



Food and Agriculture
Organization of the
United Nations

IDENTIFICATION OF TUNA AND TUNA-LIKE SPECIES IN INDIAN OCEAN FISHERIES



Indian Ocean Tuna Commission
Commission des Thons de l'Océan Indien

These identification cards are produced by the Indian Ocean Tuna Commission (IOTC) to help improve catch data and statistics on tuna and tuna-like species, as well as on other species caught by fisheries in the Indian Ocean. The most likely users of the cards are fisheries observers, samplers, fishing masters and crew on board fishing vessels targeting tuna and tuna-like species in the Indian Ocean. Fisheries training institutions and fishing communities are other potential users.

Layout: Julien Million. Scientific advice: Julien Million and David Wilson

We gratefully acknowledge D. Itano, Dr C. Anderson and Dr E. Romanov (CAPRUN-ARDA) for the development of this publication.

Illustrations © R. Swainstonanima.net.au.

Photographs courtesy of J. Million (cover), D. Itano (p. 7&8) and M. Potier (p. 23)

© FAO, 2019

Common English name



How to use these cards?

Scientific name

J – Japanese name

C – simplified Chinese / traditional Chinese names

F – French name

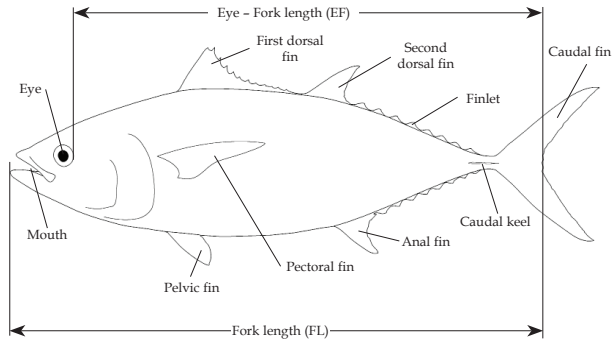
S – Spanish name

Each card contains

- the scientific name of the species as well as its common names in English, French, Spanish, Japanese, traditional and simplified Chinese,
- its FAO code
- an illustration of the species with some distinctive features
- its maximum fork length (Max. FL)
- its common fork length in the Indian Ocean (Com. FL)

Terminology

- Caudal keel: fleshy ridge; usually relates to a skin fold on the precaudal peduncle.



Measurements used for tuna:

- Fork length (FL)
- Eye - Fork length (EF)

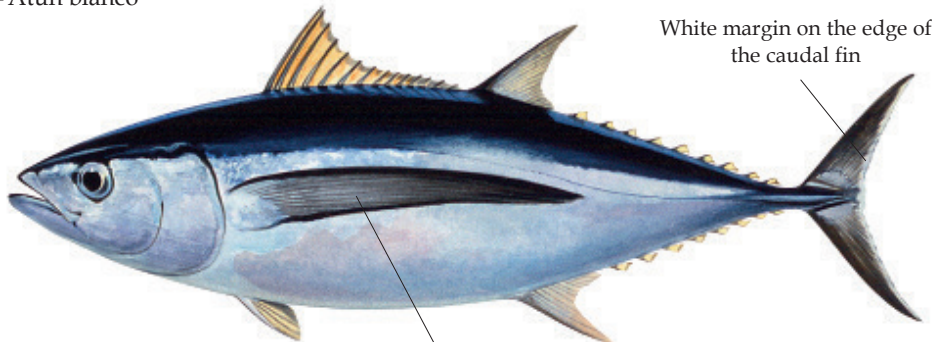
Albacore

ALB

Thunnus alalunga

- J - ビンナガ
- C - 长鳍金枪鱼 / 长鳍鲔
- F - Germon
- S - Atún blanco

Highest body depth in the middle of the body or posterior



White margin on the edge of the caudal fin

Very long pectoral fin reaching well beyond the second dorsal fin

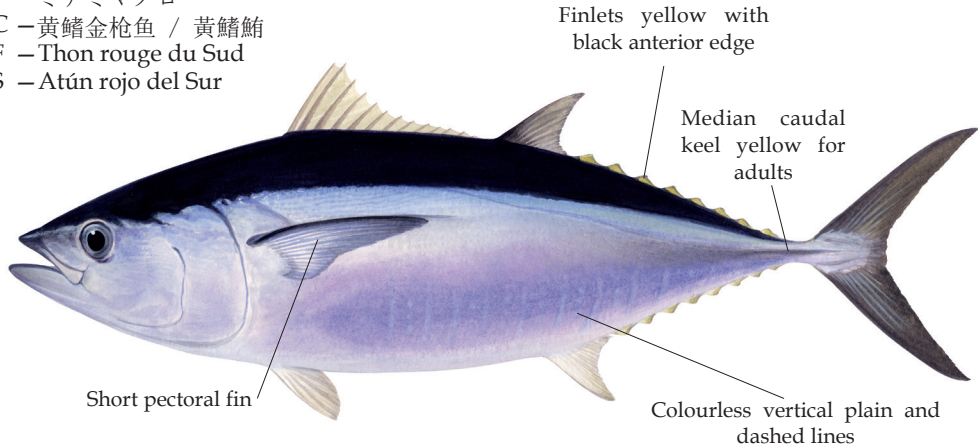
Max. FL: 140 cm
Com. FL: 40-100 cm

Southern Bluefin tuna

SBT

Thunnus maccoyii

- J - ミナミマグロ
C - 黄鳍金枪鱼 / 黄鳍鲔
F - Thon rouge du Sud
S - Atún rojo del Sur



Max. FL: 245 cm

Com. FL: 160-200 cm

Bigeye tuna

BET

Thunnus obesus

J - メバチ

C - 大眼金枪鱼 / 大目鮪

F - Patudo, thon obèse

S - Patudo

Round body

Marked blue line

No notch

Large eye

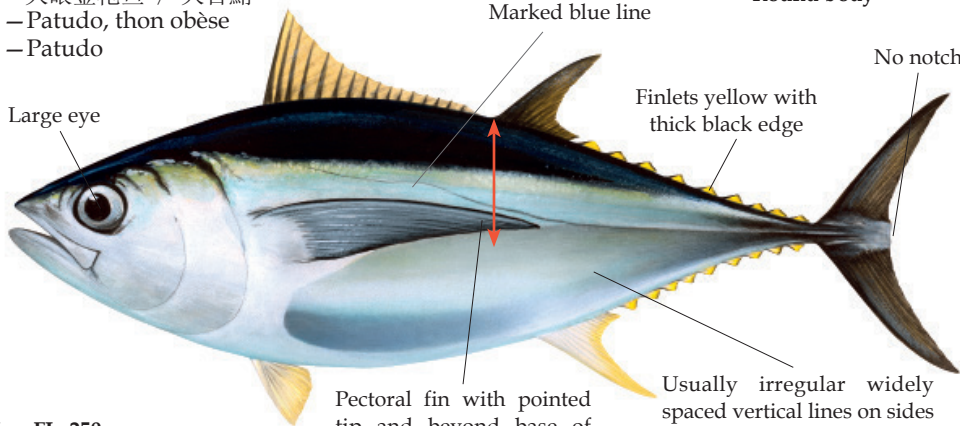
Finlets yellow with
thick black edge

Pectoral fin with pointed
tip and beyond base of
second dorsal fin

Usually irregular widely
spaced vertical lines on sides

Max. FL: 250 cm

Com. FL: 30-180 cm



Yellowfin tuna

YFT

Thunnus albacares

J - 黄鳍金枪鱼

C - 黄鳍金枪鱼 / 黄鳍鲔

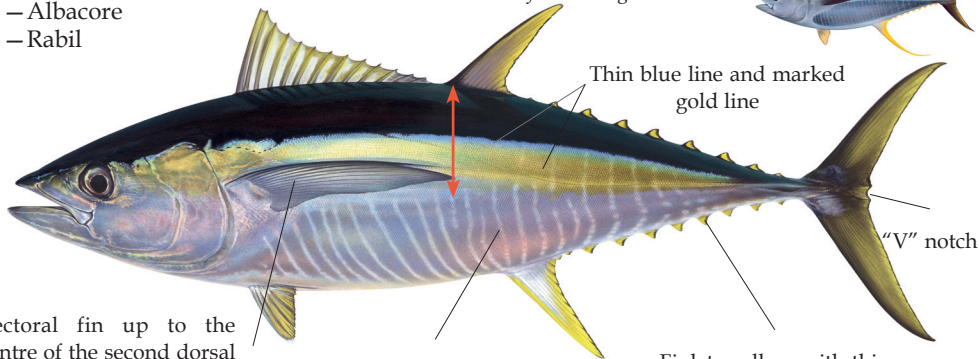
F - Albacore

S - Rabil

Long second dorsal and anal fins on large individuals



Thin blue line and marked gold line



Pectoral fin up to the centre of the second dorsal fin with rounded tip

Regular closely spaced plain and dashed lines on sides

Finlets yellow with thin black edge

"V" notch

Max. FL: 240 cm

Com. FL: 30-180 cm

Yellowfin tuna vs. Bigeye tuna

Markings



Yellowfin tuna

- Closely spaced silvery lines
- Solid lines alternate with rows of dots
- Pattern from tail to under pectoral fin and above lateral line



Bigeye tuna

- Irregular vertical, widely spaced white lines or marks
- Pattern irregular, broken, mostly below lateral line

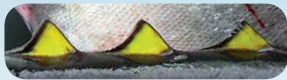
BEWARE: *markings and colours can fade quickly after death*

Finlets



Yellowfin tuna

- Yellow with very thin black margin



Bigeye tuna

- Yellow with marked black margin on posterior edge

Caudal fin



Yellowfin tuna

- Notch at fork

Bigeye tuna

- Flat fork

Yellowfin tuna vs. Bigeye tuna

Head



Yellowfin tuna

- Shorter head length
- Smaller eye diameter

Bigeye tuna

- Greater head length
- Greater eye diameter

Pectoral fins



Yellowfin tuna

- Pectoral fins shorter, thicker, "blade-like"



Bigeye tuna

- Pectoral fins longer, thinner, falcate and pointed at tip

Longtail tuna

LOT

Thunnus tonggol

J - コシナガ

C - 青干金枪鱼 / 长腰鲔

F - Thon mignon

S - Atún tongol

Dorsal, pectoral and pelvic fins grey to black

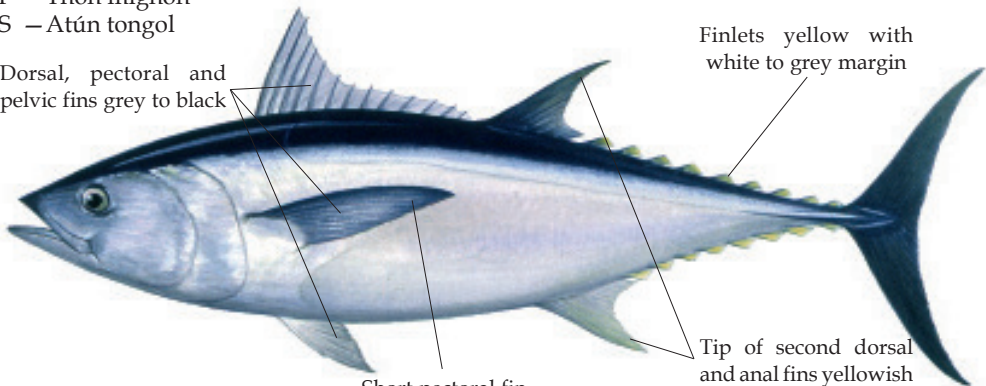
Finlets yellow with white to grey margin

Short pectoral fin

Tip of second dorsal and anal fins yellowish

Max. FL: 145 cm

Com. FL: 40-70 cm



Skipjack tuna

SKJ

Katsuwonus pelamis

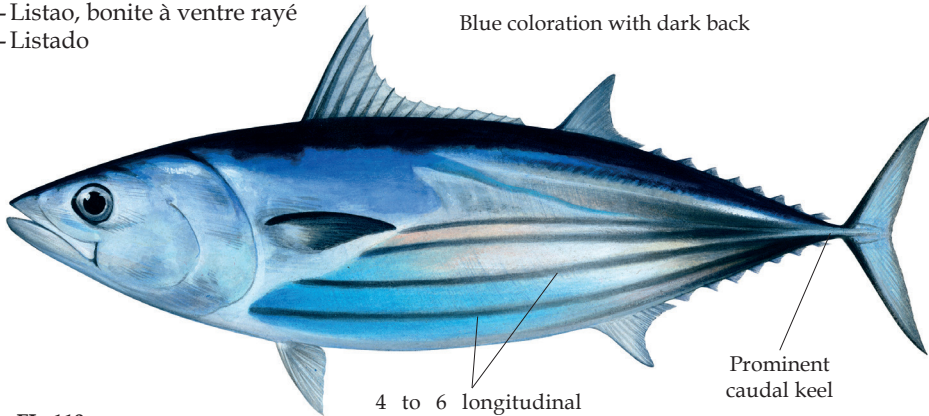
J -カツオ

C -鰹魚 / 正鰹

F -Listao, bonite à ventre rayé

S -Listado

Blue coloration with dark back



4 to 6 longitudinal
lines on the belly

Prominent
caudal keel

Max. FL: 110 cm

Com. FL: ≤ 80 cm

Kawakawa

KAW

Euthynnus affinis

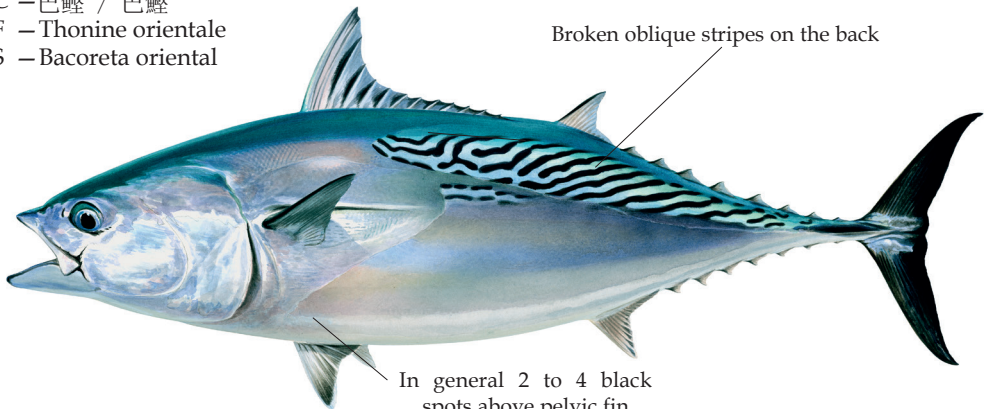
J - スマ

C - 巴鯉 / 巴鯉

F - *Thonine orientale*

S - *Bacoreta oriental*

Broken oblique stripes on the back



In general 2 to 4 black spots above pelvic fin

Max. FL: 100 cm

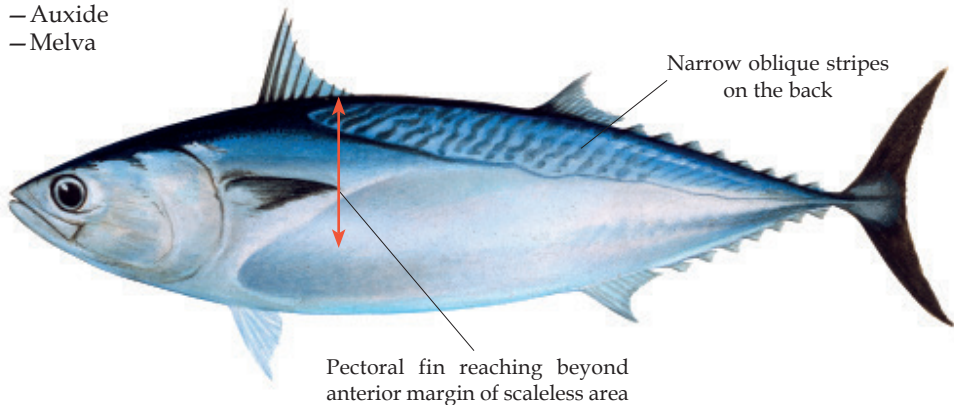
Com. FL: 80 cm

Frigate tuna



Auxis thazard

J - ヒラソウダ
C - 平鳍旗鱼 / 扁花鲹
F - Auxide
S - Melva



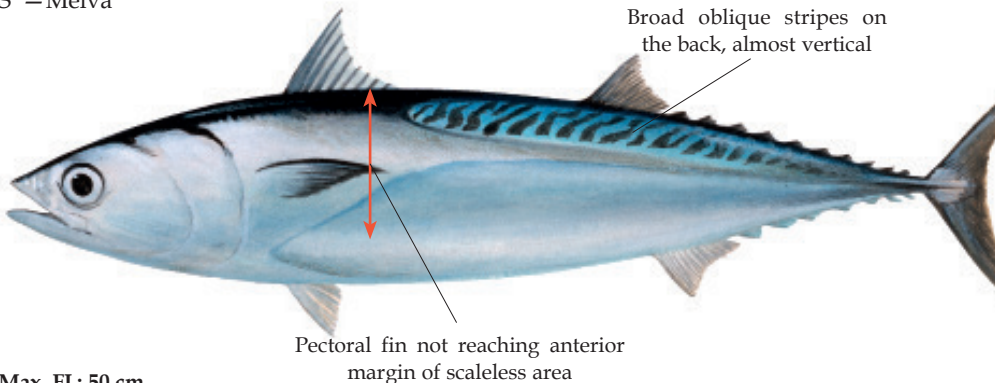
Max. FL: 65 cm
Com. FL: 25-40 cm

Bullet tuna

BLT

Auxis rochei

- J - マルソウダ
- C - 双鳍舵鲹 / 圓花鲹
- F - Bonitou
- S - Melva



Max. FL: 50 cm

Com. FL: 15-25 cm

Narrow-barred Spanish mackerel

COM

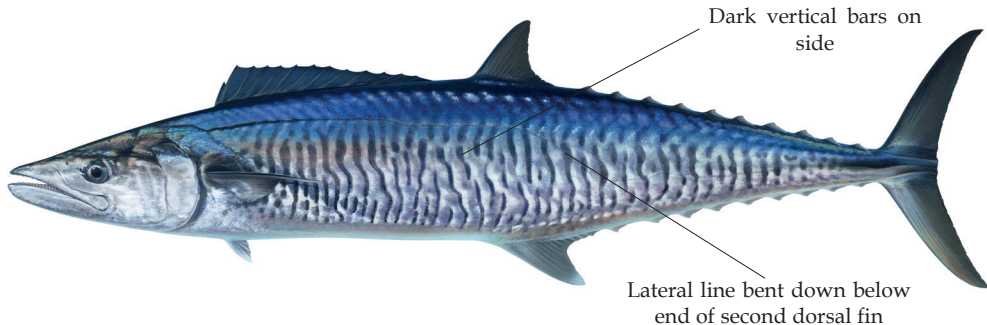
Scomberomorus commerson

J - ヨコシマサワラ

C - 鱈 / 康氏馬加鱈

F - Thazard rayé indo-pacifique

S - Carite estriado Indo-Pacífico



Max. FL: 240 cm

Com. FL: ≤ 90 cm

Indo-Pacific king mackerel



Scomberomorus guttatus

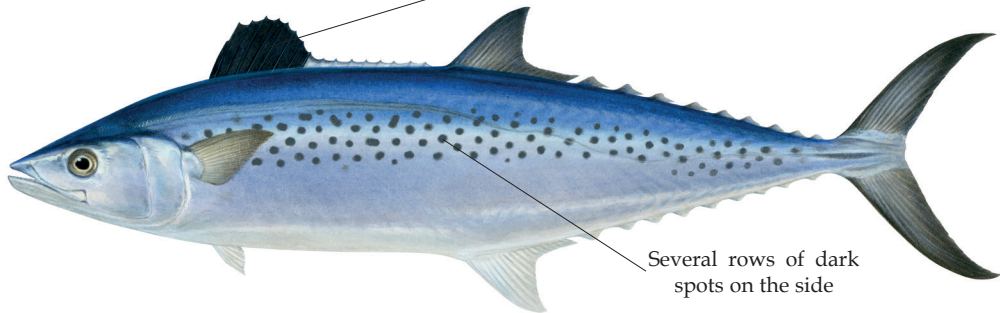
J - タイワンサワラ

C - 长颌花鲷 / 台湾馬加鰹

F - Thazard ponctué indo-pacifique

S - Carite del Indo-Pacífico

First dorsal fin black up to the eighth spine and white posterior



Several rows of dark spots on the side

Max. FL: 76 cm

Com. FL: ≤ 55 cm

OTHER FISH SPECIES

Some other fish species are commonly caught as bycatch by vessels targeting tuna and tuna-like species in the Indian Ocean, *i.e.* longliners, purse seiners, gillnetters, *etc...* These include, but are not limited to, the following species.

- <i>Acanthocybium solandri</i>	Wahoo
- <i>Ruvettus pretiosus</i>	Oilfish
- <i>Lepidocybium flavobrunneum</i>	Escolar
- <i>Coryphaena hippurus</i>	Common dolphinfish
- <i>Coryphaena equiselis</i>	Pompano dolphinfish
- <i>Sphyrnaena barracuda</i>	Barracuda
- <i>Elagatis bipinnulata</i>	Rainbow runner
- <i>Canthidermis maculata</i>	Rough triggerfish
- <i>Brama brama</i>	Atlantic pomfret
- <i>Taractichthys steindachneri</i>	Sickle pomfret

Furthermore, identification guides have been developed by IOTC for other species commonly caught as target or bycatch species, such as billfish, sharks, seabirds or marine turtles:

- Billfish identification in Indian Ocean pelagic fisheries. IOTC, 2013.
- Shark and ray identification in Indian Ocean pelagic fisheries. IOTC and SPC, 2012.
- Seabird identification cards for fishing vessels operating in the Indian Ocean. IOTC, 2011.
- Marine turtle identification cards for Indian Ocean fisheries. IOTC and SPC, 2011.
- Cetacean identification cards for Indian Ocean fisheries. IOTC and FAO, 2018.

Wahoo

WAH

Acanthocybium solandri

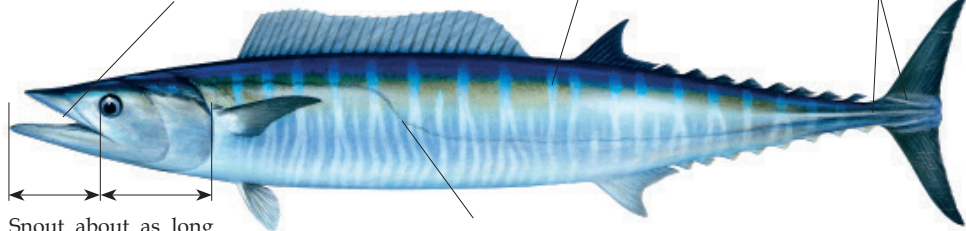
- J - アブラソコムツ
- C - 异鳞蛇鲭 / 细鳞油鱼
- F - Thazard-bâtard
- S - Peto

Very elongated body

Large mouth with long and finely serrated teeth

Bright blue vertical bars on back

One prominent median keel and two smaller keels above and below



Snout about as long as rest of the head

Lateral line bent down below first dorsal fin

Max. FL: 250 cm

Com. FL: ≤ 170 cm

Oilfish

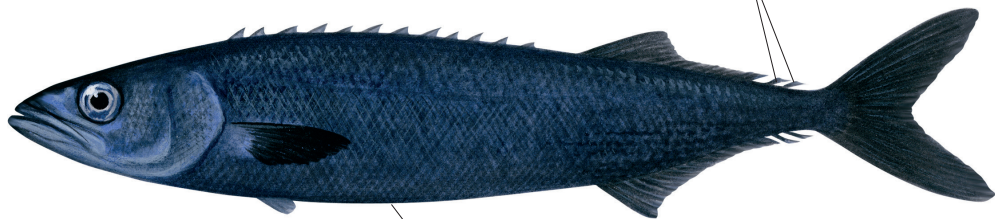


Ruvettus pretiosus

- J - バラムツ
- C - 棘鳞蛇鲭 / 粗鳞油鱼
- F - Rouvet
- S - Escolar clavo

Body uniformly dark with rough skin

Two finlets



Sharp scaly abdominal keel

Max. FL: 300 cm

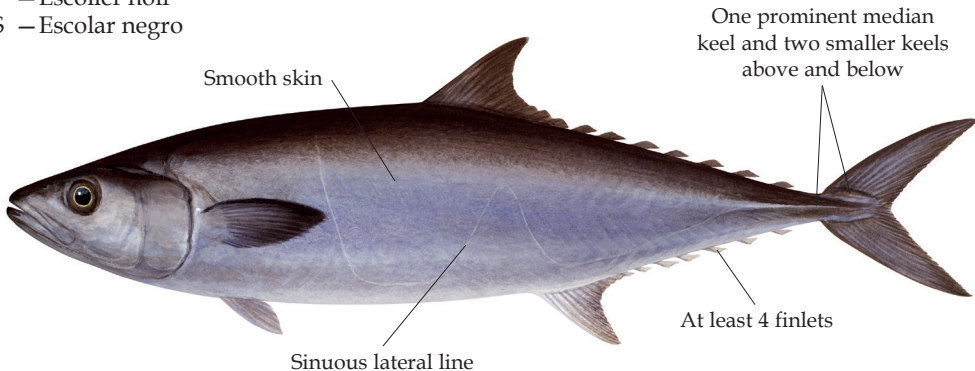
Com. FL: ≤ 150 cm

Escolar

LEC

Lepidocybium flavobrunneum

- J - アブラソコムツ
- C - 异鳞蛇鲭 / 细鳞油鱼
- F - Escolier noir
- S - Escolar negro



Max. FL: 200 cm
Com. FL: ≤ 150 cm

Common dolphinfish

DOL

Coryphaena hippurus

J - シイラ

C - 鯨鰺 / 鬼頭刀

F - *Coryphène commune*

S - Lampuga

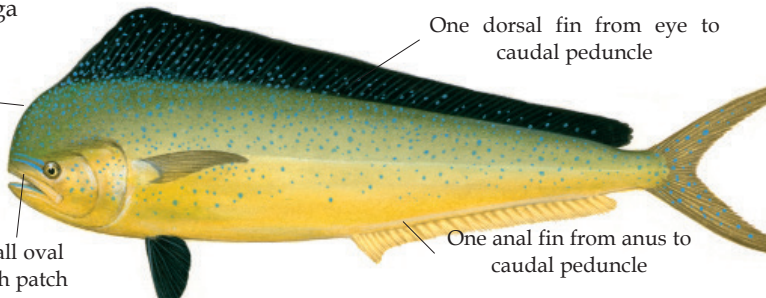
Male with prominent bony crest

Small oval tooth patch on tongue

Distinctive body shape and color
Greatest body depth is anterior to pectoral fin

One dorsal fin from eye to caudal peduncle

One anal fin from anus to caudal peduncle



Max. FL: 210 cm

Com. FL: ≤ 100 cm

Beware: Pompano dolphinfish (*Coryphaena equiselis* - CFW) also commonly caught as bycatch:

- Greatest body depth is posterior to pectoral fin
- One dorsal fin from just behind the eye to caudal peduncle
- Broad tooth patch on tongue

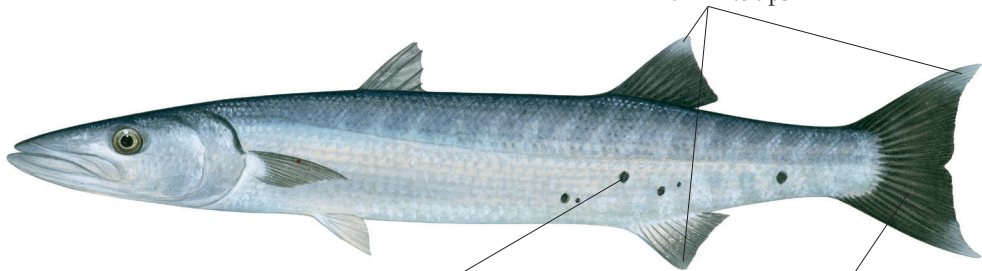
Great barracuda



Sphyraena barracuda

- J - オニカマス
- C - 大魩 / 竹梭
- F - Barracuda
- S - Picuda barracuda

Second dorsal, anal and caudal fins
with white tips



Often dark spots on lower
posterior part of the body

Distinctive
caudal fin

Max. FL: 200 cm
Com. FL: ≤ 140 cm

Rainbow runner

RRU

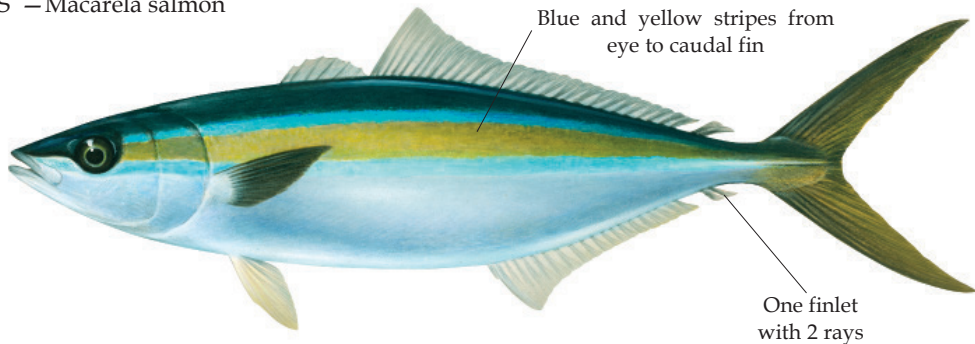
Elagatis bipinnulata

J - ツムブリ

C - 纺锤鲷 / 雙帶鯨

F - Comète saumon / Coureur arc-en-ciel

S - Macarela salmón



Max. FL: 180 cm

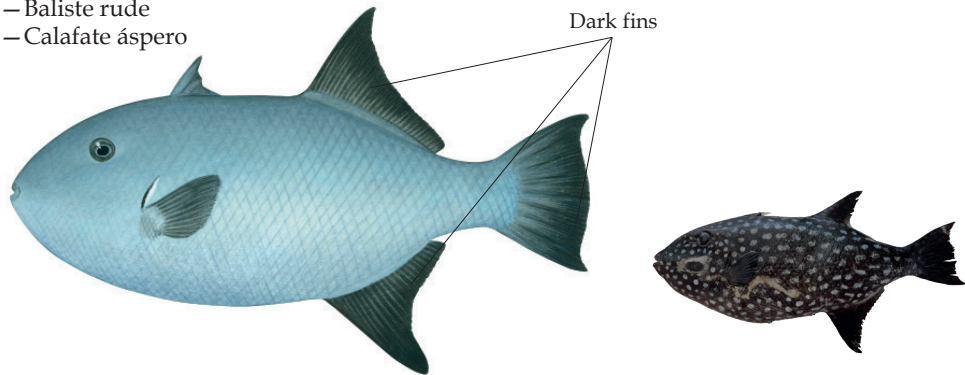
Com. FL: ≤ 90 cm

Rough triggerfish

CNT

Canthidermis maculata

- J - アミモンガラ
- C - 疣鱗 / 剥皮魚
- F - Baliste rude
- S - Calafate áspero



Max. FL: 50 cm
Com. FL: ≤ 35 cm

Body generally grey to dark with white spots
that may disappear with growth

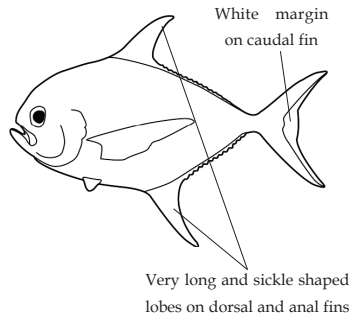
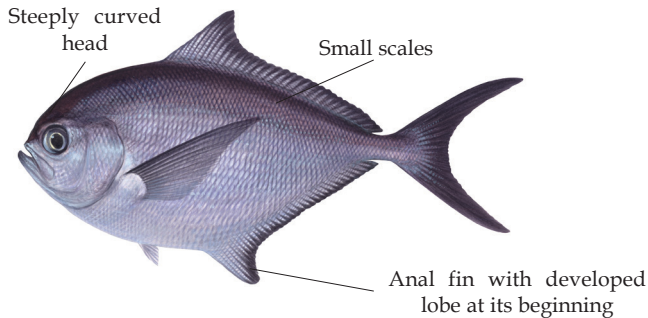
Atlantic pomfret (Ray's bream)

POA

Brama brama

J - ニシシマガツオ
C - 烏魴 / 大西洋烏魴
F - Grande castagnole
S - Japuta

Beware: Sickie pomfret (*Taractichthys steindachneri* - TST) also commonly caught as a bycatch by longliners.



Max. FL: 100 cm
Com. FL: ≤ 40 cm

IOTC requirements regarding tuna and tuna-like species

Identify, record and correctly report every tuna caught by your vessel

The following are among the actions that fishers/observers are expected to take in accordance with IOTC Conservation and Management Measures (CMM) (It is recommended that you check annually for modifications by IOTC):

- Fishers on board longline vessels shall report through their logbooks in number and in weight, catches of all tuna and tuna-like species by species as well as of other bony fishes as per applicable CMM.
- Fishers on board purse seine vessels shall report through their logbooks in weight, catches of all tuna and tuna-like species by species, and where possible catches of other bony fishes as per applicable CMM.
- Fishers on board pole-and-line, gillnet, handline and trolling vessels shall report through their logbooks in numbers and/or in weight, catches of all tuna and tuna-like species by species as well as of other bony fishes as per applicable CMM.

Ban on discards of bigeye, skipjack and yellowfin tuna and non-targeted species

All purse seine vessels are required to retain on board and then land all bigeye tuna, skipjack tuna, and yellowfin tuna caught, except fish considered unfit for human consumption.

All purse seine vessels are required to retain on board and then land, to the extent practicable, the following non-targeted species or species group; other tunas, rainbow runner, dolphinfish, triggerfish, billfish, wahoo and barracuda, except fish considered unfit for human consumption and/or species which are prohibited from retention through domestic legislation and international obligations.

- “Unfit for human consumption” are fish that:
 - is meshed or crushed in the purse seine; or
 - is damaged due to depredation; or
 - has died and spoiled in the net where a gear failure has prevented both the normal retrieval of the net and catch, and efforts to release the fish alive
- “Unfit for human consumption” does not include fish that:
 - is considered undesirable in terms of size, marketability, or species composition; or
 - is spoiled or contaminated as the result of an act or omission of the crew of the fishing vessel.

If tuna (bigeye tuna, skipjack tuna or yellowfin tuna) was caught during the final set of a trip and there is insufficient storage capacity to accommodate all tuna and non-targeted species caught in that set, this fish may only be discarded if:

- the captain and crew attempt to release the fish alive as soon as possible; and
- no further fishing is undertaken after the discard until the fish on board the vessel has been landed or transhipped

All purse seine vessels are encourage to retain on board and then land all non-targeted species as far as the vessel can ensure appropriate fishing operation (including but not limited to other tunas, rainbow runner, dolphinfish, triggerfish, billfish, wahoo, and barracuda) except fish considered unfit for human consumption.

IDENTIFICATION OF TUNA AND TUNA-LIKE SPECIES IN INDIAN OCEAN FISHERIES

This publication was made possible through financial support provided by IOTC



For further information contact:
Indian Ocean Tuna Commission
Le Chantier Mall
PO Box 1011, Victoria, Seychelles

Phone: +248 422 54 94
Email: IOTC-secretariat@fao.org

Fax: +248 422 43 64
Website: www.iotc.org



Some rights reserved. This work is available under a CC BY-NC-SA 3.0 IGO licence