

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

DRAFT



iotc ctoi

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.

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Photos: cover © J. Million, p.7&8 © D. Itano

Common English name



How to use these cards?

Scientific name

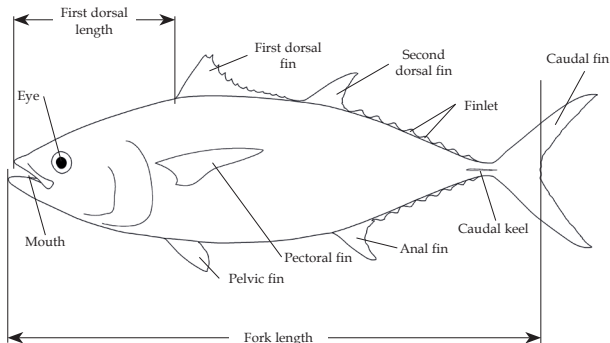
- J – Japanese name
C – simplified Chinese / traditional Chinese names
F – French name
S – Spanish name

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)
- First dorsal length (FD1)

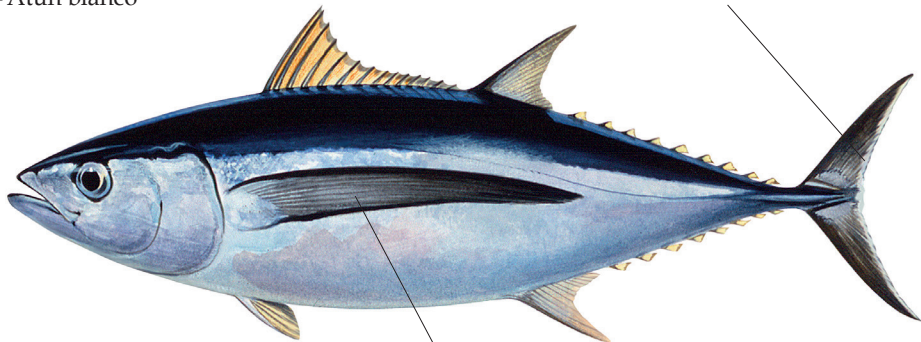
Albacore

SSP

Thunnus alalunga

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

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

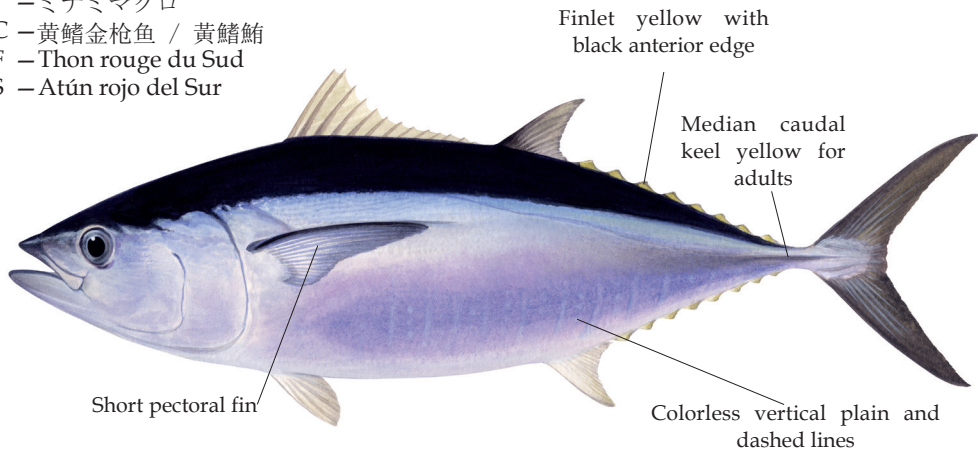
Thunnus maccoyii

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

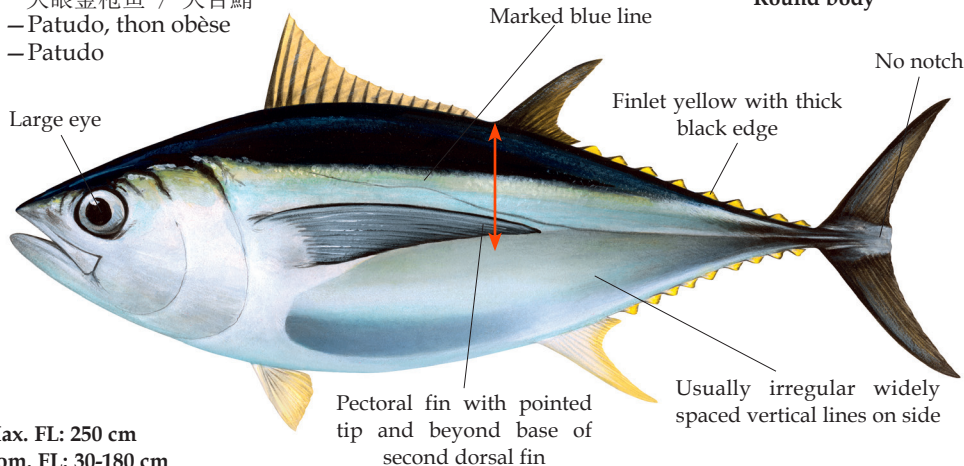
J -メバチ

C -大眼金枪鱼 / 大目鮪

F -Patudo, thon obèse

S -Patudo

Round body



Max. FL: 250 cm

Com. FL: 30-180 cm

Yellowfin tuna

YFT

Thunnus albacares

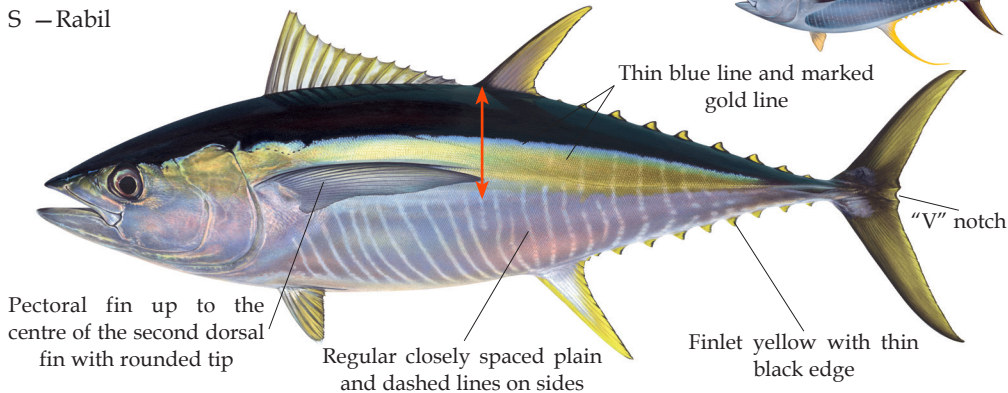
J - キハダ

C - 黄鳍金枪鱼 / 黄鳍鲔

F - Albacore

S - Rabil

Long second dorsal and anal fins on large individuals



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

Max. FL: 239 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

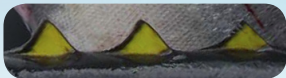
BEWARE: *markings and colours can fade quickly after death*

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 fin shorter, thicker, "blade-like"



Bigeye tuna

- Pectoral fin longer, thinner, falcate pointed at tip

Longtail tuna

LOT

Thunnus tonggol

J - コシナガ

C - 青干金枪鱼 / 長腰鰯

F - Thon mignon

S - Atún tongol

Dorsal, pectoral
and pelvic fins
grey to black

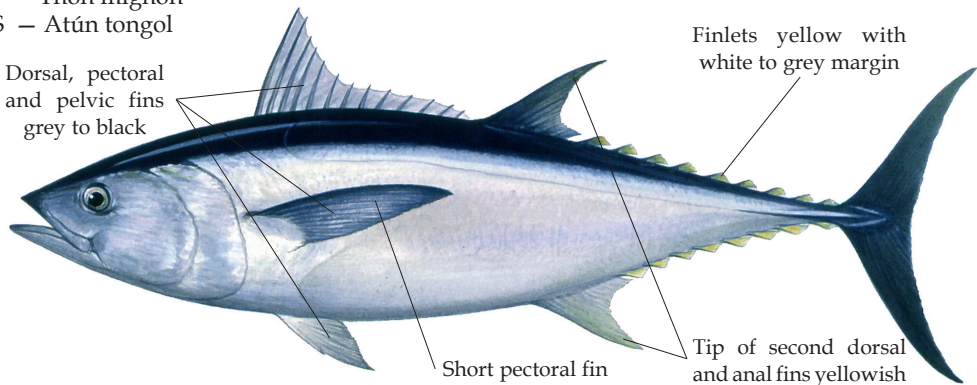
Finlets yellow with
white to grey margin

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

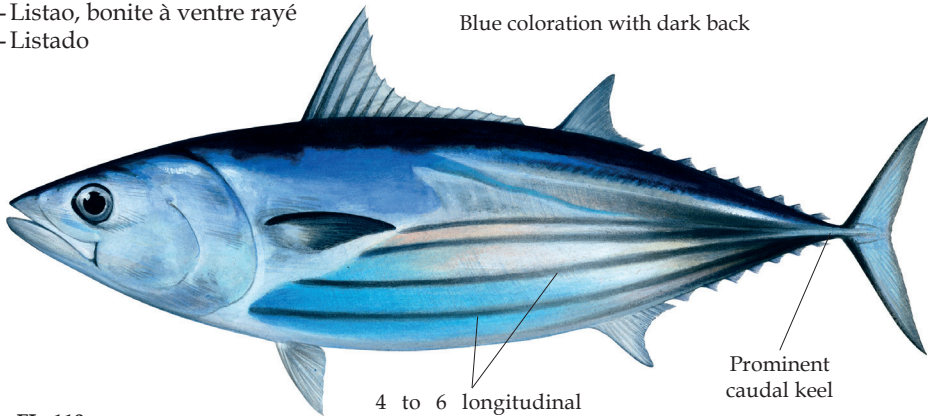
J - カツオ

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 \leq 80 cm

Kawakawa

KAW

Euthynnus affinis

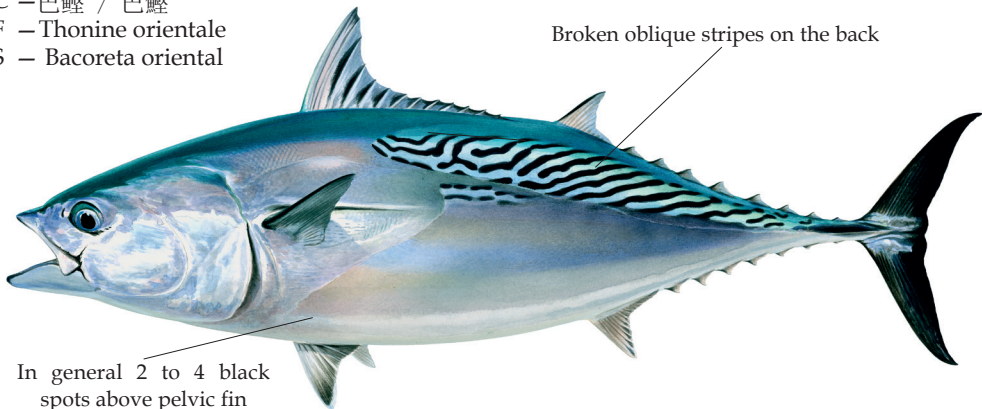
J - スマ

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

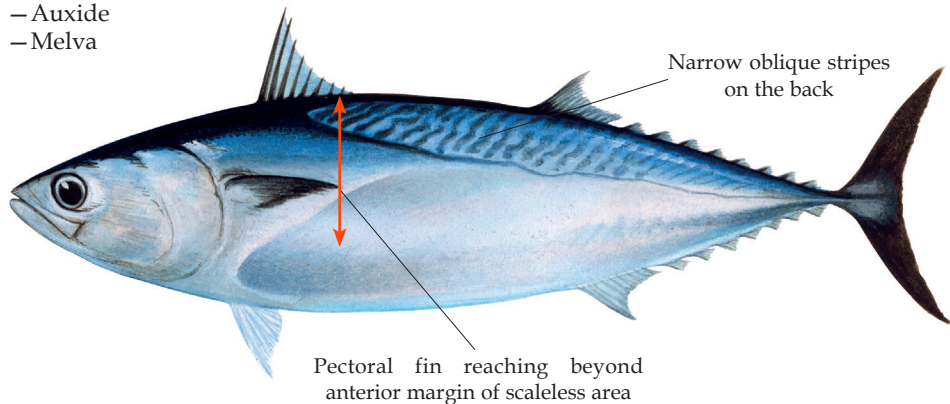
Com. FL: 80 cm

Frigate tuna

FRI

Auxis thazard

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



Max. FL: 65 cm

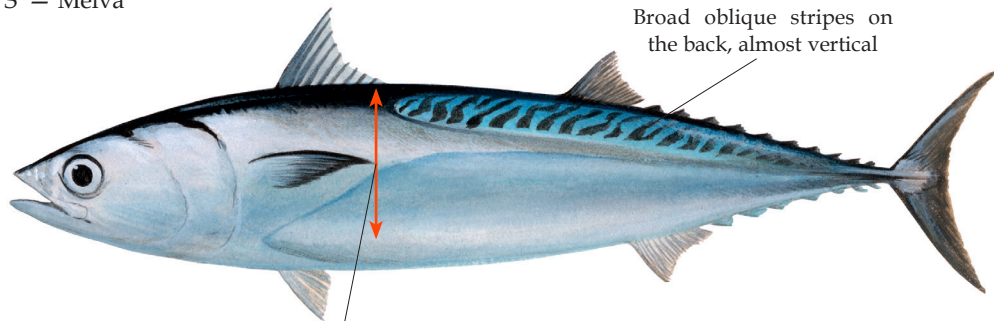
Com. FL: 25-40 cm

Bullet tuna

BLT

Auxis rochei

J - マルソウダ
C - 双鳍舵鰹 / 圓花鰹
F - Bonitou
S - Melva



Broad oblique stripes on
the back, almost vertical

Pectoral fin not reaching anterior
margin of scaleless area

Max. FL: 50 cm

Com. FL: 15-25 cm

Narrow-barred Spanish mackerel

COM

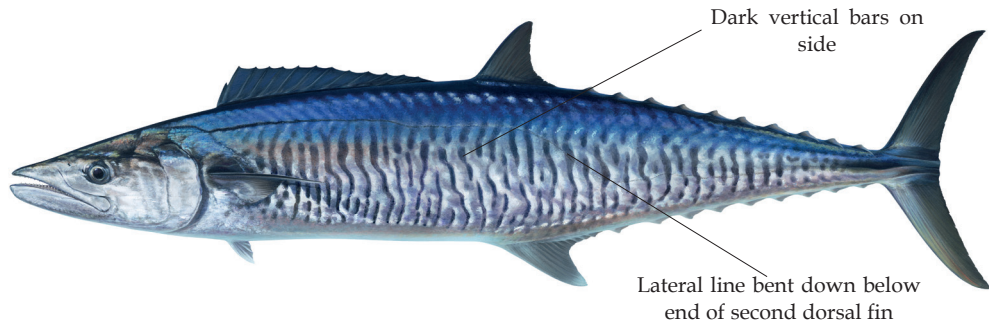
Scomberomorus commerson

J - ヨコシマサワラ

C - 鰭 / 康氏馬加鰭

F - Thazard rayé indo-pacifique

S - Carite estriado Indo-Pacífico



Max. FL: 240 cm

Com. FL \leq 90 cm

Indo-Pacific king mackerel

GUT

Scomberomorus guttatus

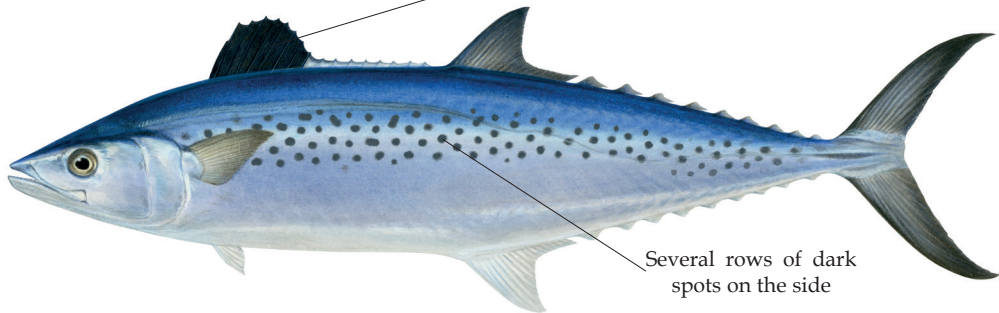
J - タイワンサワラ

C - 长颌花鲈 / 台湾馬加鰅

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 \leq 55 cm

OTHER FISH SPECIES

Some other fish species are commonly caught as bycatch by vessel 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>Lepidocybium flavobrunneum</i>	Escolar
- <i>Ruvettus pretiosus</i>	Oilfish
- <i>Sphyraena barracuda</i>	Barracuda
- <i>Coryphaena hippurus</i>	Common dolphinfish
- <i>Elagatis bipinnulata</i>	Rainbow runner
- <i>Brama brama</i>	Atlantic pomfret
- <i>Canthidermis maculata</i>	Rough triggerfish

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:

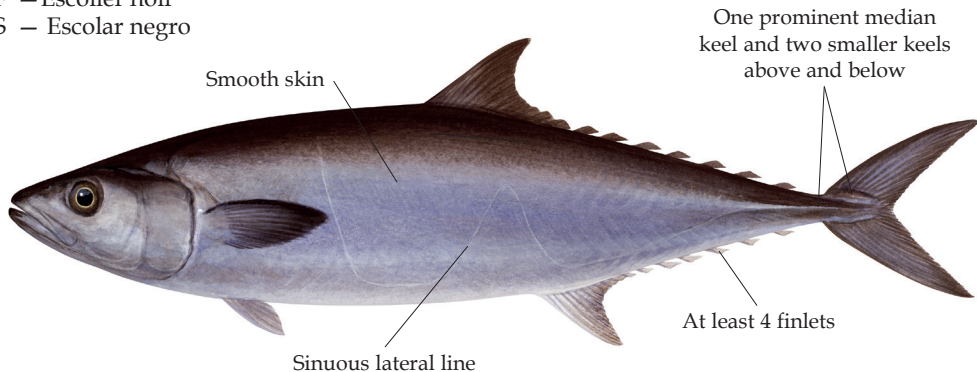
- Billfish identification in Indian Ocean pelagic fisheries. IOTC, 2013.
- Shark and ray identification in Indian Ocean pelagic fisheries. IOTC and SPC, 2012.
- Seabird identification cards for fishing vessels operating in the Indian Ocean. IOTC, 2011.
- Marine turtle identification cards for Indian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

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 \leq 150 cm

Oilfish



Ruvettus pretiosus

J - バラムツ

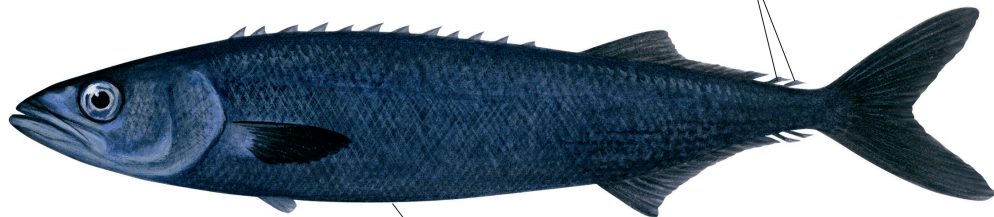
C - 棘鳞蛇鲭 / 粗鳞油鱼

F - Rouvet

S - Escolar clavo

Body uniformly dark with rough skin

Two finlets



Sharp scaly abdominal keel

Max. FL: 300 cm

Com. FL \leq 150 cm

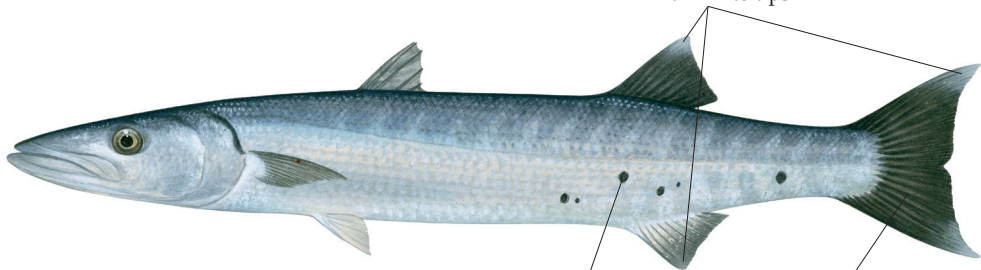
Great barracuda



Sphyraena barracuda

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

Caudal, second dorsal and anal fins
with white tips



Often dark spots on lower
posterior part of the body

Distinctive
caudal fin

Max. FL: 200 cm
Com. FL \leq 140 cm

Common dolphinfish

DOL

Coryphaena hippurus

J - シイラ

C - 魷鰵 / 鬼頭刀

F - *Coryphène commune*

S - Lampuga

Distinctive body shape and color

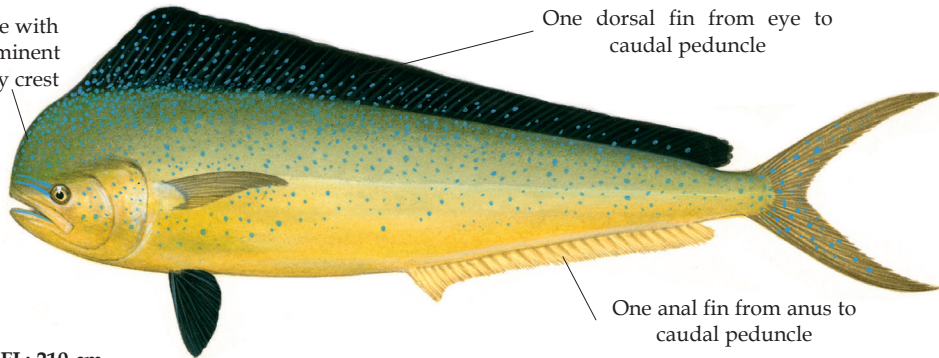
Male with prominent bony crest

One dorsal fin from eye to caudal peduncle

One anal fin from anus to caudal peduncle

Max. FL: 210 cm

Com. FL \leq 100 cm



Rainbow runner



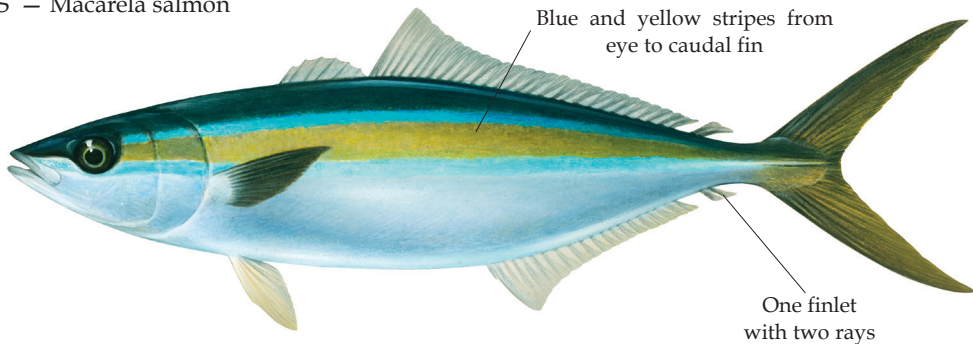
Elagatis bipinnulata

J - ツムブリ

C - 纺锤鲷 / 雙帶鰹

F - Comète saumon / Courreur arc-en-ciel

S - Macarela salmón



Max. FL: 180 cm

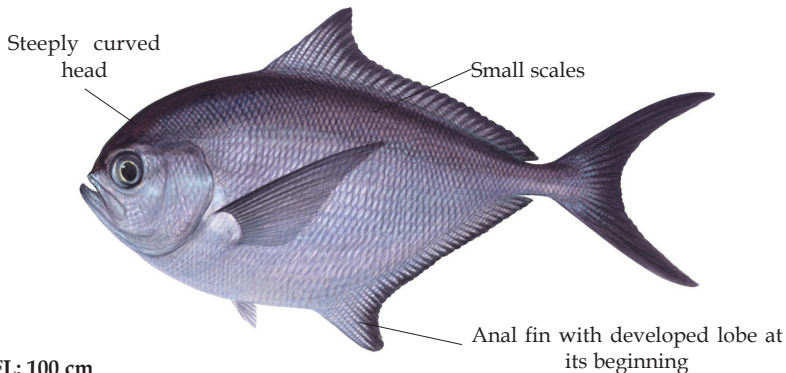
Com. FL \leq 90 cm

Atlantic pomfret (Ray's bream)

POA

Brama brama

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



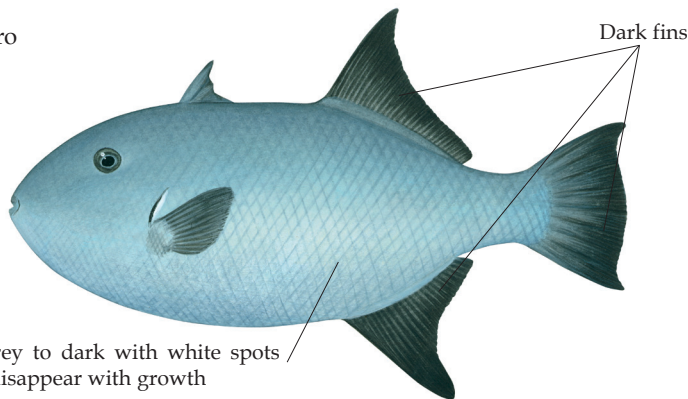
Max. FL: 100 cm
Com. FL \leq 40 cm

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 \leq 35 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, 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, 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 gillnet, handline and trolling vessels shall report through their logbooks, 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 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:

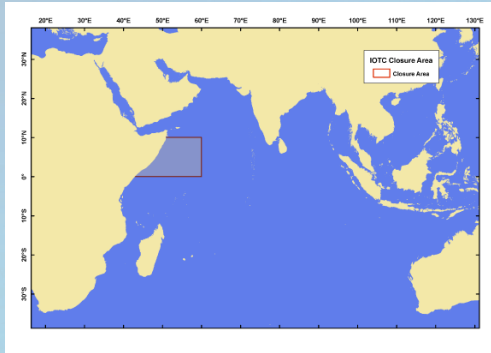
- the captain and crew attempt to release the tuna (bigeye tuna, skipjack tuna or yellowfin tuna) alive as soon as possible; and
- no further fishing is undertaken after the discard until the tuna (bigeye tuna, skipjack tuna or yellowfin tuna) on board the vessel has been landed or transhipped

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.

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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