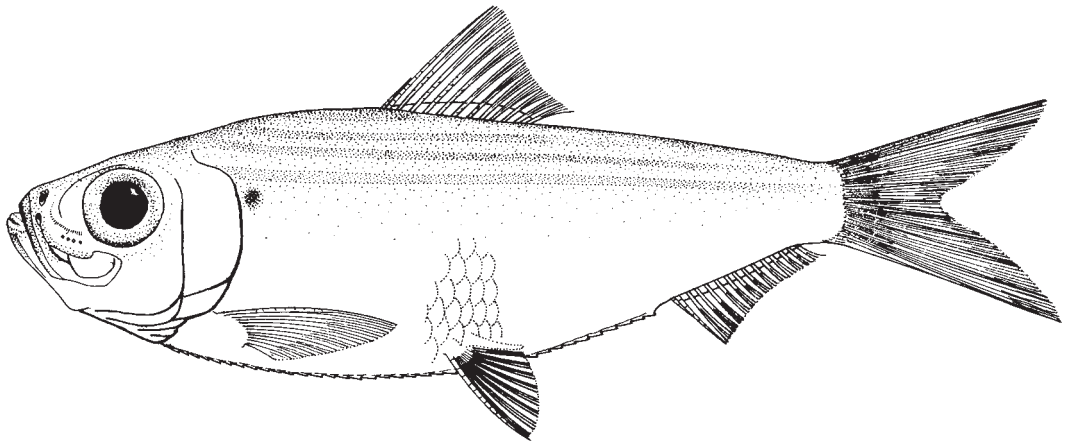


Harengula jaguana Poey, 1865

HCG

Frequent synonyms / misidentifications: *Harengula pensacolae* Goode and Bean, 1879; *Harengula majorina* Storey, 1938 / *Harengula clupeola* (Cuvier, 1829).

FAO names: **En** - Scaled herring (AFS: Scaled sardine); **Fr** - Harengule jagane; **Sp** - Sardineta jaguana.

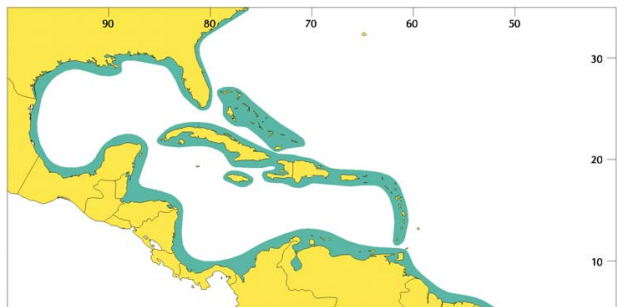


Diagnostic characters: Body fusiform, moderately deep, compressed, **body depth usually 34% or more of standard length (over 40% standard length in large individuals)**, and greater than head length. Abdomen with 28 to 31 scutes forming a distinct keel. **Toothed hypomaxilla present**; posterior border of gill opening with 2 fleshy outgrowths; gill rakers fine, 30 to 40 (usually 32 to 39) on lower limb of first arch; **broad tooth plates with distinct 'shoulders' extending back from tongue**. Dorsal fin placed slightly anterior to centre point of body; anal fin short and placed well posterior to vertical through posterior dorsal-fin base; **pectoral fin long, 22.0 to 24.5% standard length; 7 branched pelvic-fin rays, pelvic-fin origin about midway between insertion of pectoral fin and origin of anal fin**. **Colour:** dorsum and upper sides blue-black, with faint lateral streaks; lower sides and abdomen silvery; dark spot on side posterior to gill cover, faint or conspicuous; **fins hyaline**, but tips of caudal fin often dusky.

Size: Maximum 22 cm standard length; commonly to 12 cm standard length.

Habitat, biology, and fisheries: Pelagic and demersal in coastal waters over sand and mud bottoms, often near estuaries and sometimes in hypersaline lagoons; abundant in nearshore estuaries and bays during spring to autumn; abundant in the Gulf of Mexico and common but apparently not abundant outside the Orinoco delta. Juveniles were collected in Guanabara Bay, Brazil, in May with average lengths of 29 to 44 mm standard length and migrated out of the bay by December or March at approximate size of first maturity (78 to 85 mm). Spawns at night from January to September, peak activity from April to August, dependent on location; some evidence of intermittent or spasmodic spawning. Most mature at age-1 (80 to 130 mm), all by age-2; size at first maturity 78 to 85 mm standard length. Estimated fecundity 5 563 to 52 753 eggs (based on 22 females, 85 to 163 mm standard length); relative fecundity 323 to 807 eggs/g; 3 modes of oocytes, 2 of which are spawned during one spawning season. Eggs pelagic, transparent, spherical; 1.55 to 1.85 mm. Caught where it occurs, with no major fishery; a small bait fishery exists in south Florida. Separate statistics not reported for this species, but combined *Harengula* catches for 1995 were 1 117 t (Cuba: 1 045 t; Dominican Republic: 72 t). Caught with beach seines, purse seines, and as bycatch in the industrial trawl fishery for shrimps. Marketed fresh; canned in Cuba and Venezuela.

Distribution: Probably throughout the area, northward to New Jersey and southward to southern Brazil. Variations in body depth, eye size, etc., of individuals collected throughout this range suggest that more systematic work is needed on this taxon.

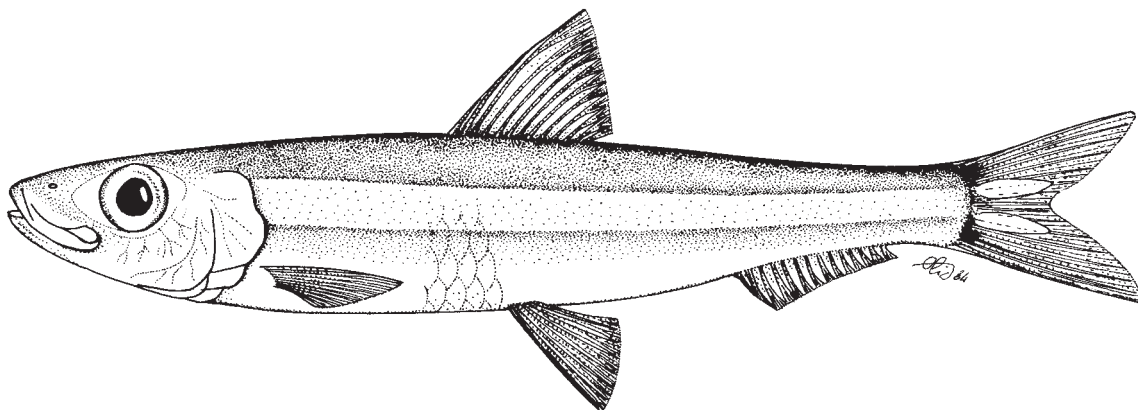


Jenkinsia lamprotaenia (Gosse, 1851)

CJL

Frequent synonyms / misidentifications: *Jenkinsia viridis* (Bean, 1912) / None.

FAO names: **En** - Dwarf round herring (AFS: Dwarf herring); **Fr** - Shadine pisquette; **Sp** - Sardineta canalerita.

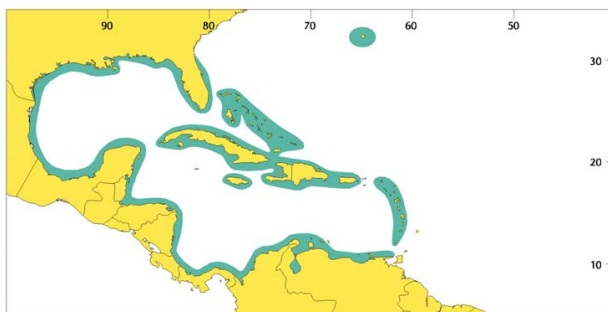


Diagnostic characters: Body elongate, slightly compressed; **abdomen rounded, without scutes** (except for plate-like, W-shaped pelvic scute). **Premaxilla toothed**; branchiostegal rays few (5 or 6). **Isthmus slender, but with slight shoulders anteriorly**. Dorsal-fin origin at about midpoint of body; anal-fin base short, posterior to vertical through midpoint of dorsal-fin base; **pectoral-fin rays 13 or 14**. **Colour:** dorsum olive-green; **adults with broad lateral silver stripe (width equalling up to 1/2 eye diameter and not narrowing anteriorly)**.

Size: Maximum 7 cm standard length; commonly to 5 cm standard length.

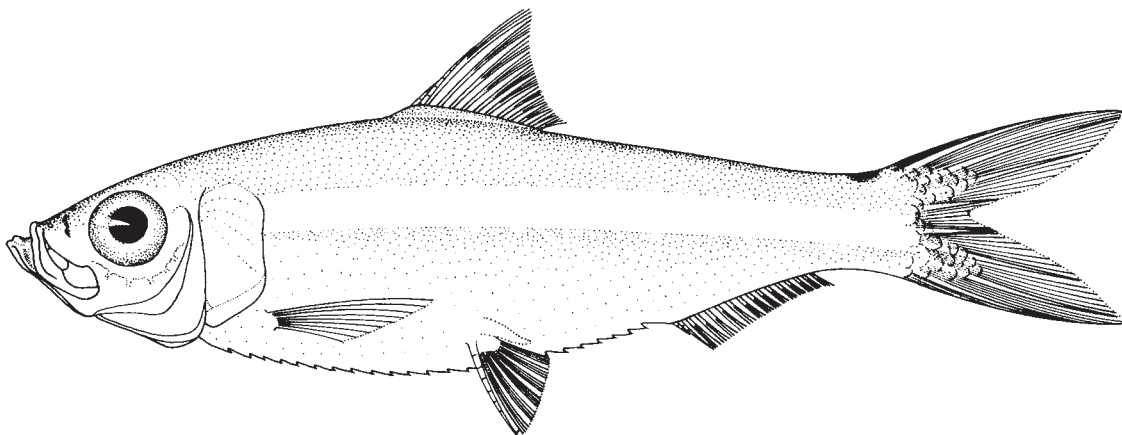
Habitat, biology, and fisheries: Forms large schools near surface or shallow water off sandy beaches and rocky areas. In the Virgin Islands, predictably aggregate in shallow (less than 2 m) inshore locations in daytime during a portion of the lunar month (around full moon); these aggregations are hypothesized to be prespawning shoals seeking refuge in shallow water during daylight. Exhibit a daily, crepuscular pattern of inshore (at dawn) and offshore (dusk) movements. Presumably spawn offshore in deeper, open water, at or beyond the mouth of bays, around the full moon. May spawn monthly. Often extremely abundant. Feeds on zooplankton. No special fishery, but caught with other clupeoids. Separate statistics not reported for this species. Caught mainly with beach and boat seines. Readily attracted by light. No value as a foodfish; used for bait and chum and probably also reduced to fish meal together with other clupeoid fishes.

Distribution: Probably occurs throughout central and southern parts of area, also Bermuda (recorded as *viridis*), but only doubtfully from North and South Carolina and nothing farther north; not recorded farther south than Tobago.



Lile piquitinga (Schreiner and Miranda-Ribeiro, 1903)

LCP

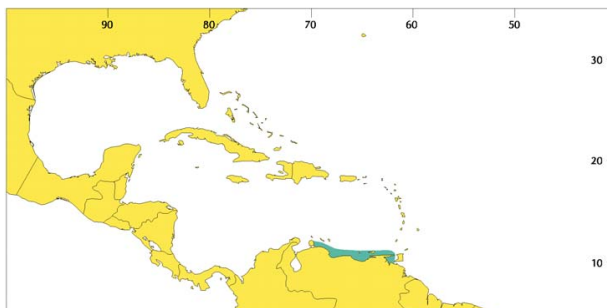
Frequent synonyms / misidentifications: None / None.**FAO names:** **En** - Atlantic piquitinga; **Fr** - Harengule piquitinge; **Sp** - Sardineta piquitinga.

Diagnostic characters: Body fusiform, slightly compressed; abdomen with scutes forming a distinct keel. **No hypomaxilla; posterior border of gill opening evenly rounded**, without fleshy lobes. Dorsal fin placed slightly anterior to centre point of body; anal fin short and placed well posterior to vertical through posterior dorsal-fin base; **7 branched pelvic-fin rays**, pelvic-fin origin inserted at about vertical through middle of dorsal-fin base. **Colour:** dorsum blue-green, sides lighter, with very distinct silver stripe from gill opening to caudal-fin base, equalling about 3/4 eye diameter in width; dark spot on dorsum at caudal-fin base; fins hyaline.

Size: Maximum 12 cm standard length; commonly to 6 cm standard length.

Habitat, biology, and fisheries: Pelagic, in-shore waters; protected coastal waters, over muddy bottoms, also in estuaries and hypersaline lagoons; very abundant in mangrove-lined lagoons and beaches, especially south of Margarita Island. Caught with beach and boat seines and with cast nets. Probably little used for food, but mainly for bait. No separate statistics reported for this species. Contributes to clupeoid catches in western Venezuela only.

Distribution: Venezuela (Nueva Esparta), and commonly off northeastern Brazil; may well occur in the intervening area.

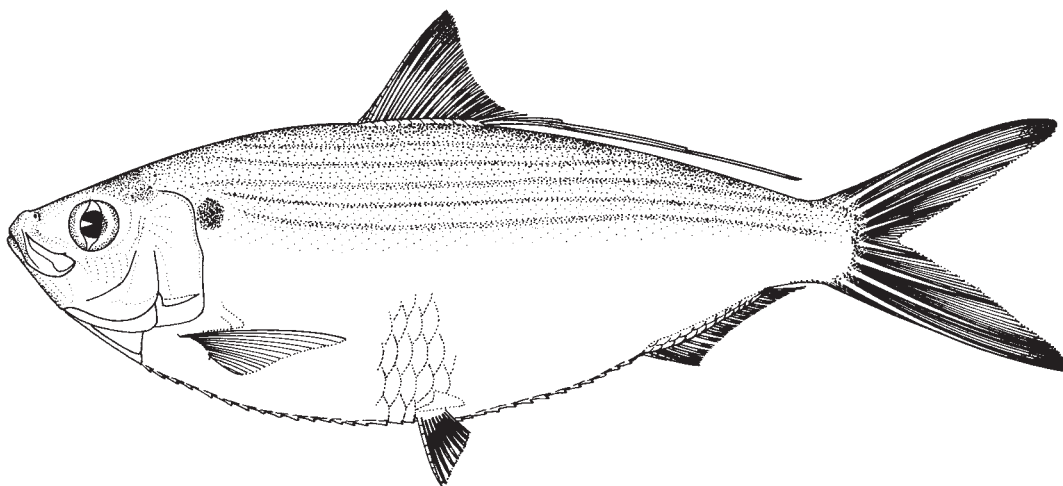


Opisthonema oglinum (Lesueur, 1818)

THA

Frequent synonyms / misidentifications: *Opisthonema captivai* Rivas, 1972 / None.

FAO names: **En** - Atlantic thread herring; **Fr** - Chardin fil; **Sp** - Machuelo hebra atlántico.

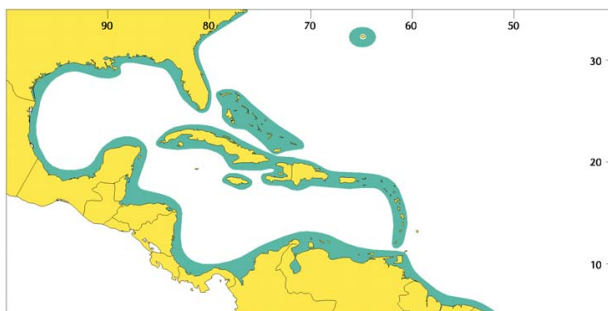


Diagnostic characters: Body fusiform, moderately compressed; abdomen with 32 to 36 scutes forming a distinct keel. **No hypomaxilla**; gill rakers fine and numerous, increasing with size of fish up to 12 cm standard length, then stable at 28 to 46 gill rakers. Posterior margin of gill chamber with 2 fleshy lobes. **Dorsal fin slightly anterior to centre point of body, its last ray filamentous**; anal fin short and placed well posterior to vertical through posterior base of dorsal fin; **7 branched pelvic-fin rays**, pelvic-fin origin inserted at point about at vertical through middle of dorsal-fin base. **Colour:** dorsum and upper sides blue-green, sometimes with dark horizontal lines, lower sides and abdomen silvery; dark spot on side posterior to gill cover, about equal in size to diameter of pupil (followed in some specimens by one or more irregular lines of smaller spots); margin of dorsal fin and its filament dusky; caudal fin with black tips.

Size: Maximum 38 cm standard length, commonly to 20 cm standard length.

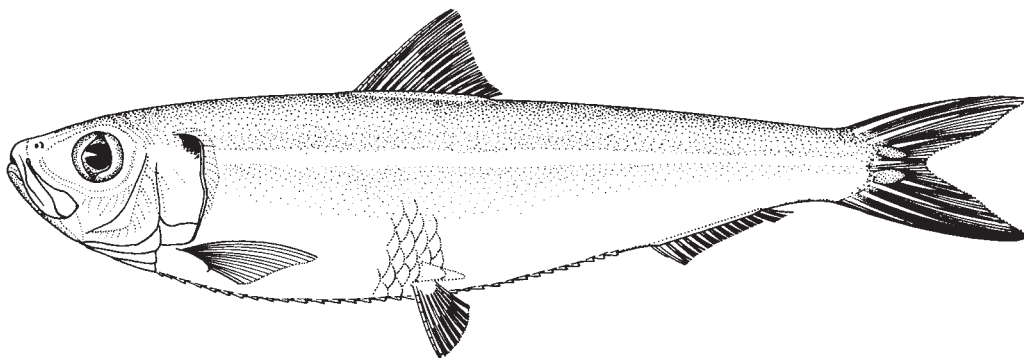
Habitat, biology, and fisheries: Pelagic, coastal, migratory, often forming compact surface schools (but solitary individuals reported); schools from southeastern United States migrate south during autumn and winter when temperatures fall below 20°C, presumably to overwinter. Prefers temperatures above 17°C and below 29°C; salinity 32 to 34‰, probably does not enter low salinity waters. Spawning period May and June off North Carolina, February to September (peak April to August) in eastern Gulf of Mexico, possibly March to July off Venezuela. Recruitment occurs throughout the year, with maximum in summer. Females mature at 135 to 169 mm fork length. Estimated fecundity 13 638 to 67 888 eggs; relative fecundity 471 to 746 eggs/g. Eggs pelagic, 1.08 to 1.31 mm. Adults feed on small fishes, crabs, and shrimps; juveniles on planktonic organisms. Predominately taken in artisanal and industrial fisheries. Caught throughout the area, targeted off Costa Rica, and Venezuela, the continental margins of the Caribbean, the Gulf of Mexico, and near the islands of Cuba, Hispaniola, Puerto Rico, Jamaica, and Trinidad, also off coasts of Ecuador and Peru. This species represents a relatively important fishery resource in some regions. The total reported catch in 1995 was 7 737 t (Venezuela: 307 t; USA: 5 056 t; Cuba: 2 005 t; Dominican Republic: 369 t). Caught with beach seines, purse seines, and cast nets, sometimes gill nets and as bycatch in the trawl fishery for shrimps. Marketed fresh, frozen, salted, and as bait; also of growing importance in fish meal and fish oil industry; minor quantities for human consumption, occasionally canned as 'sardine'; processed into pet food.

Distribution: Western Atlantic (Gulf of Maine, Bermuda, throughout Gulf of Mexico, Caribbean and West Indies, southward to Santa Caterina, Brazil). Also off coasts of Ecuador and Peru.



Sardinella aurita Valenciennes, 1847

SAA

Frequent synonyms / misidentifications: *Sardinella anchovia* Valenciennes, 1847 / None.**FAO names:** **En** - Round sardinella (AFS: Spanish sardine); **Fr** - Allache; **Sp** - Alacha.

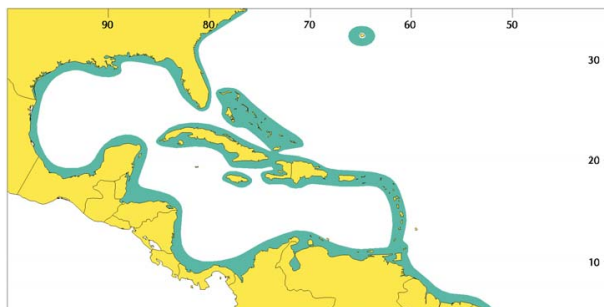
Diagnostic characters: Body elongate, usually subcylindrical, but sometimes slightly compressed; **abdomen rounded, with scutes, but without prominent keel. Top of head with 8 to 10 longitudinal frontoparietal striae on each side; no hypomaxilla; posterior border of gill opening with 2 fleshy outgrowths;** gill rakers fine and numerous (more than 80), increasing with size of fish, **anterior rakers on lower limbs of second and third gill arches lying more or less flat.** Dorsal fin placed slightly anterior to centre point of body; anal fin short and placed well posterior to vertical through posterior dorsal-fin base; **8 branched pelvic-fin rays**, pelvic-fin inserted at vertical through anterior dorsal-fin base. **Colour:** dorsum dark blue, sides silvery; fins hyaline; with faint golden midlateral stripe, preceded by faint golden spot on sides posterior to gill opening; distinct black spot at posterior border of gill cover.

Size: Maximum 30 cm standard length, commonly to 25 cm standard length.

Habitat, biology, and fisheries: Coastal, pelagic, preferring clear saline water with a minimum temperature of 24°C; from inshore and near surface to edge of continental shelf and down to 350 m (West Africa), or perhaps even deeper. Possible inshore/offshore migration (Florida); off Venezuela, adults live permanently on shelf and migrate along shelf. Schooling and strongly migratory, often rising to surface at night and dispersing; surface and demersal schools usually associated with upwellings and increased concentrations of zooplankton. Diurnal migrator. Breeds perhaps at all times of the year, but with distinct peaks; spawning period off Venezuela extending from November to June, chiefly December to April, with peak in January and February; perhaps mid-June to end of September off North America; September to February in the Gulf of Mexico. Minimum length at sexual maturity about 130 mm fork length; sexually mature between ages 2 and 3. Estimated batch fecundity 21 240 to 146 729 eggs (based on females 146 to 188 mm fork length). Eggs pelagic, spherical, 1.03 to 1.25 mm. Feeds mainly on zooplankton, especially copepods, but some phytoplankton (especially by juveniles). A foodfish of major commercial importance. Caught throughout the area, but main fishing grounds are off Venezuela (Gulf of Cariaco, Araya Peninsula, and Margarita Island). Total reported catch within the area for 1995 was 154 988 t. Caught with beach seines and purse seines; small quantities are occasionally taken with bottom trawls. Marketed fresh or canned (Venezuela); also widely used as a bait fish.

Distribution: Western Atlantic (Cape Cod to Argentina); elsewhere, eastern Atlantic and Mediterranean.

Remarks: Separation of *S. aurita* from *S. brasiliensis* based on gill raker shape is tentative. *Sardinella brasiliensis* may be a junior synonym of *S. aurita*. Purported differences in gill raker morphology between these 2 nominal species need to be confirmed. Mitochondrial DNA haplotype frequencies of western Atlantic *Sardinella* populations of both nominal species indicate separation of genetic populations rather than species differences. More study is needed to evaluate the morphological and genetic differences between and among these populations in order to determine their taxonomic status.

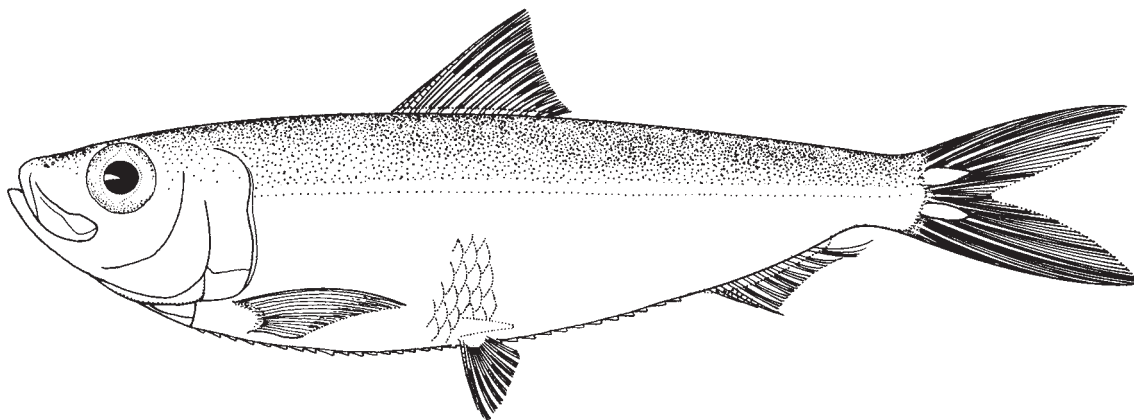


Sardinella brasiliensis (Steindachner, 1879)

BSR

Frequent synonyms / misidentifications: None / *Sardinella aurita* Valenciennes, 1847.

FAO names: **En** - Brazilian sardinella (AFS: Orangespot sardine); **Fr** - Sardine de Brésil; **Sp** - Sardinela del Brasil.



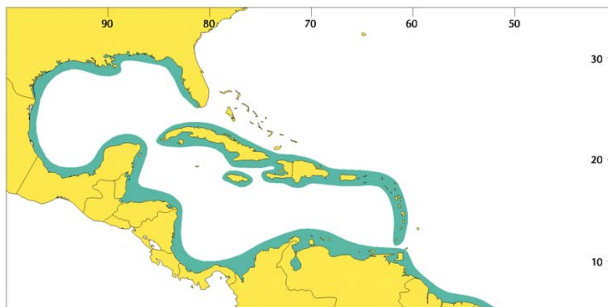
Diagnostic characters: Body elongate, slightly compressed; **abdomen rounded, with scutes, but without prominent keel. Top of head with 8 to 10 longitudinal frontoparietal striae on each side; no hypomaxilla;** posterior border of gill opening with 2 fleshy outgrowths; gill rakers fine and numerous, increasing with size of fish, **anterior rakers on lower limbs of second and third gill arches very strongly curled.** Dorsal fin placed slightly anterior to centre point of body; anal fin short and placed well posterior to vertical through posterior dorsal-fin base; **8 branched pelvic-fin rays**, pelvic-fin origin inserted about at vertical through middle of dorsal-fin base. **Colour:** dorsum dark blue, sides silvery, the 2 areas separated by a thin golden stripe; fins hyaline.

Size: Maximum 25 cm standard length; commonly to 20 cm standard length.

Habitat, biology and fisheries: Coastal, pelagic, often forming compact schools. Caught with *Sardinella aurita* and probably not often distinguished from it. Peak spawning in summer, particularly January and February. Average size at sexual maturity ca. 17 cm; average fecundity 23 000 eggs/female. Separate statistics within the area not reported for this species; possibly included in data for *Sardinella aurita*. Caught with beach seines and purse seines. Marketed fresh and canned, and widely used as bait. Probably marketed as *S. aurita*.

Distribution: Western Atlantic (Gulf of Mexico, Caribbean, West Indies, southward to Brazil and northern Uruguay). Identifications not always reliable; almost certainly less abundant than *Sardinella aurita*; probably not found north of Florida, but southward replacing *S. aurita* and dominating catches from Espirito Santo (Brazil) to Uruguay.

Remarks: See remarks under *Sardinella aurita*. This species is currently recognized as *Sardinella janeiro* (Eigenmann, 1894) by some authors.

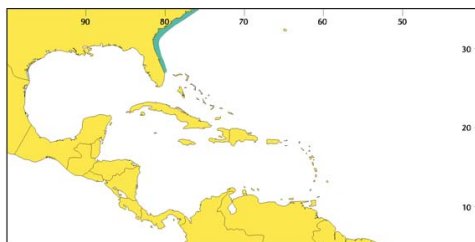
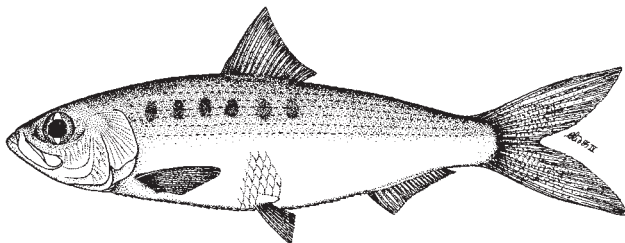


***Alosa mediocris* (Mitchill, 1814)**

SHH

En - Hickory shad; **Fr** - Alose américaine.

Maximum size to 60 cm standard length, commonly to 40 cm standard length. Coastal and tidal fresh waters; euryhaline, entering brackish and fresh water, anadromous. Most of adult life spent in sea. Spawns in tidal fresh water (Patuxent River, Chesapeake Bay in May-June; Virginia rivers and southern part of range in February-May). Sexually mature at 3 to 5 years. Estimated fecundity 43 000 to 348 000 eggs/female. Feeds on small fishes, also squids, small crabs, and other crustaceans, as well as fish eggs. Of minor importance to fisheries. Caught with seines, pound nets, and in lesser quantities in gill and fyke nets. Western North Atlantic (Maine southward to the St. Johns River, Florida); also in rivers.

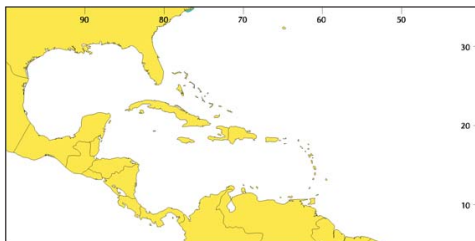
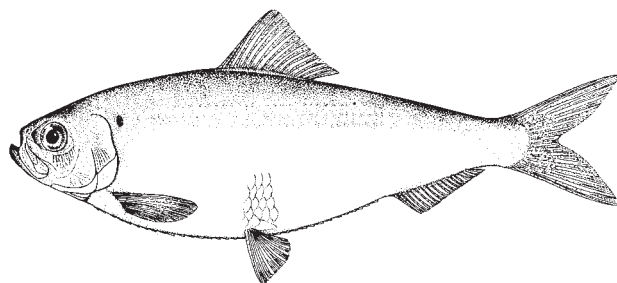


***Alosa pseudoharengus* (Wilson, 1811)**

ALE

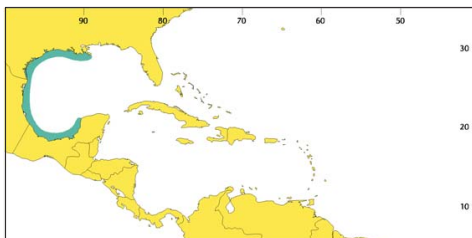
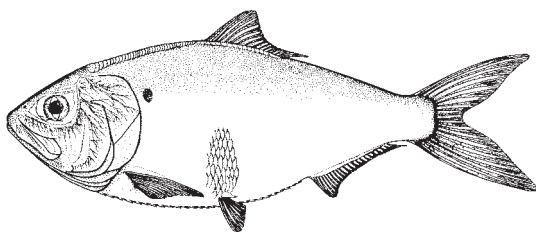
En - Alewife; **Fr** - Gaspareau; **Sp** - Pinchagua.

Maximum size to 40 cm standard length, commonly to 30 cm standard length. Euryhaline, entering brackish and fresh waters, anadromous, schooling. Undertakes seasonal migrations, possibly in conjunction with changing patterns of water temperature; generally inshore and northward during spring from overwintering areas. Adults migrate up rivers and even small streams, spawning in lakes and quiet stretches of rivers; landlocked populations also ascend affluent rivers and streams; juveniles descend in summer and autumn, or even as late as November or December. Spawns in March in the Chesapeake Bay area, late April or May in Maine and in Canada. Estimated fecundity 60 000 to 467 000 eggs/female. Eggs semi-demersal, pink, 0.80 to 1.27 mm. Light levels play major role in daily behaviour; light sensitive; tend to be found in water column rather than at surface during daylight hours. May undertake vertical migrations corresponding with diel movements of zooplankton. Primarily particulate-feeding planktivore, consuming wide variety of zooplankton (euphausiids, copepods, amphipods, mysids, ostracods); with increasing size, diet switches from micro- to macrozooplankton; adults feed on shrimps and small fishes, juveniles on diatoms, copepods, and ostracods. Probably not always distinguished from *A. aestivalis*. Taken in a variety of gears in inshore waters and also in trawls offshore. In the 1970s and 1980s, this species contributed the largest landings of North American shads, but more recent catches have been considerably less. Marketed fresh, salted, frozen, and smoked. Western North Atlantic (Gulf of St. Lawrence and Nova Scotia southward to North Carolina); also in streams and rivers; introduced and now landlocked in Lake Ontario and in lakes Erie, Huron, Michigan, and Superior; also in lakes Seneca and Cayuga, New York.

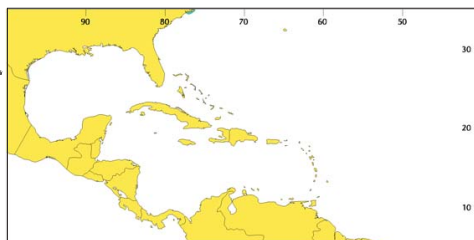
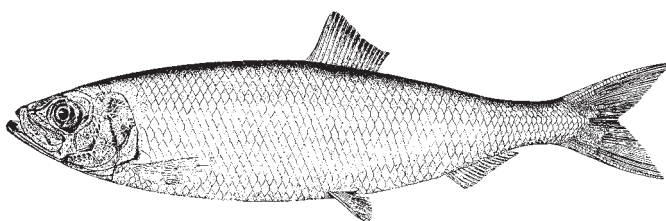


Brevoortia gunteri* Hildebrand, 1948*En** - Finescale menhaden.

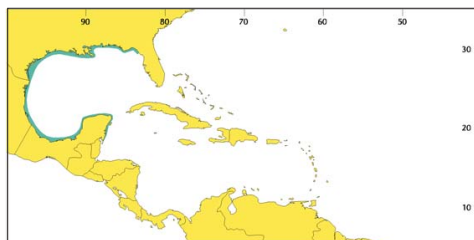
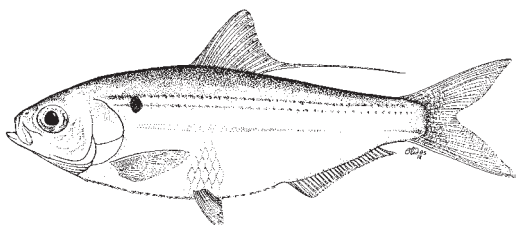
Maximum size to 27 cm standard length. Marine, pelagic, schooling in inshore waters, including bays (possibly euryhaline). Spawns near shore and in bays in winter and early spring. Feeds on plankton. Of local importance to fisheries, but not separated from *Brevoortia patronus*. Gulf of Mexico (Chandeleur Sound, Louisiana, to Gulf of Campeche, Mexico), but no certain records from the Caribbean.

***Clupea harengus* Linnaeus, 1758****HER****En** - Atlantic herring; **Fr** - Hareng de l'Atlantique; **Sp** - Arenque del Atlántico.

To 40 cm standard length, usually 20 to 25 cm. Coastal, pelagic down to 200 m, schooling, with complex feeding and spawning migrations. Feeds on small planktonic copepods in the first year, and thereafter mainly copepods, but also hyperid amphipods, euphausiids, mysid shrimps, small fishes, arrow-worms, ctenophores, and pteropods. Major interest to fisheries in North Atlantic but only marginal in Area 31.

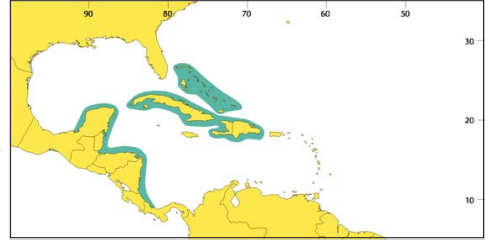
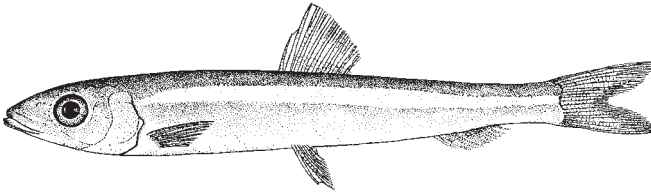
***Dorosoma petenense* (Günther, 1866)****CDA****En** - Threadfin shad.

Maximum size to 18 cm standard length in southern range, but only to about 10 to 12 cm standard length in northern range. Pelagic, often schooling, mainly in fresh water, but adults also found in brackish or saline waters of estuaries and bays (up to 30‰; juveniles to about 15‰). Breeds in spring and again in autumn in open waters near or over plants or other objects; some evidence of synchronized spawning; eggs slightly adhesive. Batch fecundity estimated at 800 to 21 000 ova/female. Age at maturity usually 2 or 3 years, sometimes in autumn of their first year. Size at maturation 75 to 126 mm total length; maximum longevity about 4 years, most fish not exceeding age-2. Chiefly midwater filter-feeders, but not entirely herbivorous since copepods, cladocerans, and even fish fry have been recorded in diets; occasionally feeds benthically; young and adults take same foods; method of food processing presumably similar to that of *Dorosoma cepedianum*. Gulf of Mexico drainages of North and Central America; south to Texas and Florida; rivers around the Gulf to northern Guatemala; also Belize River, Belize; introduced into various systems in several places in USA.

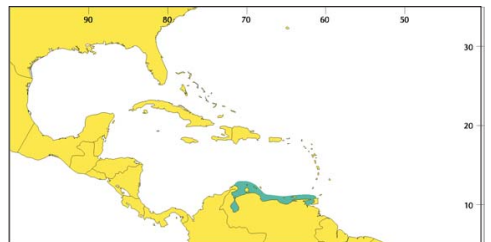
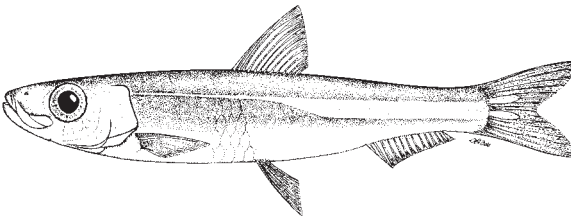


Jenkinsia majua* Whitehead, 1963*En** - Little-eye round herring.

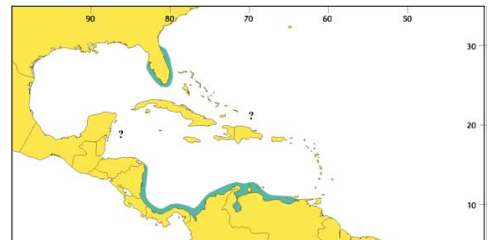
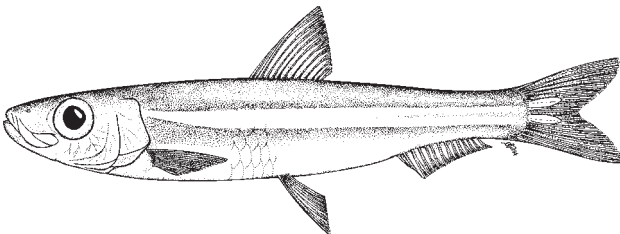
Maximum size to 6 cm standard length. Marine, pelagic, and usually inshore schooling fishes. Feeds on zooplankton. Separate statistics not recorded for this species; probably of little commercial importance. Western central Atlantic (Gulf of Campeche, Bahamas, northwestern coast of Caribbean).

***Jenkinsia parvula* Cervigón and Velasquez, 1978****En** - Shortstriped round herring.

Maximum size to 6 cm standard length. Marine, pelagic, schooling near coral reefs. Feeds on zooplankton. Separate statistics not recorded for this species; probably of little commercial importance. Western central Atlantic (Venezuela).

***Jenkinsia stolifera* (Jordan and Gilbert, 1884)****CJS****En** - Florida round herring (AFS: Shortband herring).

Maximum size to 7.5 cm total length. Marine, pelagic, and usually inshore schooling fishes. Feeds on zooplankton. Separate statistics not recorded for this species; probably of little commercial importance. Western central Atlantic (Florida, Honduras, Venezuela).

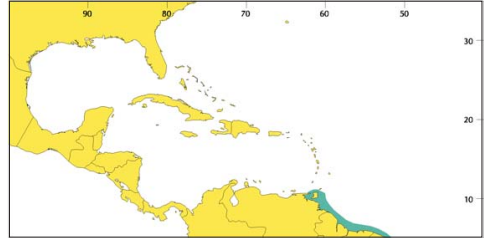
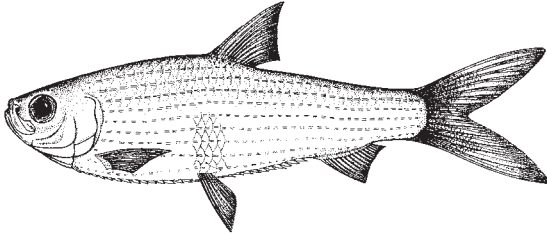


Rhinosardinia amazonica (Steindachner, 1879)

RIA

En - Amazon spinejaw sprat (AFS: Shortband herring).

Maximum size to 8 cm standard length, commonly to 5 cm standard length. Fresh waters of rivers, but tolerating brackish water, presumably schooling. Feeds on zooplankton. At present of no interest to fisheries. Western central and South Atlantic (Gulf of Paria, lower reaches of Orinoco, rivers of the Guianas, Amazon at Pará, and northern Brazil, but undoubtedly in other river systems elsewhere in this region).

***Rhinosardinia bahiensis*** (Steindachner, 1879)

En - Bahia sprat.

Maximum size to 8 cm standard length. Fresh-water rivers, but probably also tolerating brackish water. Probably of little interest to fisheries. Western central and South Atlantic (lower reaches of Orinoco, Suriname, to Bahia, Brazil).

