

Photographic identification guide for non-target fish species taken in WCPO purse-seine fisheries



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Version 1

August 2007

NOTE

The species included in this guide are the most commonly reported by-catch species recorded by observers on tuna purse-seine vessels operating in the western and central Pacific Ocean (WCPO). The guide was developed to assist in the training of observers operating within the Western and Central Pacific Fisheries Commission (WCPFC) Convention Area.

Only the most commonly seen marlin and shark species encountered on purse seiners are depicted here. Other species of billfish, sharks, marine turtles and other finfish that may be seen on WCPO purse seiners should be positively identified using other identification manuals. Several are available, such as those produced by the Secretariat of the Pacific Community, the WCPFC Scientific Committee and other observer programmes.

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Fisheries observer programmes and agencies can obtain the PowerPoint version of this ID guide for training purposes by contacting the authors directly.



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Scientific Committee
Third Regular Session
13-24 August 2007
Honolulu, Hawaii, USA
of the
Western and Central Pacific Fisheries Commission

Fishing Technology Specialist Working Group
SWG-FT IP-7
August 2007

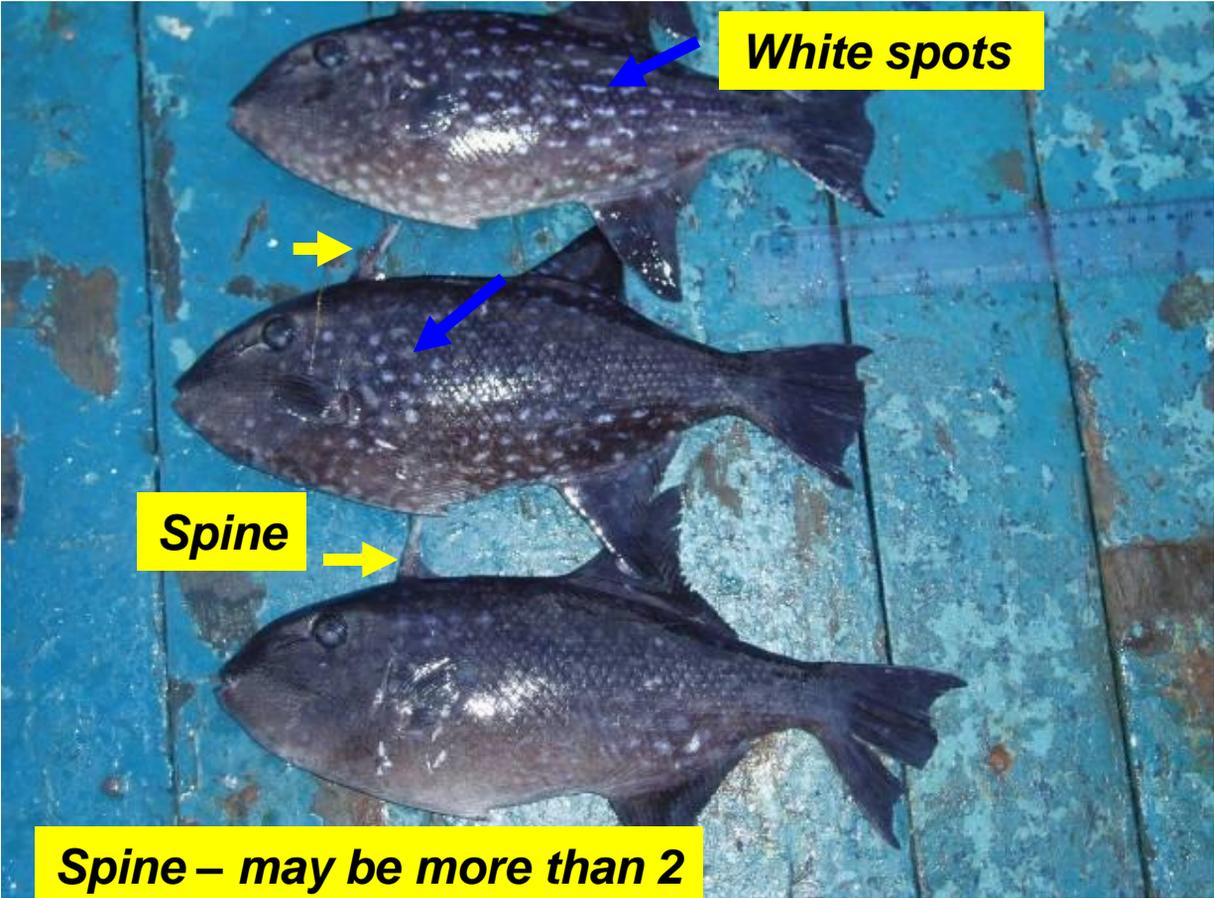
The document can be downloaded from the Pelagic Fisheries Research Program ftp site. To access this site, click on this link or paste it into a Web browser:

<ftp://ftp.soest.hawaii.edu/PFRP/itano>

or send a request to Siosifa Fukofuka siosifaF@spc.int or
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SPOTTED OCEANIC TRIGGERFISH

Canthidermis maculatus



SPOTTED OCEANIC TRIGGERFISH

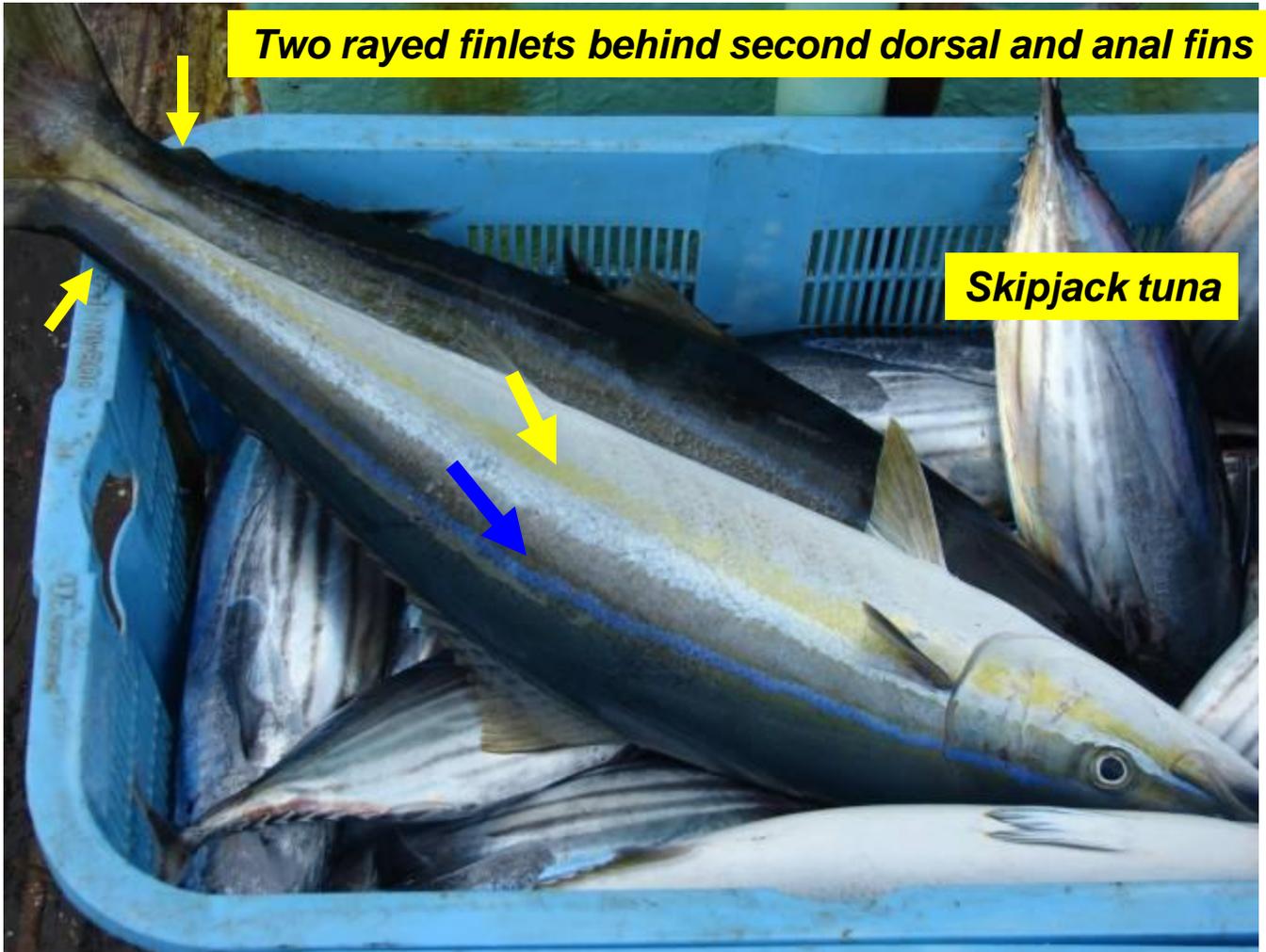
Canthidermis maculatus

Frozen condition:

- *White spots have disappeared*
- *Change in color to dark black after weeks in the brine well*

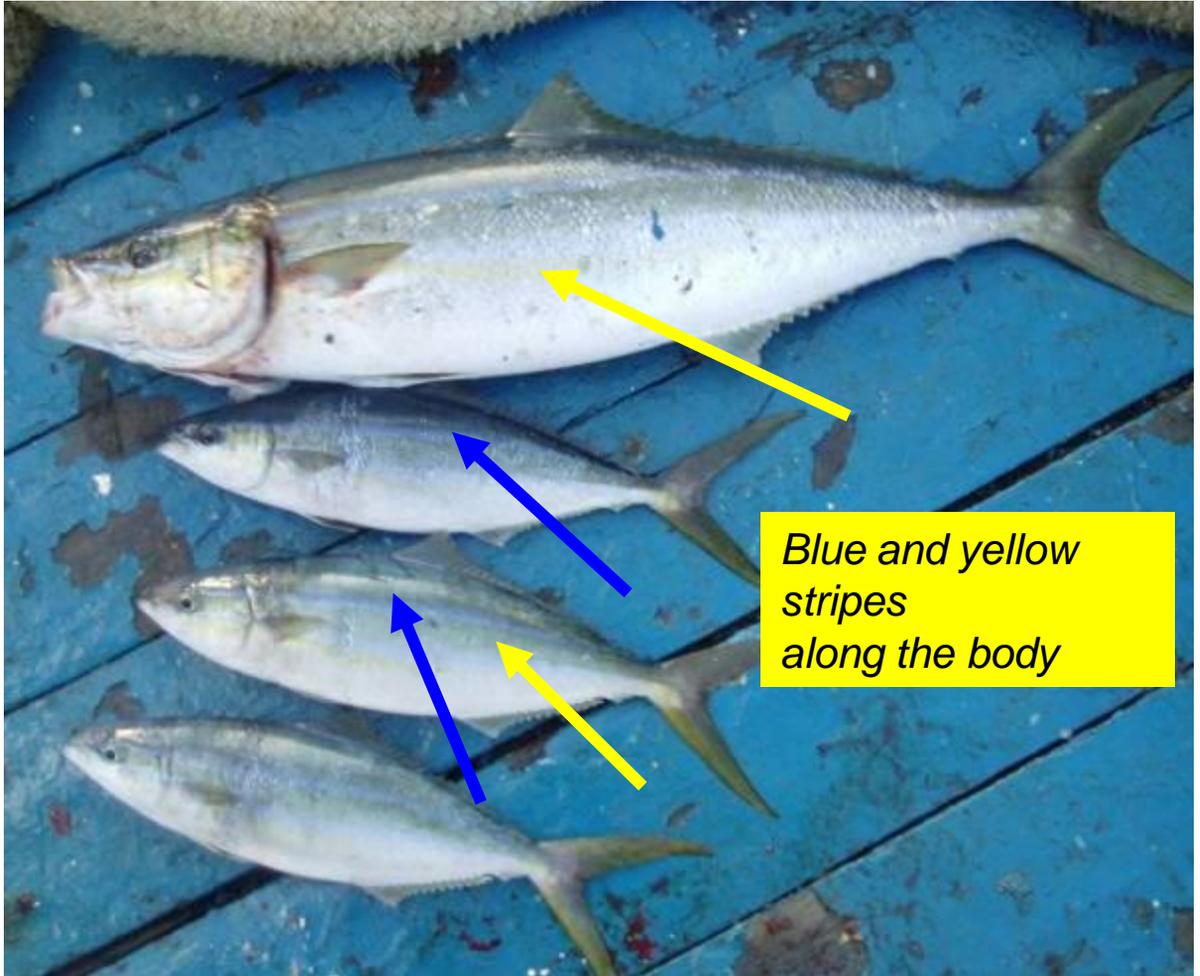


RAINBOW RUNNER
Elagatis bipinnulata



RAINBOW RUNNER

Elagatis bipinnulata

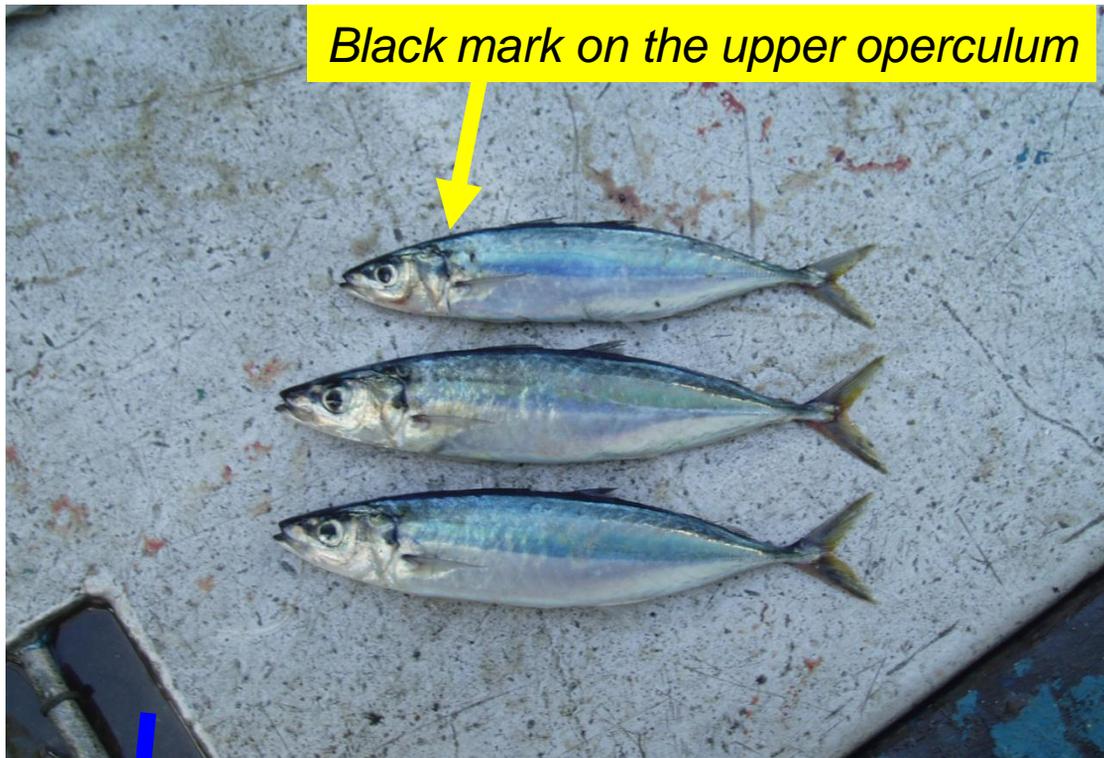


Blue and yellow stripes along the body

MACKEREL SCAD

Decapterus macarellus

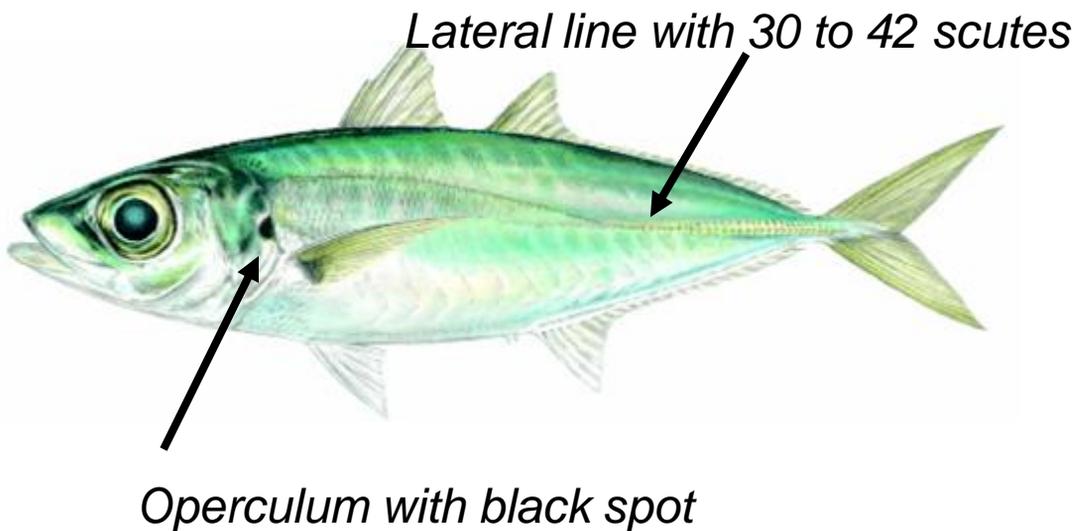
- *Body elongate and slender*
- *Black metallic green upper body*
- *Lower belly is silvery white*



BIGEYE SCAD

Selar crumenophthalmus

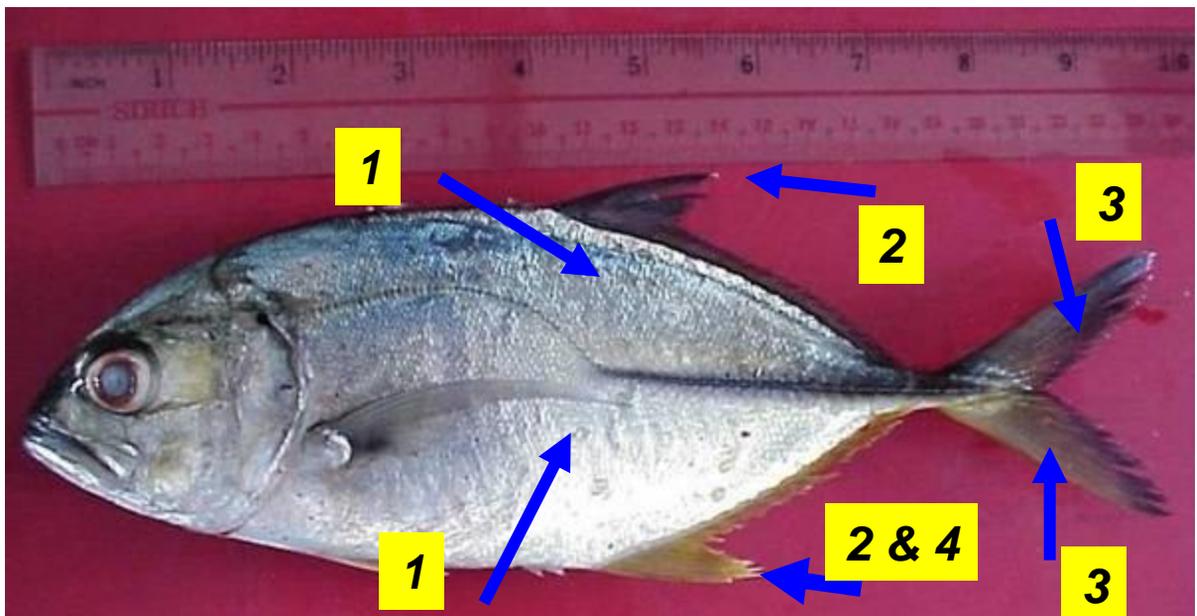
- *Body elongate and compressed*
- *Metallic blue to bluish green body color*
- *Operculum with black spot*
- *Large eye*



BIGEYE TREVALLY

Caranx sexfasciatus

1. Body color: blue-green dorsally, silvery white lower body
2. Dorsal lobe (soft) and anal fin with white-tipped lobes
3. Caudal fin yellowish to black
4. Two detached spines with the anal fin
5. Live or fresh specimens golden with vertical bars



Frozen specimen

GOLDEN TREVALLY

Gnathanodon speciosus

- *Yellow to silvery body color*
- *Broad and narrow black bars*
- *Fins yellow*
- *Black spots on sides, mainly in adults*
- *Pectorals falcate*
- *Anal fin with 2 detached spines*



Photo: J E. Randall

GREATER AMBERJACK

Seriola dumerili

- *Dark stripe through eye, especially in juveniles*
- *Greenish grey upper body*
- *Silvery white lower body*
- *Stripe along mid-side of body and below around pectoral*



Photo: J. E. Randall

COTTONMOUTH JACK

Uraspis secunda

- *Inside of mouth and tongue are pure white in color*
- *Sooty dark gray with several lighter vertical bars; fins are dark*



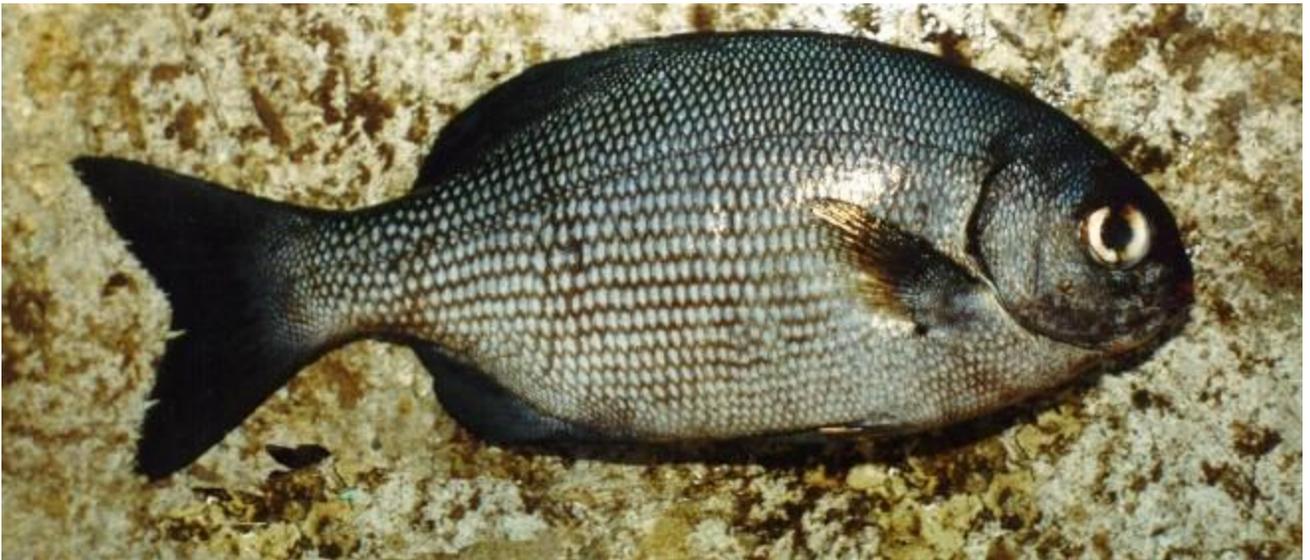
Photo: NOAA Fisheries

BLUE SEACHUB

Kyphosus cinerascens

Note: very common in purse-seine sets, particularly on logs and FADs

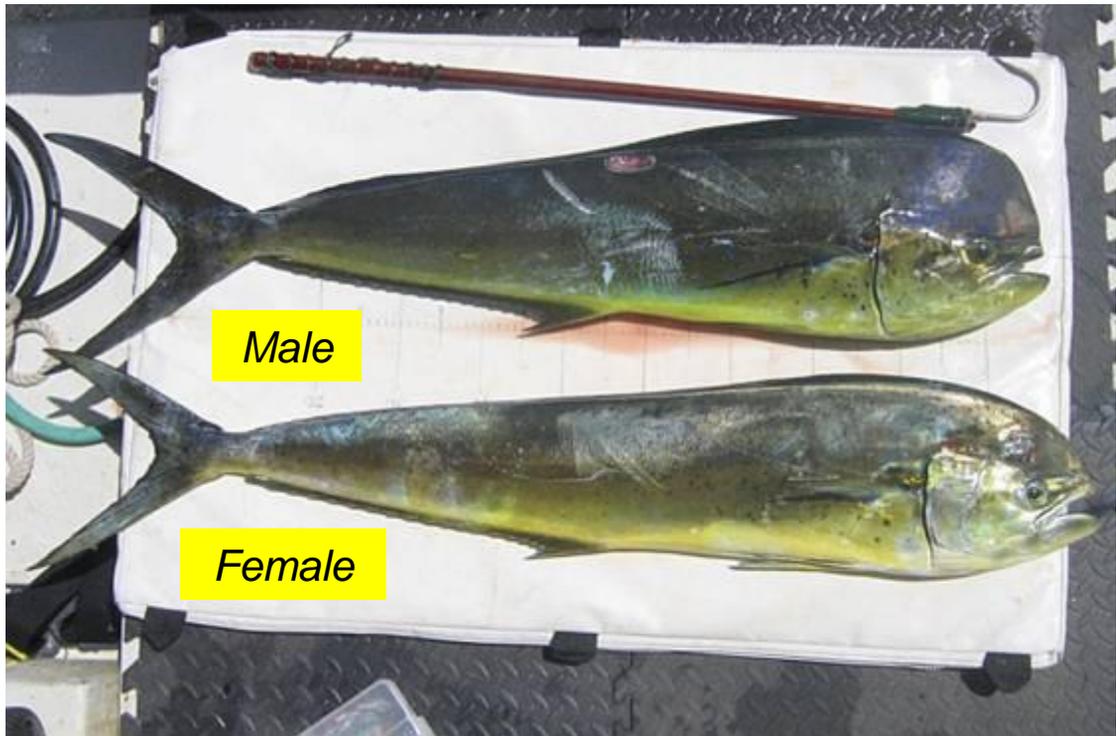
- Grey with dusky fins
- Soft parts of dorsal and anal fins elongated anteriorly
- Horizontal stripes made up of small light spots
- Soft parts of dorsal and anal fins elongated anteriorly



DOLPHIN FISH

Coryphaena hippurus

- *Bright green blue upper body*
- *Bright yellow lower body*
- *Distinct body shape and color*
- *Males have high forehead compared to rounded forehead of females*

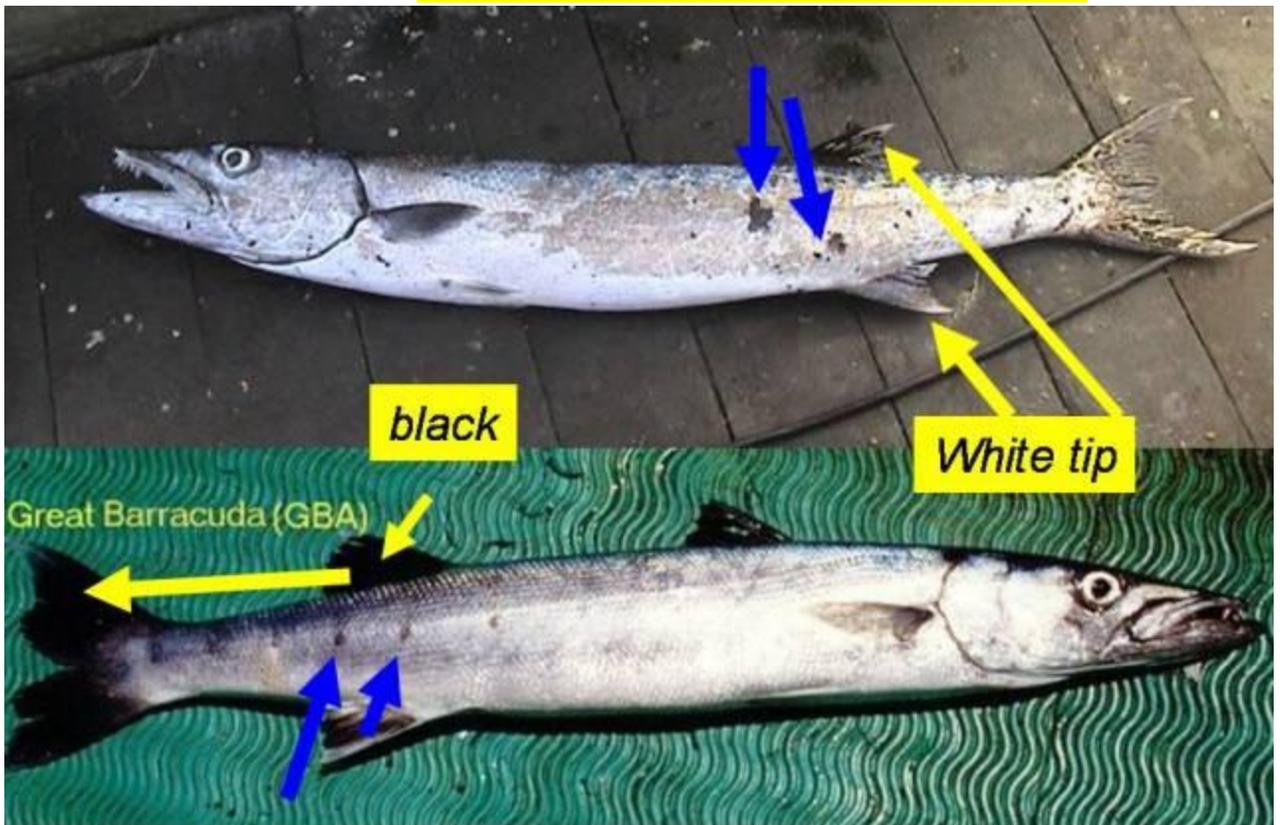


GREAT BARACUDA

Sphyraena barracuda

- Lower jaw extends in front of upper snout
- Short dark bars on silvery sides, white belly
- A few irregular dark blotches on sides
- Large scales
- Dark second dorsal, anal and tail fins with white tips

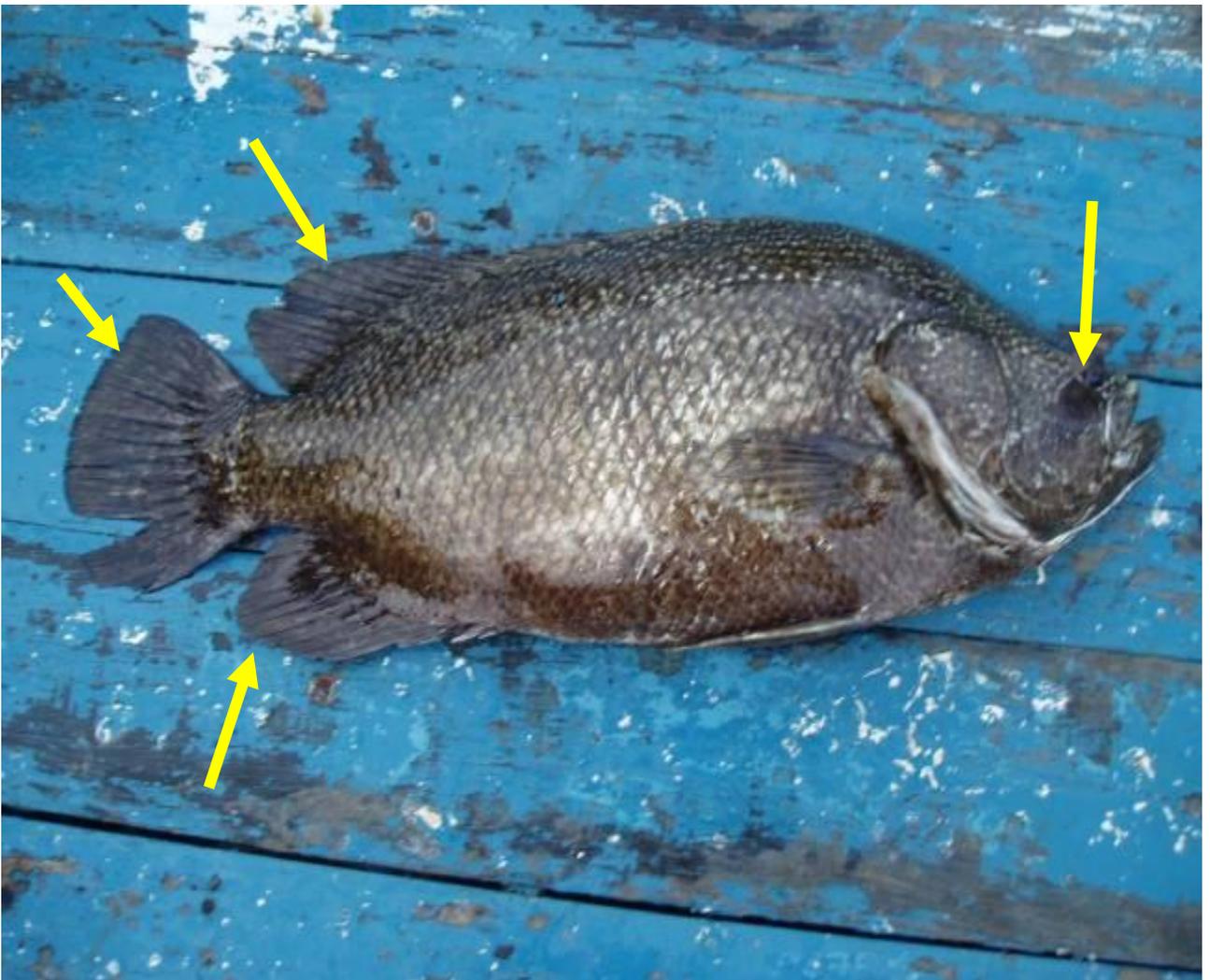
Black spots above the anal fin



TRIPLETAIL

Lobotes surinamensis

- *Upper body dark brown to black*
- *Lower body bronze with grey to white edges on scales*
- *Long and round dorsal and anal fin extend close to tail*
- *Small eyes close to mouth*



LONGFIN BATFISH

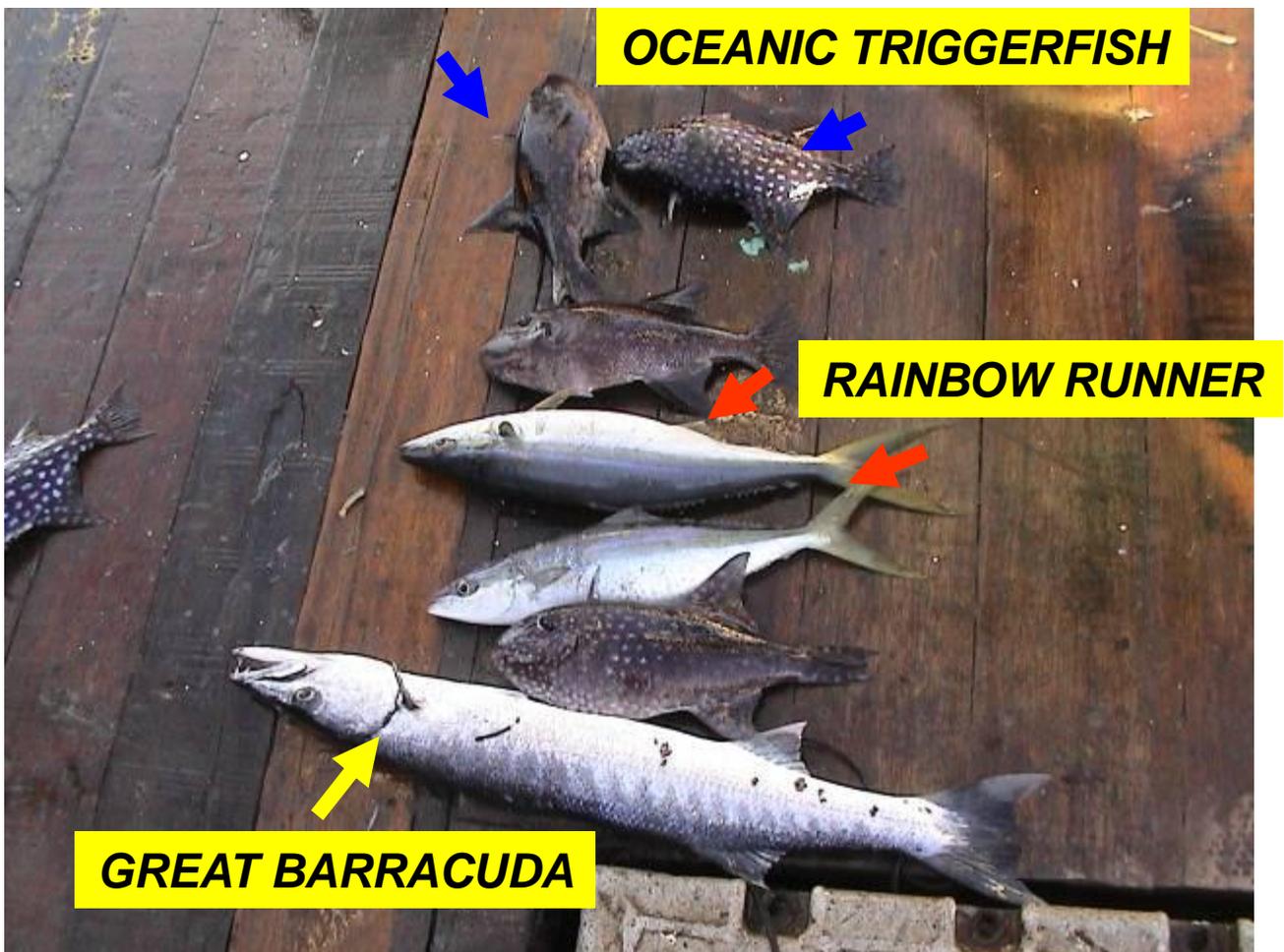
Platax teira

- *Yellowish silvery or dusky body color*
- *Distinctive flattened, oval shaped body*
- *Black bar through eye*
- *Dark bar from dorsal-fin origin across rear edge of operculum and pectoral-fin base to belly*
- *Color of pelvic fin is yellow*
- *Grows to a length of 70 cm*



Typical purse-seine by-catch species

- OCEANIC TRIGGERFISH
- RAINBOW RUNNER
- GREAT BARRACUDA



Typical purse-seine by-catch species

- **OCEANIC TRIGGERFISH**
- **MACKEREL SCAD**
- **BLUE SEA CHUB**



BLUE MARLIN

Makaira nigricans

- *First dorsal fin height is $\frac{1}{2}$ to $\frac{3}{4}$ greatest body depth*
- *Pectoral fins nearly straight, not sickle shaped*
- *Second dorsal fin slightly posterior to second anal fin*
- *Blue-black color on back and upper sides, white/silver below*
- *Body thick in cross section with grayish-white meat*



Photo: NOAA Fisheries

BLACK MARLIN

Makaira indica

- *First dorsal fin height is $\frac{1}{2}$ or less of body depth*
- *Pectoral fins sickle shaped and rigid, cannot be folded flat to body*
- *Second dorsal fin slightly in front of second anal fin*
- *Highly angled nape (area between bill and first dorsal fin)*
- *Short, stout bill, round in cross section*
- *Black to dark blue color on dorsal surface, silvery-white to white below*

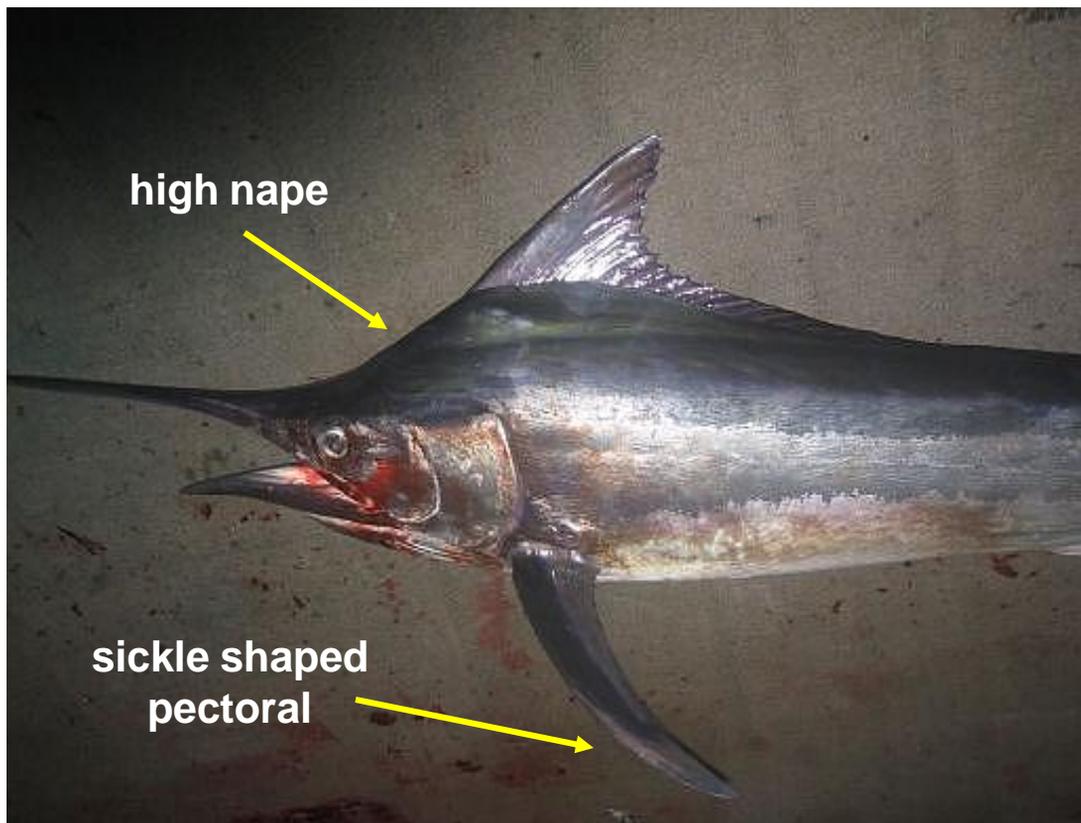


Photo: NOAA Fisheries

BLACK MARLIN

Makaira indica

Note

- *Low dorsal fin with rounded tip*
- *Rigid, sickle shaped pectoral fins, cannot be folded back*
- *Second dorsal fin slightly in front of the second anal fin*



Photo: NOAA Fisheries

STRIPED MARLIN

Tetrapturus audax

Note: striped marlin are extremely rare in tropical purse-seine catch. All marlin can show stripes when fresh.

- Dorsal fin height equal to or greater than body depth
- Dorsal fin long and thin, not as rigid as blue or black marlin
- Body thin and flattened, not rounded as for blue or black marlin
- Long, thin, sharp bill
- Meat can be pinkish or orange



Photo: NOAA Fisheries

OCEANIC WHITETIP SHARK

Carcharhinus longimanus

- *Large rounded first dorsal and pectoral fins with white or mottled tips*
- *Flattened head and rounded snout*
- *Body color typically brown, whitish below*
- *May have black markings on the tips of small fins*

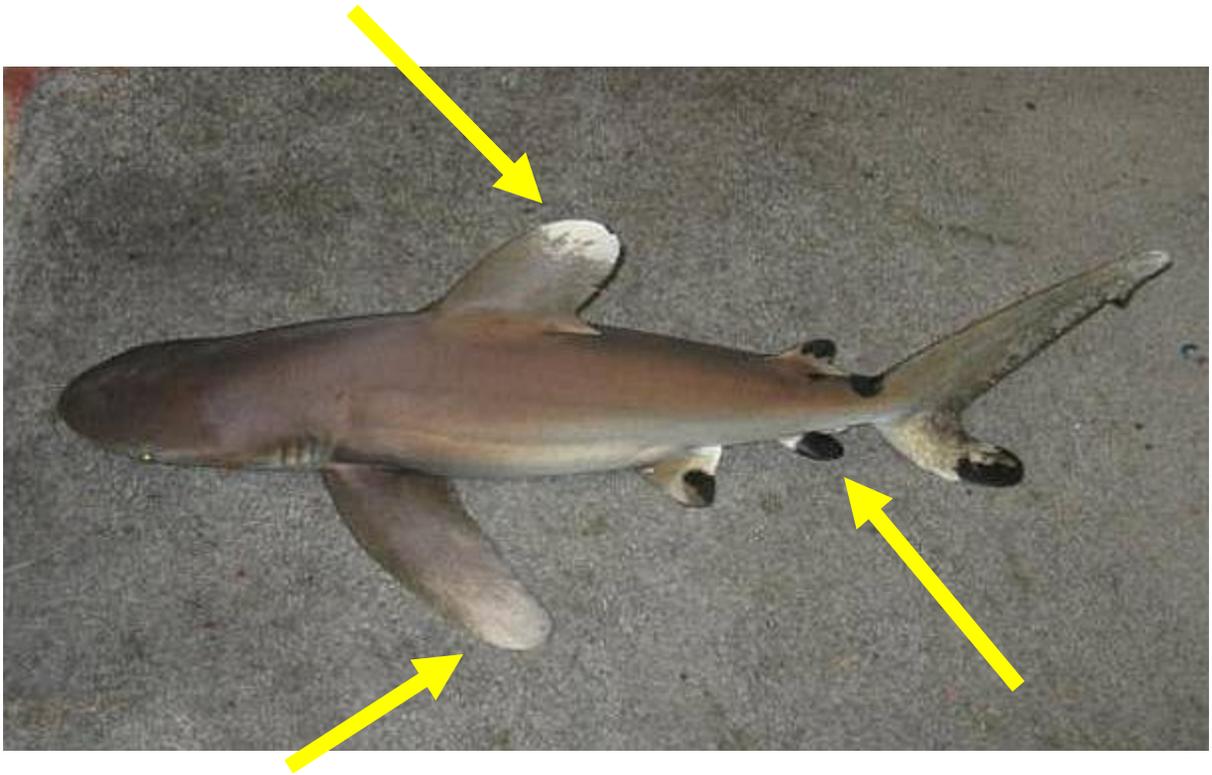


Photo: NOAA Fisheries

SILKY SHARK

Carcharhinus falciformis

Note: very common in purse-seine sets, particularly on logs and FADs

- Front attachment of dorsal fin located behind pectoral fins
- Distinct ridge between dorsal fins
- Long, low interdorsal ridge
- Long, free tips at rear of dorsal and second anal fins
- Copper-brown color with white belly
- Black markings on underside of pectoral fin tips



Photo: NOAA Fisheries

WAHOO

Acanthocybium solandri

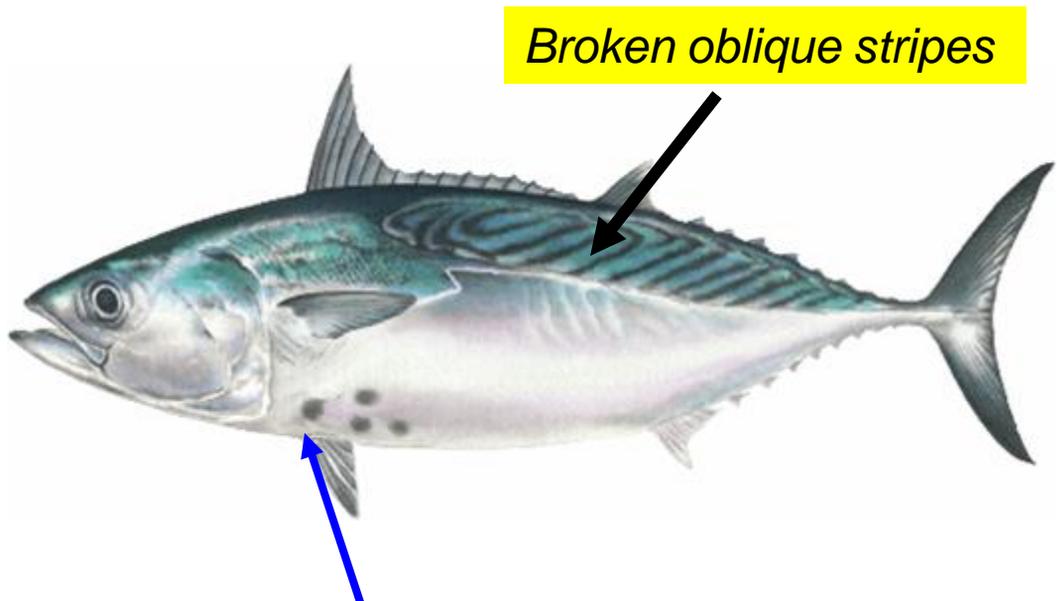
- *Snout as long as the head – see below*
- *Up to 30 vertical bars*
- *Lower jaw and upper snout about equal when mouth closed*
- *Smooth skin with tiny scales*
- *Fine serrate teeth*



Photo: NOAA Fisheries

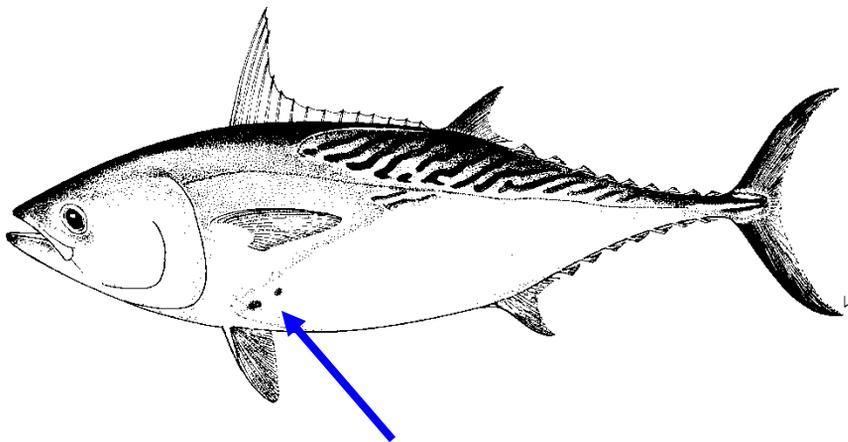


KAWAKAWA
Euthynnus affinis



Broken oblique stripes

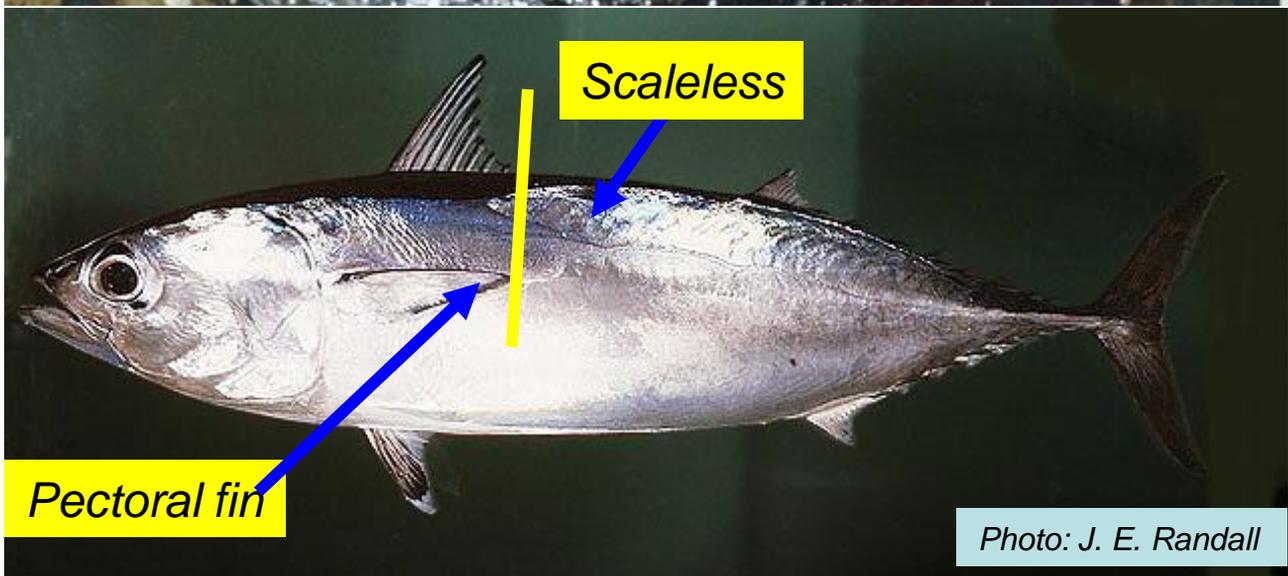
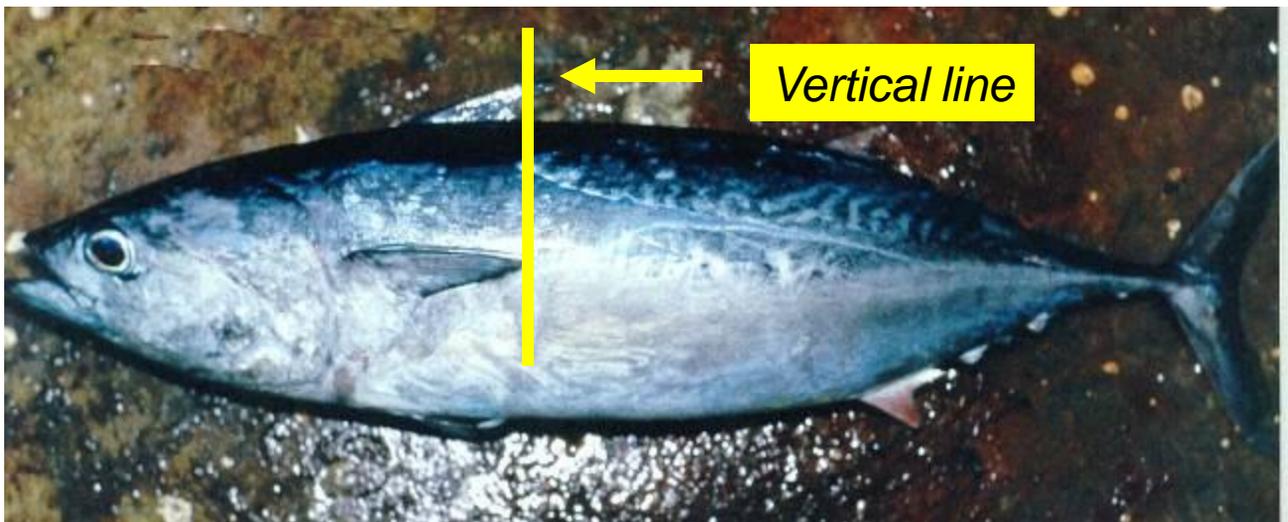
Black spots on the belly close to pelvic fin



FRIGATE TUNA

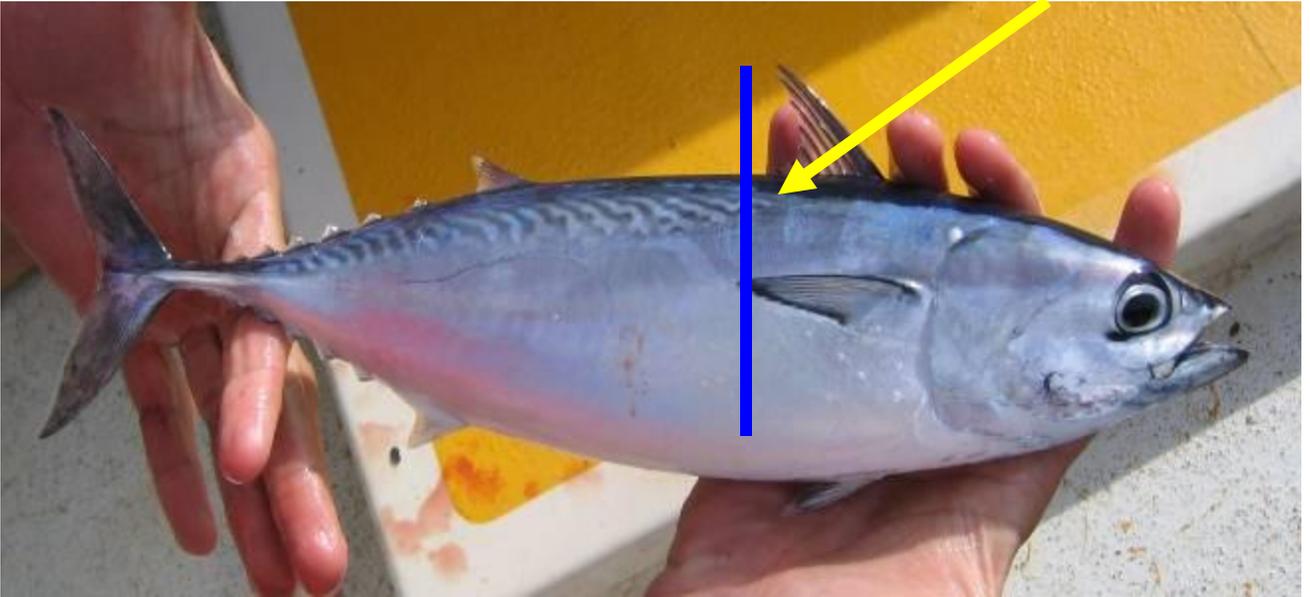
Auxis thazard

- Short pectoral fins, but reaching past vertical line from anterior margin of scaleless area above corslet – see below.



FRIGATE TUNA

Auxis thazard

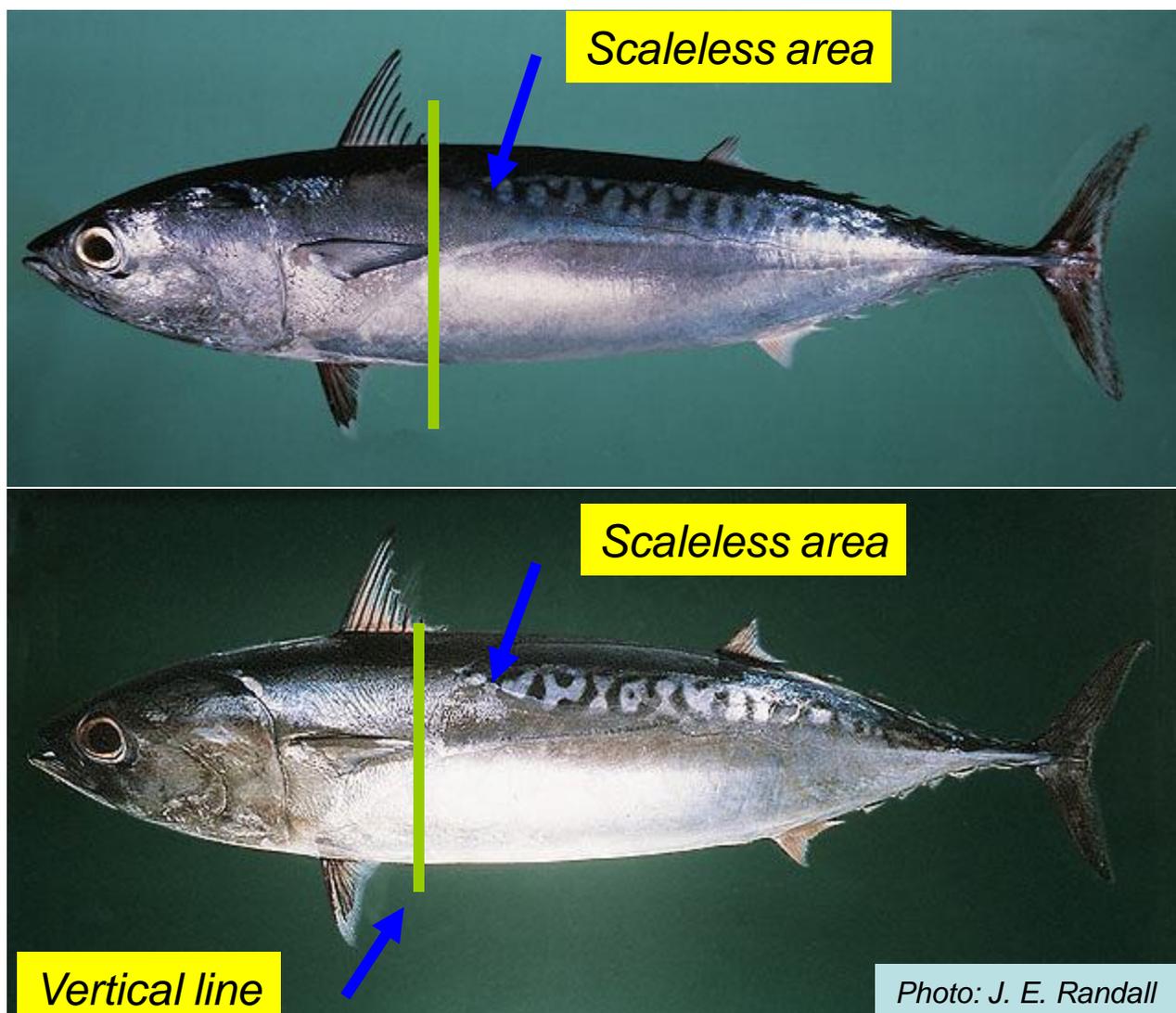


- *Short pectoral fins, but reaching past vertical line from anterior margin of scaleless area above corslet*

BULLET TUNA

Auxis rochei

- Pectoral fins short, not reaching vertical line from anterior margin of scaleless area above corselet – see below



MIXED SMALL TUNA

1. Bullet tuna 2. Frigate tuna 3. Kawakawa



OCEAN ANCHOVY

Encrasicholina punctifer



- *Rounded snout*
- *A very broad silver mid-lateral band with darker margins*

OCEAN SUNFISH

Mola mola

- *'Half a fish' appearance*
- *Unique fish whose bodies come to an end just behind the dorsal and anal fins*
- *Length up to over 3 meters*
- *No tail*



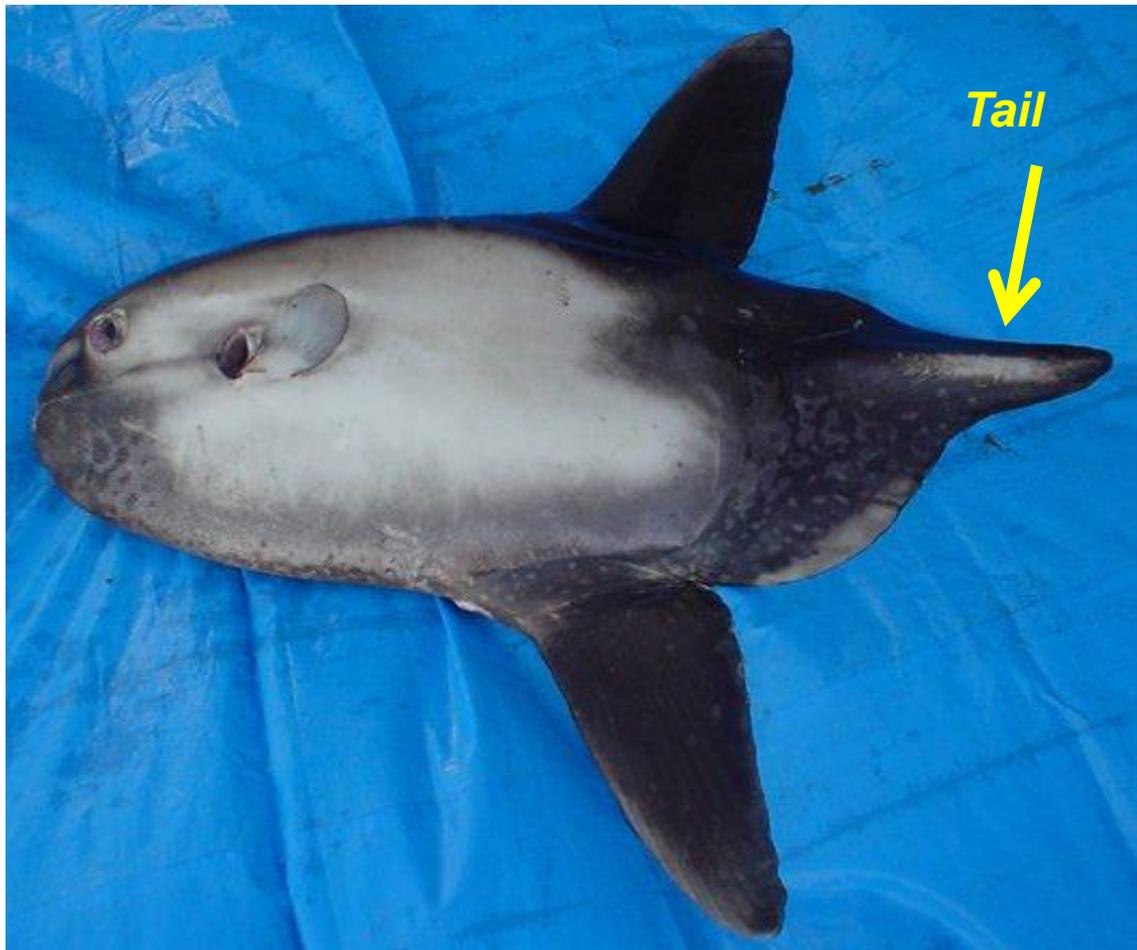
No tail

Very distinct features

SHARPTAIL SUNFISH

Masturus lanceolatus

- *Deep and compressed body*
- *Protruding tail*
- *Up to 3 meters in length*



Very distinctive tail

OCEAN SUNFISH

Mola mola



SHARPTAIL SUNFISH

Masturus lanceolatus



GAINT MANTA RAY

Manta birostris



Photos: D. Golden



Identifying characteristics

- Short and thin whip-like tail, usually lacks a spine
- Very large body (max. size 9.1 m) with broad head projections on either side of mouth
- Dark to black color above, whitish below

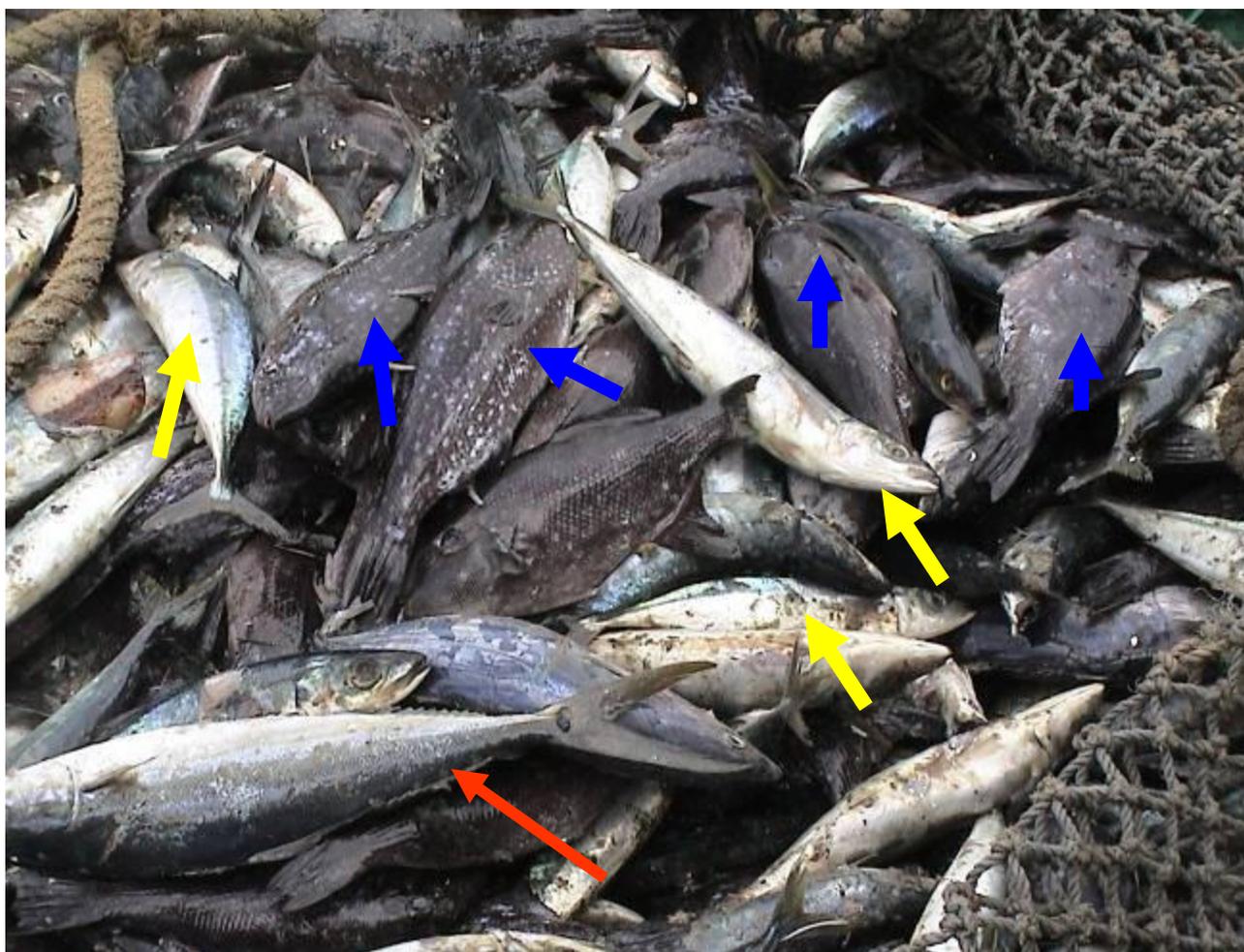
PELAGIC STING RAY

Dasyatis violacea



FROZEN PURSE-SEINE BY-CATCH

- MACKEREL SCADS (yellow arrow)
- OCEANIC TRIGGERFISH (blue arrow)
- RAINBOW RUNNER (red arrow)



SORTED DISCARDS ON PURSE SEINER



FROZEN NON-TARGET CATCH SORTED OUT DURING UNLOADING

- MACKEREL SCADS
- OCEANIC TRIGGERFISH
- RAINBOW RUNNER



ENGLISH

OCEANIC TRIGGERFISH
RAINBOW RUNNER
MACKEREL SCAD
BIGEYE SCAD
BIGEYE TREVALLY
GOLDEN TREVALLY
GREATER AMBERJACK
COTTONMOUTH JACK
BLUE SEA CHUB
DOLPHIN FISH
GREAT BARACUDA
TRIPLE TAIL
BATFISH
BLUE MARLIN
BLACK MARLIN
STRIPED MARLIN
OCEANIC WHITETIP SHARK
SILKY SHARK
WAHOO
KAWAKAWA
FRIGATE TUNA
BULLET TUNA
OCEAN ANCHOVY
OCEAN SUNFISH
SHARPTAIL SUNFISH
GAINT MANTA RAY
PELAGIC STING RAY

Scientific

Canthidermis maculatus
Elagatis bipinnulata
Decapterus macarellus
Selar crumenophthalmus
Caranx sexfasciatus
Gnathanodon speciosus
Seriola dumerili
Uraspis secunda
Kyphosus cinerascens
Coryphaena hippurus
Sphyraena barracuda
Lobotes surinamensis
Platax teira
Makaira nigricans
Makaira indica
Tetrapturus audax
Carcharhinus longimanus
Carcharhinus falciformis
Acanthocybium solandri
Euthynnus affinis
Auxis thazard
Auxis rochei
Encrasicholina punctifer
Mola mola
Masturus lanceolatus
Manta birostris
Dasyatis violacea

