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FAO SPECIES IDENTIFICATION SHEETS

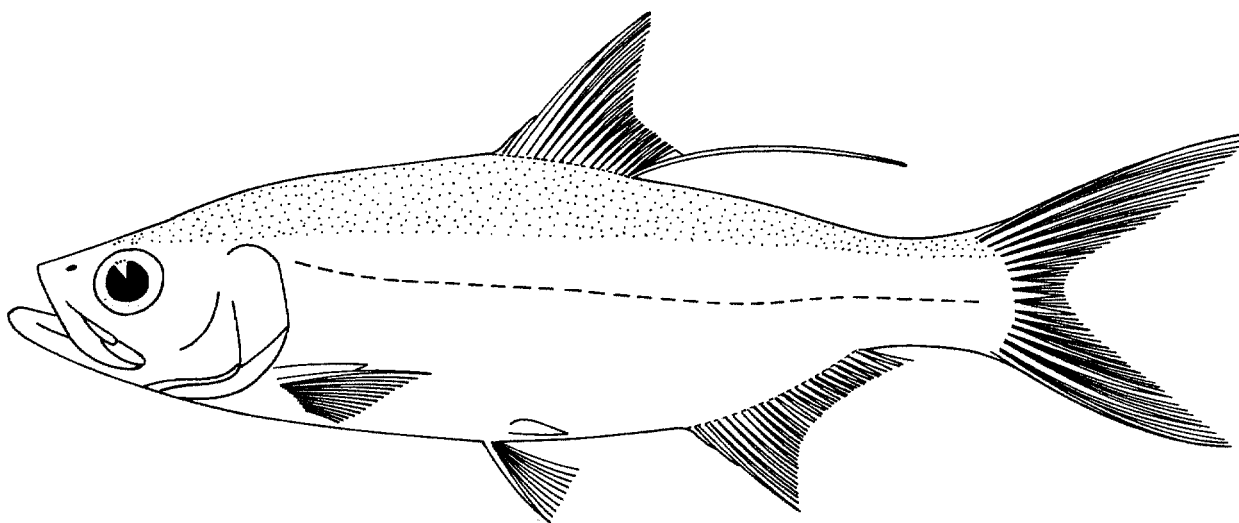
FISHING AREAS 57,71
(E Ind. Ocean)
(W Cent. Pacific)

MEGALOPIDAE

Tarpons

Moderately deep-bodied, fusiform fishes, resembling *Clupeidae* (herrings) but possessing a lateral line and lacking scutes along belly. A single dorsal fin, with unbranched rays soft and last dorsal ray filamentous; anal fin origin set a little behind last dorsal ray. Bony gular plate between arms of lower, jaw. Pseudobranch absent (gill-like structure on inner face of gill cover). Scales large; lateral line present, with up to 40 scales.

Colour: back blue/green, flanks silvery.



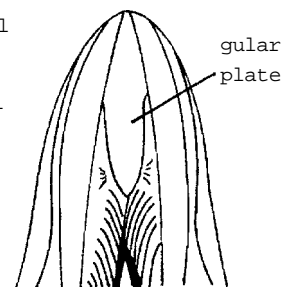
SIMILAR FAMILIES OCCURRING IN THE AREA:

Clupeidae: usually have sharp keel of scutes along belly; also, no lateral line and no gular plate.

Elopidae: have smaller scales (about 100 in lateral line) and last dorsal ray in ray not filamentous.

Chanidae: last dorsal fin ray not filamentous.

Albulidae: last dorsal fin ray not filamentous; also, snout projecting, mouth inferior.



Megalopidae, Elopidae
underside of head

Key to Genera

Megalops only (*Tarpon* an Atlantic genus)

List of Species occurring in the Area

(Code numbers are given for those species
for which Identification Sheets are included)

Megalops cyprinoides

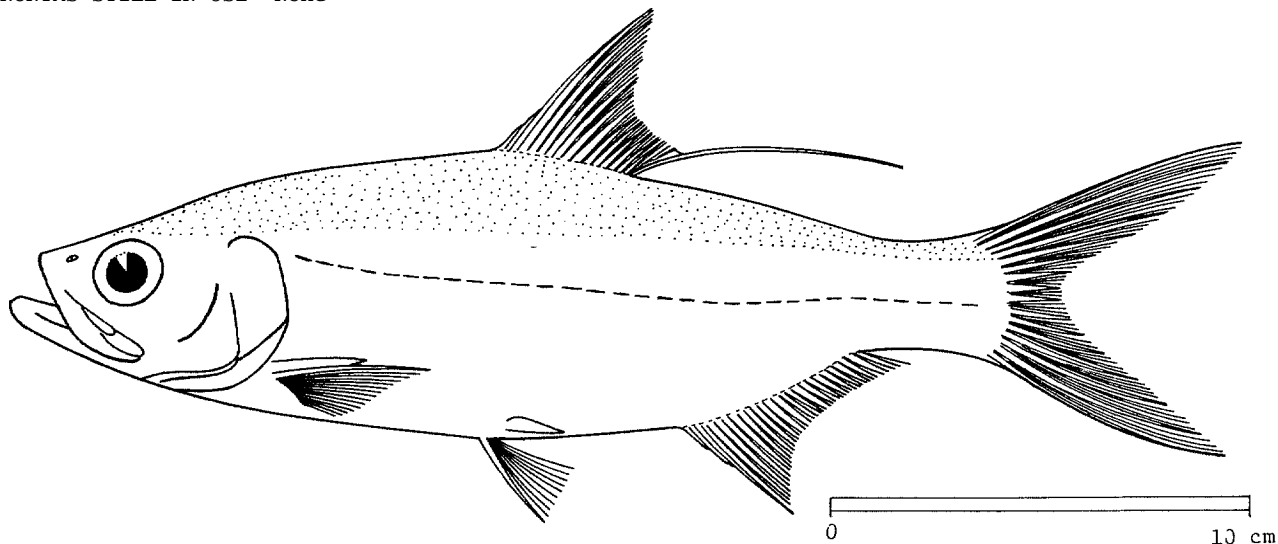
MEGAL Megal 1

FAO SPECIES IDENTIFICATION SHEETS

FAMILY: MEGALOPIDAE

FISHING AREAS 57,71
(E Ind. Ocean)
(W Cent. Pacific)*Megalops cyprinoides* (Broussonet, 1782)

SYNONYMS STILL IN USE: None



VERNACULAR NAMES:

FAO: En - Indo-Pacific tarpon
Fr
Sp -

NATIONAL:

DISTINCTIVE CHARACTERS:

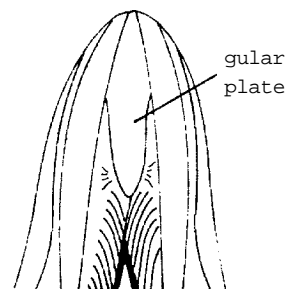
Body fusiform, somewhat compressed, with smooth, unkeeled belly. Single dorsal fin, the last ray a long filament; anal fin origin behind base of last dorsal ray. Upper jaw reaching almost to hind border of eye; lower jaw projecting slightly. Gular plate present between arms of lower jaw. Branchiostegal rays 26 to 27. Pseudobranch absent (gill-like structure on inner face of gill cover). Scales present, large; lateral line with 30 to 40 scales.

Colour: back blue/green, flanks silvery; lateral line golden.

DIFFERENTIAL CHARACTERS OF SIMILAR SPECIES OCCURRING IN THE AREA:

Species of Clupeidae: lateral line and gular plate absent, but scutes along belly in most species.

Elops machnata: no filamentous last dorsal ray and much smaller scales (about 100 in lateral series; no more than 40 in *Megalops cyprinoides*).

*Megalops*

SIZE:

Maximum: 55 cm; common: 25 to 30 cm.

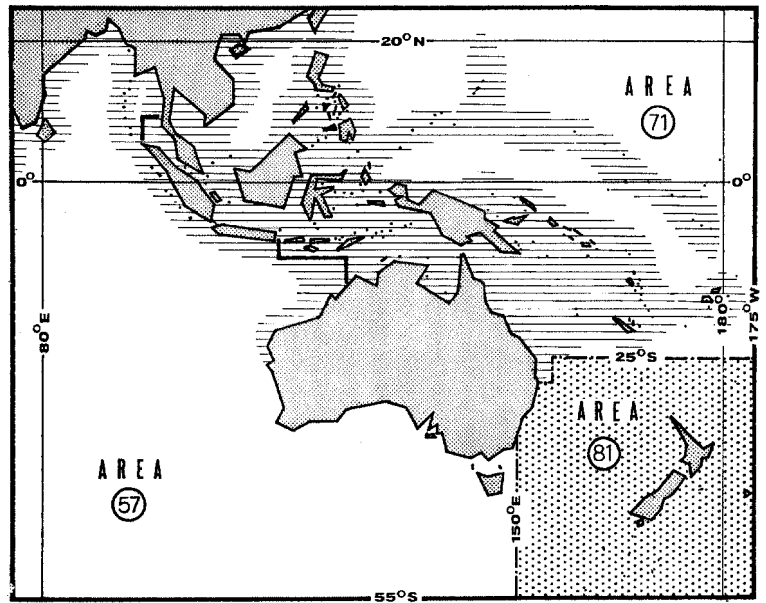
GEOGRAPHICAL DISTRIBUTION AND BEHAVIOUR:

Throughout whole of northern part of area, southward to tropical waters of Australia; also, westward to East Africa and eastward to Hawaii.

A coastal pelagic species.

PRESENT FISHING GROUNDS:

Throughout its range.



CATCHES, MAIN FISHING GEAR AND PRINCIPAL FORMS OF UTILIZATION:

Separate statistics are not reported for this species.

Caught with gill nets and trawls.

Marketed usually fresh or dried-salted.

FAD SPECIES IDENTIFICATION SHEETS

FAMILY: MUGILIDAE

FISHING AREAS 57,71

(E Ind. Ocean)

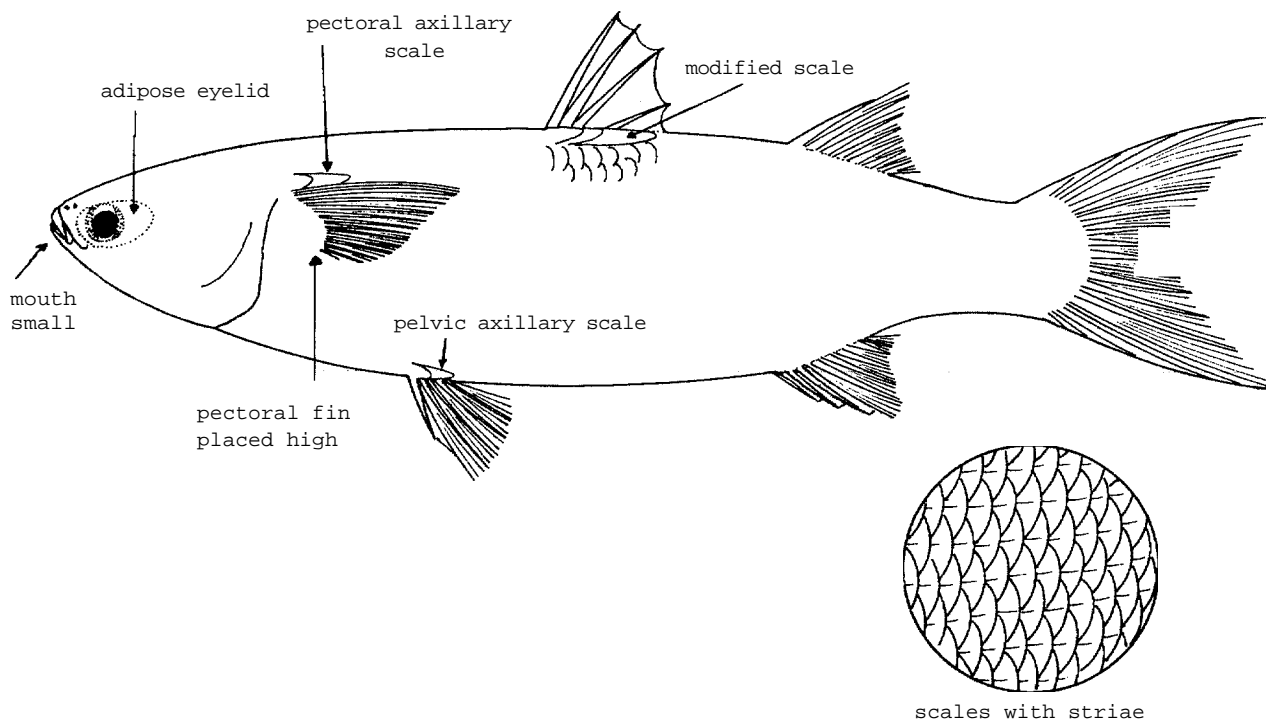
(W Cent. Pacific)

MUGILIDAE

Grey mullets

Elongate fishes, usually with *broad, flattened head*, blunt snout and cylindrical or little compressed body. *Mouth rather small, terminal or inferior*; premaxillae protractile; teeth small, feeble, hidden or absent. Eyes often partly covered by fatty tissue (adipose eyelid). No lateral line. *2 short dorsal fins, the first with 4 slender spines*; pectoral fins set rather high on body; pelvic fin base about equidistant between pectoral fin base and origin of first dorsal fin; 3 spines in anal fin; caudal fin moderately forked, emarginate or truncate. Scales large or moderate, often with one or more striae to give appearance of longitudinal streaks down sides; modified scales may be present below first dorsal fin and above pectoral and pelvic fins (axillary scales).

Colour: in life, blue/green, green or olive on back, silvery on sides and belly, often with 3 to 9 longitudinal streaks on back, sides and belly; fins hyaline or dusky.



SIMILAR FAMILIES OCCURRING IN THE AREA:

Atherinidae: have silvery stripe along sides, larger eyes and soft anal fin rays usually more than 10 (usually less than 10 in Mugilidae).

Key to Genera

- 1 a. Fleshy lobes between arms of lower jaw (Fig. 1) *Cestraeus*
- 1 b. No such fleshy lobes (Fig. 2)
 - 2 a. Spine on gill cover above pectoral fin base *Sicamugil*
 - 2 b. No spine on gill cover
 - 3 a. Head concave between eyes, the latter projecting above this level; anterior nostril at level of eye centre or lower *Rhinomugil*
 - 3 b. Head concave between eyes, the latter not projecting above this level; anterior nostril above level of eye centre
 - 4 a. Lower third of upper lip bearing enlarged papillae or crenellations
 - 5 a. Preorbital deeply notched (Fig. 3); lips with a single row of horny projections *Oedalechilus*
 - 5 b. Preorbital not or but little notched (Fig. 4); lips with a multiserial row of papillae
 - 6 a. Scales cycloid but hind margin with denticulations; large pectoral axillary scale *Crenimugil*
 - 6 b. Scales either ctenoid or cycloid but without denticulations on hind margin; pectoral axillary scale rudimentary or absent *Chelon*
 - 4 b. Lower third of upper lip without enlarged papillae or crenellations
 - 7 a. Lower lip thick; small symphyseal knob at front of lower jaw *Aldrichetta*
 - 7 b. Lower lip thin; large symphyseal knob at front of lower jaw

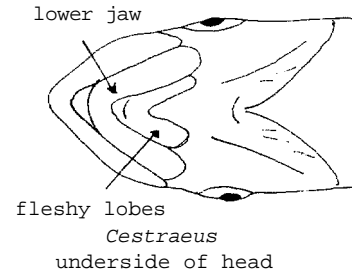


Fig. 1



Fig. 2

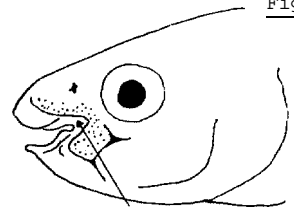


Fig. 3

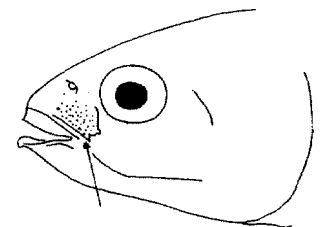


Fig. 4

- 8 a. Hind tip of maxilla not curved down below tip of premaxilla (Fig. 5); adipose eyelid to pupil in adults Mugil

- 8 b. Hind tip of maxilla curved down below tip of premaxilla (Fig. 6); adipose eyelid absent or to iris only

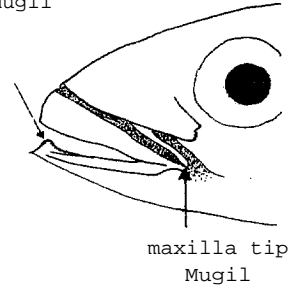


Fig. 5

- 9 a. Teeth present on vomer and palatines (roof of mouth); maxilla tip not greatly curved downward Myxus

- 9 b. Teeth absent on vomer and palatines (roof of mouth); maxilla tip strongly curved down at corner of mouth (Fig. 6)

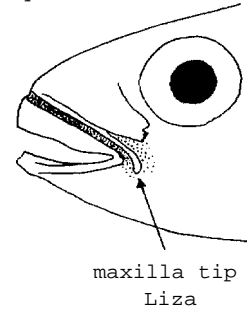


Fig. 6

- 10 a. Scales ctenoid or cycloid but with no digitations on hind margin; tip of maxilla apparent when mouth closed Liza

- 10 b. Scales cycloid, hind margin with digitations; maxilla tip hidden beneath tendon .. Valamugil

List of Species occurring in the Area
(Code numbers are given for those species
for which Identification Sheets are included)

| | | | |
|---------------------------------|---------------|--------------------------------|--------------|
| <i>Aldrichetta forsteri</i> | MUGIL Aldr 1 | <i>Myxus elongatus</i> | MUGIL Myx 1 |
| | | <i>Myxus petardi</i> | |
| <i>Cestraeus oxyrhynchus</i> | | | |
| <i>Cestraeus plicatilis</i> | | <i>Oedalechilus labiosus</i> | |
| <i>Crenimugil crenitabis</i> | | <i>Rhinomugil nasutus</i> | |
| <i>Crenimugil heterocheilos</i> | | <i>Rhinomugil squamipinnis</i> | |
| <i>Liza argentea</i> | MUGIL Liza 1 | <i>Sicamugil cascasia</i> | |
| <i>Liza carinata</i> | | <i>Sicamugil hamiltoni</i> | |
| <i>Liza macrolepis</i> | | | |
| <i>Liza melinoptera</i> | | <i>Valamugil buchanani</i> | |
| <i>Liza parmata</i> | | <i>Valamugil cunnesius</i> | MUGIL Vala 1 |
| <i>Liza parsia</i> | | <i>Valamugil engeli</i> | |
| <i>Liza subviridis</i> | MUGIL Liza 2 | <i>Valamugil georgii</i> | |
| <i>Liza tade</i> | MUGIL Liza 3 | <i>Valamugil seheli</i> | MUGIL Vala 2 |
| <i>Liza vaigiensis</i> | MUGIL Liza 4 | <i>Valamugil speigleri</i> | MUGIL Vala 3 |
| <i>Mugil cephalus</i> | MUGIL Mugil 1 | | |

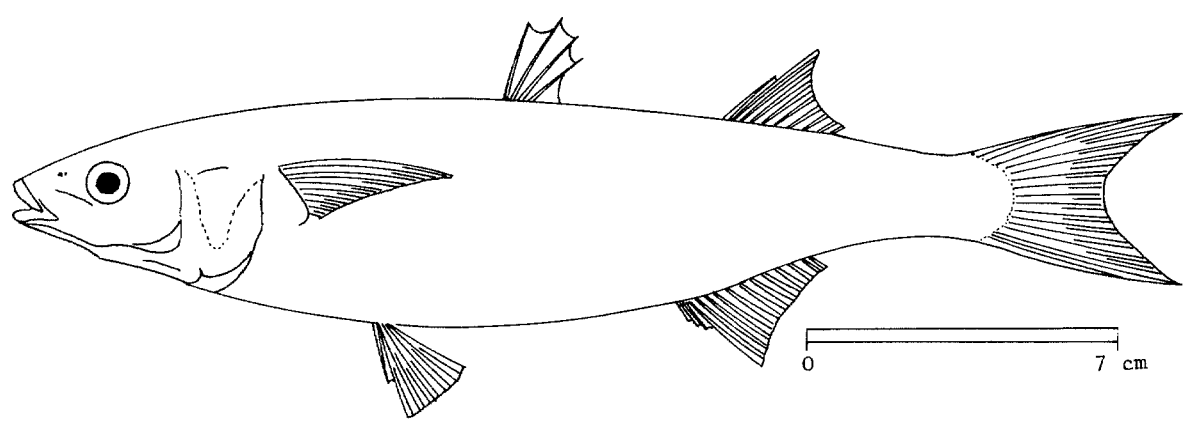
FAD SPECIES IDENTIFICATION SHEETS

FAMILY: MUGILIDAE

FISHING AREAS 57,71
(E Ind. Ocean)
(W Cent. Pacific)

Aldrichetta forsteri (Valenciennes, 1836)

SYNONYMS STILL IN USE: *Agonostomus forsteri*: Waite, 1921



VERNACULAR NAMES:

- FAO: En - Yellow eye grey mullet
- Fr -
- Sp -

NATIONAL:

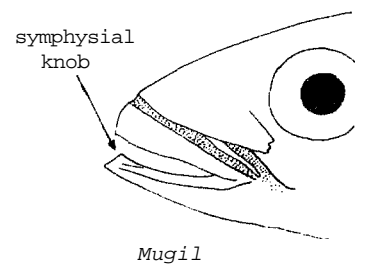
DISTINCTIVE CHARACTERS:

Body slender, elongate, head somewhat convex on top, its length 23 to 267 of standard length; no fatty (adipose) tissue on head; lips thick, posterior tip of upper jaw not visible when mouth closed; several rows of teeth in both lips, sessile in jaws. Origin of first dorsal fin nearer to caudal fin base than to snout tip. Second dorsal fin origin behind vertical from origin of anal fin; pectoral fins of moderate length, 78 to 807 of head length, with no axillary scale; caudal fin forked. Scales in lateral series 58 to 64.

Colour: olive/brown on back, silvery to yellowish white on sides and belly; fins with brown margins; iris yellow.

DISTINGUISHING CHARACTERS OF SIMILAR SPECIES OCCURRING IN THE AREA:

All other mugilid species in area: lower lip thin, with large symphyseal knob at front of lower jaw; also, fewer scales (less than 58 in lateral series).



Mugil

SIZE:

Maximum: 40 cm; common: 15 to 20 cm.

GEOGRAPHICAL DISTRIBUTION AND BEHAVIOUR:

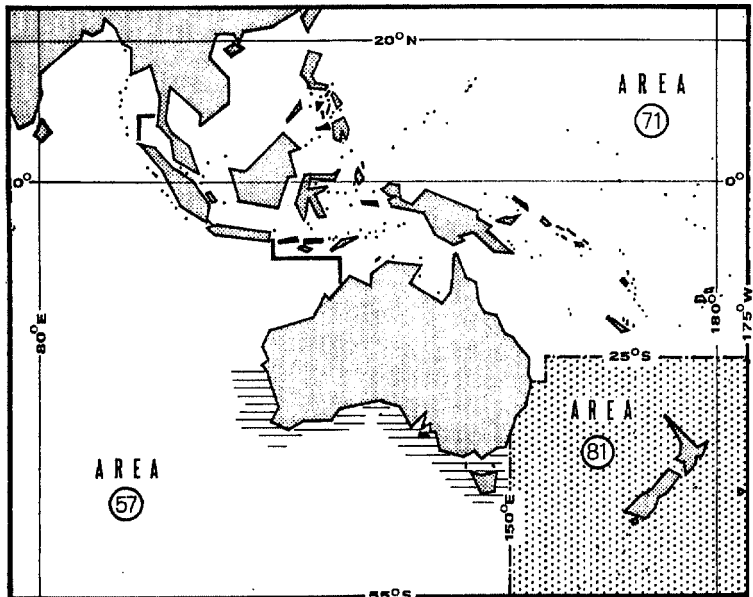
Southern coasts of Australia, from Shark Bay on the west coast to southern New South Wales on the east; also, extending southward to New Zealand.

Shoals occur in shallow estuaries and close inshore, spawning takes place in the sea.

Feeds on small crustaceans and molluscs, as well as filamentous algae and diatoms.

PRESENT FISHING GROUNDS:

Estuaries, lagoons and some sea beaches.



CATCHES, MAIN FISHING GEAR AND PRINCIPAL FORMS OF UTILIZATION:

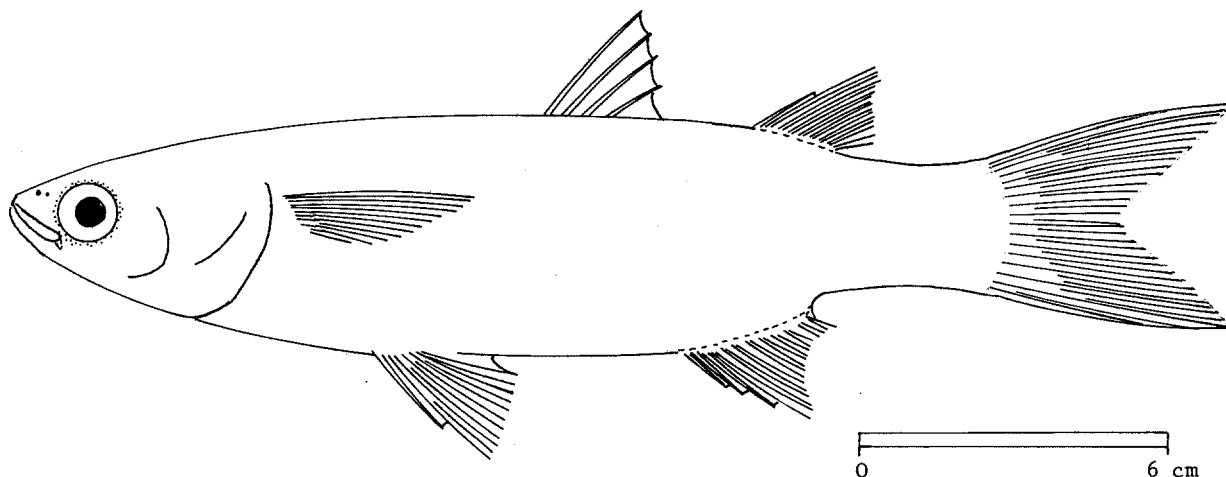
The total catch in 1972 was 250 tons (Australia only).

Caught with gill nets and beach lines.

Marketed fresh.

FAO SPECIES IDENTIFICATION SHEETS

FAMILY: MUGILIDAE

FISHING AREAS 57,71
(E Ind. Ocean)
(W Cent. Pacific)*Liza argentea* (Quoy & Gaimard, 1824)SYNONYMS STILL IN USE: *Gracilimugil ramsayi* Whitley, 1941

VERNACULAR NAMES:

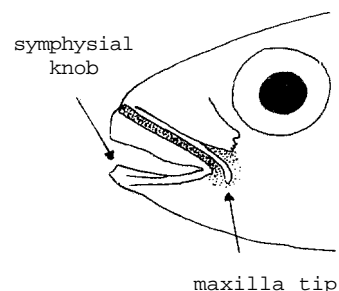
FAO: En - Ramsay's grey mullet
Fr -
Sp -

NATIONAL:

DISTINCTIVE CHARACTERS:

Body slender, head flattened on top but relatively narrow, its length 26 to 28% of standard length; fatty (adipose) tissue only a rim around eye; lips thin; a large symphysial knob at front of lower jaw; posterior tip of upper jaw strongly curved dors and still visible when mouth closed; a single row of fine teeth in both jaws. Origin of first dorsal fin nearer to caudal fin base than to snout tip; origin of second dorsal at vertical from mid-way along anal fin base; pectoral fins short, about 3/4 of head length, with no axillary scale; anal fin with 10 soft rays; caudal fin deeply forked; scales in lateral series 35 to 38.

Colour: light brown on back, silvery on sides and belly; iris purple with gold flecks; a patch of bright gold at upper posterior corner of operculum.

*Liza*

DISTINGUISHING CHARACTERS OF SIMILAR SPECIES OCCURRING IN THE AREA:

Liza vagiensis: caudal fin truncate, not forked.

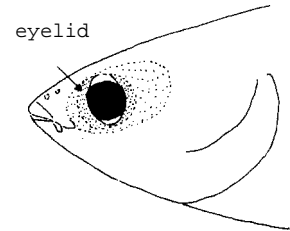
Liza subviridis, *L. tade*: adipose tissue covering eye except for pupil (only a rim in *L. argentea*); also, usually 9 soft anal fin rays.

Mugil species: adipose tissue covering eye except for pupil; also, maxilla not curving down behind mouth corner.

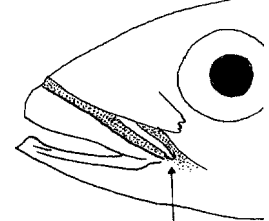
Valamugil species: longer pectoral fins (reaching to level of first dorsal fin).

Aldrichetta species: lower lip thick, and only a small symphyseal knob at front of lower jaw.

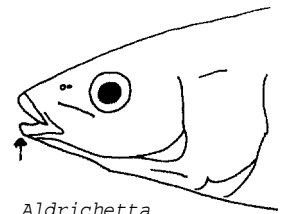
Myxus species: no adipose tissue around eye.



Liza subviridis



maxilla tip
Mugil



Aldrichetta

SIZE:

Maximum: 30 cm; common: 15 to 22 cm.

GEOGRAPHICAL DISTRIBUTION AND BEHAVIOUR:

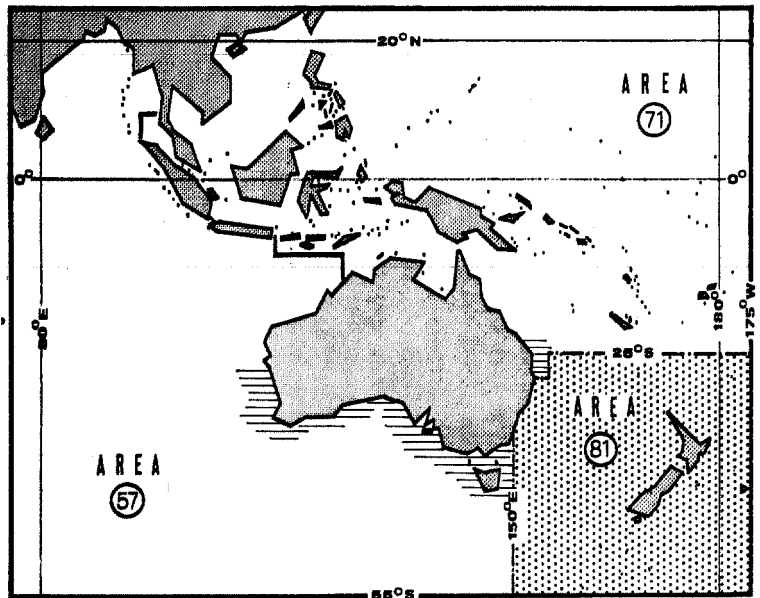
Southern Australia, from mid-Queensland to Geraldton on west coast.

Schools occur in shallows, bogs and lower estuaries, and more saline lagoons. Spawning takes place in the sea.

Feeds on minute bottom-living organisms, including small crustaceans and filamentous algae.

PRESENT FISHING GROUNDS:

Shallow coastal waters, estuaries.



CATCHES, MAIN FISHING GEAR AND PRINCIPAL FORMS OF UTILIZATION:

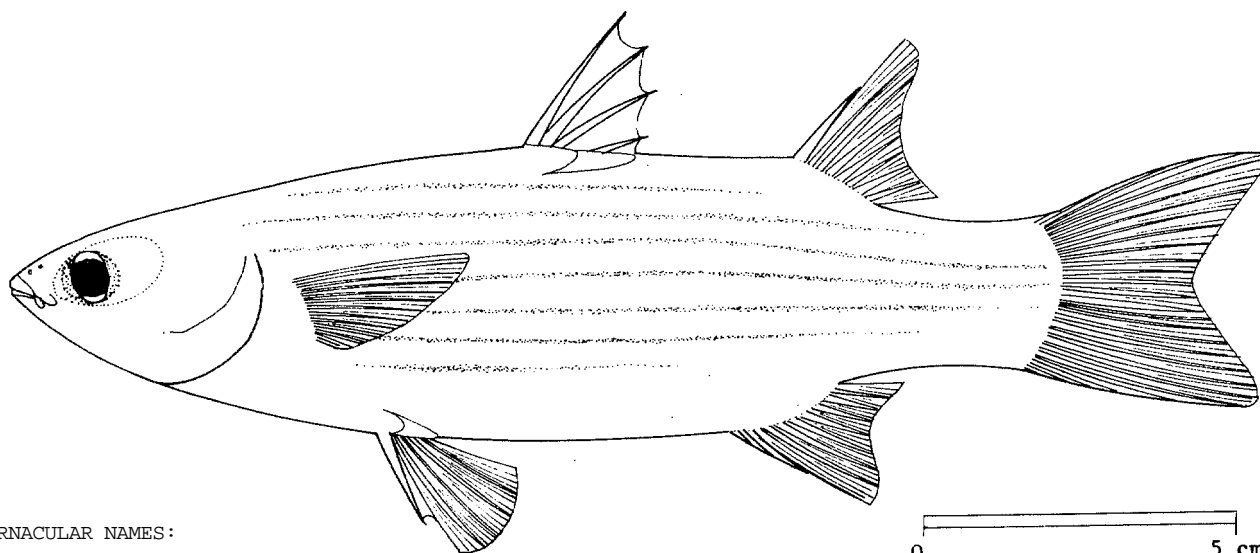
Separate statistics are not reported for this species.

Caught with gill nets and beach seines.

Marketed fresh and filleted.

FAO SPECIES IDENTIFICATION SHEETS

FAMILY: MUGILIDAE

FISHING AREAS 57,71
(E Ind. Ocean)
(W Cent. Pacific)*Liza subviridis* (Valenciennes, 1836)SYNONYMS STILL IN USE: *Mugil dussumieri* Valenciennes, 1836
Mugil javanicus Bleeker, 1852
Mugil sundanensis Bleeker, 1853

VERNACULAR NAMES:

FAO: En - Greenback grey mullet
Fr -
Sp -

NATIONAL:

DISTINCTIVE CHARACTERS:

Body rather stout, head broad and flattened on top, its length 23 to 25% of standard length; fatty (adipose) tissue covering eye except for pupil. Upper and lower lips thin; a large symphyisial knob at front of lower jaw; posterior tip of upper jaw strongly curved down and still visible when mouth closed; several rows of teeth in upper lip, a single row in lower lip, the latter absent in adults. Origin of first dorsal fin nearer to snout tip than to caudal fin base; origin of second dorsal fin behind vertical from origin of anal fin; pectoral fins very short, about 3/4 of head length, with no axillary scale; caudal fin slightly forked. Scales in lateral series 30 to 32.

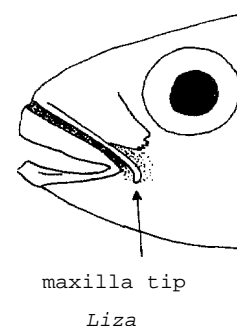
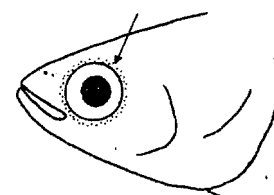
Colour: back green/grey, flanks and belly silvery; often 3 to 7 blackish longitudinal stripes along flanks; pectoral fins not blackish.

DISTINGUISHING CHARACTERS OF SIMILAR SPECIES OCCURRING IN THE AREA:

Liza vaigiensis: pectoral fins as long as head and blackish; scales in lateral series 24 to 27 (30 to 32 in *L. subviridis*); also, caudal fin almost truncate (slightly forked in *L. subviridis*).

Liza tade: head very short (19 to 23% of standard length; 23 to 25% in *L. subviridis*) and with distinctive bulge at sides; also, caudal fin forked.

Liza argentea, *L. vaigiensis* and *Valamugil seheli*: adipose tissue only a rim around eye.

*Liza**Liza argentea*

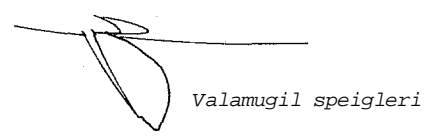
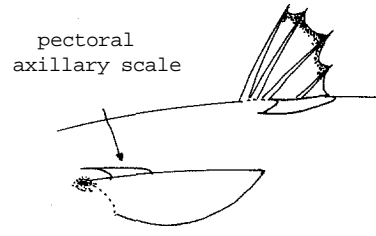
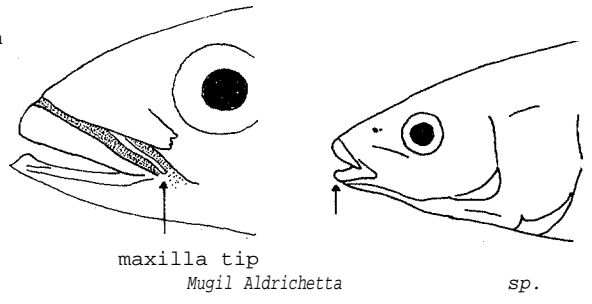
Liza parsia: corner of mouth reaches to vertical from posterior nostril (to vertical from anterior nostril in *L. subviridis*).

Mugil species: maxilla not curved down and hidden when mouth closed.

Aldrichetta species: lower lip thick, and only a small symphyseal knob at front of lower jaw.

Myxus species: no adipose tissue around eye.

Other mugilid species: large axillary scale usually present above pectoral fin.



SIZE:

Maximum: 40 cm; common: 25 cm.

GEOGRAPHICAL DISTRIBUTION AND BEHAVIOUR:

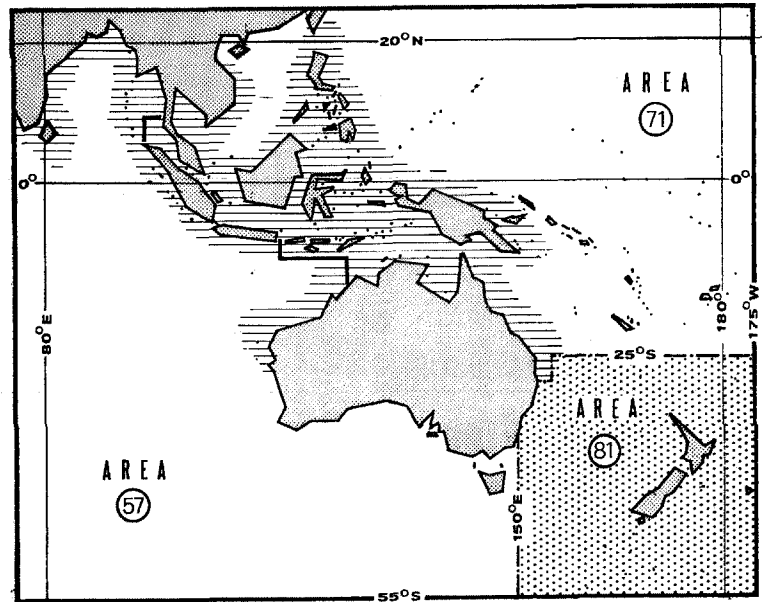
Throughout most of northern part of area and southward to northern coasts of Australia (recorded as *Liza planiceps*); also, westward to Karachi.

Schools occur in shallow coastal waters and enter lagoons and estuaries to feed, juveniles often occurring in rice fields and mangrove swamps. Spawning takes place in the sea.

Feeds on minute bottom-living organisms and on organic matter contained in mud and sand; perhaps also on floating algae.

PRESENT FISHING GROUNDS:

Shallow coastal waters, estuaries, and mangrove swamps.



CATCHES, MAIN FISHING GEAR AND PRINCIPAL FORMS OF UTILIZATION:

Separate statistics are not reported for this species. The total reported catch of unclassified grey mullets in 1972 was:

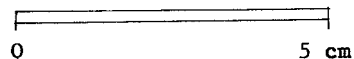
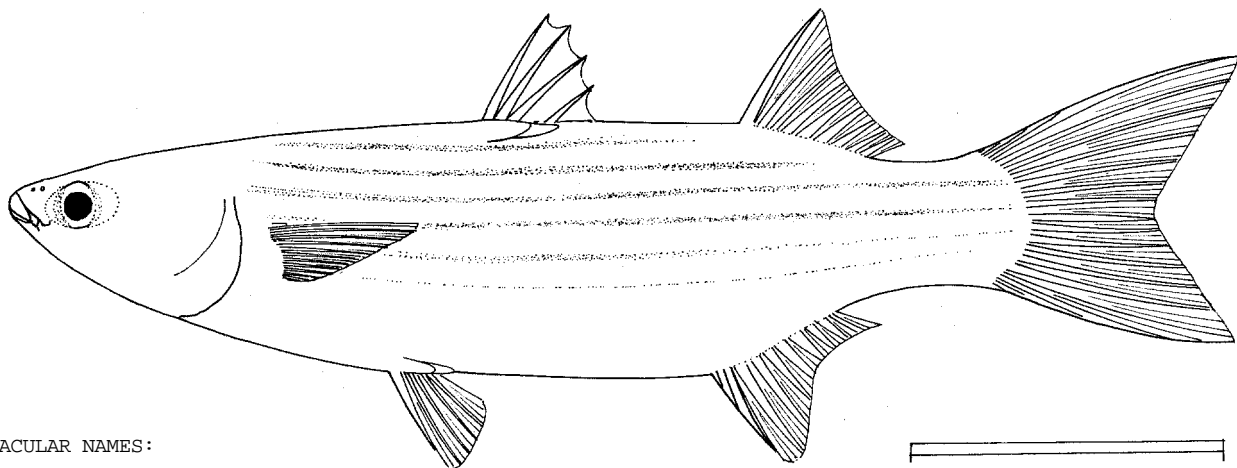
- area 57 (Eastern Indian Ocean): 1 700 tons (Australia: 1 200 tons)
- area 71 (Western Central Pacific): 2 300 tons (Australia: 1 500 tons)

Caught with gill nets, beach seines and cast nets.

Marketed fresh and salted; also boiled (Thailand) and canned or frozen (Australia). The roe is often marketed as a salted product.

FAO SPECIES IDENTIFICATION SHEETS

FAMILY: MUGILIDAE

FISHING AREAS 57,71
(E Ind. Ocean)
(W Cent. Pacific)*Liza tade* (Forsskål, 1775)SYNONYMS STILL IN USE: *Mugil planiceps* Valenciennes, 1836

VERNACULAR NAMES:

FAO: En - Tade grey mullet
Fr -
Sp -

NATIONAL:

DISTINCTIVE CHARACTERS:

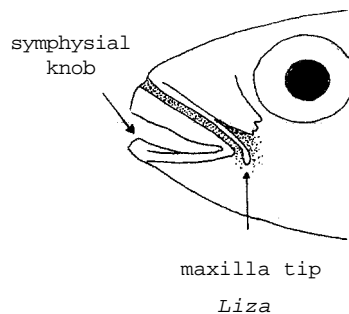
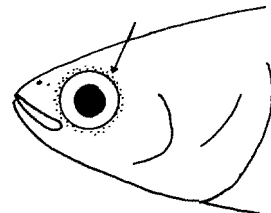
Body rather stout, head short, broad and flattened on top, its length 19 to 23% of standard length, with distinctive bulge at sides; fatty (adipose) tissue covering eye except for pupil. Upper and lower lips thin; a large symphyseal knob at front of lower jaw; posterior tip of upper jaw strongly curved down and still visible when mouth closed; a row of fine straight teeth (and 4 to 8 rows of smaller teeth) on upper lip, a row of sparse cilia on lower lip. Origin of first dorsal fin nearer to tip of snout than to base of caudal fin. Origin of second dorsal fin behind vertical from origin of anal fin; pectoral fins very short, 18 to 20% of standard length, about 3/4 of head length, with axillary scale very small or absent; caudal fin forked. Scales in lateral series 31 to 33.

Colour: back olive, flanks and belly silvery; often 5 to 9 dark longitudinal stripes along flanks.

DISTINGUISHING CHARACTERS OF SIMILAR SPECIES OCCURRING IN THE AREA:

Liza subviridis: head longer (23 to 25% of standard length; 19 to 23% in *L. tade*) and without distinctive bulge at sides; also, caudal fin almost truncate.

Liza argentea, *L. vaiyiensis* and *Valamugil seheli*: adipose tissue only a rim around eye; also, pectoral fins about equal to head length and blackish in *L. vaiyiensis* (3/4 of head length in *L. tade*).

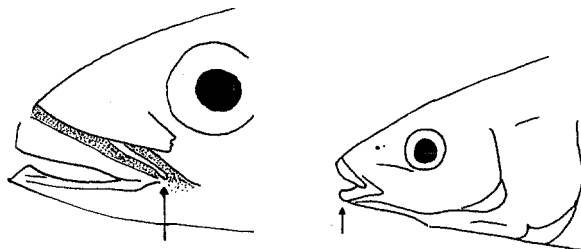
*Liza**Liza argentea*

Mugil species: maxilla not curved down and hidden when mouth closed.

Aldrichetta species: lower lip thick, and only a small symphyseal knob at front of lower jaw.

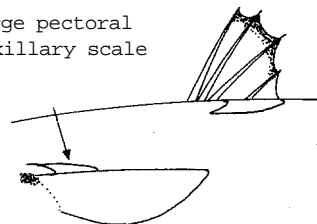
Myxus species: no adipose tissue around eye.

Other mugilid species: large axillary scale usually present above pectoral fin.



maxilla tip
Mugil Aldrichetta

large pectoral
axillary scale



SIZE:

Maximum: 47 cm; common: 30 cm.

GEOGRAPHICAL DISTRIBUTION AND BEHAVIOUR:

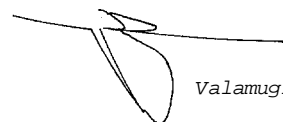
Throughout most of northern part of area, but probably not from Australian coasts (previous records, as *Mugil planiceps*, refer to *Liza subviridis*); also, westward to Bombay.

Schools occur in shallow coastal waters and enter lagoons, estuaries and rivers to feed, the juveniles often occurring in rice fields and mangrove swamps. Spawning takes place in the sea.

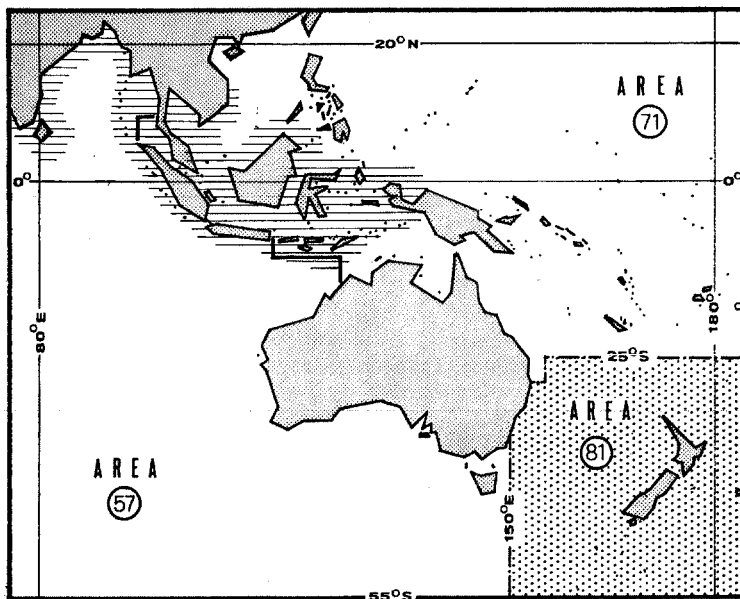
Feeds on minute bottom-living organisms and on organic matter contained in mud and sand; perhaps also on floating algae.

PRESENT FISHING GROUNDS:

Shallow coastal waters, estuaries, and mouths of rivers.



Valamugil speigleri



CATCHES, MAIN FISHING GEAR AND PRINCIPAL FORMS OF UTILIZATION:

Separate statistics are not reported for this species. The total reported catch of unclassified grey mullets in 1972 was:

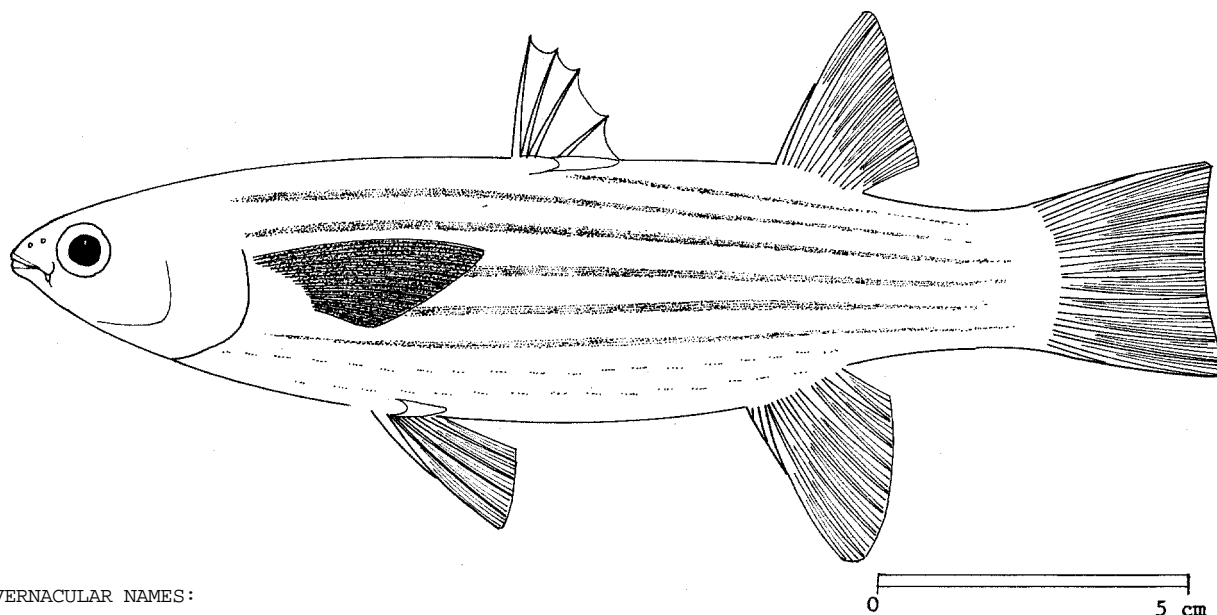
- area 57 (Eastern Indian Ocean): 1 700 tons (Australia: 1 200 tons)
- area 71 (Western Central Pacific): 2 300 tons (Australia: 1 500 tons)

Caught with gill nets, beach seines and cast nets.

Marketed fresh and salted; also boiled (Thailand) and canned or frozen (Australia). The roe is often marketed as a salted product.

FAD SPECIES IDENTIFICATION SHEETS

FAMILY: MUGILIDAE

FISHING AREAS 57,71
(E Ind. Ocean)
(W Cent. Pacific)*Liza vaigiensis* (Quoy & Gaimard, 1824)SYNONYMS STILL IN USE: *Mugil vaigiensis* Quoy & Gaimard, 1824

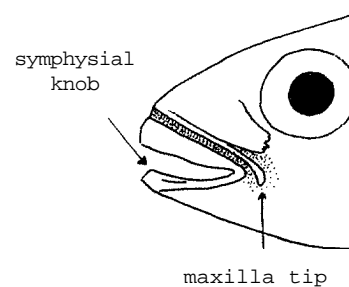
VERNACULAR NAMES:

FAO: En - Diamond-scaled grey mullet
Fr -
Sp -

NATIONAL:

DISTINCTIVE CHARACTERS:

Body rather stout, head broad and flattened on top, its length 24 to 27% of standard length; fatty (adipose) tissue only around rim of eye. Upper and lower lips thin; a large symphyseal knob at front of lower jaw; posterior tip of upper jaw strongly curved down and still visible when mouth closed; adults without teeth, juveniles with sparse row of teeth in each lip. Origin of first dorsal fin nearer to base of caudal fin than to snout tip; origin of second dorsal fin behind vertical from origin of anal fin; pectoral fins about equal to head length, with no axillary scale; caudal fin almost truncate. Scales in lateral series 24 to 27.



Liza

Colour: back dark green, flanks lighter, belly silvery; usually 6 longitudinal spotted bands along flanks, the second and fifth the most conspicuous. Pectoral fins blackish, other fins with dusky margins.

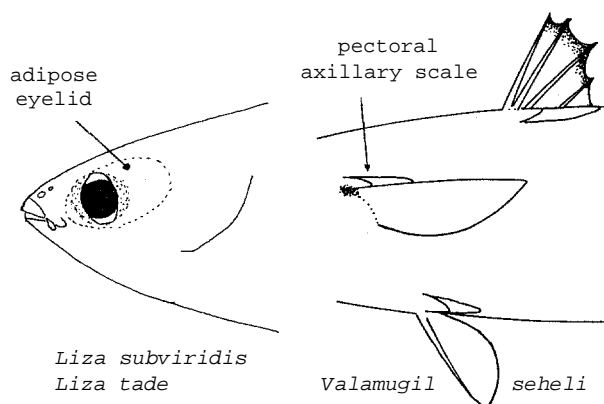
DISTINGUISHING CHARACTERS OF SIMILAR SPECIES OCCURRING IN THE AREA:

Liza subviridis, L. Lade: adipose tissue covering eye except for pupil; pectoral fin 3/4 of head length and not blackish; scales in lateral series 30 to 33 (24 to 27 in *L. vaigiensis*).

Other mugilid species: caudal fin more or less forked and axillary scale usually present above pectoral fin.

SIZE:

Maximum: 45 cm; common: 30 cm.



GEOGRAPHICAL DISTRIBUTION AND BEHAVIOUR:

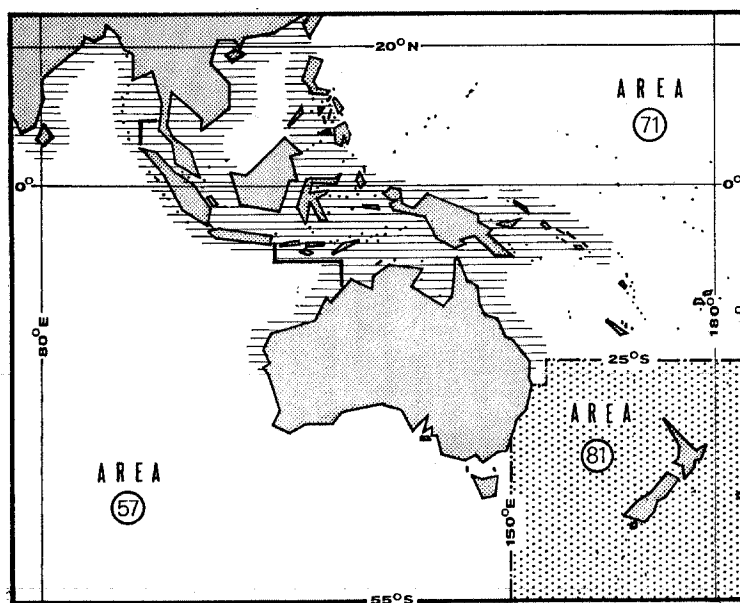
Throughout most of northern part of area and southward to northern coasts of Australia; also, westward to South Africa and northward to Japan.

Schools occur in shallow coastal waters and enter lagoons, estuaries and rivers, the juveniles often occurring in rice fields and mangrove swamps. Spawning takes place in the sea.

Feeds on minute bottom-living organisms and on organic matter in mud and sand; perhaps also on floating algae.

PRESENT FISHING GROUNDS:

Shallow coastal waters, estuaries, and mouths of rivers.



CATCHES, MAIN FISHING GEAR AND PRINCIPAL FORMS OF UTILIZATION:

Separate statistics are not reported for this species. The total reported catch of unclassified grey mullets in 1972 was:

- area 57 (Eastern Indian Ocean): 1 700 tons (Australia: 1 200 tons)
- area 71 (Western Central Pacific): 2 300 tons (Australia: 1 500 tons)

Caught with gill nets, beach seines and cast nets.

Marketed fresh and salted; also boiled (Thailand) and canned or frozen (Australia). The roe is often marketed as a salted product.

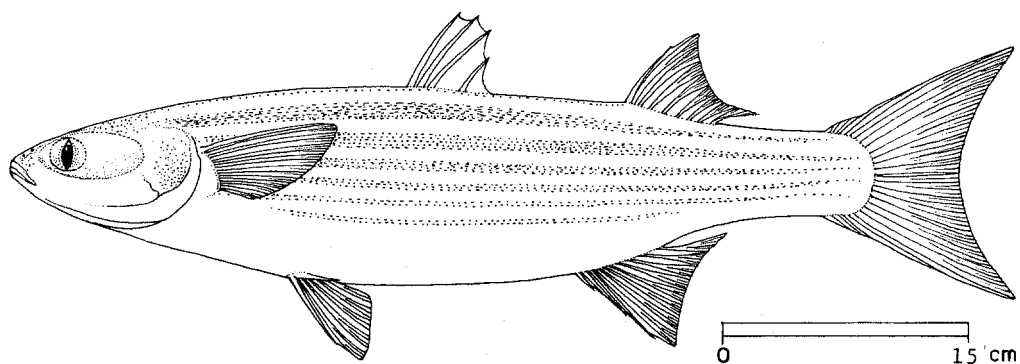
FAO SPECIES IDENTIFICATION SHEETS

FAMILY: MUGILIDAE

FISHING AREAS 57,71
(E Ind. Ocean)
(W Cent. Pacific)

Mugil cephalus Linnaeus, 1758

SYNONYMS STILL IN USE: *Mugil japonicus* Schlegel, 1845
Mugil galapagensis Ebeling, 1961



VERNACULAR NAMES:

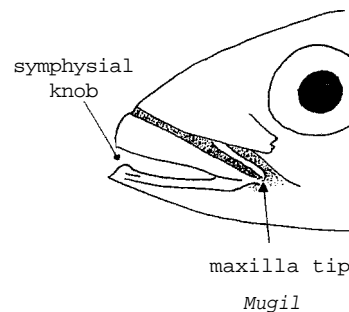
FAO: En - Flathead grey mullet
Fr -
Sp -

NATIONAL:

DISTINCTIVE CHARACTERS:

Body rather stout, head broad and flattened on top, its length 27 to 29% of standard length; fatty (adipose) tissue covering most of eye; lips thin; a large symphyseal knob at front of lower jaw; posterior tip of upper jaw not curved down and hidden when mouth closed; several rows of teeth in upper lip; one row or sometimes more in lower lip. Origin of first dorsal fin nearer to snout tip than to caudal fin base; origin of second dorsal fin behind vertical from origin of anal fin; pectoral fins short, not reaching first dorsal fin origin, with an axillary scale; anal fin with 8 soft rays; caudal fin forked. Scales in lateral series 38 to 42.

Colour: olive green on back, silvery on sides shading into white below; 6 to 7 indistinct longitudinal brown bars on flanks.



Mugil

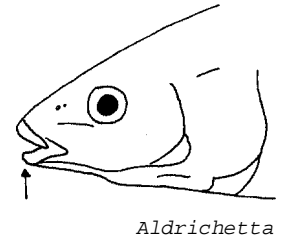
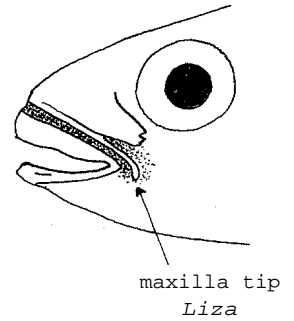
DISTINGUISHING CHARACTERS OF SIMILAR SPECIES OCCURRING IN THE AREA:

Liza and *Myxus* species: adipose tissue only covering rim of eye or at most to iris border, no axillary pectoral scale, and maxilla curving down behind mouth corner; also, usually 9 to 11 soft anal rays (8 in *Mugil cephalus*, but 8 in *L. vaigiensis* as also in *Aldrichetta*).

Valamugil species: longer pectoral fins (reaching to level of first dorsal fin).

Aldrichetta species: lower lip thick, and only a small *sympphysial* knob at front of lower jaw.

Myxus species: no adipose tissue around eye.



SIZE:

Maximum: 60 cm; common: 14 to 32 cm.

GEOGRAPHICAL DISTRIBUTION AND BEHAVIOUR:

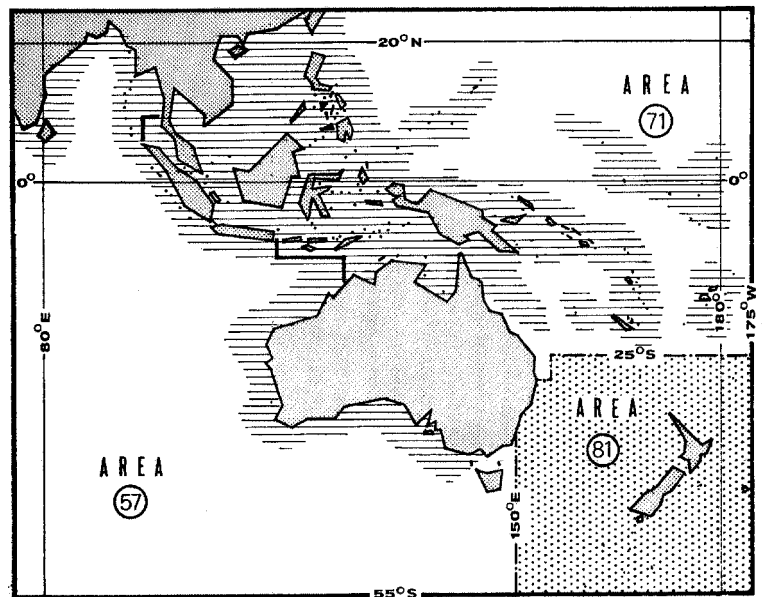
Throughout area but not common in tropical areas (especially Indo-Australian archipelago).

Schools enter fresh water and estuaries but spawning in the sea; commonly leaps from the water.

Feeds on microscopic organisms and organic detritus in bottom muds.

PRESENT FISHING GROUNDS:

Shallow estuaries and coastal lakes, as well as sea beaches on the migration to the spawning grounds.



CATCHES, MAIN FISHING GEAR AND PRINCIPAL FORMS OF UTILIZATION:

Separate statistics for this species are reported only by Australia. The Australian catch in 1972 was:

area 57 (Eastern Indian Ocean): 452 tons
area 71 (Western Central Pacific): 1 300 tons

Caught with gill nets, beach seines and shore-line traps.

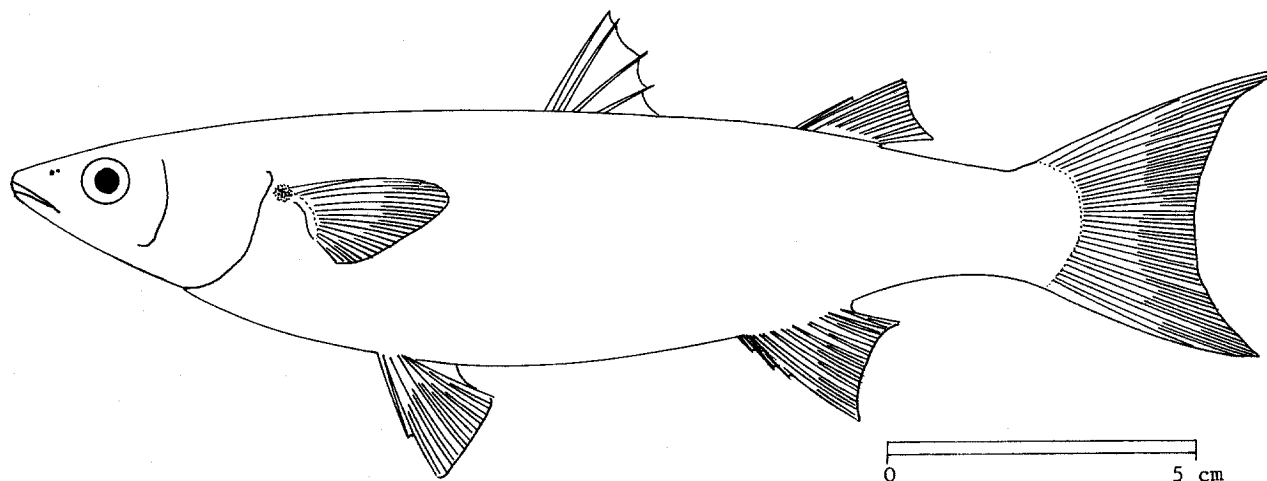
Marketed fresh or sometimes frozen. Roe also sold fresh or smoked.

FAO SPECIES IDENTIFICATION SHEETS

FAMILY: MUGILIDAE

FISHING AREAS 57,71
(E Ind. Ocean)
(W Cent. Pacific)*Myxus elongatus* (Günther, 1861)

SYNONYMS STILL IN USE: None



VERNACULAR NAMES:

FAO: En - Sand grey mullet
Fr -
Sp -

NATIONAL:

DISTINCTIVE CHARACTERS:

Body slender, head slightly convex and rather broad, its length 25 to 267 of standard length; no fatty (adipose) tissue around eye; lips thin; a large symphysial knob at front of lower jaw; hind tip of upper jaw hidden when mouth closed; a single row of spatulate teeth in upper lip, a marginal row in lower lip and also lateral patches near mouth corners. Origin of first dorsal fin nearer to caudal fin base than to snout tip; origin of second dorsal fin behind vertical from origin of anal fin; pectoral fins very short, less than 3/4 of head length, with no axillary scale; caudal fin deeply forked. Scales in lateral series 43 to 46.

Colour: olive green on back, silver on sides, white below; fins with dusky edges except anal fin which has white edge; iris yellow; a dark axillary spot at base of pectoral fins.

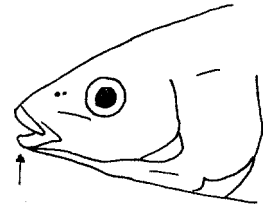
DISTINGUISHING CHARACTERS OF SIMILAR SPECIES OCCURRING IN THE AREA:

Myxus petardi: ciliate teeth in upper lip (spatulate in *M. elongatus*) and more scales in lateral series (47 to 50; 43 to 46 in *M. elongatus*).

Liza and *Mugil* species: adipose tissue around at least rim of eye.

Valamugil species: longer pectoral fins (reaching to level of first dorsal fin).

Aldrichetta species: lower lip thick, and. only a small symphyisial knob at front of lower jaw; also, 58 to 64 scales.



Aldrichetta

SIZE:

Maximum: 27 cm; common: 15 to 20 cm.

GEOGRAPHICAL DISTRIBUTION AND BEHAVIOUR:

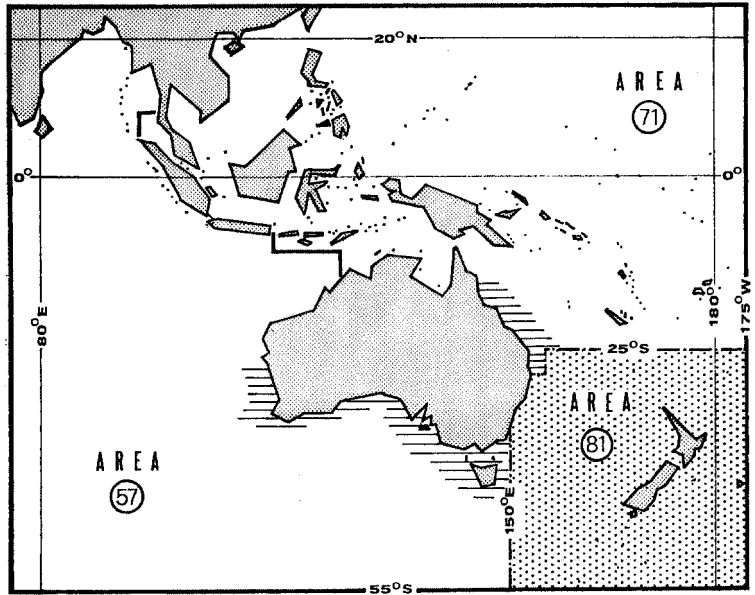
Southern coasts of Australia, from southern Queensland to south western Australia.

Schools occur in shallow coastal waters and lower estuaries. Spawning takes place in the sea.

Feeds on small crustaceans and molluscs as well as microscopic algae.

PRESENT FISHING GROUNDS:

Shallow coastal waters and estuaries.



CATCHES, MAIN FISHING GEAR AND PRINCIPAL FORMS OF UTILIZATION:

Separate statistics are not reported for this species.

Caught with gill nets and beach seines.

Marketed fresh or filleted.

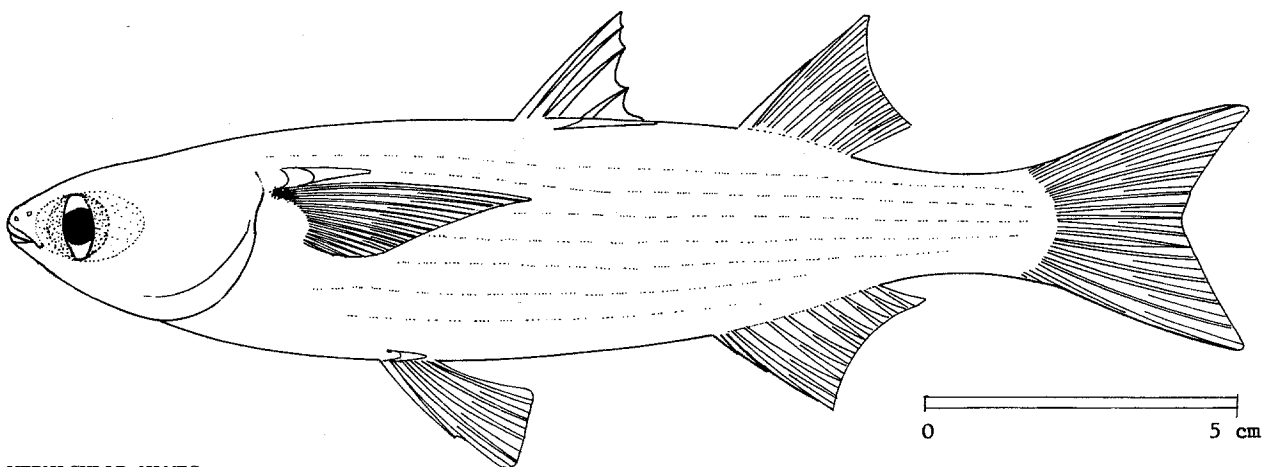
FAO SPECIES IDENTIFICATION SHEETS

FAMILY: MUGILIDAE

FISHING AREAS 57,71
(E Ind. Ocean)
(W Cent. Pacific)

Valamugil cunnesius (Valenciennes, 1836)

SYNONYMS STILL IN USE: *Mugil strongylocephalus* Richardson, 1846
Mugil longimanus Günther, 1861



VERNACULAR NAMES:

FAO: En - Longfin grey mullet
Fr
Sp -

NATIONAL:

DISTINCTIVE CHARACTERS:

Body elongate, rather slender, head moderate; fatty (adipose) tissue covering eye except for pupil. Upper lip fleshy, lower lip thin; posterior tip of upper jaw hidden when mouth closed; fine teeth on both lips, but more sparse on upper. Origin of first dorsal fin a little nearer to tip of snout than to base of caudal fin; origin of second dorsal fin a little behind vertical from origin of anal fin; pectoral fins equal to or longer than head, reaching to below 3rd or 4th rays of first dorsal fin, with axillary scale nearly half the length of fin; caudal fin forked. Scales in lateral series 30 to 35.

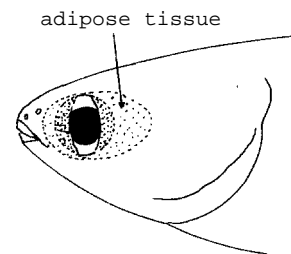
Colour: back blue, flanks and belly silvery; pectoral fins with dark mark at axil.

DISTINGUISHING CHARACTERS OF SIMILAR SPECIES OCCURRING IN THE AREA:

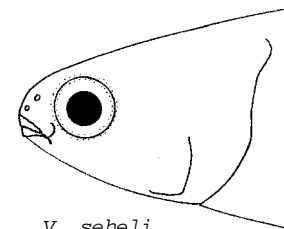
Valamugil speigleri outer margin of first dorsal fin black; also, scales in lateral series 37 to 40 (30 to 35 in *V. cunnesius*).

Valamugil seheli, *V. buchmanani*: fatty (adipose) tissue only around rim of eye.

Other mugilid species: shorter pectoral fins, not reaching beyond first dorsal fin origin.



V. cunnesius



V. seheli

SIZE:

Maximum: 35 cm; common: 15 to 20 cm.

GEOGRAPHICAL DISTRIBUTION AND BEHAVIOUR:

Throughout most of northern part of area and southward to northern Australia; also, westward to Bombay.

Schools occur in shallow coastal, waters and enter lagoons, estuaries and rivers to feed, the juveniles often occurring in rice fields and mangrove swamps.

Spawning takes place in the sea.

Feeds on minute bottom-living organisms and on organic material contained in mud and sand; perhaps also on floating algae.

PRESENT FISHING GROUNDS:

Shallow coastal waters, estuaries, and mouths of rivers.

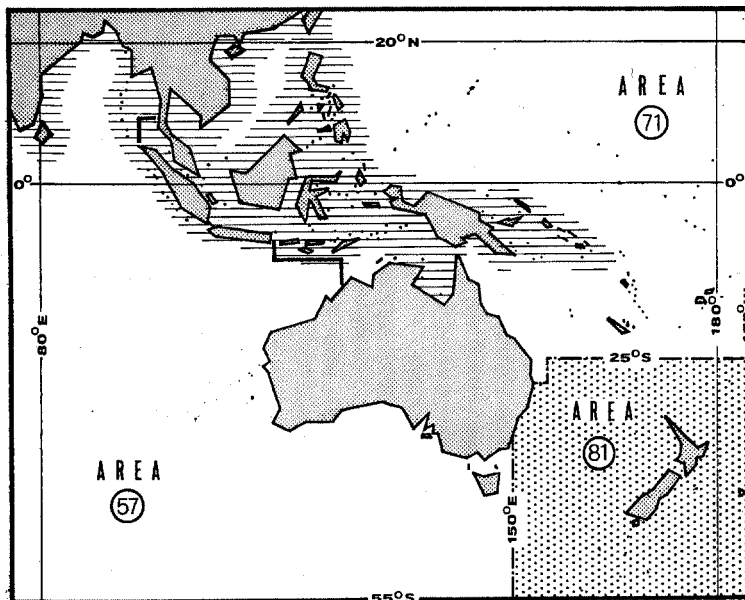
CATCHES, MAIN FISHING GEAR AND PRINCIPAL FORMS OF UTILIZATION:

Separate statistics are not reported for this species. The total reported catch of unclassified grey mullets in 1972 was:

area 57 (Eastern Indian Ocean): 1 700 tons (Australia: 1 200 tons)
area 71 (Western Central. Pacific): 2 300 tons (Australia: 1 500 tons)

Caught with gill nets, beach seines and cast nets.

Marketed fresh and salted; also boiled (Thailand) and canned or frozen (Australia). The roe is often marketed as a salted product.

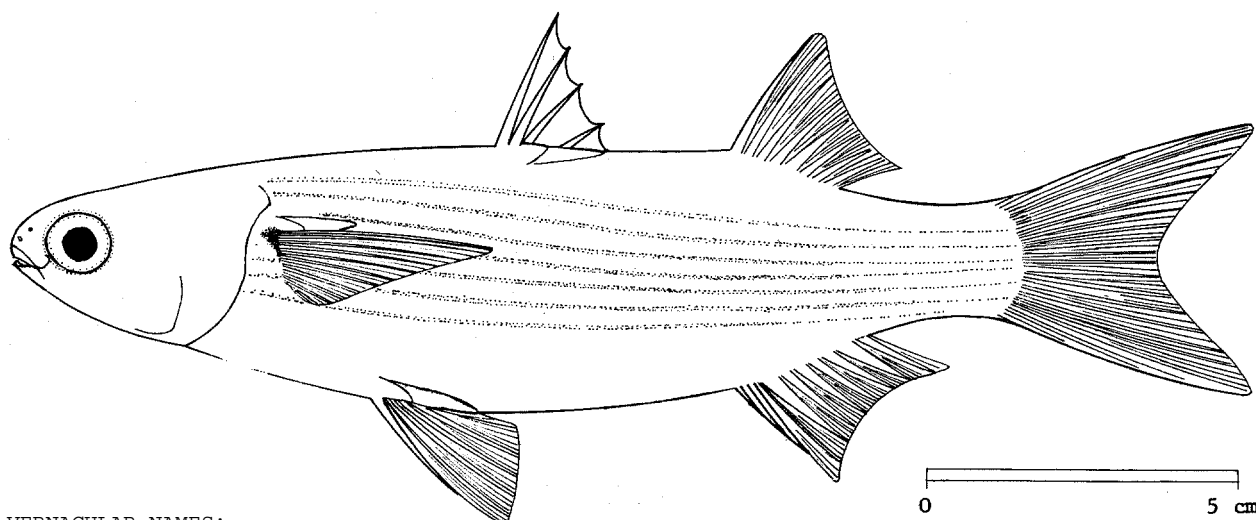


FAO SPECIES IDENTIFICATION SHEETS

FAMILY: MUGILIDAE

FISHING AREAS 57,71
(E Ind. Ocean)
(W Cent. Pacific)

| |
|--|
| <i>Valamugil seheli</i> (Forsskål, 1775) |
|--|

SYNONYMS STILL IN USE: *Mugil axillaris* Valenciennes, 1836
Mugil caeruleomaculatus Lacepède, 1803

VERNACULAR NAMES:

FAO: En - Bluespot grey mullet
Fr -
Sp -

NATIONAL:

DISTINCTIVE CHARACTERS:

Body elongate, rather slender, head moderate; fatty (adipose) tissue only around rim of eye. Upper lip fleshy, lower lip thin; posterior tip of upper jaw hidden when mouth closed; fine teeth on both lips, but shorter and more sparse in upper. Origin of first dorsal fin about equidistant between tip of snout and base of caudal fin; origin of second dorsal fin on vertical from anal fin origin; pectoral fins equal to head length or a little shorter, just reaching to vertical from first dorsal fin origin, with axillary scale $1/3$ the length of fin; caudal fin forked. Scales in lateral series 38 to 42.

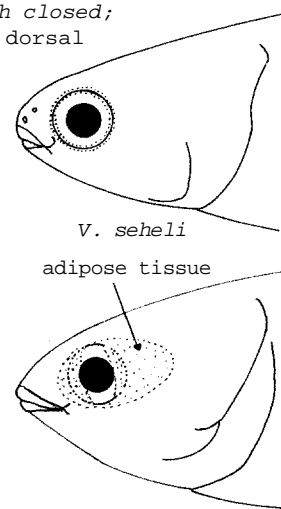
Colour: back blue, flanks and belly silvery; pectoral fins yellow, with dark blue spot at axil.

DISTINGUISHING CHARACTERS OF SIMILAR SPECIES OCCURRING IN THE AREA:

Valamugil speigleri, *V. cunnesius*, *V. engeli*: fatty (adipose) tissue covering most of eye.

Valamugil buchanani: fewer scales in lateral series (32 to 35; 38 to 42 in *V. seheli*).

Other mugilid species: shorter pectoral fins not reaching to vertical from first dorsal fin origin.



V. speigleri

SIZE:

Maximum: 45 cm; common: 20 to 30 cm.

GEOGRAPHICAL DISTRIBUTION AND BEHAVIOUR:

Throughout most of northern part of area and probably southward to tropical waters of Australia; also westward to South Africa.

Schools occur in shallow coastal waters and enter lagoons, estuaries and rivers to feed, juveniles often occurring in rice fields and mangrove swamps.

Spawning takes place in the sea.

Feeds on minute bottom-living organisms and on organic matter contained in mud and sand; perhaps also on floating algae.

PRESENT FISHING GROUNDS:

Shallow coastal waters, estuaries, and mouths of rivers.

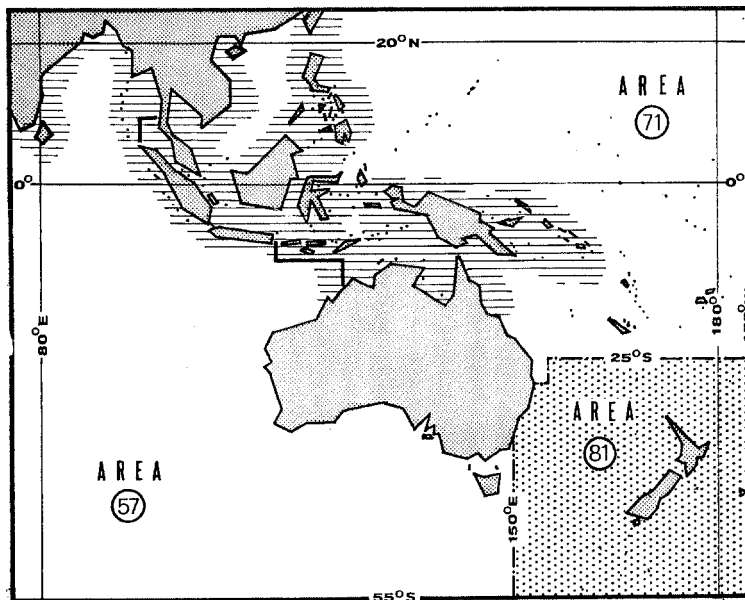
CATCHES, MAIN FISHING GEAR AND PRINCIPAL FORMS OF UTILIZATION:

Separate statistics are not reported for this species. The total reported catch of unclassified grey mullets in 1972 was:

area 57 (Eastern Indian Ocean): 1 700 tons (Australia: 1 200 tons)
area 71 (Western Central Pacific): 2 300 tons (Australia: 1 500 tons)

Caught with gill nets, beach seines and cast nets

Marketed fresh and salted; also boiled (Thailand) and canned or frozen (Australia). The roe is often marketed as a salted product.



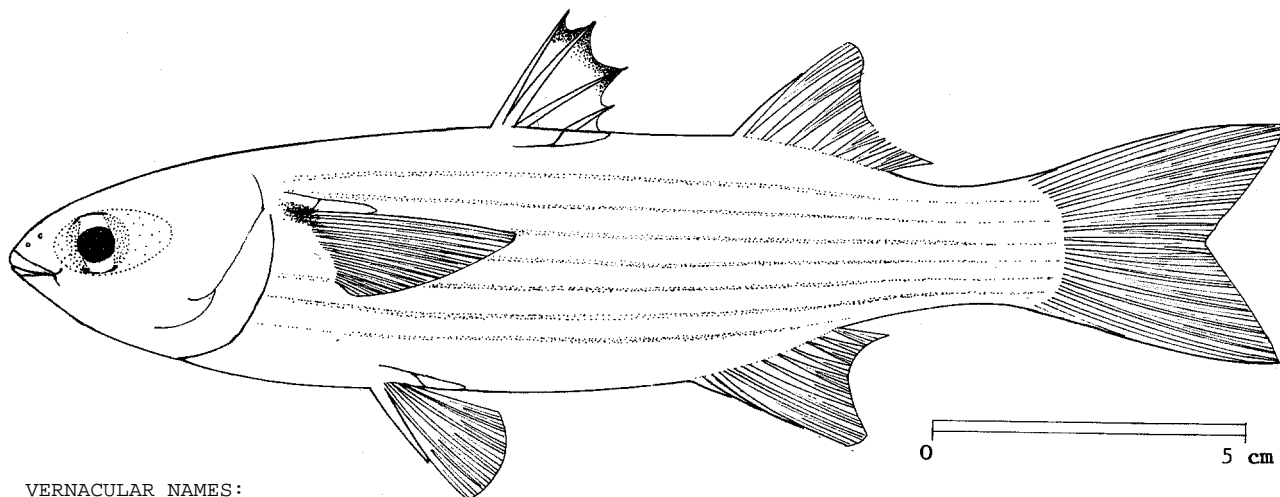
FAO SPECIES IDENTIFICATION SHEETS

FAMILY: MUGILIDAE

FISHING AREAS 57,71
(E Ind. Ocean)
(W Cent. Pacific)

Valamugil speigleri (Bleeker, 1858)

SYNONYMS STILL IN USE: None



VERNACULAR NAMES:

FAO: En - Speigler's grey mullet
Fr -
Sp -

NATIONAL:

DISTINCTIVE CHARACTERS:

Body elongate, rather slender, head moderate; fatty (adipose) tissue covering eye except for pupil. Upper lip fleshy, lower lip thin; posterior tip of upper jaw hidden when mouth closed; fine teeth on both lips, but more sparse on upper. Origin of first dorsal fin nearer to tip of snout than to base of caudal fin; origin of second dorsal fin behind origin of anal fin; pectoral fin a little shorter than head length, reaching somewhat beyond vertical from first dorsal fin origin, with axillary scale almost half the length of fin; caudal fin forked. Scales in lateral series 37 to 40.

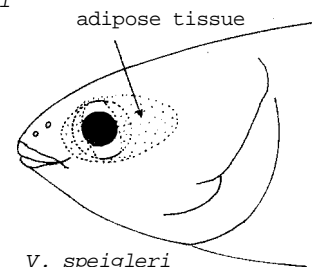
Colour: back green, flanks and belly silvery; pectoral fin with black spot at axil; margin of first dorsal fin black; other fins dusky.

DISTINGUISHING CHARACTERS OF SIMILAR SPECIES OCCURRING IN THE AREA:

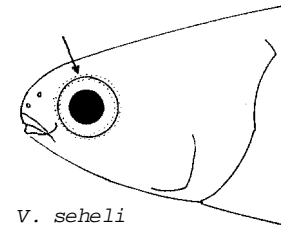
Valamugil seheli, *V. buchanani*: fatty (adipose) tissue only around rim of eye; also, margin of first dorsal fin not black.

Valamugil cunnesius: outer margin of first dorsal fin not black; also, fewer scales in lateral series (30 to 35; 37 to 40 in *V. speigleri*).

Other mugilid species: shorter pectoral fins, not reaching beyond first dorsal fin origin.



V. speigleri



V. seheli

SIZE:

Maximum: 35 cm; common: 15 to 20 cm.

GEOGRAPHICAL DISTRIBUTION AND BEHAVIOUR:

Throughout most of northern part of area, but perhaps not southward to Australian coasts.

Schools occur in shallow coastal waters and enter lagoons, estuaries and rivers to feed, juveniles often occurring in rice fields and mangrove swamps.

Spawning takes place in the sea.

Feeds on minute bottom-living organisms and on organic material contained in mud and sand; perhaps also on floating algae.

PRESENT FISHING GROUNDS:

Shallow coastal waters, estuaries, and mouths of rivers.

CATCHES, MAIN FISHING GEAR AND PRINCIPAL FORMS OF UTILIZATION:

Separate statistics are not reported for this species. The total reported catch of unclassified grey mullets in 1972 was:

area 57 (Eastern Indian Ocean): 1 700 tons (Australia: 1 200 tons)
area 71 (Western Central Pacific): 2 300 tons (Australia: 1 500 tons)

Caught with gill nets, beach seines and cast nets

Marketed fresh and salted; also boiled (Thailand) and canned or frozen (Australia). The roe is often marketed as a salted product.

