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

Measurements used for tuna:
- Fork length (FL)
- Eye – Fork length (EF)
Albacore

Thunnus alalunga

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

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
**Southern Bluefin tuna**

*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

- Short pectoral fin
- Median caudal keel yellow for adults
- Colourless vertical plain and dashed lines
- Finlets yellow with black anterior edge

**Max. FL:** 245 cm
**Com. FL:** 160-200 cm
Bigeye tuna

**Thunnus obesus**

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

**Key Features**

- **Large eye**
- **Round body**
- **Marked blue line**
- **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**

**English Name**

Patudo, thon obèse

**Japanese Name**

メバチ

**Chinese Names**

大眼金枪鱼 / 大目鮪
Yellowfin tuna

*Thunnus albacares*

- **J** — キハダ (Kyuda)
- **C** — 黄鳍金枪鱼 / 黄鳍鲔 (황연진기어)
- **F** — Albacore
- **S** — Rabil

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

- Pectoral fin up to the centre of the second dorsal fin with rounded tip
- Long second dorsal and anal fins on large individuals
- Regular closely spaced plain and dashed lines on sides
- Thin blue line and marked gold line
- "V" notch
- Finlets yellow with thin black edge
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

Thunnus tonggol

J 一コシナガ
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

Katsuwonus pelamis

4 to 6 longitudinal lines on the belly
Prominent caudal keel
Blue coloration with dark back

Max. FL: 110 cm
Com. FL: ≤ 80 cm
Kawakawa

Euthynnus affinis

In general 2 to 4 black spots above pelvic fin
Broken oblique stripes on the back

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

**Auxilide**

**Auxis thazard**

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

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

- Narrow oblique stripes on the back
- Pectoral fin reaching beyond anterior margin of scaleless area
Bullet tuna

*Auxis rochei*

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

- Broad oblique stripes on the back, almost vertical
- Pectoral fin not reaching anterior margin of scaleless area
Narrow-barred Spanish mackerel
*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

Dark vertical bars on side
Lateral line bent down below end of second dorsal fin
Indo-Pacific king mackerel
*Scomberomorus guttatus*

Max. FL: 76 cm
Com. FL: ≤ 55 cm

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

Several rows of dark spots on the side
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.
Wahoo

*Acanthocybium solandri*

**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
- Lateral line bent down below first dorsal fin
- Snout about as long as rest of the head

**Max. FL**: 250 cm
**Com. FL**: ≤ 170 cm
Oilfish

Ruvettus pretiosus

Body uniformly dark with rough skin

Two finlets

Sharp scaly abdominal keel

Max. FL: 300 cm
Com. FL: ≤ 150 cm
Escolar

Lepidocybium flavobrunneum

Smooth skin

Sinuous lateral line

One prominent median keel and two smaller keels above and below

At least 4 finlets

Max. FL: 200 cm
Com. FL: ≤ 150 cm
Common dolphinfish

**Coryphaena hippurus**

**J** 一シイラ
**C** 一鰤 鬼頭刀
**F** — Coryphène commune
**S** — Lampuga

Male with prominent bony crest

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

Small oval tooth patch on tongue

**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*

Max. FL: 200 cm
Com. FL: ≤ 140 cm

Often dark spots on lower posterior part of the body

Second dorsal, anal and caudal fins with white tips

Distinctive caudal fin
Rainbow runner

*Elagatis bipinnulata*

**J** のツムブリ
**C** - 纖錘鰤 / 雙帶鰤
**F** - Comète saumon / Coureur arc-en-ciel
**S** - Macarela salmón

Blue and yellow stripes from eye to caudal fin

One finlet with 2 rays

Max. FL: 180 cm
Com. FL: ≤ 90 cm
Rough triggerfish

*Canthidermis maculata*

J — アミモンガラ
C — 疣鱗 / 削皮魚
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)

Brama brama

J ー ニシシマガツオ
C ー 乌鲂 / 大西洋烏鲂
F ー Grande castagnole
S ー Japuta

Steeply curved head
Small scales
Anal fin with developed lobe at its beginning

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

White margin on caudal fin
Very long and sickle shaped lobes on dorsal and anal fins

Max. FL: 100 cm
Com. FL: ≤ 40 cm
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 encouraged 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.