

## Species ID Guide for Tuna Fisheries in Indonesian Archipelagic Waters

DRAFT - NOT FOR DISTRIBUTION. YKAN Technical Paper

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## 1 Introduction

Tuna fisheries are of major importance in Indonesian Archipelagic Waters (IAW), which include fisheries management areas (FMAs or "Wilayah Pengelolaan Perikanan") WPP 713, 714 and 715. This area is reported to produce more than half of all tuna landings in Indonesia [1]. The fisheries here include three major oceanic species, yellowfin tuna or "madidihang" (*Thunnus albacares*), bigeye tuna or "tuna mata besar" (*Thunnus obesus*), and skipjack tuna or cakalang (*Katsuwonus pelamis*), as well as a number of neritic (coastal) tuna species such as kawa-kawa or "tongkol" (*Euthynnus affinis*), frigate tuna or "tongkol krai" (*Auxis thazard*), bullet tuna or "tongkol lisong" (*Auxis rochei*) and longtail tuna or "tongkol abu-abu" (*Thunnus tonggol*).

The current report serves as a species ID guide and ID training manual for enumerators analysing images from our Crew-Operated Data Recording System (CODRS), where crews of fishing vessels photograph each fish caught with a measuring board as background. Images are usually taken directly after capture and so these pictures show accurate coloration as seen in the field on fresh fish, in contrast to colours of fish photographed at fish markets, which have usually faded. Because this guide focuses on catches of various tuna species which are caught over a range of sizes, we included pictures of adults as well as juveniles. Important characteristics for species ID are included with the photographs and in explanatory text.

Scientific names are provided for all species as well as some English, Indonesian and other common names. We provided common names even though their use must be avoided. Common names can never be used to accurately refer to any one species, and there are few fish species that can accurately be described by one common name. Especially in species diverse fisheries, a single common name is used for various species, resulting in confusion in the trade and even in scientific publications. Also, various common names may be used (usually in different areas) for the same species, leading to further confusion. Hence, it is safest to always use the scientific name to accurately indicate which species is being discussed.

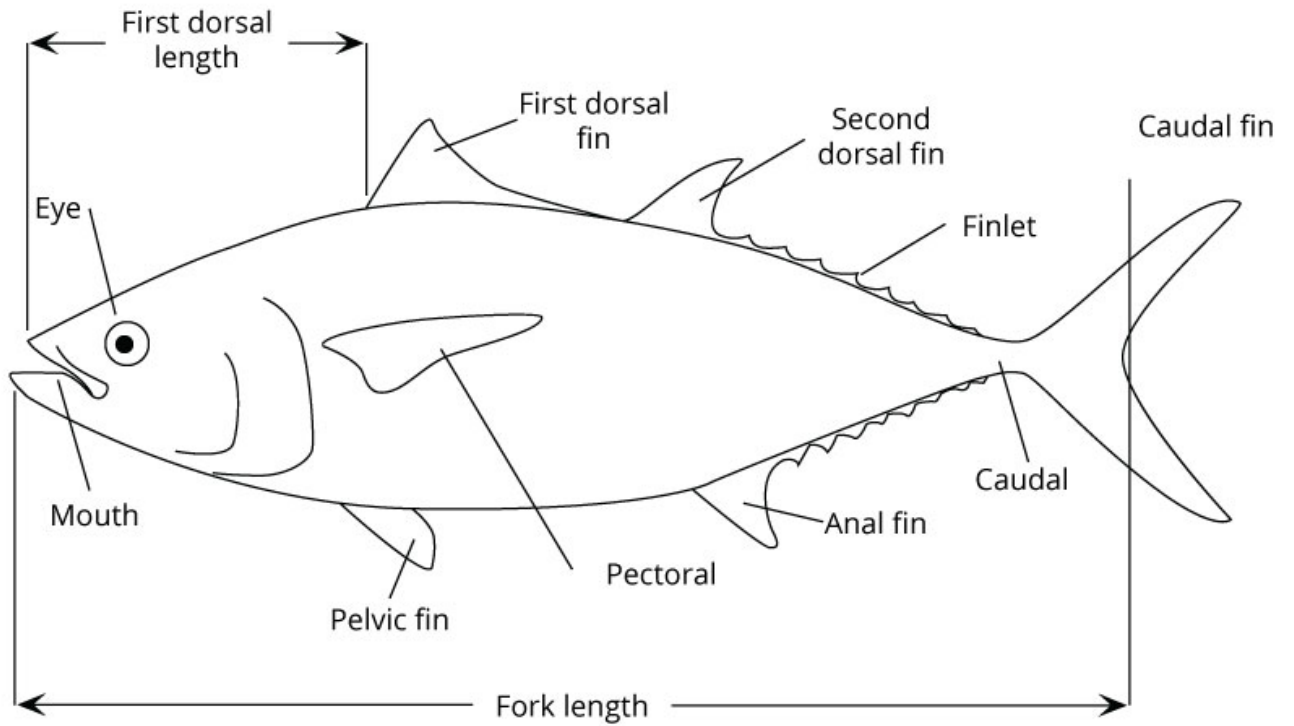
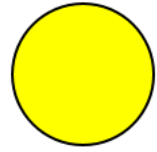
## 2 How to use this guide

### Family

Latin Name

Common Name

Local Name

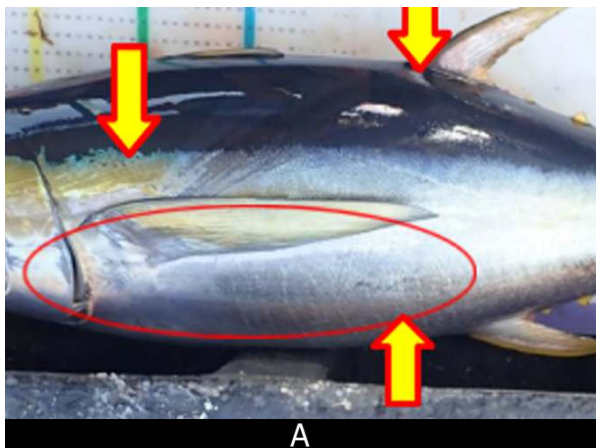
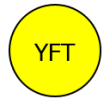


### 3 Scombridae

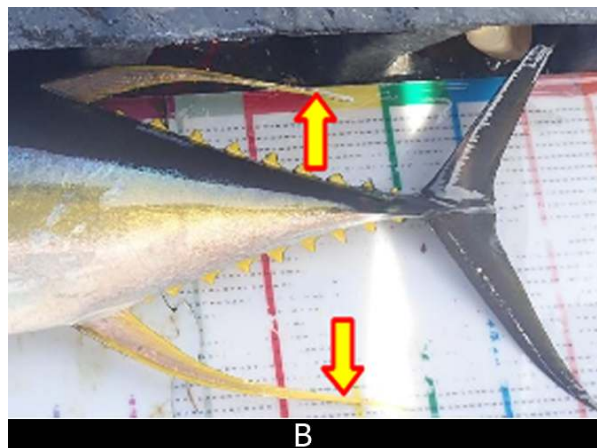
#### 3.1 *Thunnus albacares*

Yellowfin tuna

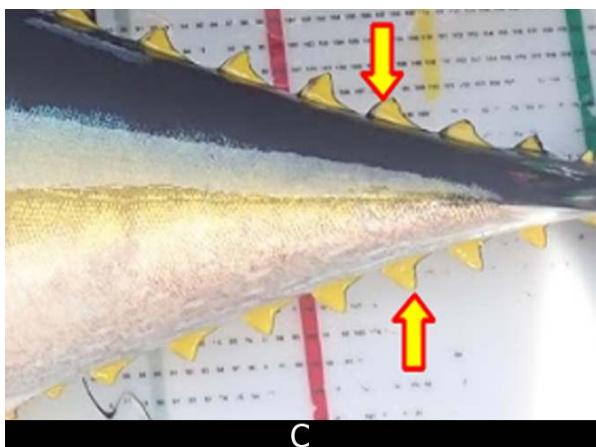
Tuna sirip kuning, madidihang, tuna



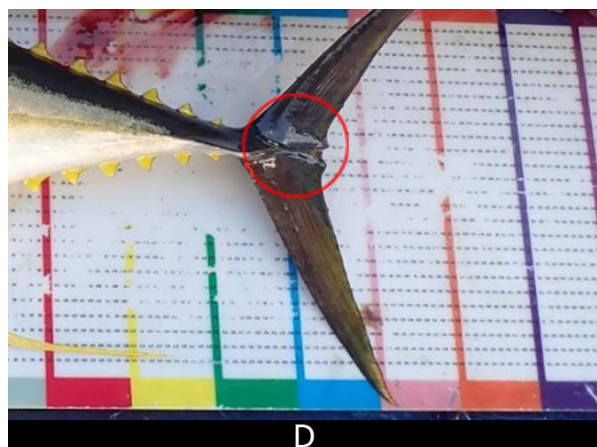
A



B



C



D

- (A) Regular closely spaced plain and dashed lines on sides, blue and yellow line on the body [2].
- (B) Long second dorsal and anal fins on large individuals [2].
- (C) Finlets yellow with thin black edge [2].
- (D) 'V' notch on tail [2].

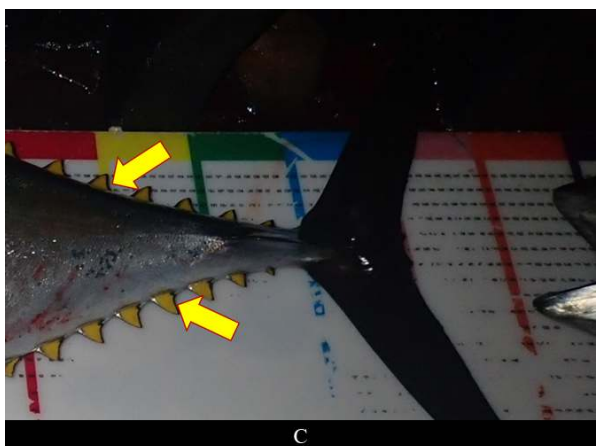
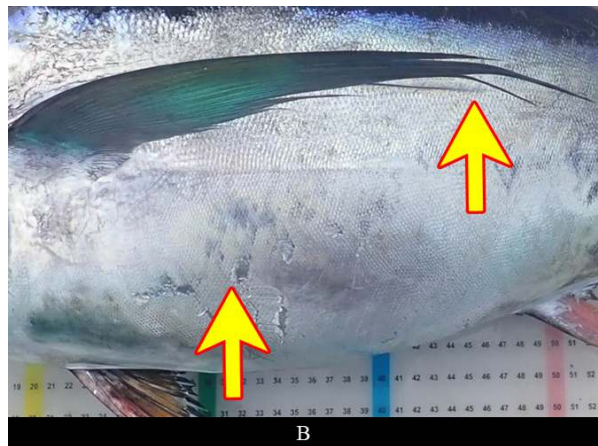
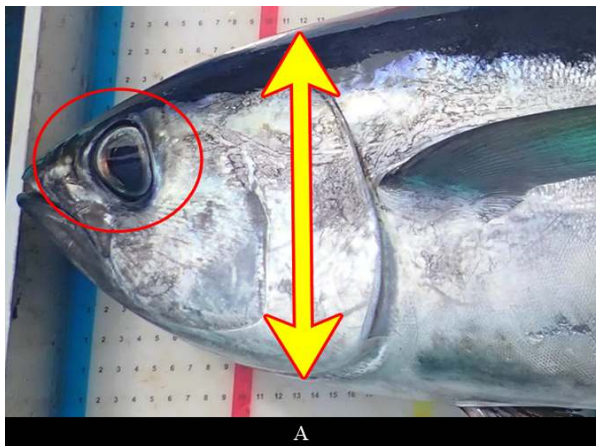


### 3.2 *Thunnus obesus*

Bigeye tuna

Tuna mata besar, mata belok, tuna.

BET

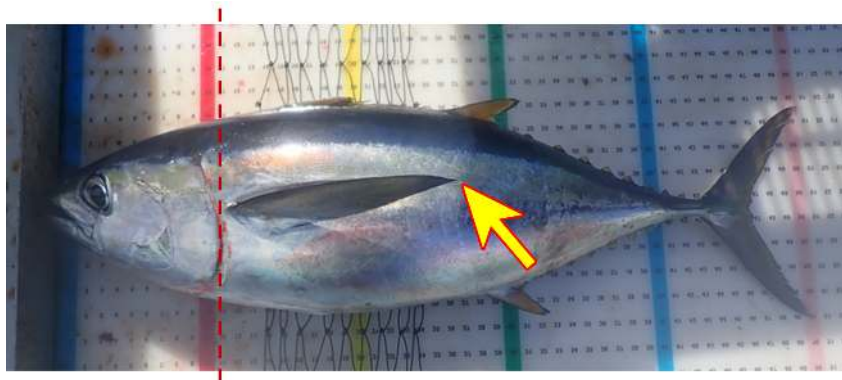


- (A) Large diameter on eye, wide head [2].
- (B) Pointed extremity of pectoral fins and beyond base of second dorsal fin, practically irregular lines, or some irregular marks on the lower part of the body [2].
- (C) Finlets yellow with thick black edge [2].
- (D) Portion of trailing centre edge forms a flat without mounds [2].

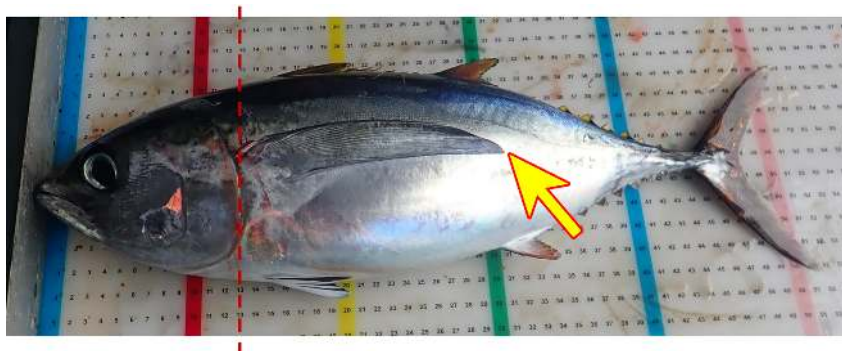
### 3.3 Comparison between *Thunnus albacares* and *Thunnus obesus*



*Thunnus albacares* 128 cm : elongated body, short pectoral fin, bright yellow finlet with no or slight black edging [2]. *Thunnus obesus* (119 cm) : rounded body, long pectoral fin, yellowish color finlet edged with black [2].



A. Juvenile Yellowfin Tuna. Pectoral fin up to the centre of the second dorsal fin, smaller eye diameter, shorter head length [2].



B. Juvenile Bigeye Tuna. Very long pectoral fin reaching well beyond the second dorsal fin, greater eye diameter, greater head length [2].

### 3.4 *Thunnus alalunga*

Albacore  
Albakora

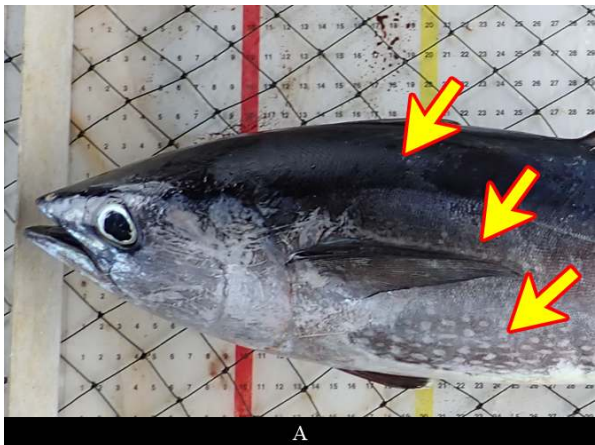


- (A) Dark colour on the head, silvery colour on the body, very long pectoral fin reaching well beyond the second dorsal fin
- (B) Flat on the trailing centre and white or transparent margin on the edge of the caudal fin
- (C) Sharp head than the other tuna, wide diameter on eye, wide eye pupil

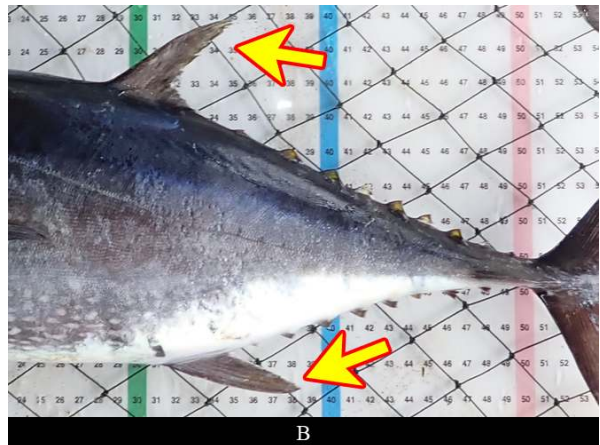
### 3.5 *Thunnus tonggol*

Longtail tuna

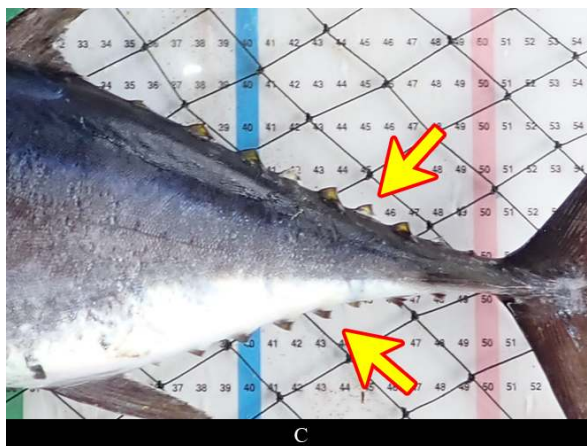
Tongkol abu, tuna batu, tuna sirip hitam.



A



B

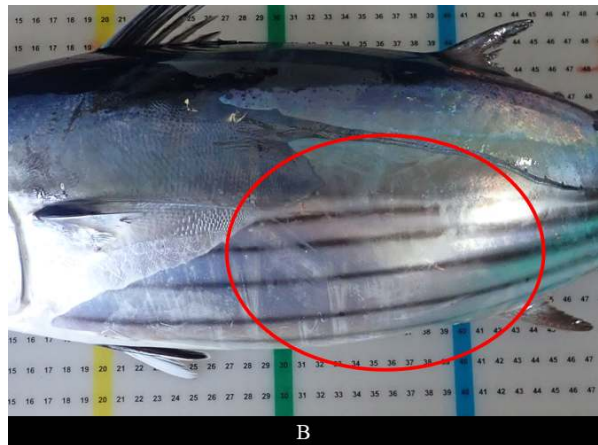
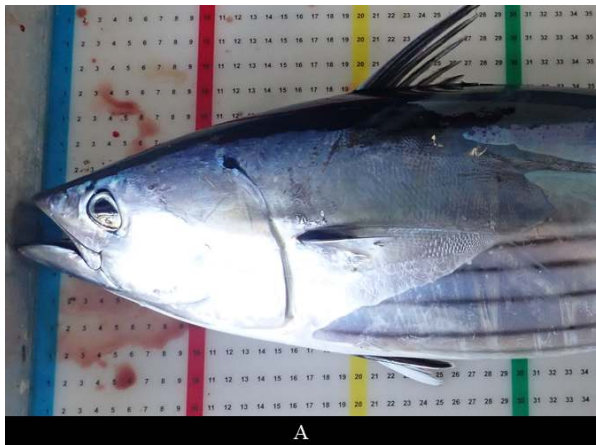


C

- (A) Grayish black upper body, silvery belly, dorsal, pectoral and pelvic fins grey to black [3].
- (B) Tip of second dorsal and anal fins yellowish [3].
- (C) Finlets yellow with white to grey margin [3].

### 3.6 *Katsuwonus pelamis*

Skipjack tuna  
Cakalang, blereng, swat.



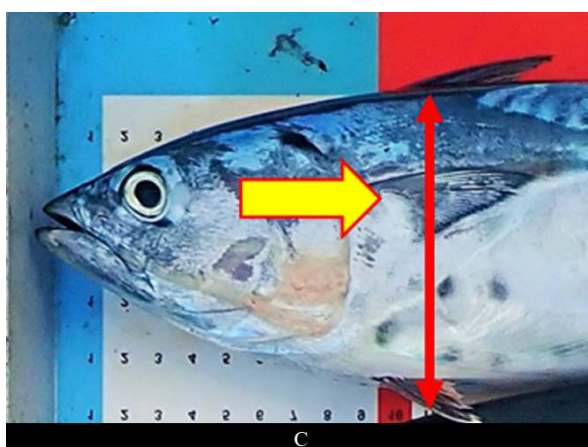
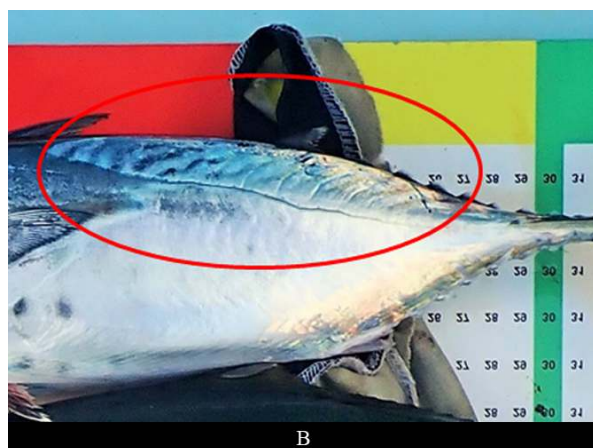
- (A) Blue coloration with dark back.
- (B) There are 4 - 6 dark horizontal stripes on the lower half and sides from the operculum [3].
- (C) Prominent caudal keel [3].

### 3.7 *Euthynnus affinis*

Kawa-kawa

Tongkol, tongkol komo, tongkol comel.

KAW



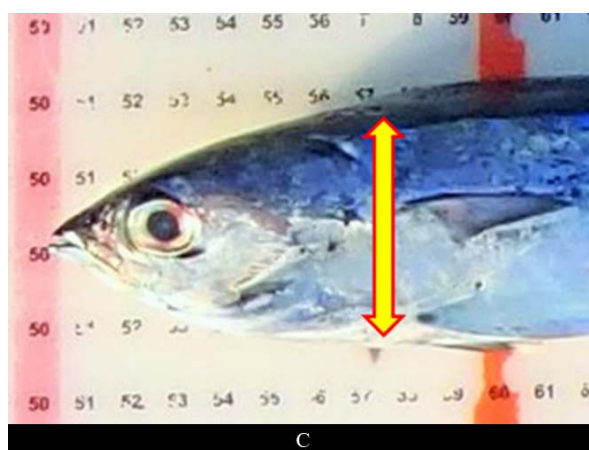
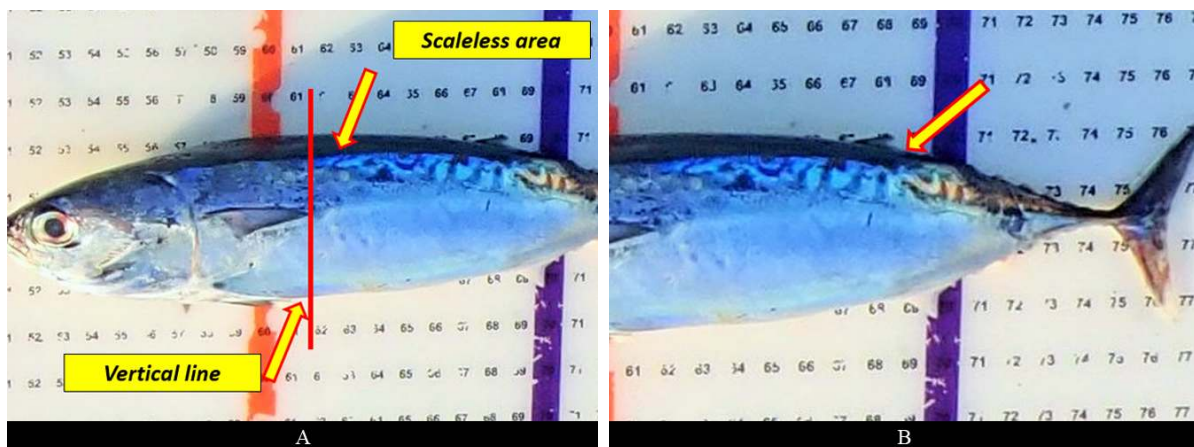
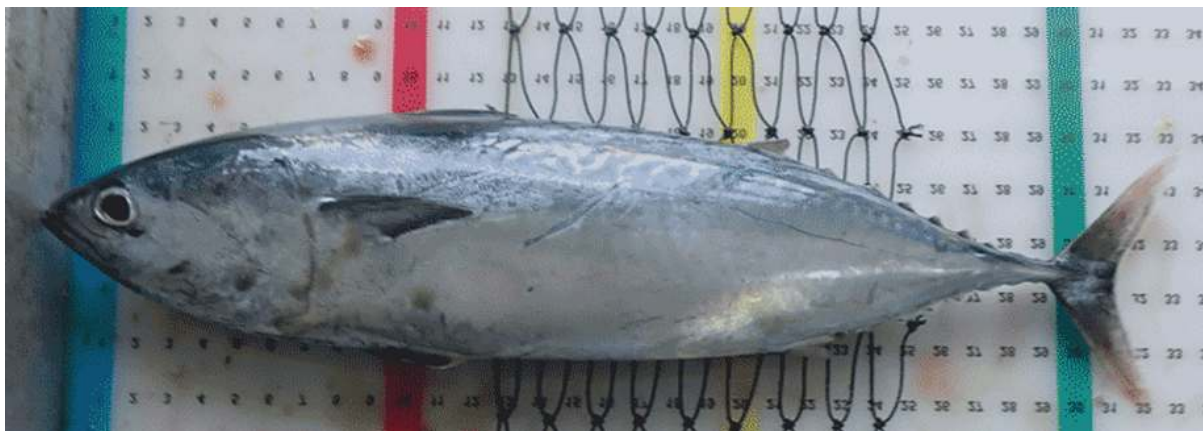
- (A) Black spots on the belly close to pelvic [3].
- (B) Broken oblique stripes [3].
- (C) Higher body, the oblique stripes beyond the pelvic fin [3].

### 3.8 *Auxis rochei*

Bullet tuna

Tongkol, tongkol lisong, awan

BLT



(A) Pectoral fins short, not reaching vertical line from anterior margin of scaleless area [3].

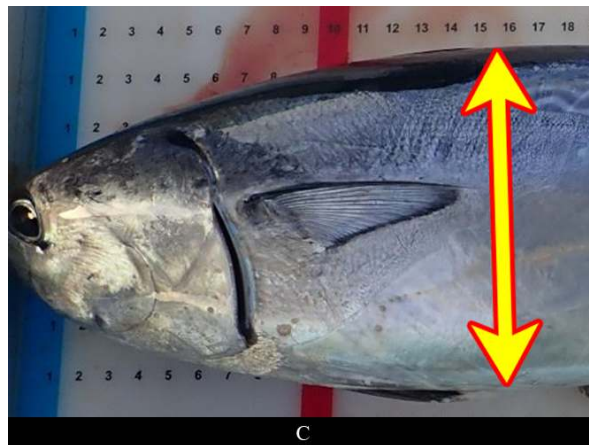
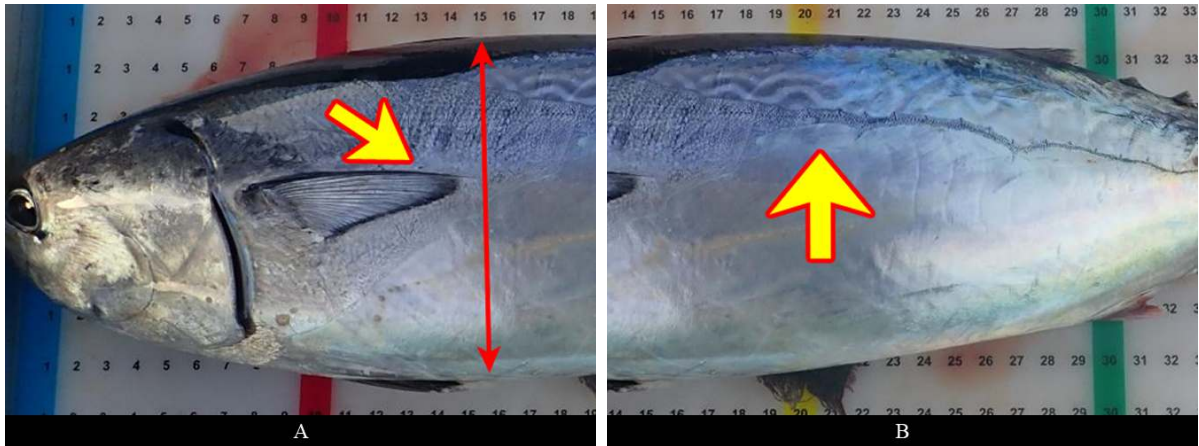
(B) Broad oblique stripes on the back, almost vertical [4].

(C) Rounded and short body [4].

### 3.9 *Auxis thazard*

Frigate tuna

Tongkol, tongkol krai, tongkol balaki

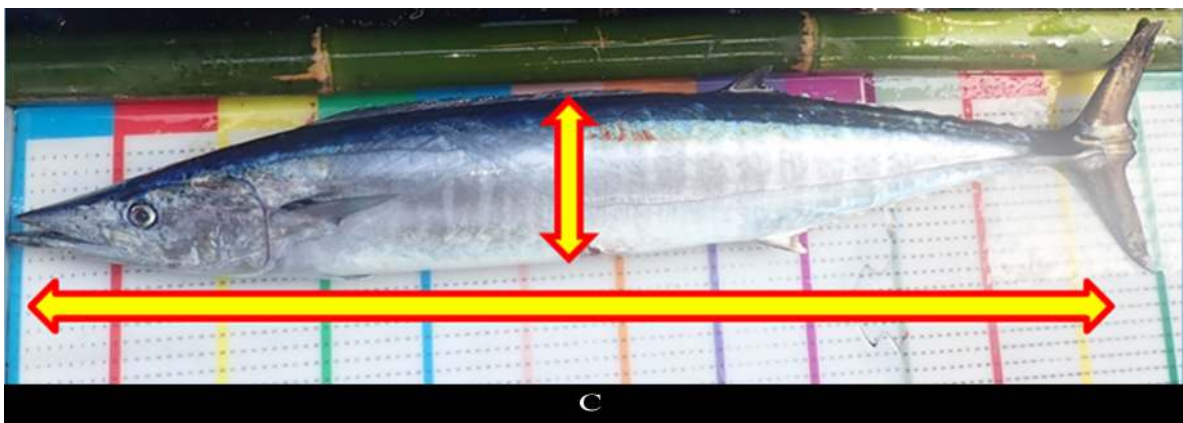
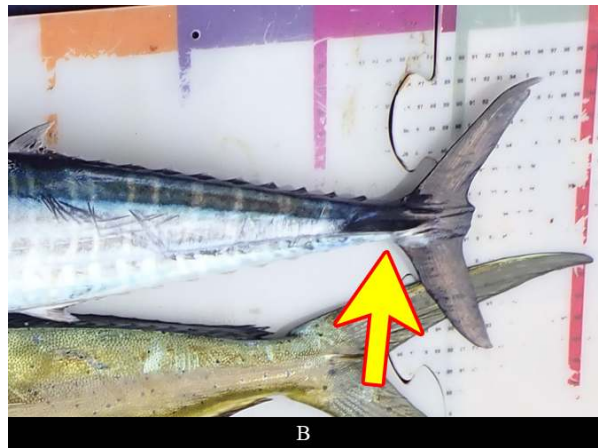


- (A) Pectoral fin not reaching anterior margin of scaleless area [3].
- (B) Narrow oblique stripes on the back [4].
- (C) Rounded body and shorter than bullet tuna [4].



### 3.10 *Acanthocybium solandri*

Wahoo  
Tenggiri



(A) Large mouth with snout tip and jaw terminal, maxilla concealed [4].

(B) Prominent caudal keel flanked by two smaller keels on caudal fin base [4].

(C) Elongated body, fusiform and only slightly compressed [4].

### 3.11 *Scomberomorus guttatus*

Indo-Pacific king mackerel  
Tenggiri, Ajong-ajong, Tandang



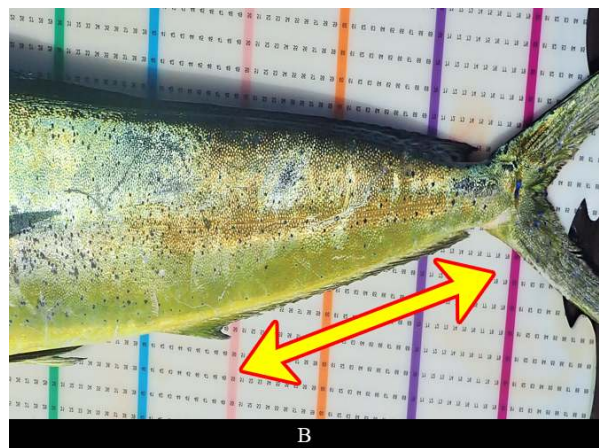
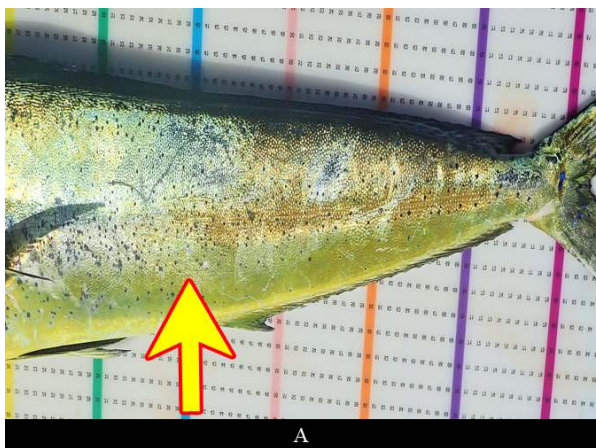
(A) Dark spots on the side [4].

## 4 Coryphaenidae

### 4.1 *Coryphaena hippurus*

Common dolphinfish, Mahi-mahi  
Lemadang, tompek.

DOL



- (A) Typical body shape with yellow colour with light blue varied and black notes on the body, dorsal fin from eye to caudal peduncle [4].  
(B) One anal fin from anus to caudal peduncle [4].  
(C) Small oval tooth patch on tongue [4].

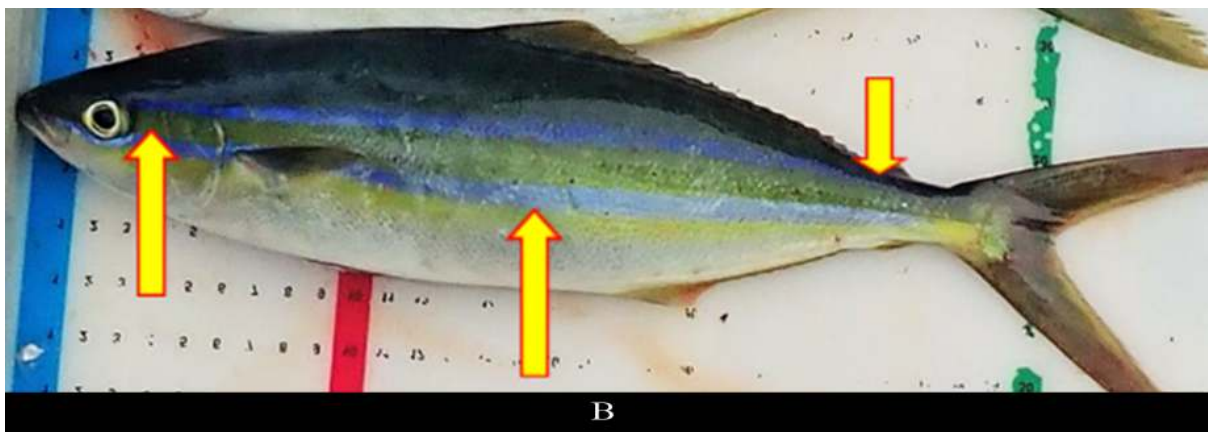
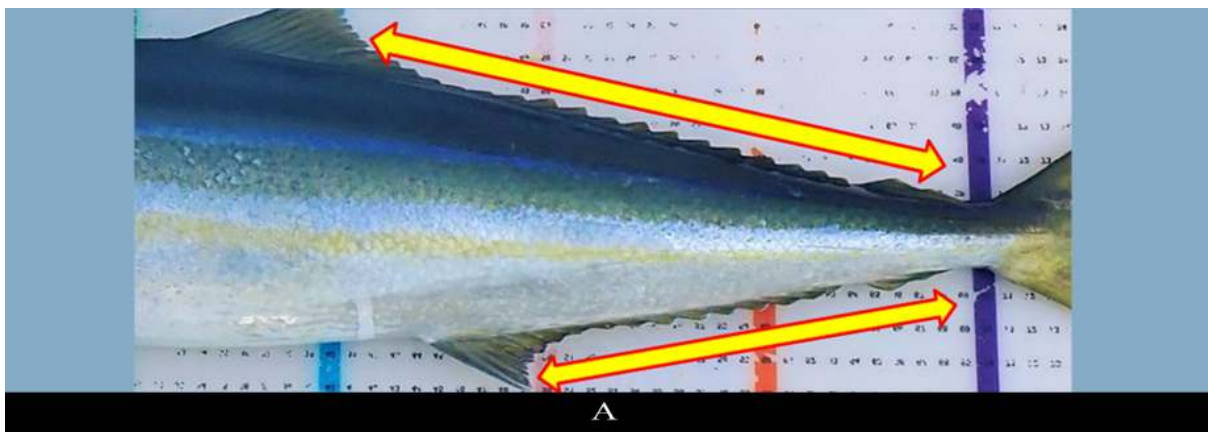
## 5 Carangidae

### 5.1 *Elagatis bipinnulata*

Rainbow runner

Sunglir, Salem, Salmon jepang

RRU

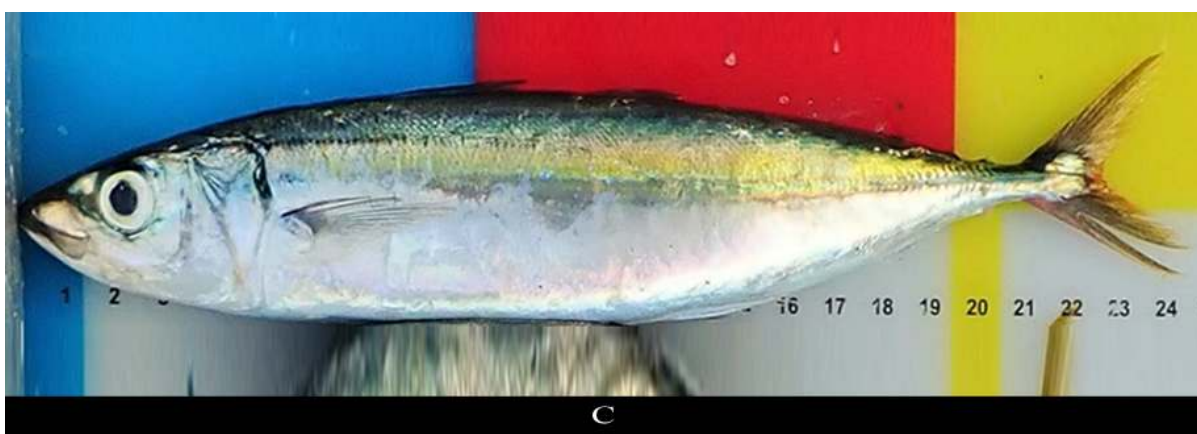
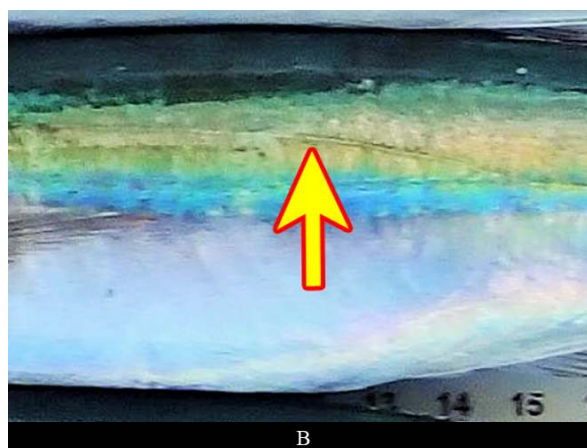
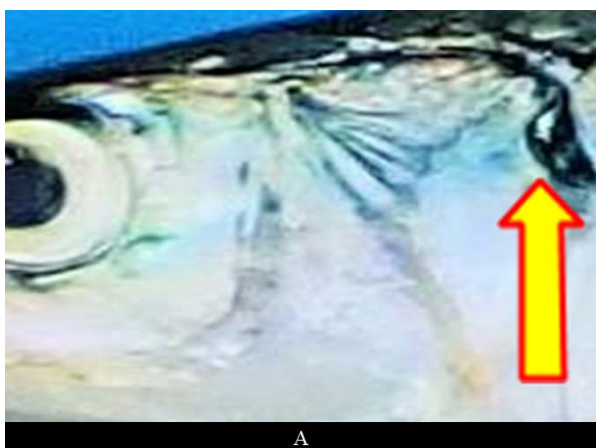
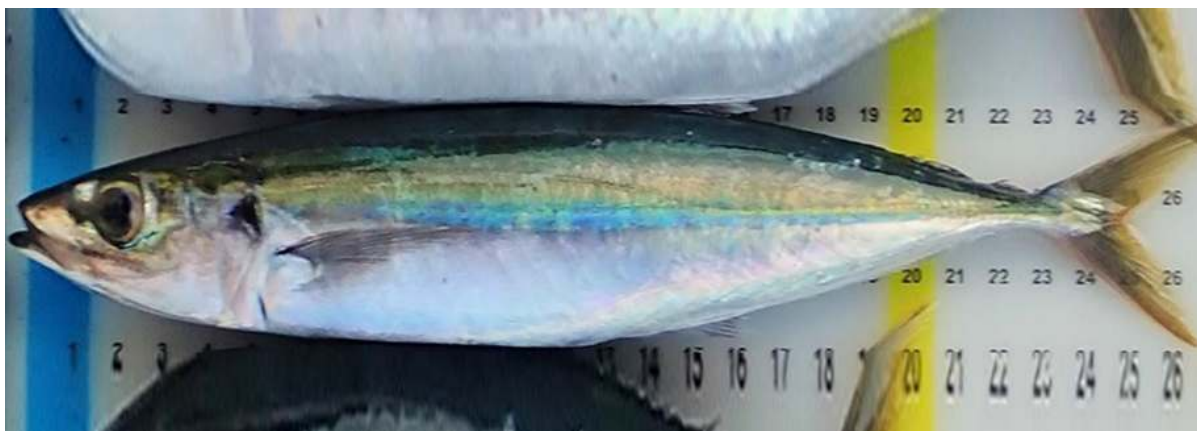


- (A) First dorsal fin much lower than second dorsal with no interspace or they connected, Anal fin base much shorter than soft second dorsal fin base [4].
- (B) 2 blue longitudinal stripes extending from the mouth through eyes to almost caudal fin, 1 yellow longitudinal stripes extending from the mouth through below of eyes to almost caudal fin [4].

## 5.2 *Decapterus macarellus*

Mackerel scad  
Layang biru, malalugis

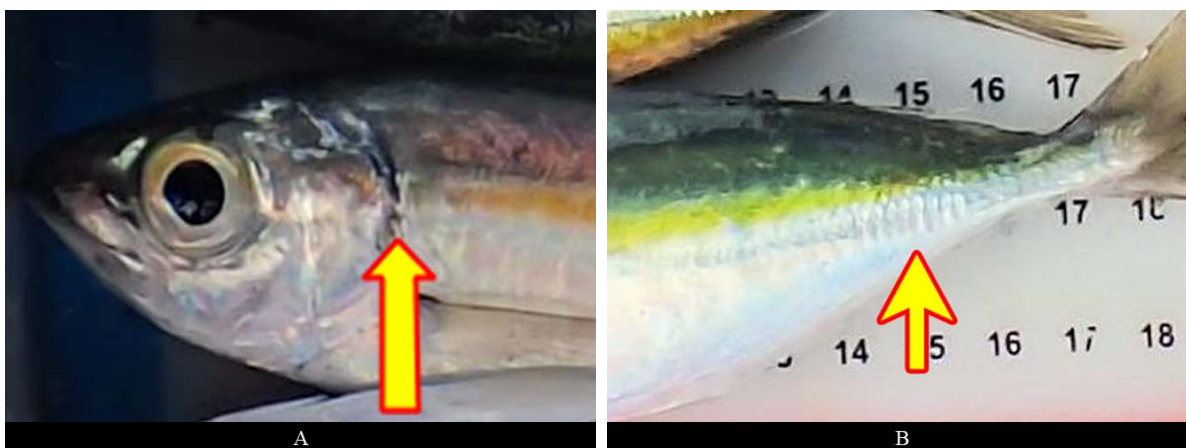
MSD



- (A) Black mark on the upper operculum [4].  
(B) Bluish green in upper body, lower belly is silvery white [4].  
(C) Tip of fin failing to reach from second dorsal fin origin, 2 rayed finlet behind second dorsal and anal fins [4].

### 5.3 *Selar crumenophthalmus*

Bigeye scad  
Selar

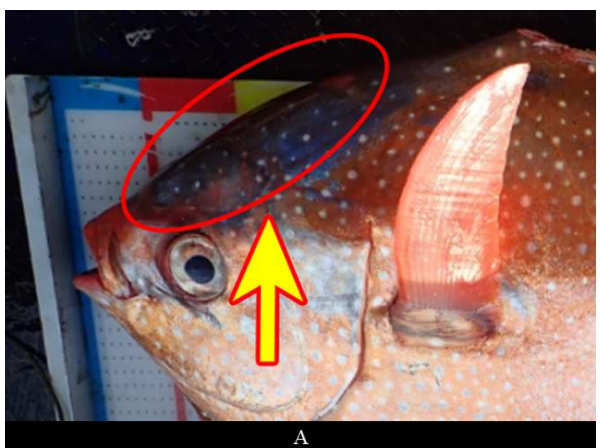
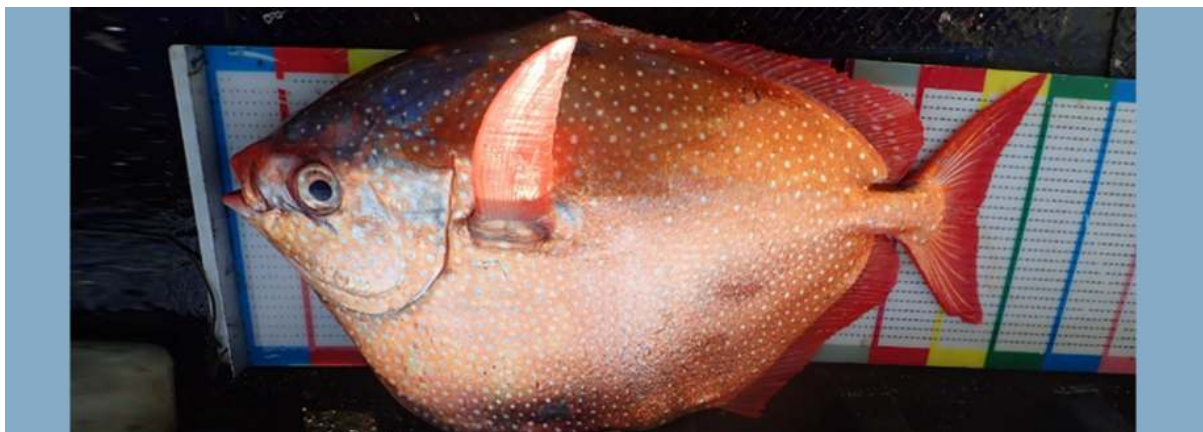


- (A) Black mark on the upper operculum [3].  
(B) Lateral line slightly curved anteriorly, becoming straight below middle second dorsal fin; 32 to 38 scutes [3].

## 6 Lampridae

### 6.1 *Lampris guttatus*

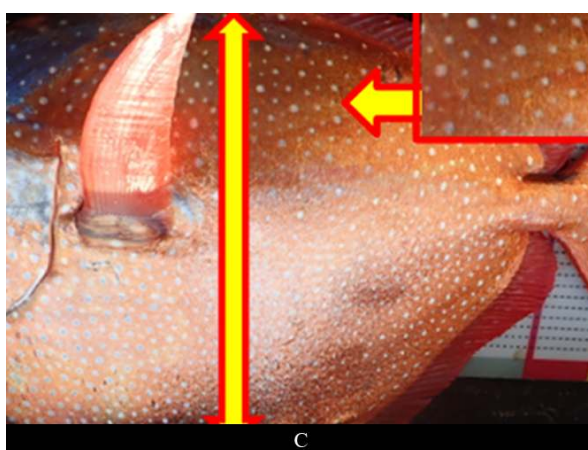
Opah



A



B



C

(A) Blue colored head above the eyes [5].

(B) Two rayed finlet anal fin [5].

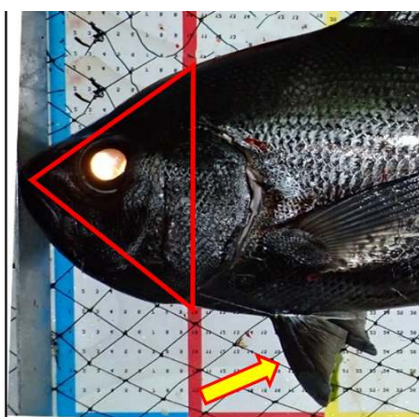
(C) Deep-bodied with orange color, white dots all over body [5].

## 7 Bramidae

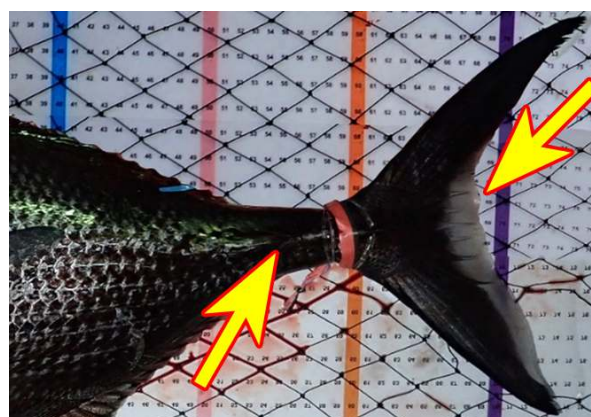
### 7.1 *Taractes rubescens*

Knifetail pomfret, Keeltail pomfret

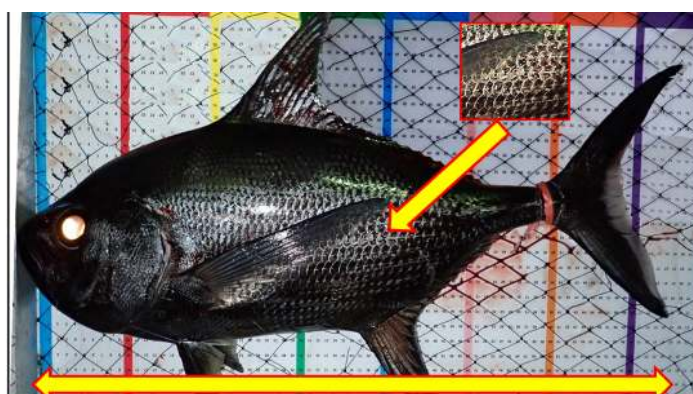
Tengkek, Bawal laut dalam, Bawal lonjong



A



B



C

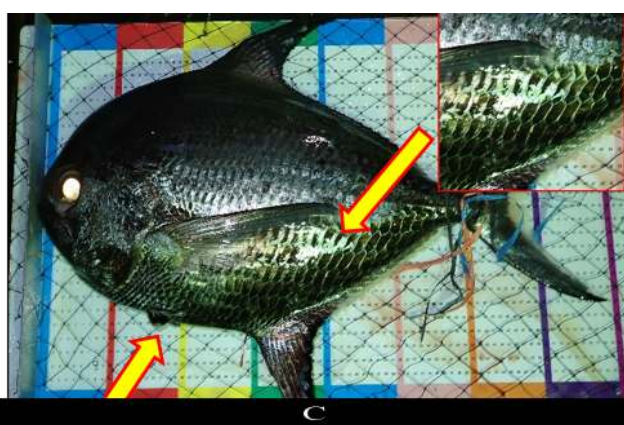
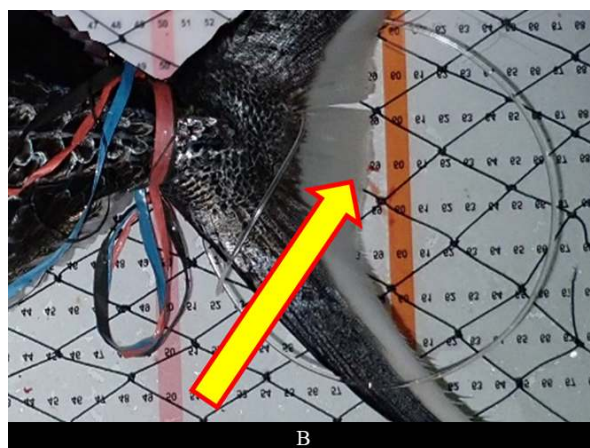
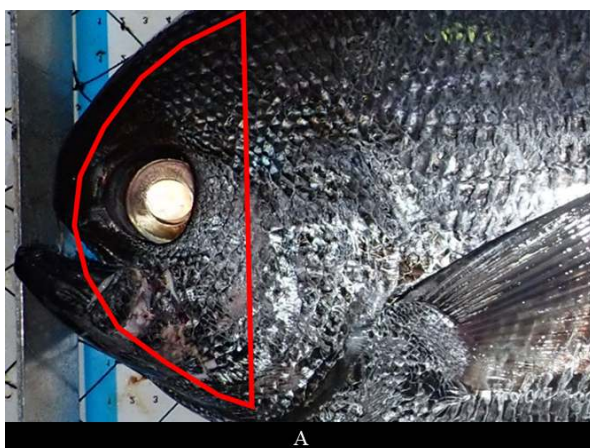
- (A) Snout pointed, lower jaw greatly projecting and longer pelvic fins [6].
- (B) Scales on caudal peduncle enlarged to form a sharp keel in adults [6].
- (C) C-form of caudal fin and white margin in the below part [6].
- (D) Uniformly brownish and more elongate body [6].



## 7.2 *Taractichthys steindachneri*

Sickle pomfret, Pomfret

Bawal sabit, Bawal bulat, Caisper



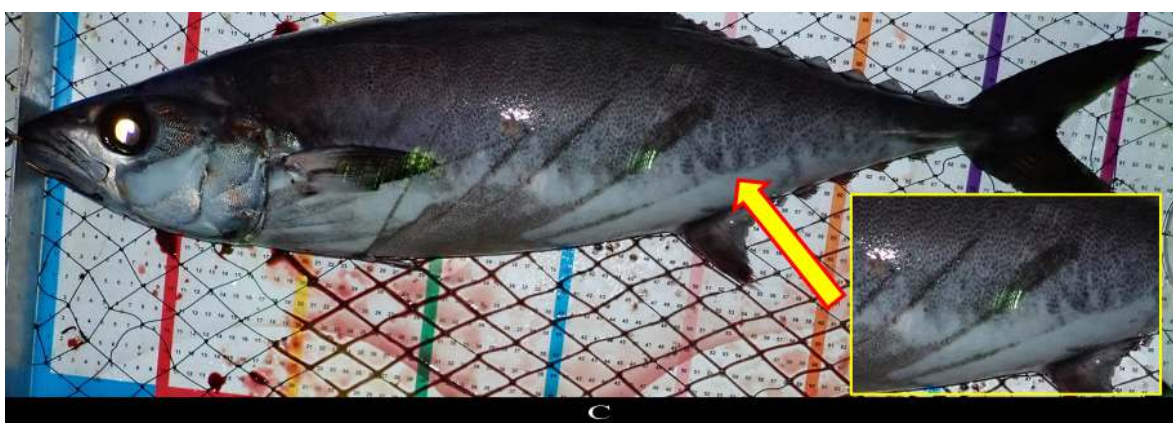
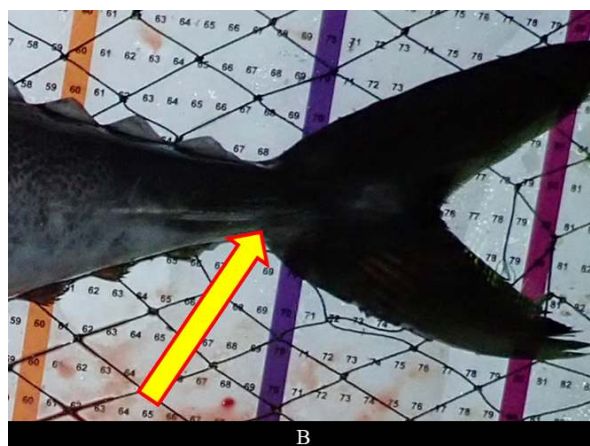
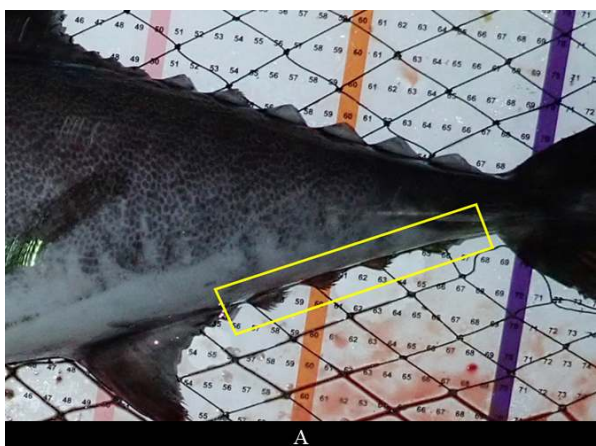
- (A) 4-5 anal finlets [6].
- (B) Strong median keel with two small keels [6].
- (C) Elongate body, single curved lateral line [6].

## 8 Gempylidae

### 8.1 *Lepidocybium flavobrunneum*

Escolar, Black oil-fish

Gindara, Ikan Setan, Jalidin



(A) 4-5 anal finlets [6].

(B) Strong median keel with two small keels [6].

(C) Elongate body, single curved lateral line [6].

## 9 References

- [1] Ministry of Marine Affairs and Fisheries [MMAF], 2017. Statistics of Marine Capture Fisheries by Fisheries Management Area (FMA) 2005-2016. Jakarta.
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