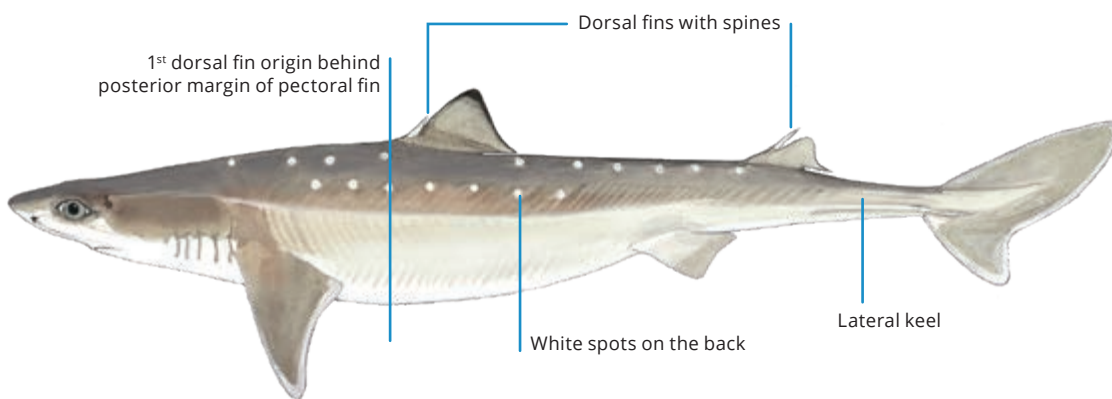
**Description:** short and thick snout. Inner corner of pectoral fins elongated and pointed. Dorsal fins with spines. Shallow notch in posterior caudal fin margin. First dorsal fin quite short and lower than second. Dark greyish-brown, slightly lighter ventrally. Viviparous, litter up to 1-6 young, pups born less than 30-42 cm in TL.

**Habitat:** demersal species on continental shelves and slopes from 50 to 1440 m.

**Distribution:** west Indian Ocean, widespread in the Mediterranean but not in the Black Sea.

**Remarks:** Taxonomy of the genus *Centrophorus* has been under debate, of which two species (*C. uyato* and *C. granulatus*) have been the focus.

Note: considered a commercial species throughout several parts of its distribution in the Mediterranean.



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**SQUALIDAE**

***Squalus acanthias*, Picked dogfish – DGS**

**EN** Picked dogfish

**SP** Mielga

**FR** Aiguillat-chagrin commun

**AR** كلب أبو شوكة مُرَقَط



**SPA/BD PROTOCOL:** Annex III

**CITES:** Not listed

**CMS:** Appendix II

**GFCM:** GFCM/42/2018/2

**Global**

**Med**

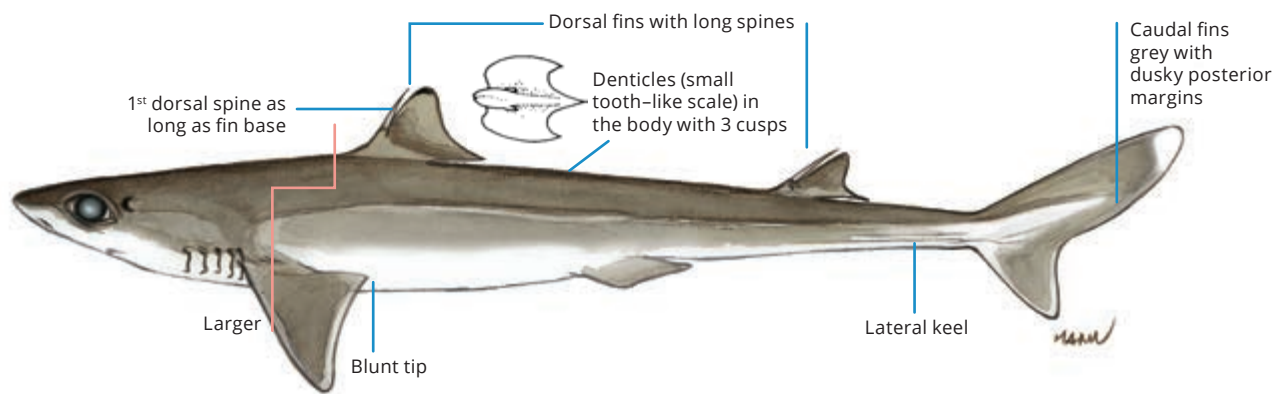
**Size:** up to 200 cm in total length (TL)

**Description:** slender dogfish. Inner corner of pectoral fins rounded; origin of first dorsal spine behind inner pectoral corner; second dorsal fin with spine and much smaller than first. White spots on upper surface of body slate grey, rarely brownish-grey; belly pale from grey to white. Viviparous, litter up to 1-32 young, pups born less than 18-33 cm in TL.

**Habitat:** demersal species on continental shelves and occasionally on the slopes from 10 to 700 m.

**Distribution:** worldwide, excluding the pole and tropical areas and north Pacific. Also in the Mediterranean and Black Sea.

Note: considered a commercial species throughout several parts of its distribution in the Mediterranean.



© F. Serena

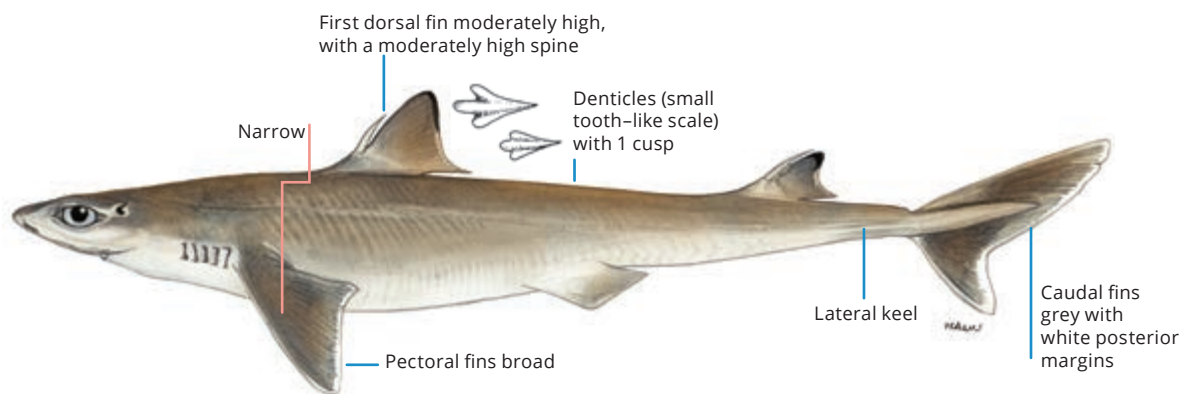
**SQUALIDAE*****Squalus blainville*, Longnose spurdog – QUB****EN** Longnose spurdog**SP** Galludo**FR** Aiguillat-coq**AR** كلب أبو شوكة مأنف قضاط بوشوكة**DD****DD****SPA/BD PROTOCOL:** Not listed**CITES:** Not listed**CMS:** Not listed**GFCM:** Not listed**Global****Med****Size:** 50 – 80 cm in total length, occasionally until 110 cm

**Description:** two dorsal fins with spines as long as fin base; anterior nasal flap with a small but distinct lobe. Inner corner of pectoral fin blunt; second dorsal fin smaller than first. Denticles tridentate. Dorsal surface from grey to grey-brown, ventral surface white, posterior edges of fins distinctly or slightly edged white. Viparous, with 3 to 4 pups per litter. Young born at about 23 cm TL.

**Habitat:** benthic species at intermediate depth, between 15 - 720 m.

**Distribution:** Mediterranean and Black Sea. Present also in South Atlantic, Pacific and Indian oceans.

**Remarks:** taking into account the identification difficulties on board between *Squalus blainville* and *Squalus megalops*, we suggest to be identified as a single taxon corresponding to *Squalus cf blainville*.



© S.P. Iglesias



SHARKS  
RAYS  
CHIMAERAS

**SQUALIDAE**

***Squalus megalops*, Shortnose spurdog – DOP**

**EN** Shortnose spurdog

**SP** Galludo ñato

**FR** Aiguillat nez court

**AR** قطاط بوشوكة

**DD**

**DD**



**SPA/BD PROTOCOL:** Not listed

**CITES:** Not listed

**CMS:** Not listed

**GFCM:** Not listed

**Global**

**Med**

**Size:** less than 70 cm in total length (also 100 cm TL)

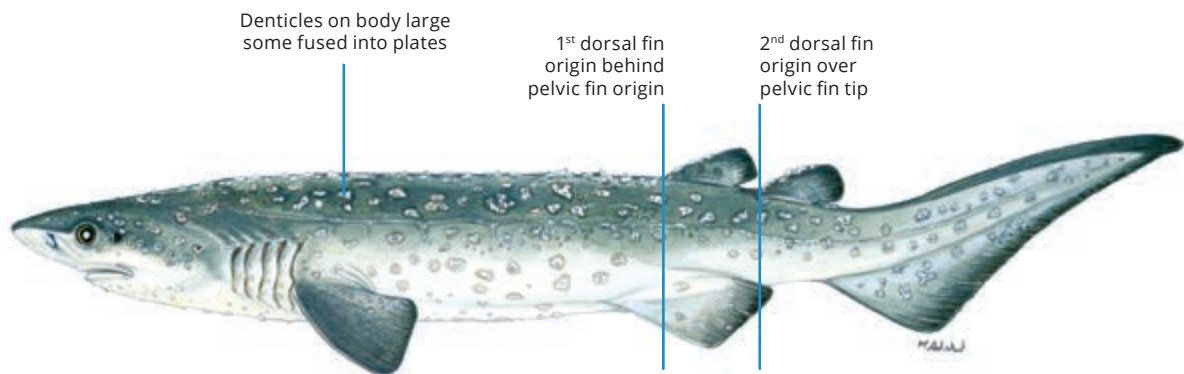
**Description:** short angular snout and a small mouth almost the length of the snout; 1<sup>st</sup> dorsal fin spine over pectoral fins. Denticles monodontate. Bronze-grey on the back, white below; dorsal fins with black tips and white edges. Viviparous, with 2 to 4 pups in a litter. Size at birth 20-24 cm TL.

**Habitat:** found on the continental shelves and upper slopes generally on or near the bottom at depths from close inshore down to 732 m.

**Distribution:** Eastern Atlantic, western Indian Ocean, western Pacific to southern Australia. It has been reported from the western Mediterranean Sea, although its presence in this sea is considered questionable because confusion with congeners.

**Remarks:** taking into account the identification difficulties on board between *Squalus blainville* and *Squalus megalops*, we suggest to be identified as a single taxon corresponding to *Squalus cf blainville*.





© H.B. Osmany

**ECHINORHINIDAE*****Echinorhinus brucus*, Brambel shark – SHB**

**EN** Brambel shark    **SP** Tiburón de clavos    **FR** Squale bouclé    **AR** NA



**SPA/BD PROTOCOL:** Not listed    **CITES:** Not listed    **CMS:** Not listed    **GFCM:** Not listed

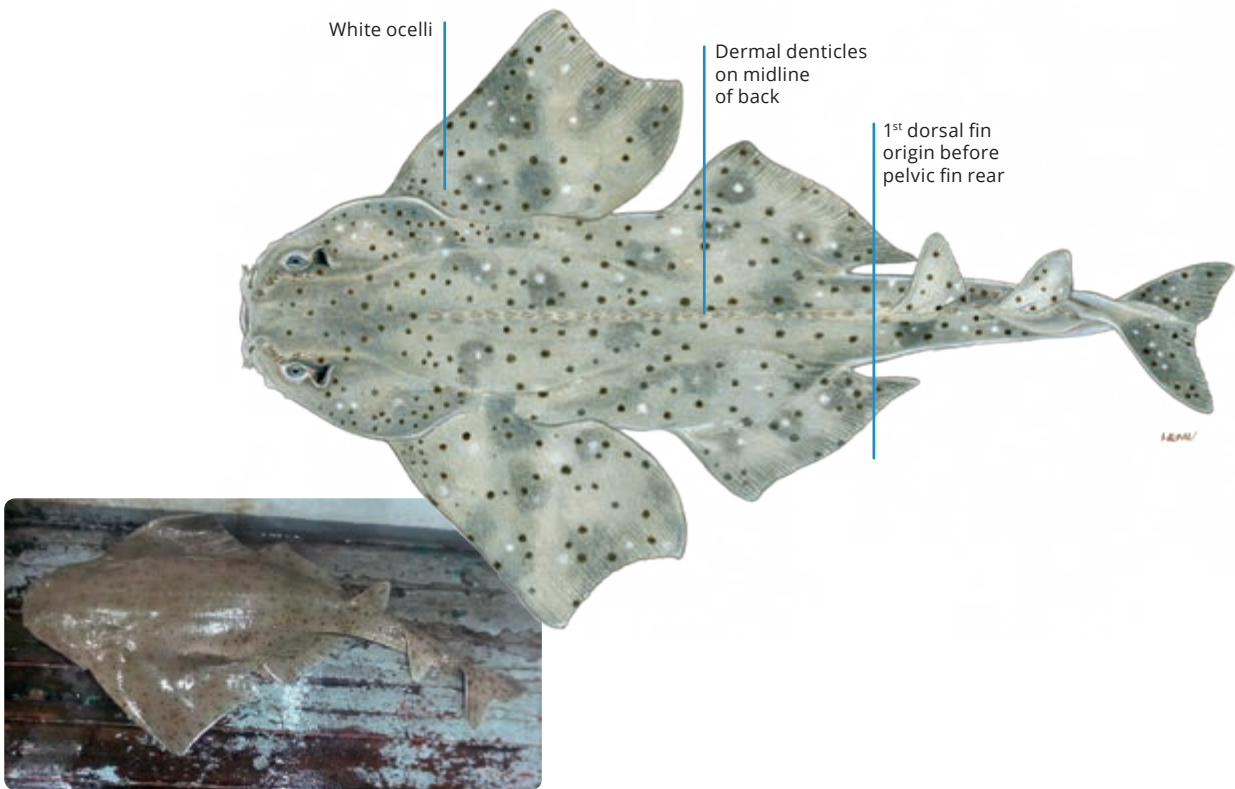
**Global**    **Med**

**Size:** up to 310 cm in total length (TL)

**Description:** snout ovate, tapering smoothly from eyes. Mouth semilunar. Spiracle well behind eye. Pectoral fins short; origin of the first dorsal fin over posterior portion of pelvic fin base; origin of the second dorsal fin over pelvic fin tips, slightly smaller than first dorsal; caudal fin falcate. Denticles irregularly spaced buckler-like dermal on the body that form flat shields, large ridged spines. Grey to brown, belly from light brown to white. Viviparous, litter up to 15-26 young, pups born less than 40-50 cm in TL.

**Habitat:** demersal species of temperate waters on continental shelves and slopes between 200 and 900 m of depth.

**Distribution:** Indo-west Pacific. It is distributed in the Mediterranean, but not in the Black Sea.



© iSea, www.isea.com.gr

## SQUATINIDAE

### *Squatina aculeata*, Sawback angelshark – SUA

**EN** Sawback  
angelshark

**SP** Angelote  
espinudo

**FR** Ange de mer  
épineux

**AR** ملاك شوكي (سفن / وقاص)



**SPA/BD PROTOCOL:** Annex II

**CITES:** Not listed

**CMS:** Not listed

**GFCM:** GFCM/42/2018/2

**Global**

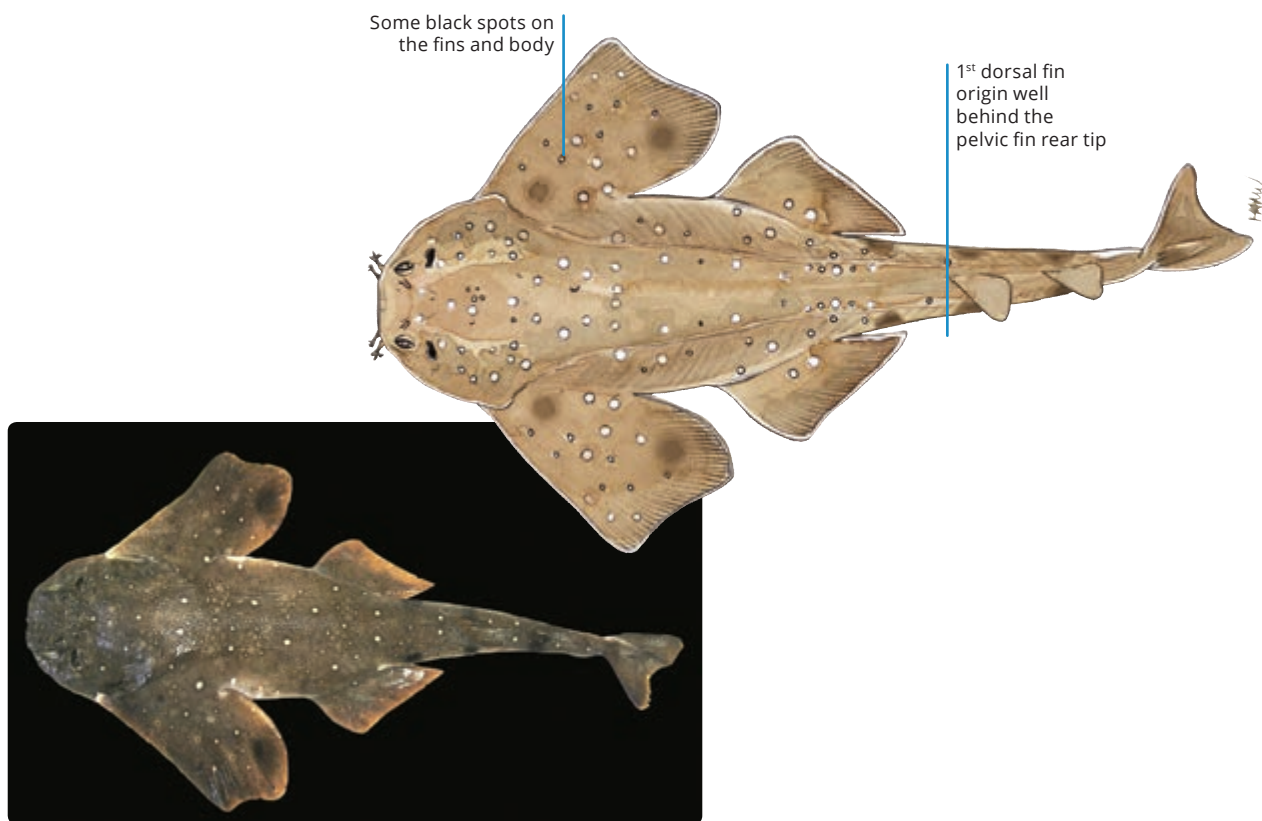
**Med**

**Size:** up to 190 cm in total length (TL)

**Description:** trunk relatively slender. Terminal mouth with anterior nasal barbels strongly fringed. Eyes and large spiracles dorsally. Gill slits at the sides and before of the head. Origin of first dorsal fin usually opposite pelvic rear tips or ahead; pectoral fins rather long, no anal fin. Large spines on the back along the median line from head to dorsal fins and between the fin bases. No ocelli on body, light brown spots. Viviparous, pups born less than 30-35 cm in TL.

**Habitat:** demersal species of the continental shelf and on uppermost of the slope. In the warm-temperate and tropical waters, at 30 - 500 m of depths.

**Distribution:** East Atlantic from Gibraltar to Namibia. Rare in the Mediterranean, absent in the Black Sea.



© F. Serena

**SQUATINIDAE*****Squatina oculata*, Smoothback angelshark – SUT****EN** Smoothback angelshark**SP** Pez angel**FR** Ange de mer ocellé**AR** NA**SPA/BD PROTOCOL:** Annex II**CITES:** Not listed**CMS:** II**GFCM:** GFCM/42/2018/2**Global****Med****Size:** up to 160 cm in total length (TL)

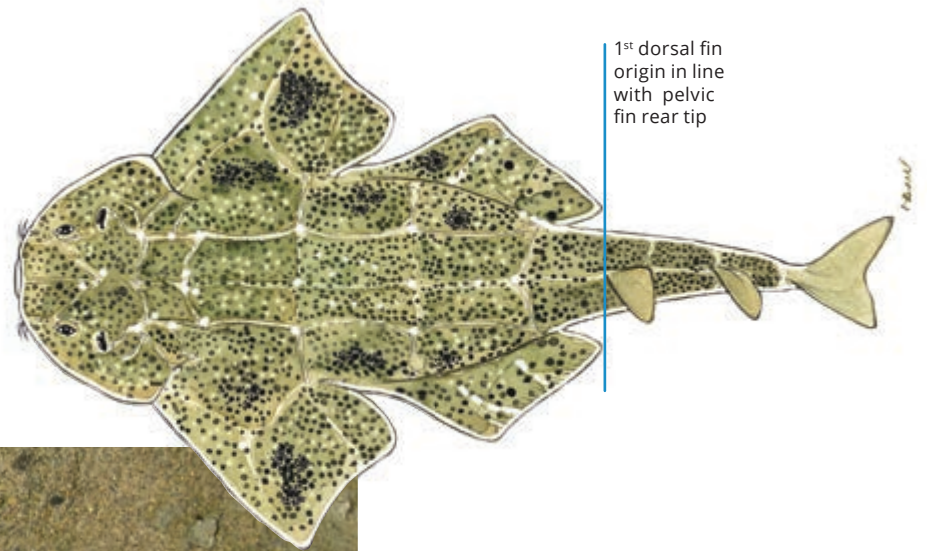
**Description:** trunk rather slender. Terminal mouth with anterior nasal barbels strongly fringed weakly bifurcated. Eyes and large spiracles dorsally. Gill slits at the sides and before of the head. Origin of first dorsal fin usually well behind free rear tips of pectoral fins, no anal fin. Large spines present on snout but usually absent from midback. No large brown ocelli, but prominent symmetrical white spots present on pectoral fins and on body. Viviparous, litter up to 3-8 young, pups born less than 23-27 cm in TL.

**Habitat:** demersal species of the continental shelf and on uppermost of the slope. In the warm-temperate and tropical waters, at 20 - 500 m of depths.

**Distribution:** East Atlantic from Gibraltar to Namibia. Rare in the Mediterranean, absent in the Black Sea.



© F. Garibaldi



1<sup>st</sup> dorsal fin origin in line with pelvic fin rear tip



**SQUATINIDAE**

***Squatina squatina*, Angelshark – AGN**

**EN** Angelshark

**SP** Angelote

**FR** Ange de mer commun

**AR** ملاك شائع (سفن وقاص)



**SPA/BD PROTOCOL:** Annex II

**CITES:** Not listed

**CMS:** Appendix II

**GFCM:** GFCM/42/2018/2

**Global**

**Med**

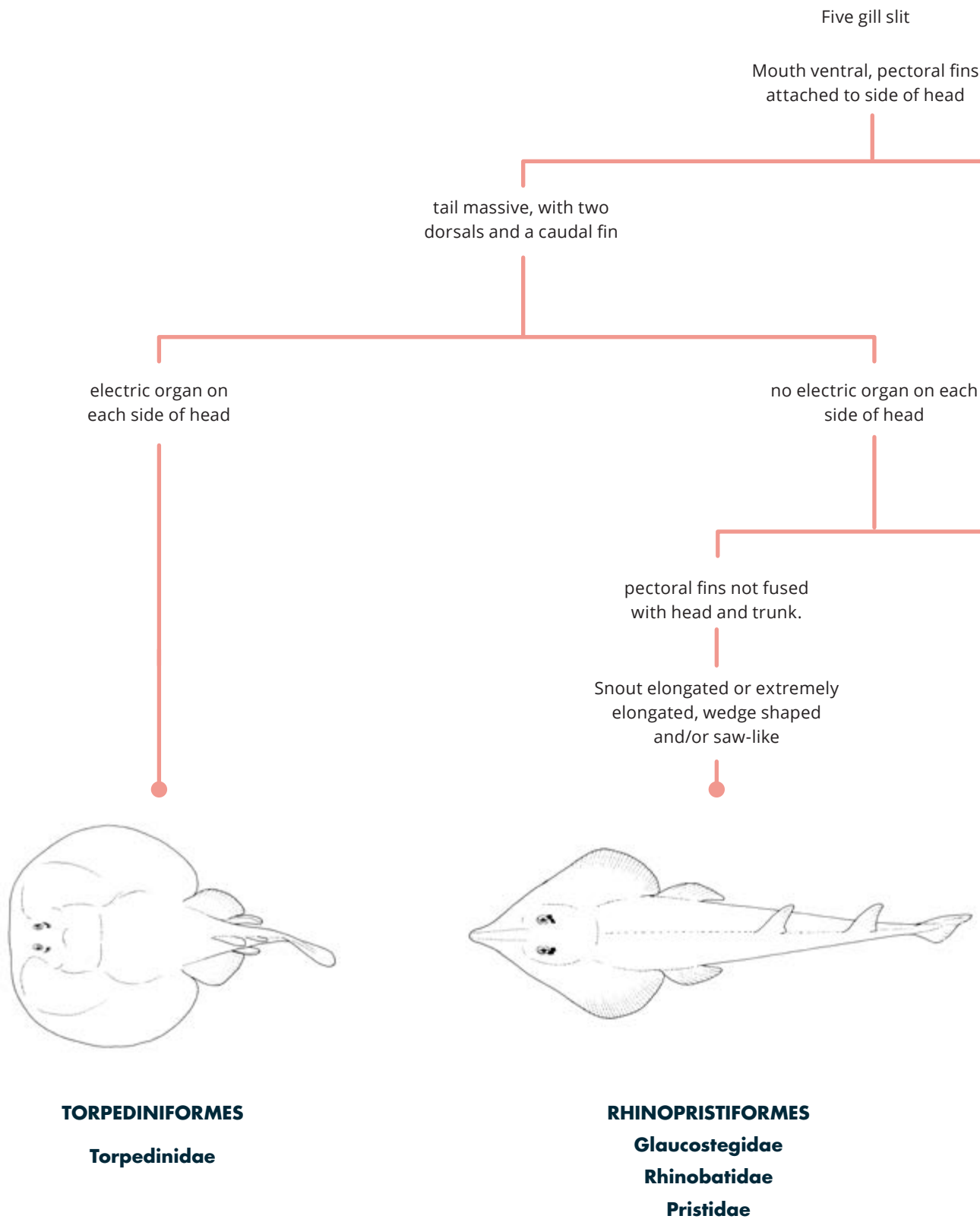
**Size:** up to 250 cm in total length (TL)

**Description:** trunk large. Terminal mouth with anterior nasal barbels simple and with a spatulate tip. Eyes and large spiracles dorsally. Gill slits at the sides and before of the head. 1<sup>st</sup> dorsal fin origin in line with pelvic fin rear tip, no anal fin. Patches of small spines on snout and above eyes. No ocelli on body. Grey to reddish or greenish brown. Viviparous, litter up to 7-25 young, pups born less than 24-30 cm in TL.

**Habitat:** demersal species of the continental shelf. In the warm-temperate and cold waters, at 5 - 150 m of depths.

**Distribution:** East Atlantic from Canary Islands to Southern North Sea. Rare in the Mediterranean, present also in the Black Sea.

## Ray fishes (Batoids)





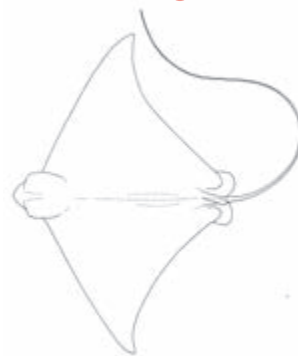
tail thin, usually long like  
whip, often with sting

pectoral fins fused with  
head and trunk;

disc rhomboidal;  
pelvic fins  
bilobed



**RAJIFORMES**  
**Rajidae**



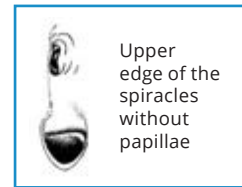
**MYLIOBATIFORMES**  
**Dasyatidae**  
**Gymnuridae**  
**Aetobatidae**  
**Myliobatidae**  
**Rhinopteridae**  
**Mobulidae**

## Rays

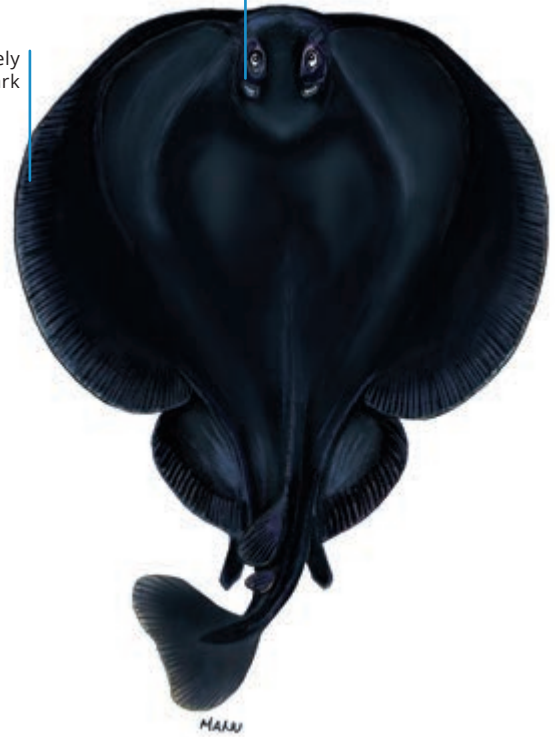


© L. Sion

Dorsal surface completely black or brown-dark



Upper edge of the spiracles without papillae



### TORPEDINIDAE

## *Tetronarce nobiliana*, Electric ray – TTO

**EN** Electric ray

**SP** Tremolina negra

**FR** Torpille noire

**AR** راية سوداء



**SPA/BD PROTOCOL:** Not listed

**CITES:** Not listed

**CMS:** Not listed

**GFCM:** Not listed

**Global**

**Med**

**Size:** 180 cm in total length

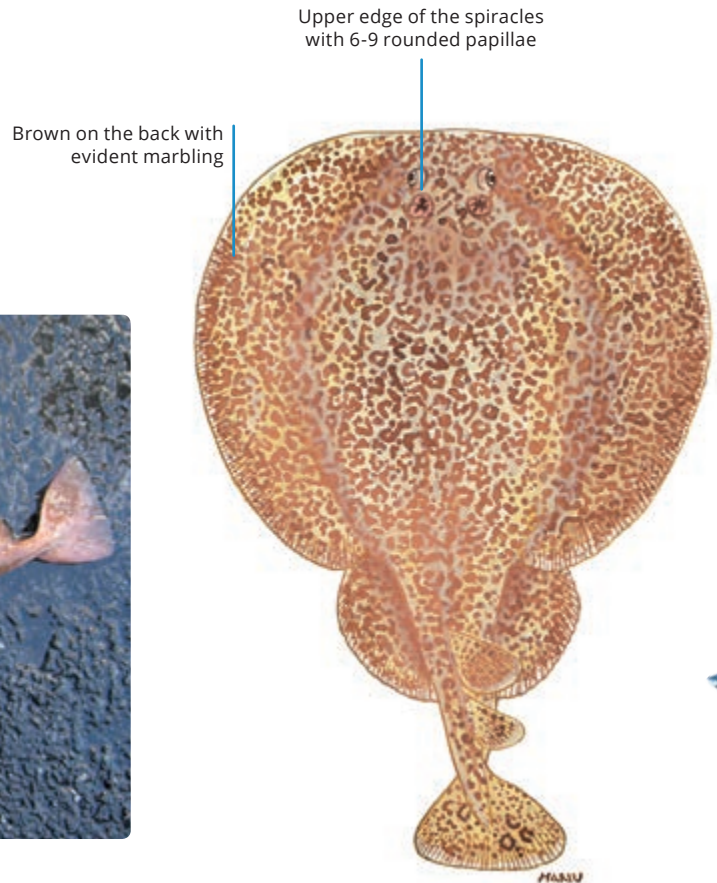
**Description:** body rounded, very short snout anterior to the eyes. First dorsal fin larger than second. Spiracles with smooth margins, without tentacles or papillae. Dark violet/brown on the back; ventral side white to cream, often with dusky margins of the disc and the pelvic fins. Viviparous, produces litters up to 60 embryos per year; 23 cm in TL at birth.

**Habitat:** juvenile specimens mainly benthic on soft bottoms from 10 up to 350 m, also found on insular slopes up to 925 m depth; adults frequently pelagic or semi-pelagic.

**Distribution:** Indo-Pacific oceans and Eastern Atlantic from North Sea to South Africa, including the Mediterranean Sea. Absent in the Black Sea.



© F. Serena



#### TORPEDINIDAE

### *Torpedo marmorata*, Marbled electric ray – TTR

**EN** Marbled electric ray

**SP** Tremolina mármorata

**FR** Torpille marbrée

**AR** راية مَرْمَرِيَّة (نعاس)

DD

LC

**SPA/BD PROTOCOL:** Not listed    **CITES:** Not listed    **CMS:** Not listed    **GFCM:** Not listed

**Global**    **Med**

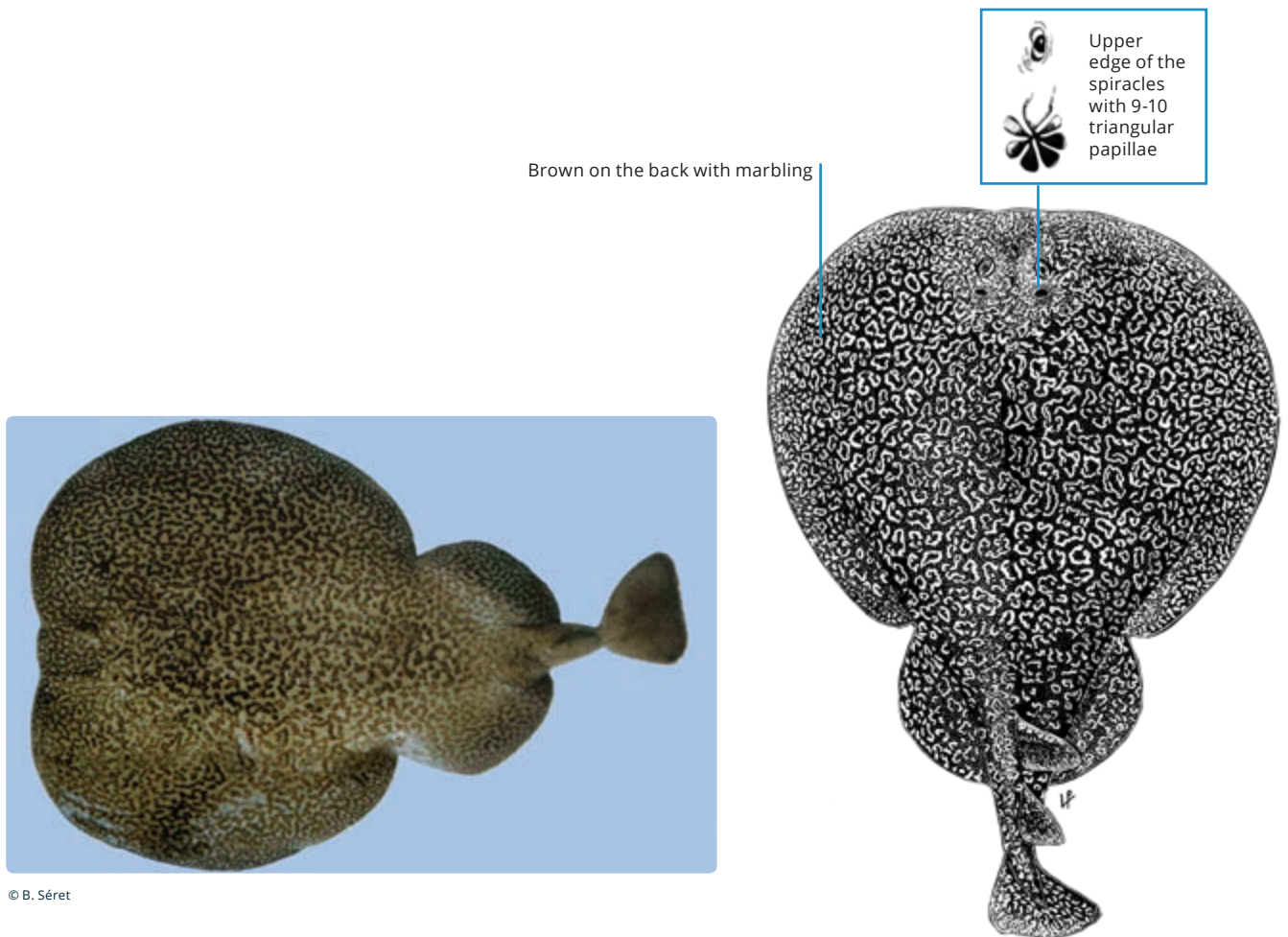
**Size:** 100 cm in total length

**Description:** body rounded, very short snout anterior to the eyes. First dorsal fin slightly larger than second. Spiracles with 6-8 tentacles of equal length on margins. Dorsal surface variable, usually light patch or marbling on brown background; ventral side white to cream. Viviparous, produces large litters of 2-32 embryos; 10-14 cm in TL at birth.

**Habitat:** benthic on soft as well as hard bottoms up to about 100 m, occasionally to 350 m.

**Distribution:** Eastern Atlantic from North Sea to South Africa, including the Mediterranean Sea. Absent in the Black Sea.

Note: considered a commercial species throughout several parts of its distribution in the Mediterranean.



#### TORPEDINIDAE

### *Torpedo sinuspersici*, Variable torpedo ray – TTJ

**EN** Variable torpedo ray

**SP** Tremolina mármol

**FR** Torpille auréolée

**AR** راية الخليج



**SPA/BD PROTOCOL:** Not listed **CITES:** Not listed **CMS:** Not listed **GFCM:** Not listed

**Global Med**

**Size:** 130 cm in total length

**Description:** body rounded, very short snout anterior to the eyes. First dorsal fin larger than second, with a small caudal fin. Spiracles with 9-10 tentacles of equal length on margins that do not extend to centre of spiracle opening. Dorsal surface with bright color pattern of circles and irregular marks, dark red or brown to blackish background; ventral side white to cream. Viviparous, produces litters of 9-22 embryos.

**Habitat:** benthic on soft bottoms of the continental shelf up to about 150 m.

**Distribution:** Eastern Indian Ocean, in the Persian Gulf, from Red Sea to South Africa. Rare in the Mediterranean.

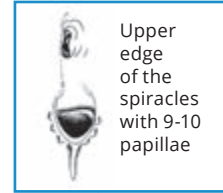
**Remarks:** only few specimens of this species in Syrian waters have been described. It would be useful to have a confirmation of its occurrence in the Mediterranean.





© F. Serena

Uniform light brown on the back with ocelli, spiracles up to 6 round papillae



Upper edge of the spiracles with 9-10 papillae



SHARKS  
RAYS  
CHIMAERAS

#### TORPEDINIDAE

### *Torpedo torpedo*, Common torpedo – TTV

**EN** Common torpedo **SP** Tremolina comun **FR** Torpille ocellée **AR** راية حَلْفِيَّة (نعاس)



**SPA/BD PROTOCOL:** Not listed **CITES:** Not listed **CMS:** Not listed **GFCM:** Not listed

**Global Med**

**Size:** 60 cm in total length

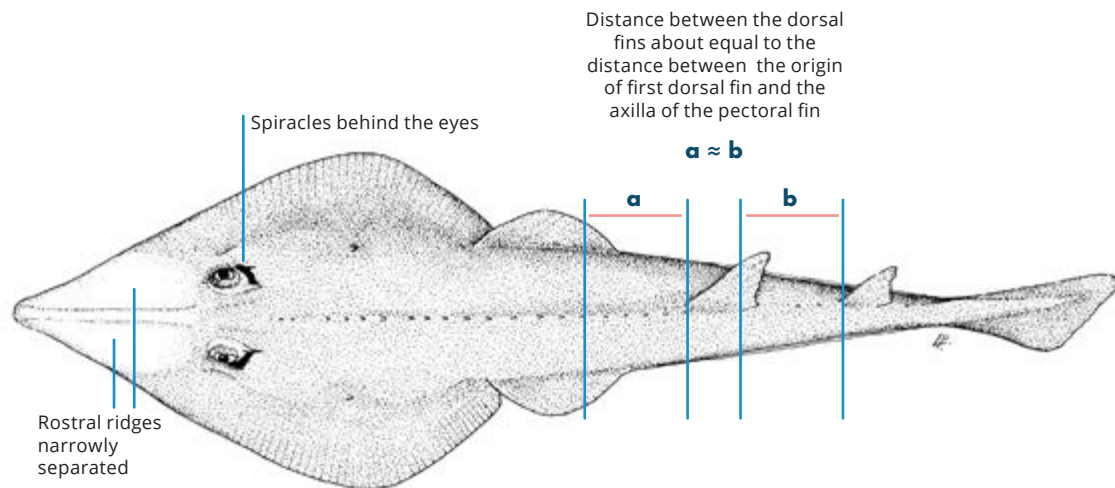
**Description:** body rounded, very short snout anterior to the eyes. First dorsal fin slightly larger than second. Spiracles with 8-10 small triangular papillae. Dorsal surface uniform dark or light brown, normally with five (sometimes fewer) large blue eye-spots on disc; ventral side white to cream. Viviparous, produces large litters of 3-21 pups, born at about 8-10 cm TL.

**Habitat:** benthic on soft bottoms of the continental shelf up to about 70 m.

**Distribution:** Eastern Atlantic from Bay of Biscay to Angola, including the Mediterranean. Absent in the Black Sea.

Note: considered a commercial species throughout several parts of its distribution in the Mediterranean.





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**GLAUCOSTEGIDAE**

***Glaucostegus cemiculus*, Blackchin guitarfish – RBC**

**EN** Blackchin guitarfish

**SP** Guitarra barbanegra

**FR** Guitar de Mer fouisseuse

**AR** قيثارة سوداء الذقن (محرث / قرس)



**SPA/BD PROTOCOL:** Annex II (as *Rhinobatos cemiculus*)

**CITES:** Not listed

**CMS:** Not listed

**Global**

**Med**

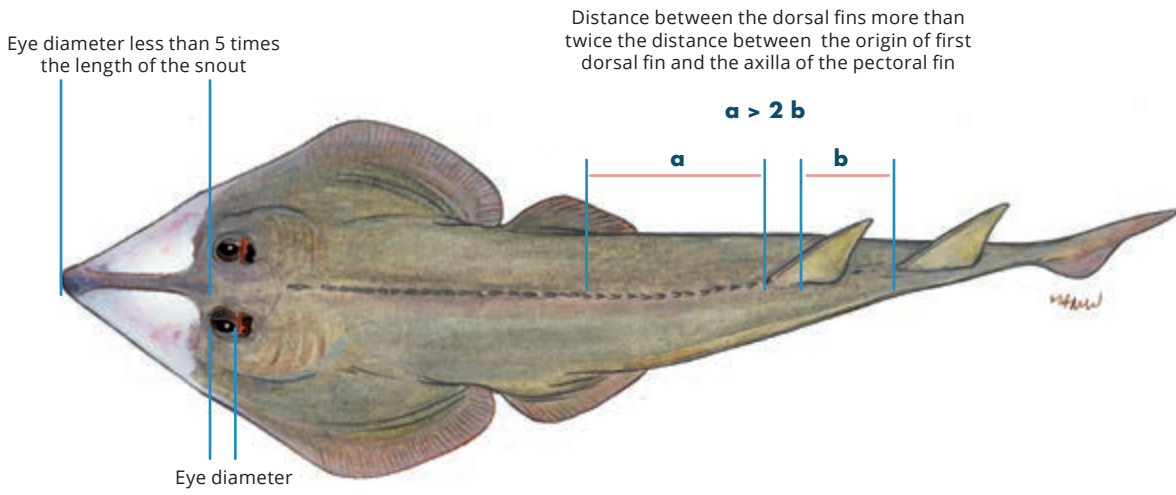
**GFCM:** GFCM/42/2018/2

**Size:** 242 cm in total length

**Description:** wedge-shaped disc (combined head, body and pectoral fins) with rostral ridges narrowly separated. Anterior nasal lobe extending little; posterior nasal flap narrow. Spiracle with two folds of about same size. Thorns present around of the orbits (eyes) in the inner margin and between the spiracles, on shoulders and along midline of disc and tail. Body brown on the back, without distinct markings; white below. Viviparous, 1-2 litters per year, of 4-6 embryos; 34 cm in TL at birth.

**Habitat:** benthic species on sandy and muddy bottoms, from shallow water to about 100 m.

**Distribution:** Atlantic species from Northern Portugal to Angola, including the Mediterranean Sea, but not Black Sea.



© J.E. Randall

**GLAUCOSTEGIDAE**  
***Glaucostegus halavi*, Halavi ray – RBH**

**EN** Halavi ray    **SP** NA    **FR** NA    **AR** NA    **VU**    **NE**

**SPA/BD PROTOCOL:** Not listed    **CITES:** Not listed    **CMS:** Not listed    **GFCM:** Not listed    **Global**    **Med**

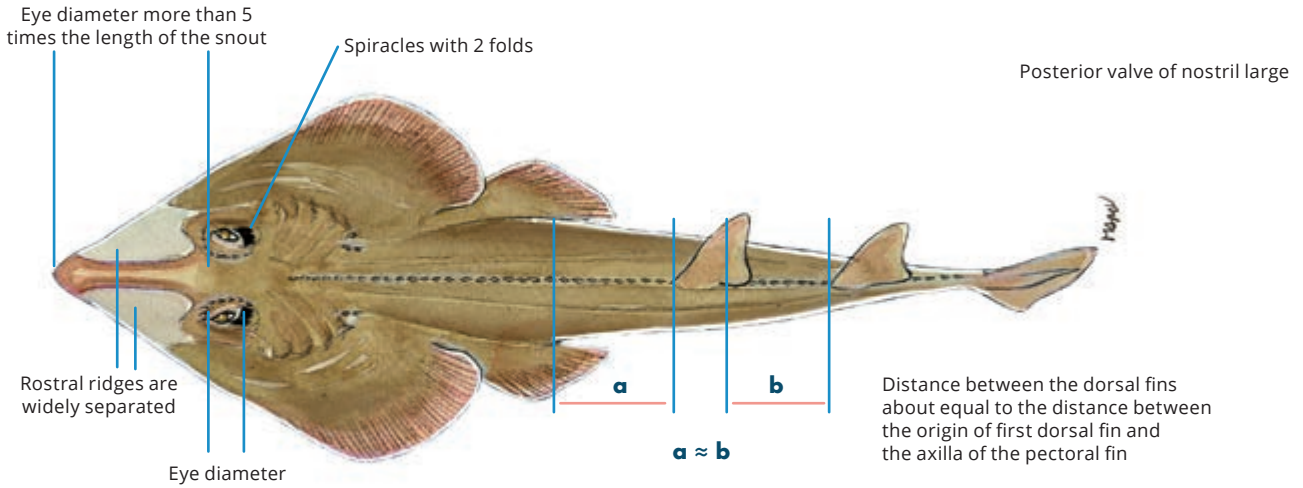
**Size:** 120 cm in total length (probably up to 171 cm).

**Description:** wedge shape disc, wide triangular and moderately acute snout with rounded tip. Tail slightly longer than disc, distance between dorsal fins 1.5-1.9 times base length of the 1<sup>st</sup> dorsal fin. Dorsal surface yellowish to greyish brown, ventral side white. Viviparous, up to 10 pups a litter, about 29 cm in TL at birth.

**Habitat:** benthopelagic species on sandy bottoms of subtropical waters from shallow water to about 100 m depth.

**Distribution:** Indian Ocean, from Red Sea to Persian and Gulf of Oman. Cited also for the Mediterranean Sea.

**Remarks:** Its occurrence in the Mediterranean needs to be confirmed.



© F. Serena

**RHINOBATIDAE**

***Rhinobatos rhinobatos*, Common guitarfish – RBC**

**EN** Common guitarfish **SP** Guitarra comun **FR** Guitar de Mer commune **AR** قيثارة شائعة (محرث / قرس)



**SPA/BD PROTOCOL:** Annex II **CITES:** Not listed **CMS:** Appendix II **GFCM:** GFCM/42/2018/2

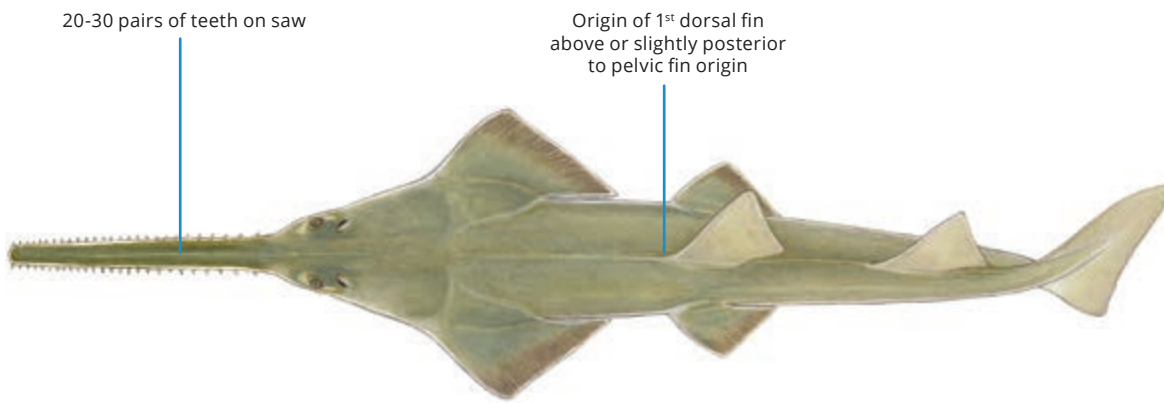
**Global Med**

**Size:** 150 cm in total length

**Description:** wedge-shaped disc with rostral ridges widely separated. Anterior nasal lobe reaching to inner corner of nostril; posterior nasal flap wide. Spiracle with 2 quite developed folds, the outer one more prominent. Relatively small thorns present around inner margin of eyes, between spiracles, on shoulders, and along midline of disc and tail. Brown on the back, white below. Viviparous, 1-2 litters per year, of 4-10 embryos; about 25 cm in TL at birth.

**Habitat:** benthic species on sandy and muddy bottoms, from shallow water to about 100 m.

**Distribution:** Atlantic species from Southern Bay of Biscay to Angola, including the Mediterranean Sea but not Black Sea.



© H. Burgess

**PRISTIDAE**

***Pristis pectinata*, Smalltooth sawfish – RPP**

**EN** Smalltooth sawfish

**SP** Peje-peine

**FR** Poisson-scie tident commune

**AR** منشار ناعم



**Global**

**Med**

**SPA/BD PROTOCOL:** Annex II    **CITES:** Appendix I    **CMS:** Appendix I and II  
**GFCM:** GFCM/42/2018/2

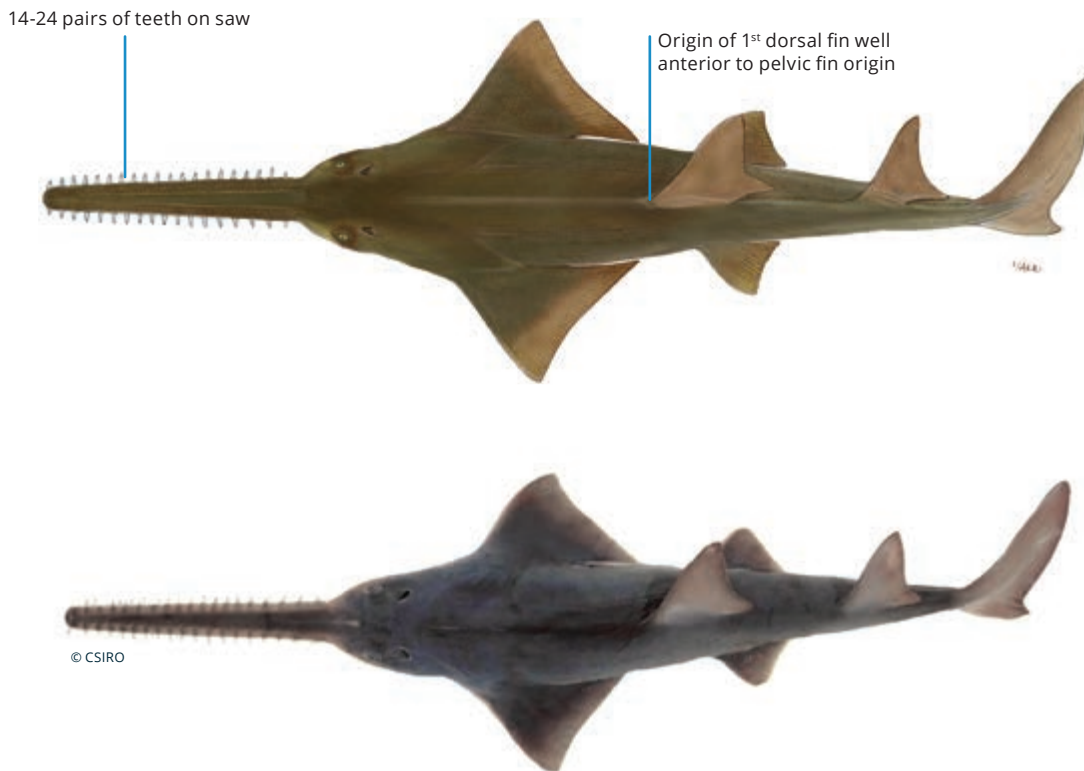
**Size:** up to 550 cm in total length

**Description:** long rostrum with rostral teeth on saw. Two dorsal fins, more or less equal in shape and size. 1<sup>st</sup> dorsal fin origin above origin of pelvic fins. Body uniformly dark grey/brown on back and sides, whitish below. Viviparous, litters of around 15-20 pups; about 60 cm in TL at birth.

**Habitat:** benthic species of warm seas, on soft bottoms, from shallower water to about 90 m.

**Distribution:** Atlantic and South-West of Indian Ocean. Probably extinct in the Mediterranean.

**Remarks:** its occurrence in the Mediterranean has to be confirmed.



**PRISTIDAE**

***Pristis pristis*, Common sawfish – RPR**

**EN** Common sawfish

**SP** Pez sierra

**FR** Poisson-scie commune

**AR** منتشر شائع



**SPA/BD PROTOCOL:** Annex II

**CITES:** Appendix I

**CMS:** Appendix I & II

**GFCM:** GFCM/42/2018/2

**Global**

**Med**

**Size:** probably up to 700 cm in total length.

**Description:** long rostrum with rostral teeth on saw. Two dorsal fins, more or less equal in shape and size. Origin of 1<sup>st</sup> dorsal fin well forward origin of pelvic fins. Body uniformly grey-ochre on back and sides, ventral side white. Viviparous, litters of around 1-13 pups; about 72-90 cm in TL at birth.

**Habitat:** benthic species of tropical seas, including rivers and waterholes, to at least 45 m of depth.

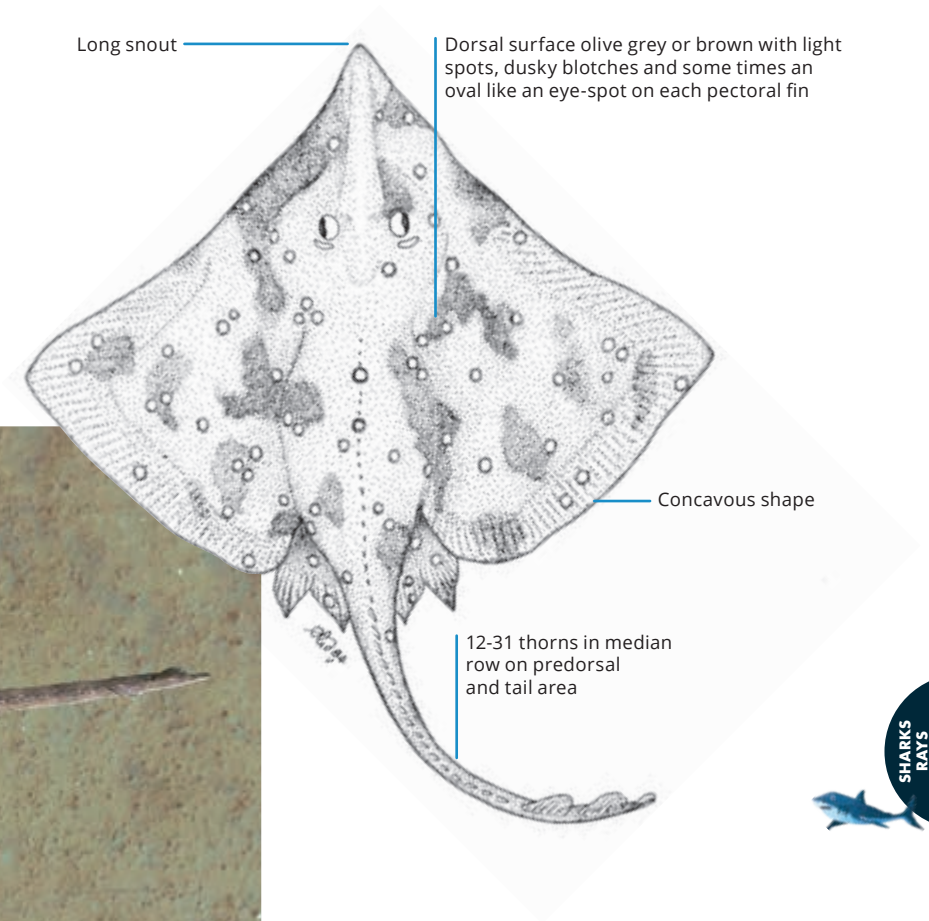
**Distribution:** Atlantic and South-West of Indian Ocean also in the Pacific. Probably extinct in the Mediterranean.

**Remarks:** its occurrence in the Mediterranean has to be confirmed.





© J. Ellis



**RAJIDAE**

***Dipturus cf batis*, Blue skate – RJB**

**EN** Blue skate

**SP** Noriega

**FR** Pocheteau gris

**AR** سَفْنْ أَزْرَق



**SPA/BD PROTOCOL:** Annex II

**CITES:** Not listed

**CMS:** Not listed

**GFCM:** GFCM/42/2018/2

**Global**

**Med**

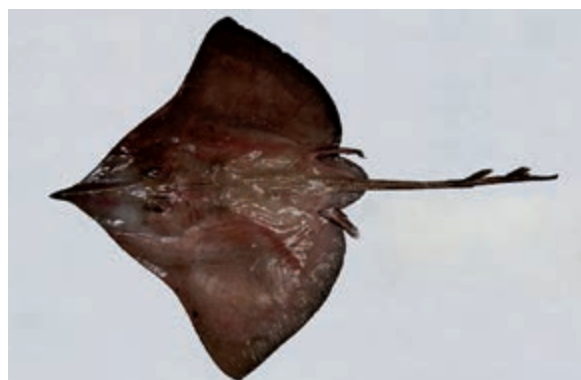
**Size:** probably up to 285 cm in total length.

**Description:** large skate with broadly rhombic disc. Snout long and pointed, anterior margins of the disc distinctly concave. Dorsal and ventral surface smooth in young, partly prickly in larger specimens. Upper surface brown with a variable pattern with blotches, eye-spot and light spots. Ventral side ashy-grey to blue-grey; mucous pores on both sides of disc always. Oviparous, young hatch at about 21 cm in TL.

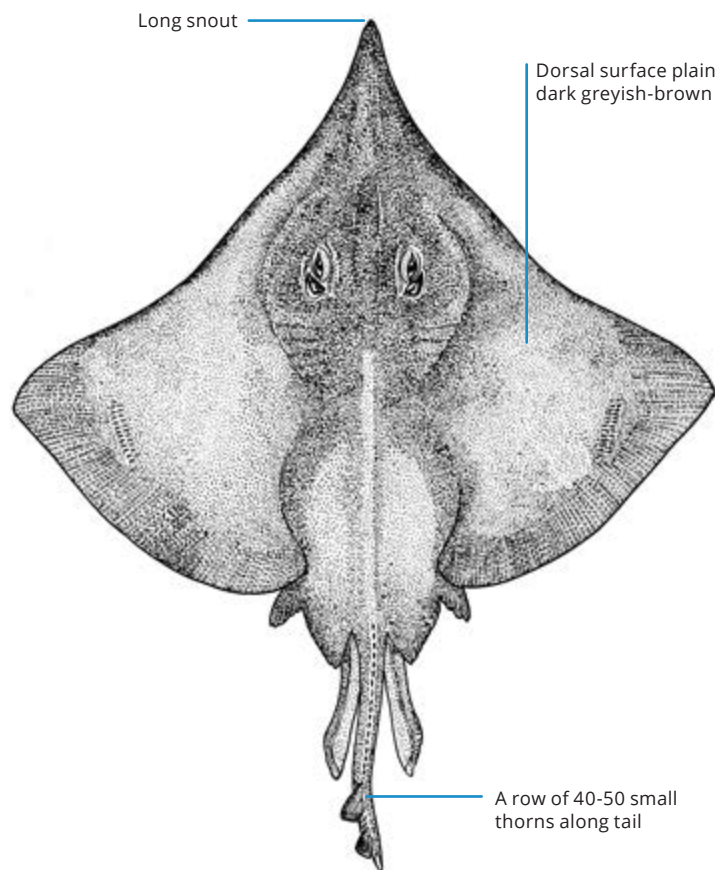
**Habitat:** demersal species, in cold and temperate waters of the continental shelf to at least 600 m of depth.

**Distribution:** North-East Atlantic. The species could be present now only in the Western area of the Mediterranean basin (Morocco, Spain, and France).

**Remarks:** its occurrence in the Mediterranean has to be confirmed.



© M.L. Geraci



**RAJIDAE**

***Dipturus nidarosiensis*, Norwegian skate – RJB**

**EN** Norwegian skate    **SP** Raja noruega    **FR** Pocheteau de Norvège    **AR** سَفَن نرويجي



**SPA/BD PROTOCOL:** Not listed    **CITES:** Not listed    **CMS:** Not listed    **GFCM:** Not listed

**Global**    **Med**

**Size:** up to 200 cm in total length.

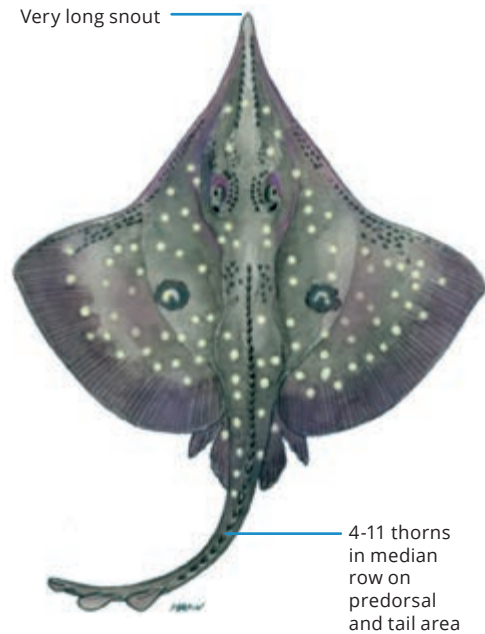
**Description:** Snout acute, disc wider than long with the anterior margins of the pectoral fins concave. Upper surface smooth. Grey brownish on the back. Ventral side uniformly dark with ampullar pores darkly pigmented. Oviparous, size hatching unknown.

**Habitat:** demersal on sandy bottoms of continental and slopes, from coastal waters (125 m) to depths of about 1400 m.

**Distribution:** Eastern Atlantic, from Iceland to South Africa. It is also found in the Mediterranean.



© F. Serena



SHARKS  
RAYS  
CHIMAERAS

## RAJIDAE

### *Dipturus oxyrinchus*, Longnosed skate – RJO

EN Longnosed skate SP Picón

FR Pocheteau noir

AR سَفَن مُؤَنَّف



SPA/BD PROTOCOL: Not listed

CITES: Not listed

CMS: Not listed

GFCM: Not listed

Global

Med

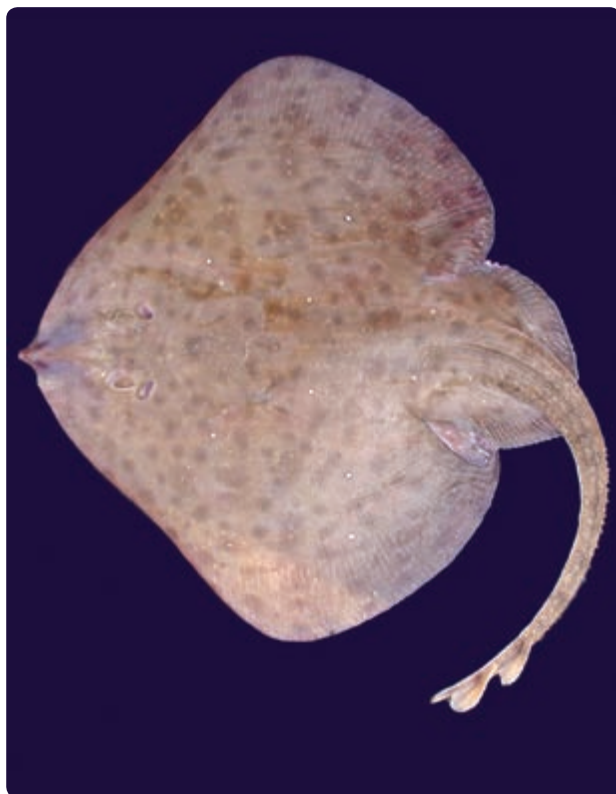
**Size:** up to 150 cm in total length.

**Description:** very long snout and pointed, disc broadly rhombic with anterior margins deeply concave. Dorsal surface gradually becoming almost entirely spinulose in adults, except bare patches on pectoral fins. No thorns on disc, a row of 4-11 thorns along tail. Ventral side smooth in young, becoming almost entirely spinulose in adults. Dorsal surface from light to dusky brown or grey, with a pattern of more or less distinct spots and black dots; ventral side almost dark brown to blue-grey, with numerous mucous pores on both sides of disc marked as black dots and streaks. Oviparous, young hatch at about 17 cm in TL.

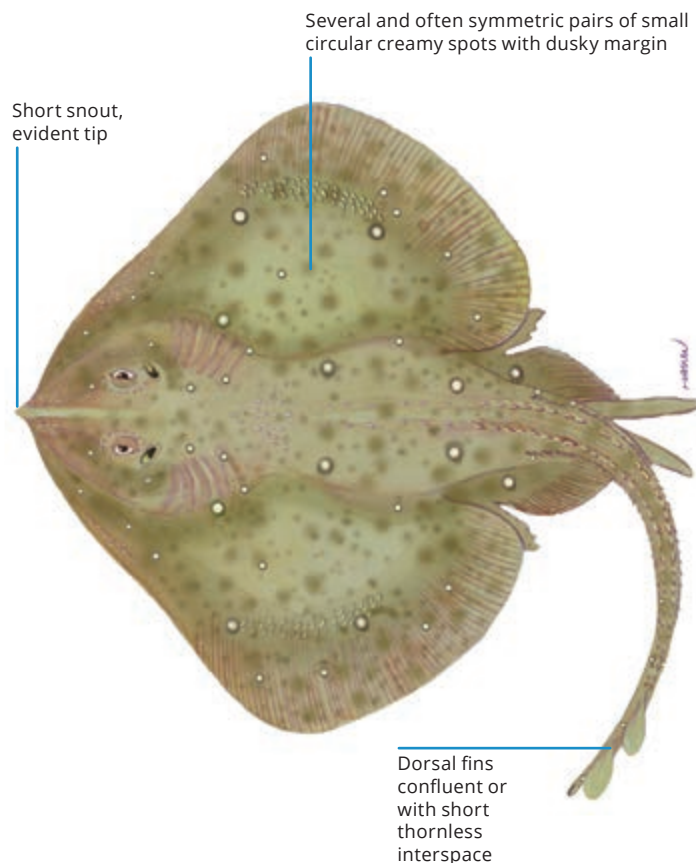
**Habitat:** demersal species, in cold and temperate waters of the bathyal zone to at least 1230 m of depth.

**Distribution:** Atlantic, from Norway to Senegal, included the Mediterranean but excluded Black Sea.

Note: considered a commercial species throughout several parts of its distribution in the Mediterranean.



© F. Serena



**RAJIDAE**

***Leucoraja circularis*, Sandy ray – RJI**

**EN** Sandy ray

**SP** Raja falsa vela

**FR** Raie circulaire

**AR** راية رملية



**SPA/BD PROTOCOL:** Annex II

**CITES:** Not listed

**CMS:** Not listed

**GFCM:** GFCM/42/2018/2

**Global**

**Med**

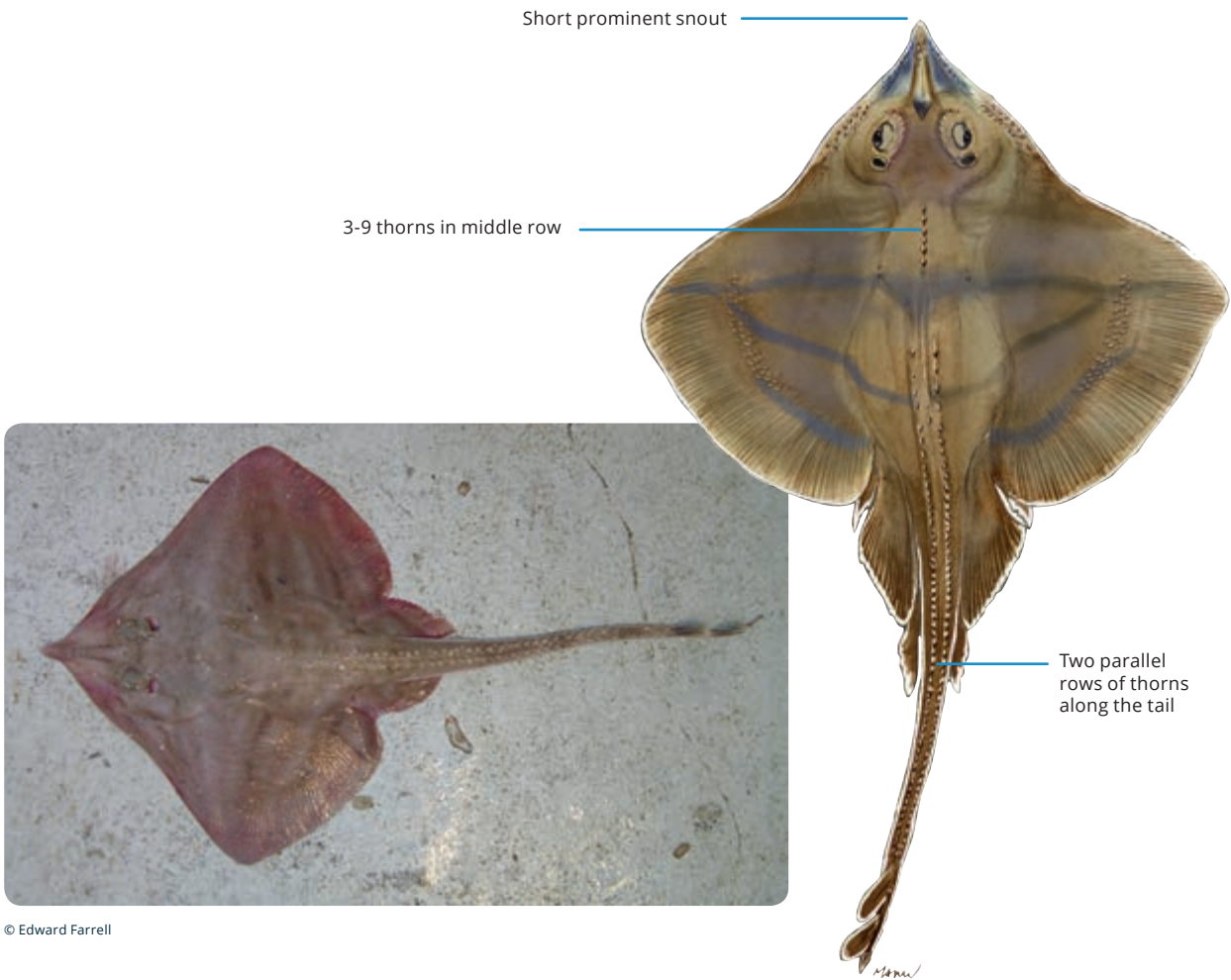
**Size:** up to 120 cm in total length.

**Description:** snout short with evident rostrum; disc roundish with, tail longer than body. Dorsal surface rough with prickles on pectoral fins, thornlets on head and on posterior part of disc. Large triangle of thorns on shoulder. Several and often symmetric pairs of small circular creamy spots with dusky margin. Ash-grey to dark brown on the back, ventral side smooth and whitish, margin of the pectoral and pelvic fins dusky. Oviparous, young hatch at about 8.9 cm in TL.

**Habitat:** demersal species, in cold and temperate waters of outer continental shelf and upper slope at 50-800 m of depth.

**Distribution:** Atlantic from Scotland and southern Norway possibly to Senegal. Western Mediterranean to Libya, absent in the Black Sea.





© Edward Farrell

#### RAJIDAE

### *Leucoraja fullonica*, Shagreen ray – RJF

EN Shagreen ray    SP *Raja cardadora*    FR Raie chardon    AR رابية مُشَوَّكة



SPA/BD PROTOCOL: Not listed    CITES: Appendix 1    CMS: Appendix I & II    GFCM: Not listed    Global    Med

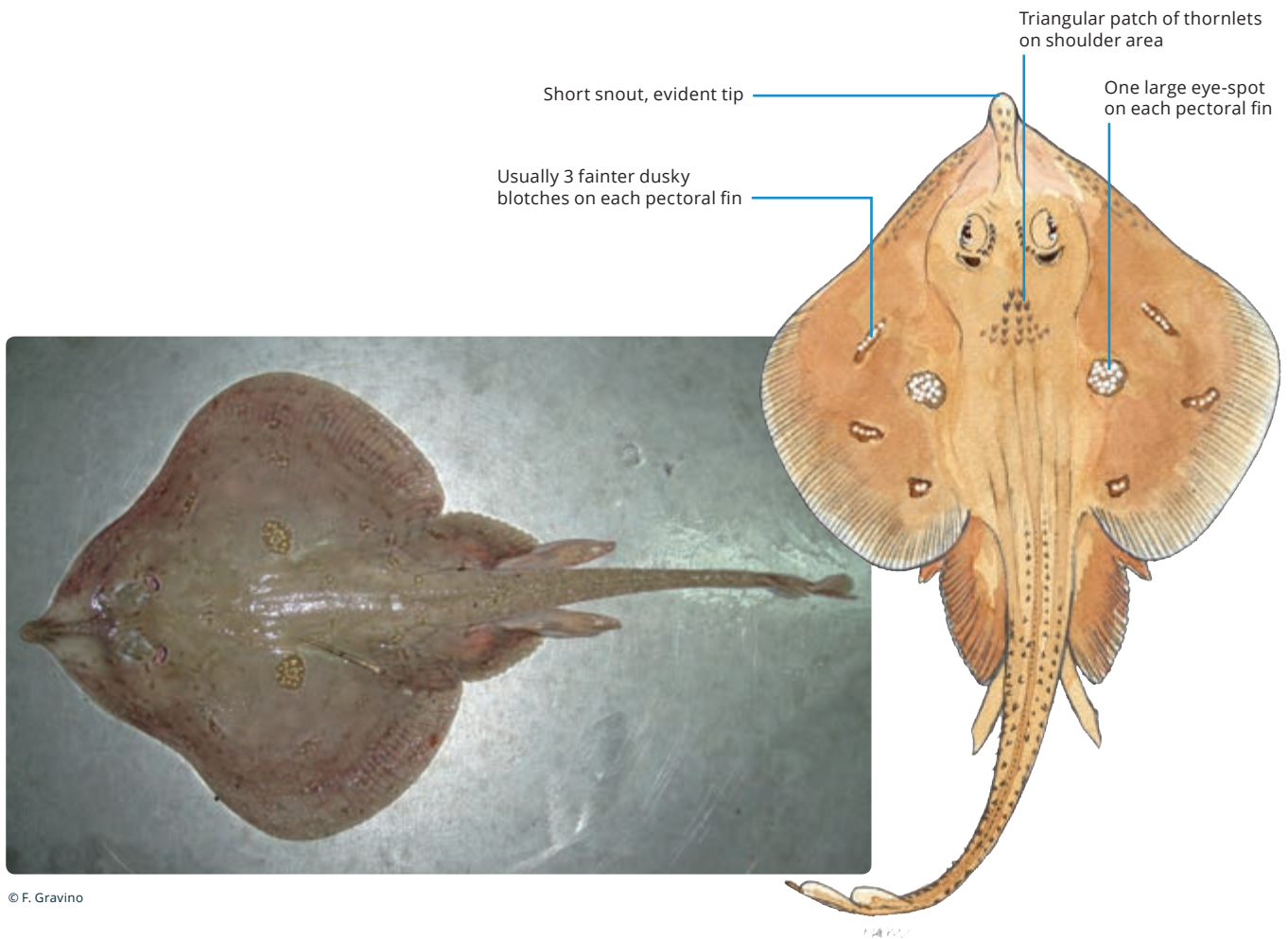
**Size:** up to 120 cm in total length.

**Description:** snout pronounced and pointed. Upper surface spinulose. Generally, a longitudinal row of 3-9 nuchal thorns; row of about 50 thorns on each side of midline, from shoulder to first dorsal fin; dorsal side prickly. Dorsal surface plain ashy-grey, underside white. Oviparous, young hatch unknown.

**Habitat:** demersal species, in cold and temperate waters of outer continental shelf and upper slope at 30-600 m of depth.

**Remarks:** its occurrence in the Mediterranean has to be confirmed.





© F. Gravino

**RAJIDAE**

***Leucoraja melitensis*, Maltese ray – JAM**

**EN** Maltese ray    **SP** Raja de Malta    **FR** Raie de Malte    **AR** راية مالطا (قرشلة)



**SPA/BD PROTOCOL:** Annex II    **CITES:** Not listed    **CMS:** Not listed    **GFCM:** GFCM/42/2018/2

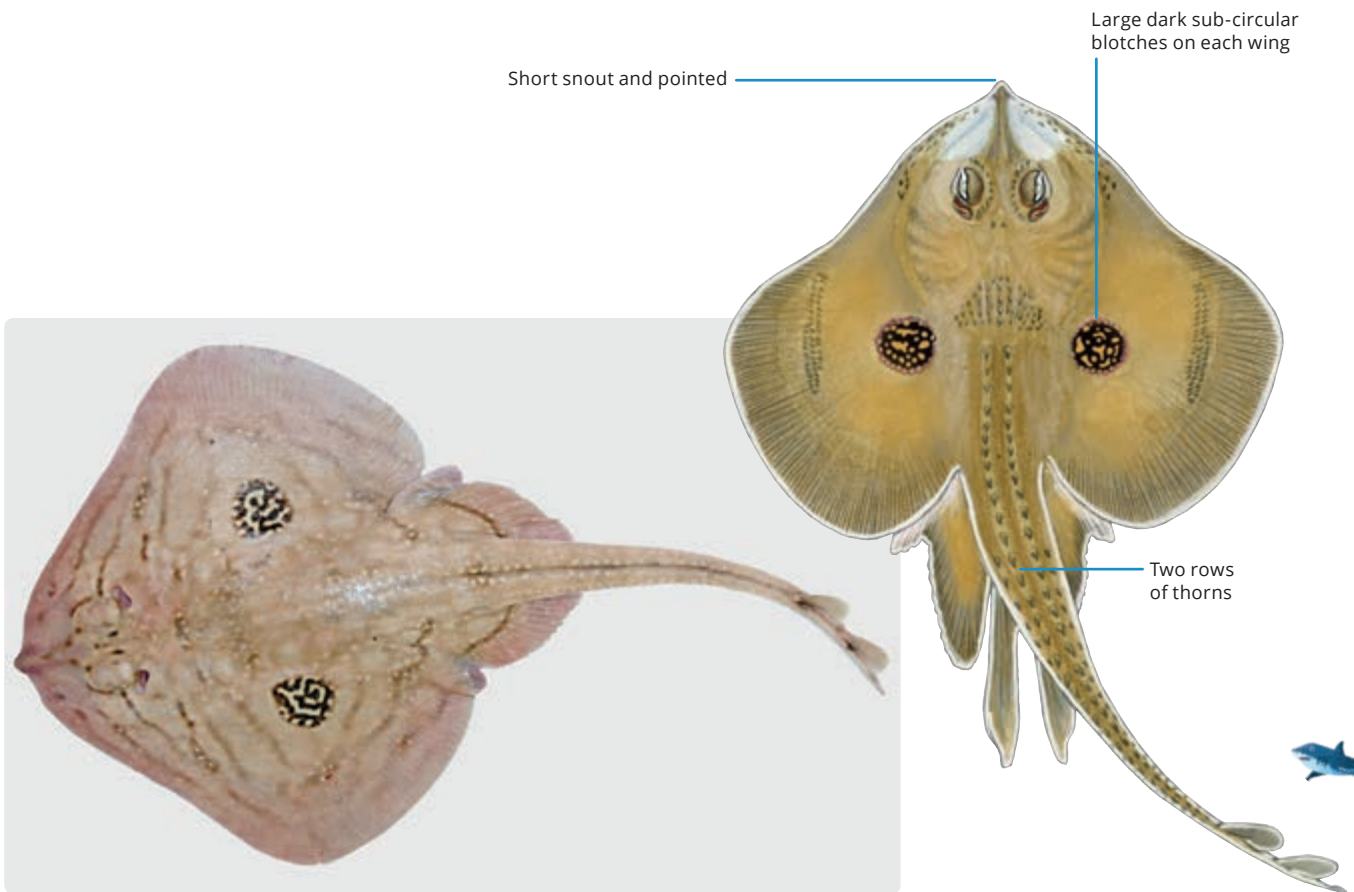
**Global**    **Med**

**Size:** up to 50 cm in total length.

**Description:** snout short with evident tip; upper surface more or less spinulose. Triangular patch of thornlets on shoulder area. Dorsal surface light brown, one large eye-spot on each pectoral fin. Oviparous, about 10-56 eggs are laid ind/year, young hatch unknow.

**Habitat:** demersal species from temperate waters of outer continental shelf and upper slope at 30-600 m of depth.

**Distribution:** endemic species from the Mediterranean, concentrated in the central area.



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**RAJIDAE**

***Leucoraja naevus*, Cukoo ray – RJN**

**EN** Cukoo ray    **SP** Raja sanguosa    **FR** Raie fleurie    **AR** NA

**LC**    **NT**

**SPA/BD PROTOCOL:** Not listed    **CITES:** Not listed    **CMS:** Not listed    **GFCM:** Not listed    **Global**    **Med**

**Size:** up to 81 cm in total length.

**Description:** Snout short and pointed. Disc slightly wider than long with anterior margins sinuous. Two rows of thorns on tail, none between dorsal fins. light brown-greyish on the back. Two eye spots in the centre of each wing. Occasionally with secondary eye spots elsewhere on the disc. Ventral side white and smooth. Oviparous, up to 100 eggs are laid ind/year, young hatch at 9-12 cm in TL.

**Habitat:** demersal species, cold and temperate waters of continental shelf and upper slope at 10-250 m of depth.

**Distribution:** Atlantic coasts from Senegal to Ireland, Britain and Northern parts of the North Sea. Found from the Western to the Central Mediterranean, including the Western coasts of Greece, absent in the Black Sea.

Note: considered a commercial species throughout several parts of its distribution in the Mediterranean.



© F. Serena

**RAJIDAE*****Raja asterias*, Mediterranean starry ray – JRS****EN** Mediterranean starry ray**SP** Raya estrellada**FR** Raie Étoilée**AR** رابية مية (قرشلة)**NT****NT****SPA/BD PROTOCOL:** Not listed**CITES:** Not listed**CMS:** Not listed**GFCM:** Not listed**Global****Med****Size:** up to 80 cm in total length.

**Description:** dorsal surface smooth in juveniles, prickly in adult specimens; 50-60 median slightly irregular thorns from nape to first dorsal fin; occasionally an additional parallel row on tail in adults. surface of dorsal side light brown with diverse dark dots partly encircled larger light spots; underside white. Oviparous, produce 30-112 egg cases/year, young hatch at about 8 cm TL.

**Habitat:** demersal species over soft bottoms, at depths ranging from 7 to 300 m.

**Distribution:** endemic species from the Mediterranean. Less common in the Eastern basin, not present in the Black Sea. Recently found out of Gibraltar Strait.

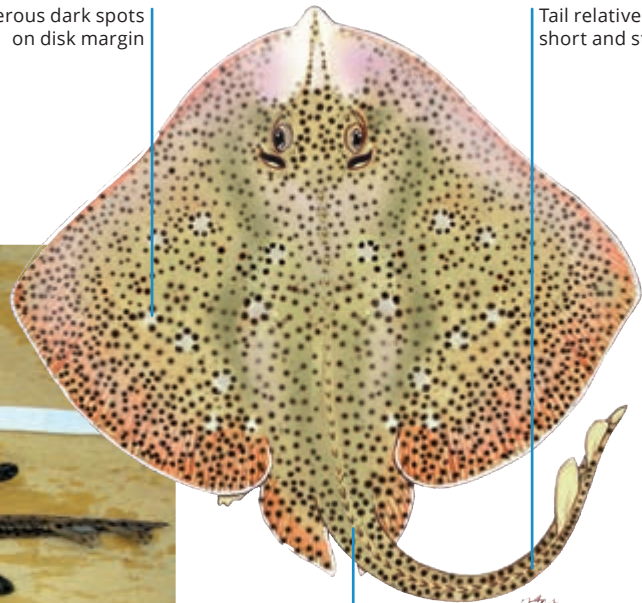
Note: considered a commercial species throughout several parts of its distribution in the Mediterranean.



© F. Serena

Numerous dark spots on disk margin

Tail relatively short and stout



Median row of 40-45 thorns from nape to first dorsal fin. Large males have this row interrupted on the back



SHARKS  
RAYS  
CHIMAERAS

**RAJIDAE**

***Raja brachyura*, Blonde ray – RJH**

**EN** Blonde ray    **SP** Raja boca de rosa    **FR** Raie lisse    **AR** NA

**NT**    **NT**

**SPA/BD PROTOCOL:** Not listed    **CITES:** Not listed    **CMS:** Not listed    **GFCM:** Not listed    **Global**    **Med**

**Size:** up to 120 cm in total length.

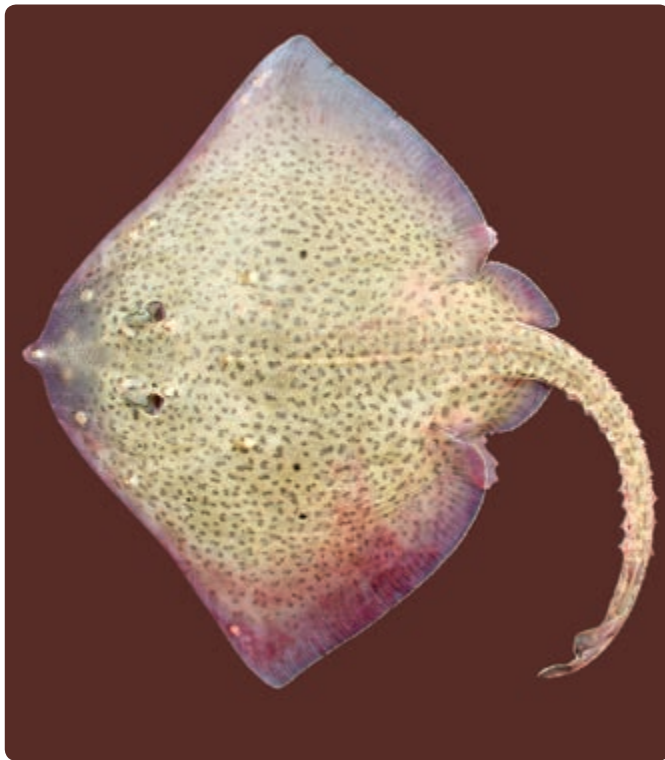
**Description:** dorsal surface of body very prickly, except in juveniles; ventral side also prickly along front margins of the disc, in the adults also along the body. Tail relatively short and stout. Colour dusky ochre, with small dark spots along the margins of the disc (combined head, body and pectoral fins); sometimes few light blotches encircled by dark spots; ventral side white. Oviparous, produce about 30 egg cases/year, young hatch at 16-18 cm TL.

**Habitat:** demersal species over soft bottoms, on continental shelf and upper slope up to 150 m depths.

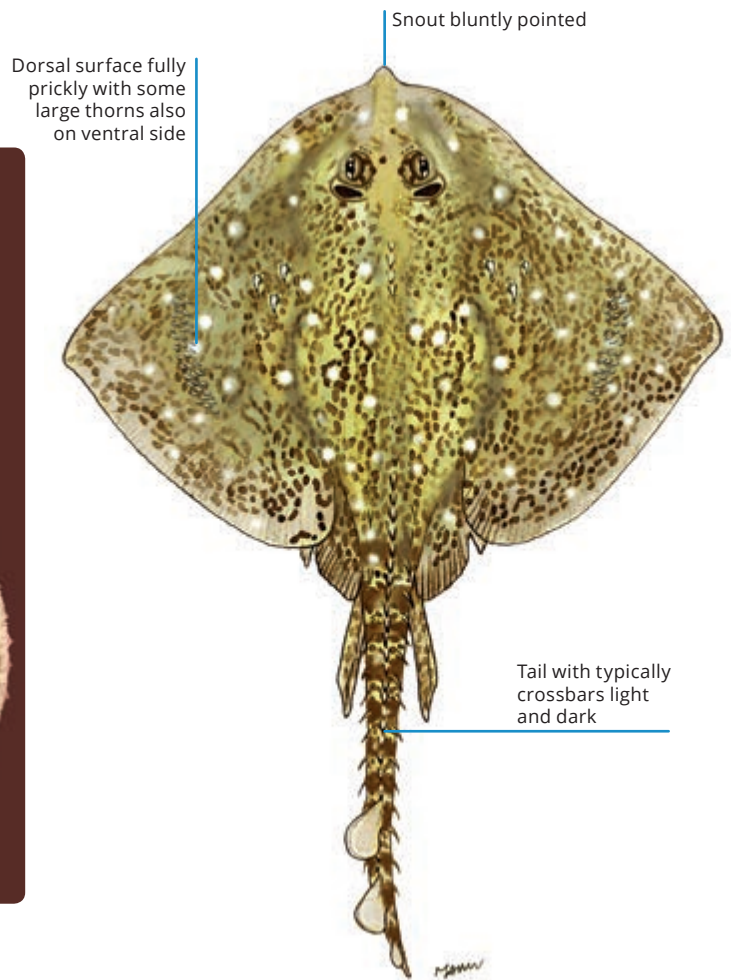
**Distribution:** Atlantic from Norway to Morocco. It occurs in the Mediterranean Sea and it is absent in the Black Sea.

Note: considered a commercial species throughout several parts of its distribution in the Mediterranean.





© F. Serena



**RAJIDAE**

***Raja clavata*, Thornback ray – RJC**

**EN** Thornback ray    **SP** Raja de clavos    **FR** Raie bouclée    **AR** راية مُشَوَّكة الظهر (قرشلة)

**NT**    **NT**

**SPA/BD PROTOCOL:** Not listed    **CITES:** Not listed    **CMS:** Not listed    **GFCM:** Not listed

**Global**    **Med**

**Size:** up to 90-130 cm in total length.

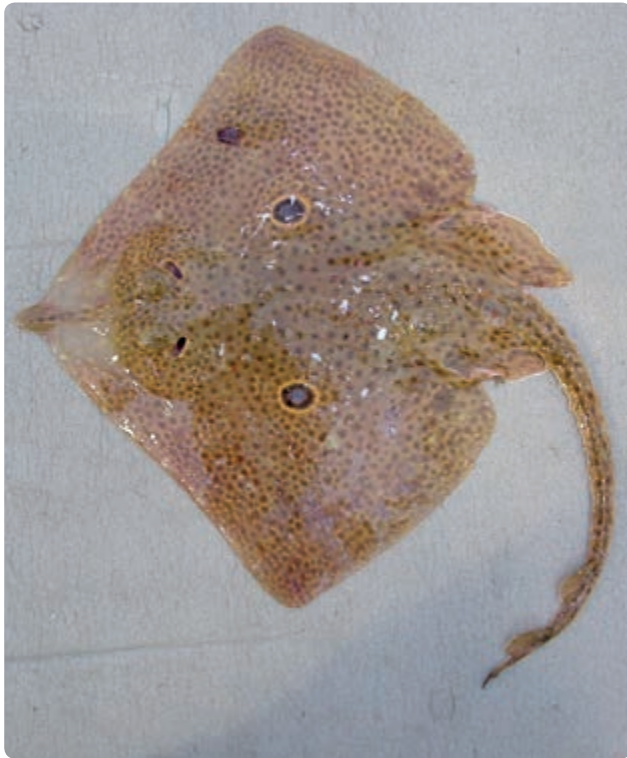
**Description:** dorsal surface fully prickly with large and stout thorns; ventral side sometimes with large thorns. Tail relatively short and stout with crossbars light and dark. Pattern of dorsal surface very variable brownish with dark and light spots and blotches. Oviparous, produce about 70-167 egg cases/year, young hatch at 10-13 cm TL.

**Habitat:** demersal species over soft bottoms, on continental shelf and slope from shallow waters up to 1000 m depths.

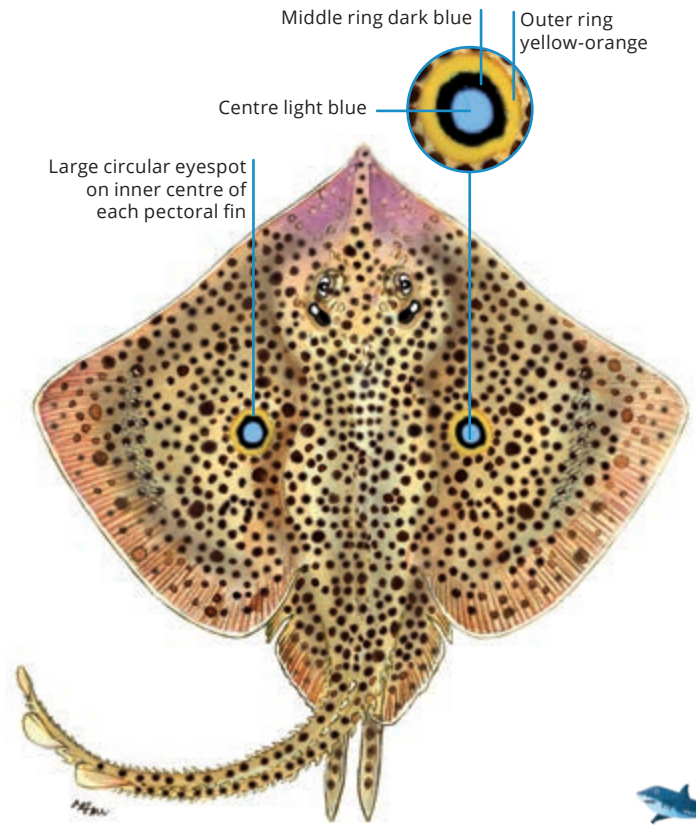
**Distribution:** It is widely distributed from Iceland and Norway to the North Sea, the Mediterranean, the western Black Sea, the Atlantic coasts of Africa, and as far south as South Africa and the south-western Indian Ocean.

Note: considered a commercial species throughout several parts of its distribution in the Mediterranean.





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**RAJIDAE**

***Raja miraletus*, Brown ray – JAI**

**EN** Brown ray

**SP** Raja de espejos

**FR** Raie miroir

**AR** راية إم عيون (قرشلة)

LC

LC

**SPA/BD PROTOCOL:** Not listed

**CITES:** Not listed

**CMS:** Not listed

**GFCM:** Not listed

**Global**

**Med**

**Size:** up to 70 cm in total length.

**Description:** dorsal surface nearly smooth, ventral side smooth. Upper surface ochre to reddish-brown with scattered dark spots with a specific large circular eyespot on inner centre of each pectoral fin. Ventral side white. Oviparous, produce about 40-72 egg cases/year, young hatch at 5 cm TL.

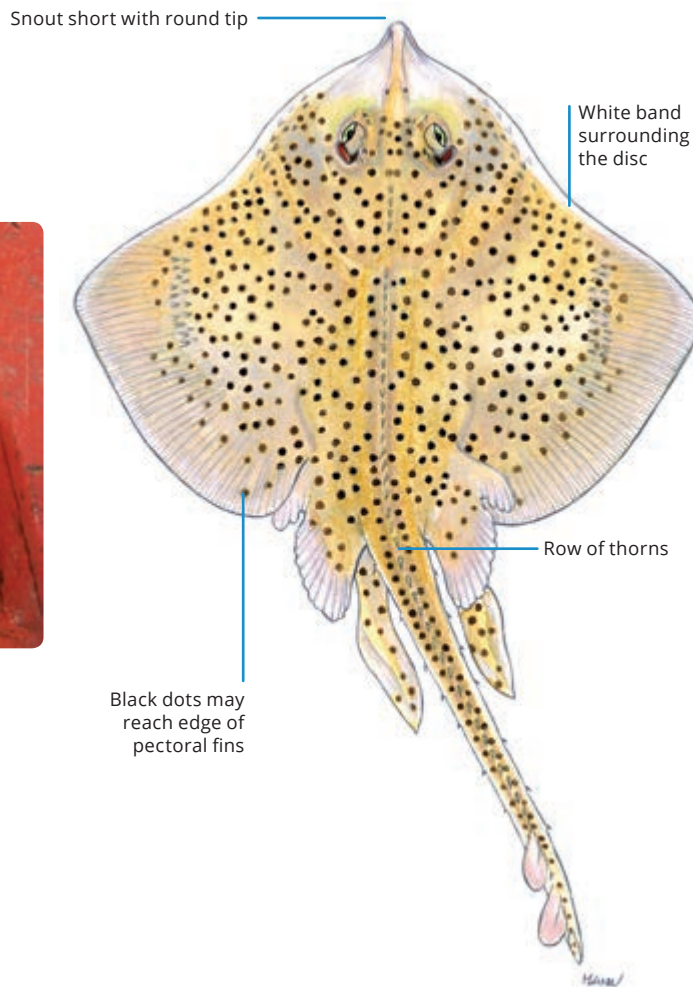
**Habitat:** demersal species over soft bottoms, on continental shelf and upper slope from shallow waters up to 500 m depths.

**Distribution:** Found in the Eastern Atlantic, Mediterranean and Western Indian Ocean where it apparently forms distinct subpopulations.

Note: considered a commercial species throughout several parts of its distribution in the Mediterranean.



© R.B. Diaz

**RAJIDAE*****Raja montagui*, Spotted ray – RJM****EN** Spotted ray**SP** Raja pintada**FR** Raie douce**AR** راية مبرقشة**LC****LC****SPA/BD PROTOCOL:** Not listed**CITES:** Not listed**CMS:** Not listed**GFCM:** Not listed**Global****Med****Size:** up to 80 cm in total length.

**Description:** Body disc wider than long with margin forming a sinuous curve. Snout short with tip rounded and prickly. Dorsal surface smooth with some thornlets. Ventral side smooth. Brown on the back with an irregular pattern of dark dots and light blotches, narrow white band surrounding the disc. Black dots on the dorsal surface which may reach the edge of the pectoral fins. Oviparous, produce about 24-70 egg cases/year. Young hatching at size of 8 to 12 cm TL.

**Habitat:** demersal species over soft bottoms, on continental shelf and slope from surface up to 650 m depths.

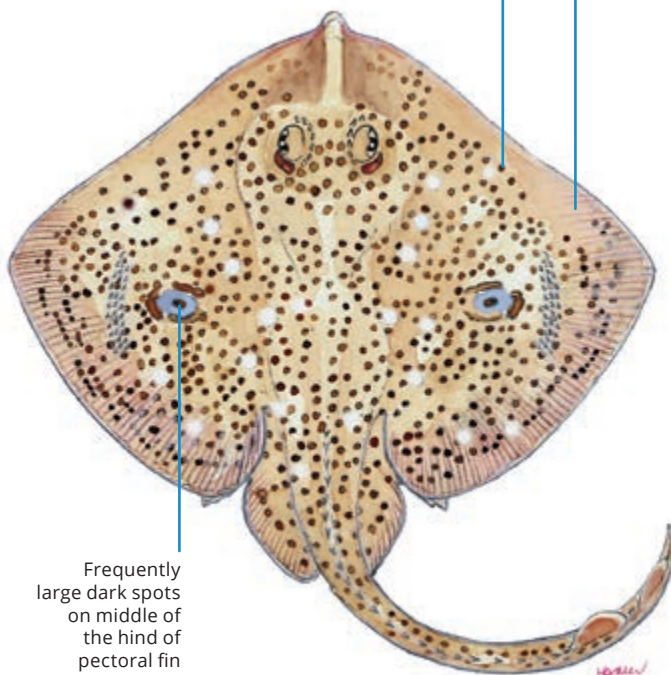
**Distribution:** Atlantic coasts from Morocco to the Shetlands, Southern part of North Sea. In the Mediterranean, along the Western basin, in particular Morocco, Algeria and Tunisian coasts.

**Remarks:** this species has a very variable pattern on the back. It is often confused with the other similar specie *R. polystigma*. For this reason, we suggest to operators on board record it as *R. cf polystigma*. It is considered a commercial species throughout several parts of its distribution in the Mediterranean.



© F. Serena

Brown on the back with an irregular pattern of dark dots and light blotches, narrow white band surrounding the disc. Scattered dark dots which may not reach the edge of the pectoral fins



Frequently large dark spots on middle of the hind of pectoral fin



SHARKS  
RAYS  
CHIMAERAS

**RAJIDAE**

***Raja polystigma*, Speckled ray – RJM**

**EN** Speckled ray    **SP** Raja manchada    **FR** Raie tachetée    **AR** NA

**LC**    **LC**

**SPA/BD PROTOCOL:** Not listed    **CITES:** Not listed    **CMS:** Not listed    **GFCM:** Not listed

**Global**    **Med**

**Size:** up to 70 cm in total length.

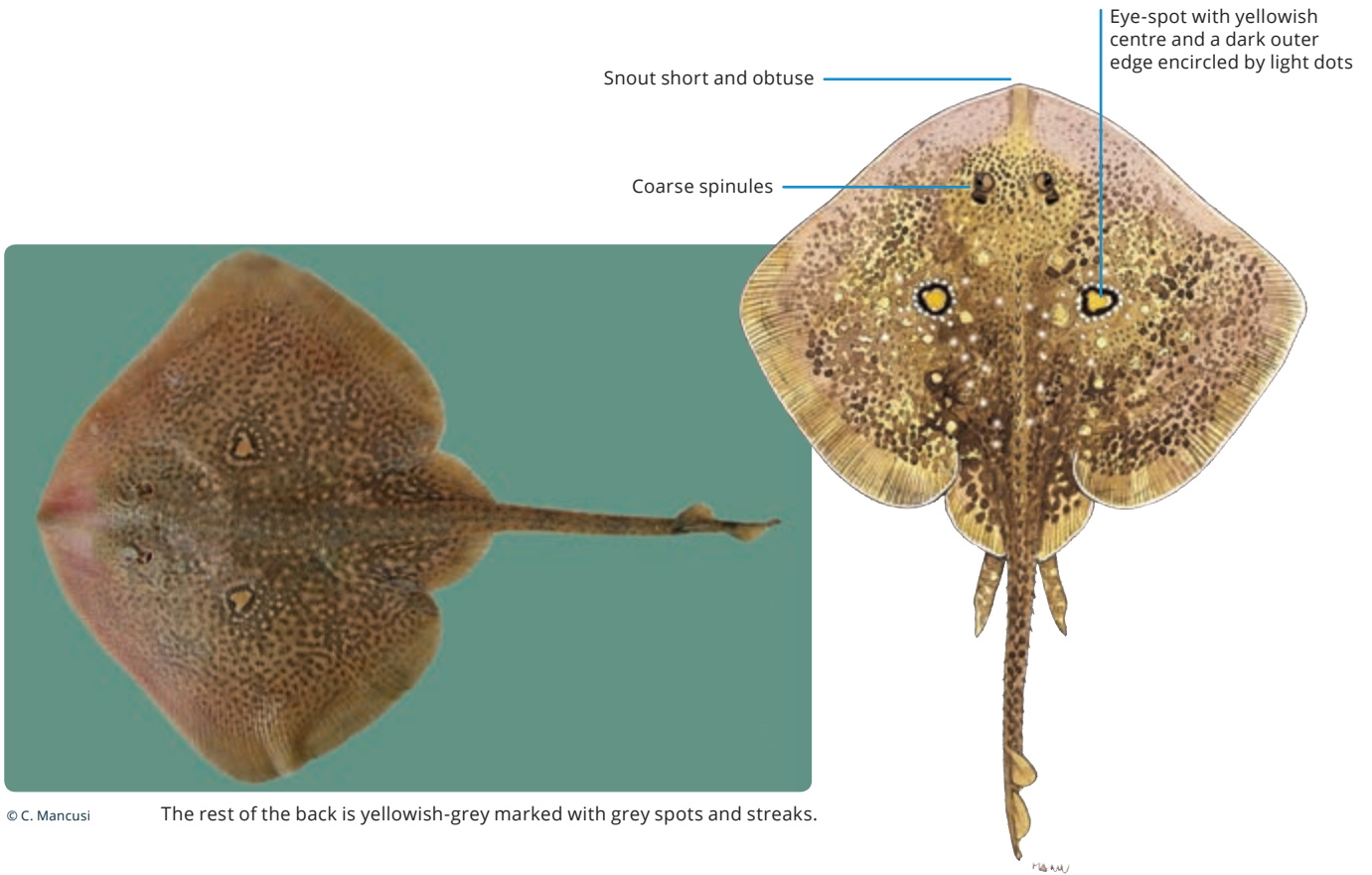
**Description:** Body disc with pectoral fins wider than long with margin forming a sinuous curve. Snout short with tip rounded and prickly. Dorsal surface smooth with some thornlets on anterior margins. Ventral side smooth, except for snout. The colour is brown on the back with an irregular pattern of dark dots and light blotches and a narrow white band surrounding the disc. It has scattered dark dots which may not reach the edge of the pectoral fins. Oviparous, produce about 20-62 egg cases/year.

**Habitat:** demersal species over soft bottoms, on continental shelf and upper slope from 100 up to 400 m depths.

**Distribution:** Mediterranean endemic species, rare in the Levantine area. Absent in the Black Sea.

**Remarks:** this species has a very variable pattern on the back. It is often confused with the other similar specie *R. montagui*. For this reason, we suggest to operators on board record it as *R. cf polystigma*.





© C. Mancusi

The rest of the back is yellowish-grey marked with grey spots and streaks.

## RAJIDAE

### *Raja radula*, Rough ray – JAR

EN Rough ray

SP *Raja aspera*

FR Raie rape

AR راية خشنه (قرشلة)



SPA/BD PROTOCOL: Not listed

CITES: Not listed

CMS: Not listed

GFCM: Not listed

Global

Med

**Size:** up to 70 cm in total length.

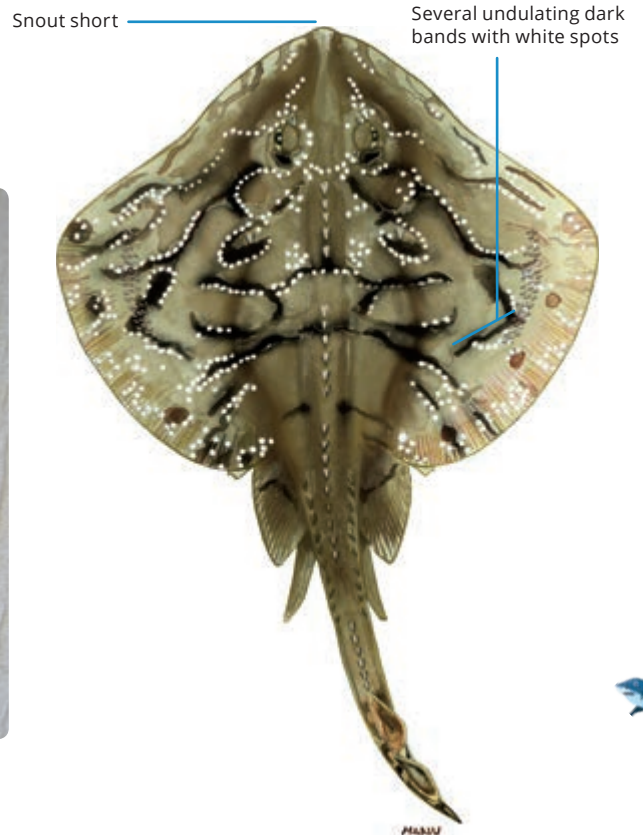
**Description:** snout short and obtuse. Upper surface covered with coarse spinules. Underside spiny only on snout and on hind half of tail (juveniles and males) with an irregular row of small thorns from nape to first dorsal fin; two thorns between dorsal fins. It has an eye-spot on inner centre of each pectoral fin. Upper surface covered with coarse spinules. Oviparous, produce about 80-154 egg cases/year, young hatch at 5 cm TL.

**Habitat:** demersal species over soft bottoms, on continental shelf and upper slope from 20 up to 350 m depths.

**Distribution:** Mediterranean endemic species. Apparently passing into Atlantic coasts of Northern Morocco.



© F. Serena



## RAJIDAE

### *Raja undulata*, Undulate ray – RJU

**EN** Undulate ray    **SP** Raja mosaica    **FR** Raie brunette    **AR** راية مُمَوَّجَة



**SPA/BD PROTOCOL:** Not listed    **CITES:** Not listed    **CMS:** Not listed    **GFCM:** Not listed

**Global**    **Med**

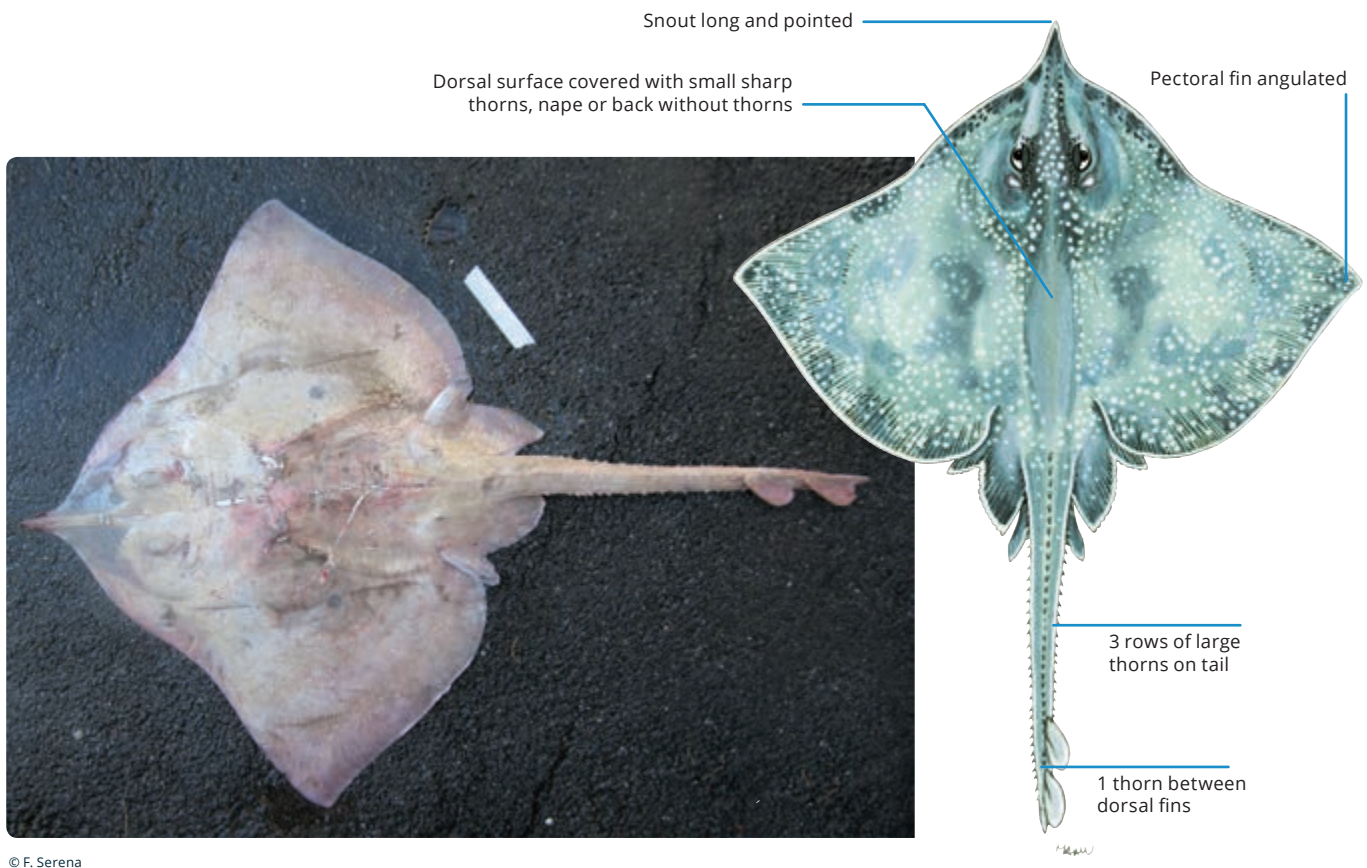
**Size:** up to 114 cm in total length.

**Description:** snout short, spinulose on the back, with nude areas on central and hind parts of body disc; 2-8 thorns along nape; ventral side smooth except for snout and front edges. Dorsal surface ochre to greyish-brown, with several undulating dark bands edged with white spots like pearl-strings; underside white. Oviparous, produce about 30-90 egg cases/year, young hatch at 14 cm TL.

**Habitat:** demersal species over soft bottoms, on continental shelf up to 200 m depths.

**Distribution:** Atlantic from British islands to Senegal, and the Mediterranean Sea; absent in the Black Sea.





© F. Serena

## RAJIDAE

### *Rostroraja alba*, White skate – RJA

**EN** White skate    **SP** Raja bramante    **FR** Raie blanche    **AR** (رپا)



**SPA/BD PROTOCOL:** Not listed    **CITES:** Not listed    **CMS:** Not listed    **GFCM:** Not listed    **Global**    **Med**

**Size:** up to 240 cm in total length.

**Description:** snout long and pointed, with pronounced tip; disc rhombic with the outer corners angulated. Dorsal surface with bare patches on wings. Nape, shoulder region and back smooth, about 15 thorns in a median row on tail, one thorn between dorsal fins; usually a row of strong thorns on either side of lower edge of tail. Ventral side more or less prickly except for nude areas on outer part of wings. Dorsal surface reddish-brown to greyish-blue with distinct light spots; ventral side white with dark margins to pectoral and pelvic fins, tail dusky. Oviparous, produce about 55-156 egg cases/year, young hatch at 30 cm TL.

**Habitat:** demersal species over soft bottoms, on continental shelf to upper slope up to 40-600 m depths.

**Distribution:** From the Eastern Atlantic coasts of the southern British Isles south to South Africa, the Mediterranean Sea, and extending into the southwestern parts of Indian Ocean.

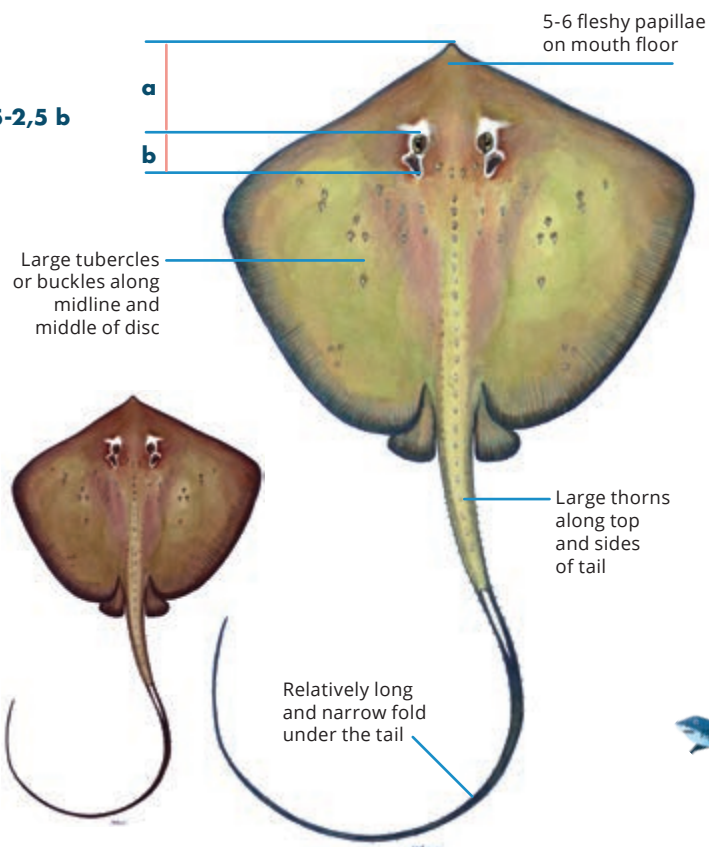
**a: rostrum length**

**b: sum of the length of the orbit and spiracle**

$$a = 1,5-2,5 b$$



© NOAA\NMFS\SEFSC\MS Laboratories2



SHARKS  
RAY  
CHIMAERAS

## DASYATIDAE

### *Bathytoshia lata*, Roughtail stingray – RDC

**EN** Roughtail stingray **SP** Raja látigo Iija

**FR** Pastenague épineuse

**AR** راية لابيعة مشوكة (قادو)

LC

VU

**SPA/BD PROTOCOL:** Not listed

**CITES:** Not listed

**CMS:** Not listed

**GFCM:** Not listed

Global

Med

**Size:** up to 210 cm in disc wide.

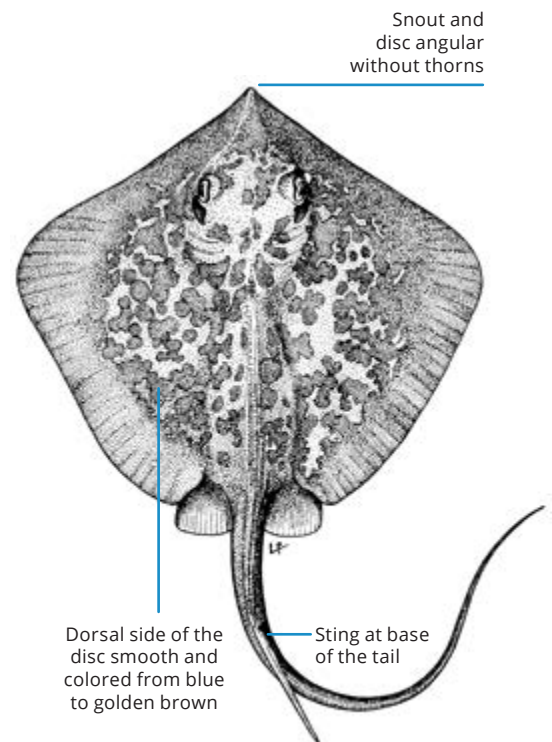
**Description:** snout obtuse, disc rhomboid, front and hind margins more or less straight; tail twice as long as disc length. Dorsal (back) surface with large tubercles, as well as large thorns along top and sides of tail. Olive-brown on the back, underside almost white. Dorsal surface reddish-brown to greyish-blue with distinct light spots; ventral side white with dark margins to pectoral and pelvic fins, tail dusky. Viviparous, with litters of 2-6 pups, disc width 34-37 cm at birth.

**Habitat:** demersal species on soft bottoms of the continental shelf and upper slope from 90 to 300 m depth.

**Distribution:** north Western Atlantic from Cape Cod to Gulf of Mexico, and in the south Western Atlantic from Brazil to Argentina. In the Eastern Atlantic from Bay of Biscay to Angola; Also present throughout coastal waters of the Mediterranean Sea.



© M.L. Kattoura



**DASYATIDAE**

***Dasyatis marmorata*, Marble stingray – RDQ**

**EN** Marble stingray

**SP** Raja látigo jaspeada

**FR** Pastenague marbrée

**AR** راية رخامية لاسعة



**SPA/BD PROTOCOL:** Not listed

**CITES:** Not listed

**CMS:** Not listed

**GFCM:** Not listed

**Global**

**Med**

**Size:** up to 60 cm in disc wide.

**Description:** snout and disc (combined head, body and pectoral fins) angular, tail less than twice body length; disc without thorns; usually one sting. Dorsal surface with evident bright blue blotches and branching lines on a golden-brown disc; ventral side white. Viviparous, with litters of 1-4 pups, disc width not well know at birth.

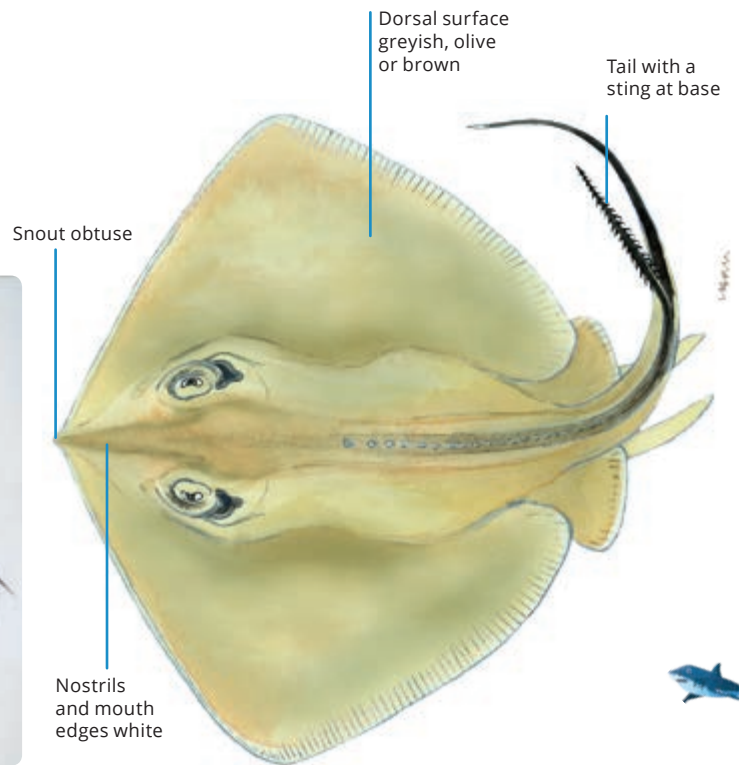
**Habitat:** demersal species, coastal and shallower in temperate waters up to 12-65 m depth.

**Distribution:** Eastern Atlantic from Morocco to Mauritania, and the Mediterranean Sea; absent in the Black sea.





© M.N. Bradai



**DASYATIDAE**

***Dasyatis pastinaca*, Common stingray – JDP**

**EN** Common stingray

**SP** Raja látigo común

**FR** Pastenague commune

**AR** راية لاسعة شائعة (حمام)

**DD**

**VU**

**SPA/BD PROTOCOL:** Not listed    **CITES:** Not listed    **CMS:** Not listed    **GFCM:** Not listed

**Global**

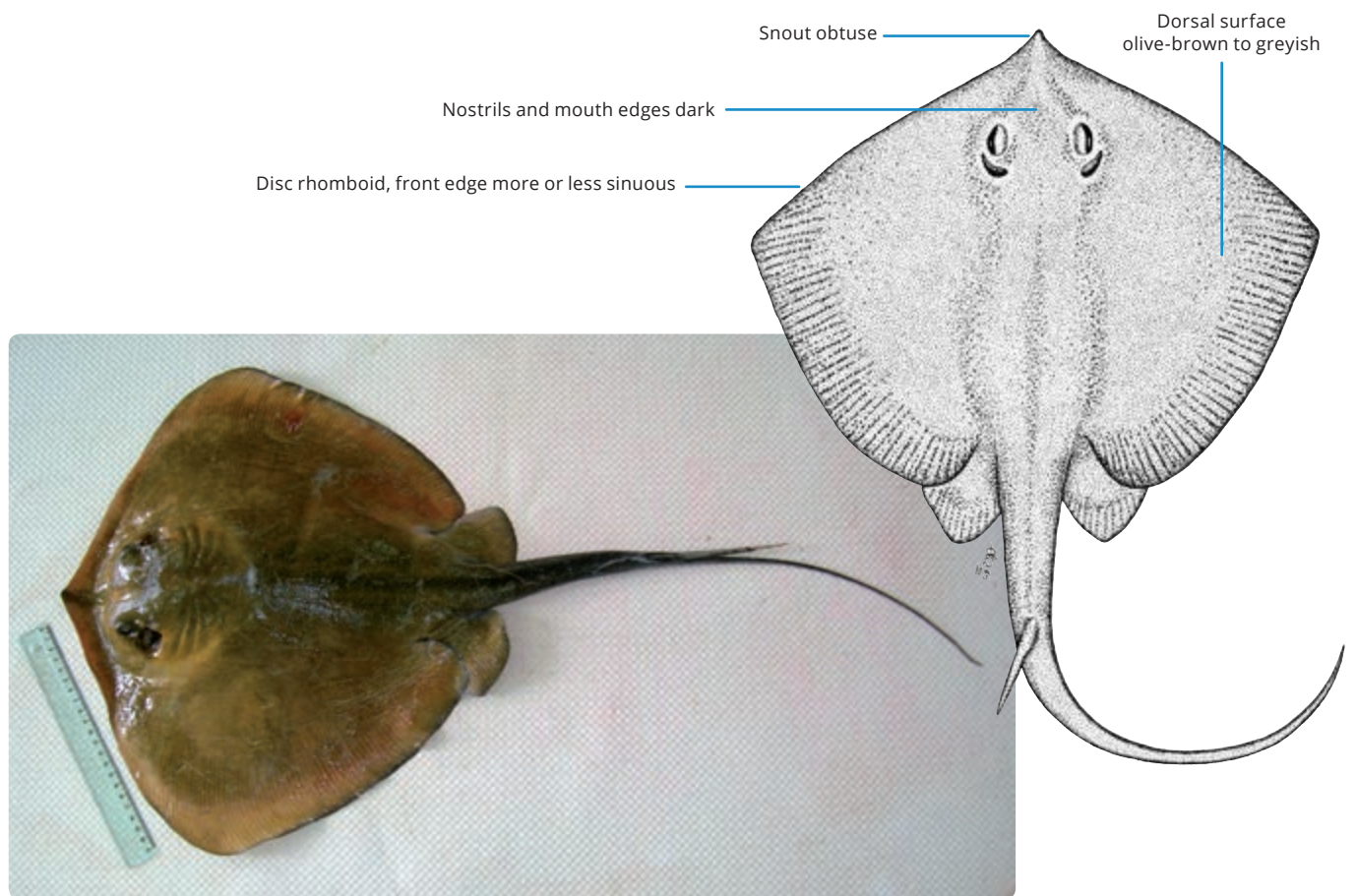
**Med**

**Size:** up to 68 cm in disc wide.

**Description:** snout obtuse and disc rhomboid, front margin more or less sinuous; tail 1.3-1.5 times length of disc with a short membranous fold below. Back surface without large tubercles also in the adult specimens. Long dorsal keel below the sting. Greyish, olive-brown on the back; ventral side white with a wide greyish brown to blackish margin. Viviparous, with litters of 3-7 pups, disc width 12 cm at birth.

**Habitat:** benthic, coastal and shallower in temperate waters up to 200 m depth.

**Distribution:** North Eastern Atlantic from France to Mauritania, and the Mediterranean and Black Sea.



© C. Capapé

**DASYATIDAE**

***Dasyatis tortonesei*, Tortonese's stingray – JDP**

**EN** Tortonese's stingray

**SP** Rayalátigo de Tortonese

**FR** Pastenague de Tortonese

**AR** (حمام)

**DD**

**VU**

**SPA/BD PROTOCOL:** Not listed

**CITES:** Not listed

**CMS:** Not listed

**GFCM:** Not listed

**Global**

**Med**

**Size:** up to 84 cm in disc wide.

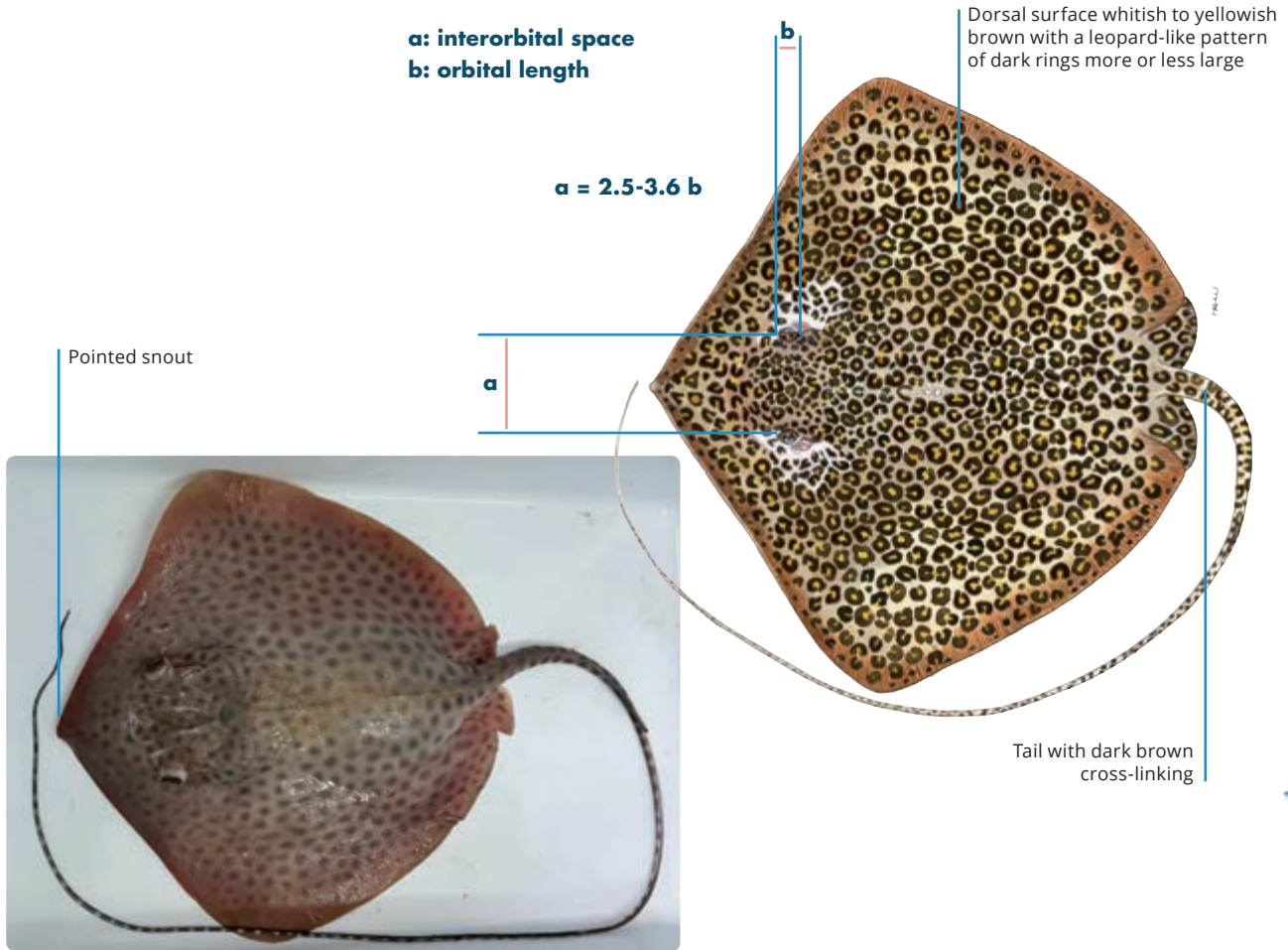
**Description:** snout obtuse and disc rhomboid, front margin more or less sinuous; tail 1.2-1.4 times length of disc with a short membranous fold below. Dorsal surface without large tubercles, but more or less covered with denticles in larger adult specimens. Olive-brown to greyish on the back; ventral side white with a brown border around the disc. Viviparous, with litters of 3-9 pups, disc width 15-16 cm at birth.

**Habitat:** benthic, coastal and shallower in temperate waters up to 100 m depth.

**Distribution:** North Eastern Atlantic from France to Mauritania, and the Mediterranean Sea; absent in the Black Sea.

**Remarks:** probably synonym of *D. pastinaca*. It needs confirmation.





© N. Yücel

#### DASYATIDAE

### *Himantura leoparda*, Honeycomb stingray – DKL

EN Honeycomb stingray

SP NA

FR NA

AR NA



SPA/BD PROTOCOL: Not listed

CITES: Not listed

CMS: Not listed

GFCM: Not listed

Global

Med

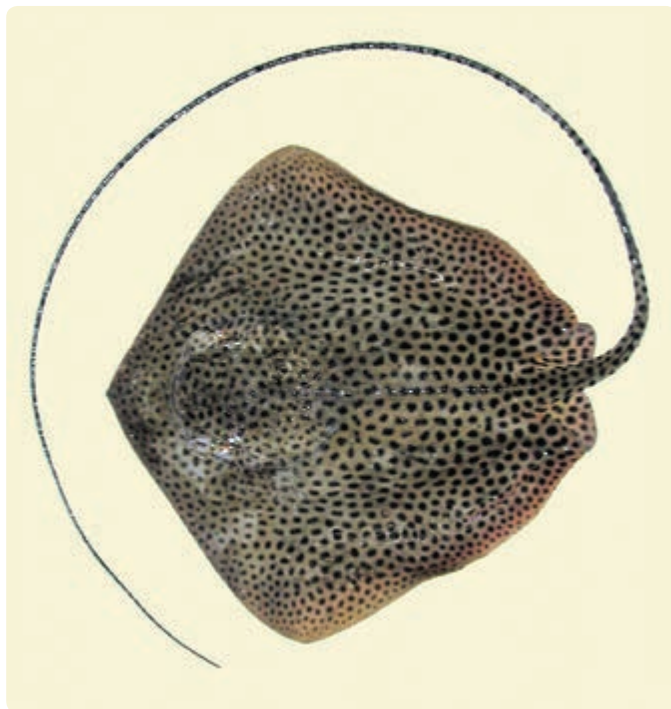
**Size:** up to 140 cm in disc wide (about 410 cm TL).

**Description:** Disc rhombic and robust, apex of the pectoral fins rounded. Snout broadly triangular with a small apical lobe. Usually one sting on the caudal part of the tail. Dorsal surface yellowish brown with a leopard-like pattern of dark rings more or less large. Ventral side white. Viviparous, disc width 20 cm at birth.

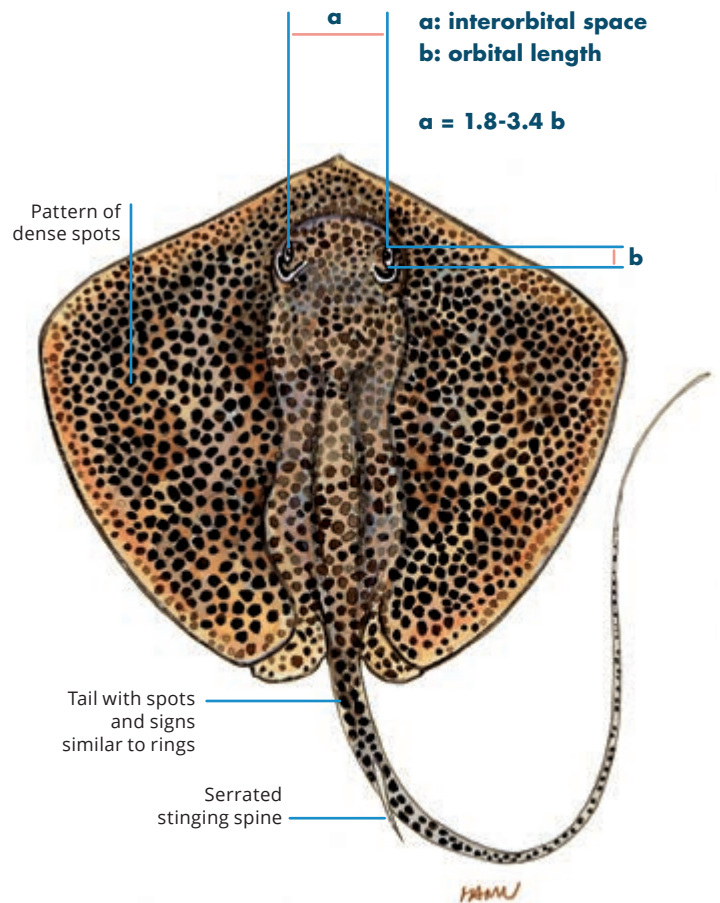
**Habitat:** Demersal on sandy and muddy bottoms of the continental shelf up to 70 m depth.

**Distribution:** Indo-West Pacific, from South Africa to Eastern Australia and Japanese waters. Its occurrence in the Mediterranean must be confirmed.

**Remark:** recently in the north Levantine Sea a new *Himantura* species has been described as *H. leoparda*.



© R. Bonfil



**DASYATIDAE**

***Himantura uarnak*, Honeycomb stingray – DHV**

**EN** Honeycomb stingray

**SP** Chupare oval

**FR** Pastenague indienne

**AR** راية هندية لاسعة



**SPA/BD PROTOCOL:** Not listed

**CITES:** Not listed

**CMS:** Not listed

**GFCM:** Not listed

**Global**

**Med**

**Size:** up to 160-200 cm in disc wide, (450 TL)

**Description:** snout obtusely and angled; disc almost rhomboid. Dorsal surface with a series of tubercles on the middle part of disc. Brown or pale yellowish on the back, with dark spots or reticulations spots, bars or reticulations, making a bright pattern; ventral side cream white. Viviparous, with litters of 2 pups (3-5 for some Authors), disc width 21-28 cm at birth.

**Habitat:** lessepsian species. Demersal on sandy and muddy bottoms of the continental shelf up to 50 m depth.

**Distribution:** Indian Ocean, including Borneo, Red Sea and recently also the Mediterranean Sea along the coast of the Levantine basin.



© N. Ungaro

#### DASYATIDAE

### *Pteroplatytrygon violacea*, Pelagic stingray – PLS

**EN** Pelagic stingray   **SP** Raja látigo violeta   **FR** Pastenague violette   **AR** راية لاسعة بنفسجية (الزرقايا)

LC

LC

**SPA/BD PROTOCOL:** Not listed   **CITES:** Not listed   **CMS:** Not listed   **GFCM:** Not listed

Global

Med

**Size:** up to 80 cm in disc wide.

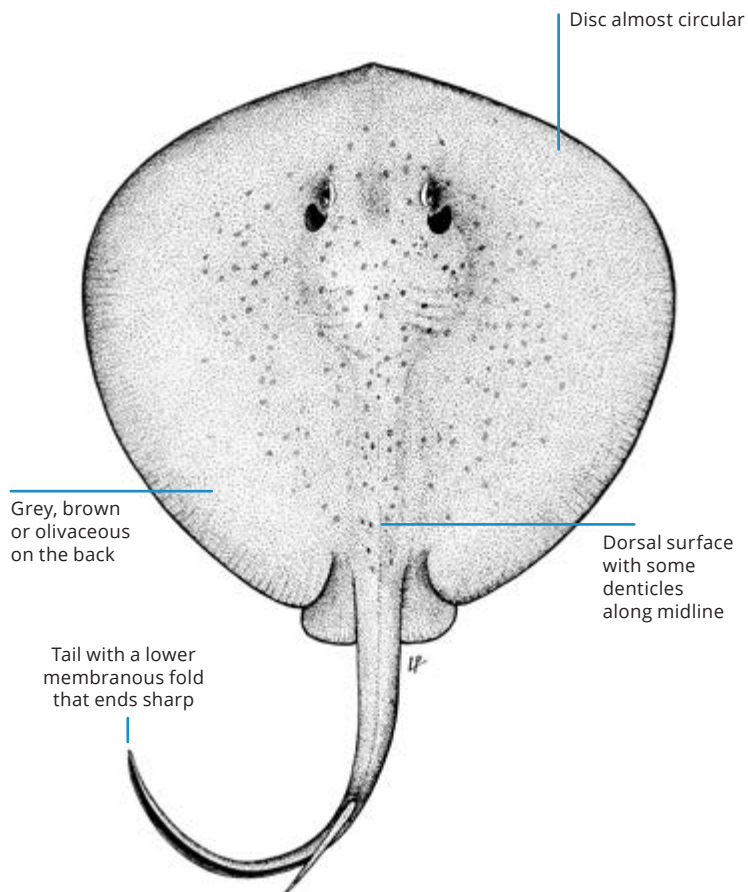
**Description:** snout rounded, disc almost triangular with margins convex. Floor of mouth with 10-12 papillae. Dorsal and ventral surfaces blue dark. Viviparous, with litters of 2-9 pups, disc width 14-20 cm at birth.

**Habitat:** pelagic species in all tropical and temperate waters. In the water column up to about 400 m depth.

**Distribution:** cosmopolitan species including the Mediterranean Sea, absent in the Black Sea.



© F. Serena



**DASYATIDAE**

***Taeniurops grabatus*, Round stingray – RTB**

**EN** Round stingray    **SP** Chupare redondo    **FR** Pastenague africaina    **AR** (ترش)



**SPA/BD PROTOCOL:** Not listed    **CITES:** Not listed    **CMS:** Not listed    **GFCM:** Not listed

**Global**    **Med**

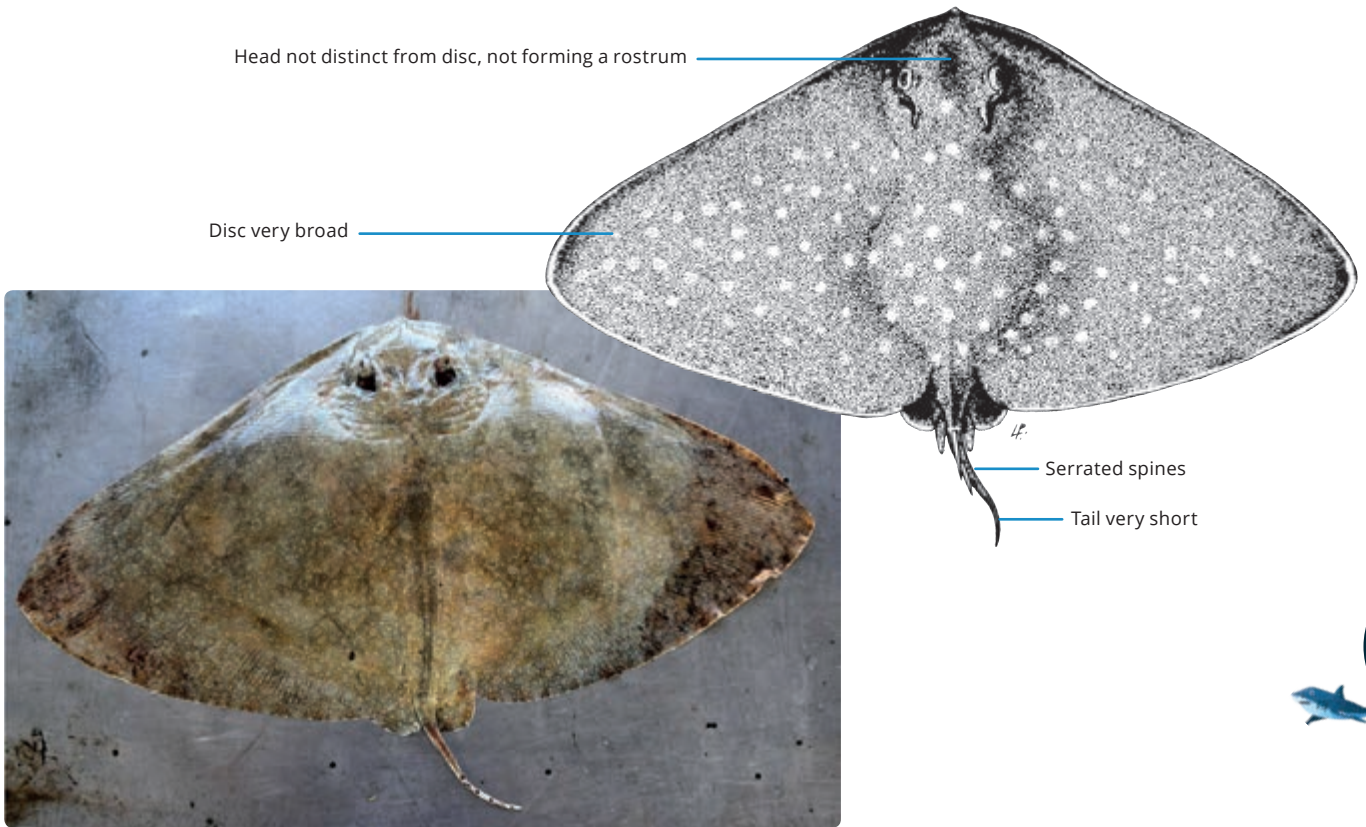
**Size:** up to 80 cm in disc wide.

**Description:** disc almost circular, tail relatively short with a membranous fold below up to tip of tail. Dorsal surface with just only some denticles along midline. Colour grey, brown or olivaceous on the back, underside yellowish-white. Viviparous, reproductive biology not well known.

**Habitat:** demersal species in tropical and temperate waters on rocky and sand bottoms up to 300 m depth.

**Distribution:** Atlantic from the Gulf of Biscay to Angola and the Mediterranean Sea, absent in the Black.





© M.N. Bradai

**GYMNURIDAE**

***Gymnura altavela*, Spiny butterfly ray – RGL**

**EN** Spiny butterfly ray **SP** Raja mariposa espinuda **FR** Raie-papillon épineuse **AR** راية الفراشة (حصيرة)



**SPA/BD PROTOCOL:** Annex II **CITES:** Not listed **CMS:** Not listed **GFCM:** GFCM/42/2018/2

**Global**

**Med**

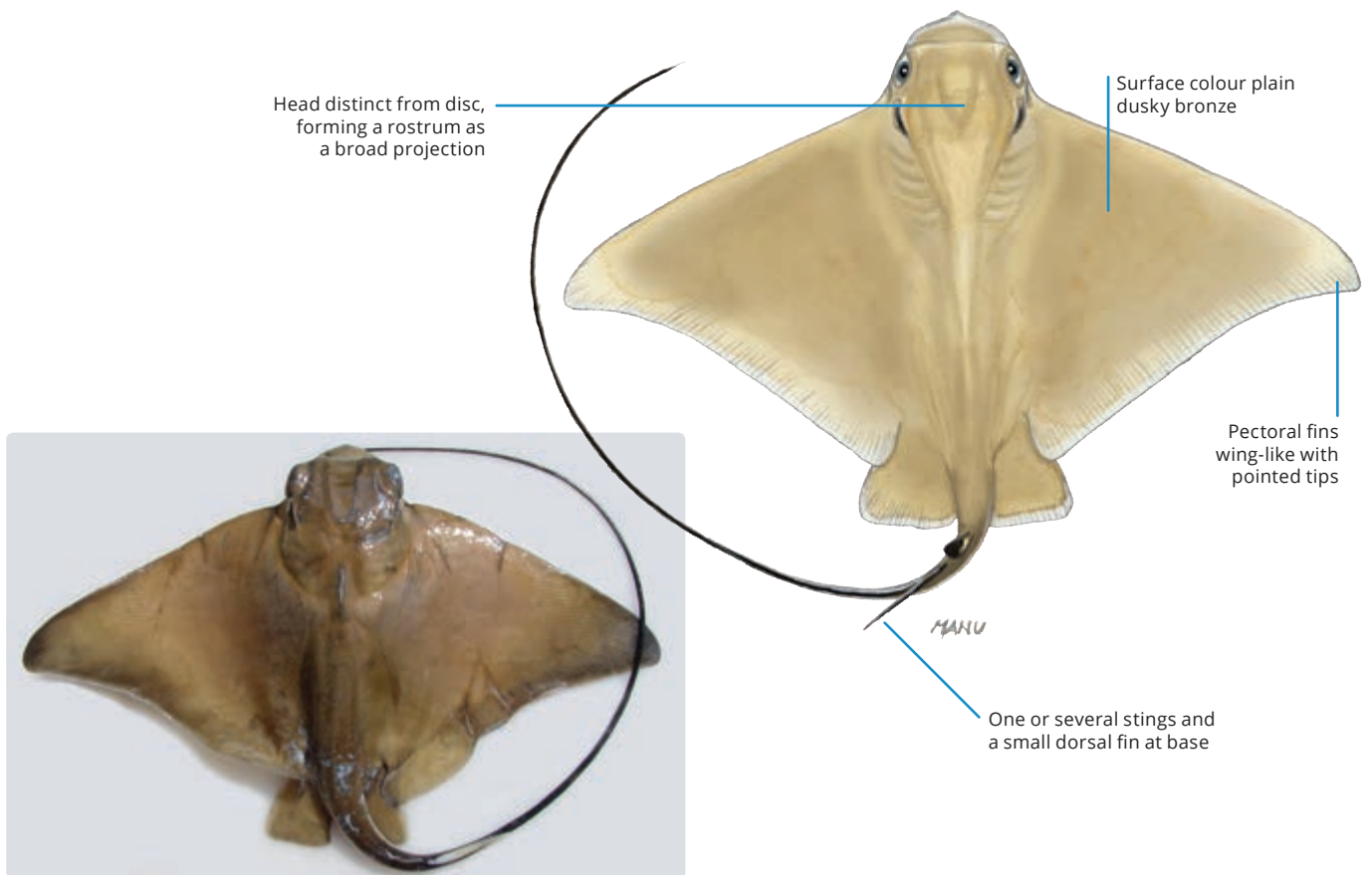
**Size:** up to 400 cm in disc wide.

**Description:** snout obtuse, disc about twice as broad as long; tail very short, with serrated spines near base. No dorsal fin. Dorsal surface with thornlets in adults. From dark brown to greyish-brown or reddish-brown on the back; underside white. Viviparous, with litters of 1-8 pups, disc width 38-44 cm at birth.

**Habitat:** benthic species in subtropical and temperate waters on sand bottoms, sometimes on the posidonia beds, up to 150 m depth.

**Distribution:** is patchily distributed across the Mediterranean Sea and the Atlantic Ocean. Absent in the Black Sea.





© F. Serena

**MYLIOBATIDAE**

***Myliobatis aquila*, Common eagle ray – MYL**

**EN** Common eagle ray

**SP** Aguila marina

**FR** Aigle commun

**AR** عقاب البحر (البقرة)

**DD**

**VU**

**SPA/BD PROTOCOL:** Not listed

**CITES:** Not listed

**CMS:** Not listed

**GFCM:** Not listed

**Global**

**Med**

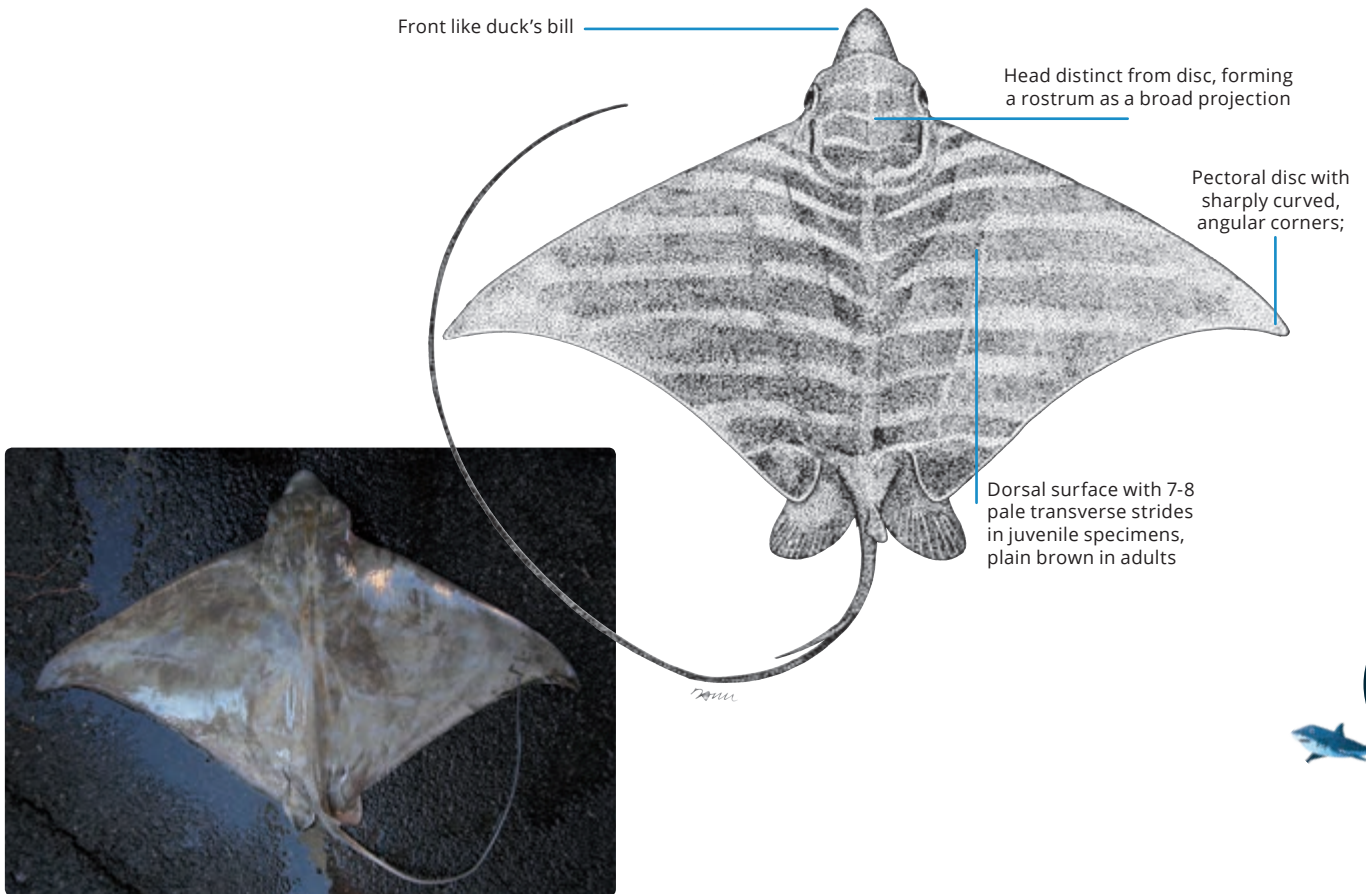
**Size:** 80 cm disc wide up to 150 cm.

**Description:** snout rather short and rounded. Disc with broadly angular corners. Origin of the dorsal fin behind pelvic fin tips. Brown or dusky bronze dorsally, ventral side white with a brownish margin. Viviparous, with litters of 3-7 pups, disc width smaller than 19 cm at birth.

**Habitat:** benthic species in subtropical and temperate waters on sandy and muddy bottoms up to 200 m depth.

**Distribution:** ranges throughout continental shelf and offshore waters of the Mediterranean Sea. Outside the Mediterranean Sea, its range extends throughout the eastern Atlantic Ocean to the Indian Ocean.

Note: considered a commercial species throughout several parts of its distribution in the Mediterranean.



© F. Serena

## AETOBATIDAE

### *Aetomylaeus bovinus*, Bull ray – MPO

**EN** Bull ray

**SP** Chucho vaca

**FR** Aigle Vachette

**AR** راية بقرة (البقرة)

DD

CR

**SPA/BD PROTOCOL:** Not listed

**CITES:** Not listed

**CMS:** Not listed

**GFCM:** Not listed

**Global**

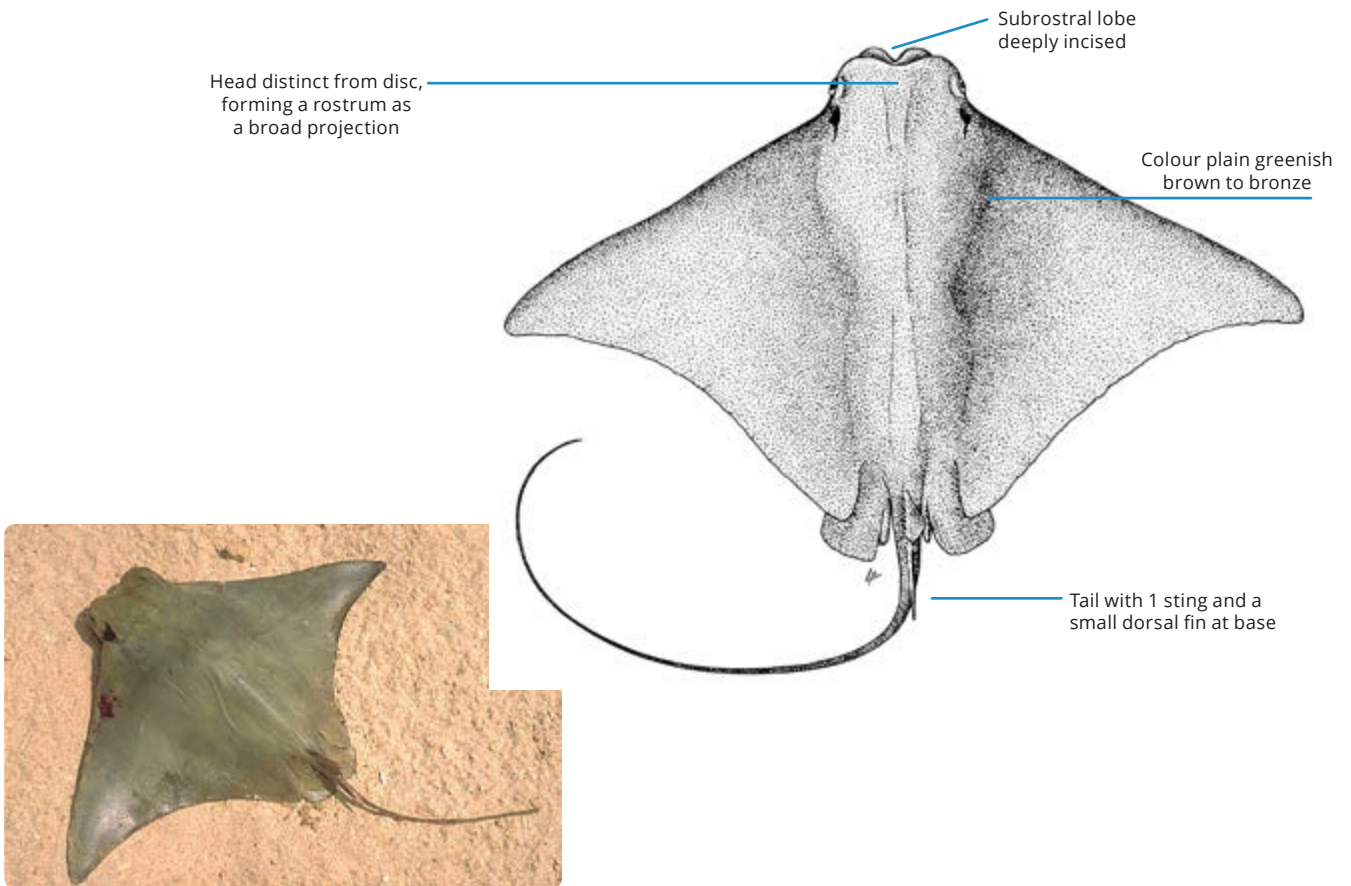
**Med**

**Size:** disc wide up to 220 cm.

**Description:** front lobe of pectoral fin under snout rather long and a little pointed in front like a duck's bill. Origin of the dorsal fin before pelvic fin tips. Dorsal surface plain brown in adults, with several (7-8) pale transverse blue-grey stripes in the juvenile specimens, ventral side whitish. Viviparous, with litters of 3-7 pups, disc width smaller than 45 cm at birth.

**Habitat:** benthic species in subtropical and temperate waters on sandy bottoms and sometimes in the sandy canals of the posidonia beds or into little circular basins up to 150 m depth.

**Distribution:** Eastern Atlantic from Portugal to South Africa. Also in the Mediterranean but not in the Black Sea.



© M. Ducrocq

**RHINOPTERIDAE**

***Rhinoptera marginata*, Lusitanian Cownose ray – MRM**

**EN** Lusitanian Cownose ray

**SP** Gávilan lusitánico

**FR** Mourine lusitanienn

**AR** راية طائرة

**NT**

**DD**



**SPA/BD PROTOCOL:** Not listed

**CITES:** Not listed

**CMS:** Not listed

**GFCM:** Not listed

**Global**

**Med**

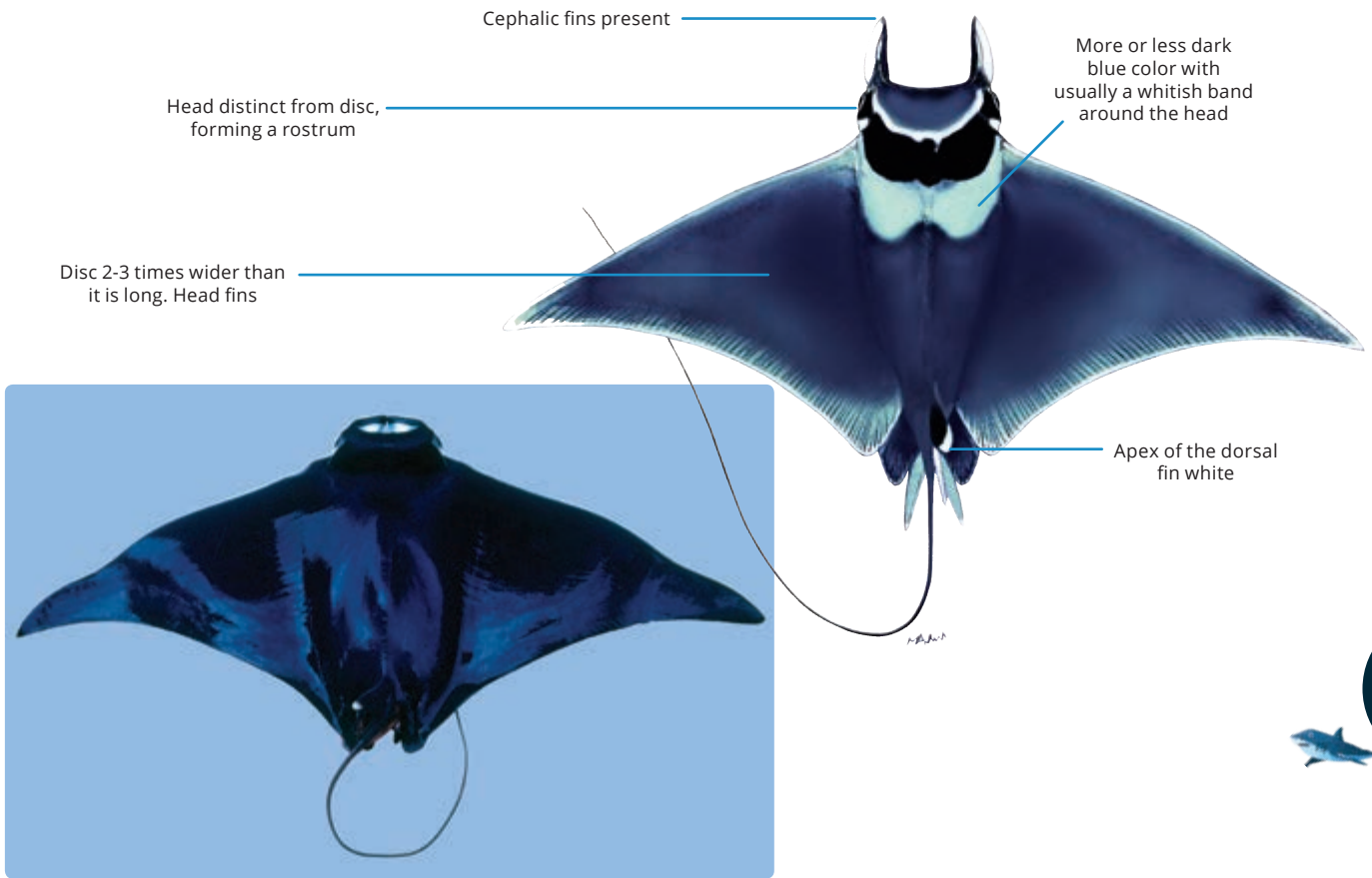
**Size:** disc wide up to 100 cm, perhaps also 200 cm.

**Description:** head distinctly concave in front. Pectoral fins slightly falcate, outer angle blunt. Dorsal surface without thorns or thornlets. Colour greenish brown to bronze on the back; ventral side whitish. Viviparous, with litters of single pups (some authors stated 2-6), disc width about 23 cm at birth.

**Habitat:** benthic species in subtropical and temperate waters on sandy bottoms up to 30 m depth.

**Distribution:** Eastern Atlantic from Spain to Morocco and the Mediterranean, absent in the Black Sea.

**Remarks:** For a long time, there have not been reported catches of this species in the Mediterranean.



© F. Serena

## MOBULIDAE

### *Mobula mobular*, Devil fish – RMM

EN Devil fish

SP Manta

FR Mante

AR شيطان البحر (عينو في قرنو)



SPA/BD PROTOCOL: Annex II

CITES: Appendix II

CMS: Appendix I & II

GFCM: GFCM/42/2018/2

Global

Med

**Size:** disc wide up to 520 cm.

**Description:** typical cephalic fins in front of the head. Base of dorsal fin beyond hind tips of pectoral fins; one or several serrated spines on the tail behind dorsal fin. Grayish-blue dorsal surface often with a dark band on the shoulder area, tip of the dorsal fin white. Ventral side white. Viviparous, with litters of 1-2 pups, only one in general, after a gestation period of 20-25 months. Disc width about 160 cm at birth.

**Habitat:** epipelagic species in temperate waters. Occurs both in neritic and offshore from surface up to 600–700 m depth.

**Distribution:** Mediterranean Sea, and possibly in the nearby Northeast Atlantic, absent in the Black Sea.



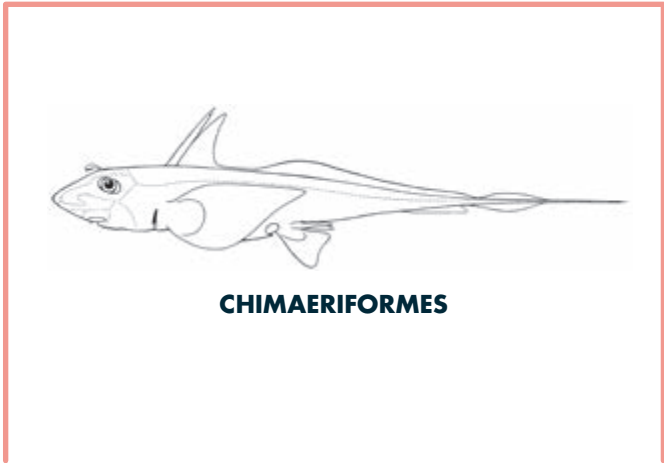




# Chimaera fishes

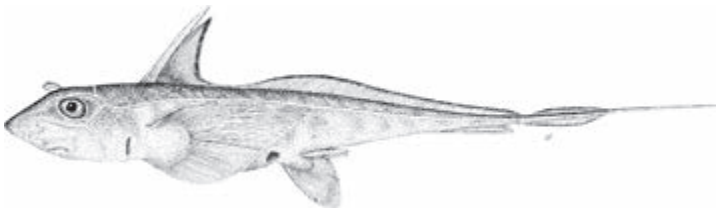
One gill slit

Body elongated with spindly tail, head large and stout, a notable first dorsal-fin spine. Second dorsal fin low and elongated, lateral line canals on head and trunk sticky

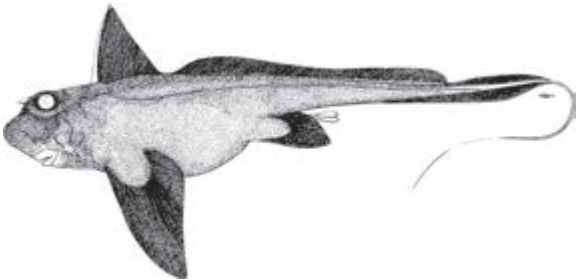


Anal fin separated from caudal fin

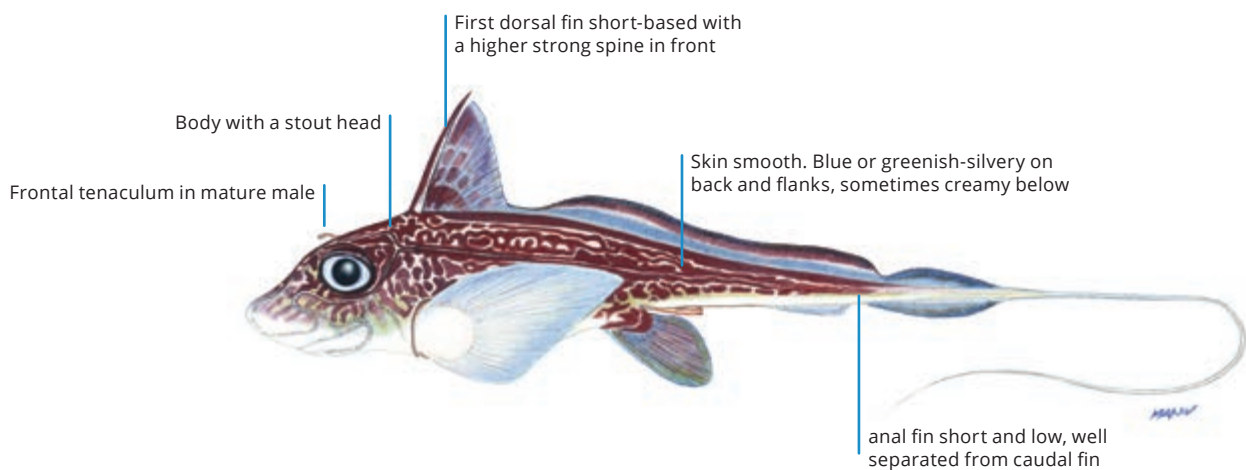
Anal fin joined to the caudal fin



**Chimaera**



**Hydrolagus**



© F. Serena

#### CHIMAERIDAE

### *Chimaera monstrosa*, Rabbit fish – CMO

**EN** Rabbit fish

**SP** Chimère  
commune

**FR** Chimère  
commune

**AR** خُرَافَة

NT

NT

**SPA/BD PROTOCOL:** Not listed

**CITES:** Not listed

**CMS:** Not listed

**GFCM:** Not listed

**Global**

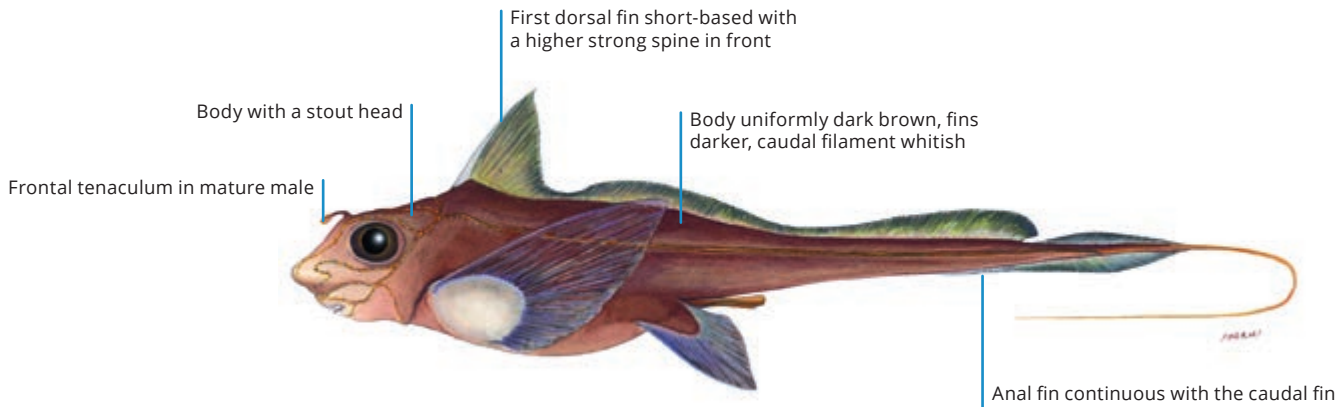
**Med**

**Size:** total length up to 100 cm.

**Description:** body with a stout head and trunk tapering to a whip-like caudal filament. Snout short and conical with a little overhanging mouth. First dorsal fin short-based with a higher strong spine in front; second dorsal fin long; anal fin short and low, well separated from caudal fin. Skin smooth except for denticles on male organs on the head. Blue or greenish-silvery on back and flanks, sometimes creamy below. Oviparous, young are alike adults and hatch at about 10 cm in total length.

**Habitat:** epipelagic species in temperate waters. Occurs both in neritic and offshore from surface up to 600–700 m depth.

**Distribution:** Atlantic coasts from Morocco to Iceland, Northern part of Norway and Northern North Sea. Widespread throughout the Mediterranean Sea, except for the northern Adriatic and Black seas. Probably this species is more abundant in the east than western.



© M.M.S. Ferrag

## CHIMAERIDAE

### *Hydrolagus mirabilis*, Large eyed rabbitfish – CYH

**EN** Large eyed rabbitfish

**SP** Quimera ojón

**FR** Borrico

**AR** NA

**NT**

**SPA/BD PROTOCOL:** Not listed

**CITES:** Not listed

**CMS:** Not listed

**GFCM:** Not listed

**Global**

**Med**

**Size:** total length up to 80 cm.

**Description:** body tapering from a massive head and trunk to caudal fin with a long whip-like filament. Snout short and conical, mouth overhanging. Base of the first dorsal fin short, triangular and high, with a strong spine in front; pectoral fins well reaching beyond origin of pelvic fins; anal fin continuous with the caudal fin. Skin smooth except for denticles on male organs. Body uniformly dark brown, fins darker, caudal filament whitish. Oviparous, young are alike adults and hatch at least about 18 cm in total length.

**Habitat:** chimaera in cold and temperate waters with a depth range of 450 to 1933 m, but generally occurring below 800 m. Occurs on muddy bottom probably also on rocky reef.

**Distribution:** Eastern North Atlantic: from Iceland to Northern Spain, and continuous to off the Northwest African coast. Recently has been reported in the Western North Atlantic and also in the Mediterranean.

# Sponges and Corals

Vasilis Gerovasileiou<sup>1</sup>, Marzia Bo<sup>2</sup>, Joana R. Xavier<sup>3,4</sup> and Maria del Mar Otero<sup>5</sup>

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<sup>5</sup> IUCN-Centre for Mediterranean Cooperation, Malaga, Spain

## Source materials and references

Bo M (2017). Deep-sea corals of the Mediterranean Sea. FAO, I7256EN.

<http://www.fao.org/3/a-i7256e.pdf>

Bo M., Gaamour A., Sana K., Hanem D., Mhedhbi B., Zied G., Ahmed Kassab T., Grinyó J., Domínguez C., Ambroso S., Muñoz A., Díaz D, Mallol S. (2014). Visual guide for benthic bycatch of artisanal fishing gears. EU ENPI CBC MED, ECOSAFIMED project, 50 p.

Xavier JR & Bo M (2017). Deep-sea sponges of the Mediterranean Sea. FAO, I6945EN.

<http://www.fao.org/3/a-i6945e.pdf>

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## Symbol for data reporting

Sponges are classified based on the main morphological categories rather than sponge species names. Sponges not exhibiting these morphologies should be termed as 'others'. Shorthand codes for each category (e.g.-KERA) are provided to allow taking notes faster on the bycatch note sheets.

# Sponges



Sponges (Phylum Porifera) are amongst the most ancient animals in the world's oceans. In some areas they form highly structured habitats known as sponge grounds, aggregations, gardens or reefs. These habitats play key ecological roles:

- serving as shelter and a nursery;
- providing food for numerous other species of invertebrates and fish;
- mediating the transfer of energy between the benthic and pelagic systems;
- participating in biogeochemical cycling processes.

## **Demosponges (class Demospongiae)**

Demosponges, also known as siliceous sponges, represent the largest and most diverse class within Porifera. Approximately 670 demosponge species are known to occur in the Mediterranean Sea. Their shape and size range from thin crusts, to various sizes of globular, vase cushion-, and tree-like sponges. Colouration, derived from pigments or symbiotic micro-organisms, covers a wide spectrum (from white to black) including yellow, orange, red, blue, green, purple, brown, etc. Consistency depends on the skeletal composition and varies between soft, compressible, elastic, to tough and rock hard.

## **Glass sponges (class Hexactinellida)**

Hexactinellids, also known as glass sponges, constitute a predominantly deep-sea group, typically occurring at bathyal and abyssal depths (i.e. below 200m). Nine hexactinellid species occur in the Mediterranean Sea. Their external morphology usually varies between vase, blade, cup or tube-shaped and both stalked and non-stalked forms exist. Colouration is mostly in shades of white, beige and yellow.



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# 1. Massive sponges – MASS

## 1.1. Massive keratose sponges – KERA

- ✓ Large group of **massive** sponges in **various shapes**, from more or less irregular to sub-spherical or massive-tubular.
- ✓ Their surface bears **openings** (oscles) and numerous **conules**, small or large, depending on the species. Internally, most species bear large cavities.
- ✓ Their colour varies from **brownish to purple-grey or black**.
- ✓ They have a very dense and compressible texture (bath sponges) and only some species are easy to tear.
- ✓ Size **up to 1 m** across.
- ✓ This category includes **protected species**.



*Sarcotragus* sp.



*Sarcotragus* sp.



*Hippospongia communis*



*Ircinia variabilis*

## 1.2. Massive, (sub-) spherical hard sponges (*Geodia* spp.) – GEOD

- ✓ Massive sponges occurring in a **variety of shapes**, from irregular to convoluted masses; younger specimens are usually (sub)spherical.
- ✓ They bear **openings** (oscles) which are grouped together and located in depression areas on the top surface of the sponge.
- ✓ They have a **tough but slightly compressible consistency**.
- ✓ Size **up to 50 cm** in diameter.
- ✓ This category includes **protected species** (*Geodia cydonium*).



***Geodia cydonium*** is **yellow** in colour and has a **hispid/harsh surface** often **covered with sediment**.



### 1.3. Massive Mediterranean stony sponge (*Petrosia ficiformis*) – PETR

- ✓ **Massive lobose** sponges with large sharp-edged openings (oscles) on the upper side.
- ✓ Consistency is **hard** but slightly compressible, **crumbly inside**. Texture is **velvety**.
- ✓ **Outer colouration** varies from **dark red/burgundy** (in shallower areas) to **off-white** (in deeper and darker areas) whereas **inner colouration is always off-white**.
- ✓ Size **up to 50 cm** across.



*Petrosia ficiformis* (burgundy morph)



*Petrosia ficiformis* (white morph)



#### 1.4. Massive-tubular gold sponges (*Aplysina* spp.) – APLY

- ✓ **Massive** sponges with a **cushion-like base** from which **several finger-like tubes** project.
- ✓ The tubes are somewhat flattened at the top and bear a single large **opening** (oscule).
- ✓ Consistency is somewhat **flexible** and **compressible**.
- ✓ Colour is **golden yellow when fresh**, turning to **greenish-blue/violet black** after a few minutes of exposure to air.
- ✓ Size **up to 50 cm** across.
- ✓ This category includes **protected species**.



***Aplysina*** upon air exposure

**SPA/BD Protocol:** Annex II



Freshly collected ***Aplysina***

**SPA/BD Protocol:** Annex II



## 1.5. Other massive sponges (to be recorded as “Other massive”) – OTHR

- ✓ Several sponge species have a **massive shape**, ranging from irregular to sub-spherical or massive-tubular.
- ✓ Colour, consistency and texture vary between different species.
- ✓ Size **up to 1 m** across.



Massive orange sponge *Agelas oroides*

## 2. Globular sponges – GLOS

- ✓ **Globular sponges** with usually one large apical opening.
- ✓ Consistency is **firm yet slightly compressible**.
- ✓ The surface texture varies from **even and velvety** (in *Suberites domuncula*) to **lumpy and rough** (in *Tethya* or *Thenea*).
- ✓ Colour varying from **yellow to orange, red and brown**.
- ✓ Some species (*S. domuncula*) are frequently inhabited by hermit crabs.
- ✓ Size **up to 10 cm** in diameter.
- ✓ This category includes **protected species** (*Tethya* spp.).



***Suberites domuncula***



***Tethya aurantium***

**SPA/BD Protocol:** Annex II



***Thenea* spp.** have root-like structures projecting from the base, by means of which it attaches to soft substrate.

### 3. Arborescent sponges – ARBS

- ✓ Stalked **arborescent** sponges.
- ✓ Numerous **flexible** and soft branches.
- ✓ Colouration is **yellowish/orange**, depending on the species.
- ✓ Size **up to 1.5 m** height.
- ✓ This category includes **protected species**.



***Axinella* sp.**



***Axinella cannabina***

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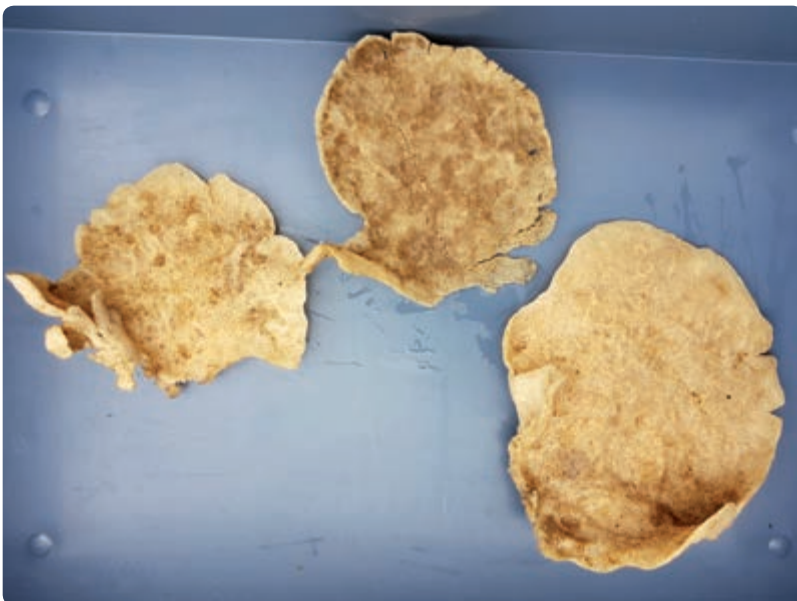


## 4. Fan-shaped sponges – FANS

- ✓ Several sponges have a more or less **flat shape** which resembles a **fan**.
- ✓ Some fan-shaped species are attached to the seabed by a **narrow stalk**.
- ✓ Their surface is **more or less smooth**.
- ✓ Some species are **flexible** and others **hard but friable**.
- ✓ Their colour varies from whitish/whitish beige to ochre-yellow or even bright orange, depending on the species.
- ✓ Size **up to 30 cm** wide.



***Phakellia ventilabrum***



***Phakellia robusta***

## 5. Lamellate to cup-shaped sponges – LAMS

- ✓ Irregular morphology ranging from **lamellate to cup-shaped** and more or less massive sponges.
- ✓ Their colour varies from **brownish to grey or black**, depending on the species.
- ✓ Some species are **flexible** and others **hard**, depending on the species.
- ✓ Size **up to 1 m** across.
- ✓ This category includes **protected species**.



*Spongia lamella*



*Calyx nicaeensis*



## 6. Lamellate rock sponges (*Leiodermatium* sp.) – ROCK

- ✓ Erect sponges with a **lamellate shape**, from irregular to convoluted masses.
- ✓ Consistency is **rock-hard** and texture is rough.
- ✓ Colour is **off-white to light brown** sometimes presenting a light blue tinge.
- ✓ Size **up to 1 m** across.



*Leiodermatium pfeifferae*

## 7. Birds' nest glass sponge (*Pheronema carpenteri*) – BIRD

- ✓ **Globular to sub-cylindrical** sponges which resemble a **bird's nest**.
- ✓ The surface is "**hairy**" and shows an intricate network of spicules.
- ✓ Texture is **fibrous** and **compressible**.
- ✓ It is attached to the substrate by means of a **basal tuft** of spicules.
- ✓ Can be found in **large numbers** as the only species or alongside other sponge species (it forms sponge **aggregations**).
- ✓ Size **up to 20 cm** in height.



*Pheronema carpenteri*

## 8. Felt vase glass sponge (*Asconema setubalense*) – FELT

- ✓ **Vase-shaped** glass sponge.
- ✓ It has a thin **fibreglass-like** wall.
- ✓ When collected by dredge/trawl, the appearance can be that of **“felt” shreds**.
- ✓ Colour is **off-white to grey or brownish** with **sediment**.
- ✓ Can be found in **large numbers** (i.e. it forms sponge aggregations).
- ✓ Size **up to 1 m** in height.



*Asconema setubalense*



Fishermen of Cinarcik Town, Turkey.  
© Kerem Gogus | Dreamstime.com







# Corals



Corals are marine organisms of class Anthozoa (Phylum Cnidaria), a relatively well-known group that comprises hard and soft corals, gorgonians, sea pens, black corals and anemones. The generic term CORAL is given to those anthozoans showing a rigid, calcareous skeleton that live on the sea floor, commonly attached to a hard surface, while more rarely they can be found in soft sediments.

They have a flower-like appearance: they are **often branched and tree-like, usually quite colourful**, and their polyps have tentacles that, when extended, look like flower petals. Corals can be solitary, colonial and many of them can form dense aggregations (or forests), creating three-dimensional habitats occupied by numerous other organisms. In the Mediterranean Sea, anthozoans account for about 150 species, of which 26 species are endemic. Given their morphology, they can be entangled by fishing gears targeting demersal species and are landed on board of fishing vessels.

## Symbol for data reporting

Corals are classified based on the main morphological categories rather than coral species names. Those not exhibiting these morphologies should be termed as 'others'. Shorthand codes for each category (e.g.-WHIT) are provided to allow taking notes faster on the bycatch note sheets.

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## 1. White corals – WHIT

- ✓ They are called “white corals” due to the **white colour** characterizing their skeletons although they can occasionally show a salmon-pink colouration.
- ✓ *Madrepora oculata* has a distinctive **zigzag pattern** of the corallites (i.e. cups containing the polyps).
- ✓ *Lophelia pertusa* has characteristic **trumpet-shaped corallites** with marked septa.
- ✓ They are mainly found along canyons, between 200 and 1800m depth.



***Madrepora oculata***

EN

SPA/BD Protocol: Annex II

Med



***Lophelia pertusa***

EN

SPA/BD Protocol: Annex II

Med

## 2. Bright yellow or salmon-pink hard corals (*Dendrophyllia* spp.) – DEND

- ✓ *Dendrophyllia* species form **arborescent, rigid colonies** that may develop a large basal trunk.
- ✓ They can form small, **bright yellow** colonies, with an **irregular distribution** of the corallites (*Dendrophyllia cornigera*).
- ✓ They may also be **salmon-pink or light orange with whitish polyps** and display short circular corallites often arranged in two lateral rows (*Dendrophyllia ramea*).
- ✓ Occasionally, dead skeletons of dendrophyllids can be mistaken onboard for white corals.



Dead dendrophyllids



***Dendrophyllia cornigera***   
SPA/BD Protocol: Annex II  
Med



***Dendrophyllia ramea***   
SPA/BD Protocol: Annex II  
Med

### 3. Colonial hard corals (*Cladocora caespitosa*) – CLAD

- ✓ A wide array of other hard corals can be found in the fishing bycatch from shallow waters up to 300 m depth, including fragments or entire **cushion-like colonies** of *Cladocora caespitosa*.
- ✓ This coral is brown in appearance when alive and grey-whitish when collected dead.



***Cladocora caespitosa***

SPA/BD Protocol: Annex II



Med



## 4. Arborescent black corals – BLAC

- ✓ Corals characterized by **spiny skeletons** that appear **black** when the colony loses its living tissue.
- ✓ Four species are considered typical of the Mediterranean basin:
- ✓ *Antipathella subpinnata* shows a **tree-like morphology, with plumose, thin ramifications** covered by small, white polyps. Up to 1.5 m in height. Depth: 60-700m.
- ✓ *Parantipathes larix* has **single-stem or sparsely branched colonies with a bottlebrush morphology**. If damaged, it looks like a spiny black stick. Depth: 100-2000 m.
- ✓ *Leiopathes glaberrima* is a **tree-like** species, with short, **curved branchlets, orange or white in colour**. Its skeleton is smooth and shiny. Depth: 100-2000 m.
- ✓ *Antipathes dichotoma* colonies show numerous, **long and flexible ramifications** giving it an overall willow-like aspect. Up to 1.5m height. Depth: 70-800m.



***Antipathella subpinnata***

SPA/BD Protocol: Annex II



***Parantipathes larix***

SPA/BD Protocol: Annex II



***Leiopathes glaberrima***

SPA/BD Protocol: Annex II



Med



***Antipathes dichotoma***

SPA/BD Protocol: Annex II



## 5. Soft corals – SOFT

- ✓ Soft corals lack a rigid skeletal support, making them capable, when on-board, of contracting and **greatly reducing in size**.
- ✓ *Alcyonium palmatum* is one of the most common soft corals of the basin. It is found on muddy and sandy bottoms, from 20 to 200 m depth, fixed to the ground with its dark stalk on shells and pebbles. It has a **finger-like, orange appearance**, almost the size of a hand. The **basal part** of the colony is **white with no polyps and ends in a short stalk** that is buried in the sediment.
- ✓ Far less common, are the **tree-like, orange-whitish colonies** of the species *Chironephthya mediterranea*, found attached to hard substrata between 100 and 200 m depth in the Western basin.



***Alcyonium palmatum***



***Chironephthya mediterranea***

## 6. Seapens – PENS

- ✓ Sea pens are colonial octocorals, up to 20 cm high, showing a **feather-like or elongated, cylindrical appearance**, usually characterized by **bright colours**.
- ✓ They all live **anchored in soft bottoms thanks to a bulbous peduncle at the end of the stalk** but some of them are still capable of limited movements.
- ✓ They may form dense populations from 20 to 600 m depth.



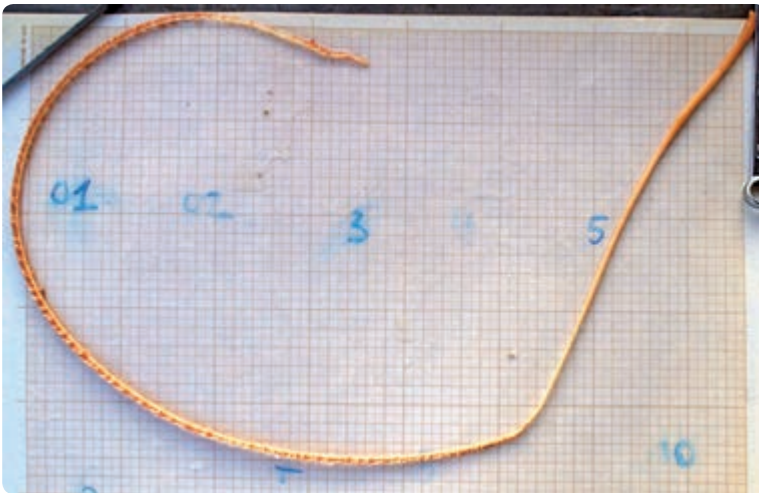
*Pteroeides spinosum* and *Pennatula* spp.



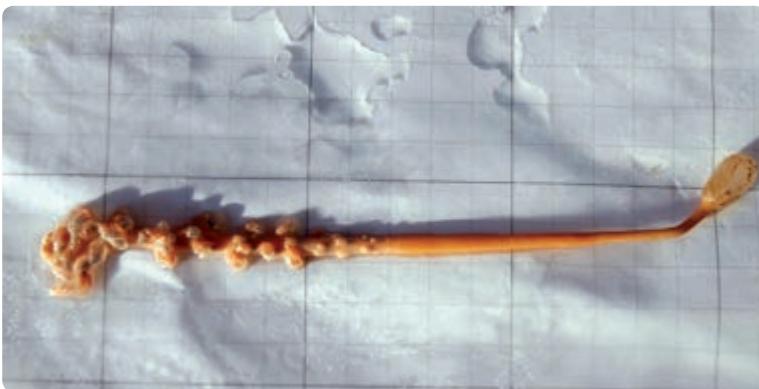
*Veretillum cynomorium*

## 7. White, stem-like sea pens – STEM

- ✓ White, stem-like sea pens occasionally form dense clusters in undisturbed areas.
- ✓ The species *Funiculina quadrangularis* is characterized by **whitish-creamy, whip-like colonies** exceeding 200 cm in length, living from 20 to over 2000 m depth in compact mud. Despite being flexuous, the colonies have a **brittle axial skeleton and spiny polyps**.
- ✓ *Kophobelemnon stelliferum* forms **elongated, cylindrical and clavate colonies** up to 20 cm high and with a **greyish colouration**; it is found on bathyal soft bottoms between 200 and 800 m depth.



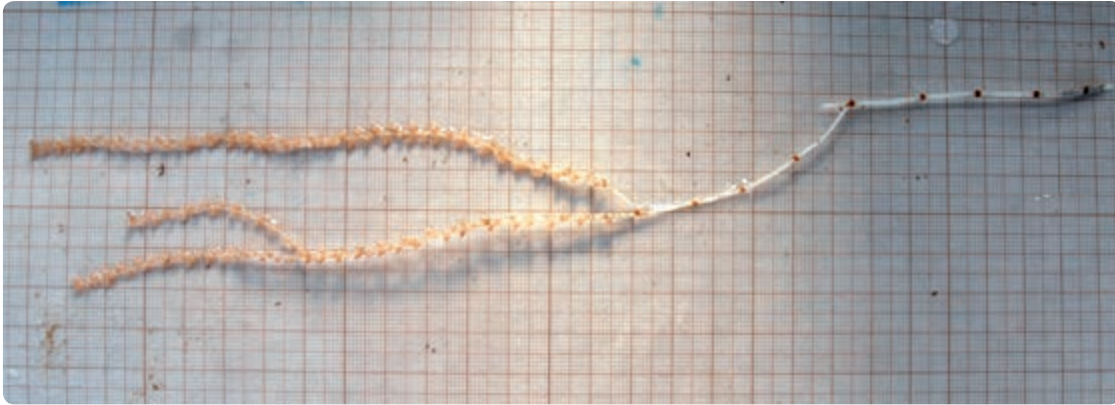
***Funiculina quadrangularis***   
Med



***Kophobelemnon stelliferum***

## 8. Bamboo corals – BAMB

- ✓ The bamboo coral *Isidella elongata* displays the typical **candelabrum-shaped morphology**, like a bamboo plant. The skeleton is formed by black nodes alternating with white internodes.
- ✓ Colonies, up to **70 cm high**, live between 120 and 1900 m depth on compact mud forming, when undisturbed, dense meadows.
- ✓ A similar species, but **more arborescent** in appearance and **orange** is apparently less common in the basin (*Acanella arbuscula*).
- ✓ They both use a **root-like anchorage** to fix in the mud.



***Isidella elongata***

SPA/BD Protocol: Annex II



Med



**Root-like anchorage of *Isidella elongata***





## 9. Salmon-pink, brittle fan-shaped gorgonians (*Callogorgia verticillata*) – CALL

- ✓ The brittle fan-shaped gorgonian *Callogorgia verticillata* is characterized by **branched, fan-like colonies, exceeding 1 m in height**, whose **feathery branches** resemble palm leaves.
- ✓ The dense content of carbonate gives this gorgonian a **brittle consistency**.
- ✓ Typically displaying a **salmon-pink colouration**.
- ✓ This species forms mixed coral gardens with other gorgonian species usually between 90 and 900 m depth.



***Callogorgia verticillata***

SPA/BD Protocol: Annex II



## 10. Thick and tall red, yellow fan-shaped gorgonians – FANG

- ✓ Large, fan-shaped or arborescent gorgonians with colonies characterized by a **rough or spiny surface**.
- ✓ One species, *Acanthogorgia hirsuta* displays **bright yellow** colonies, seldom exceeding 30 cm high, with a **spiny aspect**. It forms dense populations between 70 and 500 m depth on hard substrates.
- ✓ *Paramuricea clavata*, a widely distributed gorgonian forming shallow-water forests from 5 to 250 m depth, is characterized by **large, rigid colonies, up to 1m high, with thick ramifications, carmine red and/or yellow, lacking long spines**. All these species **turn black when dried**.



*Acanthogorgia hirsuta*



*Paramuricea clavata*



Med



## 11. Thin, delicate white, reddish, yellow fan-shaped gorgonians – THIG

- ✓ **Small-sized** (up to 20 cm high), **fan-shaped gorgonians** with **thin ramifications** and a rough surface, although never with a spiny appearance.
- ✓ These species are mostly known from the Western basin in deep waters (from 40 to 1000 m) and have a grey, white, yellow, reddish or brown colouration.
- ✓ *Paramuricea macrospina* is often associated to **coralligenous concretions** or **mäerl** and is the most coloured.



***Paramuricea macrospina***

## 12. Flexible white and salmon-pink fan-shaped gorgonians (*Eunicella* spp.) – EUNI

- ✓ Large, fan-shaped colonies, up to 70 cm high, well branched in all directions and with densely crowded polyps. Ramifications have a smooth, fine-grained surface.
- ✓ *Eunicella cavolini* shows a **yellow, orange, or salmon-pink colouration** with branches terminating in a cylindrical apex.
- ✓ *Eunicella verrucosa* is **white with shorter branches** showing a pointed apex surrounded by tall polyps.
- ✓ Up to 70 cm in height. From 2 to 200 m.



*Eunicella cavolini*



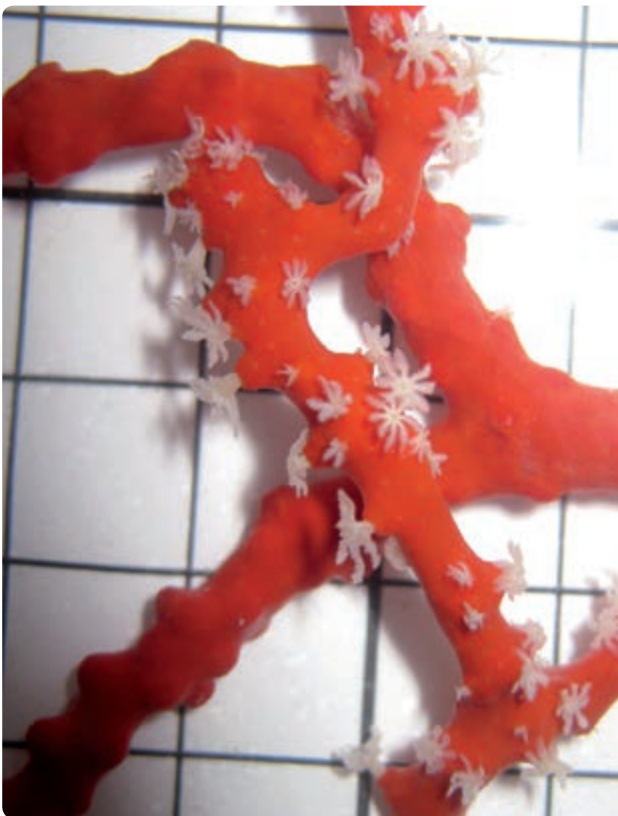
*Eunicella verrucosa*





### 13. Precious red coral (*Corallium rubrum*) – REDC

- ✓ The colonies of the precious red coral have a **completely calcified, totally inflexible, red axis.**
- ✓ When collected, the **polyps can be seen as white.**
- ✓ Occasionally, **long-dead colonies turn whitish** due to the occurrence of encrusting organisms, with holes produced by boring sponges.
- ✓ Colonies are usually **10-20 cm high.**
- ✓ Most populations are found between 30 and 150 m depth but they can be found down to 1000 m.



***Corallium rubrum***

SPA/BD Protocol: Annex II

EN

Med

## 14. Candelabrum-shaped, red gorgonians (*Ellisella paraplexauroides*) – ELLP

- ✓ This category is represented by the gorgonian species *Ellisella paraplexauroides*.
- ✓ It displays **large, branched and flexuous colonies** with **long, whip-like, upright branches** usually rising near the base of the colony and resulting in a **candelabrum-shaped aspect**.
- ✓ Colonies are typically **brick red** and they may grow as much as **2 m high**.
- ✓ This species is rare and patchily distributed in the Western Mediterranean basin, mainly along the Southern coasts, from 15 to 250 m depth.
- ✓ It is locally abundant in the Alboran Sea on rocky substrates and in the Sicily Channel.



***Ellisella paraplexauroides***

SPA/BD Protocol: Annex II



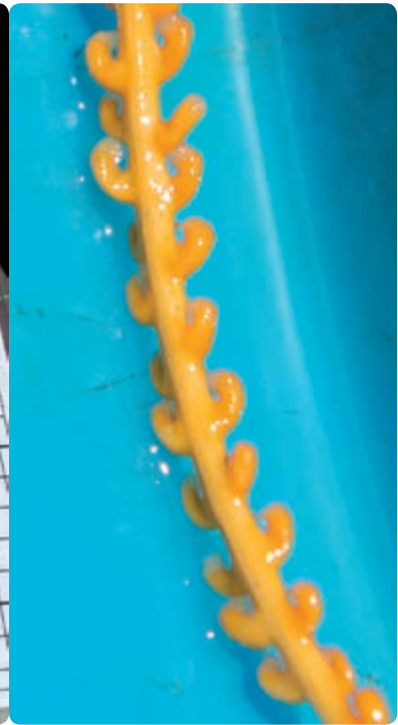
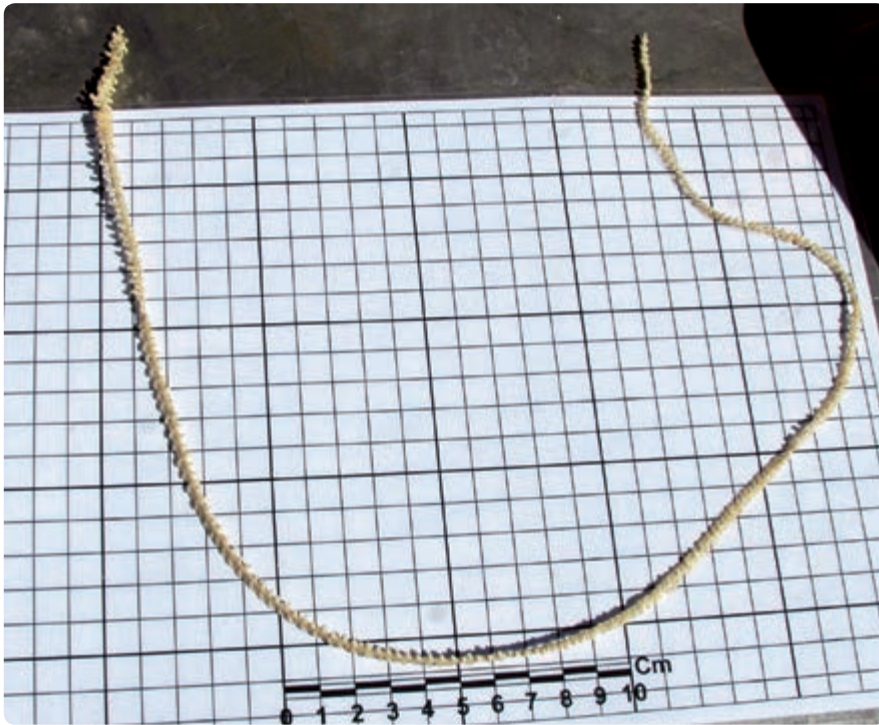
Med





## 15. Tall, white or yellow whip gorgonians (*Viminella flagellum*) – VIMF

- ✓ This category is represented by the gorgonian species *Viminella flagellum*.
- ✓ It is characterized by **large (more than 1 m high), whip-like colonies** occasionally with one or a few branches, usually rising from the middle of the stem.
- ✓ The colony is robust but still very **flexible**.
- ✓ **Polyps** are easily recognizable, being **large, cylindrical and bent upwards**.
- ✓ Two different colourations are known, **white** or **orange-yellow** that do not change when the colony is dried.
- ✓ It prefers hard substrates at 100-200 m depth, where it forms dense meadows, although it has been sighted down to more than 500 m.



***Viminella flagellum***











# Project Partners



## **Agreement on the Conservation of Cetaceans of the Black Sea, Mediterranean Sea and contiguous Atlantic area (ACCOBAMS)**

Established under the auspices of the UNEP Convention on Migratory Species of Wild Animals (UNEP/CMS), ACCOBAMS is a regional cooperation agreement, whose mandate is to achieve and maintain a favourable conservation status for cetaceans in the Mediterranean and the Black Sea, and the contiguous Atlantic area. It entered into force in 2001 and includes 24 Contracting Parties. The Agreement is based on a detailed Conservation Plan, which provides specific provisions related to conservation, research and management measures. In particular, it provides that Parties shall assess and manage human-cetaceans interactions, such as the incidental catches in fisheries, which are one of the main threats to cetaceans, recognized as vulnerable species. The ACCOBAMS Permanent Secretariat, hosted by the Principality of Monaco, provides support to the Parties in the implementation of the ACCOBAMS provisions.



## **General Fisheries Commission for the Mediterranean (GFCM) of the Food and Agriculture Organization of the United Nations (FAO)**

The GFCM is a regional fisheries management organization (RFMO) established under FAO provisions and composed of 24 contracting parties and five cooperating non-contracting parties. Its mandate is to ensure the conservation and the sustainable use of marine living resources, at the biological, social, economic and environmental level, as well as the sustainable development of aquaculture in the Mediterranean and in the Black Sea. In support of FAO objectives, the key function of the GFCM is to adopt binding recommendations and ensure that riparian states meet their national, regional and international commitments on sustainable fisheries and aquaculture development, towards a level-playing field. GFCM policy and activities are implemented through its Secretariat, including in collaboration with multiple partner organizations.



## **Specially Protected Areas Regional Activity Centre (SPA/RAC) of the United Nations Environment Programme /Mediterranean Action Plan (UN Environment/MAP)**

The SPA/RAC was established in Tunis in 1985 following a decision of the Contracting Parties to the Barcelona Convention. As one of the seven components of the Mediterranean Action Plan, its mission consists in supporting the Contracting Parties in the implementation of the Protocol concerning Specially Protected Areas and Biological Diversity in the Mediterranean (SPA/BD Protocol). SPA/RAC works in close collaboration with governmental and non-governmental organizations at both the national and regional levels. The Centre contributes to the conservation and sustainable management of threatened species, ecosystems and areas of particular natural and cultural value in the Mediterranean and to the mitigation of impacts of human activities (including fisheries) in the Mediterranean Sea.



### **International Union for Conservation of Nature – Centre for Mediterranean Cooperation (IUCN-Med)**

IUCN is a membership union composed of both government and civil society organizations. It harnesses the experience, resources and reach of its more than 1,300 member organizations and the input of more than 10,000 experts. IUCN is the global authority on the status of the natural world and the measures needed to safeguard it. The IUCN-Med opened in Malaga, Spain in October 2001 with the core support of the Spanish Ministry of Environment, the Regional Government of Andalucía and the Spanish Agency for International Cooperation and Development (AECID). The Centre's mission is to influence, encourage and assist Mediterranean societies in sustainably conserving and using the natural resources of the region, work with IUCN members and cooperate with all other agencies that share the objectives of IUCN.



### **BirdLife Europe & Central Asia**

BirdLife Europe & Central Asia (BL ECA) is a partnership of 48 national conservation organisations that strives to conserve birds, their habitats and biodiversity, working with people towards sustainability in the use of natural resources. We are one of the six regional secretariats that compose BirdLife International, a global partnership of 121 NGOs worldwide – and growing. BirdLife is widely recognised as the world leader in bird conservation. Rigorous science informed by practical feedback from projects on the ground in important sites and habitats enables us to implement successful conservation programmes for birds and all nature. Our actions are providing both practical and sustainable solutions significantly benefiting nature and people. We are driven by our belief that local people, working for nature in their own places but connected nationally and internationally through our global Partnership, are the key to sustaining all life on this planet. This unique local-to-global approach delivers high impact and long-term conservation for the benefit of nature and people.



### **Mediterranean Association to Save the Sea Turtles (MEDASSET)**

MEDASSET is an international non-governmental organization (NGO) registered as a non-profit organization in Greece. It plays an active role in the study and conservation of sea turtles and their habitats throughout the Mediterranean by conducting scientific research, providing environmental education, lobbying relevant decision-makers and raising public awareness. The organization is a partner to UNEP/MAP and, since 1988, has been a permanent observer-member to the Bern Convention, Council of Europe.









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