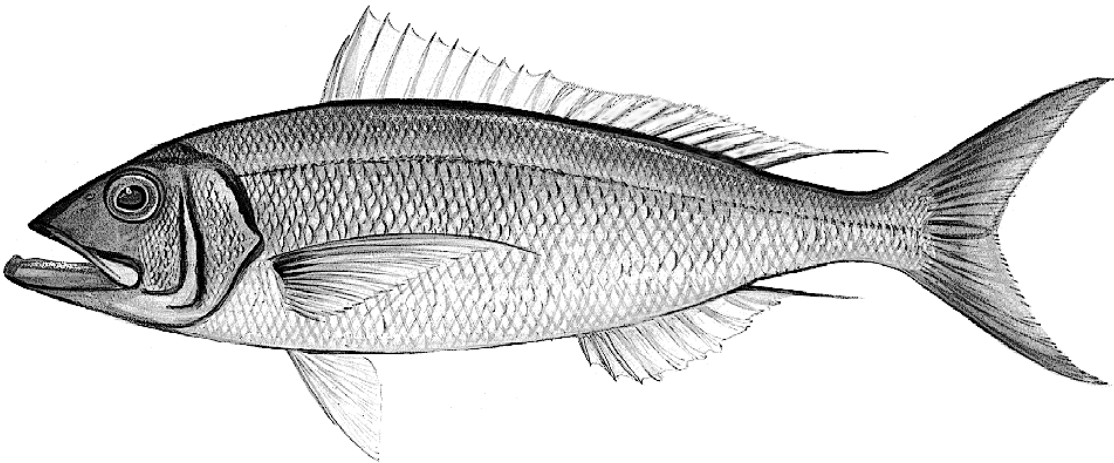


Aphareus furca (Lacepède, 1801)

(Plate V, 27)

Frequent synonyms / misidentifications: None / None.

FAO names: En - Smalltoothed jobfish; Fr - Vivaneau tidents; Sp - Pargo boquidulce.



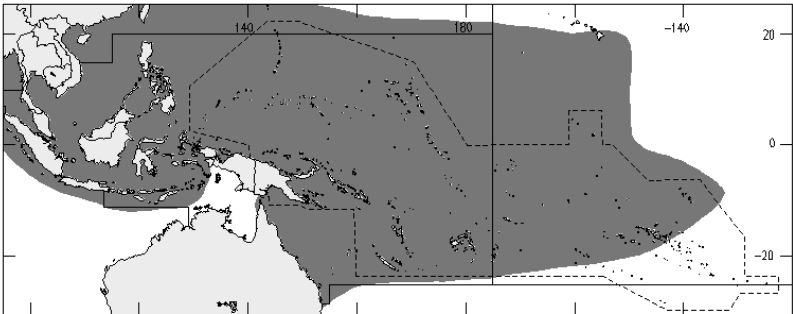
Diagnostic characters: Body elongate, laterally compressed. Nostrils on each side of snout close together. **Lower jaw protruding. Premaxillae not protrusible, fixed by a frenum.** Maxilla extending to below middle of eye or slightly beyond. **Teeth in jaws extremely small; roof of mouth usually toothless (small juveniles may have minute teeth in semicircular pattern on vomer).** Maxilla without scales or longitudinal ridges. Interorbital region flattened. Gill openings extending far anterior to orbit. First gill arch with 6 to 12 gill rakers on upper limb, 15 to 18 on lower limb (total 22 to 28). Dorsal fin continuous, not deeply incised near junction of spinous and soft portions. **Last soft ray of both dorsal and anal fins well produced, longer than next to last ray.** Caudal fin forked. Pectoral fins somewhat shorter than head, reaching posteriorly to about vertical through anterior part of soft dorsal fin. **Dorsal fin with X spines and 11 (infrequently 10 or 12) soft rays.** Anal fin with III spines and 8 soft rays. Pectoral-fin rays 15 or 16. **Membranes of dorsal and anal fins without scales. Tubed lateral-line scales 71 to 74.** **Colour:** variable: head and body may be steel blue overall with dorsal and anal fins mainly yellow and other fins white to yellow to dark grey; or back and upper sides purplish brown, blue-grey on sides, silvery sheen on head and lower sides, edges of preopercle and opercle outlined with black, fins whitish to yellow-brown; on occasion reported to have brilliant yellow on head.

Size: Maximum standard length about 40 cm, commonly to 25 cm.

Habitat, biology, and fisheries: Inhabits reefs at depths between about 1 and 120 m. Occurs solitarily or in small groups. Feeds mainly on fishes, but also eats crustaceans. Individuals with brilliant yellow on head may be nuptial males. Caught mainly with handlines or vertical longlines; also speared by divers. Often seen in markets where it is sold fresh.

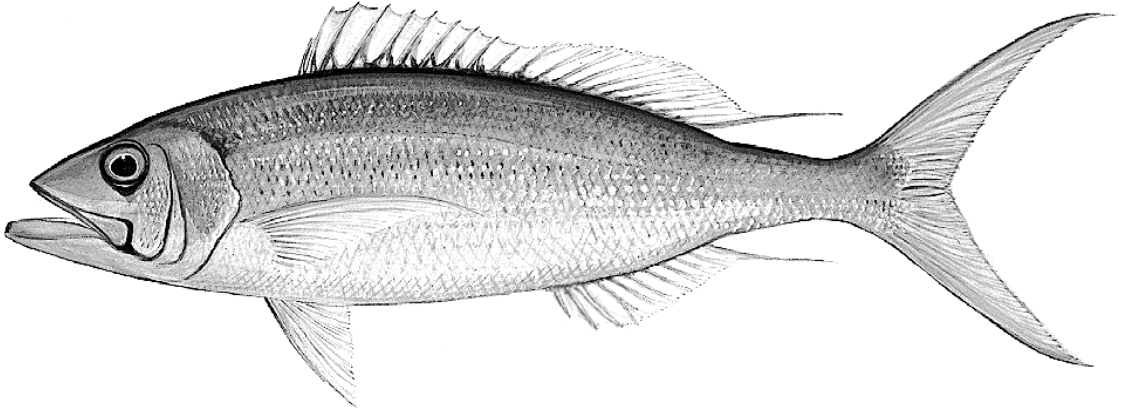
Distribution: Widespread in the Indo-Pacific from Hawaii to East Africa and from southern Japan southward to Australia; also known from Cocos Island in the eastern Pacific.

Remarks: The spelling usually given for the specific name is *furcatus*, but in the original description it is *furca*. The word *furca* is a noun in apposition and properly retains the original spelling with whatever generic name it is combined.



Aphareus rutilans Cuvier, 1830

(Plate V, 28)

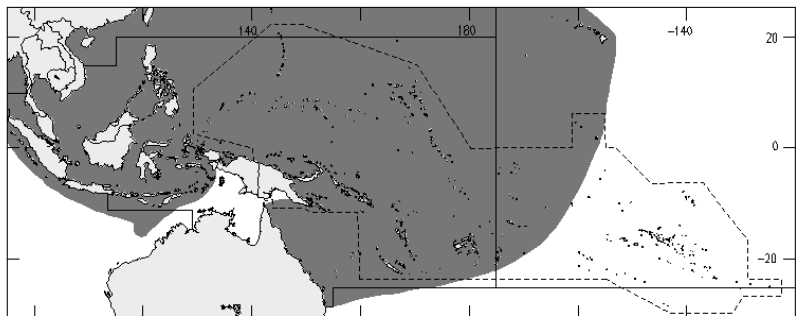
Frequent synonyms / misidentifications: None / None.**FAO names:** En - Rusty jobfish; Fr - Vivaneau rouillé; Sp - Pargo bermellón.

Diagnostic characters: Body elongate, laterally compressed. Nostrils on each side of snout close together. **Lower jaw protruding. Premaxillae not protrusible, fixed by a frenum.** Maxilla extending to below middle of eye or slightly beyond. **Teeth in jaws extremely small, minute in large adults; roof of mouth toothless.** Maxilla without scales or longitudinal ridges. Interorbital region flattened. Gill openings extending far anterior to orbit. First gill arch with 16 to 19 gill rakers on upper limb, 32 to 35 on lower limb (total 49 to 52). Dorsal fin continuous, not deeply incised near junction of spinous and soft portions. **Last soft ray of both dorsal and anal fins well produced, longer than next to last ray.** Caudal fin forked. Pectoral fins somewhat shorter than head. **Dorsal fin with X spines and 11 (infrequently 10) soft rays.** Anal fin with III spines and 8 soft rays. Pectoral-fin rays 15 or 16. **Membranes of dorsal and anal fins without scales. Tubed lateral-line scales 69 to 75.** **Colour:** blue-grey or mauve to overall reddish; margin of maxilla black; in some specimens, at least, **inside of mouth, gill chamber, and gills shining silver;** fins yellowish to reddish except pelvic and anal fins sometimes whitish.

Size: Maximum standard length about 80 cm, commonly to 50 cm.

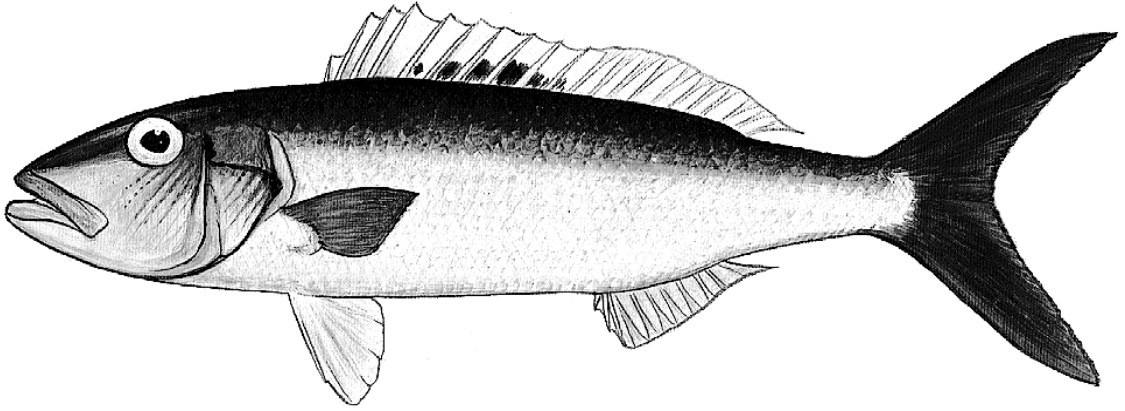
Habitat, biology, and fisheries: Inhabits reefs and rocky bottom areas to depths of at least 250 m. At Vanuatu (New Hebrides) spawning occurs mainly during spring and summer, with peak activity in November and December. Caught with handlines and bottom longlines. Locally abundant and an important market fish in some areas. It is one of the principal species in the Hawaiian offshore handline fishery. Marketed fresh.

Distribution: Widespread in the Indo-Pacific from Hawaii to East Africa and from the Ryukyu and Ogasawara islands southward to Australia.



Aprion virescens Valenciennes, 1830

(Plate V, 29)

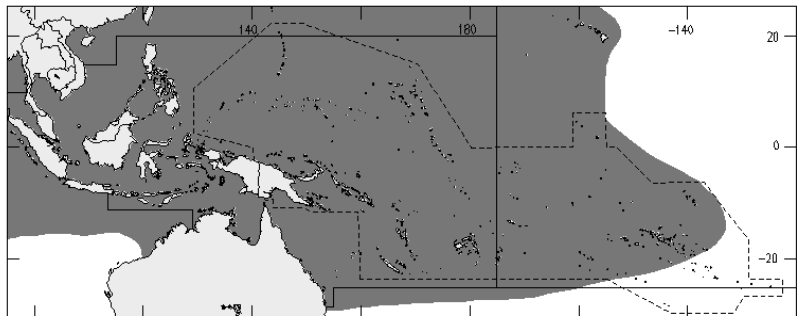
Frequent synonyms / misidentifications: None / None.**FAO names:** En - Green jobfish; Fr - Vivaneau job; Sp - Pargo verde.

Diagnostic characters: Body elongate, robust. Nostrils on each side of snout close together. **Very distinct horizontal groove on snout ventral to nostrils.** Mouth terminal; jaws about equal. Maxilla extending to vertical through about anterior margin of orbit or somewhat short of orbit. Teeth in both jaws in bands, with **strong canines anteriorly**; teeth on roof of mouth in chevron- or crescent-shaped patch on vomer and in elongate band on each palatine. **Maxilla without scales or longitudinal ridges. Interorbital region flattened.** Preopercular edge smooth, sometimes denticulated in juveniles. **First gill arch with 7 or 8 gill rakers on upper limb, 13 to 16 on lower limb (total 20 to 24).** Dorsal fin continuous, not deeply incised near junction of spinous and soft portions. **Last soft ray of both dorsal and anal fins well produced, longer than next to last ray. Caudal fin forked. Pectoral fins short, less than 1/2 length of head, about equal to length of snout. Dorsal fin with X spines and 11 soft rays. Anal fin with III spines and 8 soft rays. Pectoral-fin rays 16 to 18. Membranes of dorsal and anal fins without scales. Tubed lateral-line scales 48 to 50. Colour:** dark green, bluish, or grey-blue.

Size: Maximum standard length about 80 cm, commonly to 50 cm.

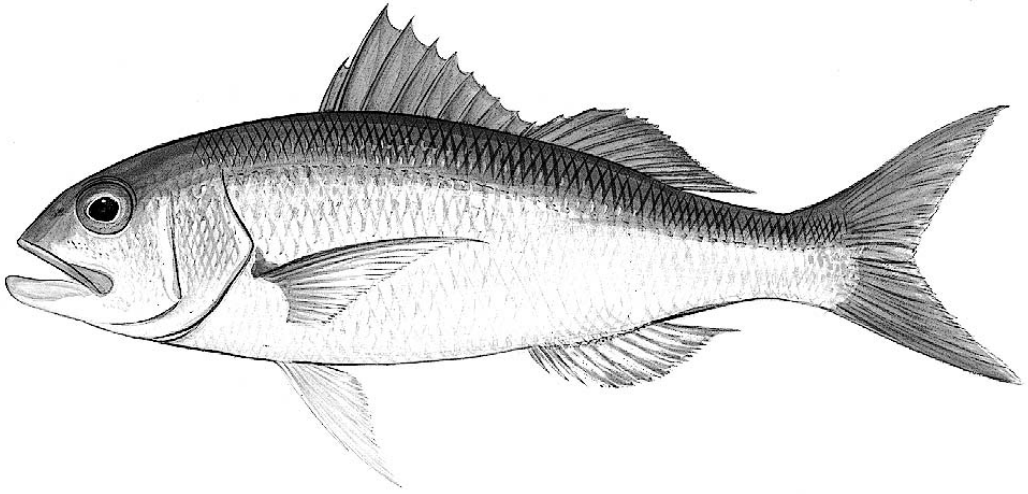
Habitat, biology, and fisheries: Inhabits coastal waters, from the surface down to depths of 120 m. Mainly a solitary species. Feeds mostly on fishes, but also on shrimps, crabs, and cephalopods. Spawning recorded in January and November off East Africa. Caught mainly with trolled lures, handlines, bottom longlines, and bottom trawls. One of the main species in the Hawaiian offshore handline fishery. Significant in some subsistence fisheries. A fine food fish. Frequently seen in markets where it is sold mostly fresh, but also dried and salted.

Distribution: Widely distributed in the Indo-Pacific from Hawaii to East Africa and from southern Japan southward to Australia.



Etelis carbunculus Cuvier, 1828

(Plate V, 30)

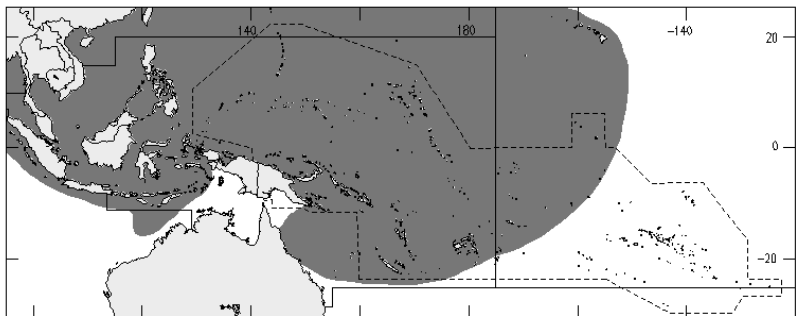
Frequent synonyms / misidentifications: *Etelis marshi* (Jenkins, 1903) / Other species of *Etelis*.**FAO names:** En - Ruby snapper; Fr - Vivaneau rubis; Sp - Pargo rubí.

Diagnostic characters: Body relatively elongate, laterally compressed. Nostrils on each side of snout close together. Lower jaw protruding slightly. Premaxillae protrusible. Maxilla extending to below middle of eye. Both upper and lower jaws with conical teeth; 1 to several enlarged canines on each side of both jaws; vomer and palatines with teeth, those on vomer in a chevron-shaped patch. **Maxilla with scales, but without longitudinal ridges. Interorbital region flattened. First gill arch with 5 to 8 gill rakers on upper limb, 11 to 14 on lower limb (total number, including rudiments, 17 to 22). Dorsal fin continuous, but spinous portion of fin deeply incised at its junction with soft portion. Last soft ray of both dorsal and anal fins produced, longer than next to last ray. Caudal fin forked, the lobes relatively short (about 25 to 30% standard length) compared with other species of *Etelis*.** Pectoral fins fairly long; in specimens more than about 19 cm standard length, length of pectoral fins about 80 to 90% of head length. **Dorsal fin with X spines and 11 soft rays.** Anal fin with III spines and 8 soft rays. Pectoral-fin rays 15 to 17. **Membranes of dorsal and anal fins without scales. Tubed lateral-line scales 48 to 50. Colour:** mainly pink to red, becoming white on lower sides and belly.

Size: Maximum standard length 80 cm or more, commonly to 50 cm.

Habitat, biology, and fisheries: Inhabits rocky bottoms at depths between about 90 and 400 m. Feeds on fishes and larger invertebrates such as squids, shrimps, and crabs; also takes planktonic organisms, including pelagic urochordates. At Vanuatu (New Hebrides) spawning occurs throughout most of the year, with peak activity during November. Caught mainly with bottom longlines and deep handlines. An important food fish in some areas, and one of the principal species in the Hawaiian offshore handline fishery. Marketed fresh or frozen.

Distribution: Widely distributed in the Indo-Pacific from Hawaii to East Africa and from southern Japan southward to Australia; also reported from off northern New Zealand.

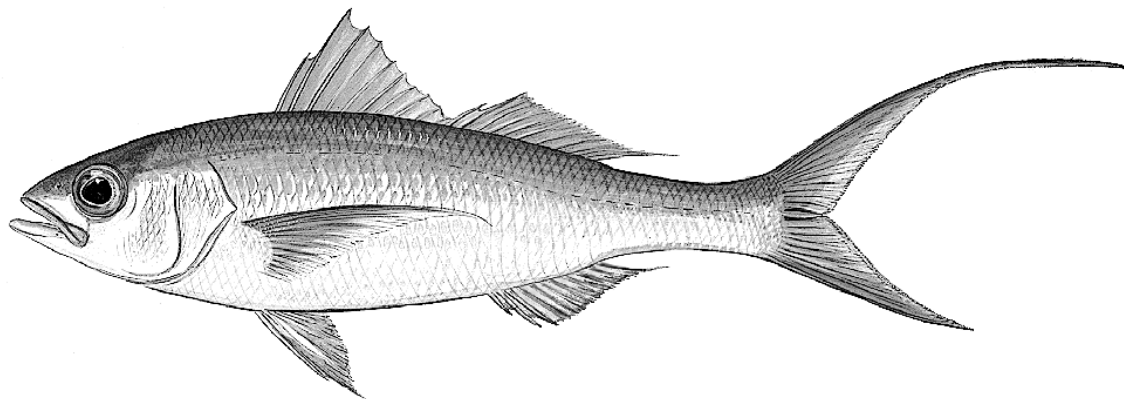


Etelis coruscans Valenciennes, 1862

(Plate V, 31)

Frequent synonyms / misidentifications: None / Other species of *Etelis*.

FAO names: En - Flame snapper; Fr - Vivaneau la flamme; Sp - Pargo de llama.



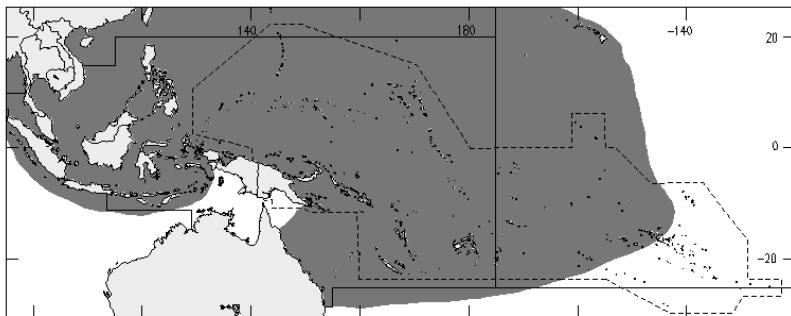
Diagnostic characters: Body relatively elongate, laterally compressed. Nostrils on each side of snout close together. Lower jaw protruding slightly. Premaxillae protrusible. Maxilla extending to below middle of eye. Usually one to a few canine or canine-like teeth on each side of both jaws anteriorly, followed by a series of conical teeth; vomer and palatines with teeth, those on vomer in a chevron-shaped patch. **Maxilla with scales, but without longitudinal ridges. Interorbital region flattened. First gill arch with 8 to 10 gill rakers on upper limb, 15 to 18 on lower limb (total number, including rudiments, 23 to 28). Dorsal fin continuous, but spinous portion of fin deeply incised at its junction with soft portion. Last soft ray of both dorsal and anal fins produced, longer than next to last ray. Caudal fin deeply forked, the lobes short to long; upper lobe of caudal fin extremely long in some specimens (in specimens more than about 13 cm standard length, upper lobe of caudal fin 33 to 75% standard length). Pectoral fins fairly long; in specimens more than about 18 cm standard length, length of pectoral fins about 80 to 90% of head length. Dorsal fin with X spines and 11 soft rays. Anal fins with III spines and 8 soft rays. Pectoral-fin rays 15 or 16. Membranes of dorsal and anal fins without scales. Tubed lateral-line scales 47 to 50. Colour:** back and upper sides deep pink to red; lower sides and belly pink to white; fins pink to red.

Size: Maximum standard length about 85 cm, commonly to 50 cm.

Habitat, biology, and fisheries: Inhabits rocky bottoms at depths between about 90 and 400 m. Feeds on small fishes, squids, and crustaceans. Caught mainly with deep handlines. An important food fish in some areas (for example southern Japan). Marketed fresh or frozen.

Distribution: Widely distributed in the Indo-Pacific from Hawaii to East Africa and from southern Japan southward to Australia (Queensland and New South Wales) and Lord Howe Island; also known from off the Kermadec Islands, northeast of New Zealand.

Remarks: Two morphs are present in this species: long- and short-tailed forms. Caudal-fin length may be sexually

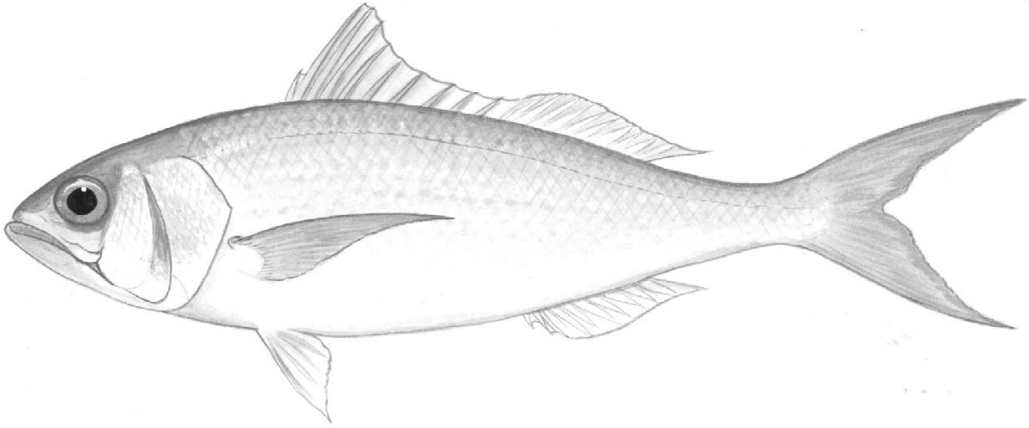


dimorphic, but there are no data available that would support or refute this. Both forms have been caught in the vicinity of Fiji, where the short-tailed form is generally restricted to seamounts and the long-tailed form, although found on seamounts, occurs more commonly on island slopes.

Etelis radiosus Anderson, 1981

Frequent synonyms / misidentifications: None / Other species of *Etelis*.

FAO names: En - Scarlet snapper; Fr - Vivaneau écarlate; Sp - Pargo escarlata.

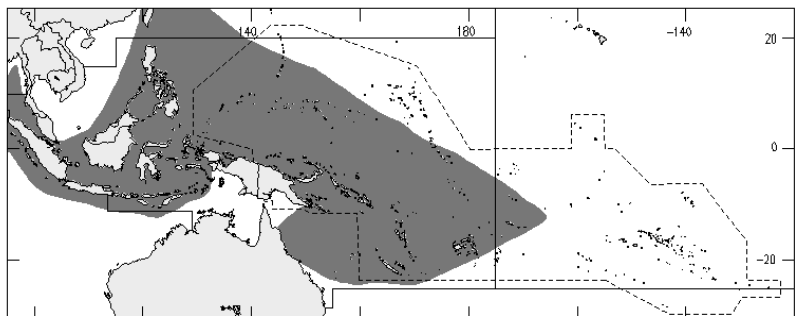


Diagnostic characters: Body relatively elongate, laterally compressed. Nostrils on each side of snout close together. Lower jaw protruding. Premaxillae protrusible. Maxilla extending to vertical near posterior margin of orbit. Small conical teeth in jaws with a few anterior ones in each jaw enlarged, sometimes into canine-like teeth; vomer and palatines with teeth, those on vomer in a rounded arch-shaped or chevron-shaped patch. **Maxilla with scales, but without longitudinal ridges. Interorbital region flattened. First gill arch with 11 to 15 gill rakers on upper limb, 20 to 22 on lower limb (total, including rudiments, 32 to 36). Dorsal fin continuous, but spinous portion of fin deeply incised at its junction with soft portion. Last soft ray of both dorsal and anal fins produced, longer than next to last ray. Caudal fin lunate, with a notch at the middle of the distal margin of the fin. Pectoral fins fairly long, a little shorter than head. Dorsal fin with X spines and 11 soft rays. Anal fin with III spines and 8 soft rays. Pectoral-fin rays 16. Membranes of dorsal and anal fins without scales. Tubed lateral-line scales 50 or 51. Colour:** mainly red, lighter on lower sides and belly.

Size: Maximum standard length about 80 cm, commonly to about 50 cm.

Habitat, biology, and fisheries: Inhabits rocky bottoms at depths between about 90 and 360 m. Feeds mainly on fishes. Caught mainly with deep handlines. Marketed fresh.

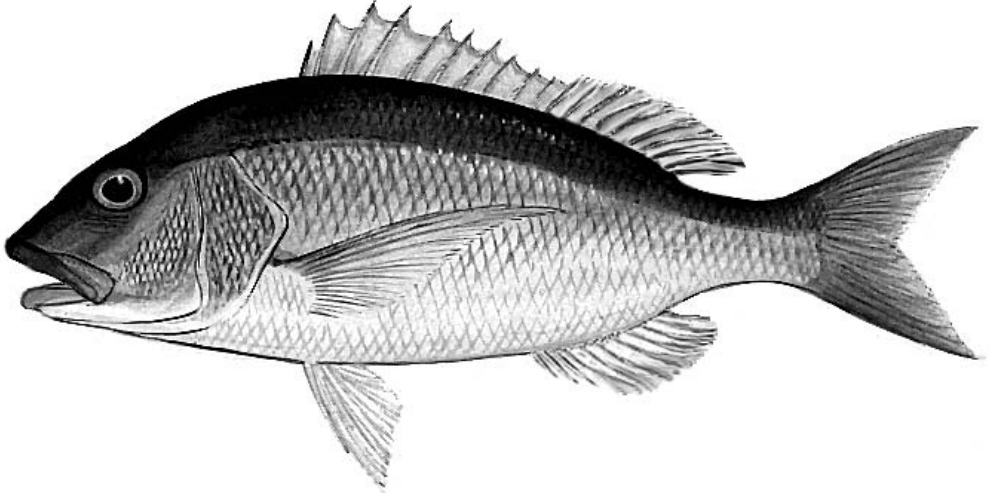
Distribution: Widely distributed in the Indo-Pacific from Samoa to Sri Lanka and from the Ryukyu Islands southward to Australia.



***Lipocheilus carnolabrum* (Chan, 1970)** (Plate V, 32)

Frequent synonyms / misidentifications: None / None.

FAO names: En - Tang's snapper; Fr - Vivaneau verrue; Sp - Pargo trompudo.

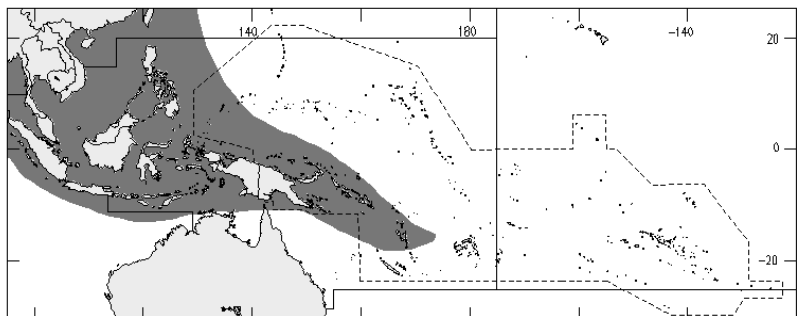


Diagnostic characters: Body moderately deep, its depth 38 to 42% standard length, laterally compressed. Nostrils on each side of snout close to each other and to eye. **Upper jaw protruding when mouth closed.** **Adults with a thick fleshy protrusion at anterior end of upper lip.** Premaxillae protrusible. Maxilla reaching vertical through middle of eye. Upper and lower jaws both with an outer row of conical teeth (a few at anterior end of each jaw enlarged into canines, canines of lower jaw frequently well exerted) and an inner band of villiform teeth; vomer and palatines with teeth, those on vomer in chevron-shaped patch; no teeth on tongue. **Maxilla without scales or longitudinal ridges.** **Interorbital region somewhat flattened to slightly convex.** **First gill arch with 5 to 7 gill rakers on upper limb, 11 to 14 on lower limb (total 17 to 21).** Dorsal fin continuous, not deeply incised near junction of spinous and soft portions. **Spines of dorsal and anal fins strong, very robust in large adults.** **Last soft ray of dorsal and anal fins not produced, shorter than next to last ray.** **Caudal fin moderately forked, lobes not produced into filaments.** Pectoral fins long, reaching vertical through base of second anal-fin spine or beyond. **Dorsal fin with X spines and 10 soft rays.** Anal fin with III spines and 8 soft rays. Pectoral-fin rays 15 or 16. **Membranes of dorsal and anal fins without scales except for a few scales basally at posterior end of each fin.** **Tubed lateral-line scales 49 to 54.** **Colour:** yellow with a tinge of brown on upper part of head and anterior part of lips and a silvery sheen on lower side of body; juveniles frequently with about 5 vertical bars.

Size: Maximum standard length more than 50 cm, commonly to 30 cm.

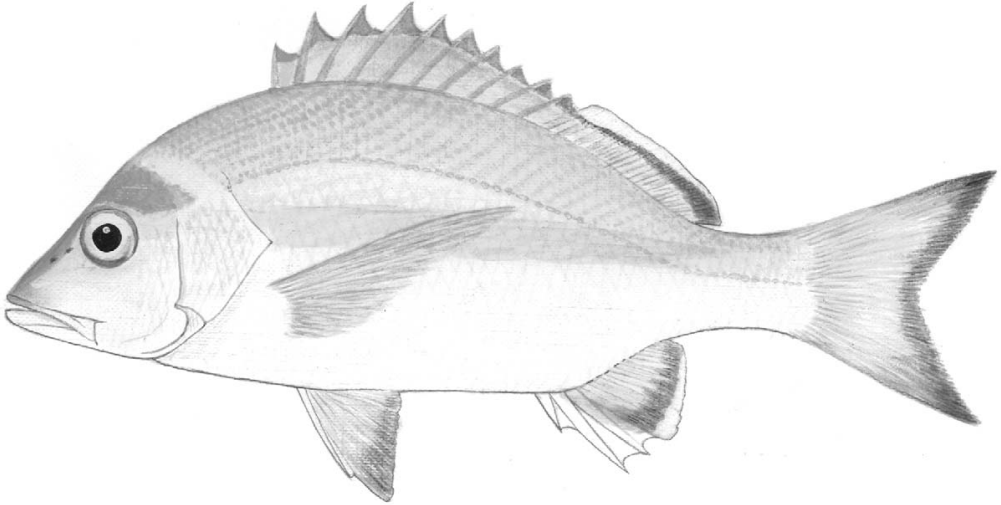
Habitat, biology, and fisheries: Occurs over rocky bottoms at depths between 90 and 340 m. Probably feeds on fishes and larger invertebrates. Caught mainly with longlines and handlines; also taken with bottom trawls. A moderately common constituent of the longline fishery on the continental shelf off South China.

Distribution: Widespread in the Indo-West Pacific from Vanuatu to the Arabian Sea and from the Ryukyu Islands southward to northern Australia.



Lutjanus adetii (Castelnau, 1873)

(Plate V, 33)

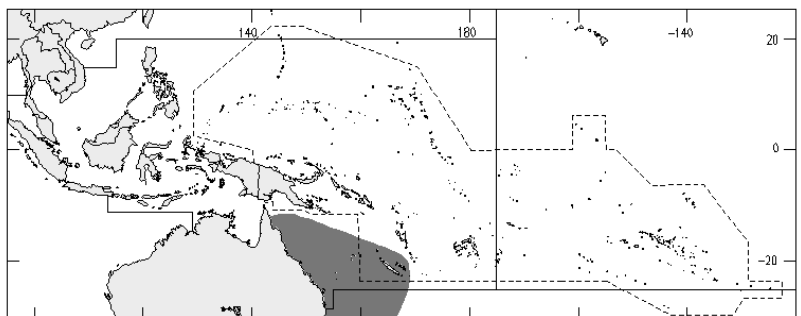
Frequent synonyms / misidentifications: None / None.**FAO names:** En - Yellowbanded snapper; Fr - Vivaneau de nuit; Sp - Pargo nachero.

Diagnostic characters: Body relatively deep, its depth 2.5 to 2.7 times in standard length. Snout somewhat pointed; preorbital bone relatively broad, wider than eye diameter; preopercular notch and knob moderately well developed; **vomerine tooth patch triangular, without a medial posterior extension**; tongue with a patch of granular teeth. **First gill arch with 27 to 29 gill rakers**, of which 19 or 20 (including rudiments) on lower limb. **Dorsal fin with X spines and 14 soft rays**; anal fin with III spines and 8 soft rays; posterior profile of dorsal and anal fins rounded. Caudal fin emarginate or slightly forked. Pectoral fins with 17 rays. Scale rows on back rising obliquely above lateral line. **Colour:** back and upper sides olive-brownish; lower sides and belly whitish to pink; **a prominent yellow to golden brown stripe along middle of sides**; eyes surrounded by yellow or orange.

Size: Maximum total length about 50 cm, commonly to about 30 cm. Matures at about 20 to 30 cm.

Habitat, biology, and fisheries: Mainly a coral reef species, sometimes forming large aggregations around rocky outcrops during daylight hours. At New Caledonia spawning occurs from August to February with peak activity during November to January. Mainly of interest to recreational fishermen, but sometimes appearing in fish markets, particularly at New Caledonia. Good eating and usually marketed fresh. Caught with hook-and-line; also with gill nets.

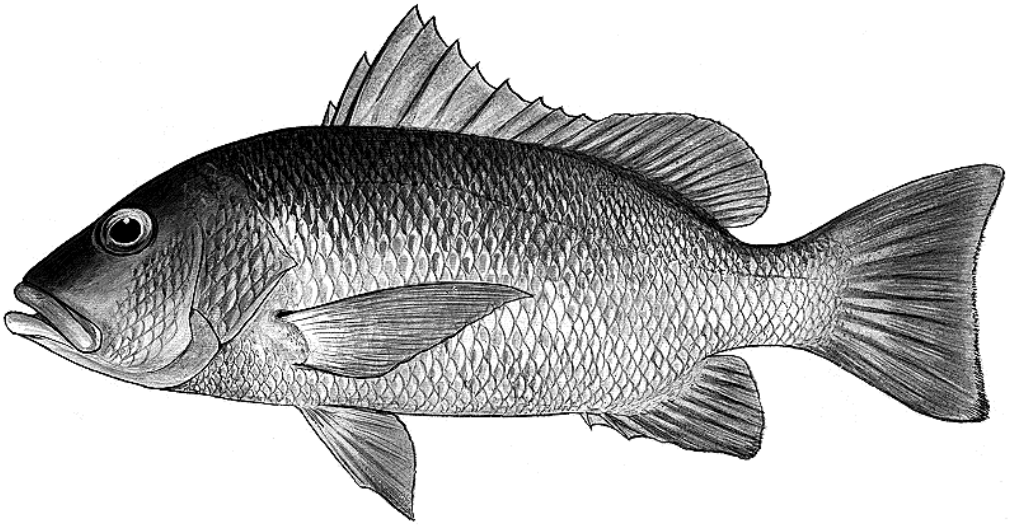
Distribution: Restricted to the east coast of Australia and New Caledonia. The main Australian distribution is off southern Queensland between Cape Moreton (about 27°S) and the Capricorn Group (23°S).



Lutjanus argentimaculatus (Forsskål, 1775)

(Plate V, 34)

RES

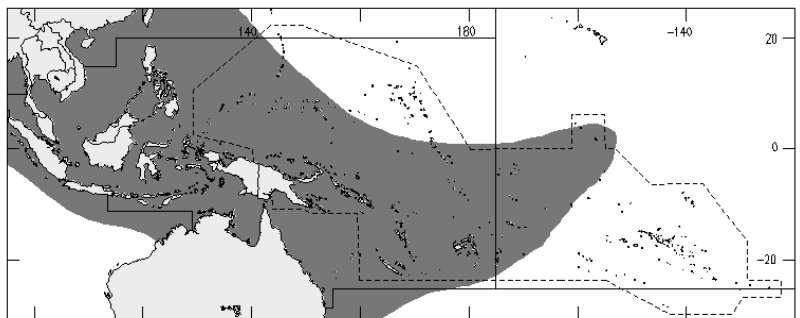
Frequent synonyms / misidentifications: None / None.**FAO names:** En - Mangrove red snapper; Fr - Vivaneau des mangroves; Sp - Pargo de manglar.

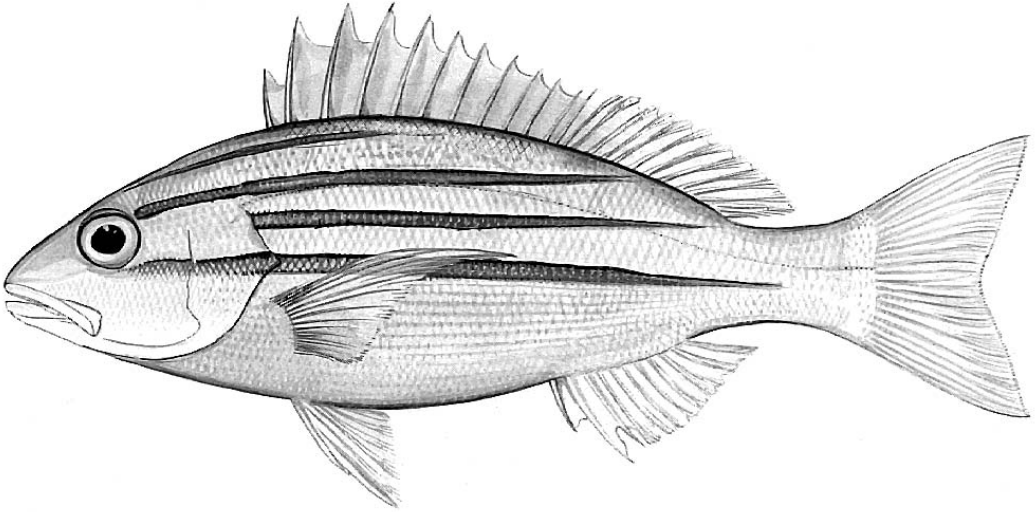
Diagnostic characters: Body moderately deep, its depth 2.5 to 3.1 times in standard length. Snout somewhat pointed; preorbital bone relatively broad, wider than eye diameter; preopercular notch and knob poorly developed; vomerine tooth patch crescentic, without a medial posterior extension; tongue with a patch of granular teeth. **First gill arch with 16 to 20 gill rakers**, of which 9 to 12 (including rudiments) on lower limb. **Dorsal fin with X spines and 13 or 14 soft rays**; anal fin with III spines and 8 soft rays; posterior profile of dorsal and anal fins rounded. Caudal fin emarginate to nearly truncate. Pectoral fins with 16 or 17 rays. **Scale rows on back more or less parallel to lateral line, or parallel below spinous part of dorsal fin and sometimes rising obliquely posteriorly, or rarely with entirely oblique rows.** **Colour:** back and sides greenish brown to reddish; belly silvery or whitish; specimens from deep water frequently overall reddish; juveniles with a series of about 8 whitish bars crossing sides, and 1 or 2 blue lines across cheek.

Size: Maximum total length about 120 cm, commonly to 80 cm.

Habitat, biology, and fisheries: Juveniles and young adults found in mangrove estuaries and in the lower reaches of fresh-water streams. Eventually they migrate offshore to deeper reef areas, sometimes penetrating to depths in excess of 100 m. Habitat frequently consists of areas of abundant shelter in the form of caves or overhanging ledges. Feeds mainly on fishes and crustaceans. Spawning occurs throughout the year, at least in lower latitudes. An important market species throughout the Indo-Pacific region, but never found in large quantities. Caught mainly with handlines, bottom longlines, and trawls. Marketed mostly fresh; also dried-salted. From 1990 to 1995, the FAO Yearbook of Fishery Statistics reports a range of yearly catch of around 4 300 to 12 700 t of *Lutjanus argentimaculatus* from the Western Central Pacific.

Distribution: Widespread in the Indo-West Pacific from Samoa and the Line Islands to East Africa, and from Australia northward to the Ryukyu Islands. Has dispersed into the eastern Mediterranean (off Lebanon) via the Suez Canal, but is not well established there.



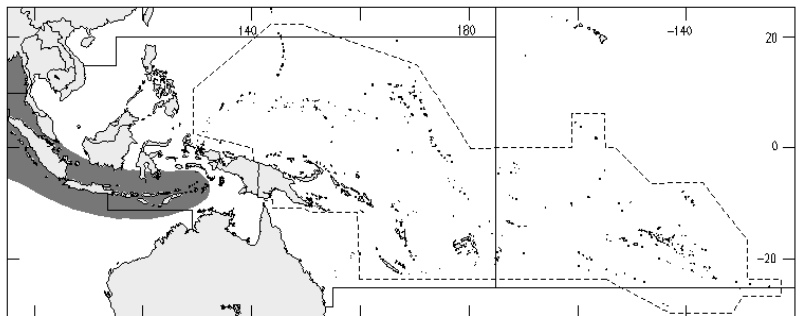
Lutjanus bengalensis (Bloch, 1790)**(Plate VI, 35)****Frequent synonyms/ misidentifications:** None / None.**FAO names:** En - Bengal snapper; Fr - Vivaneau du Bengale; Sp - Pargo de Bengala.

Diagnostic characters: Body fusiform, slender to moderately deep, its depth 2.5 to 2.9 times in standard length. Snout somewhat pointed; preorbital bone relatively narrow; its width usually less than eye diameter; **preopercular notch and knob well developed**; vomerine tooth patch crescentic, without a medial posterior extension; tongue smooth, without teeth. First gill arch with 26 to 28 gill rakers, of which 17 to 19 (including rudiments) on lower limb. **Dorsal fin with XI or XII spines and 12 to 14 soft rays**; anal fin with III spines and 8 soft rays; posterior profile and anal fins moderately pointed. Caudal fin emarginate. Pectoral fins with 16 or 17 rays. Scale rows on back rising obliquely above lateral line. **Colour:** back and sides yellowish; belly whitish; **sides with a series of 4 bright blue stripes**; no black spot on back below middle of dorsal fin; fins yellow to whitish.

Size: Maximum total length about 30 cm, commonly to 20 cm.

Habitat, biology, and fisheries: Mainly a coral reef species found at depths between about 10 and 25 m; sometimes forming aggregations around rocky outcrops and coral heads during daylight hours. Feeds mainly on fishes and crustaceans. Found in small quantities in most markets and not considered important, although the flesh is of good quality. Caught mainly with handlines, traps, and gill nets. Marketed mostly fresh.

Distribution: East Africa and the Red Sea to the Molucca Islands in the Indonesian Archipelago.

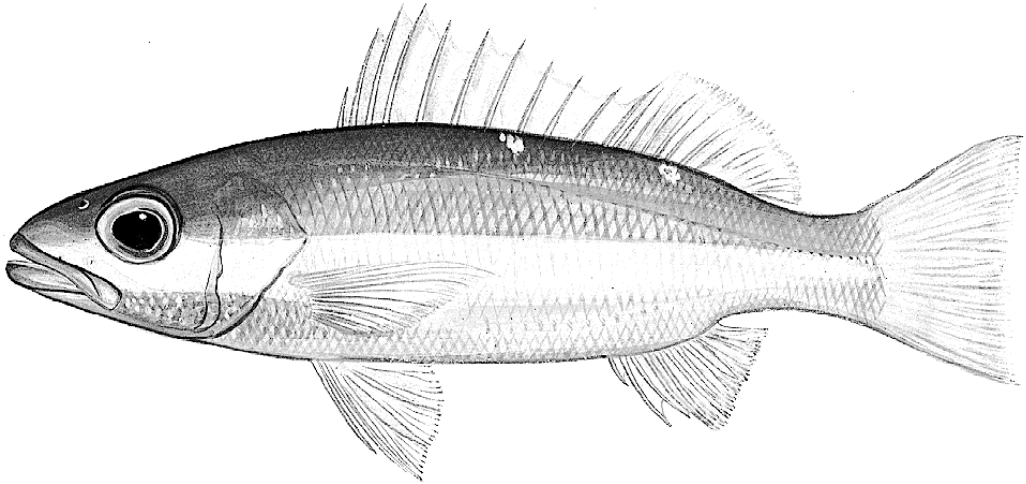


Lutjanus biguttatus (Valenciennes, 1830)

(Plate VI, 36)

Frequent synonyms / misidentifications: None / None.

FAO names: **En** - Twospot banded snapper; **Fr** - Vivaneau à bande blanche; **Sp** - Pargo de banda blanca.



Diagnostic characters: Body fusiform, very slender, its depth 3.5 to 3.8 times in standard length. Snout profile low, sloping very gently; preorbital bone narrow, its width less than 1/2 of eye diameter; preopercular notch and knob poorly developed; vomerine tooth patch triangular, with a medial posterior extension, or diamond-shaped; tongue smooth without teeth. First gill arch with 23 to 25 gill rakers, of which 16 to 19 (including rudiments) on lower limb. **Dorsal fin with XI spines and 12 soft rays**; anal fin with III spines and 8 soft rays; posterior profile of dorsal and anal fins somewhat pointed or angular. Caudal fin truncate. Pectoral fins with 15 or 16 rays. Scale rows on back rising obliquely above lateral line. **Colour:** back and upper sides dark brown; lower sides and belly golden-brown to yellowish; **a broad pearly white stripe from below eye to base of caudal fin; 2 small white spots on upper back**, 1 below base of seventh dorsal-fin spine and 1 below middle of soft part of dorsal fin.

Size: Maximum total length about 20 cm, commonly to 15 cm.

Habitat, biology, and fisheries: Inhabits coral reefs at depths between about 5 and 25 m. Sometimes occurs in large schools of more than 100 individuals. Feeds mainly on small fishes and crustaceans. An important market fish in some areas such as Sri Lanka, but generally marketed in small quantities. Caught mainly with handlines, traps, and gill nets. Marketed mostly fresh.

Distribution: Mainly the Indo-Australian Archipelago from the Solomon Islands to Sumatra, and from off Cape York Peninsula, Australia, northward to the Philippines; also occurring in the central and eastern Indian Ocean as far west as the Maldives.

