

Epinephelus itajara (Atlantic Goliath Grouper)

Family: Serranidae (Groupers and Sea Bass)

Order: Perciformes (Perch and Allied Fish)

Class: Actinopterygii (Ray-finned fish)



Fig. 1. Atlantic goliath grouper, *Epinephelus itajara*.

[<https://www.keywestaquarium.com/goliath-grouper>, downloaded 21 October 2016]

TRAITS. *E. itajara*, previously known as *Serranus itajara* (goliath grouper or jewfish) is one of the largest groupers found in the Atlantic, hence 'goliath' in its name. Its large, muscular body can reach a length of 2.5m and a weight of 350kg. There is little dimorphism between sexes in this species with females being slight larger than males at maturity (IUCN, 2016). It is usually a yellow-brown, grey or olive colour with 3-4 dark bands stretching from dorsal (upper) to ventral (lower) side and dark spots speckled about its body (Fig. 1). The head is wide with small eyes; pectoral and tail fins are all rounded at the tips. This species possesses 3-5 rows of teeth, with underdeveloped canines used to differentiate between the closely related Pacific goliath grouper (Robins, 2016).

DISTRIBUTION. The Atlantic goliath grouper is native to Trinidad and Tobago (IUCN, 2016). It can be found in the western, south-western, eastern and south-eastern parts of the Atlantic residing in the seas near Florida to Brazil and Mexico to the Caribbean, and from Senegal to the Congo (Fig. 2) (Robins, 2016).

HABITAT AND ECOLOGY. Juveniles are often seen where mangroves are in abundance or in estuaries while adults choose places that have shipwrecks, overhangs, piers and bridges (FFWC,

2016). *E. itajara* is thought to be crepuscular with most activity being done at twilight hours (Collins, 2014). It has a slow growth rate, with the oldest male and female recorded being 26 years and 37 years respectively (Bullock et al., 1992). The Atlantic goliath grouper is an apex predator usually at the top of the food chain at maturity. They feed on invertebrates, mainly crustaceans, and other fish. They do not chase swiftly moving prey but rather slowly ambush them, catching them with their canine-like teeth and swallowing them whole (Robins, 2016).

REPRODUCTION. Atlantic goliath groupers generally assemble in groups of up to 100 fish to spawn in shallow waters 10-50m deep (Fig. 3) (IUCN, 2016). Courtship and spawning are presumed to be dependent on lunar cycles when most activity was observed at full moons during July-September (Bullock et al., 1992). They reproduce by broadcast spawning, where females release eggs into the water and males simultaneously release sperm. This method increases the chance of fertilization and lowers chances of eggs being eaten (Oceana, 2016). Juveniles are pelagic and presumed to be given no parental care. On hatching they appear kite-shaped (Fig. 4) with lengthy dorsal and ventral fins (Robins, 2016).

BEHAVIOUR. *E. itajara* is solitary and only gathers in groups to spawn (Robins, 2016). This species is not usually combative but presumed fighting has been determined between two males judging by the cuts and splits in their fins and bodies (Colin, 1990). Juveniles are found mostly in mangroves or estuaries where they stay up to 6 years then leave to offshore reefs (Koenig et al., 2007). *E. itajara* emits a loud low-frequency sound which is caused by vibrations of the swim bladder, which they use for communication (Gerhardinger et al., 2006).

APPLIED BIOLOGY. The Atlantic goliath grouper is listed as critically endangered due to overfishing for sale and sport (IUCN, 2016). The loss of the habitat juvenile favour most i.e mangroves also adds to the decline in population. In Brazil, harvesting of *E. itajara* has been prohibited in waters where they reside and plans to protect it was issued by the IBAMA as well as bans by other countries near these waters (IUCN, 2016).

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Fig. 2. Atlantic goliath grouper geographic distribution.

[<http://www.bushwarriors.org/iucn-species-of-the-day-goliath-grouper/> downloaded 26 October 2016]



Fig. 3. Spawning aggregation.

[<http://www.xray-mag.com/content/goliath-groupers>, downloaded 26 October 2016]

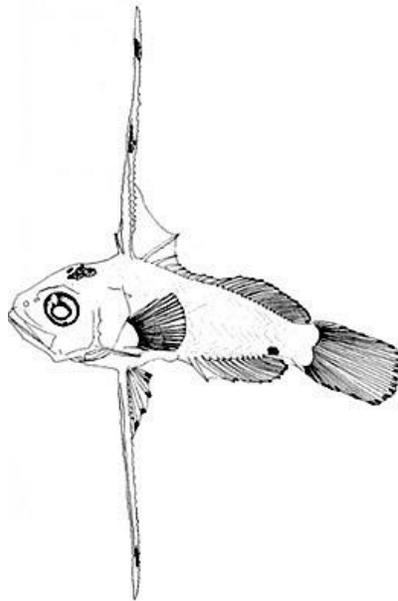


Fig. 4. Juvenile physical characteristics.

[<https://www.flmnh.ufl.edu/fish/discover/species-profiles/epinephelus-itajara>, downloaded 26 October 2016]

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