# *Opisthonema oglinum* (Atlantic Thread-herring)

Family: Clupeidae (Sardines and Herrings)
Order: Clupeiformes (Sardines, Herrings and Anchovies)
Class: Actinopterygii (Ray-finned Fish)

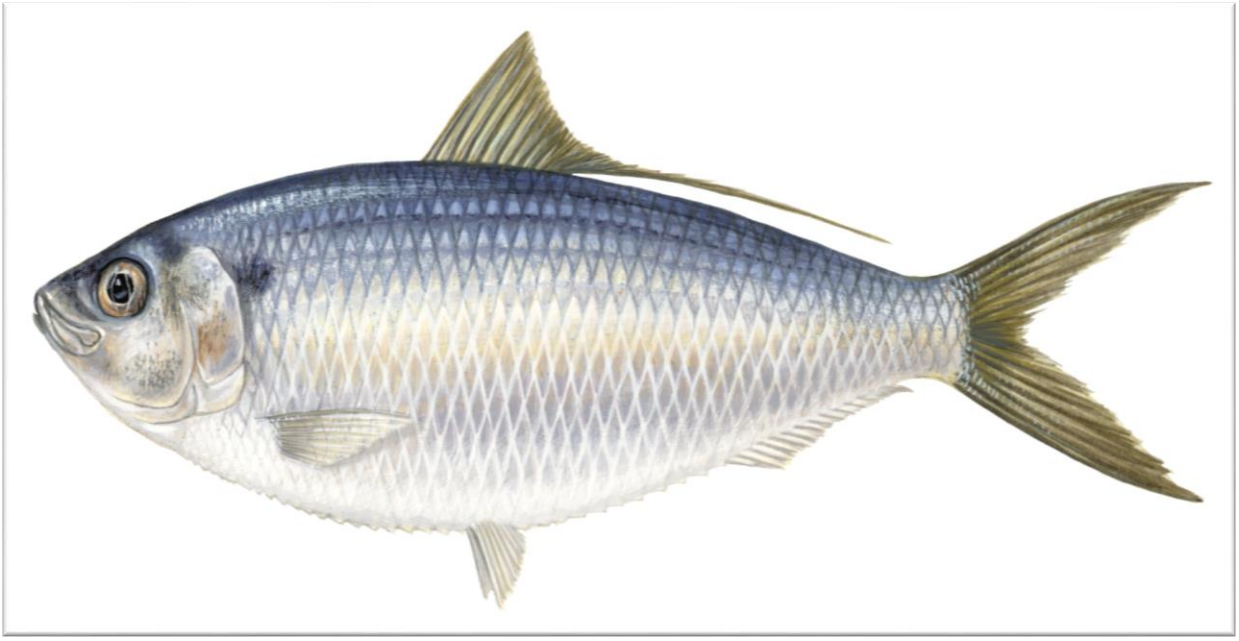

**Fig.1.** Atlantic thread-herring, *Opisthonema oglinum.*

[http://scandposters.com/illustration/atlantic-thread-herring downloaded 7 March 2016]

**TRAITS.** The colour of the fish is bluish at the top and silvery on the belly and sides, with a dark area on the shoulder along with a few dusky horizontal stripes on the upper flanks (Murdy and Musick, 2013). The fish has a thin body with a sharp belly and saw-edges. Dorsal fin with the posteriormost ray filamentous, giving the name thread-herring (Fig. 1). Caudal fin deeply forked. The tips of the dorsal fin and caudal fin are black. Scales are organized in longitudinal series. The maximum length of the fish can range from 31-38cm.

**DISTRIBUTION.** It is distributed well across the western Atlantic, from the Gulf of Maine to Bermuda, as well as throughout the Gulf of Mexico, the Caribbean Sea and the West Indies, continuing southwards to Brazil and Uruguay (FFWCC, 2014). The Atlantic thread-herring is known to migrate to warm temperate waters during autumn and late spring (Smith, 1994). They generally prefer warm tropical coastal waters and are often found in schools close to the surface of the water, usually less than 50 m deep. This species is native in Trinidad and Tobago.

**HABITAT AND ACTIVITY.** The Atlantic thread-herring is a pelagic (open water) schooling species therefore they favour shallow coastal waters, generally no more than 90 m deep. They form dense schools in coastal waters (Fig. 2), but they do not like low-salinity waters. They prefer "bluer" waters that are high in salinity and high in temperature (Munroe, 2000). They prefer

temperatures between 22-30°C and salinities from 32-37% (Houde, 2014). They sometimes venture into rivers and estuaries seeking potential nursery grounds (IUCN, 2015). They are nocturnal and feed mostly at night, during the day they tend to keep in the deeper waters to avoid predators.

**FOOD AND FEEDING.** Atlantic thread-herring are filter feeders and mostly feed on phytoplankton and zooplankton using their numerous gill rakers (filtering bars on the gills). They also feed on small fishes, crabs, shrimps, copepods, gastropods, bivalves, larval barnacles, plant detritus, fish scales and sediments (FFWCC, 2014).

**POPULATION ECOLOGY.** The Atlantic thread-herring are mostly found in large schools in tropical and sub-tropical shallow waters, however there are instances where they are found in schools of mixed fishes, mostly other types of herring. They are also solitary, as some tend to stray off from the schools to venture out on their own. The Gulf of Maine rarely has any thread-herring, except for the occasional strays. The thread-herring can live up to 8 years. The average length of the fish ranges from 10-20cm (Fig. 3), and it usually matures around 12-14cm, between ages 1-2 (Munroe, 2000). It is locally abundant and forms large schools. Although it is harvested heavily in some countries, such as Puerto Rico, Jamaica and Colombia, and the population size has declined in those areas, the Atlantic thread-herring is still not considered over exploited and facing extinction. Research conducted in different countries to determine the quantity of fish landing showed many fluctuations but no threats to the global population. In Florida, from 1982 to 1994 there was a great increase in commercial landing due to expansion of fisheries, however there was a decline in landing after the passage of Amendment 3 in 1995, which put strict limitations on marine net fishing. In Mexico the landings are usually mixed-species, the majority of which are thread herrings. In 1997 the commercial landing peaked to 1005 tons, however it drastically declined in 2008, to 42 tons. This fishery is deemed over exploited (IUCN, 2015).

**REPRODUCTION.** Spawning for Atlantic thread-herring occurs mainly from April to September. Spawning occurs during spring and summer, at depths less than 50 m (Smith, 1994). The eggs and larvae are pelagic and thrive in near shore coastal waters. The preferred conditions for spawning are temperatures ranging from 18.5°-30.9°C and salinities ranging from 27.3-36.8% (Houde, 2014). The rate of development from egg to larva is dependent on temperature conditions, and can take up to 7-10 days. The larvae are translucent and lack scales, they carry around a yolk-sac containing nutrients until they are able to feed.

**BEHAVIOUR.** The larvae and young juveniles keep to deeper waters to avoid predators and are very inactive during the day. They feed on a variety of eggs and small organisms especially plankton. This stage is critical for survival as the thread-herring are aggressively preyed upon at these young stages. The fish is considered very agile and difficult to catch. They stay in large schools and migrate when necessary for better breeding and living conditions (Houde, 2014).

**APPLIED ECOLOGY.** The IUCN Red List shows the Atlantic thread-herring as Least Concern, although there are reports of localized declines, it is not severe enough to cause any significant threat to its global population. Currently there are no species-specific conservation measures for the thread-herring (IUCN, 2015). The fish is mainly harvested using purse seine vessels as they usually occur in massive schools that can stretch for miles, darkening the surface of the water

under which it swims. It is harvested for both commercial and recreational use. Most of the catch is used as bait fish or converted to fish oil (Smith, 1994). Some other important uses of the fish are for human consumption, fish meal and canned pet food. The other methods of catching this fish are by beach seines, hook and line, cast nets and floating gill nets (IUCN, 2015). It serves as an important prey species to many coastal pelagic fishes, such as king mackerel, Spanish mackerel, crevalle jack and bluefish. The juveniles are especially preyed upon by the Spanish mackerels and bluefish (Munroe, 2000). It is also a food source to a variety of sea birds and marine mammals.

**REFERENCES**

FFWCC. (2014). Florida Fish and Wildlife Conservation and Community: Atlantic Thread Herring, Lesueur 1817. Accessed on 26 February 2016. http://myfwc.com/media/194720/atlantic_thread_herring.pdf

Houde E. (2014). Abundance and potential yield of the Atlantic thread herring, *Opisthonema oglinum*, and aspects of its early life history in the eastern gulf of Mexico. Accessed on 2 March 2016. https://www.researchgate.net/profile/Edward_Houde/publication/242193169

IUCN. (2015). *Opisthonema oglinum.* Accessed on 28 February 2016. http://www.iucnredlist.org/details/summary/16466100/0

Munroe T A. (2000). An Overview of the Biology, Ecology, and Fisheries of the Clupeoid Fishes Occurring in the Gulf of Maine. Accessed on 28 February 2016. http://nefsc.noaa.gov/publications/crd/pdfs/crd0002.pdf

Murdy E. O. and Musick J A. (2013). Field Guide to Fishes of the Chesapeake Bay. The John Hopkins University Press.

Smith J W. (1994). Biology and Fishery for Atlantic Thread Herring, *Opisthonema oglinum*, along the North Carolina Coast. Accessed on 4 March 2016. http://spo.nmfs.noaa.gov/mfr564/mfr5641.pdf

Author: Kamine Saroop

Posted online: 2016

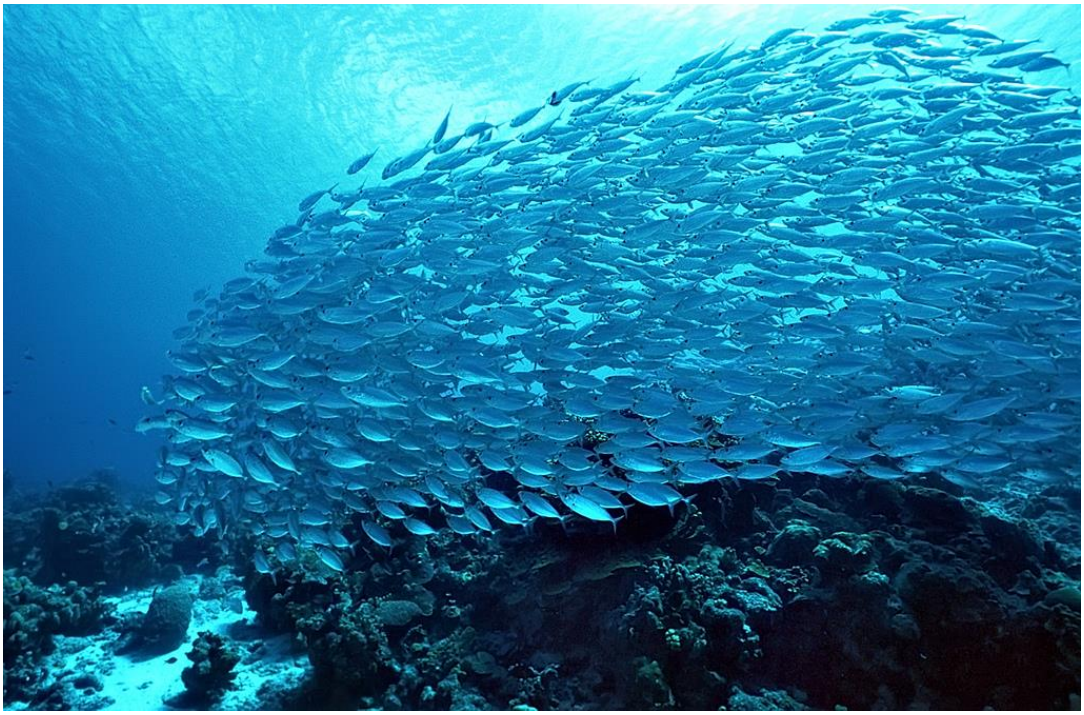

**Fig. 2.** School of *Opisthonema oglinum.*

[https://www.flickr.com/photos/hstachel/6749093625, downloaded 5 March 2016]

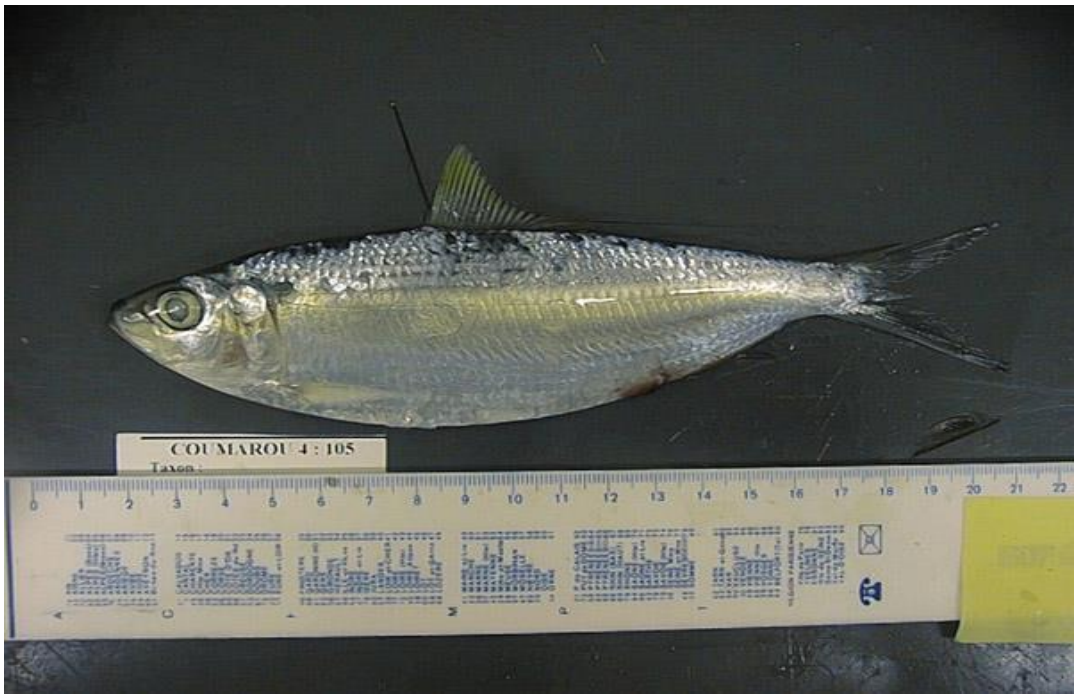


**Fig. 3.** The size of an average Atlantic thread-herring.

[http://dsiphoto.mnhn.fr/gicim/sd00003/i2002-0945~p1m.jpg, downloaded 3 March 2016]