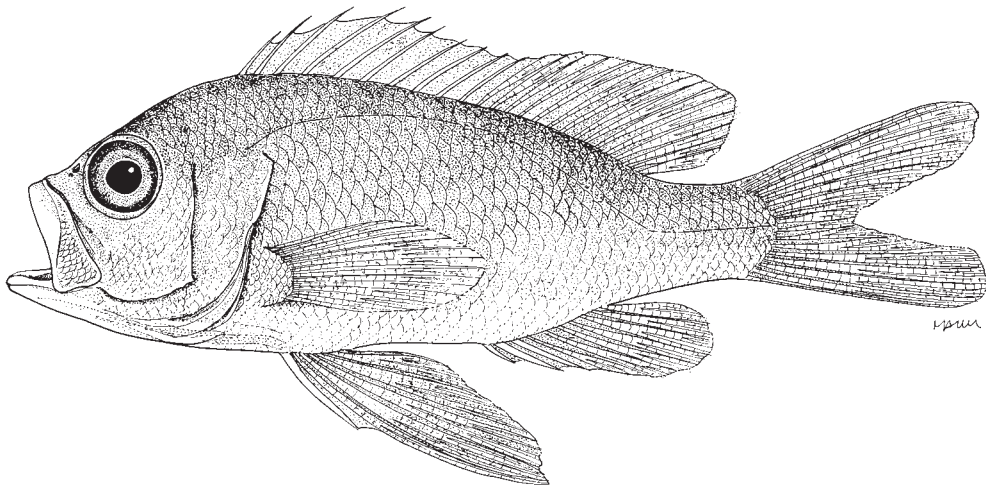


***Anthias nicholsi* Firth, 1933**

**Frequent synonyms / misidentifications:** None / None.

**FAO names:** En - Yellowfin bass.

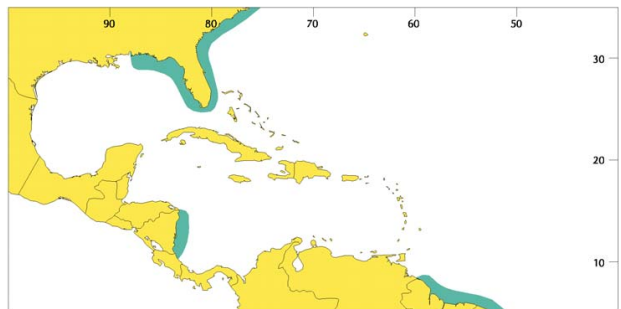


**Diagnostic characters:** Body moderately deep, depth of body at first dorsal-fin spine 34 to 44% standard length. Head moderate, its length 34 to 39% standard length. Orbit almost always longer than snout, horizontal diameter of bony orbit 9 to 13% standard length in specimens greater than about 7 cm standard length. The 2 nostrils on each side of head close together; internarial distance 7 to 9 times in snout length; posterior border of anterior nostril produced into short flap, but never produced into a long slender filament. Upper and lower jaws each with a series of conical teeth; canine or canine-like teeth present anteriorly in both jaws; vomer and palatines with teeth; vomerine tooth patch chevron-shaped to triangular (sometimes with convex posterior border), without posterior prolongation; endopterygoids toothless; tongue usually toothless (with teeth in about 40% of specimens greater than about 14 cm standard length). Most of head, including maxilla, covered with scales. Gill rakers on first arch 12 or 13 on upper limb and 27 to 31 on lower limb, total 39 to 44. Dorsal fin single, not incised at junction of spinous and soft portions; dorsal fin with 10 spines and 15, occasionally 14, soft rays. Anal-fin length 32 to 40% standard length; anal fin with 3 spines and 6 to 8 soft rays. Caudal fin deeply forked. Upper caudal-fin lobe 31 to 49% standard length. Lower caudal-fin lobe 29 to 46% standard length. Pelvic-fin length 38 to greater than 46% standard length, in specimens greater than about 13 cm standard length. Pectoral fin with 18 to 21, usually 19 or 20, rays. Lateral line continuous, not interrupted; tubed scales in lateral line 31 to 34. Circum-caudal-peduncular scales 17 or 18. **Colour:** body rosy dorsally, suffused with yellow or dull brownish yellow; body paler ventrally; upper part of head mainly rosy, suffused with yellow; lower part of head with bright yellow stripe beginning at anterior part of gular, fusing or almost fusing posteriorly with bright yellow of pelvic fins; 2 bright yellow stripes on side of head; iris brightly coloured, outermost pigment usually bright blue, innermost pigment bright yellow; fins, except pectoral, mostly yellow; pectoral fin mostly pallid.

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

**Habitat, biology, and fisheries:** Known from depths of 55 to 430 m. Observed over clumps of *Oculina* and over large boulders. Consumes pteropods and copepods. Ripe females collected in Gulf of Mexico in April and spent females in April and June. This species is a protogynous hermaphrodite.

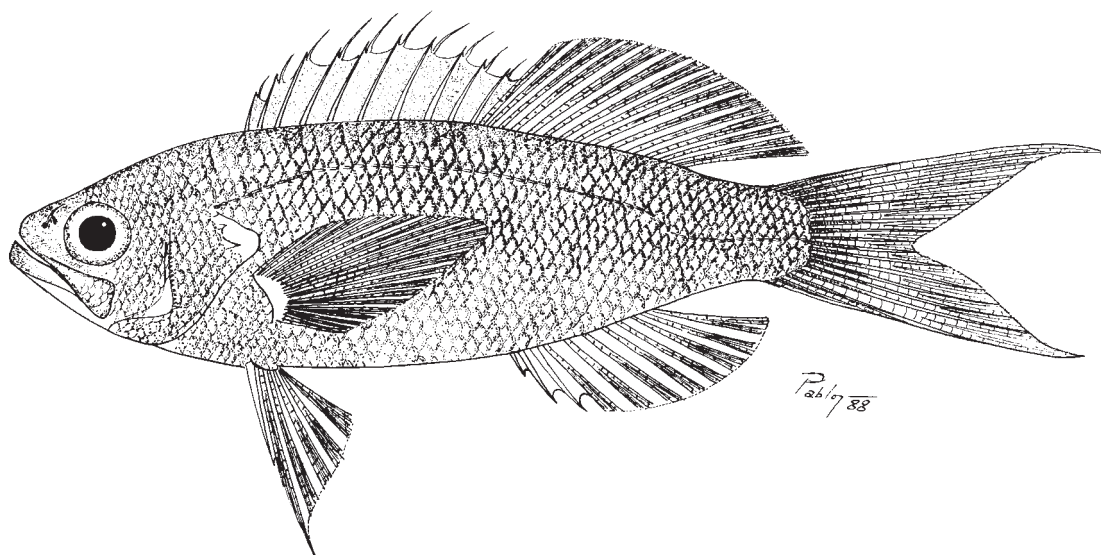
**Distribution:** Nova Scotia to Straits of Florida, eastern Gulf of Mexico, western Caribbean off Nicaragua, and from Guyana to northeastern Brazil (Pará).



*Anthias tenuis* Nichols, 1920

**Frequent synonyms / misidentifications:** None / None.

**FAO names:** En - Threadnose bass.

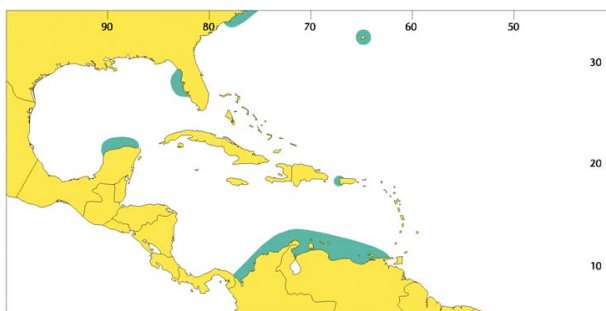


**Diagnostic characters:** Body comparatively slender, depth of body at first dorsal-fin spine 26 to 32% standard length. Head relatively short, its length 28 to 32% standard length. Orbit longer than snout, horizontal diameter of bony orbit 8 to 11% standard length. The 2 nostrils on each side of head relatively far apart; internarial distance 4 to 5 times in snout length; posterior border of anterior nostril produced into a long slender filament, usually reaching to or very near orbit when reflected. Teeth in jaws mostly small, but a few teeth usually enlarged into canines; vomer and palatines with villiform to very small conical teeth; vomerine teeth in a chevron-shaped patch or in a small patch with as few as 2 or 3 teeth, tooth patch without posterior prolongation; endopterygoids and tongue toothless. Maxilla covered with scales. Gill rakers on first arch 9 to 11 on upper limb and 24 to 28 on lower limb, total 34 to 39. Dorsal fin single, notched at junction of spinous and soft portions, but not incised to base of fin; dorsal fin with 10 spines and 15, rarely 14, soft rays. Anal-fin length 30 to 38% standard length; anal fin with 3 spines and 7 to 9, almost always 8, soft rays. Caudal fin deeply forked. Upper caudal-fin lobe 29 to 46% standard length. Lower caudal-fin lobe 29 to 48% standard length. Pelvic fin relatively short, 21 to 32% standard length. Pectoral fin with 19 to 21 rays. Lateral line interrupted beneath soft dorsal fin; tubed scales in lateral line 51 to 57. Circum-caudal-peduncular scales 25 to 28, most frequently 27. **Colour:** body red orange to rosy dorsally, purplish pink to yellow posteroventrally, pallid anteroventrally; head mostly red orange to rosy dorsally, mostly pallid ventrally; iris mostly yellow; interradial membranes of dorsal and anal fins with columns of oblong to elliptical greenish spots; posterior 1/3 of upper and lower lobes of caudal fin and posterior 1/2 of middle caudal-fin rays blood red; pectoral and pelvic fins mostly pallid.

**Size:** Maximum standard length to about 9 cm, commonly to 8 cm.

**Habitat, biology, and fisheries:** Collected from depths of 55 to 915 m; most specimens examined taken in less than 150 m. No other information available.

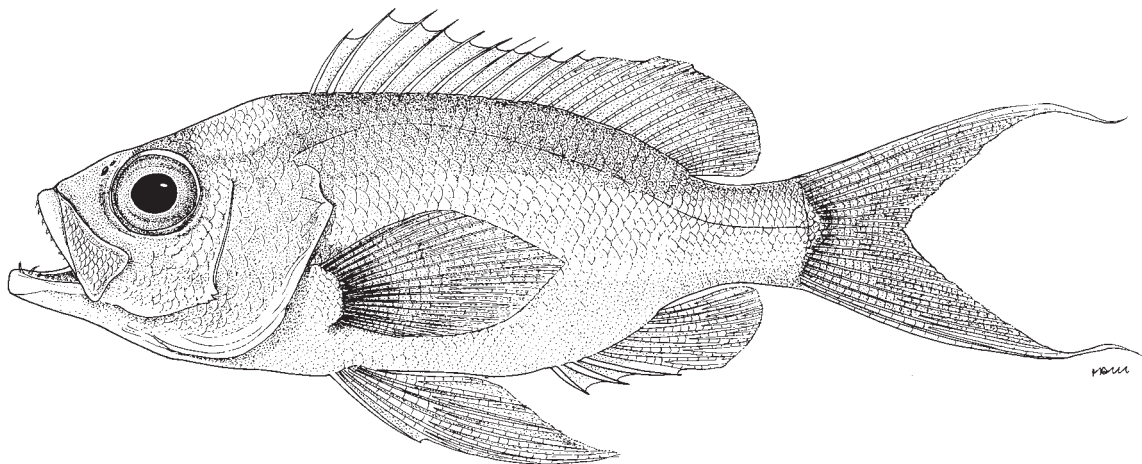
**Distribution:** Known from off Bermuda and North Carolina, from the Gulf of Mexico (off Florida and Yucatán), from Mona Passage off Puerto Rico, and from the southern Caribbean Sea off Colombia and Venezuela. Very likely more widespread than museum collections suggest.



***Anthias woodsi*** Anderson and Heemstra, 1980

**Frequent synonyms / misidentifications:** None / None.

**FAO names:** En - Longtailed jewelfish (AFS: Swallowtail bass).

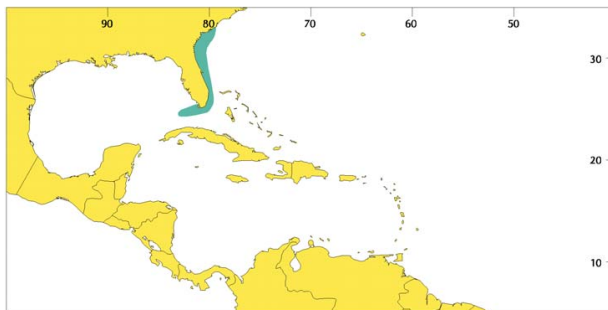


**Diagnostic characters:** Body moderately deep, depth of body at first dorsal-fin spine 34 to 41% standard length. Head moderate, its length 36 to 40% standard length. Orbit longer than snout, horizontal diameter of bony orbit 11 to 14% standard length. The 2 nostrils on each side of head close together; internarial distance 9 to 15 times in snout length; posterior border of anterior nostril produced into short flap, but never produced into a long slender filament. Upper and lower jaws each with a series of conical teeth; canine or canine-like teeth present anteriorly in both jaws; vomer and palatines with mostly granular to villiform teeth; vomerine tooth patch chevron-shaped, without posterior prolongation; endopterygoids and tongue toothless. Most of head, including maxilla and midline of gular region, covered with scales. Gill rakers on first arch 11 or 12 on upper limb and 26 to 28 on lower limb, total 38 to 40. Dorsal fin single, not incised at junction of spinous and soft portions; dorsal fin with 10 spines and 14, occasionally 15, soft rays. Anal-fin length 27 to 31% standard length; anal fin with 3 spines and 7, occasionally 8, soft rays. Caudal fin deeply forked. Upper caudal-fin lobe 49 to 110% standard length. Lower caudal-fin lobe 41 to 95% standard length. Pelvic fin slightly to well produced, 27 to 41% standard length. Pectoral fin with 18 rays. Lateral line continuous, not interrupted; tubed scales in lateral line 42 to 48. Circum-caudal-peduncular scales 21 to 24. **Colour:** body mainly rose, darker immediately ventral to dorsal fin; broad yellow (or vermilion) band beginning on opercle, narrowing below end of soft dorsal fin to continue over dorsolateral part of caudal peduncle; head mostly rose with admixture of yellow on snout dorsolaterally; yellow bar posterior to orbit joins yellow region on dorsolateral posterior part of head; iris mostly reddish orange; dorsal fin mostly yellow; dorsalmost and ventralmost caudal-fin rays and proximal halves of filamentous portions of these rays yellow, distal halves dark rose; remainder of caudal fin mainly rose with distal band of yellow or pale yellowish green; pectoral fin pale pink to bright rose.

**Size:** Maximum standard length to about 25 cm.

**Habitat, biology, and fisheries:** Known from depths of 175 to 475 m. No other information available.

**Distribution:** South Carolina to the Straits of Florida (off Dry Tortugas).

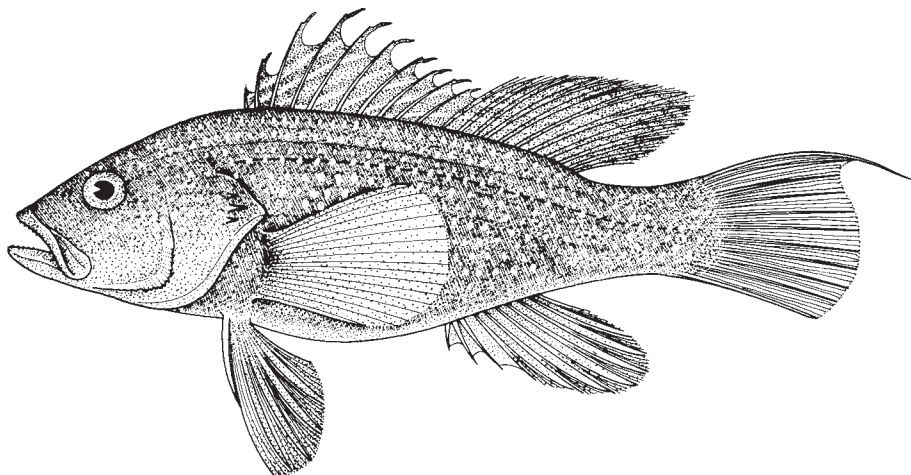


***Centropristis striata*** (Linnaeus, 1758)

BSB

**Frequent synonyms / misidentifications:** *Centropristis striatus* (Linnaeus, 1758); *Centropristis melana* Ginsburg, 1952 / None.

**FAO names:** **En** - Black seabass; **Fr** - Fanfre noir; **Sp** - Serrano estriado.



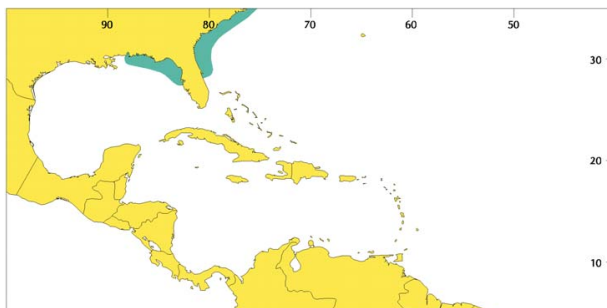
**Diagnostic characters:** Body oblong, moderately compressed. Mouth large, oblique; maxilla exposed, scaleless, reaching to below middle of eye; no supramaxilla; preopercle finely serrate, evenly rounded; opercle with 3 flat spines. Total gill rakers on first arch 21 to 29. Dorsal and anal fins high; **dorsal fin with 10 spines and 10 to 12 soft rays, the posterior spines shorter than anterior soft rays; dorsal interspinous membranes deeply notched, the spines with fleshy tips; anal fin with 3 spines and 7 soft rays;** caudal fin rounded to trilobate, often with a single upper ray much elongated in adults. Some scales on bases of soft portions of dorsal and anal fins. **Colour:** adults dark, with a pale spot on each scale, forming longitudinal series of silvery spots; dorsal-fin spines silvery blue, the membranes black, with silvery streaks and spots; irregular pale blotches often visible on dorsal part of body. Adult males develop a conspicuous blue hump on the nape during the spawning season. Juveniles mottled with brown blotches and small white spots, a dark brown or black midlateral band from eye to base of caudal fin; large black spot at base of last 3 dorsal-fin spines; turquoise horizontal streaks on lower part of head.

**Size:** Maximum weight about 5 kg; maximum length about 60 cm.

**Habitat, biology, and fisheries:** Most common on rocky bottoms and around pilings, seawalls, and jetties. Adults feed mainly on crabs, shrimps, and fish; juveniles eat shrimp, isopods, and amphipods. Spawning occurs off North Carolina in May; and from mid-May to July between Massachusetts and New Jersey. Females become mature in their second year at a length of 20 cm and change sex the following year at a length of 23 cm. Maximum age is supposed to be 20 years, but fish older than 9 years are rare. A 1-year old fish is 13 cm, a 5-year old is 30 cm, and an 8-year old fish is only about 38 cm. Taken in otter trawls, pots and traps, dredges, pound nets, and on hand lines. An important commercial and sportfish north of Area 31 and off the Carolinas. The most intensive fishery is off North Carolina to New Jersey and Long Island. The catch reported from Area 31 between 1995 and 1999 ranged from 295 to 393 t. Marketed fresh or frozen.

**Distribution:** From Massachusetts to central Florida and occasionally to the Florida Keys. In the Gulf of Mexico, the black seabass is confined to the West Coast of Florida from Pensacola to Placida.

**Remarks:** The population from the west coast of Florida differs slightly from the Atlantic population in meristic characters and juvenile coloration, and is considered a separate subspecies (*Centropristis striata melana* Ginsburg, 1952) by some authors.

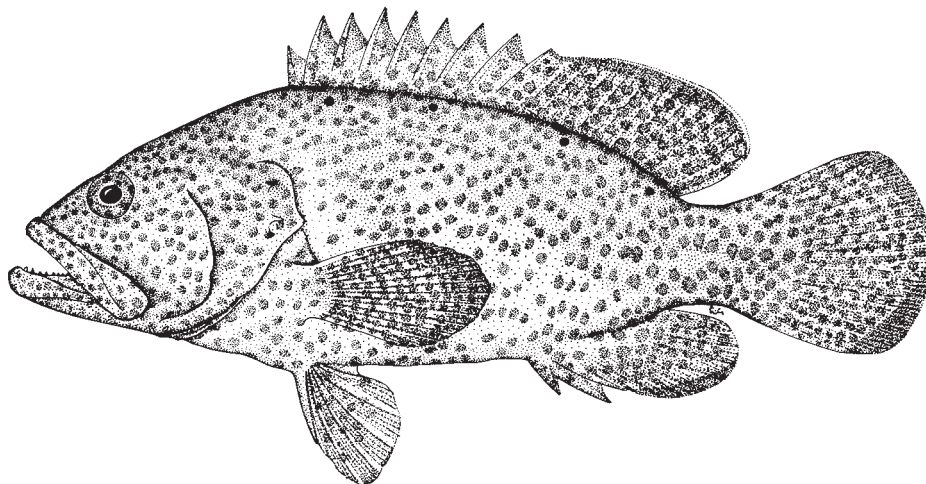


***Cephalopholis cruentata* (Lacepède, 1802)**

CFL

**Frequent synonyms / misidentifications:** *Petrometopon cruentatus* (Lacepède, 1802); *Epinephelus cruentatus* (Lacepède, 1802) / None.

**FAO names:** En - Graysby; Fr - Coné essaim; Sp - Cherna enjambre.

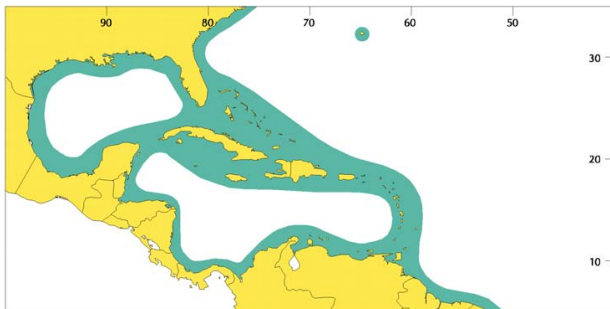


**Diagnostic characters:** Body depth contained 2.5 to 2.9 times in standard length. Preopercle rounded, finely serrate, with shallow notch above angle. Nostrils small, subequal. Interorbital area flat. Maxilla scaly, reaching past vertical at rear edge of eye. Gill rakers on first arch 18 to 21 (total). **Dorsal fin with 9 spines and 13 to 15 soft rays, the fourth or fifth spines longest and the membrane distinctly indented between all the spines; anal fin with 3 spines and 8 soft rays; bases of dorsal and anal fins covered with scales and thick skin; pectoral-fin rays 16.** Caudal fin rounded. Lateral body scales distinctly ctenoid; lateral-line scales 47 to 51; lateral-scale series 69 to 81. **Colour:** head, body and fins pale grey or brown, covered with orange-brown or reddish spots; 4 distinct spots at base of dorsal fin may be either black or white; a mid-dorsal white stripe sometimes present on head from tip of lower jaw to nape.

**Size:** Maximum about 33 cm; 2 kg.

**Habitat, biology, and fisheries:** In seagrass (*Thalassia*) beds and coral reefs from shore to depths of 170 m. In eastern Gulf of Mexico, graysby occurs on rocky reef in 27 to 50 m. In the Netherland Antilles, the graysby is abundant at the Leeward islands where there are extensive coral reefs; but in the Windward islands, which have only small isolated coral patches, it is scarce. Appears to be more abundant in heavily fished areas than in unexploited areas. It may benefit in some way from reduced competition or predation in exploited areas, or its catchability is significantly less than that of other groupers. An increase in graysby in the absence of predators and competitors occurred after the 1971 red tide killed most of the groupers on shallow-water reefs off the west coast of Florida. One-year old fish are 8 cm (standard length) and females mature at 16 cm (total length). Most females change sex between 20 and 23 cm (ages 4 and 5), with sexual transition occurring immediately after spawning in August and September. Number of eggs per spawning was estimated at 263 000 for a fish of 29 cm total length. A small, secretive fish that usually stays in or near its hiding places in the reef during the day, the graysby is a crepuscular predator, and adults feed mainly on fishes, especially *Chromis multilineata*. After sunset a greater proportion of crustaceans are taken, because of their increased nocturnal availability. Juveniles feed more on shrimps than on fishes. Because of its small size, the graysby is of little commercial importance in the Caribbean, but it undoubtedly represents a significant source of protein for the local people. Caught with hook-and-line and in fish traps.

**Distribution:** Bermuda, North Carolina to Florida, Gulf of Mexico, Bahamas, and throughout the Caribbean.

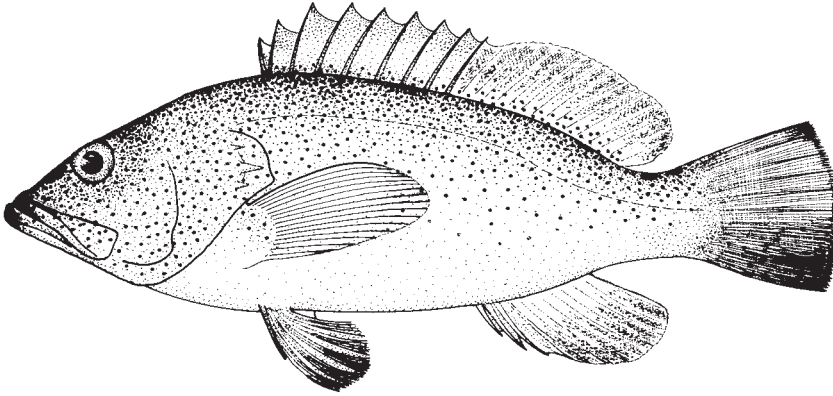


***Cephalopholis fulva*** (Linnaeus, 1758)

CFJ

**Frequent synonyms / misidentifications:** *Epinephelus fulvus* (Linnaeus, 1758) / None.

**FAO names:** En - Coney; Fr - Coné ouatalibi; Sp - Cherna cabrilla.

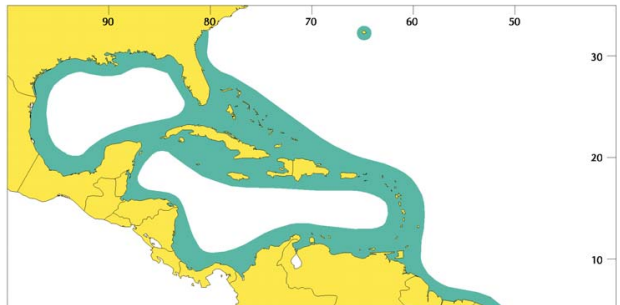


**Diagnostic characters:** Body depth distinctly less than head length, 2.6 to 2.9 times in standard length (for fish 10 to 25 cm standard length). Nostrils small, subequal. Preopercle rounded, with shallow notch above the angle; upper limb finely serrate, the serrae at angle moderately enlarged. Interorbital region flat. Maxilla scaly, reaching to or beyond vertical at rear edge of eye. Gill rakers on first arch 23 to 27 (total). **Dorsal fin with 9 spines and 14 to 16 soft rays, the membranes distinctly notched between spines; anal fin with 3 spines and 9 soft rays; bases of soft dorsal and anal fins covered with scales and thick skin; pectoral-fin soft rays 17 to 19. Caudal fin convex posteriorly, but corners angular (not rounded).** Lateral body scales ctenoid (rough to touch); lateral-line scales 46 to 54; lateral scale series 90 to 97. **Colour:** there are 3 colour phases in this species: red (deep water), orange-brown, or bicoloured with upper half of fish dark and lower half abruptly pale (shallow water) and xanthic (an all yellow morph that may be found in shallow or deep water). In all 3 colour morphs, head and body covered with small dark-edged pale blue spots, 2 small black spots on top of caudal peduncle, and another 2 at tip of lower jaw. The bicoloured pattern of the shallow-water morph is apparently an excitement pattern, and it can be turned on or off in a few seconds. The night pattern is generally pale, with irregular vertical bars and a dark tuning-fork mark on interorbital region like that of *Epinephelus striatus*.

**Size:** Maximum about 39 cm (from La Roques, Venezuela); common to 25 cm.

**Habitat, biology, and fisheries:** Prefers coral reefs and rocky bottoms to depths of about 40 m. In the Gulf of Mexico it occurs on deep-water reefs in clear water, but is not seen on more silty shallow-water reefs. At Bermuda and in the West Indies, common in shallow water, but it usually hides in caves or under ledges during the day. A protogynous species that spawns in pairs: females mature at 16 cm total length and transform to males at a length of about 20 cm. The spawning season begins Bermuda in May and lasts until at least early August, while in Jamaica the peak spawning period is from January to March. Fecundity estimates range from 150 000 to 282 000 eggs per female. A few specimens that appear to be hybrids of *C. fulva* and *Paranthias furcifer* have been described. Adults feed mainly on small fishes (46% by volume) and crustaceans, and are occasionally seen associating with moray eels in order to feed on the normally inaccessible small fishes and invertebrates that are flushed from the interstices of the reef by the foraging eels. Although its small size precludes it from being of much commercial importance, it is abundant in the West Indies and often sold for food in local markets. Caught with hook-and-line and in traps.

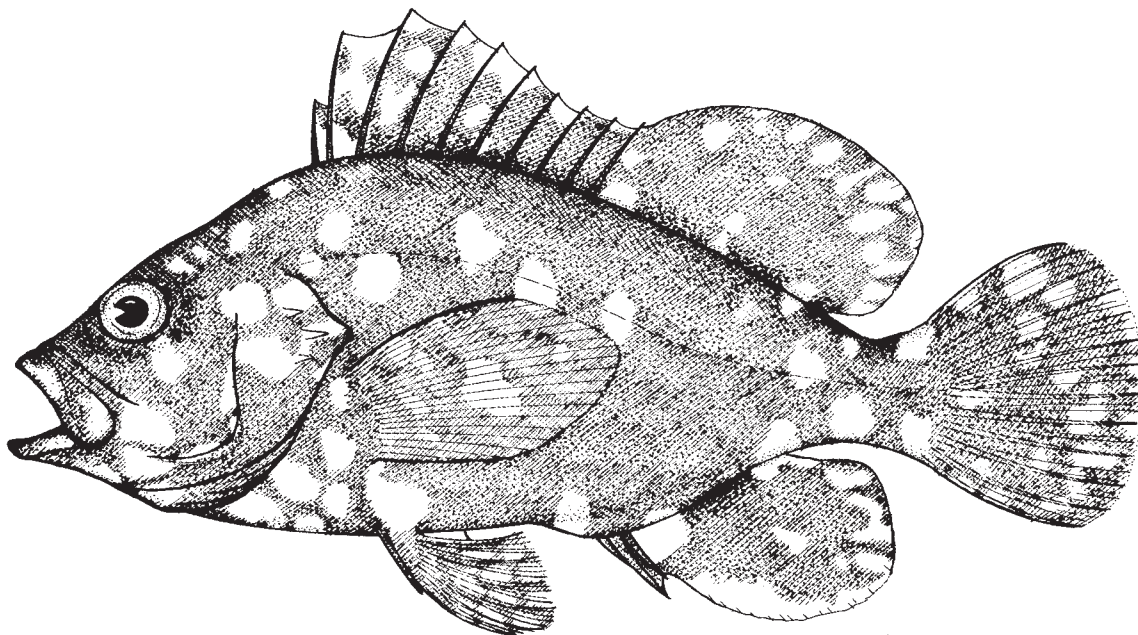
**Distribution:** Bermuda, South Carolina to Florida, Gulf of Mexico, western Caribbean coast and the West Indies to southern Brazil, including Atol das Rocas; very common at oceanic islands of Venezuela.



***Dermatolepis inermis*** (Valenciennes, 1833)

**Frequent synonyms / misidentifications:** *Epinephelus inermis* (Valenciennes, 1833) / None.

**FAO names:** En - Marbled grouper; Fr - Méran marbré; Sp - Mero marmol.

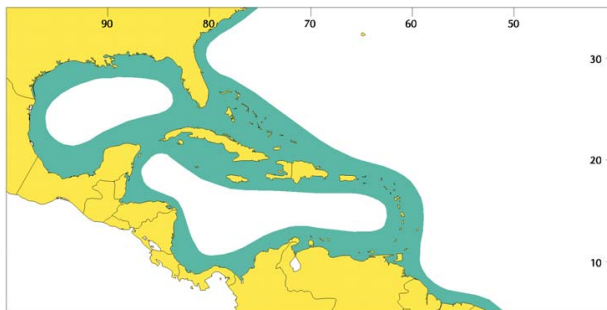


**Diagnostic characters:** Body deep and compressed, the greatest depth distinctly more than head length, contained 2.2 to 2.5 times in standard length (for fish 15 to 34 cm standard length); body width contained 2.2 to 2.9 times in the depth. No canine teeth. Preopercle finely serrate, the serrae at angle slightly enlarged. Gill rakers on first arch 19 to 22 (total). **Dorsal fin with 11 spines and 18 to 20 soft rays, the membranes incised between the spines, and the third or fourth spine longest; anal fin with 3 spines and 8 to 10 soft rays, the rear margin falcate in large adults;** bases of soft dorsal and anal fins covered with scales and thick skin; caudal fin rounded in juveniles, truncate or concave in adults; **pectoral fins 29 to 35% standard length;** pectoral-fin rays 18 or 19. **Scales smooth, deeply embedded;** accurate scale counts are difficult. **Colour:** juveniles (see above) black or dark brown, covered with irregular white spots and blotches; adults mottled greyish brown with white speckles and small black spots that tend to be arranged in rings.

**Size:** Maximum total length about 90 cm; maximum weight over 10 kg.

**Habitat, biology, and fisheries:** A rare, secretive species seldom seen by divers. Depth records range from 21 to 250 m. Virtually nothing is known of its biology. Caught incidentally throughout its range. Rarely seen in markets, but undoubtedly eaten when caught.

**Distribution:** From North Carolina to Rio de Janeiro, including the Gulf of Mexico, Bahamas, W.I., and Caribbean. Previous reports from Bermuda are erroneous.

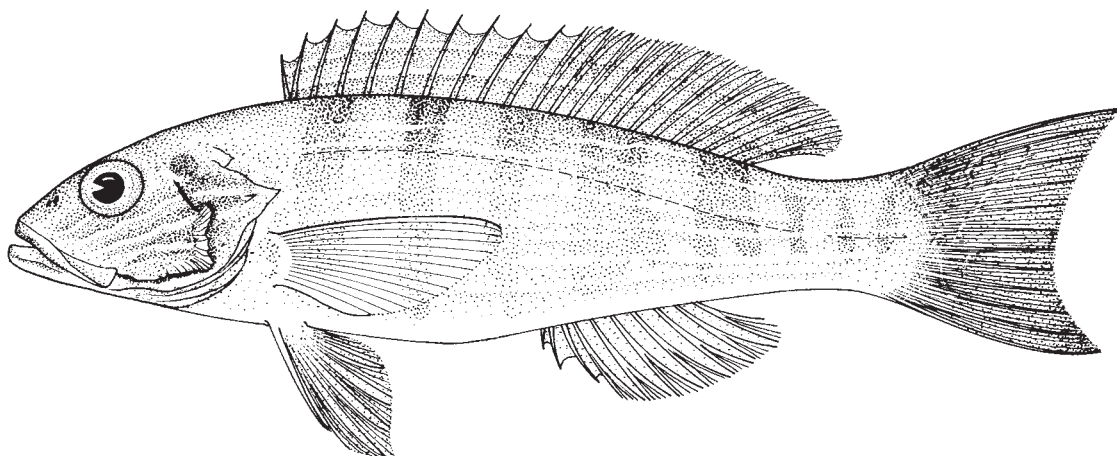


***Diplectrum formosum*** (Linnaeus, 1758)

PES

**Frequent synonyms / misidentifications:** None / None.

**FAO names:** En - Sand seabass (AFS: Sand perch); Fr - Serran de sable; Sp - Serrano arenero.



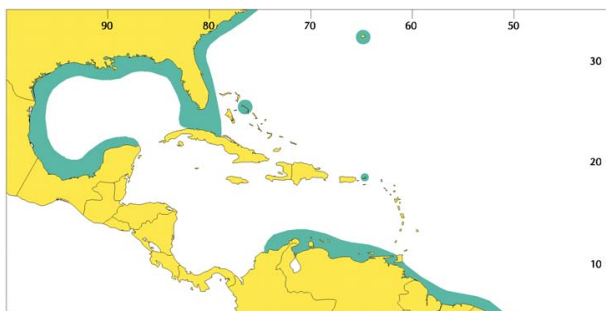
**Diagnostic characters:** Body slender and elongate; maxilla exposed at its posterior end; **preopercle with 2 clusters of radiating spines; cheek scale rows (from eye to rear lower corner of preopercle) 10 to 15;** opercle with 3 flat spines, the middle one longest. Dorsal and anal fins high; **dorsal fin single, with 10 spines and 11 to 13 soft rays, the interspinous membranes incised;** anal fin with 3 spines and 6 to 8 soft rays; bases of dorsal and anal fins with a few scales on the membranes but not covered with thick scaly skin; caudal fin moderately forked, upper lobe longer than lower lobe, both pointed; pectoral fins blunt, longer than pelvic fins, with 15 to 17 rays; specimens from Atlantic coast of USA and Gulf of Mexico often with upper caudal-fin lobe extended into a filament. Scales rough; lateral scale series 66 to 88; pored lateral-line scales 46 to 55. **Colour:** a complex pattern of diffuse dark bars and lighter background, with alternating narrow blue and orange stripes; dark midlateral band from snout through eye, ending in dark spot at caudal-fin base; narrow blue lines crossing cheek and over top of head.

**Size:** Maximum about 30 cm total length; common to 25 cm.

**Habitat, biology, and fisheries:** Occurs from inshore grass flats to offshore depths of 73 m, but most common between 7 and 50 m; found on sand, mud, shell, or rocky rubble bottom near low reefs. A synchronous hermaphrodite, with spawning in the northeastern Gulf of Mexico occurring from March through September. The major prey is crustaceans, mainly mysids and crabs, but it will also take small fishes. Abundant in the Gulf of Mexico and along the coast of Venezuela. The flesh is excellent, but *D. formosum* is not commercially important, because of its small size. The sand seabass is also prey for a variety of piscivorous fishes. Usually caught on handlines and in traps; also with bottom trawls.

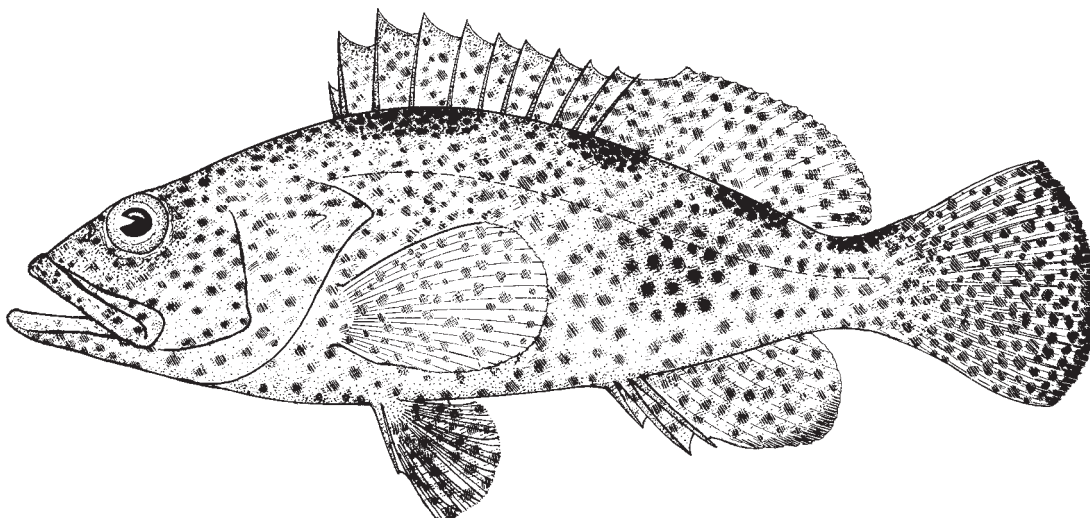
**Distribution:** Mainly continental, from Virginia to Florida, throughout Gulf of Mexico, and from Colombia to São Paulo, Brazil; known from Bermuda, but rare in the West Indies, with single records from Eleuthera Island in the Bahamas, Cuba, and the Virgin Islands.

**Remarks:** The northern subspecies, *D. formosum formosum* (from Virginia to Yucatán) differs significantly in mean number of gill rakers ( $\bar{x}$  = 18.8,  $n$  = 231, range 17 to 22) from the southern subspecies, *D. formosum radians* (Quoy and Gaimard, 1824) with 19 to 24 gill rakers,  $\bar{x}$  = 22.0,  $n$  = 108. Other differences are the larger size (max. 22 cm standard length) and the presence of an elongate upper caudal-fin ray of *D. f. formosum*, compared with the 17 cm standard length maximum size and absence of elongate upper caudal ray in *D. f. radians*. In Venezuela, *D. f. radians* is known as 'bolo' or 'guatacare'.



***Epinephelus adscensionis*** (Osbeck, 1765)

EFD

**Frequent synonyms / misidentifications:** None / None.**FAO names:** **En** - Rock hind; **Fr** -Mérour oualioua; **Sp** - Mero cabrilla.

**Diagnostic characters:** Body depth distinctly less than head length, 2.8 to 3.4 times in standard length (for fish 13 to 27 cm standard length). Nostrils subequal; preopercle evenly serrate, without salient angle. Gill rakers on first arch 7 to 9 on upper limb and 16 to 19 on lower limb, total 23 to 28. **Dorsal fin with 11 spines and 16 to 18 soft rays, the fourth or fifth spine longest, and the interspinous membranes distinctly incised; anal fin with 3 spines and 8 soft rays; rear margin of caudal fin distinctly convex; pectoral-fin rays 18 to 20.** Lateral-line scales about 50; lateral scale series 82 to 95. **Colour:** head, body, and fins generally buff or pale greenish, covered with reddish brown spots and scattered pale blotches; 3 to 5 dark brown blotches (groups of dark spots) at base of dorsal fin and a blackish brown blotch on top of caudal peduncle; rear edge of caudal fin with a row of dark brown spots forming a dark margin; small juveniles with fewer but larger dark spots on head, body, and fins.

**Size:** Maximum length about 60 cm; maximum weight 4 kg. At Ascension Island, the rock hind is said to attain a length of about 1 m.

**Habitat, biology, and fisheries:** The rock hind occurs on rocky reefs in depths of 2 to 100 m; it feeds mainly on crabs (67%) and fishes (20%). The growth equation for rock hind from the southeast coast of the USA is  $L_t = 499.4(1 - e^{-0.167(1+2.495)t})$ ; back-calculated total lengths for rock hind at ages 1, 5, and 10 years are 21, 36, and 44 cm. Females mature at 30 cm (2 years old); ripe females (35 to 44 cm) were noted from January to June at the Florida Middle Grounds. The rock hind is of minor importance to commercial and sport fisheries in the western Atlantic and Caribbean, as it seems to be less common than most other groupers. Caught with hook-and-line, in traps, and with spears.

**Distribution:** A wide-ranging species known from both sides of the Atlantic Ocean. In the western Atlantic, the rock hind is reported from Bermuda, Massachusetts (1 record), North Carolina to Florida, Gulf of Mexico, and Caribbean (continental coast and West Indies) to southern Brazil. In the eastern Atlantic, it is known with certainty from St. Helena, Ascension Island and São Tomé in the Gulf of Guinea. Records from the Cape Verde Islands, Canary Islands, Azores, and South Africa are unsubstantiated.

**Remarks:** At Ascension Island, the diet of the rock hind includes triggerfish (*Melichthys niger*) and young sea turtles.

