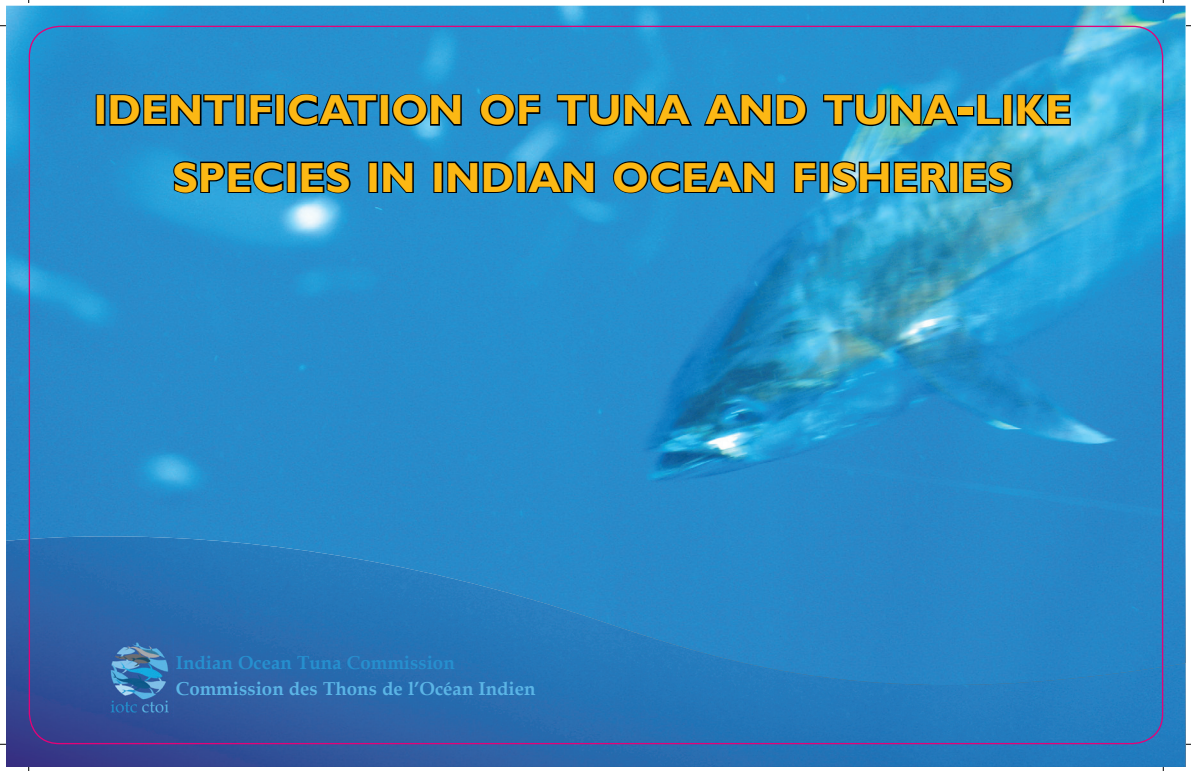
IDENTIFICATION OF TUNA AND TUNA-LIKE SPECIES IN INDIAN OCEAN FISHERIES



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

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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.

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

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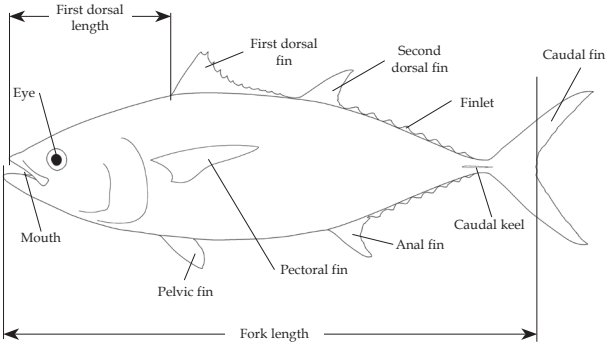
Common English name

FAO

Scientific name

J – Japanese name
C – simplified Chinese / traditional Chinese names
F – French name
S – Spanish name



Measurements used for tuna:

- Fork length (FL)
- First dorsal length or predorsal length (FD1)

How to use these cards?

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.

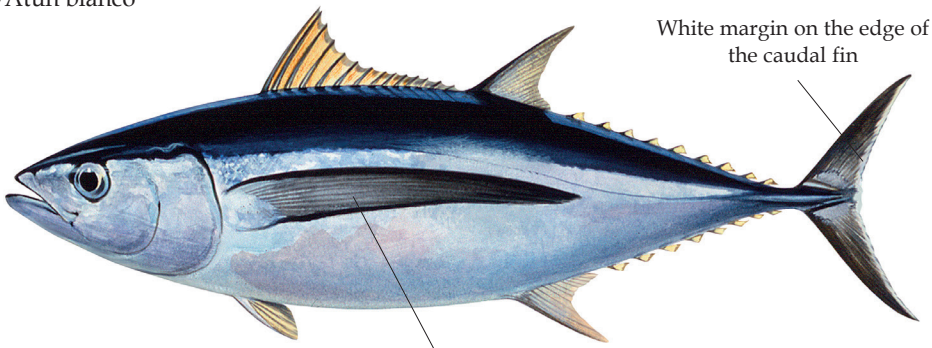
Albacore

ALB

Thunnus alalunga

J – ビンナガ
C – 长鳍金枪鱼 / 長鰭鮪
F – Germon
S – Atún blanco

Highest body depth in the middle of the body or posterior



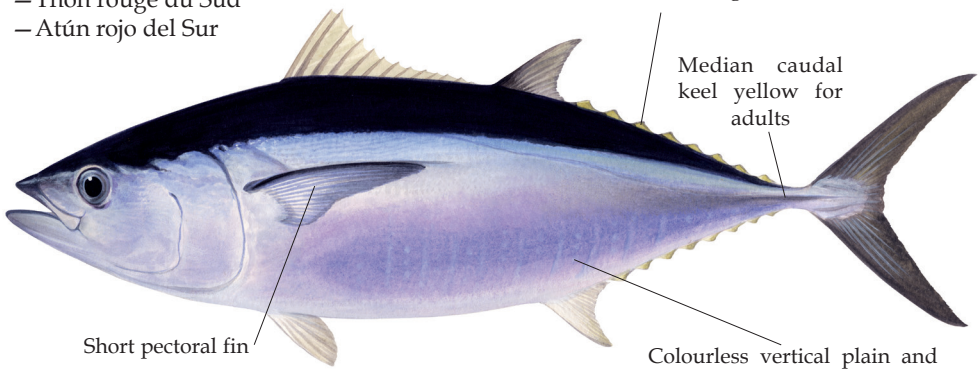
Max. FL: 140 cm
Com. FL: 40-100 cm

Southern Bluefin tuna

SBT

Thunnus maccoyii

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



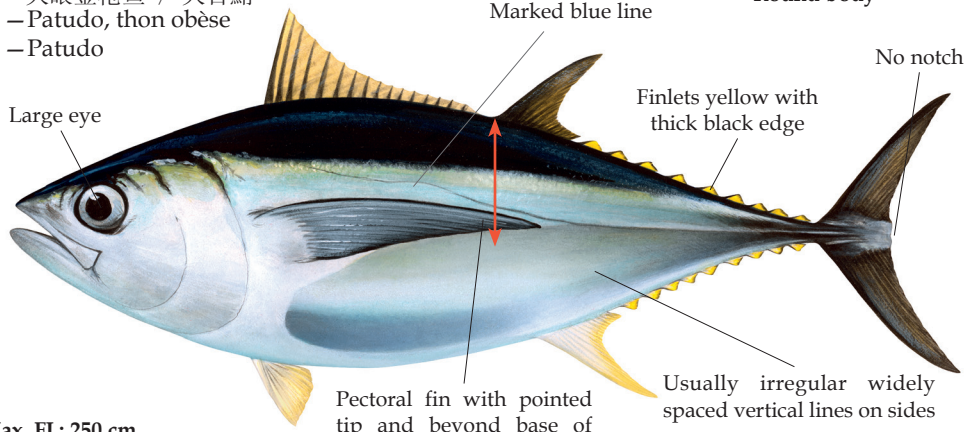
Max. FL: 245 cm
Com. FL: 160-200 cm

Bigeye tuna

BET

Thunnus obesus

J – メバチ
C – 大眼金枪鱼 / 大目鮪
F – Patudo, thon obèse
S – Patudo



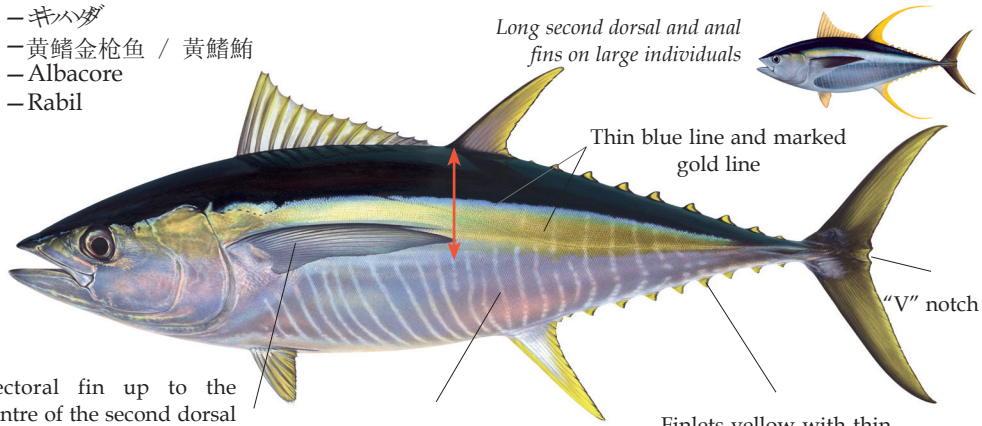
Max. FL: 250 cm
Com. FL: 30-180 cm

Yellowfin tuna

YFT

Thunnus albacares

J – キハダ
C – 黄鳍金枪鱼 / 黄鳍鮪
F – Albacore
S – Rabil



Max. FL: 240 cm
Com. FL: 30-180 cm

Yellowfin tuna *vs.* Bigeye tuna

Markings

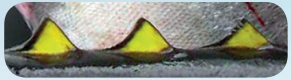
Yellowfin tuna
- Closely spaced silvery lines
- Solid lines alternate with rows of dots
- Pattern from tail to under pectoral fin and above lateral line

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

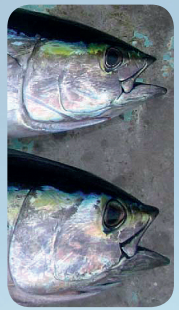
Caudal fin

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"

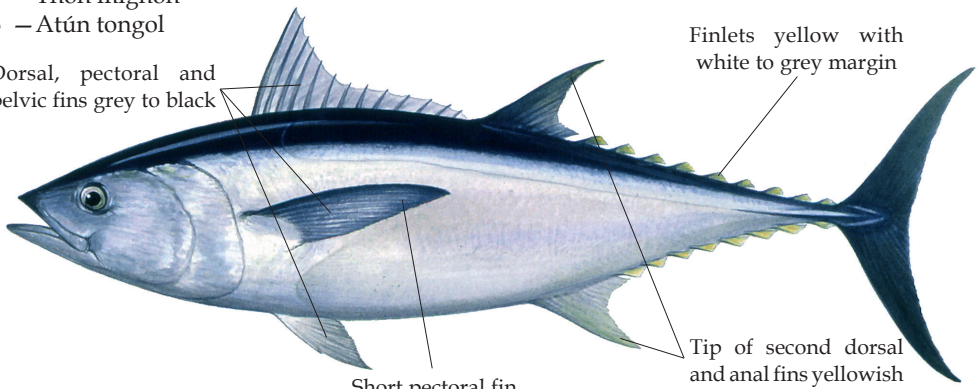
Bigeye tuna
- Pectoral fins longer, thinner, falcate and pointed at tip

Longtail tuna

LOT

Thunnus tonggol

J – コシナガ
C – 青干金枪鱼 / 長腰鮪
F – Thon mignon
S – Atún tongol



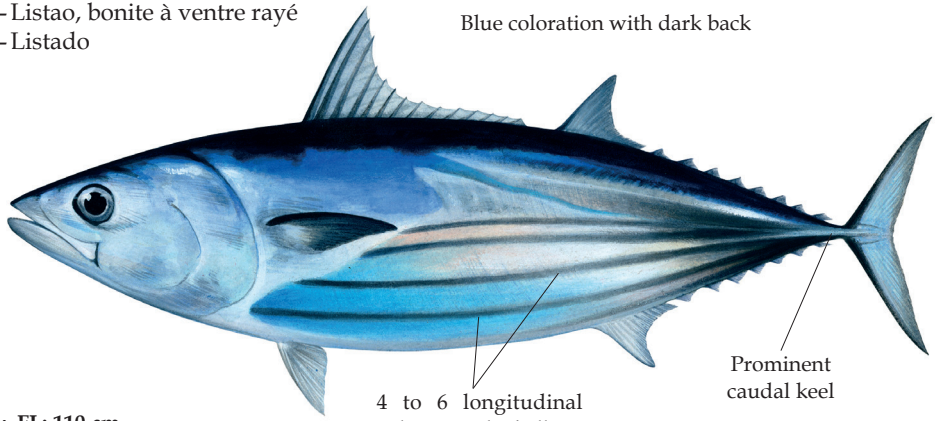
Max. FL: 145 cm
Com. FL: 40-70 cm

Skipjack tuna

SKJ

Katsuwonus pelamis

J – カツオ
C – 鰹鱼 / 正鰹
F – Listao, bonite à ventre rayé
S – Listado



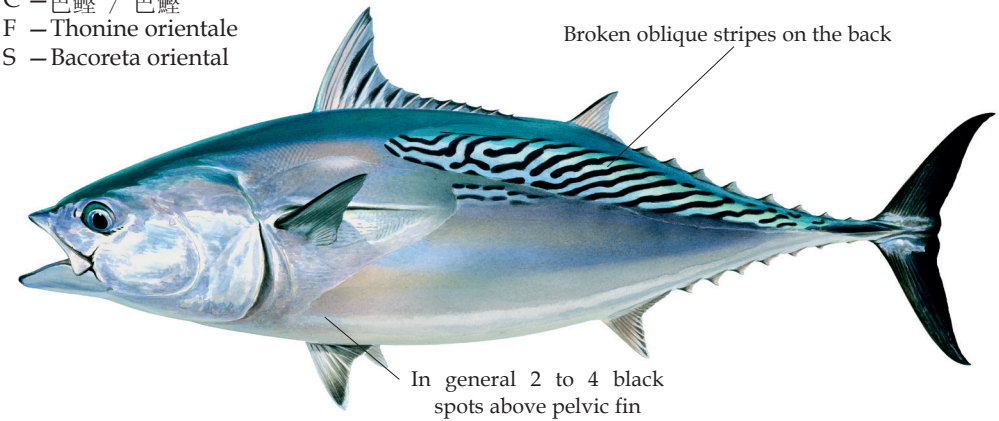
Max. FL: 110 cm
Com. FL: ≤ 80 cm

Kawakawa

KAW

Euthynnus affinis

J – スマ
C – 巴鰹 / 巴鰹
F – Thonine orientale
S – Bacoreta oriental



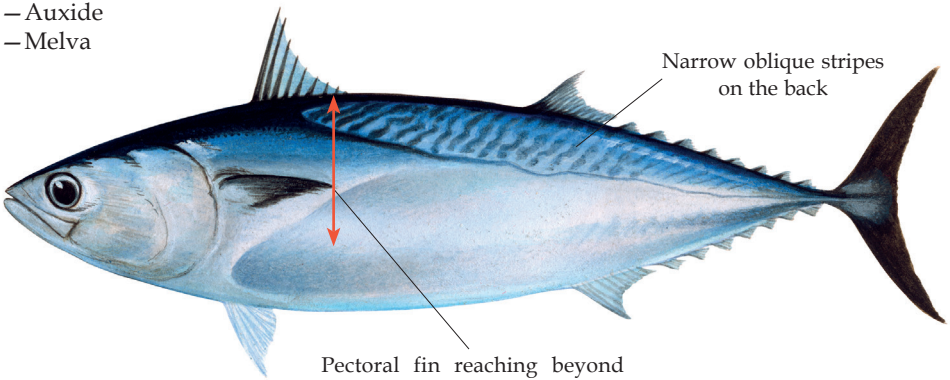
Max. FL: 100 cm
Com. FL: 80 cm

Frigate tuna

FRI

Auxis thazard

J －ヒラソウダ
C －平鰭旗鱼 / 扁花鰹
F －Auxide
S －Melva



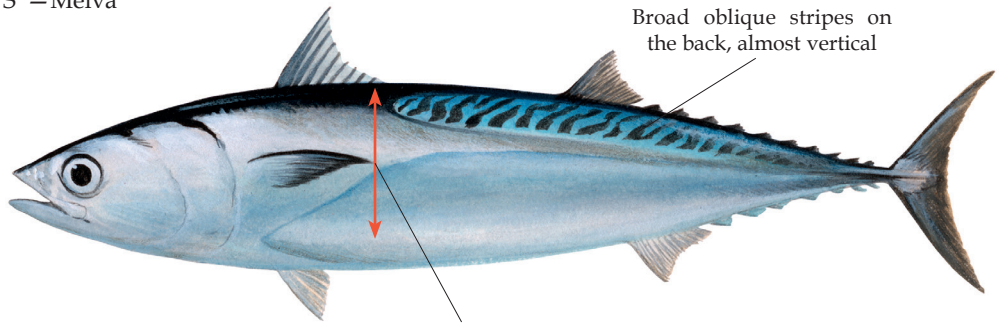
Max. FL: 65 cm
Com. FL: 25-40 cm

Bullet tuna

BLT

Auxis rochei

J －マルソウダ
C －双鰭舵鰹 / 圓花鰹
F －Bonitou
S －Melva



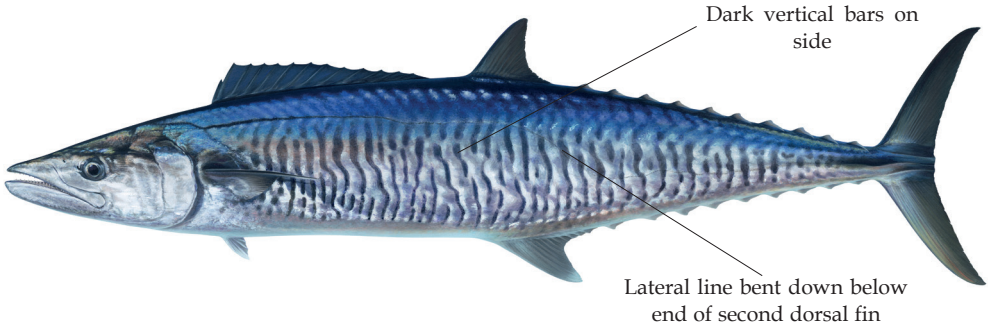
Max. FL: 50 cm
Com. FL: 15-25 cm

Narrow-barred Spanish mackerel

COM

Scomberomorus commerson

J －ヨコシマサワラ
C －鰆 / 康氏馬加鰆
F －Thazard rayé indo-pacifique
S －Carite estriado Indo-Pacífico



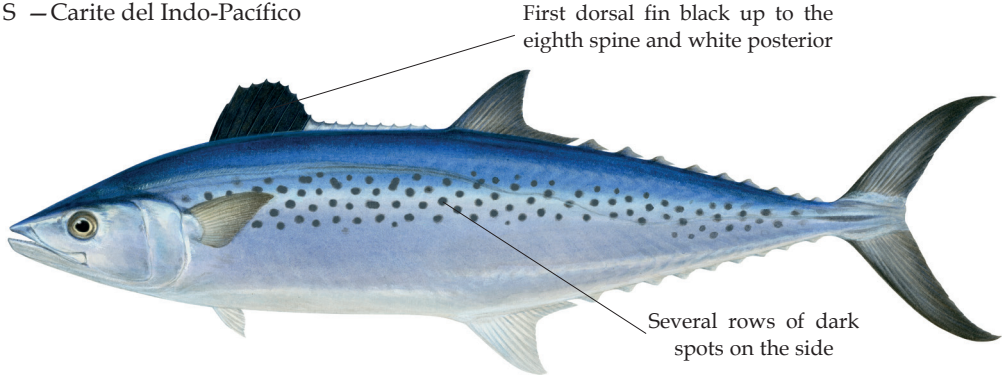
Max. FL: 240 cm
Com. FL: ≤ 90 cm

Indo-Pacific king mackerel

GUT

Scomberomorus guttatus

J –タイワンサワラ
C –长颌花鲭 / 台灣馬加鰆
F –Thazard ponctué indo-pacifique
S –Carite del Indo-Pacífico



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.

- *Acanthocybium solandri* Wahoo
- *Ruvettus pretiosus* Oilfish
- *Lepidocybium flavobrunneum* Escolar
- *Coryphaena hippurus* Common dolphinfish
- *Coryphaena equiselis* Pompano dolphinfish
- *Sphyraena barracuda* Barracuda
- *Elagatis bipinnulata* Rainbow runner
- *Canthidermis maculata* Rough triggerfish
- *Brama brama* Atlantic pomfret
- *Taractichthys steindachneri* 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.

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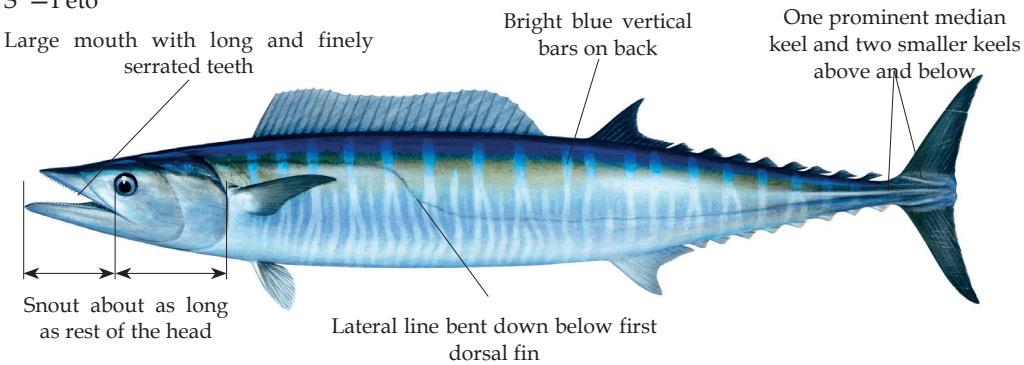
Wahoo

WAH

Acanthocybium solandri

J –アブラソコムツ
C –异鳞蛇鲭 / 細鱗油魚
F –Thazard-bâtard
S –Peto



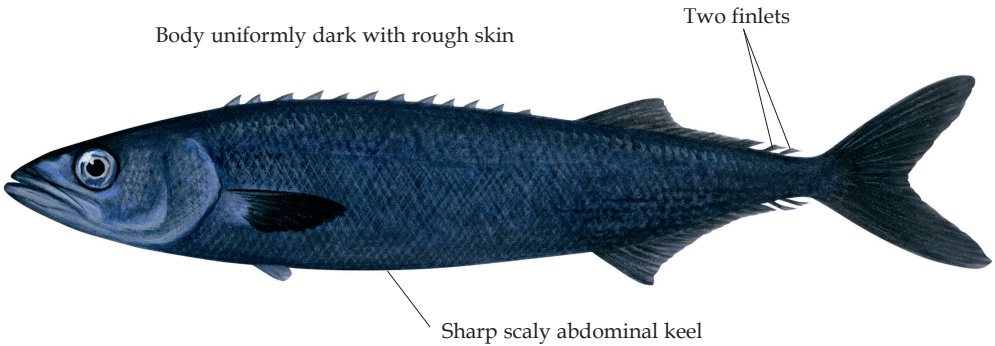
Max. FL: 250 cm
Com. FL: ≤ 170 cm

Oilfish

OIL

Ruvettus pretiosus

J －バラムツ
C －棘鱗蛇鯖 / 粗鱗油魚
F －Rouvet
S －Escolar clavo



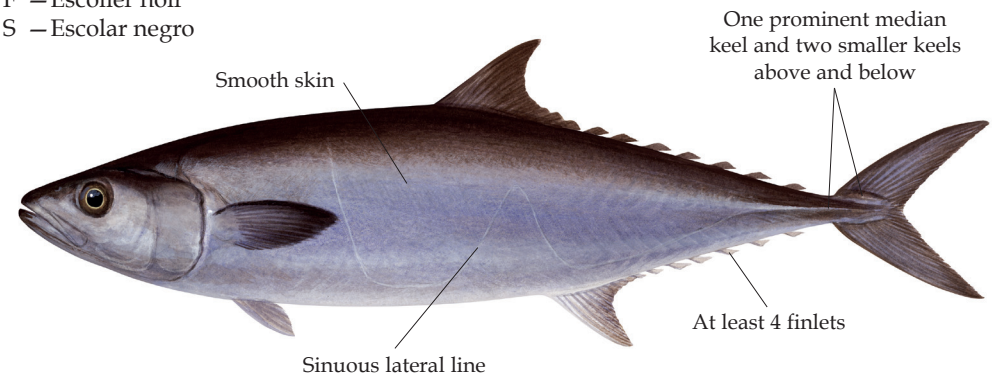
Max. FL: 300 cm
Com. FL: ≤ 150 cm

Escolar

LEC

Lepidocybium flavobrunneum

J –アブラソコムツ
C –异鳞蛇鲭 / 細鱗油魚
F –Escolier noir
S –Escolar negro



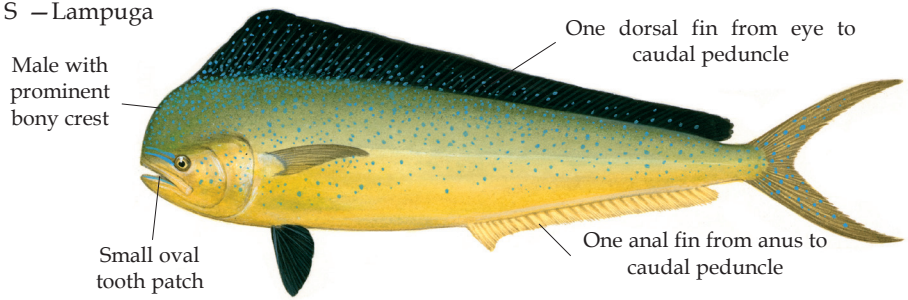
Max. FL: 200 cm
Com. FL: ≤ 150 cm

Common dolphinfish

DOL

Coryphaena hippurus

J －シイラ
C －鯕鰍 / 鬼頭刀
F －Coryphène commune
S －Lampuga



Max. FL: 210 cm
Com. FL: ≤ 100 cm

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

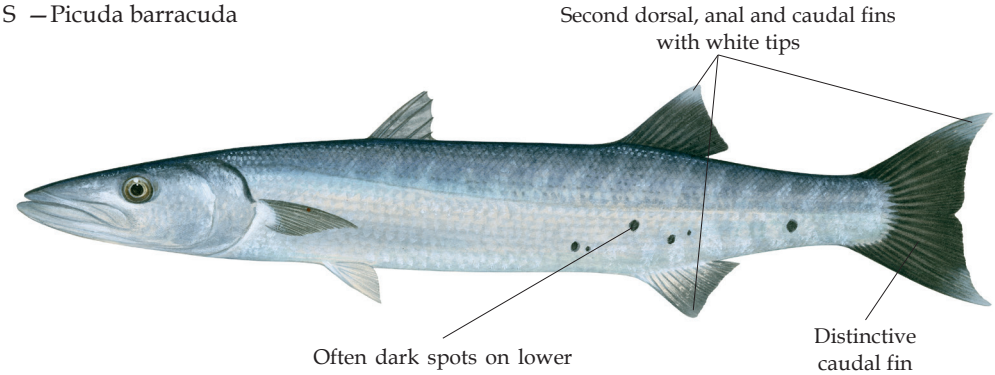
- *Greatest body depth is posterior to pectoral fin*
- *One dorsal fin from just behind the eye to caudal peduncle*
- *Broad tooth patch on tongue*

Great barracuda

GBA

Sphyraena barracuda

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



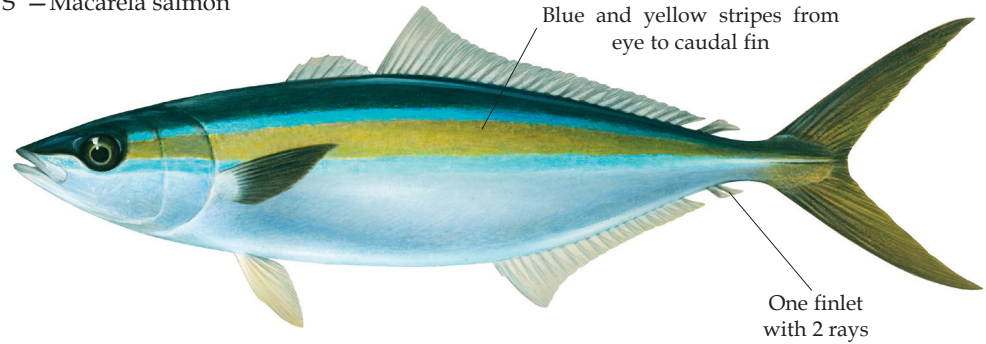
Max. FL: 200 cm
Com. FL: ≤ 140 cm

Rainbow runner

RRU

Elagatis bipinnulata

J –ツムブリ
C –纺锤鰤 / 雙帶鰺
F –Comète saumon / Coureur arc-en-ciel
S –Macarela salmón



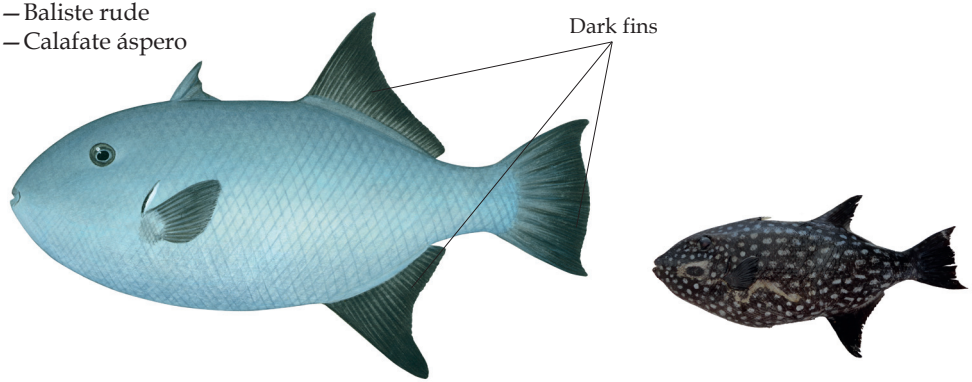
Max. FL: 180 cm
Com. FL: ≤ 90 cm

Rough triggerfish

CNT

Canthidermis maculata

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



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

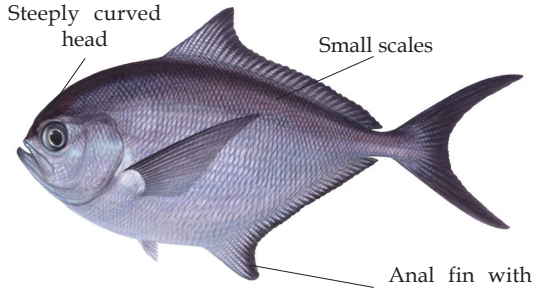
Max. FL: 50 cm
Com. FL: ≤ 35 cm

Atlantic pomfret (Ray's bream)

POA

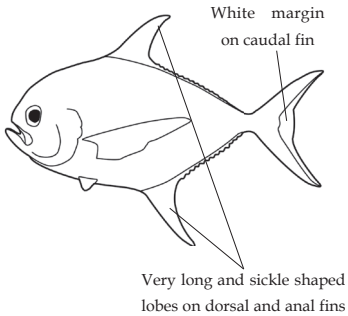
Brama brama

J –ニシシマガツオ
C –乌鲂 / 大西洋乌鲂
F –Grande castagnole
S –Japuta



Max. FL: 100 cm
Com. FL: ≤ 40 cm

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



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.

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Ban on discards of bigeye tuna, skipjack tuna and yellowfin tuna

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.

- "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 well space to accommodate all tuna caught in that set, this fish may only be discarded if:

- the captain and crew attempt to release the tuna (bigeye tuna, skipjack tuna or yellowfin tuna) alive as soon as possible; and
- no further fishing is undertaken after the discard until the tuna (bigeye tuna, skipjack tuna or yellowfin tuna) 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.

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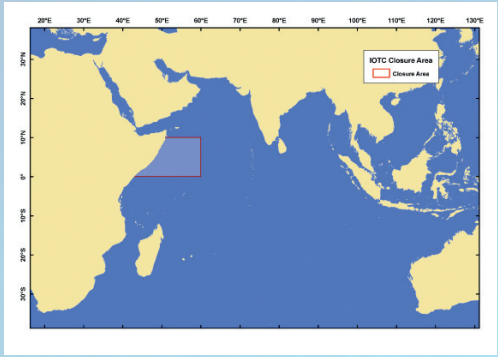
Conservation and management of tropical tuna stocks

From 2011 to 2014, the area defined by the following coordinates is closed for:

- **longline vessels** in each year from 0000 hours on 1 February to 2400 hours on 1 March
- **purse seine vessels** in each year from 0000 hours on 1 November to 2400 hours on 1 December



The area is defined by the following coordinates:

- 0-10° North
- 40-60° East

This closure area is applicable to all vessels of 24 meters overall length and over, and under 24 meters if they fish outside their EEZ, fishing within the IOTC area of competence.

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