

Management of Scombroid Fisheries

Editors

**N.G.K. Pillai
N.G. Menon
P.P. Pillai
U. Ganga**



CENTRAL MARINE FISHERIES RESEARCH INSTITUTE
(Indian Council of Agricultural Research)
Post Box No. 1603, Tatapuram P.O.
Kochi-682 014, India

Field identification of scombroids from Indian seas

U.Ganga and N.G.K.Pillai

Central Marine Fisheries Research Institute, Kochi

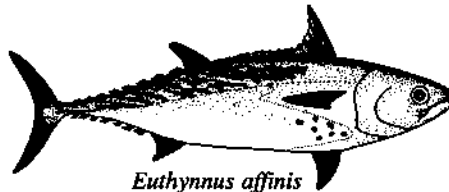
Scombroids are a diverse group of pelagic fishes ranging in size from about 30 cm to over 3 m in length. Most of them, especially the tunas and billfishes perform considerable and sometimes even transoceanic migrations. Being highly valued table fishes, they are of significant importance both as a commercial and recreational fishery. In Indian waters, this group includes,

1. Tuna and tuna-like fishes belonging to 6 genera, namely, *Thunnus*, *Katsuwonus*, *Euthynnus*, *Auxis* (tribe Thunnini) and the bonitos, *Sarda* and *Gymnosarda* (tribe Sardini)
2. Four genera of Billfishes, namely, *Istiophorus*, *Makaira* and *Tetrapturus* (family Istiophoridae) and *Xiphias* (family Xiphiidae)
3. Mackerels of the genus *Rastrelliger* (tribe Scombrini) and Spanish mackerels of the genera *Scomberomorus* and *Acanthocybium* (tribe Scomberomorini)

Species-wise field identification characters and line diagrams of these fishes are presented below:

1. TUNAS

Euthynnus affinis (Little tunny): A medium sized coastal species. Upper part of body has numerous blue black broken wavy lines directed backwards and upwards while belly is silvery white. The first and second dorsal fins are contiguous. A few conspicuous black spots are present on sides of body between pectoral and pelvic fins. Scales on body are confined to corselet and lateral line only.



Euthynnus affinis

Exploited throughout the year with peak fishing season April to November on west coast and June to August on east coast. Common size in commercial catches is 40 - 60 cm. Local names in the various maritime states of India are:

KER:choora; KAR: *Peepa kedar*, *Bugudi*; MAH : *Bugudi*, *Kuppa*, *Gedar*; GUJ:*Gedara*; AP:*Palsoora*,*Mayapusoora*; TN:*Parunsoorai*; OR: *Tumbada*; WB: *Khabu khabu*; MIN: *Latti*

Auxis thazard (Frigate tuna): A medium sized, robust bodied coastal species of tuna. Dorsal part of the body contains oblique to nearly horizontal dark wavy lines. The first and second dorsal fins are widely separated. Scales on body are confined to corselet which is short, narrow (4-5 rows of scales

wide) and abruptly ending. Common size in commercial catches 25-40 cm.

KER: *Choorā*; *Elichoorā*; KAR: *Kedar*, *Baremeenu*, *Bugudi*; MAH: *Bugudi*, *Kuppa*, *Gedar*; TN: *Elisurai*; GUJ: *Gedara*; AP: *Thikkasoora*; MIN: *Ragondi*



Auxis thazard

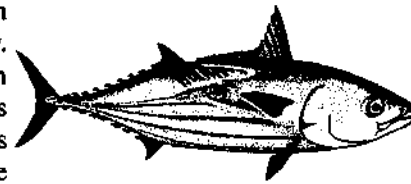
Auxis rochei (Bullet tuna) : A small sized coastal species of tuna. Upper part of body bluish with about 15 fairly broad nearly vertical dark wavy lines. The first and second dorsal fins are widely separated. Long, tapering and wide corselet of scales (contains more than 6 row of scales wide in a line below second dorsal) present. Common size in commercial catches 15 - 25 cm.



Auxis rochei

KER: *Urulanchoora*, *Elichoorā*; KAR: *Sheerad*, *Kedar*, *Bugudi*; TN: *Elisurai*; MIN: *Ragondi*

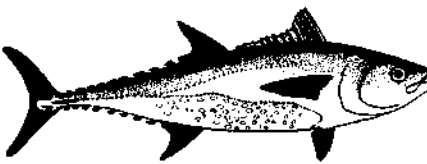
Katsuwonus pelamis (Skipjack): An oceanic species with a robust body. Backside metallic blue tinged with violet and three to five conspicuous longitudinal, dusky to black stripes below lateral line on each side of the body. First two dorsal fins separated by a short interspace. Lateral line with downward curve below second dorsal. A major fishery by pole and line in Minicoy islands with peak fishing during December - April period. Common size in commercial catches is 40 - 60 cm.



Katsuwonus pelamis

KER: *Varayan choora*; MAH : *Bugudi*, *Kuppa*, *Gedar*; AP: *Namalasoora*; TN: *Varisoorai*; GUJ: *Gedara*; OR: *Disco tumbala*; MIN: *Kalibilamas*

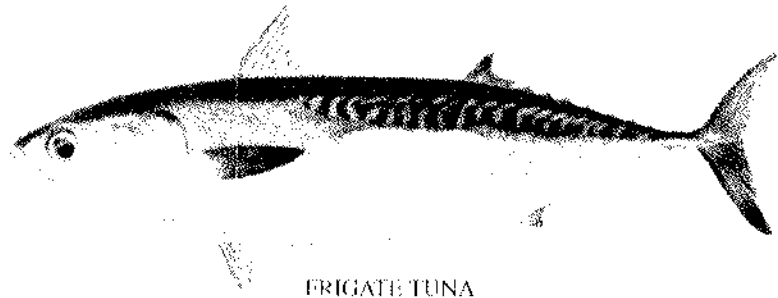
Thunnus tonggol (Longtail tuna): Body fusiform and rounded, completely covered with very small scales. A comparatively long caudal region. Upper part of body bluish black and lower part of belly with pale streaks or spots, oriented horizontally. Tips of second dorsal and anal fin faintly tinged with yellow. Common size in commercial catches 40 - 70 cm.



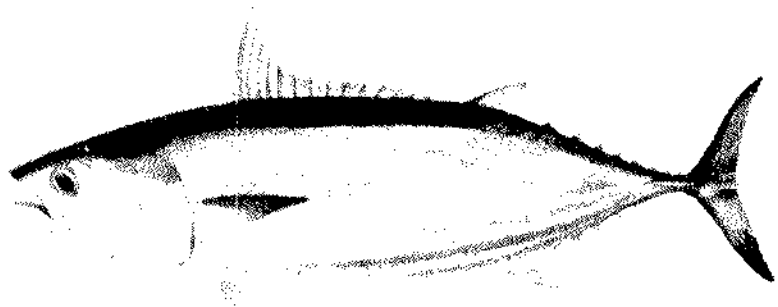
Thunnus tonggol



KAWAKAWA
Euthynnus affinis



FRIGATE TUNA
Auxis thazard



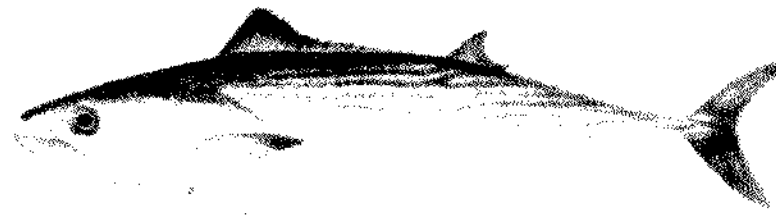
SKIPJACK TUNA
Katsuwonus pelamis



YELLOWFIN TUNA
Thunnus albacares



BIGEYE TUNA
Thunnus obesus



STRIPED BONITO
Sarda orientalis

GUJ: *Sherva*; MAH: *Khavalya*; TN: *Kila valai*; AP: *Soora*

Thunnus albacares (Yellow-fin) : Body elongate and fusiform, metallic blue or blue black above and belly with about 20 broken nearly vertical pale lines. Entire body covered with very small scales. Dorsal and anal fins very long in large specimens while pectoral fin is moderately long (reaching beyond second dorsal fin origin). Differentiated from bigeye tuna by distinct notch (V) in caudal fin with larger and more pronounced caudal keels. Common size in commercial catches 50-150 cm. Large specimens are caught in longlines operating in oceanic waters and also by the troll line and the pole and line fishery in Lakshadweep seas. Juveniles are caught from coastal waters.



Thunnus albacares

KER: *Manjachoor*; TN: *Kilavalai*; AP: *Reccasoora*; GUJ: *Gedara*; MAH: *Bugudi, Kuppa, Gedar*; MIN: *Kannelimas, Reendhooraha kanneli*; LAK: *Poovanchoor*

Thunnus obesus (Bigeye tuna): A large oceanic species with a very broad and robust body that is slightly compressed laterally and completely covered with scales. Upper part of body black to greenish blue while sides and belly are silverywhite. Caudal portion is short while eyes and head are fairly large. The first dorsal fin is deep yellow, second dorsal and anal fin slightly yellow while finlets are bright yellowish edged with black. Caudal fin is widely expanded. Caught mainly by longlines with peak catches during October to May. Common size in commercial catches 60 - 180 cm.



Thunnus obesus

LAK: *Valiyachoor*; MIN: *Boduloe kanneli*

Sarda orientalis (Oriental bonito): A small and slender bodied coastal tuna with 5-11 dark oblique stripes on back and upper sides. Body entirely covered with small scales and a well developed corselet. Lateral line conspicuously wavy. The fishing season on the south-west coast is June to September mainly by drift gill nets. Common size in commercial catches 30 - 50 cm.



Sarda orientalis

KER: *Choor*; KAR: *Bugudi*; TN: *Seela soorai*; OR: *Tumbada*; WB: *Tumbada*

Gymnosarda unicolor (Dog tooth tuna): Body slender and elongate, without any spots or stripes. Back and upper sides brilliant blue-black with belly silvery. Dorsal fins close together. First dorsal fin bluish green while other finlets are dusky blue. Distal portion of second dorsal and anal fins are whitish. Conspicuously large, well developed and conical teeth present in both jaws. A large single interpelvic process present. Common size in commercial catches 40 - 60 cm.



Gymnosarda unicolor

KER: Choorā; KAR: Bugudi; MIN: Vorikanneli; LAK: Pallanchoora

2. BILLFISHES

Makaira mazara (Blue marlin): Billfish with an elongate body, not strongly compressed. Bill long and circular in cross sectional view. Pectoral fins are usually folded back against the sides of the body and the lateral



Makaira mazara

line system has loops which are clearly visible in small specimens. Body is covered with densely imbedded scales each with one or two long acute spines. Body blue dorsally and silvery white ventrally with about 15 vertical bars each consisting of pale blue spots present. An oceanic, highly migratory species it commonly attains a size of 350 cm (total length).

KER: Marli; TN: Kopparai kuzha

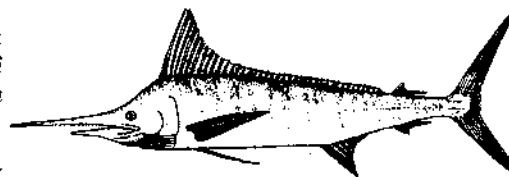
Makaira indica (Black marlin): Billfish with a very steep nape and rigid pectoral fins that cannot be folded back against the sides of the body without breaking. Single unbranched lateral line present. Body dark blue dorsally and silvery white ventrally with no markings on the sides. Common size is 380 cm (total length).



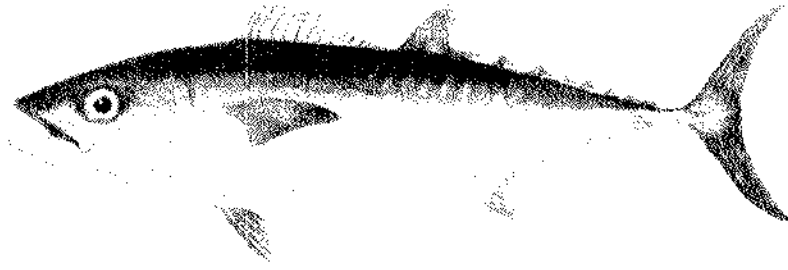
Makaira indica

KER: Marli; KAR: Madalu meenu; GUJ: Ghodo; TN: Kopparai kuzha; AP: Nallakommu konemu

Tetrapturus audax (Striped marlin): Body elon-



Tetrapturus audax



DOGTUOTH TUNA
Gymnosarda unicolor



INDO-PACIFIC BLUE MARLIN
Makaira mazara



BLACK MARLIN
Makaira indica



STRIPED MARLIN
Tetrapturus audax



INDO-PACIFIC SAILFISH
Istiophorus platypterus



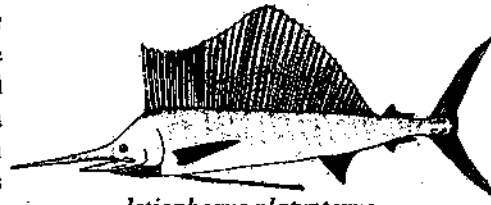
SHORTBILL SPEARFISH
Tetrapturus angustirostris

gate, compressed and upper jaw prolonged into a comparatively long spear. Two dorsal fins present of which the first is low posteriorly. Body covered with densely embedded scales each with one or two acute points. Dark blue colour dorsally and silvery white ventrally with vertical dark blue lines or spots on the body sides. Common size is 290 cm.

KER: Marli; TN: *Kopparai kuzha*

Istiophorus platypterus

(Sailfish): Body elongate and much compressed and upper jaw prolonged into a rather slender spear, round in cross section. Two dorsal fins are present of which first is large and sail like. Pelvic fin



Istiophorus platypterus

rays are very long embedded scales, each with one or two dull points. Body dark blue dorsally, silvery white ventrally with about 20 horizontal bars each consisting of several pale blue spots present on the sides of the body. Common size 270 cm.

KER: *Olameen, Mayil meen, Olapadavan*; KAR: *Madalumeenu*; MAH: *Tadmasa*; GUJ: *Ghodo, Kunga, Tadmachhi*; AP: *Nemalipuri konemu*; OR: *Mayur pankhi*, WB: *Mayur pankhi*, LAK: *Olameen*; MIN: *Funghibaru*

Tetrapturus angustirostris

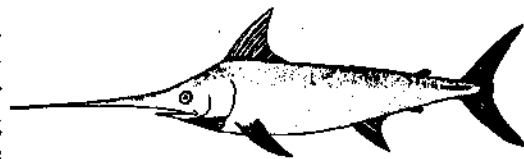
(Short bill spear fish): Elongate and much compressed body with upper jaw prolonged into a short spear only. Nape not elevated as in other marlins. Two dorsal fins, the first being rather high throughout. Body is covered with densely embedded scales each elongate, ending in several points. Common size 190 cm.



Tetrapturus angustirostris

Xiphias gladius (Sword

fish): Elongate and cylindrical body with upper jaw prolonged into a long bill that is flat oval in cross section. Pelvic fins are



Xiphias gladius

absent while the two dorsal fins are separate. (Immature individuals have both jaws prolonged into long bills and continuous dorsal fins). A large single keel present on each side of caudal peduncle. Dorsal and lateral sides of body blackish brown gradually fading to light brown on ventral side. Primarily oceanic species but occasionally seen in coastal waters. It is a

highly migratory and aggressive species whose common size is around 300 cm (total length).

KER: *Vallmeen*; MAH: *Tadmasa*; GUJ: *Ghodo, Kunga, Tadmachhi*; AP: *Kommu konemu*

3. MACKERELS

Rastrelliger kanagurta (Indian mackerel): Body bluish green, tending towards grey above and yellow on belly and sides. About 3 grayish longitudinal stripes containing rows of dusky spots along upper half of body.

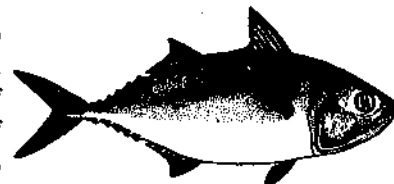


Rastrelliger kanagurta

Outer margin of first dorsal fin is dusky. Length of head distinctly greater than depth of body and snout is pointed. Purse seines, ring seines and gill nets are major gears operated along the south-west coast while on the south-east coast trawls operating beyond 70 m depths is the major gear landing this fish. Peak fishery is during August to March along the south-west coast and December to May along the east coast. Common size in commercial catches 14 - 26 cm.

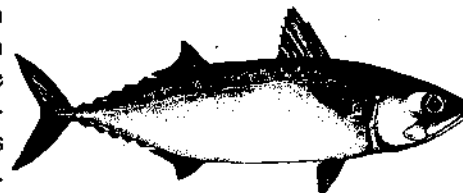
Local names : KER: *Ayila*; KAR: *Bangude*; MAH: *Bangada*; GUJ: *Malabari bhangola*; TN: *Kumla; Ailae*; AP: *kanagurta; Kanangadatha*; OR: *Karankita, Marua*; WB: *Khaph khopi, Lajjabati sating*

Rastrelliger brachysoma (Short bodied mackerel): A conspicuously deep bodied mackerel with a short and bluntly rounded snout with length of head distinctly shorter than depth of body. General body colour same as *R. kanagurta* but no dark stripes or regular rows of dusky spot on upper half of body and outer of first dorsal fin is prominently black. Glistening white spots are present behind the eyes in fresh specimens. Along the Indian coast, occurs in the Andaman seas.

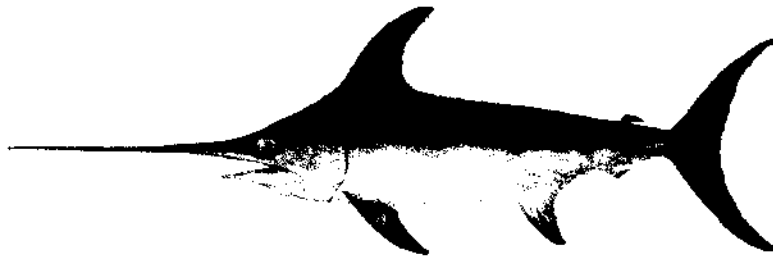


Rastrelliger brachysoma

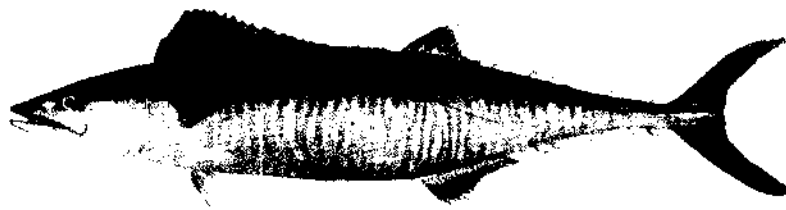
Rastrelliger faughni (Faughni's mackerel): Body slimmer than the Indian mackerel with a much shorter head. Gill rakers are very few and short and not visible as feathers when mouth is opened as in Indian mackerel. Occurs only sporadically along



Rastrelliger faughni



SWORDFISH
Xiphias gladius



NARROW-BARRED SPANISH MACKEREL
Scomberomorus commerson



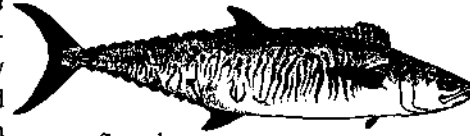
WAHOO
Acanthocybium solandri

the east coast of India especially during February to May period and a size range of 68-202 mm has been recorded off Madras.

4. SEERFISHES

Scomberomorus commerson

(King seer): Elongate and fusiform body that is practically scaleless and a deeply forked caudal fin. Lateral line with small scales and a deep and



Scomberomorus commerson

abrupt inflection below end of second dorsal fin. Side of body of juveniles with large black blotches merging to form distinct dark vertical wavy stripes in adult. Large fishes caught by large meshed drift gill nets and hooks & line while smaller specimens are caught by small meshed drift gill nets and trawls. In Indian waters, this species is more common along the south-west and south-east coast of India. Peak fishery is during January –August on the east coast and September –January along west coast. Common size in commercial catches 40 - 120 cm.

Local names KER: *Neimeen, Ayykoorra*; KAR : *Anjal, Visone*; AP: *Konemu*; MAH: *Surmai, Towar, Anjari*; GUJ: *Surmai, Chopri*; OR: *Mingiram, Koni, Konemu*; TN: *Nettaiyan seela, Vanchiram*; WB: *Gurra*

Scomberomorus guttatus

(Spotted seer): Elongate and fusiform body that is practically scaleless and a deeply forked caudal fin. Lateral line has short wavy posteriorly directed pseudobranches at its



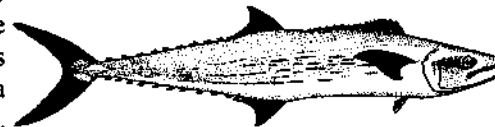
Scomberomorus guttatus

anterior portion. Sides of body has more than three rows of round or oval black spots. This species is more common along the north-west and north-east coast of India. Common size in commercial catches 20 -50 cm.

KER: *Neimeen, Varimeen*; KAR : *Chatte Anjal, Visone* ; TN : *Kattayan seela*; AP: *Magarasi*

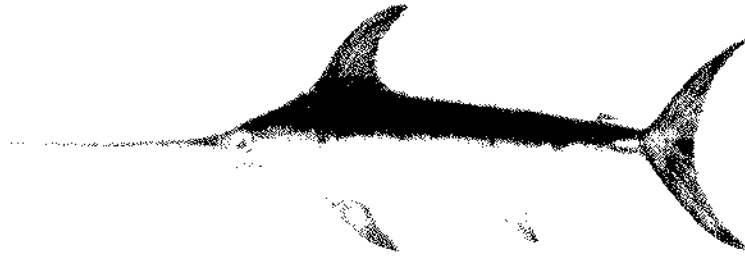
Scomberomorus lineolatus

(Streaked seer): Elongate and fusiform body that is practically scaleless and a deeply forked caudal fin. Lateral line is almost straight



Scomberomorus lineolatus

till it passes second dorsal finlet and slightly bent downwards until it reaches caudal keel which is conspicuously broad. Sides of body with irregular rows of horizontal black streaks or broken bars. Good catches are recorded



SWORDFISH
Xiphias gladius



NARROW-BARRED SPANISH MACKEREL
Scomberomorus commerson



WAHOO
Acanthocybium solandri

from the Palk Bay and Gulf of Mannar region while it is poor along rest of the Indian coast. Common size in commercial catches 55- 65 cm.

KER: *Neimeen, Varimeen*; KAR : *Anjal, Visone*; MAH: *Surmai, Towar, Anjari*; GUJ: *Chopri* ; TN: *Nona seela*

Acanthocybium solandri

(Wahoo): Distinguished from the closely resembling *Scomberomorus* spp. by a longer snout equal to the rest of the head and numerous vertical bars on the sides of the body which extend below lateral line. Caudal fin is lunate and lateral line curves to mid lateral part of the body below the first dorsal fin. Flesh is highly valued but commercial catches are practically insignificant in Indian waters.



Acanthocybium solandri

TN : *Savaran*; MIN: *Digumas*; LAK: *Aykoora*