

NORTH ATLANTIC BATOIDS AND CHIMAERAS RELEVANT TO FISHERIES MANAGEMENT

A POCKET GUIDE



FAO. North Atlantic Batoids and Chimaeras Relevant to Fisheries Management. A Pocket Guide. Rome, FAO. 2012. 84 cards.

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Produced with support of the EU.

Reprint: August 2013

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ISBN 978-92-5-107365-0 (Print)

E-ISBN 978-92-5-107883-9 (PDF)

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INTRODUCTION

This Pocket Guide presents a fully illustrated identification guide to a selection of batoid and chimaera species of the North Atlantic. It encompasses FAO fishing area 27 (Eastern North Atlantic) extending essentially from the North Pole to latitude 36°N in the central Atlantic, bordered on the west by the coast of eastern Greenland and longitude 40°W in the Central North Atlantic, and area 21 (Western North Atlantic) from Eastern Greenland westwards to the Arctic waters of northern Canada at 120°W, and from northern Arctic waters at about 78° 10'N southwards to Cape Hatteras at 35°N.

The North Atlantic batoid fauna is currently represented by fifty-six species, thirty-three of which occur in area 27, seven in area 21, while sixteen species are widespread throughout both areas. Of the total of eight chimaera species known to occur in the North Atlantic, six are distributed throughout both areas, with two species occurring only in area 27.

This pocket guide includes thirty-three species of batoids and three chimaeras selected as being most relevant to commercial fisheries, vulnerable to exploitation due to their life history characteristics, or taken in large numbers as discarded by-catch. Each species is described, illustrated and its distribution mapped. Key distinguishing features of similar-looking species occurring in the same area are highlighted allowing for easy and accurate identification in the field.

Chimaeras are of very limited commercial interest only due to their deepwater habitat and rarity of most species. On the other hand, most batoid fishes are appreciated fishery subjects in many regions of their worldwide occurrence but share the same biological peculiarities as sharks, i.e. slow growth, late maturity, low reproductive rate, and can easily become overfished. Towards this direction, the EU, non-EU countries and Regional Fisheries Management Organizations (RFMOs) have adopted conservation and management measures to reduce the impact of fisheries on elasmobranchs in the North Atlantic. Correct identification is of primary importance in marine resource management. Therefore, this pocket guide is aimed at fishery workers for the specific purpose of improving data collection at the species level for North Atlantic batoids and chimaeras.

HOW TO USE THIS GUIDE

FAO Names (English - French - Spanish)

Scientific
Name

Undulate ray – Raie brunette – Raya mosaica

Raja undulata Lacepède, 1802

Local names: Painted ray (UK); Golfrog (the Netherlands); Bolgeskate (Norway); Bänderrochen, Wellenlinien-Rochen (Germany); Raia curva (Portugal); Broget Rokke (Denmark)

Distinctive characters

Colour above ochre to greyish brown, typically patterned by several more or less undulated dark bands edged with white spots like pearl-strings; underside white, with often greyish margins to disc and posterior pelvic lobes, end of tail; sometimes greyish-brown.

Size

Max. Length (NE Atlantic):
114 cm, possibly to 120 cm TL

Similar species

No other congener shows on upper disc a pattern of undulating dark bands which edged with white spots like pearl-strings.

Orbital thorns
separated

2 to 8 median
thorns on nape



RJUE

FAO 3-alpha
code

Local names
used in countries
bordering on the
region

A different
colour for
each Order

Additional
diagnostic
features

Size given as
Total length or
Disc width

Family

RAJIFORMES – RAJIDAE

Order

Main distinctive characters
of similar species occurring
in the area

Colour illustration and
main field marks

Photo of a specimen immediately after capture

EU, non-EU countries and RFMOs that have regulations in force in 2012

Information on fisheries and commercial importance



Photo by E. Serena

Fisheries

Formerly a rather common and important species locally for commercial fisheries, mainly in southern countries, but now overfished.

EU has prohibited to fish for, to retain on board, to transport or to land *R. undulata* in and from ICES subareas VI, VII, VIII, IX and X (2012).

Bio-Ecology

Oviparous, egg cases subrectangular; females mature at about 75 cm and males at 73 cm. Benthic on soft substrate on shelf to 200 m, mostly at 30 to 150 m depth.



Known (dark green) and uncertain (light green) geographic distribution

Regulations in force in 2012 (meant to alert the user and thereby encourage him to have a closer look at the subject and increase awareness about the vulnerability of batoids and chimaeras)

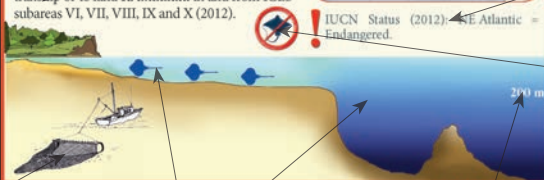
Conservation status



IUCN Status (2012) NE Atlantic = Endangered.

Prohibited species (2012)

Fishing Methods

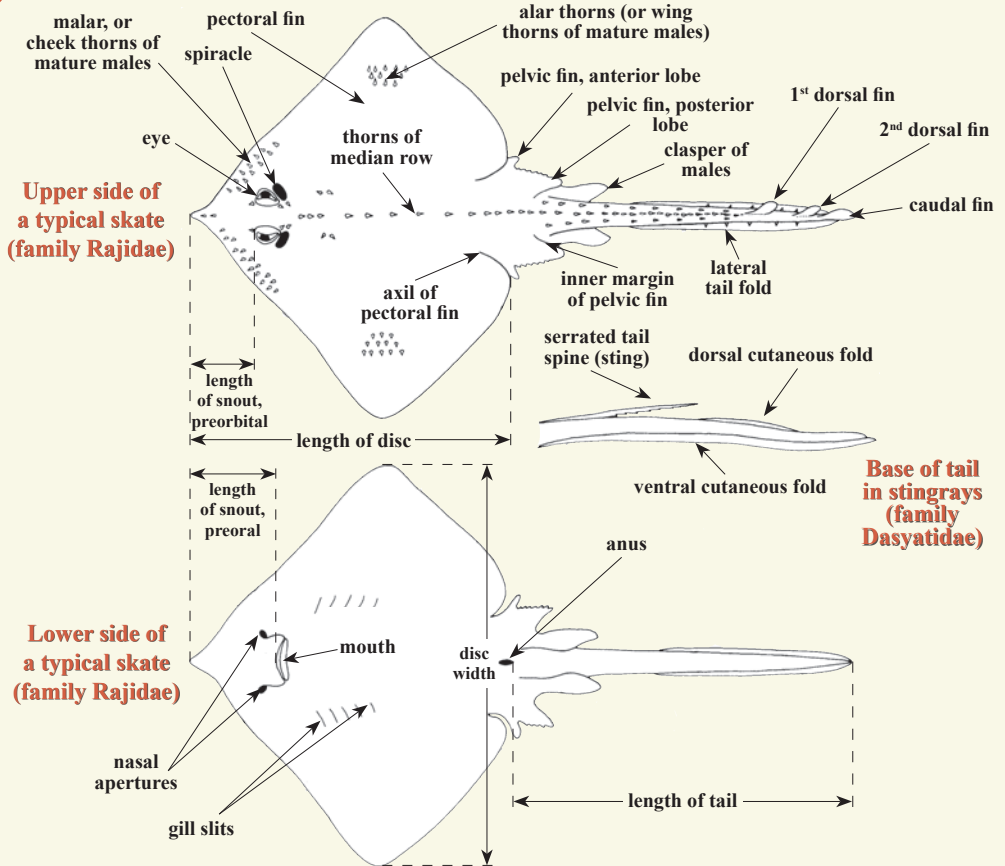


Undulate ray

Zones of occurrence (neritic, epipelagic etc.)

Maximum depth of commonly caught specimens

PICTURE GUIDE OF EXTERNAL TERMINOLOGY OF BATOIDS



Batoids

Pectoral fins forming a large oval disc; uni-lobed pelvic fins; tail massive, with two large dorsals and a large caudal fin; large electric organ on each side of head



TORPEDINIFORMES



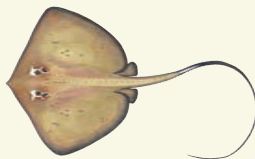
Except Guitarfishes, pectoral fins fused with head and trunk to form mostly subrhombic disc; pelvic fins bilobed; tail rather slender, with two small dorsals and rudimentary caudal fin



RAJIFORMES



Disc subrhombic to lozenge-shaped; pelvic fins uni-lobed; tail thin, mostly long and whip-like, often with serrated sting on root



MYLIOBATIFORMES



Chimaeras

Single gill opening; large eyes; long spine at origin of 1st dorsal fin; rubbery skin devoid of denticles



CHIMAERIFORMES



**GUIDE TO NORTH ATLANTIC BATOIDS AND CHIMAERAS
ORDERS INCLUDED IN THE POCKET GUIDE**

Photographing and preserving specimens for identification

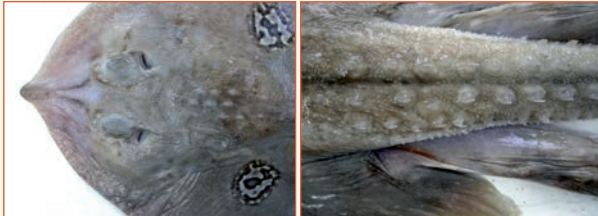
by M. Stehmann and D. Ebert

Experience over many years has shown that the identification of cartilaginous fish species can be problematic; however, people interested in identifying unusual species that they may encounter while on board fishing vessels, at landing places, ports, fish markets, on angling tours, in souvenir shops, and underwater, can take digital images and send them to a local expert for possible identification. Sometimes rare species may be encountered, and if possible these specimens in addition to being photographed fresh, should be saved and forwarded to experts for possible identification. This can benefit both the scientist, most of whom are interested in these observations, and the public who is interested in having their specimen identified.

Taking photographs for easing identification:

If possible try and place a ruler or other measuring scale alongside the specimen; if no ruler is available, then some other object that may serve as a size reference, a lens cap, pencil or some object to show a size relationship. A handwritten label that includes a number, the date, location, and other relevant capture information, and may include the person's name. Plain coloured or an artificial background contrasting the specimen's colour is fine.

Rays, skates, guitar- and sawfishes: Take photographs in total upper and lower views. Add close-ups of details, such as upper and lower side of head, the saw of sawfish both sides, mouth-nasal region, dorsal and caudal fins (if present), serrated tail spine(s) in stingrays, details of scale coverage (mainly in saw- and guitarfish) and obvious thorn pattern on upper side of disc and tail, colour pattern details like eye-spots.



Photos of *Leucoraja naevus* by M. Stehmann

Chimaeras: Take photographs in total lateral, dorsal and ventral views, if possible with fins erected and spread. Add close-ups of details catching your eye, e.g. lateral and ventral view of head to gill slits or to origin of pectoral fins, mouth-nasal region, the jaws with dentition details, details of head canal and pore system, individual fins, colour marks.



Photo of *Harriotta raleighana* by M. Stehmann

Preservation of unknown, rare or strange specimens and where to send these:

Beyond, of course, taking photographs first of the fresh specimen, preserving and forwarding such individuals may be very important for science. These may document, e.g. first geographical records, first records of small young or fully grown adults in a given location, or you may have found even a species so far unknown to science.

On board a fishing or angling tour vessel, preservation by deep-freezing, on ice, or in a refrigerator will be given options. At other occasions, it may become difficult, and preserving in 4% formaldehyde (caution: dangerous to skin, eyes and when inhaled!) will be the best. Use thick, water- and leakage-proof plastic bag or box for storage. Dilute concentrated formalin 1:9 with water and add the liquid to the specimen in the bag or box to be closed firmly – the liquid and its gas are caustic! If possible, inject before formalin into the belly cavity, or cut a small slit through belly to allow penetration of formalin to the innards to prevent from disintegration. Specimens need one to several days for being preserved, depending on their size and thickness. Then pour out liquid formalin, rinse specimen under water, wrap it in moist cloths or paper to prevent it from drying up and keep in plastic bag or box.

Make contact with the nearest marine or fishery institute, zoological institute or museum and bring the specimen there, or post it in leakage-proof packing. Internet search may help to find an appropriate addressee nearby. Public zoos and aquaria may also provide advice.

Electric ray – Torpille noire – Tremolina negra

Torpedo (Tetronarce) nobiliana Bonaparte, 1835

TTO

Local names: Svart el-rokke (Norway); Schwarzer Zitterrochen (Germany); Tremelga negra (Portugal)



Eye and spiracle

Margins of spiracles
smooth, without
tentacles or knobs

Distinctive characters

Front margin of thick, fleshy, subcircular disc broadly truncate. Tail section stout and massive, with two large, separated dorsal fins of which the first one about twice as large as second one; a large paddle-like caudal fin. Uniformly plain dark violet-brown above.

Size

Max. Length (N. Atlantic):
about 180 cm TL.



Similar species

Torpedo (Torpedo) marmorata

Dorsal coloration variably mottled light on dark background.



Eye and spiracle

Margins of spiracles
rimmed with knobs
or tentacles

Torpedo (Torpedo) torpedo

Brown above with five or fewer large blue eye-spots encircled by orange inner and black outer ring.



Eye and spiracle

Margins of spiracles
rimmed with knobs
or tentacles



Photo by L. Sion

Fisheries

Electric rays are not used for human consumption or other purposes. Bycatch in bottom and pelagic fisheries but usually discarded. Fishermen should handle these rays with respect, and avoid their powerful electric shocks.

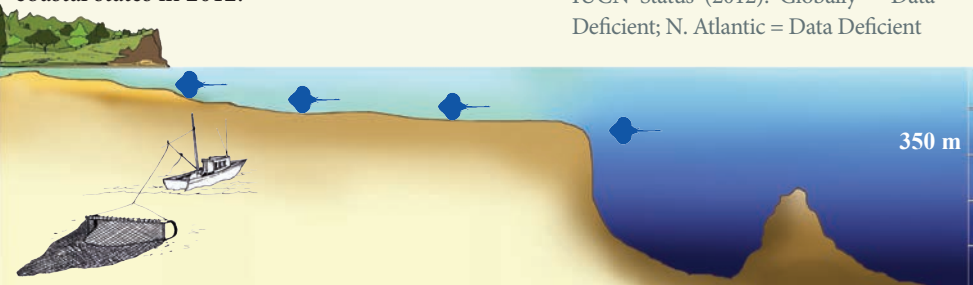
No catch limitations imposed by EU and other coastal states in 2012.

Bio-Ecology

Juveniles living mainly benthic on the continental shelf soft bottoms from 10 to 150 m, with a few records down to 350 m. Adults may be pelagic or semi-pelagic regularly swimming singly and reported migrating over long distances and found also in deeper waters.



IUCN Status (2012): Globally = Data Deficient; N. Atlantic = Data Deficient



Electric ray

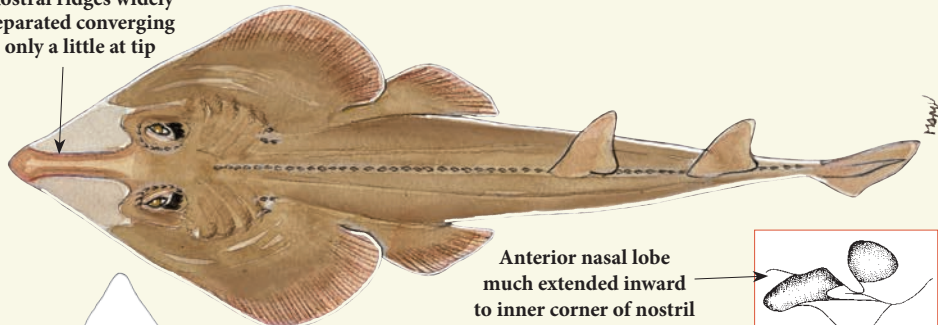
Common guitarfish – Guitare de mer commune – Guitarra común

Rhinobatos (Rhinobatos) rhinobatos (Linnaeus, 1758)

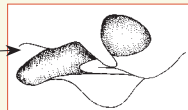
RBX

Local names: Gewöhnlicher Geigenrochen (Germany); Viola (Portugal)

Rostral ridges widely separated converging only a little at tip



Anterior nasal lobe much extended inward to inner corner of nostril



Gill slits on underside of head



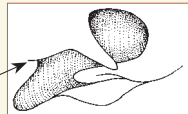
Underside of head

Similar species

Rhinobatos (Glaucostegus) cemiculus



Rostral ridges only narrowly separated



Anterior nasal lobes little extending inward, not reaching to inner corners of nostrils

Distinctive characters

Shark-like appearance, with long, massive tail section bearing two large, widely separated dorsal fins and a large, oval caudal fin without marked lower lobe.

Size

Max. Length (N. Atlantic): about 140 to 160 cm TL.





©RV DR Fridtjof Nansen

Fisheries

Rarely found nowadays. Probably not targeted in fisheries but artisanal fisheries may take considerable numbers, as this species is easily taken in shallow waters by simple gear.

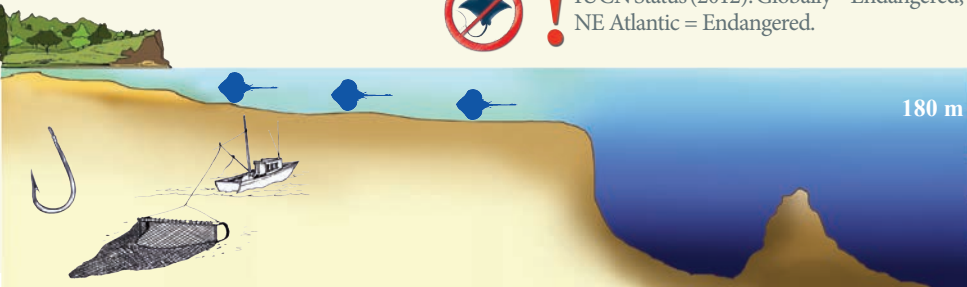
The EU has prohibited the fishing for, retaining on board, transhipments or to land guitarfishes in and from EU waters of ICES subareas from I to XII (2012).

Bio-Ecology

Males mature at about 75 cm and females at about 85 cm in length. Size at birth about 30 cm. Lives on the bottom, partly buried in the substrate, or slowly swimming over sandy and muddy bottoms searching for prey. Occurs from shallow inshore waters to about 180 m depth.



! IUCN Status (2012): Globally = Endangered;
NE Atlantic = Endangered.



Common guitarfish

Richardson's ray – Raie de Richardson – Raya de Richardson

Bathyraja richardsoni (Garrick, 1961)

BYQ

Local names: Richardsons Tiefenrochen (Germany)

Distinctive characters

Adults with heavy body, trunk thick and massive. Upper surface almost entirely set with coarse dermal denticles. Upper side usually dark brown-greyish; underside ground colour generally as dark as upper side.

Size

Max. Length (N. Atlantic):
at least 175 cm TL.



Similar species

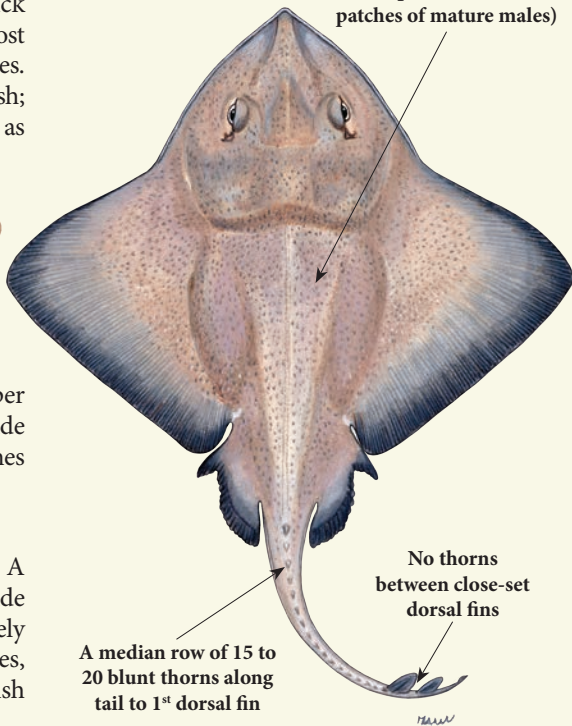
Bathyraja pallida

A thorn between dorsal fins. Upper side greyish to pale white, underside brown with irregular white patches along midbody.

Bathyraja spinicauda

Midrow on tail with 21 to 26 thorns. A thorn between dorsal fins. Upper side medium grey and almost completely covered with coarse dermal denticles, underside white with at most greyish margin to disc.

No thorns on upper disc
(except for alar thorn
patches of mature males)



A median row of 15 to
20 blunt thorns along
tail to 1st dorsal fin

No thorns
between close-set
dorsal fins



Photo Courtesy of the Irish Marine Institute

Fisheries

Mainly taken singly or in small numbers as bycatch by deepwater trawlers and bottom longliners. Its known very wide distribution in deep water may prevent much impact by fisheries, however the total population is supposedly not very large.

Species of the Order *Rajiformes* are subject to TAC regulations in EU waters (2012).

Bio-Ecology

Size at hatching is from 18.2 to 24.5 cm TL. Benthic to benthopelagic in deepwater along lower continental slopes, on adjacent deep-sea abyssal plains and along submarine rises between mostly 1,370 and 2,550 m depth.



IUCN Status (2012): Globally = Least Concern;
N. Atlantic = Least Concern.



Richardson's ray

Spinetail ray – Raie à queue épineuse

Bathyraja spinicauda (Jensen, 1914)

RJQ

Local names: Gråskate (Norway); Mariuskata (Iceland); Tornhalet rokke (Denmark, Greenland)

Distinctive characters

Adults with heavy body, trunk thick and massive. Snout moderately long and pointed, soft and flexible vertically. Upper side medium grey; underside white with at most greyish margin to disc.

Size

Max. Length (N. Atlantic):
170 to 180 cm TL.



Similar species

Bathyraja pallida

Midrow on tail with 16 to 21 thorns. A thorn between dorsal fins. Upper side greyish to pale white, underside brown with irregular white patches along midbody.

Bathyraja richardsoni

Midrow on tail with 15 to 20 thorns; no thorns between dorsal fins. Upper side usually dark brown-greyish, but intensity may vary; underside similar but always with irregular whitish markings along midbody, in pelvic region and on tail.

No thorns on upper disc (except for alar thorn patches of mature males)

Upper surface entirely covered with coarse dermal denticles

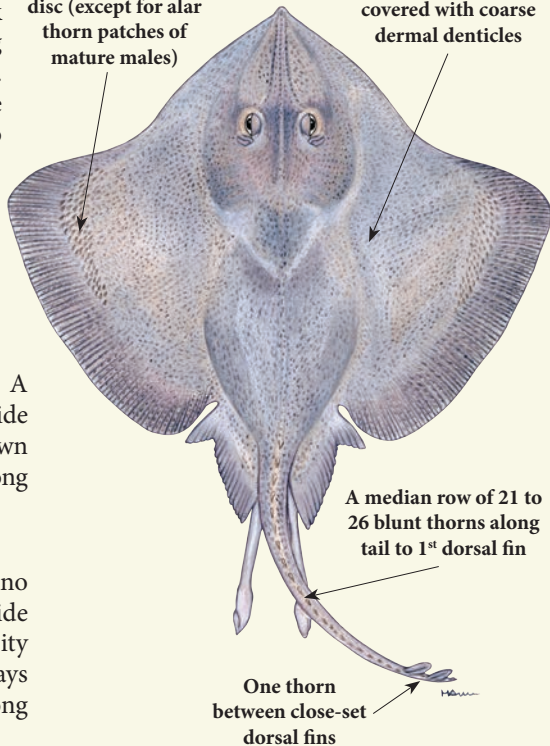




Photo of a juvenile male by M. Stehmann

Fisheries

A regular bycatch in bottom trawl and bottom longline fisheries at high latitudes in the North Atlantic. Large specimens are landed in small numbers.

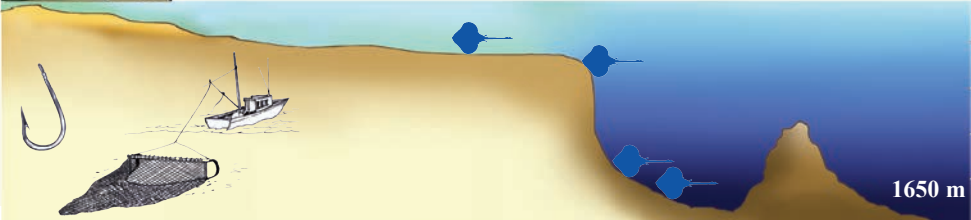
Species of the Order *Rajiformes* are subject to TAC regulations in EU waters (2012).

Bio-Ecology

Oviparous, with large egg capsules. Moderately common in Arctic and boreal latitudes in about 140 to 800 m depth in the Eastern North Atlantic, but to 1,650 m depth in the Western North Atlantic. Occurs along continental shelves down the slopes in deepwater.



- ! IUCN Status (2012): Globally = Least Concern; NE Atlantic = Least Concern;
- NW Atlantic = Vulnerable.



1650 m

Spinetail ray

Starry ray – Raie radiée – Raya radiante

Amblyraja radiata (Donovan, 1808)

RJR

Local names: Sternrochen (Germany); Sterrog (The Netherlands); Thorny ray (Canada); Tindaskata (Iceland)
Raia repregada (Portugal); Kloskate (Norway); Tærbe (Denmark, Greenland)

Distinctive characters

Disc subrhombic, with anterior margins strongly undulated in mature males, and angular outer corners.

Many thornlets scattered over snout and pectoral wings. Less than 50 tooth rows.

Size

Max. Length (NW Atlantic):
about 110 cm TL.



Similar species

Amblyraja jenseni

Fifty-two to 66 tooth rows. Upper side dark grey to brown, but also plain whitish; underside white with large dark markings only in young; larger specimens increasingly dark blotched to become nearly totally dark in adults with only few white markings left at mouth and along midbelly.

Amblyraja hyperborea

Less than 50 tooth rows and a median row of 25 to 32 thorns from anterior trunk to first dorsal fin.

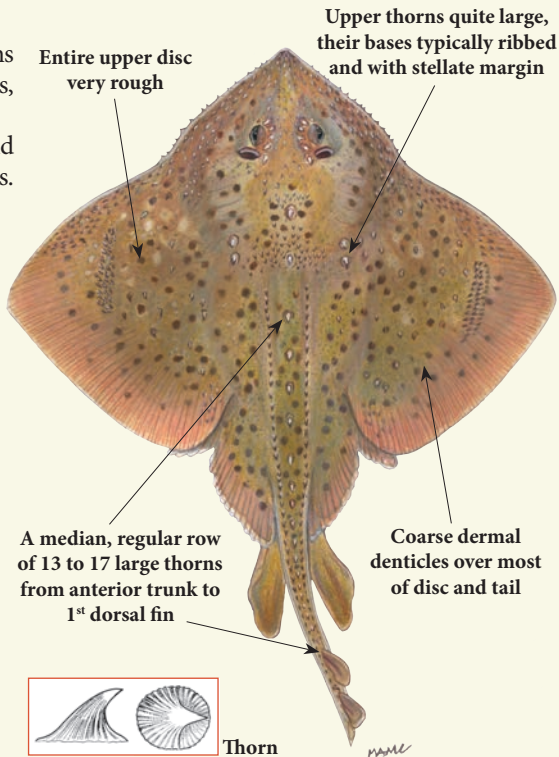




Photo by C. Nozères

Fisheries

In the past treated as bycatch and discarded, is now a target species on both sides of the North Atlantic. US NMFS has forbidden its possession and landing within the Skate Management Unit (2012).

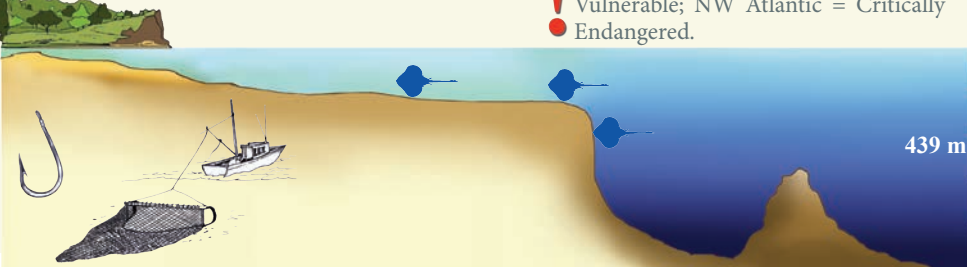
Species of the Order *Rajiformes* are subject to TAC regulations in EU waters and catches of this species should be reported separately (2012).

Bio-Ecology

Oviparous, egg capsules have a rough, coarse, sandpaper-like surface due to short, stiff fibres. Benthic inshore coastal species at high latitudes, occurring from the continental shelves down to about 1,400 m depth, but mainly from 27 to 439 m. It is found on various bottom substrates in Arctic and boreal waters.



! IUCN Status (2012): Globally = Vulnerable; NW Atlantic = Critically Endangered.



Starry ray

Blue skate

Dipturus sp. cf. flossada (Risso, 1826)

RJB

Local names: Skata (Iceland); Storskate (Norway); Slätrocka (Sweden); Glattrochen (Germany); Airoga, Raia oirega (Portugal); Vleet (the Netherlands); Skade (Denmark); Raya noruega (Spain)

Distinctive characters

Iris of eye pale yellowish. Tips of strong lateral tail thorns at right angle to tail axis. Snout long and pointed.

Size

Max. Length (NE Atlantic):
about 145 cm TL.



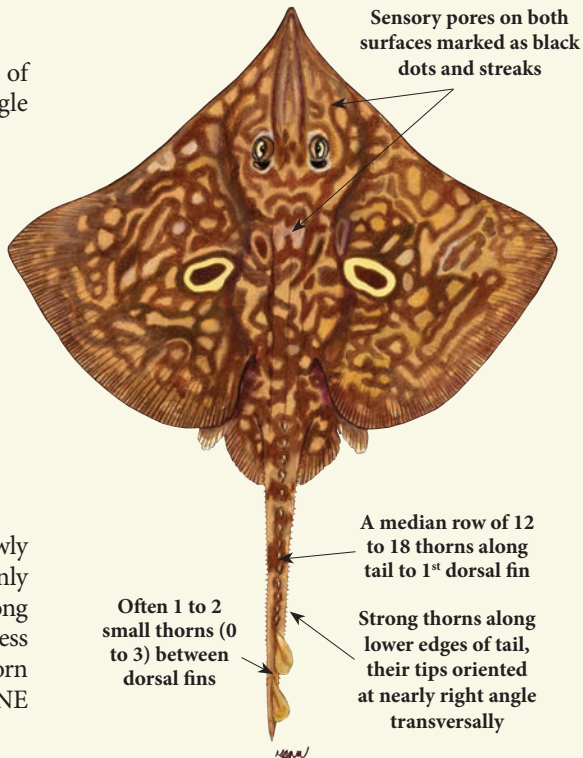
Similar species

Dipturus sp. cf. intermedia

Iris of eye dark olive-green.
Tips of strong lateral tail thorns inclined towards the head.
Occurs only in NE Atlantic.

Dipturus oxyrinchus

Snout extremely long and narrowly pointed; no thorns on upper disc, only a median row of 4 to 11 thorns along tail to first dorsal fin, which more or less worn off in adults; an interdorsal thorn may be present. Occurs only in NE Atlantic.



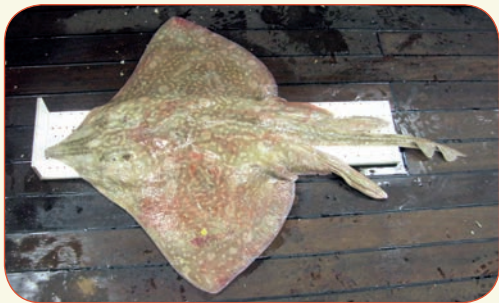


Photo by Jim Ellis (CEFAS)

Fisheries

Historically a heavily exploited species. What was once regarded as a single species (*Dipturus batis*) appears to represent two distinct species of very different sizes.

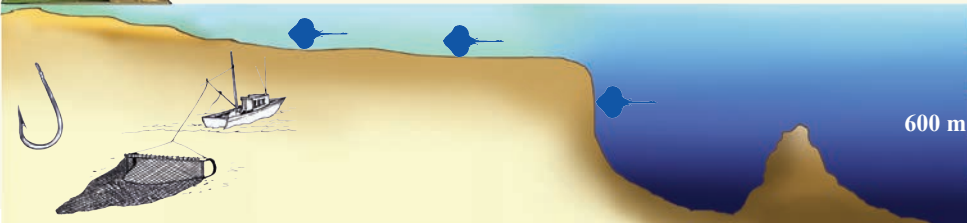
EU has prohibited to fish for, to retain on board, to tranship or to land *D. batis* in and from ICES subareas VI, VII, VIII, IX and X (2012). Accidentally caught specimens shall be promptly released.

Bio-Ecology

Oviparous, egg capsules large, with short horns and smooth surface. Males and females mature at about 115 and 123 cm in length, respectively. Benthic to benthopelagic from coastal waters to about 600 m depth, mostly around 100 m. Prefers soft bottom but also found on gravel and hard, rocky ground.



- ! IUCN Status (2012)(former *D. batis*)
Globally = Critically Endangered;
- N. Atlantic = Critically Endangered.



Blue skate

Flapper skate

Dipturus sp. cf. intermedia (Parnell, 1837)

RJB

Local names: Skata (Iceland); Storskate (Norway); Slätrocka (Sweden); Glattrochen (Germany); Airoga, Raia oirega (Portugal); Vleet (the Netherlands); Skade (Denmark); Raya noruega (Spain)

Distinctive characters

A very large growing, heavy-bodied skate with broadly rhombic disc. Snout long and pointed. Strong lateral tail-thorns with tips inclined towards the head.

Size

Max. Length (N. Atlantic):
about 230 cm, but possibly
up to 285 cm TL.



Similar species

Dipturus sp. cf. flossada

Iris of eye pale yellowish. Tips of tail thorns oriented at right angle. Occurs only in NE Atlantic.

Dipturus oxyrinchus

Snout extremely long and narrowly pointed; no thorns on upper disc, only a median row of 4 to 11 thorns along tail to first dorsal fin. Occurs only in NE Atlantic.

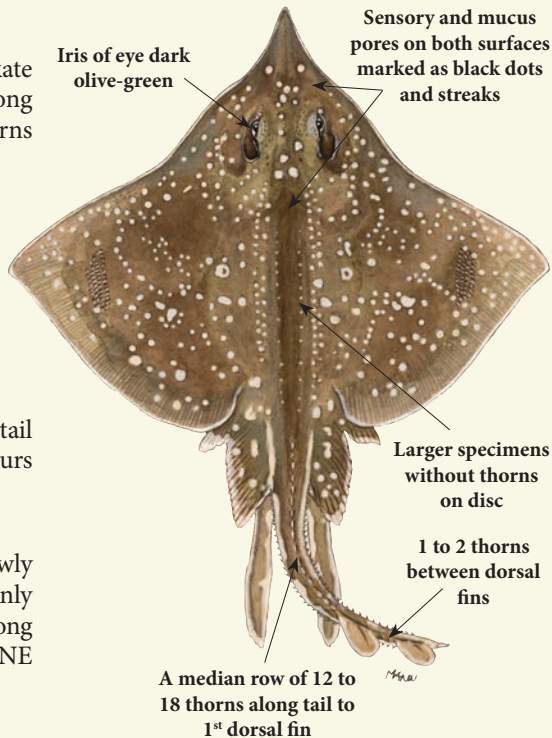
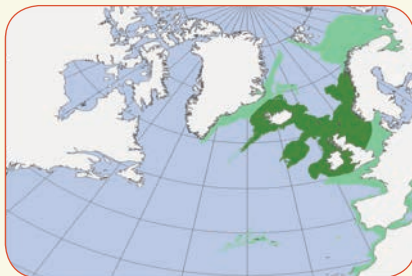




Photo by D. Holt

Bio-Ecology

Oviparous, with very large egg cases with short horns and a smooth surface. Males and females mature at about 185 cm and 197 cm TL, respectively. Benthic to benthopelagic from coastal waters to about 600 m depth, mostly around 200 m. Prefers soft bottom but also found on gravel and hard, rocky ground.



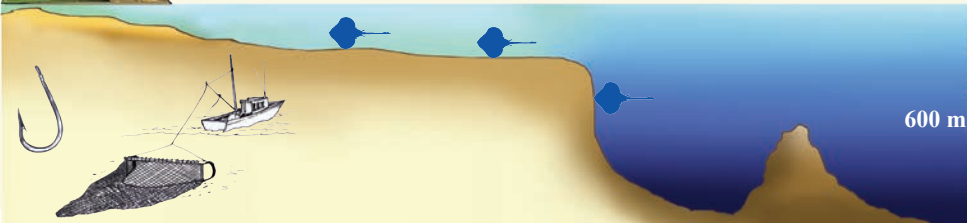
Fisheries

Historically a heavily exploited species. What was once regarded as a single species (*Dipturus batis*) appears to represent two distinct species of very different sizes.

EU has prohibited to fish for, to retain on board, to tranship or to land *D. batis* in and from ICES subareas VI, VII, VIII, IX and X (2012). Accidentally caught specimens shall be promptly released.



- ! IUCN Status (2012)(former *D. batis*)
- Globally = Critically Endangered;
- N. Atlantic = Critically Endangered.



Flapper skate

Barndoor skate – Grand raie – Raya grande

Dipturus laevis (Mitchill, 1818)

RJL

Local names: Sharpnosed ray or skate (USA)

Distinctive characters

Disc broadly rhombic, wider than long, with acute outer corners and anterior margins deeply concave. Snout long and pointed. Colour above grey to brown, with pattern of more or less distinct pale spots with dark brown centre; underside dusky, darker at outer disc and pelvic-fin margins. Above and below, sensory and mucus pores marked as distinct black dots and streaks.

Size

Max. Length (N. Atlantic):
about 153 cm TL.



Similar species

Other *Dipturus* species all occur in North Eastern Atlantic.

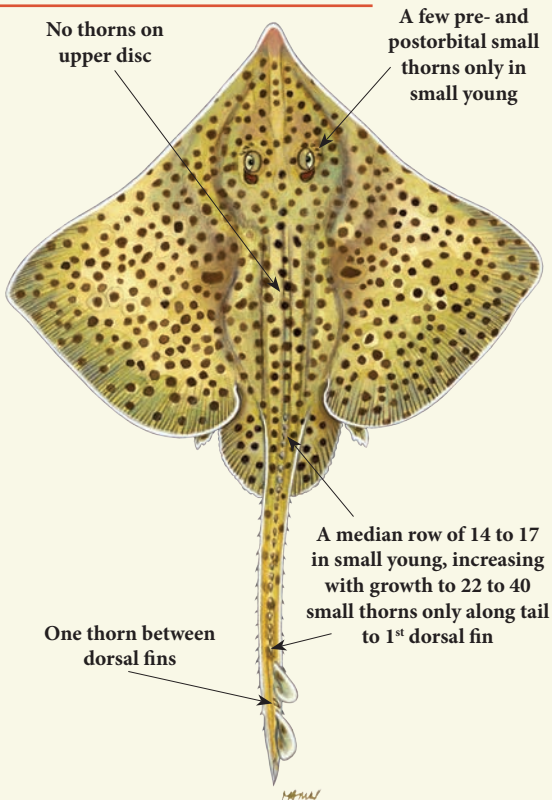




Photo by J. G. Kunkel

Fisheries

Presently, uncommon on the continental shelf. Taken as bycatch on the Georges Bank, Scotian Shelf, Grand Banks and Labrador Shelf.

US NMFS has forbidden possession and landing of Barndoor skate within the Skate Management Unit (2012).

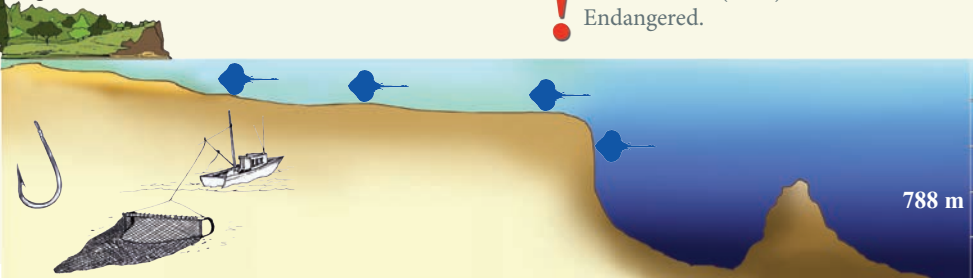
Species of the Family *Rajidae* are subject to TAC regulations in NAFO Divisions 3LNO (2012).

Bio-Ecology

Oviparous, egg capsules very large and rectangular. Females mature at about 96 to 105 cm, and males at about 100 cm TL. Benthic and benthopelagic in shelf and slope waters at 10 to 788 m depth, most commonly at 10 to 145 m. Prefers sandy and gravelly ground, but in deeper water often found on muddy bottom.



IUCN Status (2012): NW Atlantic = Endangered.



Barndoor skate

Longnosed skate – Pocheteau noir – *Raja picuda*

Dipturus oxyrinchus (Linnaeus, 1758)

RJO

Local names: Spear-nosed skate, Snipers skate (UK); Spitzrochen (Germany); Spiss-skate (Norway)

Distinctive characters

Snout extremely long and pointed, its preorbital length 5.5 to 7.0 times the interorbital distance. Disc broadly rhombic, with acute outer corners and anterior margins deeply concave. Colour above from light brown in young to dusky brown or grey in larger specimens, with more or less distinct pattern of light spots and black dots; underside light brown in young, dark brown to blue-grey in adults.

Size

Max. Length (NE Atlantic):
about 150 cm TL.



Similar species

Dipturus sp. cf. *flossada*

Snout less long and pointed, less than 5.5 times the interorbital width. Iris of eye pale yellowish. Lateral tail thorns oriented at right angle to tail axis.

Dipturus sp. cf. *intermedia*

Snout less long and pointed, less than 5.5 times the interorbital width. Iris of eye pale dark olive-green. Lateral tail thorns inclined forward toward head.

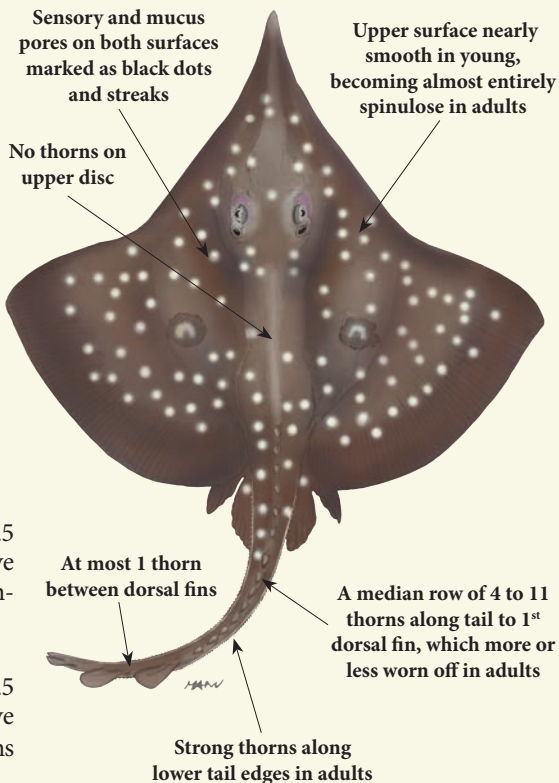




Photo by F. Serena

Fisheries

Taken as a bycatch in bottom trawl and bottom longline fisheries. Usually often discarded except for large specimens.

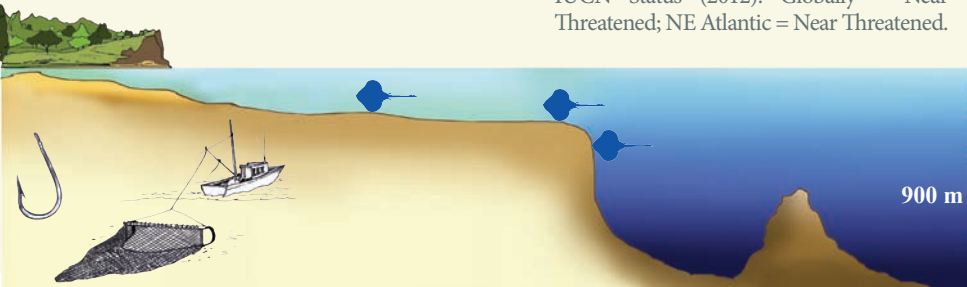
Species of the Order *Rajiformes* are subject to TAC regulations in EU waters (2012).

Bio-Ecology

Oviparous, egg capsules large and rectangular. Females reach maturity from 90 cm length, and males between 70 and 80 cm (in Mediterranean). Benthic on mainly soft mud and sand bottom but also found in loose rock areas and on gravel beds.



IUCN Status (2012): Globally = Near Threatened; NE Atlantic = Near Threatened.



Longnose skate

Sandy ray – Raie circulaire – Raya falsa vela

Leucoraja circularis (Couch, 1838)

RJI

Local names: Sandrochen (Germany); Leather Ray (UK); Zandrog (The Netherlands); Sandskata (Iceland) Sandskate (Norway); Raia de São Pedro (Portugal); Sandskøta (Faroe Islands)

Distinctive characters

Disc subrhombic with broadly rounded outer corners; snout short, bluntly angled.

A constant pattern of several pairs of circular creamy spots, each encircled dusky, arranged symmetrically on pectoral wings and on posterior pelvic lobes. Median thorn row along trunk and tail only in juveniles, but reduced on trunk in larger specimens.

Size

Max. Length (NE Atlantic):
about 120 cm TL.

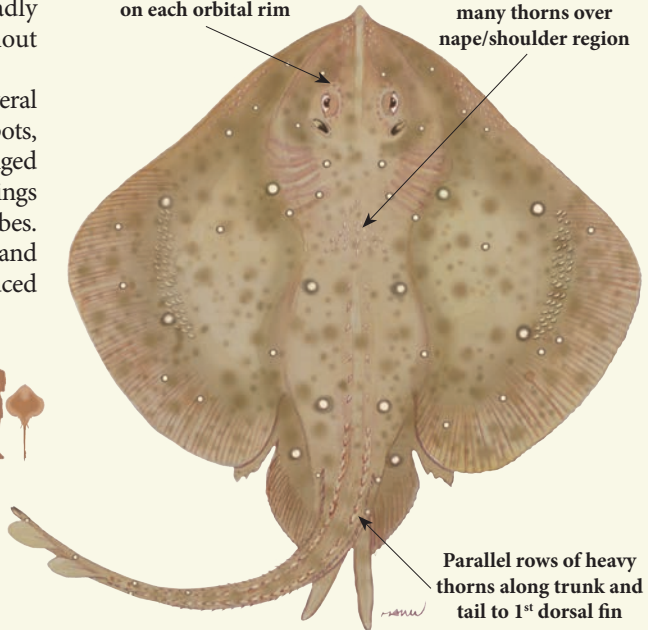


Similar species

No other skate species in the area shows this apparent dorsal pattern of paired creamy spots encircled dusky.

8 distinct thorns
on each orbital rim

A large triangle of
many thorns over
nape/shoulder region



Parallel rows of heavy
thorns along trunk and
tail to 1st dorsal fin



Photo by F. Serena

Fisheries

Infrequent species taken as bycatch. When landed is used for human consumption. Intensive bottom trawling for other species has thought to have resulted in a decline of this species, especially on the continental shelf.

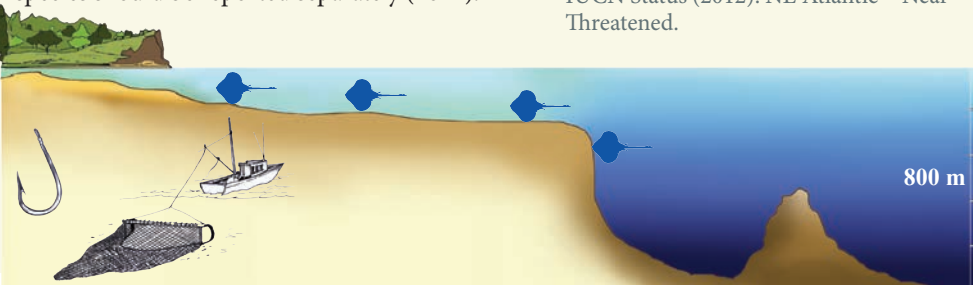
Species of the Order *Rajiformes* are subject to TAC regulations in EU waters and catches of this species should be reported separately (2012).

Bio-Ecology

Oviparous, egg capsules with smooth surfaces and anterior pair of horns very elongated, about twice the length of posterior horns. Benthic on sandy and muddy bottoms on the outer continental shelf and upper slope.



IUCN Status (2012): NE Atlantic = Near Threatened.



Sandy ray

Little skate – Raie hérisson

Leucoraja erinacea (Mitchill, 1825)

RJD

Local names: Common skate, Summer skate, Hedgehog skate, Tobacco box (USA, Canada)

Distinctive characters

Disc subrhombic with rounded outer corners and short, bluntly angled snout. Tail moderately slender, a little longer than body. Tooth rows in upper jaw 30 to 66 in small juveniles (less than 35 cm TL), less than 54 rows in mature specimens and never more than 66 rows.

Size

Max. Length (NW Atlantic):
54 cm, but most less than 48 cm TL.



Similar species

Leucoraja ocellata

Grows to twice the maximum length and has 90 to 100 upper tooth rows when larger than 53 cm TL.

Leucoraja garmani

Above freckled with pale dark or light spots, and has typically distinct, nearly symmetrically arranged large rosette-like blotches of dark spots around a central spot over wings and posterior pelvic lobes, plus 6 to 8 narrow dark cross-bands along tail.

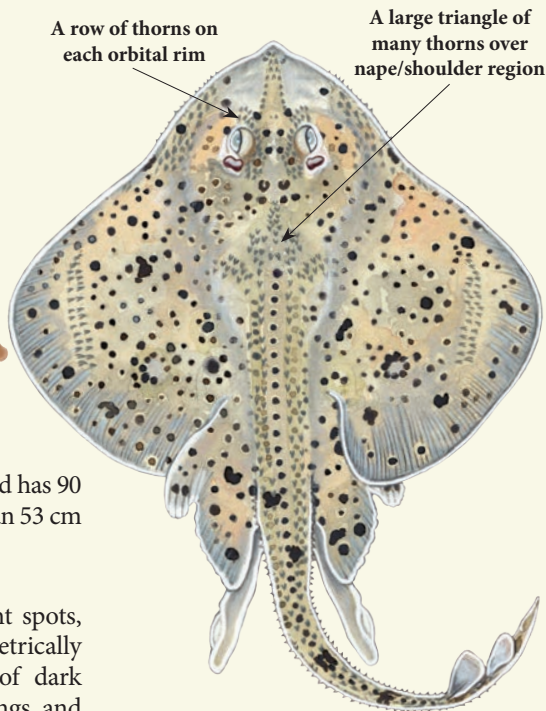




Photo by M. Stehmann

Fisheries

Although the most abundant skate in Western North Atlantic shelf waters and regularly taken in bottom trawls as bycatch, it is usually not kept and landed because of its very small size and thorniness.

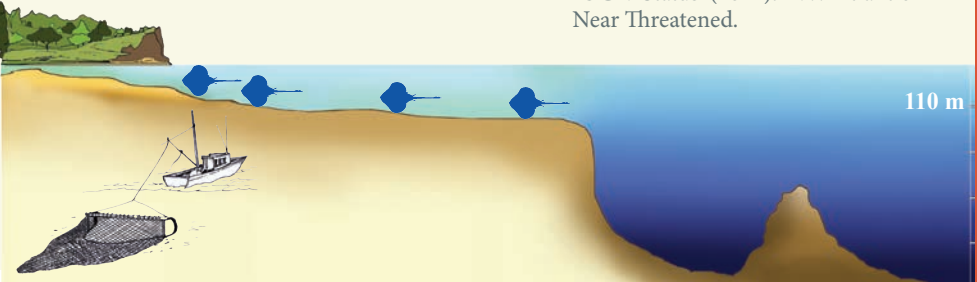
Species of the Family *Rajidae* are subject to TACs in NAFO Divisions 3LNO (2012).

Bio-Ecology

Oviparous, females reach sexual maturity at 40 to 48 cm TL, and males at about 39 cm in length. Benthic on sand and gravel bottom, less common on mud or rocky ground.



IUCN Status (2012): NW Atlantic = Near Threatened.



Little skate

Shagreen ray – Raie chardon – Raya cardadora

Leucoraja fullonica (Linnaeus, 1758)

RJF

Local names: Chagrinrochen (Germany); Fuller's Ray, French Ray (UK, Ireland); Náskata (Iceland); Kaardrog (The Netherlands); Raia pregada (Portugal); Nebbskate (Norway)

Distinctive characters

Disc rhombic with rounded outer corners and pronounced, rather pointed snout. Tail solid, a little longer than body. A continuous median row of many moderately small thorns from anterior trunk to first dorsal fin only in young; these thorns becoming with growth totally reduced on trunk, and those along tail becoming smaller but often persist. Plain ashy-grey above, with some darker banding on juveniles, underside white with faint greyish margin of pectorals and posterior pelvic lobes.

Size

Max. Length (NE Atlantic): 120 cm, but commonly 70 to 80 cm TL.

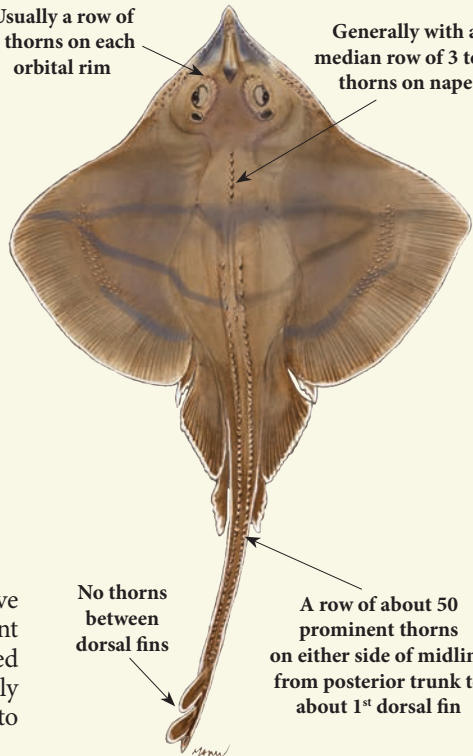


Similar species

Leucoraja circularis and *L. naevus* above never plain coloured, but with constant pattern of paired creamy spots or with paired eyespots. *Raja microocellata* conspicuously small eyes, with orbit length 1.5 (young) to 2.7 times in broad interorbital width.

Usually a row of 8 thorns on each orbital rim

Generally with a median row of 3 to 9 thorns on nape



No thorns between dorsal fins

A row of about 50 prominent thorns on either side of midline from posterior trunk to about 1st dorsal fin



Photo by Jim Ellis (CEFAS)

Fisheries

A moderately abundant species, this skate is mostly taken as bycatch in bottom and longline fisheries targeting other bony fish species. Larger bycatch specimens are usually landed for human consumption.

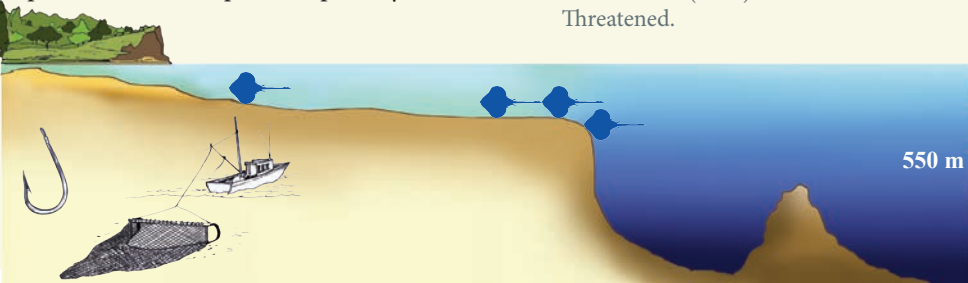
Species of the Order *Rajiformes* are subject to TAC regulations in EU waters and catches of this species should be reported separately (2012).

Bio-Ecology

Oviparous. Benthic on often rough ground on outer shelf and upper slope, occasionally on inner shelf, in relatively cold water.



IUCN Status (2012): NE Atlantic = Near Threatened.



Shagreen ray

Freckled skate

Leucoraja garmani (Whitley, 1939)

JFG

Local names: Rosetted skate, Leopard skate (USA)

Distinctive characters

Disc inverse heart-shaped to subrhombic with rounded outer corners and short, bluntly angled snout. Tail moderately slender, longer than body. A distinct pattern of nearly symmetrically arranged large rosette-like blotches of dark spots around a central spot over wings and posterior pelvic lobes.

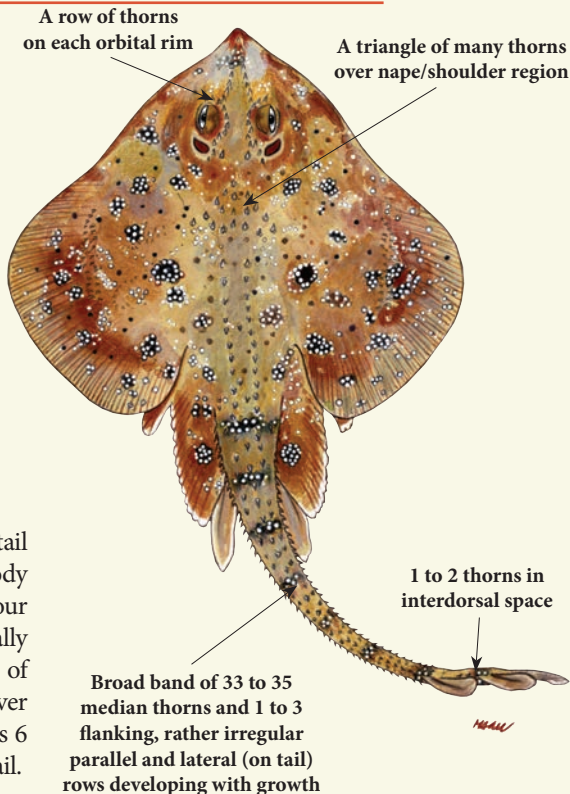
Size

Max. Length (NW Atlantic):
57 cm TL.



Similar species

No other skate species in the area has tail so markedly longer (1.5 times) than body length and this apparent upper colour pattern of many nearly symmetrically arranged large rosette-like blotches of dark spots around a central spot over wings and posterior pelvic lobes, plus 6 to 8 narrow dark cross-bands along tail.



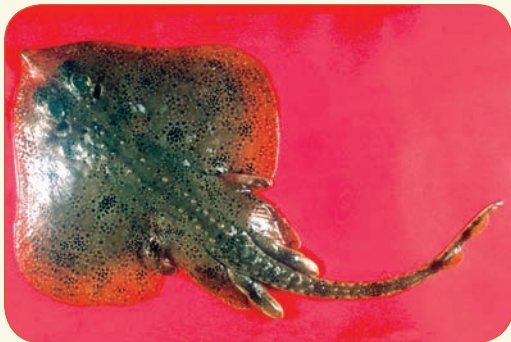


Photo by M. Stehmann

Fisheries

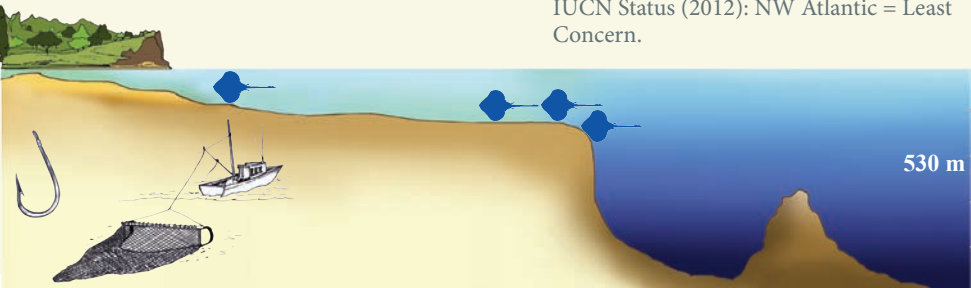
A rather common skate in offshore waters along New England and farther south. Although regularly fished in the USA, mostly as bycatch, it is probably not much used due to its small size and thorniness.

Bio-Ecology

Oviparous, egg capsules very small. Size at maturity varies by region with males and females maturing between 33 and 44 cm north of Cape Hatteras, but south of this location maturity is attained between 25 and 32 cm. Benthic on mainly the outer continental shelf and upper slope.



IUCN Status (2012): NW Atlantic = Least Concern.



Freckled skate

Cuckoo ray – Raie fleurie – Raya santiguesa

Leucoraja naevus (Müller and Henle, 1841)

RJN

Local names: Kuckucksrochen (Germany); Grootoogrog (the Netherlands); Gjøkskate (Norway); Raia de dois olhos (Portugal); Pletrokke (Denmark); Blomrocka (Sweden)

Distinctive characters

Disc subcircular with rounded outer corners and short, bluntly angled snout, tip of which a little pronounced. Tail solid, a little longer than body. Only juveniles with a median row of thorns from posterior to shoulder girdle to first dorsal fin.

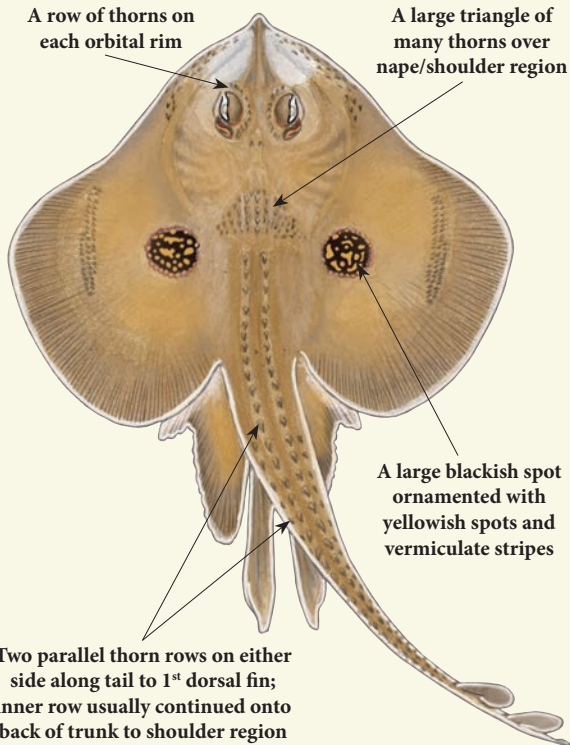
Size

Max. Length (NE Atlantic):
75 cm for females, and 68 cm for males TL.



Similar species

No other skate species in the area shows apparent, paired, large eyespots of yellowish spots and vermiculate stripes on blackish background.





©RV DR Fridtjof Nansen

Fisheries

Although heavily fished, and taken in large numbers as bycatch, the population has remained rather stable over the years due most likely to the comparably high reproductive rate per female and its year round reproductive cycle.

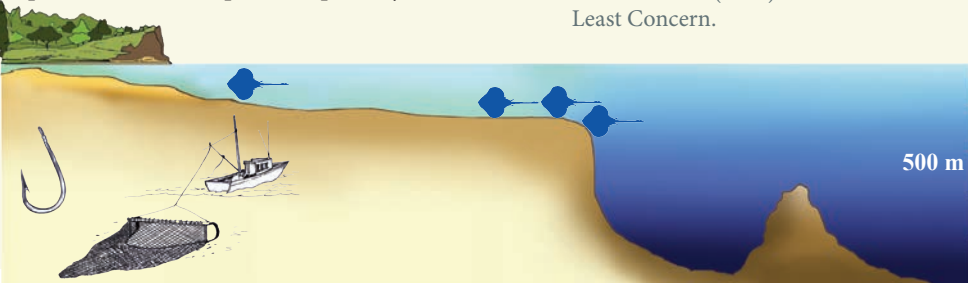
Species of the Order *Rajiformes* are subject to TAC regulations in EU waters and catches of this species should be reported separately (2012).

Bio-Ecology

Oviparous, size at maturity about 55 cm. Benthic on sandy and muddy bottoms on the continental shelf. Most common around 200 m depth.



IUCN Status (2012): NE Atlantic = Least Concern.



Cuckoo ray

Winter skate – Raie tachetée

Leucoraja ocellata (Mitchill, 1815)

RJT

Local names: Big skate, Eyed skate (USA and Canada)

Distinctive characters

Disc subrhombic with rounded outer corners and short, bluntly angled snout. Tail moderately slender, a little longer than body. Tooth rows in upper jaw 44 to 63 in juveniles (less than 53 cm TL) and 90 to 110 rows when mature. Above light brown, usually with pattern of blackish spots in varying numbers; underside white, sometimes with irregular pale brown blotches of different size on posterior pectorals and along tail.

Size

Max. Length (NW Atlantic): 109 cm, common between 70 and 80 cm TL.



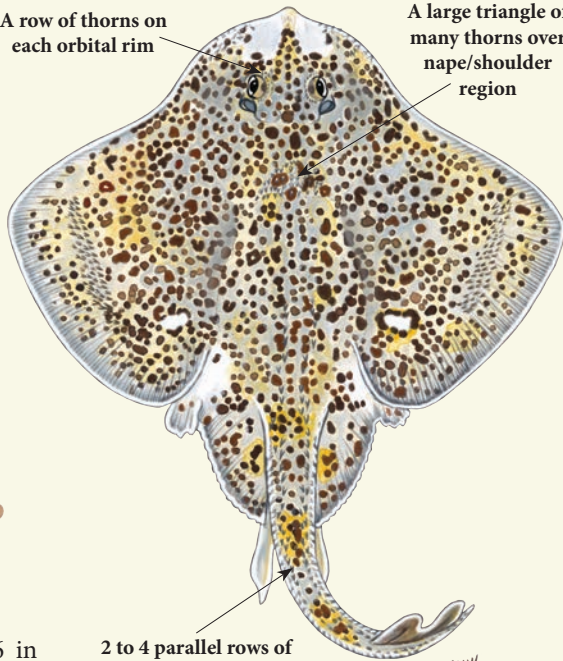
Similar species

Leucoraja erinacea

Tooth rows in upper jaw 30 to 66 in small individuals, less than 54 rows in mature specimens, and never more than 66 rows. Maximum length, 54 cm.

A row of thorns on each orbital rim

A large triangle of many thorns over nape/shoulder region



2 to 4 parallel rows of strong thorns from behind shoulder girdle to level of 1st dorsal fin



Photo by J. Kunkel

Fisheries

One of the most abundant skates in the Western North Atlantic shelf waters and regularly taken in bottom trawls as bycatch; it is usually not kept and landed, despite its good size, but because of its thorniness it is usually discarded. The wings are exported mainly to Europe.

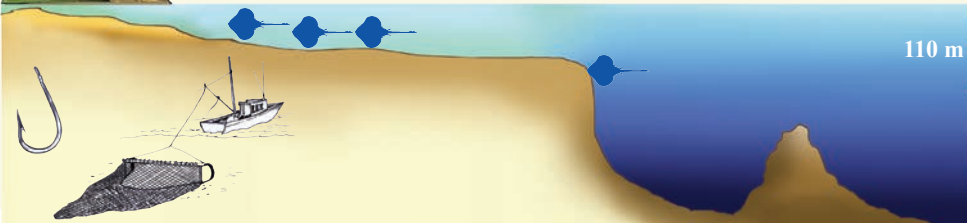
Subject to TAC regulation on the Scotian shelf, and in NAFO Divisions 3LNO (2012).

Bio-Ecology

Oviparous, females mature between 65 and 73 cm in length, and males at 53 to 58 cm, with the size at maturity increasing at higher latitudes. Found on sand and gravel bottoms, less common on mud or rocky ground. Found between 10 and 723 m, but generally at less than 110 m.



! IUCN Status (2012): NW Atlantic = Endangered.



Winter skate

Smooth skate – Raie lisse américaine – Raya lisa norteamericana

Malacoraja senta (Garman, 1885)

RJS

Local names: Smooth-tailed skate, Prickly skate, Raie lisse (USA, Canada)

Distinctive characters

Disc inverse heart-shaped, broader than long, with rounded outer corners and moderately elongated, narrowly angled snout. Tail moderately slender, somewhat longer than body. Upper side of juveniles and larger females with dense coverage of fine, velvet-like dermal denticles. Underside of tail totally or as broad marginal bands set with dense, fine dermal denticles.

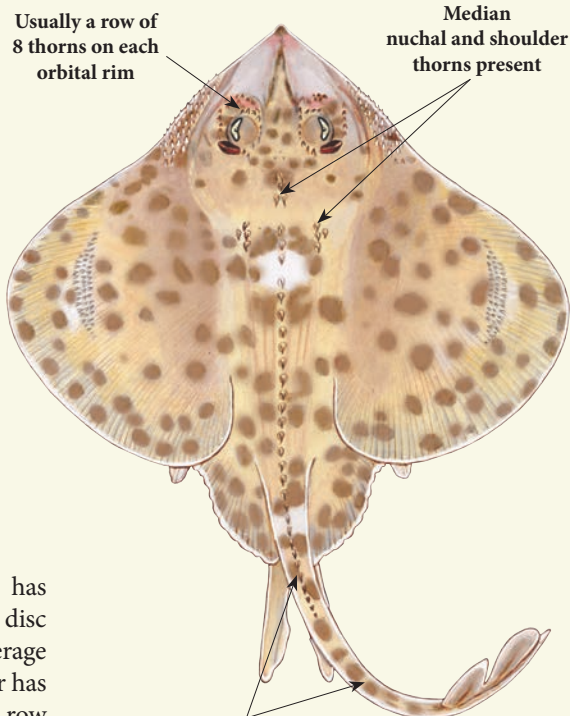
Size

Max. Length (NW Atlantic):
70 cm TL.



Similar species

No other skate species in the area has such an evenly inverse heart-shaped disc and a complete, velvet-like skin coverage of such fine dermal denticles. Neither has any other species thorns of median row totally disappearing on tail well in front of first dorsal fin.



Median row thorns along trunk and onto tail becoming smaller rearward, disappearing in posterior half or one third of tail



Photo by C. Nozères

Fisheries

A moderately common skate regularly taken as bycatch but probably not much used due to its small size and thin disc.

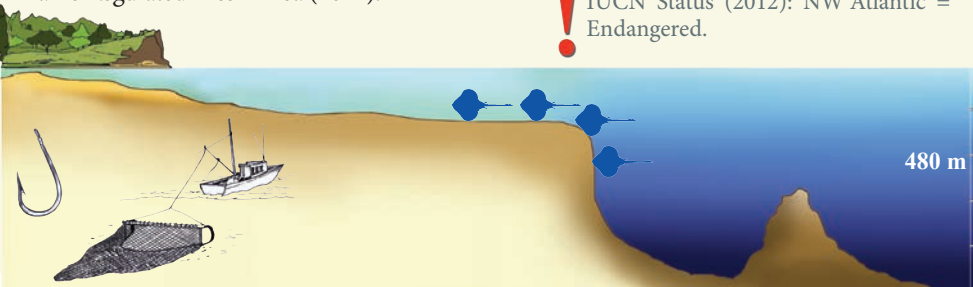
US NMFS has forbidden possession and landing of smooth skate from the Gulf of Maine Regulated Mesh Area (2012).

Bio-Ecology

Oviparous, egg capsules very small. Females reach sexual maturity at 41 to 54 cm in length, and males at about 49 to 57 cm. Benthic on most kinds of bottom substrates, mainly on the outer continental shelf and upper slope. Rare deeper than 480 m.



! IUCN Status (2012): NW Atlantic = Endangered.



Smooth skate

Blue ray – Raie pygmée azuré – Raia pigmaea azul

Neoraja caerulea (Stehmann, 1976)

BVC

Local names: Blauer Zwergrochen (Germany); Raie bleue (France); Blauwe dwergrog (the Netherlands)

Distinctive characters

Disc roundish. Snout extremely short and obtusely angled. Tail distinctly longer than body. Upper disc bluish, with back of trunk and tail marked off greyish-white. Underside of disc and origin of pelvic fins centrally white, or largely blotched dark to nearly totally dark; always a broad blackish margin around disc; underside of tail light.

Size

Max. Length (NE Atlantic):
about 30 to 35 cm TL.



Similar species

Neoraja iberica is above ochre to medium greyish-brown, with apparent pattern of few pale and more numerous dark brown spots and blotches, less so with growth, in symmetrical arrangement. Underside largely white.

Neoraja sp. has the disc inverse heart-shaped, its anterior margins evenly convex and not undulated, snout rather narrowly angled and pointed. Above plain greyish-brown, without any pattern, and underside somewhat lighter plain greyish-brown.

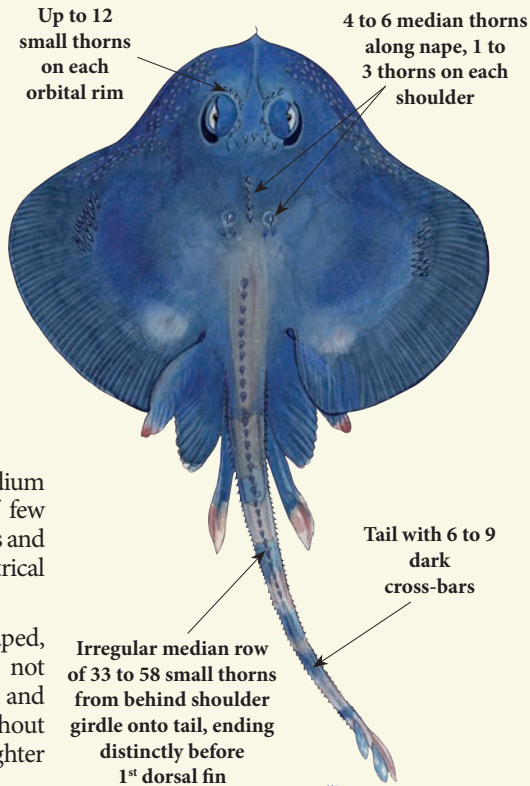




Photo by M. Stehmann

Fisheries

A rare deepwater pygmy skate sporadically taken on occasion by deepwater fisheries as bycatch, but discarded because of its very small size.

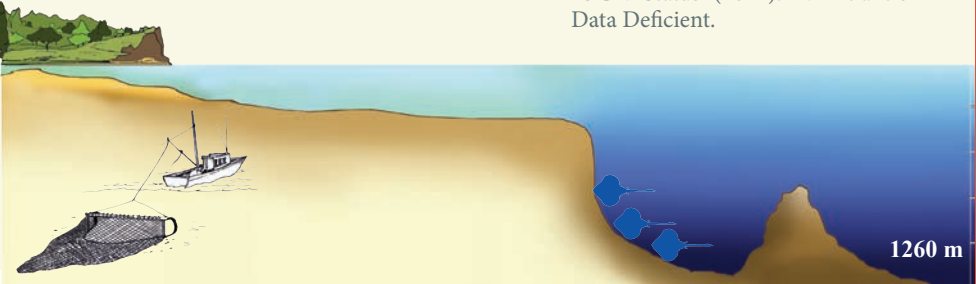
Species of the Order *Rajiformes* are subject to TAC regulations in EU waters (2012).

Bio-Ecology

Oviparous, but egg capsules not yet found. Maturity for males between 20 and 25 cm; female size at maturity, uncertain. Benthic in deepwater from 600 to 1260 m depth.



IUCN Status (2012): NE Atlantic = Data Deficient.



Blue ray

Blonde ray – Raie lisse – Raya boca de rosa

Raja brachyura Lafont, 1873

RJH

Local names: Roker (UK); Blonde rog (The Netherlands); Prikkskate (Norway); Blondrochen (Germany)

Distinctive characters

Disc broadly subrhombic, with sharply acute outer corners; tail about as long as body. High count of 60 to 90 tooth rows in upper jaw. Ochre to pale greyish-brown above, with apparent pattern of numerous small dark spots extended to the extreme edges of disc and posterior pelvic lobes; larger pale spots symmetrically scattered on disc, each encircled by black spots; underside white.

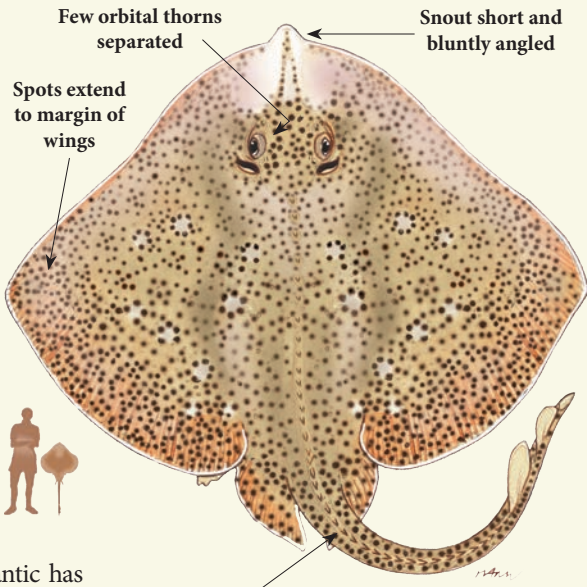
Size

Max. Length (NE Atlantic): 120 cm, but commonly 40 to 80 cm TL.



Similar species

No other congener in the NE Atlantic has such high counts of tooth rows in upper jaw. The spotted ray *Raja montagui* has disc and posterior pelvic lobes scattered with numerous blackish spots not extending to extreme margins.



Regular median row of 40 to 45 thorns from nape to 1st dorsal fin in young and large females, interrupted on back of trunk in large males

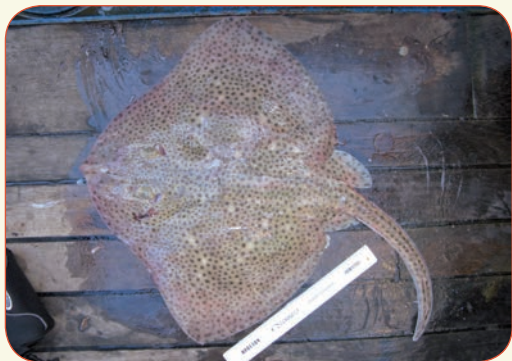


Photo by Jim Ellis (CEFAS)

Fisheries

Targeted in some areas, elsewhere landed from multispecies fisheries. Popular species in recreational fisheries. Used for human consumption.

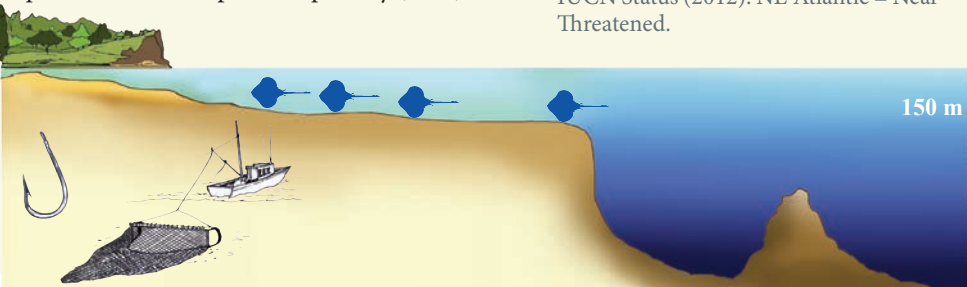
Species of the Order *Rajiformes* are subject to TAC regulations in EU waters and catches of this species should be reported separately (2012).

Bio-Ecology

Oviparous. Maturity in males and females is between 80 and 90 cm TL. Benthic on sandy and muddy substrate from inshore to upper slope, mostly shallower than 150 m depth, exceptionally as deep as 900 m.



IUCN Status (2012): NE Atlantic = Near Threatened.



Blonde ray

Thornback ray – Raie bouclée – Raya de clavos

Raja clavata Linnaeus, 1758

RJC

Local names: Roker, Maiden ray (UK); Nagelrochen (Germany); Piggskate (Norway); Dröfnuskata (Iceland)

Distinctive characters

Disc broadly subrhombic, with sharply acute outer corners, tail about as long as body; snout short and bluntly angled. Especially large females may show on wings above and below additional large 'buckler' thorns with swollen base. Colour and pattern above extremely variable over its wide geographical range, but tail usually with alternate dark and light cross-bars.

Size

Max. Length (NE Atlantic): 130 cm for females and 105 cm for males. Commonly around 100 cm TL.



Similar species

No other congener has conspicuous 'buckler' thorns scattered on disc above and below. Often mistaken for similar congeners (especially blonde and spotted rays) due to its extremely variable upper colour pattern.

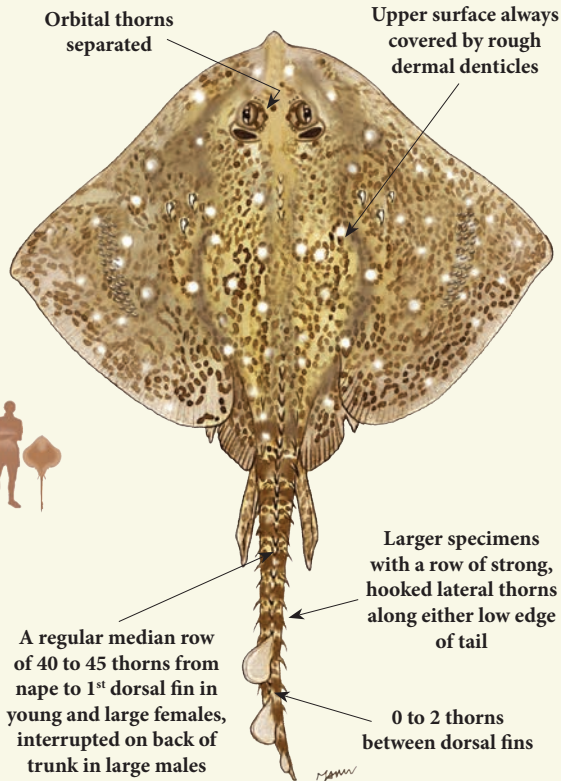




Photo by Jim Ellis (CEFAS)

Fisheries

Common target species in some areas, regular and important bycatch in many demersal fisheries. The most abundant skate species in some areas, but may have been depleted in some European localities.

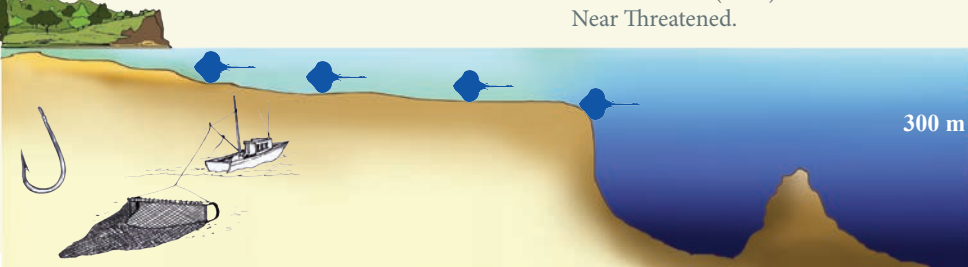
Species of the Order *Rajiformes* are subject to TAC regulations in EU waters and catches of this species should be reported separately (2012).

Bio-Ecology

Oviparous, egg capsules subquadrate. Females mature from 60 to 85 cm and males from 60 to 77 cm. A relatively common benthic skate on usually soft substrate, also on coarser bottom from close inshore shallow waters to the outer continental shelf and upper slope.



IUCN Status (2012): NE Atlantic = Near Threatened.



Thornback ray

Clearnose skate – Raie blanc nes

Raja eglanteria Bosc, 1800

JFE

Local names: None

Distinctive characters

Disc broadly subrhombic, with sharply acute outer corners. Snout moderately long and rather narrowly angled. Above light brown to greyish, with apparent pattern of numerous dark spots and short bars on disc of variable shape and size; the bars often a bit wavy and generally transverse centrally, but almost parallel to anterior and posterior disc margins in outer disc regions.

Size

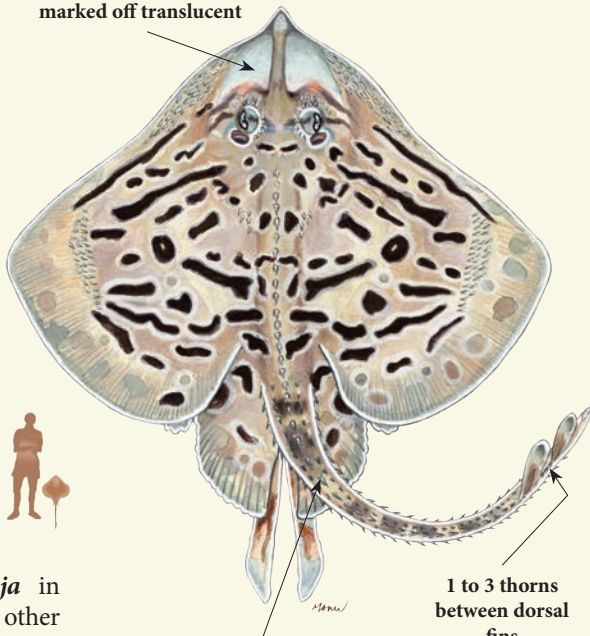
Max. Length (NW Atlantic): 84 cm TL.



Similar species

The only species of genus *Raja* in Western North Atlantic. No other species with sharply angled outer disc corners shows glassy transparent side areas of snout and such pattern above of numerous dark spots and short bars.

Side areas of rostrum marked off translucent



1 to 3 thorns between dorsal fins

Regular continuous median row of 33 to 39 thorns (14 to 19 only in small young) from nape to 1st dorsal fin persisting at all sizes

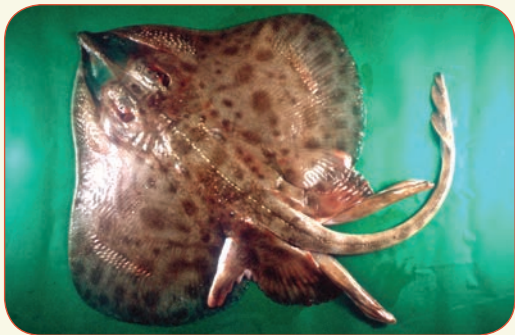


Photo by M. Stehmann

Fisheries

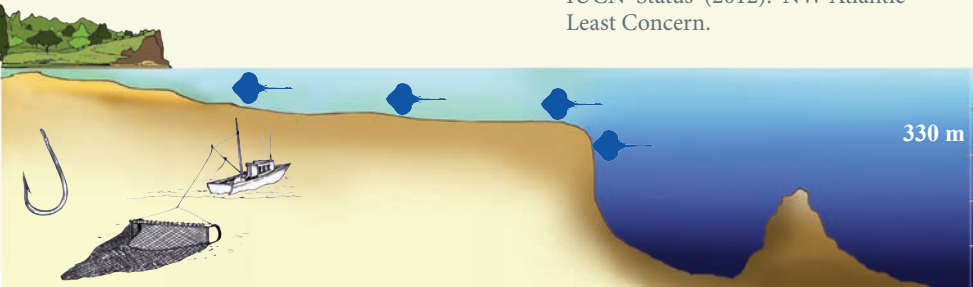
Although commonly taken as bycatch they are mostly discarded and not retained.

Bio-Ecology

Oviparous, egg cases subquadrate. Females attain sexual maturity at 59 to 65 cm, and males at 56 cm. Benthic on sandy and soft substrates from close inshore, including estuaries, and out to 330 m depth, but mainly shallower than 100 m depth.



IUCN Status (2012): NW Atlantic = Least Concern.



Clearnose skate

Madeiran ray – Raie de Madère – Raya de Madeira

Raja maderensis Lowe, 1838

JFY

Local names: Raia da Madeira (Portugal); Raya de Madeira (Spain); Madeira-Rochen (Germany)

Distinctive characters

Disc subrhombic, wider than long, with acute outer corners. Snout short and bluntly angled, its tip a little pronounced. Tail somewhat longer than body. Underside almost entirely prickly. Colour above dark brown with a constant pattern of irregular light spots forming broad undulating transverse bands and narrower unspotted bands between.

Size

Max. Length (NE Atlantic): about 70 to 80 cm TL.



Similar species

Occurring only at Madeira and possibly at Azores archipelago. No other congener shows above on coffee-brown background a pattern of irregular light spots forming broad undulating transverse bands, and narrower unspotted bands between, in combination with below broad blackish margin to disc and such markings at constant locations.

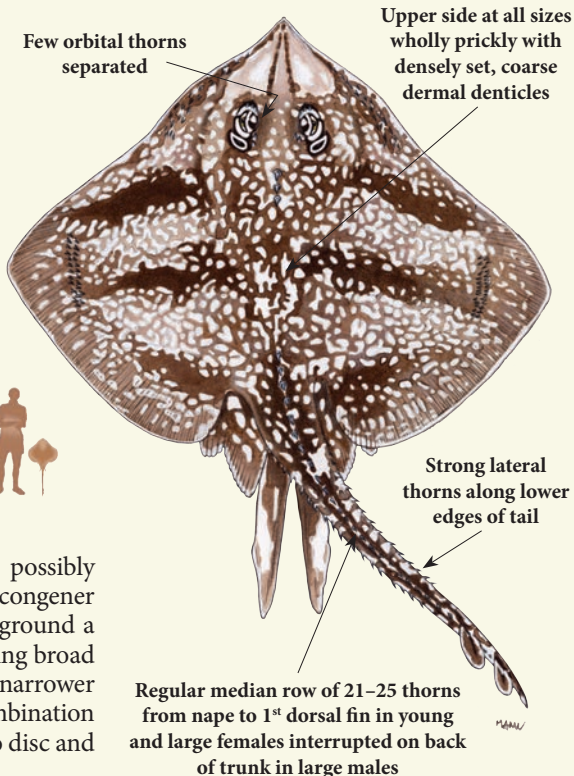




Photo by Gui Menezes(c)ImageDOP

Fisheries

Very restricted local populations of Madeira and the Azores. A relatively common species around the Azores and taken as regular bycatch in bottom longline fisheries, but mostly discarded with a fair chance of survival.

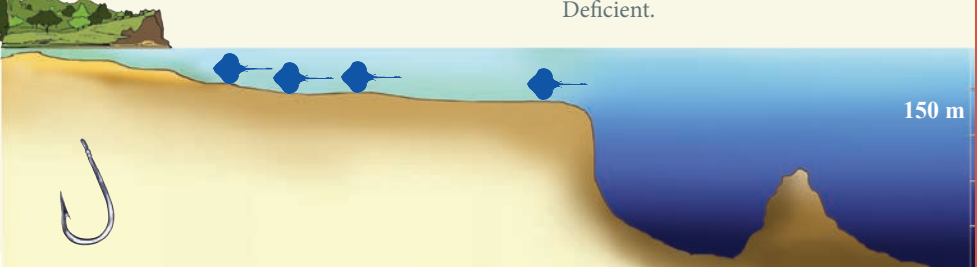
Species of the Order *Rajiformes* are subject to TAC regulations in EU waters (2012).

Bio-Ecology

Oviparous, with sexual maturity possibly occurring at 50 to 60 cm TL. Occurs on benthic hard and soft bottoms to about 150 m depth.



IUCN Status (2012): NE Atlantic = Data Deficient.



Madeiran ray

Small-eyed ray – Raie m el e – *Raja colorada*

Raja microocellata Montagu, 1818

RJE

Local names: Painted ray, Sandy ray (UK); Klein ugiger Rochen (Germany); Sm oyet skate (Norway)

Distinctive characters

Disc subrhombic, with acute outer corners, snout short and bluntly angled. Colour above greyish or olive but mostly pale sandy brown, patterned with light blotches and bands arranged nearly parallel to disc margins; underside white.

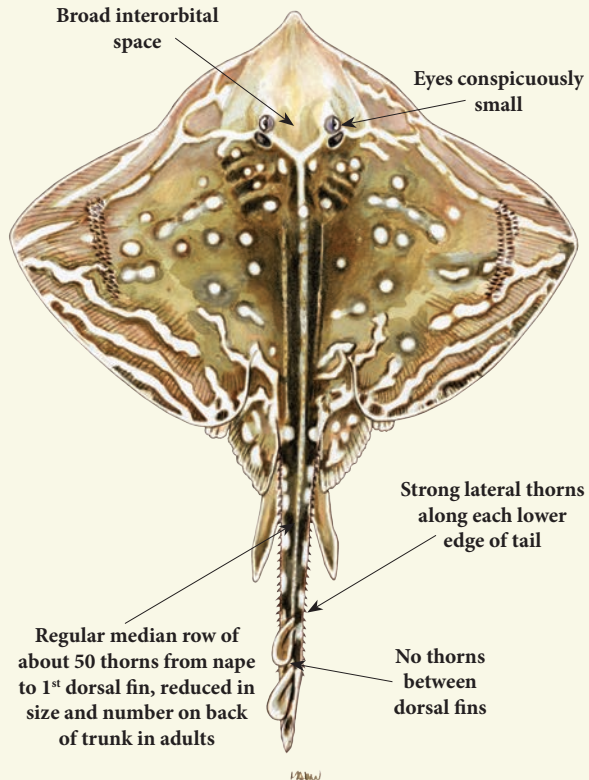
Size

Max. Length (NE Atlantic):
about 90 cm TL.



Similar species

No other congener has such small eyes [orbit length 1.5 (young) to 2.7 times in interorbital width]. Neither congeners show dorsal colour pattern of light blotches and bands arranged nearly parallel to margins of disc and posterior pelvic lobes. Adult specimens, which are more spinulose, may be confused with *Leucoraja fullonica*. The use of the common name ‘sandy ray’ leads to confusion between this species and *L. circularis*.



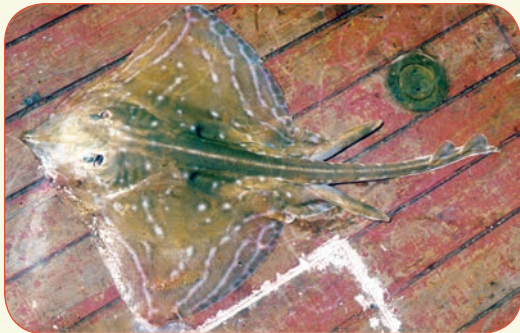


Photo by D.L. Bürkel

Fisheries

Regular bycatch in commercial trawl fisheries, landed from localities where abundant inshore; popular game fish for recreational anglers.

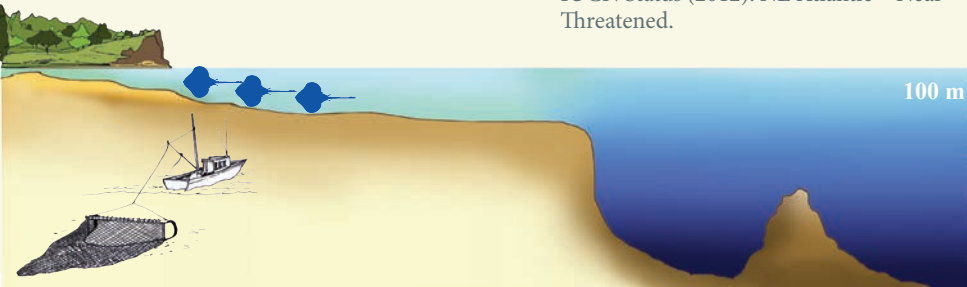
Species of the Order *Rajiformes* are subject to TAC regulations in EU waters and catches of this species should be reported separately (2012).

Bio-Ecology

Oviparous, egg capsules sub-rectangular. Sexual maturity attained at about 58 cm. Benthic on sandy ground from inshore in tidal areas to about 100 m depth, favouring sandy bays and sandbanks.



IUCN Status (2012): NE Atlantic = Near Threatened.



Small-eyed ray

Brown ray – Raie miroir – Raya de espejos

Raja miraletus Linnaeus, 1758

JAI

Local names: Spiegelrochen (Germany); Raia de quatro olhos (Portugal); Spiegelrog (The Netherlands)

Distinctive characters

Colour above ochre to reddish-brown, with many dark spots scattered on disc and posterior pelvic lobes. Above almost smooth in adults. Underside smooth, snout prickly in mature males.

Size

Max. Length (NE Atlantic):
about 60 cm TL.



Similar species

No other congener in Eastern North Atlantic shows on upper wings a pair of large circular eye-spots consisting of light blue centre encircled by an inner dark blue and outer orange ring.

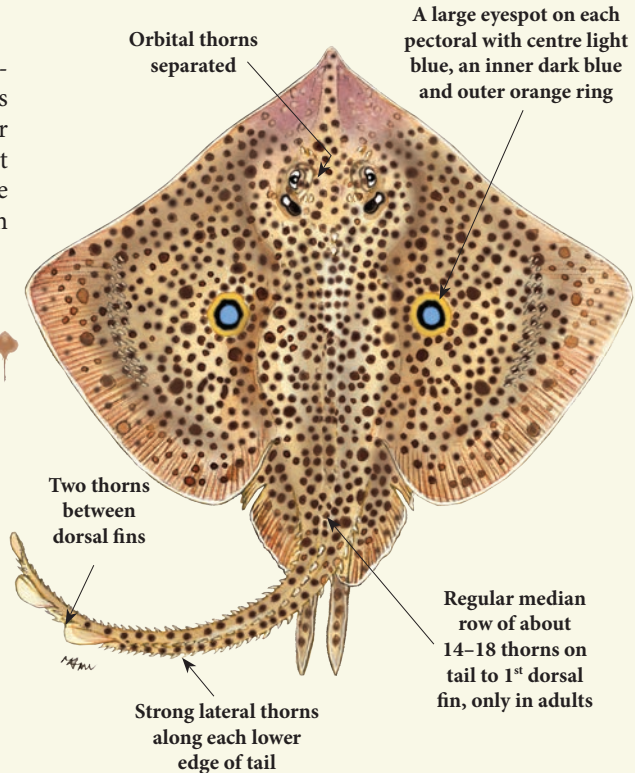




Photo by F. Serena

Bio-Ecology

Oviparous, egg capsules sub-rectangular; females maturing at 39 to 44 cm, and males at 36 to 40 cm. Benthic on soft bottom from shallow shelf to about 300 m depth, mainly at 50 to 150 m.

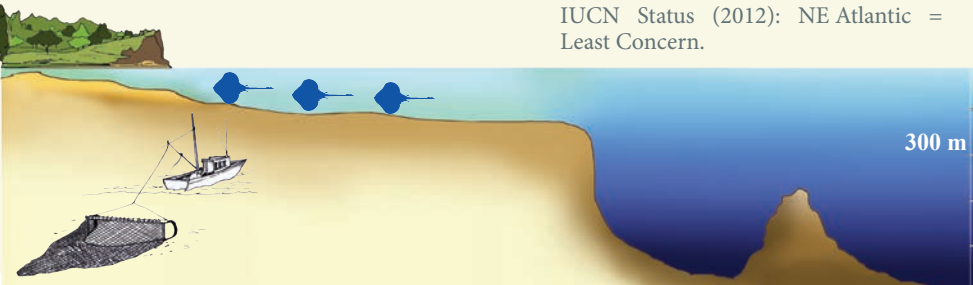


IUCN Status (2012): NE Atlantic = Least Concern.

Fisheries

A rather common species, regularly landed along West Africa, and in the Mediterranean.

Species of the Order *Rajiformes* are subject to TACs regulation in EU waters (2012).



Brown ray

Spotted ray – Raie douce – Raya pintada

Raja montagui Fowler, 1910

RJM

Local names: Homelyn ray (UK); Fleckrochen (Germany); Raia manchada (Portugal); Flekkskate (Norway)

Distinctive characters

Disc broadly subrhombic, with acute outer corners, snout short and bluntly angled. Upper side almost smooth in young, more spinulose in larger specimens, but with centre and posterior part of wings smooth. Less than 60 tooth rows in upper jaw.

Size

Max. Length (NE Atlantic):
about 80 cm TL.



Similar species

Raja brachyura has small blackish spots all over disc extending to the extreme outer margins; upper disc in larger specimens nearly totally prickly; 60 to 90 tooth rows in upper jaw.

Raja clavata is totally prickly above, and largely so also on underside.

Raja maderensis (Madeira and Azores) is above at all sizes wholly prickly, also underside almost entirely prickly; it shows transversely banded upper colour pattern, along with constant dark markings below.

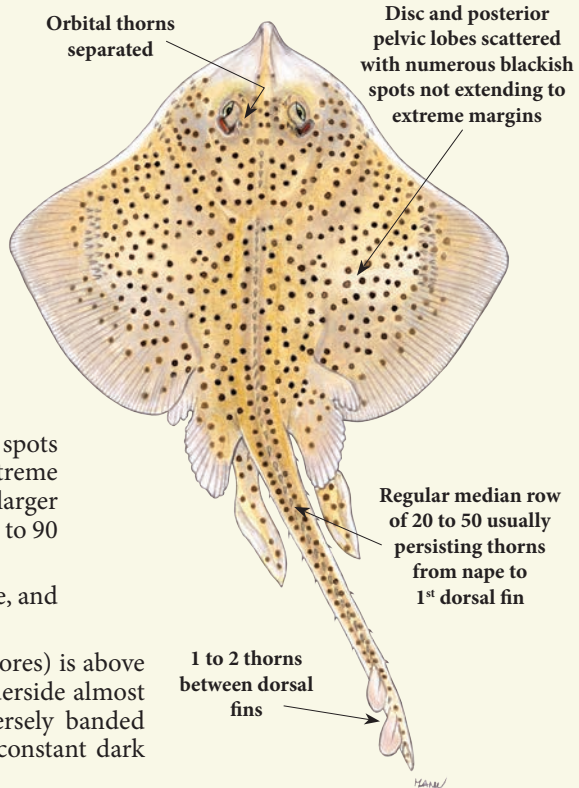




Photo by Jim Ellis (CEFAS)

Bio-Ecology

Oviparous, egg capsules sub-rectangular; males maturing at about 40 cm. Benthic on soft substrate on shelf at 30 to 150 m depth, rarely as deep as 530 m.

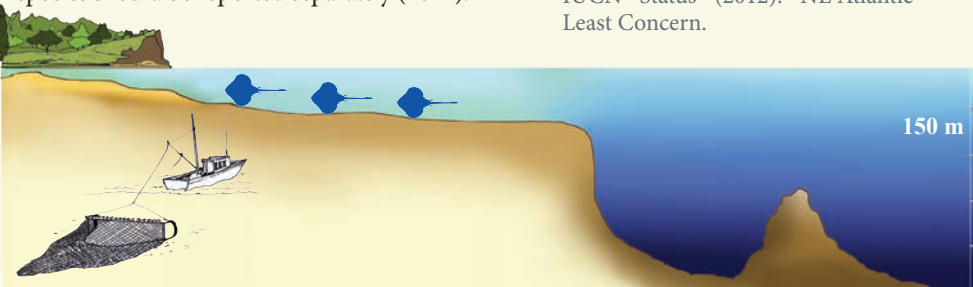


IUCN Status (2012): NE Atlantic = Least Concern.

Fisheries

Regular bycatch of commercial trawl fisheries, large specimens marketed. Despite fishing pressure throughout its range, it appears to be less affected due to its relatively small size and high fecundity.

Species of the Order *Rajiformes* are subject to TAC regulations in EU waters and catches of this species should be reported separately (2012).



Spotted ray

Undulate ray – Raie brunette – Raya mosaica

Raja undulata Lacepède, 1802

RJU

Local names: Painted ray (UK); Golfrog (the Netherlands); Bølgeskate (Norway) Bänderrochen, Wellenlinien-Rochen (Germany); Raia curva (Portugal); Broget Rokke (Denmark)

Distinctive characters

Colour above ochre to greyish brown, typically patterned by several more or less undulated dark bands edged with white spots like pearl-strings; underside white, with often greyish margins to disc and posterior pelvic lobes, end of tail sometimes greyish-brown.

Size

Max. Length (NE Atlantic):
114 cm, possibly to 120 cm TL.



Similar species

No other congener shows on upper disc a pattern of undulating dark bands which edged with white spots like pearl-strings.

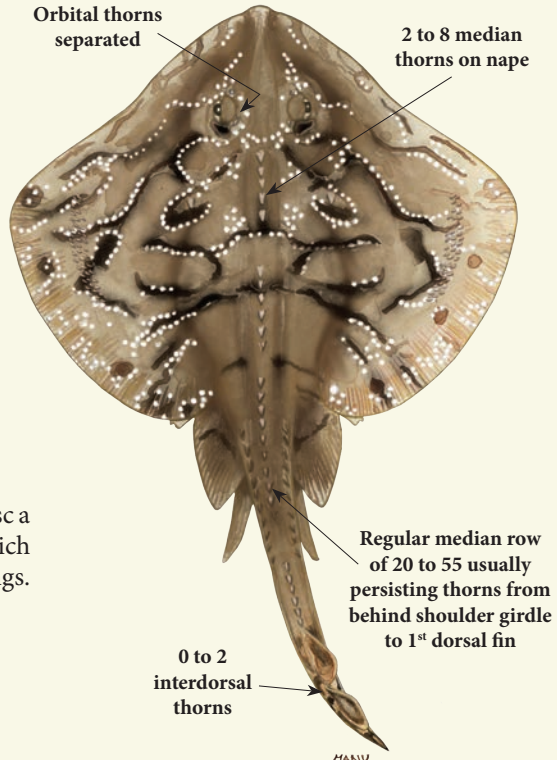




Photo by F. Serena

Bio-Ecology

Oviparous, egg cases subrectangular; females mature at about 75 cm and males at 73 cm. Benthic on soft substrate on shelf to 200 m, mostly at 30 to 150 m depth.



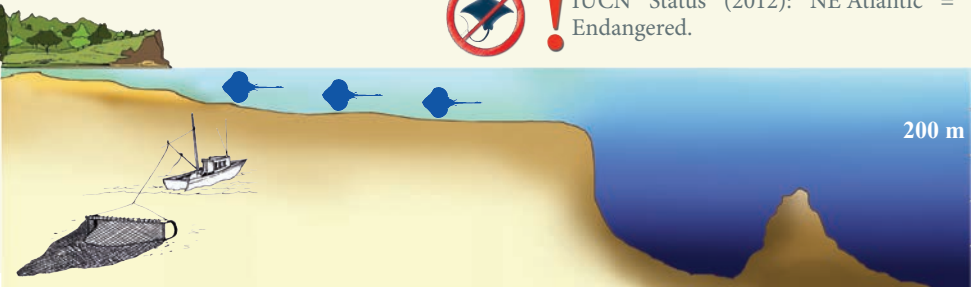
Fisheries

Formerly a rather common and important species locally for commercial fisheries, mainly in southern countries, but now overfished.

EU has prohibited to fish for, to retain on board, to tranship or to land *R. undulata* in and from ICES subareas VI, VII, VIII, IX and X (2012).



! IUCN Status (2012): NE Atlantic = Endangered.



Undulate ray

Round ray – Raie ronde – Raya redonda

Rajella fyllae (Lütken, 1888)

RJY

Local names: Sandy skate (UK); Pólskata (Iceland); Rundskate (Norway); Fyllarochen (Germany); Fyllas rokke (Denmark and Greenland); Klingruskøta (Faroe Islands); Rundrocka (Sweden)

Distinctive characters

Disc roundish, broader than long, with greatly rounded outer corners and undulated anterior margins, stronger so in mature males. Tail conspicuously longer than body. Entire upper side very rough with coarse prickles and many thornlets concentrated on head and posterior disc, only in mature males pectoral centres smooth. Larger specimens also show a large triangle of many thorns over nape and shoulder area.

Size

Max. Length (N. Atlantic):
about 55 cm TL.



Similar species

Rajella bigelowi lives in deepwater, with underside always totally dark but tail light, and with upper side lighter than lower; no other congeners are that small size of maximum about 55 cm length and have a tail length of about 60% TL.

Snout very short and very blunt, its tip a little pronounced

Inner half-ring of 5 to 9 thorns on orbital rims in larger specimens



A median row of thorns from behind shoulder girdle to 1st dorsal fin, flanked by an increasing number of parallel rows of larger thorns

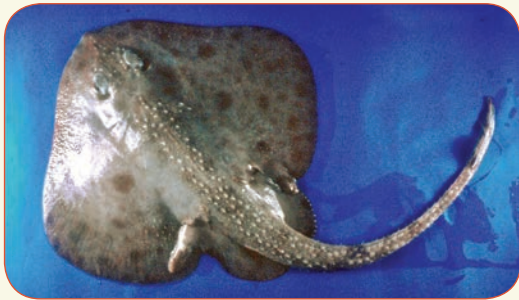


Photo by M. Stehmann

Bio-Ecology

Oviparous, egg cases very small, rectangular; females and males mature at about 45 to 50 cm. A rather common benthic species on soft substrate at depth from about 170 m to 800 m, exceptionally to about 2,000 m.

Fisheries

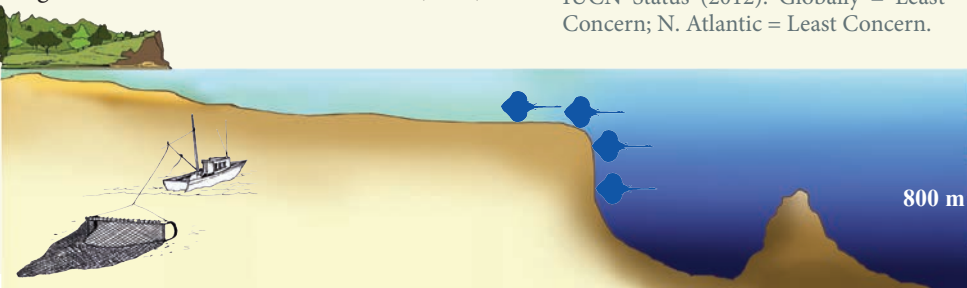
A regular bycatch of commercial bottom trawl fisheries in Arctic and subarctic waters, but usually discarded because of its small size and thorniness.

Species of the Order *Rajiformes* are subject to TACs regulation in EU waters (2012).

Skates (family *Rajidae*) are subject to TAC regulations in NAFO Divisions 3LNO (2012).



IUCN Status (2012): Globally = Least Concern; N. Atlantic = Least Concern.



Round ray

Sailray – Raie voile – Raya vela

Rajella lintea (Fries, 1839)

RJK

Local names: Pale ray (USA); Hvitskate (Norway); Hvidrokke (Denmark); Weissrochen (Germany); Raia nevoeira (Portugal); Hvitaskata (Iceland); Hvitaskøta (Faroe Islands)

Distinctive characters

Above uniformly greyish-brown; underside largely white but with greyish-brown markings: a broad margin from outer disc corners along posterior margins and at posterior pelvic lobe margins, a blotch on each anterior pelvic lobe tip, paired oval blotches flanking cloaca, and underside of tail mostly with a dark median stripe.

Size

Max. Length (N. Atlantic):
at least 125 cm TL.



Similar species

No congener without conspicuously long tail, roundish disc, broad thorn band along trunk and tail, and of maximum size over 55 cm shows on white underside constant brownish marks, such as posterior disc and pelvic-fin margins, dark tips of anterior pelvic-fin lobes, large blotches flanking anus, and median stripes of specks along tail, or tail medially totally brown.

Disc subrhombic, outer corners angular, snout elongated and pointed

Persistent median row of 38-51 thorns from nape to 1st dorsal fin

50-60 strong hooked thornlets along lower tail edges at all sizes

Upper disc wholly and loosely set with coarse dermal denticles, underside smooth

Sides of tail very densely covered with fine prickles except narrowly smooth back of tail along the course of median thorn row

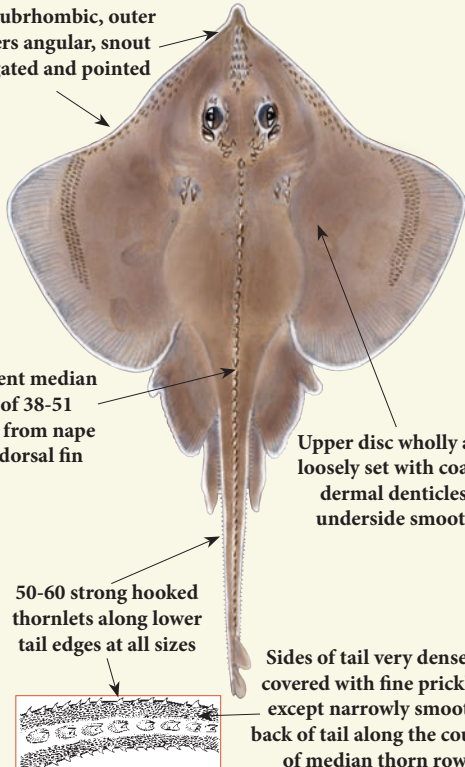




Photo by M. Stehmann

Fisheries

This species is taken as bycatch of the more intensified deepwater trawling fleets. Large specimens may be landed for human consumption.

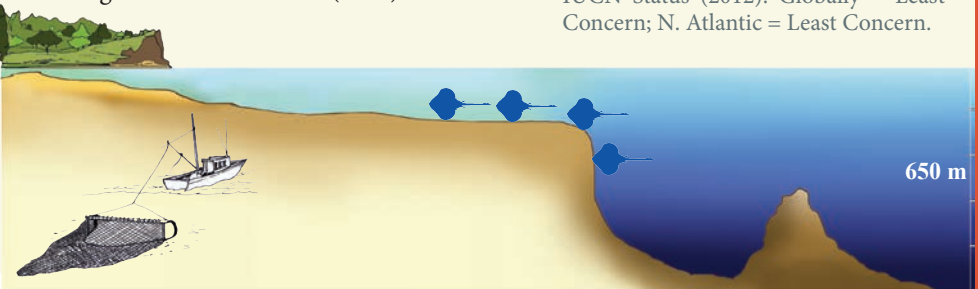
Species of the Order *Rajiformes* are subject to TACs regulation in EU waters (2012).

Bio-Ecology

Oviparous, egg capsules rectangular; size at maturity unknown. Benthic on various kinds of bottom substrate at 150 to 650 m depth, occasionally deeper, but mostly around 250 m.



IUCN Status (2012): Globally = Least Concern; N. Atlantic = Least Concern.



White skate – Raie blanche – Raya bramante

Rostroraja alba (Lacepède, 1803)

RJA

Local names: Bottlenose skate, Bordered skate, Spearnose skate, Burton skate (UK); Saumrochen (Germany); Burtons skate (Norway); Raia tairoga (Portugal); Spidsrokke (Denmark)

Distinctive characters

Broadly rhombic disc much wider than long, outer corners acute, anterior margins deeply concave. Reddish-brown above in juveniles, greyish-blue in larger specimens, with usually pattern of many pale spots; underside white but with distinct dark margins to disc and posterior pelvic lobes in juveniles, fading to various degree with growth, and underside of tail dusky. Sensory and mucus pores above and below not marked black.

Size

Max. Length (NE Atlantic):
240 cm TL.



Similar species

Only species of *Dipturus* grow to similar large size, have very long and pointed snouts and deeply concave anterior disc margins, but they all have sensory and mucus pores above and below marked as black dots and streaks.

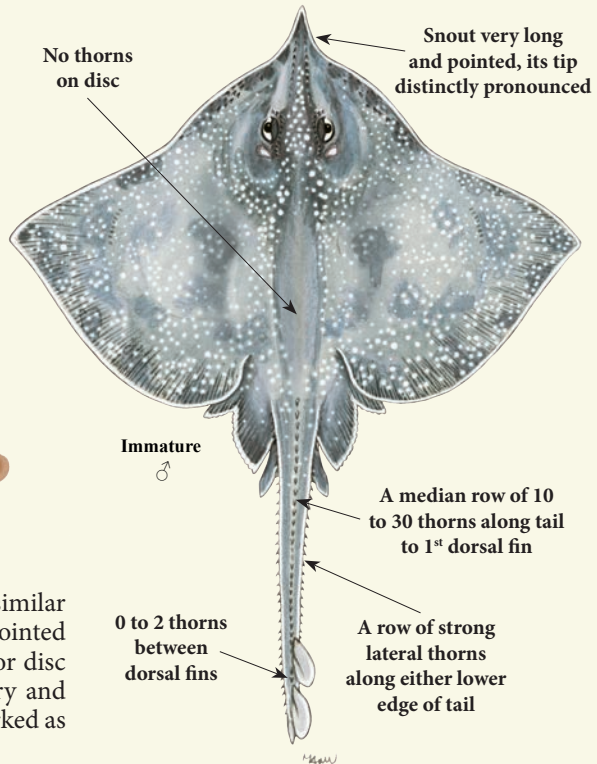




Photo by S. Iglésias

Bio-Ecology

Oviparous, egg capsules large and subquadrate. Females mature at about 195 cm and males at 152 to 170 cm. Benthic to bathypelagic on the continental shelf and upper slope at 40 to 400 m, occasionally to 500 m depth on sand and loose rocky substrate.



Fisheries

Due to its large size, it has always been targeted, or landed as bycatch and been marketed, until local stocks were drastically depleted.

EU has prohibited to fish for, to retain on board, to tranship or to land *R. alba* in and from ICES subareas VI, VII, VIII, and IX (2012).



! IUCN Status (2012): NE Atlantic = Critically Endangered.



White skate

Roughtail stingray – Pastenague des îles – Rayalátigo isleña

Dasyatis centroura (Mitchill, 1815)

RDC

Local names: Dornenschwanz-Stechrochen (Germany); Uge de Cardas (Portugal)

Distinctive characters

Disc diamond-shaped, snout short and bluntly angled, outer corners acutely angled; pelvic fins unilobed subquadrate. Olive-brown above, underside almost white, but tail blackish posterior to spine.

Size

Max. Disc Width (N. Atlantic): about 260 cm, but usually 100 to 130 cm



Similar species

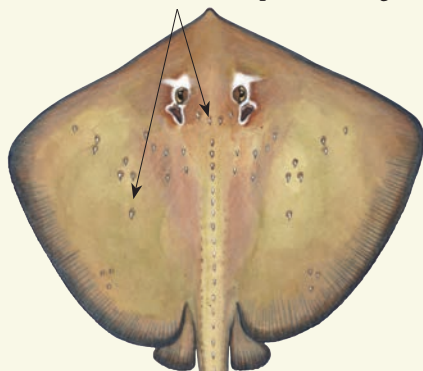
Dasyatis pastinaca

Only scattered dermal denticles on upper disc and small median thorns on tail base, and a short but deep membranous fold on back and underside of tail from level of tail spine onward.

Pteroplatytrygon violacea

Plain dark purplish-brown above and below; a broadly, evenly convex anterior disc contour and a long, distinct fold along half or more of tail underside.

Larger specimens above very rough by large tubercle thorns or bucklers irregularly from nape along midline and onto central and posterior wings



Underside of tail thorny and with long membranous fold posterior to level of spine

Tail 2.4 to 2.6 times the body length, with one or more long serrated spines on base





Photo by F. Serena

Fisheries

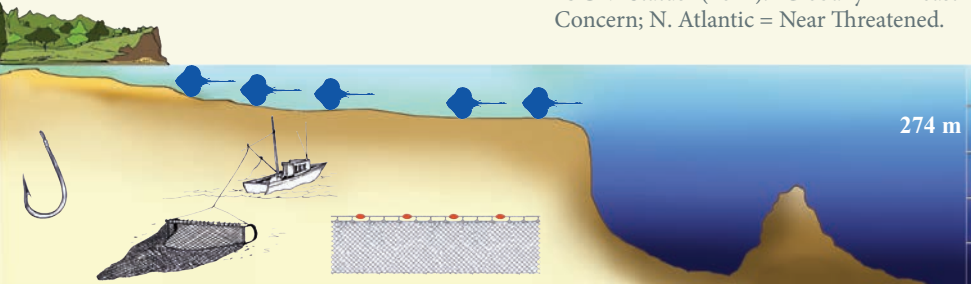
Usually bycatch in trawl, longline, trammelnet and line fisheries, but usually discarded; in Mediterranean and African waters, where they are locally common, these rays are often retained and their wings used for human consumption smoked or dried salted.

Bio-Ecology

Yolk-sac viviparous; females mature at 140 to 160 cm disc width; males mature at 130 to 150 cm disc width in the Western North Atlantic. Demersal on sandy and muddy bottoms from shallow inshore waters, where most common, to the upper continental slope.



IUCN Status (2012): Globally = Least Concern; N. Atlantic = Near Threatened.



Rough-tail stingray

Common stingray – Pastenague commune – Raya látigo común

Dasyatis pastinaca (Linnaeus, 1758)

JDP

Local names: Pilskate (Norway); Gewöhnlicher Stechrochen (Germany); Uge (Portugal)

Distinctive characters

Disc diamond-shaped, with outer corners a rounded angle (90°); snout very short and very bluntly angled. Originating at level of tail spine, a relatively short but deep membranous fold on back and underside of tail. Colour plain greyish, olive or brown above, underside white; whip-lash tail section dark.

Size

Max. Disc Width (NE Atlantic):
about 60 cm, but commonly
less than 50 cm



Similar species

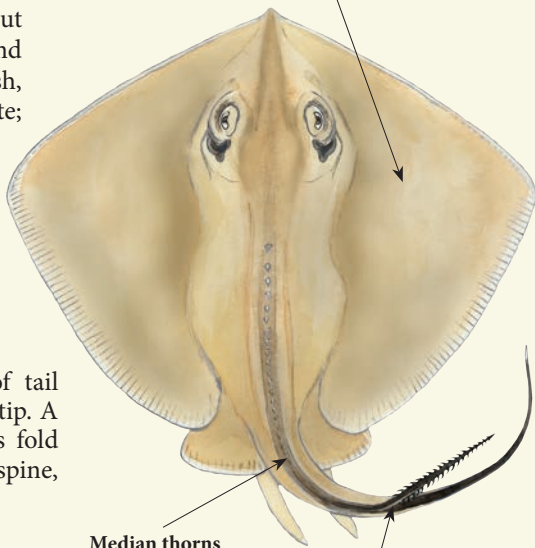
Dasyatis centroura

Extremely rough above; underside of tail also thorny posterior to level of spine tip. A relatively long and deep membranous fold along underside of tail from below tail spine, but no fold or ridge above.

Pteroplatytrygon violacea

Plain dark purplish-brown above and below; a broadly, evenly convex anterior disc contour and a long, distinct fold along half or more of tail underside, but no fold on back of tail.

Large specimens with scattered dermal denticles on upper disc



Median thorns
on tail base

Tail 1.3 to 1.5 times the body length, with a massive, long serrated spine (sometimes two or more) on base



Photo by M. Dalu'

Fisheries

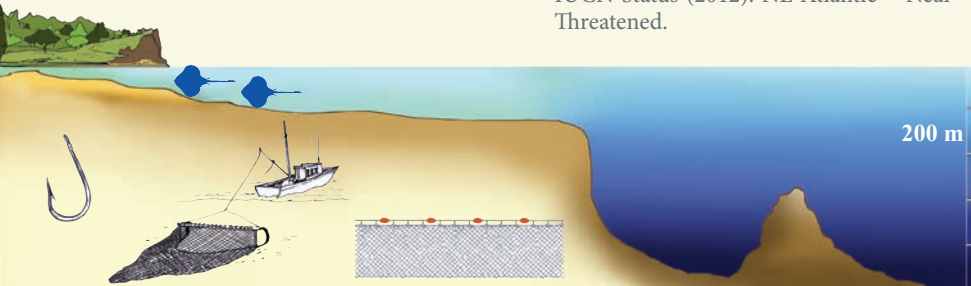
Usually bycatch in trawl, longline, trammelnet and rod and line fisheries; when retained wings are used for human consumption smoked or dried salted.

Bio-Ecology

Yolk-sac viviparous; females mature at about 28 to 38 cm and males at 26 to 32 cm in the Mediterranean. Demersal on mostly sandy and muddy bottoms, including river estuaries and brackish water, from inshore to about 200 m, but mostly 60 m or less in depth.



IUCN Status (2012): NE Atlantic = Near Threatened.



Common stingray

Pelagic stingray – Pastenague violette – Raya látigo violeta

Pteroplatytrygon violacea (Bonaparte, 1832)

PLS

Local names: Blue stingray, Violet stingray (UK); Violetter Stechrochen, Pelagischer Stechrochen (Germany); Pilrokke (Denmark); Uge-violeta (Portugal); Violet Spjutrocka (Sweden)

Distinctive characters

Disc almost triangular or trapezoid, with anterior margins forming an even arc; snout very short and bluntly rounded; outer corners acute.

Colour above plain dark purple, underside similarly dark.

Size

Max. Disc Width (N. Atlantic):
about 80 cm



Similar species

No other stingray in the area is plain dark bluish-violet coloured above and below, has such broad and evenly rounded anterior disc contour and a distinct fold along half to two-thirds of only underside of tail.

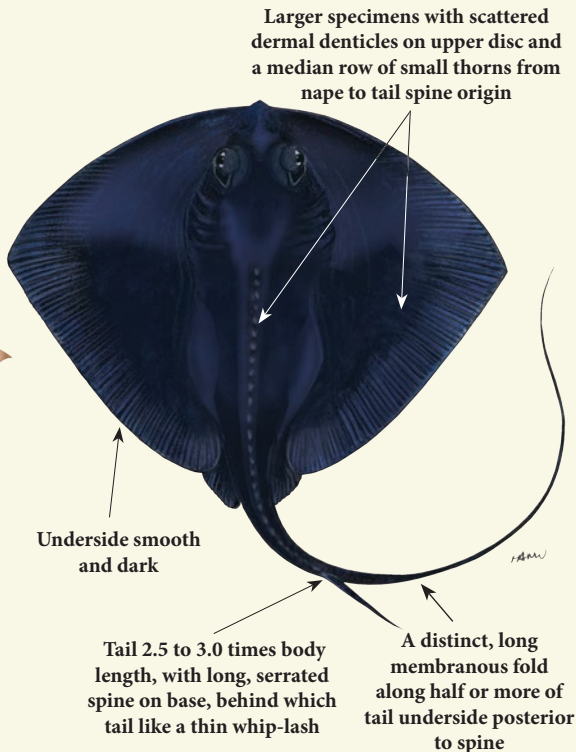
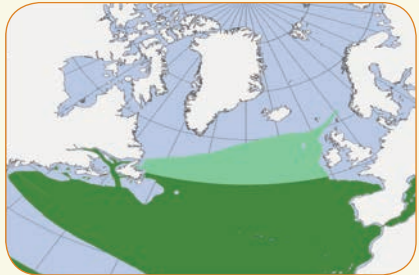




Photo by P. Psomadakis

Bio-Ecology

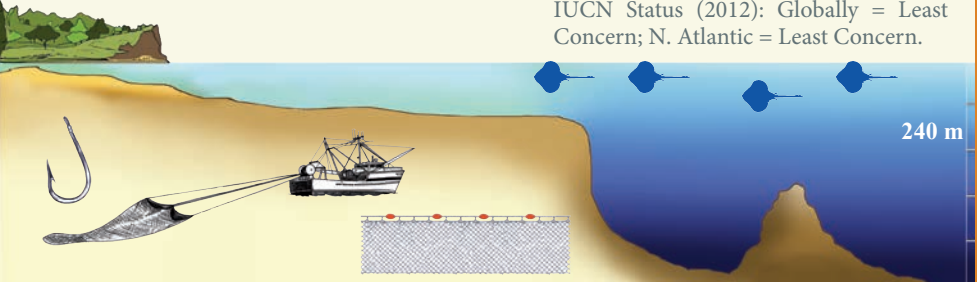
Yolk-sac viviparous; size at maturity varies, but in general females mature between 40 and 50 cm disc width and males at 35 to 40 cm disc width. Unique among stingrays, this species lives a pelagic and oceanic lifestyle, occurring from over the edge of continental and insular shelves into the open ocean usually in the upper 100 m depth.



IUCN Status (2012): Globally = Least Concern; N. Atlantic = Least Concern.

Fisheries

Frequent bycatch in pelagic longline, drift net and purse seine fisheries targeting oceanic bony fishes like tuna and swordfish. Usually discarded.



Pelagic stingray

Cownose ray – Mourine américaine – Mancha

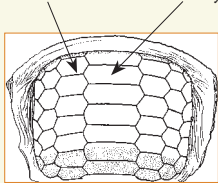
Rhinoptera bonasus (Mitchill, 1815)

MRB

Local names: Cowfish, Skeete (USA)

Usually seven rows of flat, thick teeth in each jaw forming very massive grinding plates

Teeth in middle row of upper jaw about twice broader than those of adjacent lateral rows



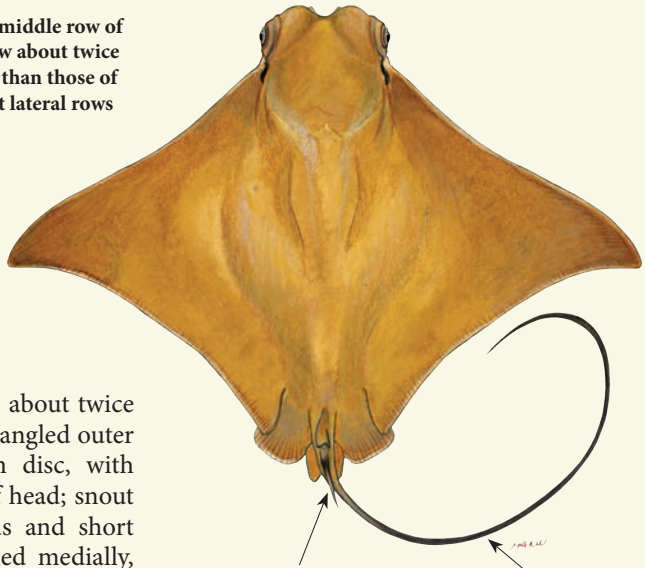
Teeth

Distinctive characters

Disc broadly lozenge-shaped, about twice as wide as long, with sharply angled outer corners; head elevated from disc, with eyes and spiracles on sides of head; snout short, with forehead bulbous and short subrostral lobe deeply notched medially, appearing bilobed. Above plain light or dark brownish, underside white, but more or less brownish at wing tips.

Size

Max. Disc Width (NW Atlantic): 107 cm, common 90 cm or less.



1 or more long, serrated spines directly behind dorsal fin

Tail nearly three times longer than disc, with a small dorsal fin on base

Similar species

No other ray in Western North Atlantic has a short, bilobed subrostral lobe.



Photo by G. Burgess

Bio-Ecology

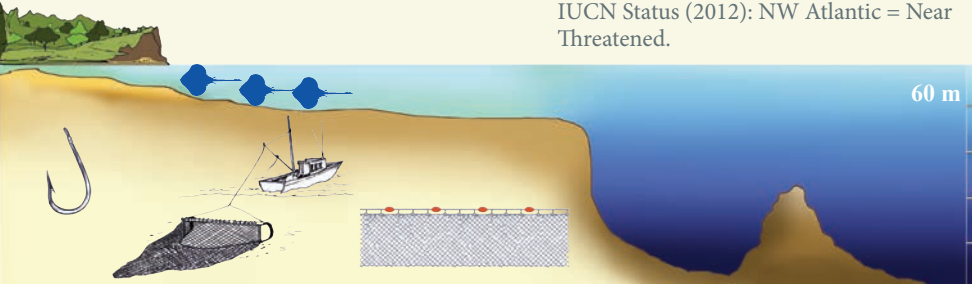
Yolk-sac viviparous, maturity is reached at a disc width of 65 to 80 cm, but differs between regions. Benthic and semi- to epipelagic, prefers shallow bays, lagoons and estuaries. Often in small or large schools of thousands of individuals during seasonal migrations when invading larger bays and inlets.

Fisheries

Regular bycatch in mixed species fisheries, locally common. Except locally, of no commercial importance for human consumption, but fishermen in the USA recently began considering target fishery for wing flesh. Targeted also for their destructive effect on bilvalve cultures.



IUCN Status (2012): NW Atlantic = Near Threatened.



Cownose ray

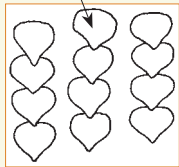
Devil fish – Mante – Manta mobula

Mobula mobular (Bonnaterre, 1788)

RMM

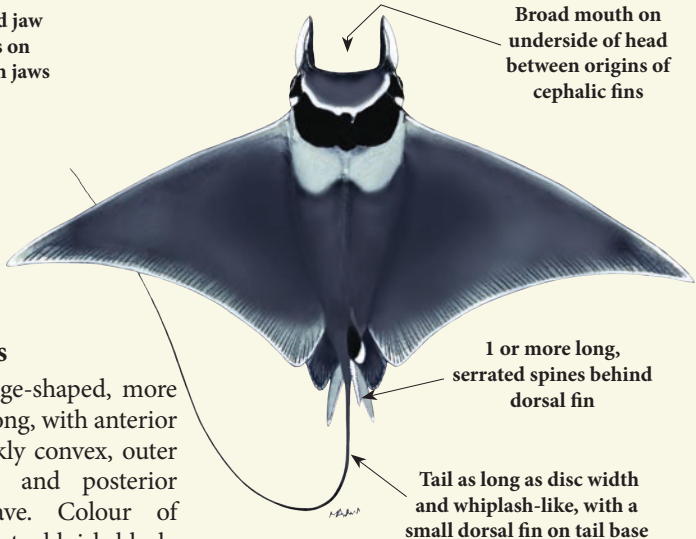
Local names: Devil ray, Giant devil ray (UK); Mante (France); Diabo-do-mar (Portugal); Jamanta (Azores)

Numerous minute, flattened jaw teeth forming tooth bands on median three fourths of both jaws



Teeth

Broad mouth on underside of head between origins of cephalic fins



1 or more long, serrated spines behind dorsal fin

Tail as long as disc width and whiplash-like, with a small dorsal fin on tail base

Distinctive characters

Disc very broadly lozenge-shaped, more than 2 times wide than long, with anterior margins straight to weakly convex, outer corners sharply acute, and posterior margins deeply concave. Colour of upper disc plain brown to bluish-black, sometimes with a blackish collar across head; underside white, but dark spots and blotches may occur.

Size

Max. Disc Width (N. Atlantic): to 520 cm, but usually found at smaller sizes.



Similar species

Manta birostris

Broad mouth terminal at front of head between the cephalic fins; the whiplash-like tail is shorter than the disc width; small dorsal fin on base but a prominent hard, rounded ridge or knob in the position of a tail spine that is absent.



Photo by F. Serena

Bio-Ecology

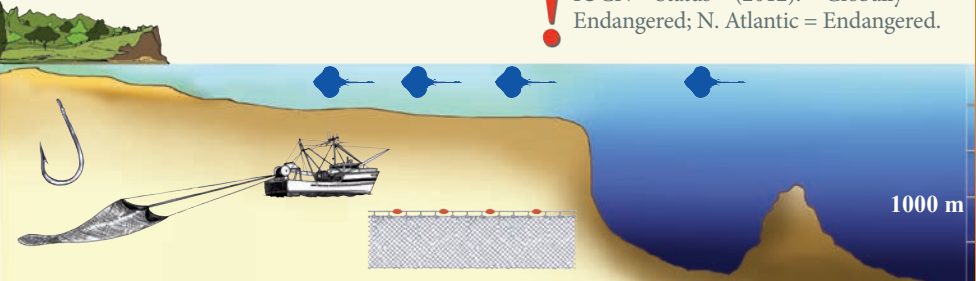
Yolk-sac viviparous; epi- to benthopelagic usually found over or near continental and insular shelves with highly productive coastlines due to upwelling, but also found in the open sea far offshore and near the surface.

Fisheries

More or less regularly accidental bycatch in pelagic fisheries with purse seines, trawls, driftnets and longlines and mostly discarded; often landed along the Mediterranean coast of Africa and along West Africa where the wings are used for human consumption fresh, dried-salted and smoked.



! IUCN Status (2012): Globally = Endangered; N. Atlantic = Endangered.



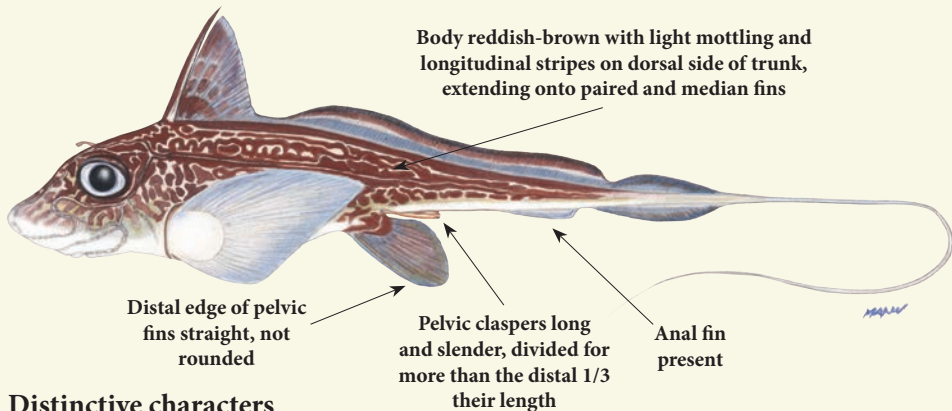
Devil fish

Rabbit fish – Chimère commune – Quimera

Chimaera monstrosa Linnaeus, 1758

CMO

Local names: Seeratte (Germany); Havmus (Denmark, Norway); Geirnytt (Iceland); Ratazana (Portugal)



Distinctive characters

Body elongate, slender, tapering from head to whiplike tail filament; head large, snout somewhat conical, gently pointed. Pectoral fins narrow and triangular in shape, reach to, and just beyond, origin of pelvic fins.

Size

Max. Length (N. Atlantic):
with intact filament may be up to 100 cm, with a body length of less than 50 cm.



Similar species

Chimaera monstrosa can be distinguished from other short snouted chimaeras by the presence of an anal fin. Members of the genus *Hydrolagus* lack an anal fin.



Fisheries

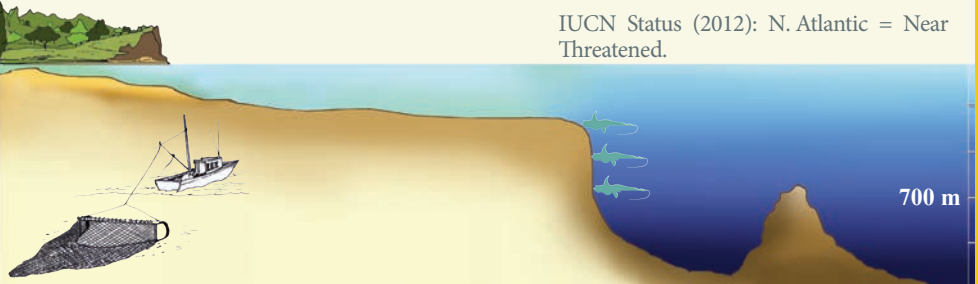
This is perhaps the most commonly caught chimaera in the Eastern North Atlantic in bottom trawl fisheries. It is largely taken as bycatch and is either discarded or retained for market.

Bio-Ecology

Oviparous. Maturity attained at about 40 cm body length (about 70 cm total length) for both sexes. A common benthopelagic species along the upper continental slope usually from 200 to 700 m, occasionally to 1000 m or more, maximum depth recorded for this species is 1663 m. It usually occurs on mud or soft bottom substrate.



IUCN Status (2012): N. Atlantic = Near Threatened.



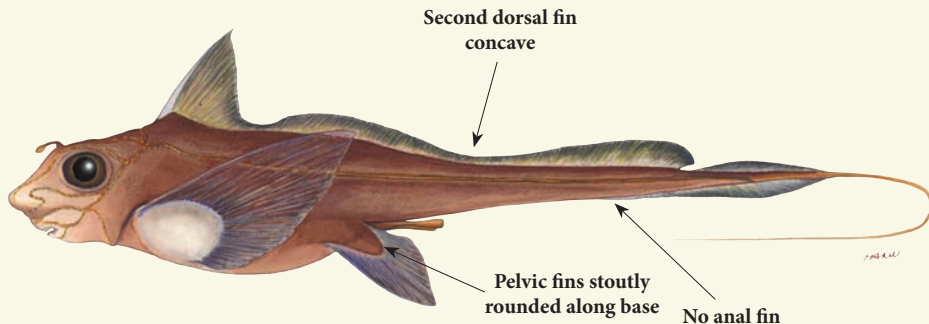
Rabbit fish

Large-eyed rabbitfish – Chimère à gros yeux – Quimera ojón

Hydrolagus mirabilis (Collett, 1904)

CYH

Local names: Kurznasenchimäre (Germany); Storøjet havmus (Denmark); Digurnefur (Iceland)



Distinctive characters

Body very short, stout, rapidly tapering behind pelvic fins to very long, slender, narrow whiplike filamentous tail. Eyes oval-shaped, relatively large, about 35% of head length. Body colour uniform pale to dark brown with darker grey-brown or blackish fin edges; second dorsal fin with light coloured band at base with a dark distal edge.

Size

Max. Length (N. Atlantic):
to 80 cm (about 35 cm body length).



Similar species

Hydrolagus mirabilis differs from all other *Hydrolagus* chimaeras by its relatively small, slender body, and large eyes that are more than one-third of the head length. All other regional chimaeras (*Hydrolagus* species) are large bodied fish, but with eyes that are smaller than one-third the head length.



Photo by M. Stehmann

Bio-Ecology

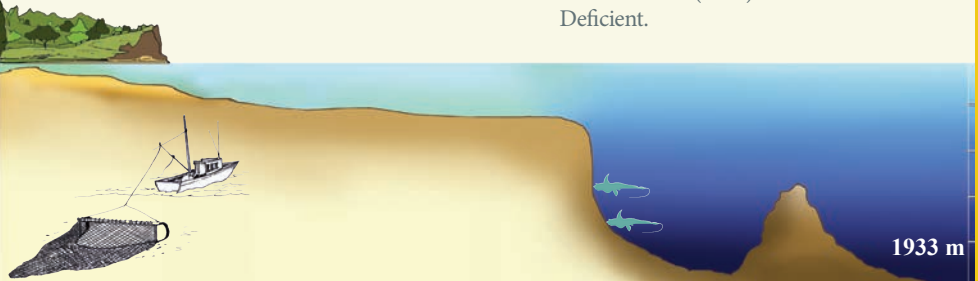
Oviparous, but nothing else known of its reproductive biology. A poorly known chimaera with a depth range of 450 to 1933 m, but generally occurring below 800 m. Possibly occurs over muddy or rocky reef habitat.

Fisheries

Occasionally taken as bycatch, but not very common and usually only in very deepwater trawl fisheries.



IUCN Status (2012): N. Atlantic = Data Deficient.



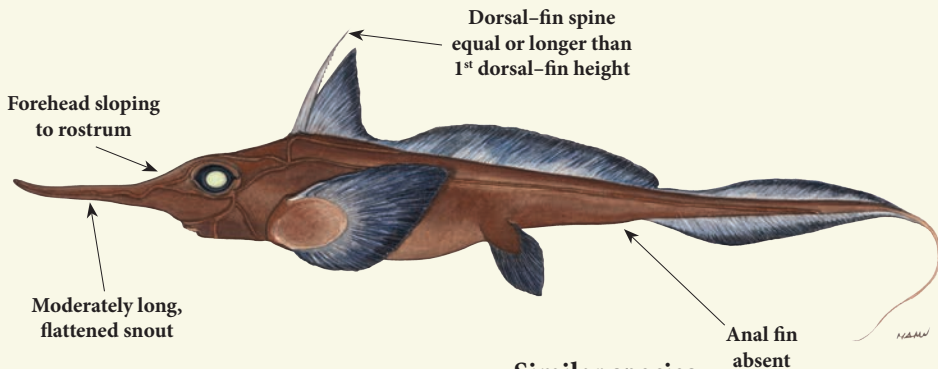
Large-eyed rabbitfish

Narrownose chimaera – Chimère de Raleigh – Quimera de Raleigh

Harriotta raleighana Goode and Bean, 1895

HCR

Local names: Benthose rabbitfish (UK); Peje Rata (Spanish); Langnefur (Iceland); Nevhavnús (Faroe Islands) Smalnæset havmus (Denmark, Greenland)



Distinctive characters

Eyes moderately large, ovoid. Caudal fin with short filament and no tubercles on upper edge. Body colour uniform dark brown; fin edges much darker, pelvic fins blackish.

Size

Max. Length (N. Atlantic): about 120 cm (70 cm precaudal length).



Similar species

Harriotta haeckeli

A relatively small eye and a first dorsal-fin spine that is shorter than the height of the first dorsal fin.

Rhinochimaera atlantica

Presence of tubercles on the dorsal margin of the caudal-fin lobe. Forehead straight, not sloping to rostrum.





Photo by M. Stehmann

Bio-Ecology

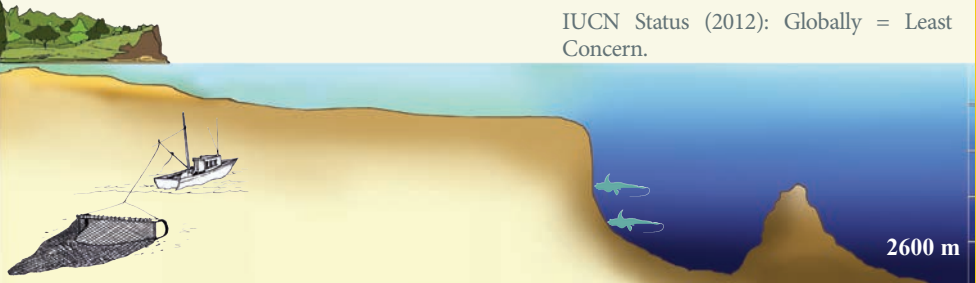
Oviparous, but little else known of its reproductive biology. Males mature at about 25 to 30 cm body length and females at about 30 cm body length. Size at hatching about 10 to 13 cm precaudal length. Depth range of 380 to 2600 m but large individuals seem to occur deeper than smaller individuals.

Fisheries

There is no targeted fishery for this species, but it is likely taken as bycatch on occasion.



IUCN Status (2012): Globally = Least Concern.



Narrownose chimaera

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A fully illustrated Catalogue of the Sharks, Batoid Fishes, and Chimaeras of the North Atlantic is included in a CD attached to this pocket guide. The volume includes detailed information of the 11 orders, 32 families, 66 genera, and 148 species of cartilaginous fishes occurring in the North Atlantic.

This Pocket Guide presents a fully illustrated identification guide to a selection of batoid and chimaera species of the North Atlantic, encompassing FAO Fishing Areas 21 and 27. It includes 33 species of batoids and 3 chimaeras selected as being most relevant to commercial fisheries, vulnerable to exploitation due to their life history characteristics, or are taken in large numbers as discarded bycatch. Information under each species account includes FAO common names, local names, scientific name, FAO 3-alpha code, a colour illustration of the species dorsal or lateral view and often illustrations of anatomical details, main field marks and diagnostic features, size and main distinctive characters of similar species occurring in the area. Moreover, it includes a photograph of the species, information on fisheries, fishing methods, EU, non-EU, and RFMOs regulations in force in 2012, geographic distribution, conservation status, whether it is a prohibited species, zones of occurrence and maximum depth of commonly caught specimens.

The pocket guide is aimed at providing a quick reference and identification tool for the batoids and chimaeras of the North Atlantic. The pocket format and the plastic support make it an easy-to-carry tool that can be used in wet environments and underwater.

ISBN 978-92-5-107365-0



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