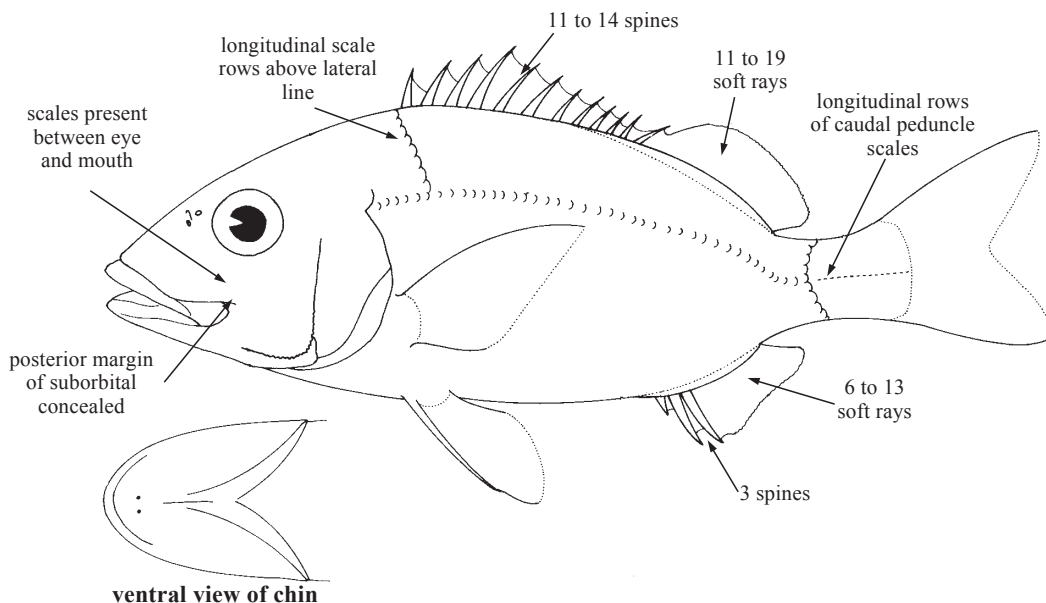


HAEMULIDAE

Grunts

K.C. Lindeman, Environmental Defense, Florida, USA and
C.S. Toxey, Old Dominion University, Virginia, USA (after Courtenay and Sahlman, 1977)

Diagnostic characters: Oblong, compressed, perchlike fishes to 75 cm total length. Head profile strongly convex in most species. Mouth small to moderate, lips often thick; **chin with 2 pores anteriorly and, in all but 1 genus, a median groove.** Teeth conical, in a narrow band in each jaw, the outer series enlarged but no canines. **No teeth on roof of mouth. Posterior margin of suborbital not exposed;** preopercle with posterior margin slightly concave and serrated; opercle with 1 spine. Dorsal fin single, with 11 to 14 strong spines and generally 11 to 19 soft rays. Pectoral fins moderately long; pelvic fins below base of pectoral fins, with 1 spine and 5 soft rays. Anal fin with 3 strong spines, the second often very prominent, and 6 to 13 soft rays; caudal fin emarginate to forked. **Scales** ctenoid (rough to touch), small or moderate, **extending onto entire head (except front of snout, lips, and chin).** **Colour:** highly variable, ranging from **uniformly coloured to striped, banded, blotched and spotted.** Adult stages of most species have distinctive colour patterns. Early juveniles (2 to 5 cm) of *Haemulon*, *Anisotremus*, and *Orthopristis* share a pattern of dark dorsolateral and midlateral stripes, and a caudal spot. **The length of the upper eye stripe, coupled with other characters, is essential to separating the extremely similar early juvenile stages of *Haemulon*.** The early juvenile pigment pattern can also be ephemerally displayed in adults of many species.



Habitat, biology, and fisheries: Fishes of shallow, nearshore waters; nearly all from tropical and subtropical waters. Many species of *Haemulon* and *Anisotremus* inhabit coral reef or hardbottom areas and many forage nocturnally over nearby sand and grass flats. Species of *Pomadasys*, *Genyatremus*, and *Conodon* are characteristic of mud bottoms and turbid, often brackish water. Species of *Orthopristis* can utilize both softbottom and hardbottom habitats, primarily the former. The name of the family derives from the sound produced by the grinding of pharyngeal teeth. Juveniles typically occur in shallower water than adults and may show several ontogenetic habitat shifts during growth. Most species feed on a variety of benthic invertebrates, particularly crustaceans and polychaetes. Several smaller species may primarily feed on plankton, while several larger species feed in part on echinoids. Schooling is present in many species, but may become less common in older individuals. The absence of documented spawning events suggests that reproduction typically occurs after sunset. Several grunts are considered good foodfish and are actively fished for. Due to their abundance, many species are also obtained opportunistically and exploited commercially or recreationally. Juvenile mortality from shrimp trawl bycatch is high in several species. Fishing gear includes traps, hook-and-line, seines, and bottom trawls. FAO statistics from Area 31 report landings ranging from 11 335 to 18 081 t annually from 1995 to 1999.

Remarks: Prior family name, Pomadasyidae, may still be encountered. The systematic status and distribution of several species in South America is unresolved.

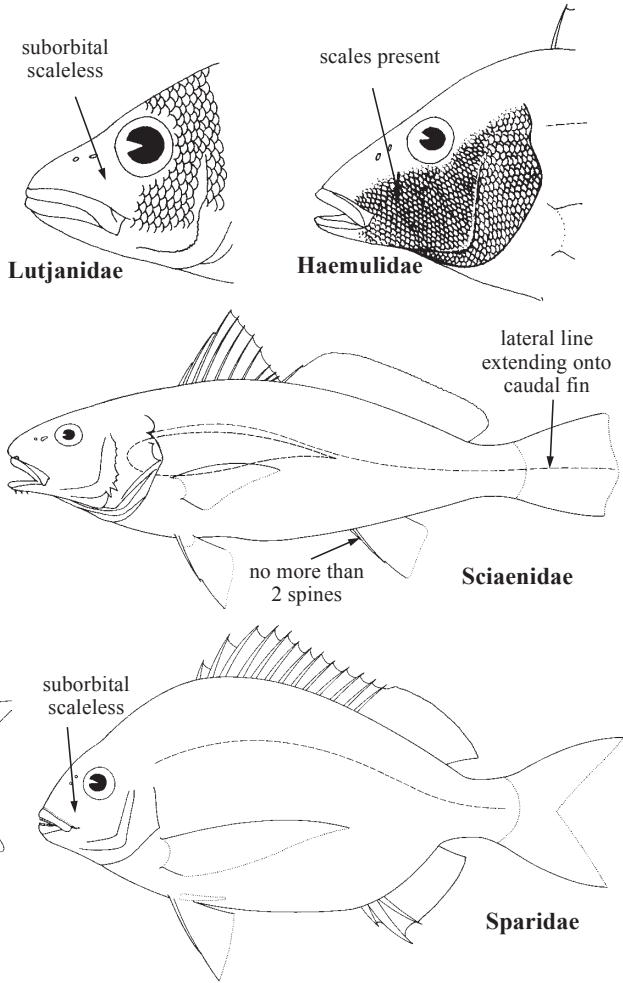
Similar families occurring in the area

Lutjanidae: canine teeth frequently present in jaws; no pores on chin; teeth present on roof of mouth; suborbital area scaleless; spines of dorsal and anal fins weaker.

Sciaenidae: anal fin with never more than two spines; lateral-line scales extending to posterior margin of caudal fin; often with rounded snout; barbels or canine-like teeth sometimes present; swimbladder usually large and complex (except in *Menticirrhus* where it is rudimentary, or absent).

Gerreidae: anterior part of lower head profile concave; mouth strongly protrusible; interorbital region slightly concave.

Sparidae: suborbital area scaleless; no serrations on margin of preopercle; 2 pores not present beneath chin.



Key to the species of Haemulidae occurring in the area

- 1a. Dorsal-fin spines 11; 2 of the spines at preopercle angle enlarged (Fig. 1) *Conodon nobilis*
- 1b. Dorsal-fin spines 12 or more; no enlarged spines on preopercle → 2

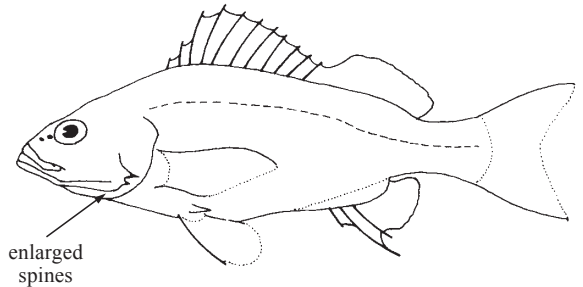


Fig. 1 *Conodon*

- 2a. Soft portions of dorsal and anal fins densely scaled nearly to margins (Fig. 2); in fresh specimens, inner lining of mouth typically red; rare in turbid, low salinity areas (*Haemulon*) → 3
- 2b. Soft portions of dorsal and anal fins naked or not scaled to margins; in fresh specimens, inner lining of mouth typically lacking red colour → 16

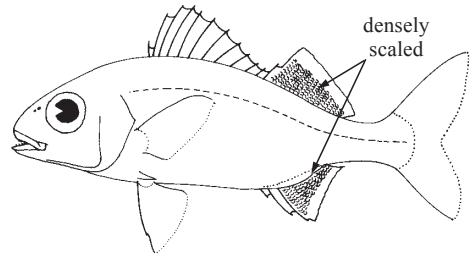


Fig. 2 *Haemulon*

- 3a. Dorsal-fin spines 13 or 14. → 4
- 3b. Dorsal-fin spines 12 → 6
- 4a. Base of caudal fin without dark spot; scale rows below lateral line typically oblique to long axis of body; normally 5 yellow to brown longitudinal stripes on body, none ventrally; dorsal-fin soft rays typically 13 or 14, range of 12 to 15; anal-fin soft rays typically 8, range of 7 to 9 *Haemulon striatum*
- 4b. Base of caudal fin usually with dark brown or black spot; scale rows below lateral line typically parallel to long axis of body; pattern of stripes not as above; typical fin ray counts not as above → 5
- 5a. Dorsal-fin soft rays typically 15, range of 14 to 16; anal-fin soft rays typically 8, range of 7 to 9; 22 caudal peduncle scales; inner lining of mouth red in fresh specimens; common in shallow and deep waters throughout area *Haemulon aurolineatum*
- 5b. Dorsal-fin soft rays typically 13, range of 11 to 15; anal-fin soft rays typically 9, range of 7 to 9; 24 or more caudal peduncle scales inner lining of mouth white in fresh specimens; restricted to deeper waters of northeast South America *Haemulon boschmae*
- 6a. Five or 6 equally-spaced body stripes, yellow in fresh specimens; scale rows below lateral line parallel to long axis of body; dorsal-fin soft rays typically 13, range of 12 to 14 *Haemulon chrysargyreum*
- 6b. Pigment not as above; scale rows below lateral line oblique to long axis of body; dorsal-fin soft rays typically 14 to 18, never or rarely 13 → 7
- 7a. At least 7 yellow or gold body stripes in fresh specimens; dorsal-fin soft rays typically 14 or 15, range of 14 to 16; anal-fin soft rays typically 8, range of 7 to 9, few other species typically show combination of both 14 or 15 dorsal-fin soft rays and 8 anal-fin soft rays (exceptions can occur in specimens of *H. melanurum*, *H. bonariense*, and *H. plumieri*). → 8
- 7b. No yellow stripes, or faint and not extending through length of caudal peduncle; dorsal-fin soft rays 15 to 18; anal-fin soft rays 7 to 10; combination of 14 or 15 dorsal-fin soft rays and 8 anal-fin soft rays uncommon. → 9
- 8a. Scales below anterior lateral line approximately twice the size of those above; oblique stripes below lateral line; yellow caudal fin; no spots/blotches below anterior eye *Haemulon flavolineatum*
- 8b. Approximately equal-sized scales above and below lateral line; parallel body stripes; dark caudal fin; very diffuse spots/blotches below anterior eye *Haemulon carbonarium*
- 9a. Black stripe extends along upper body from below anterior dorsal fin to both lobes of caudal fin; less than 8 faint yellow stripes *Haemulon melanurum*
- 9b. Pigmentation not as above. → 10

- 10a. Pectoral fins scaled to at least 1/3 their length; dorsal-fin soft rays typically 17, range of 16 to 19; anal-fin soft rays typically 8, range of 8 to 9 *Haemulon parra*
- 10b. Pectoral fins not scaled beyond base; dorsal- and anal-fin soft ray counts never or rarely 17 and 18 → 11

- 11a. At least 5 thin blue stripes on head → 12
- 11b. Stripes, when present on head, fewer than 5 and not blue → 13

- 12a. Scales above anterior lateral line approximately twice the size of those below; dark stripes on head, only faint stripes on body; dorsal and caudal fins brown-grey to pale yellow *Haemulon plumieri*
- 12b. Approximately equal-sized scales above and below lateral line; many blue stripes along length of upper and lower body; portion of dorsal and caudal fins black *Haemulon sciurus*

- 13a. Yellow nape in fresh specimens; 3 or 4 dark dorsolateral stripes typically present; 26 to 28 gill rakers (total) on first arch *Haemulon macrostomum*
- 13b. No yellow nape pigment; no continuous dorsolateral stripes in adults; 21 to 25 gill rakers (total) on first arch → 14

- 14a. No appreciable lateral stripes or spots; blotch under free margin of preopercle absent or very faint; largest *Haemulon* species commonly to 45 cm or more *Haemulon album*
- 14b. Discontinuous stripes or spots; black blotch often under free margin of preopercle; uncommon above 30 cm → 15

- 15a. Dark oblique stripes, often wavy; scales lacking pearl grey centres; pored lateral-line scales 45 to 48 *Haemulon bonariense*
- 15b. No dark oblique stripes, lateral scales with pearl grey centres that can form faint lines along scale rows; pored lateral-line scales 51 or 52 *Haemulon steindachneri*

- 16a. Chin without central groove at symphysis of lower jaw; dorsal fin typically with 13 spines and 12 soft rays (Fig. 3) *Genyatremus luteus*
- 16b. Chin with central groove at symphysis of lower jaw (Fig. 4); dorsal fin with 12, occasionally 13, spines and not fewer than 15 soft rays → 17

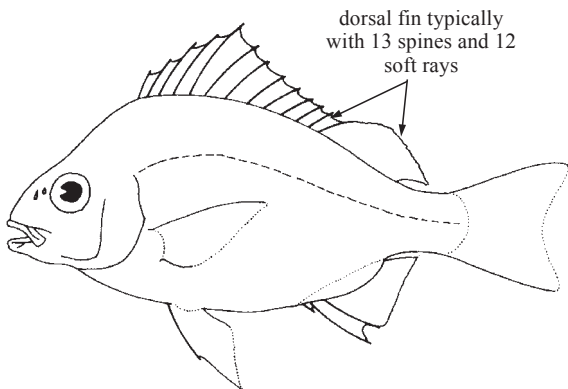


Fig. 3 *Genyatremus luteus*

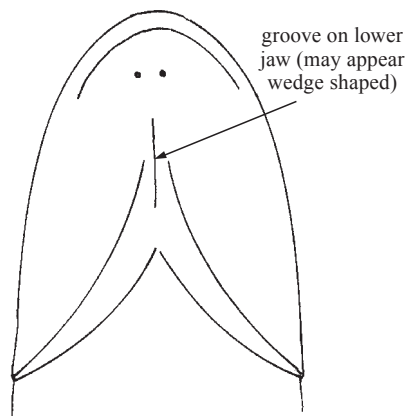


Fig. 4 species of *Anisotremus*, *Orthopristis*, *Haemulon*, and *Pomadasys*

- 17a. Adults with distinct black or white stripes or dark vertical bars; body deep, with depth typically 40 to 50% of standard length; lips thick (Fig. 5)
 (*Anisotremus*) → 18
- 17b. Adults lack distinct black or white stripes or vertical bars; body less deep, with depth typically 25 to 40% of standard length; lips thin → 20

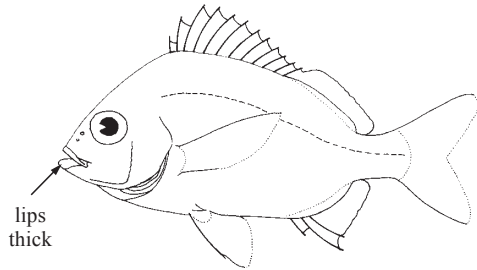


Fig. 5 *Anisotremus*

- 18a. Body brown with 6 narrow white stripes; 2 small spots on dorsal caudal peduncle; white band behind eye; in fresh specimens, inner lining of mouth red *Anisotremus moricandi*
- 18b. Body lacking all pigment characters in 18a → 19
- 19a. Yellow with 2 prominent black bands, one oblique through eye and one nearly vertical behind head; 13 to 15 gill rakers on lower limb of first arch; median fins yellow in fresh specimens *Anisotremus virginicus*
- 19b. Silvery grey with large, diffuse vertical band on side; 16 to 18 gill rakers on lower limb of first arch; dark median fins *Anisotremus surinamensis*
- 20a. Anal-fin soft rays 9 to 13 (Fig. 6) (*Orthopristis*) → 21
- 20b. Anal-fin soft rays 6 or 7 (Fig. 7) (*Pomadasys*) → 22

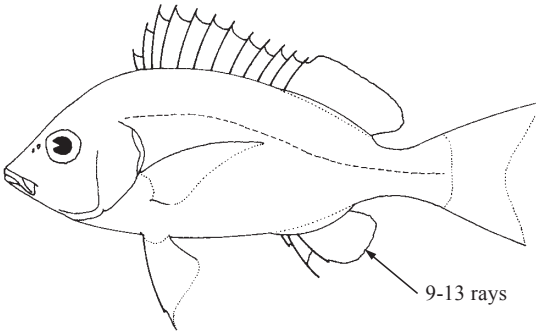


Fig. 6 *Orthopristis*

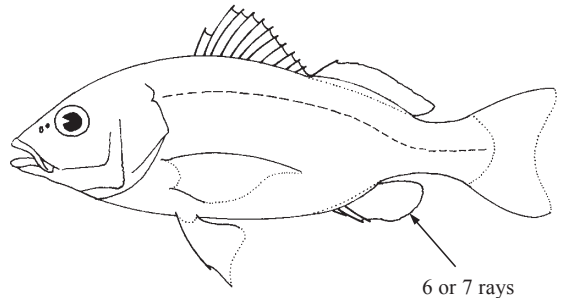







Fig. 7 *Pomadasys*

- 21a. Bronze spots on head only; dorsal-fin soft rays 15 or 16 and anal-fin soft rays 12 or 13; not recorded south of Mexico *Orthopristis chrysoptera*
- 21b. Brown-orange spots on head, upper half of body, and dorsal fin; dorsal-fin soft rays 13 to 15 and anal-fin soft rays 9 to 11; recorded only from Central America to Brazil *Orthopristis ruber*
- 22a. Dorsal fin typically with 12 spines and 13 to 15 soft rays; 10 scale rows below the lateral line; dorsal fin with a row of small scales on the membranes between the rays
 *Pomadasys corvinaeformis*
- 22b. Dorsal fin typically with 13 spines and 11 to 13 soft rays; 16 scale rows below the lateral line; no scales on membranes between the dorsal rays *Pomadasys crocro*

List of species occurring in the area

The symbol  is given when species accounts are included.

-  *Anisotremus moricandi* (Ranzani, 1842).
-  *Anisotremus surinamensis* (Bloch, 1791).
-  *Anisotremus virginicus* (Linnaeus, 1758).
-  *Conodon nobilis* (Linnaeus, 1758).
-  *Genyatremus luteus* (Bloch, 1790).
-  *Haemulon album* Cuvier, 1829.
-  *Haemulon aurolineatum* Cuvier, 1830.
-  *Haemulon bonariense* Cuvier, 1830.
-  *Haemulon boschmae* (Metzelaar, 1919).
-  *Haemulon carbonarium* Poey, 1860.
-  *Haemulon chrysargyreum* Günther, 1859.
-  *Haemulon flavolineatum* (Desmarest, 1823).
-  *Haemulon macrostomum* Günther, 1859.
-  *Haemulon melanurum* (Linnaeus, 1758).
-  *Haemulon parra* (Desmarest, 1823).
-  *Haemulon plumierii* (Lacepède, 1802).
-  *Haemulon sciurus* (Shaw, 1803).
-  *Haemulon steindachneri* (Jordan and Gilbert, 1882).
-  *Haemulon striatum* (Linnaeus, 1758).
-  *Orthopristis chrysoptera* (Linnaeus, 1766).
-  *Orthopristis ruber* (Cuvier, 1830).
-  *Pomadasys corvinaeformis* (Steindachner, 1868).
-  *Pomadasys crocro* (Cuvier, 1830).

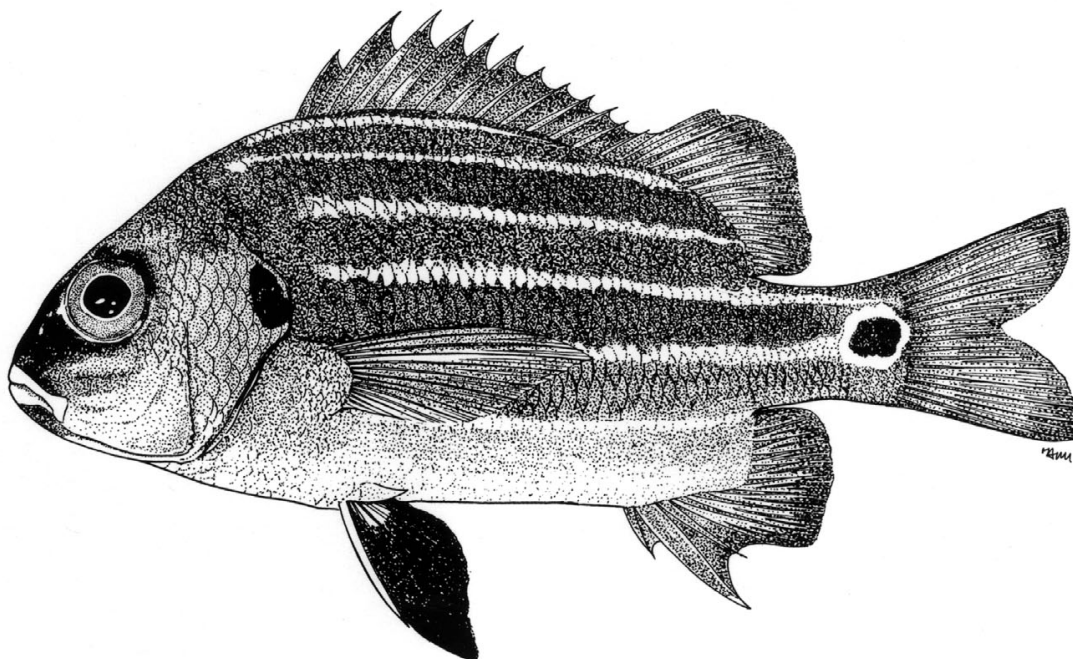
References

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- Rocha, L.A. and I.L. Rosa. 1999. New species of *Haemulon* (Teleostei: Haemulidae) from northeastern Brazilian Coast. *Copeia*, 1999(2): 447-450.

Anisotremus moricandi (Ranzani, 1842)

Frequent synonyms / misidentifications: *Anisotremus bicolor* (Castelnau, 1855) / None.

FAO names: En - Brownstriped grunt; Fr - Lippu rayé; Sp - Burrito rayado.

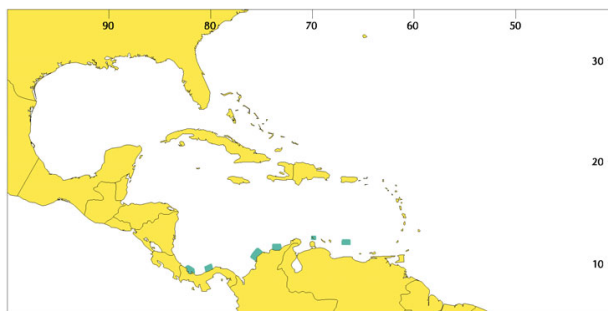


Diagnostic characters: Body deep, compressed, its depth 37 to 45% of standard length. Two pores and a median groove on chin; preopercle finely serrate; gill rakers short, 15 or 16 on lower limb of first arch. **Dorsal fin with 12 spines and 15 to 17 soft rays, anal fin with 3 spines and 9 soft rays;** soft portions of dorsal and anal fins densely scaled at base, interradi al membranes more completely scaled than other members of the genus. Pored lateral-line scales 56 to 58; 7 or 8 scales between dorsal fin and lateral line. **Colour: body and head dark brown with 6 narrow white stripes, or resembling 6 wide brown stripes; dark blotch on posterior margin of opercle and on side of caudal peduncle; white bar behind eye; 2 small spots on dorsal caudal peducle.** Pelvic fins black, others light yellow; mouth red.

Size: Maximum to at least 18 cm total length, commonly to 15 cm.

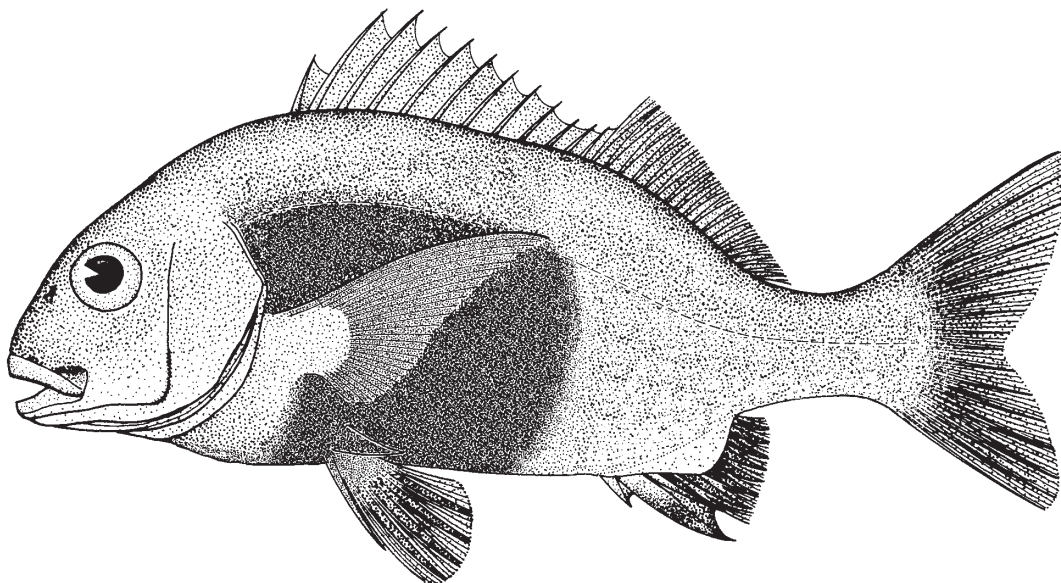
Habitat, biology, and fisheries: Primarily inhabits hard bottom habitats in turbid, shallow waters. Feeds on crustaceans and other demersal invertebrates. Incidentally taken, but of little fishery importance. Separate statistics are not reported for this species.

Distribution: Recorded from Panama, Colombia, Aruba, Orchila Island (Venezuela), and Brazil.

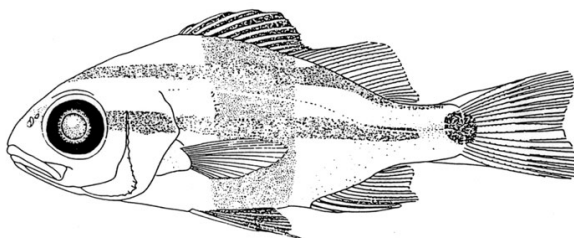


Anisotremus surinamensis (Bloch, 1791)

HNU

Frequent synonyms / misidentifications: *Anisotremus spleniatus* (Poey, 1860) / None.**FAO names:** **En** - Black margate; **Fr** - Lippu croupia; **Sp** - Burro pompón.

Diagnostic characters: Body deep, compressed, its depth 38 to 50% of standard length. Two pores and a median groove on chin; jaws with a row of closely set conical teeth and smaller teeth inside; preopercle slightly serrate; **gill rakers short, 16 to 18 on lower limb of first arch. Dorsal fin with 12 or 13 spines and 16 to 18 soft rays, the soft portion of fin highest anteriorly; anal fin with 3 spines and 8 to 10 soft rays;** soft portions of dorsal and anal fins with scales on basal part of inter-radial membranes. Pored lateral-line scales 50 to 53; **5 to 7 rows of scales in an oblique line between base of first dorsal-fin spine and lateral line.**



early juvenile

Colour: body pale, **broad dark band extends from above lateral line to ventral midline in midsection of body;** scales of back with a dark central spot, tending to form diagonal dotted bands. Fins black to grey, anal and pelvic fins darkest.

Size: Maximum to 60 cm total length, commonly to 45 cm.

Habitat, biology, and fisheries: Inhabits coral reefs and hardbottom habitats from the shore to at least 40 m. More cryptic than most grunt species. Feeds on crustaceans, smaller fishes, and echinoderms. Caught throughout its range, mainly with traps and hook-and-line. Separate statistics are not reported for this species. Marketed mostly fresh. Known also as Mexican bull or viejo in some areas.

Distribution: South Florida, Flower Gardens Bank, southern Gulf of Mexico, and the Bahamas extending southward to Brazil.

