



## Species Fact Sheets

### *Engraulis mordax* (Girard, 1856)



Black and white drawing: [\(click for more\)](#)

## Synonyms

- *Engrauli nanus* Girard, 1858:335 (San Francisco).
- *Anchovia maui* Fowler & Bean, 1923:4 (Maui, Hawaii; error, presumably eastern Pacific).
- *Engrauli mordax* Hubbs, 1925:14 (California Bay to Coronado; subspecies *mordax* and *nanus*); Jordan & Seale 1926:389 (San Francisco); Hildebrand, 1943:14, 15, figs 1,2 (*mordax* and *nanus*) (probably full range of species); Miller, 1956:20 *et seq.* (fishery biology); Ahlstrom, 1956:33 *et seq.*, figs 14, 15 (very good drawings of eggs and larvae) (Point Conception to Point San Juanico).
- *Engrauli mordax* Loukashkin & Grant, 1965:635 *et seq.* (reactions to light); Messerschmidt, 1969:17 *et seq.* (various contributions on abundance, distribution and exploitation); Whitehead, 1973a:89 (relationships); Hart, 1973:104, fig. (synopsis, good bibliography).
- *Engrauli mordax* Hubbs et al., 1979:7 (California; subspecies *mordax* and *nanus*); Hewitt, 1980:2 to 101 (figs of larval distribution); Horn & Allen, 1981:53 (upper Newport Bay, California, ecology); Eschmeyer, Herald & Hamman, 1983:74 pl.7 (synopsis).

## FAO Names

En - Californian anchovy, Fr - Anchois de Californie, Sp - Anchoa de California.

3Alpha Code: NPA Taxonomic Code: 1210600207

## Scientific Name with Original Description

*Engraulis mordax* Girard, 1856, Proc.Acad.nat.Sci.Philad., 7:138 (San Francisco; not Shoalwater Bay, Washington as sometimes stated).

## Diagnostic Features

Body slender, elongate, rather round in cross-section, its depth about 5 to 6 times in standard length. Snout quite sharply pointed; maxilla moderate, tip sharply pointed, reaching to or almost to hind border of preoperculum, projecting well beyond tip of second supramaxilla; tip of lower jaw below nostril. Lower gillrakers 37 to 45, long and slender; no gillrakers on hind face of third epibranchial. Anal fin origin under about base of last dorsal finray or a little behind. A silver stripe along flank in young individuals, disappearing with age.

AnchoaA. *delicatissima* *Anchoviella balboae*

## Geographical Distribution



### **Launch the Aquatic Species Distribution map viewer**

Eastern North Pacific (northern part of Vancouver Island south to Cape San Lucas, Baja California).

### **Habitat and Biology**

Marine, pelagic, usually coastal and within about 30 km of shore, but to 480 km and down to 219 m depth, forming large tightly packed schools; enters bays and inlets (e.g., to about 2 km up Newport Bay, mainly in July and September - Horn & Alien, 1981:53). Feeds on euphausiids, copepods and decapod larvae (at least in British Columbia - Hart, 1973:105), both by random filter-feeding and by 'pecking' at individual prey. Spawns from British Columbia south to Magdalena Bay, Baja California, but most abundantly between Point Conception and Point Spring (January to March or April), but depending on hydrological conditions (preferred temperatures 10 to 23.3 °C in upper water layers and around 22.00 hours); eggs ellipsoidal, floating perpendicular at first, later horizontal, hatching in 2 to 4 days.

### **Size**

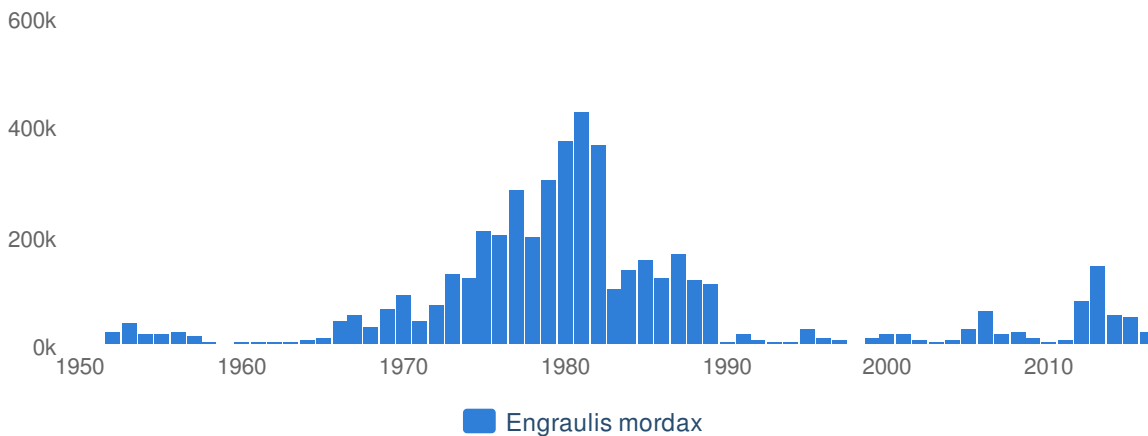
To 24.8 cm total length (about 20.5 cm standard length), usually about 12 and 14 cm standard length at 2 and 3 years.

### **Interest to Fisheries**

Restricted by law solely as a baitfish in California in 1949 to 1955, but since then also used for canning or processing into fishmeal or oil, as also in British Columbia in the 1940's when very abundant. Wide fluctuations in populations, partly in relation to hydrology, but complicated by the relation with the also fluctuating populations of the California pilchard (*Sardinops caeruleus*). The recorded catch in 1982 was 294 859 t (247 997 t by Mexico), fished with lampara nets, but after about 1946 mainly by purse seines. The total catch reported for this species to FAO for 1999 was 11 137 t. The countries with the largest catches were Mexico (5 814 t) and USA (5 323 t).

## Global Capture Production for species (tonnes)

Source: FAO FishStat



## Local Names

**USA :** Northern anchovy (AFS list).

**FAO Yearbook :** North Pacific anchovy .

## Remarks

Three subpopulations were proposed by McHugh (1952), but Miller (1956:23) doubted this. Hubbs (1925) and Hildebrand (1943) recognized two subspecies: (a) *E. mordax mordax* : body more elongate, its depth 5 to 6 times in standard length; head shorter, about 3.25 to 3.75 times in standard length; vertebrae usually 45 or 46; adults to 14 cm standard length or more; British Columbia to Baja California. (b) *E. mordax nanus* : body rather deeper, its depth 4.75 times in standard length; head longer, about 3 times in standard length; vertebrae usually 43 or 44; adults generally to less than 8 cm standard length; Bays of California. Although the Californian anchoveta is superficially very similar to the Peruvian anchoveta (*E. ringens*) and appears to have a similar biology, the two differ in characters which fully justify their separation at species level: *E. mordax* (a) Tip of lower jaw reaching only to below nostril (b) Maxilla tip sharply pointed, reaching to hind border of preoperculum (c) Angle of cheek very acute (about 30°) (d) Pseudobranch as long as eye, not reaching onto inner face of operculum (e) Urohyal bone (attachment of isthmus muscle) only slightly bulging anteriorly *E. ringens* (a) Tip of lower jaw reaching to midpoint of snout, before nostril (b) Maxilla tip blunter, reaching only to front border of preoperculum (c) Angle of cheek less acute (about 40°) (d) Pseudobranch longer than eye, reaching onto inn face of operculum (e) Urohyal bone with a very strong bulge on low edge at point where isthmus muscle ends

## Source of Information

FAO Species catalogue Vol. 7. Clupeoid fishes of the world. (Suborder CLUPEOIDEI) An annotated and illustrated catalogue of the herrings, sardines, pilchards, sprats, anchovies and wolf-herrings. Part 2. Engraulididae. Whitehead, P.J.P. 1985. FAO Fish. Synop., (125) Vol.7 Pt. 2:305-579.

## Bibliography

Hart, (1973 - good summary).

