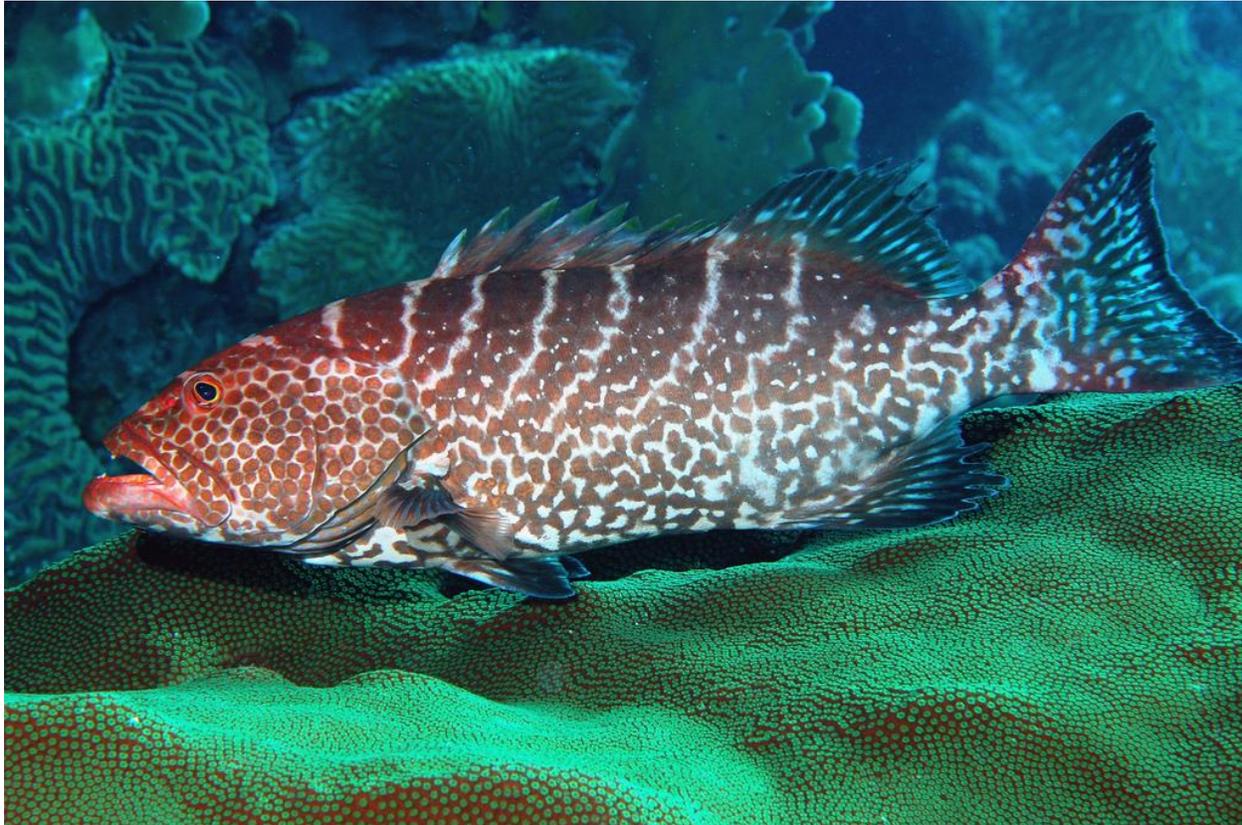


## *Mycteroperca tigris* (Tiger Grouper)

Family: Serranidae (Groupers and Sea Basses)

Order: Perciformes (Perch and Allied Fish)

Class: Actinopterygii (Ray-finned Fish)



**Fig. 1.** Tiger grouper, *Mycteroperca tigris*.

[[https://c1.staticflickr.com/5/4043/4376262192\\_a6317173a8\\_b.jpg](https://c1.staticflickr.com/5/4043/4376262192_a6317173a8_b.jpg), downloaded 5 March 2016]

**TRAITS.** Possesses a large mouth as in all grouper species, and a strong, stout body (De Kluijver et al., 2016). Colour often reddish, crossed by 9-11 narrow pale lines that slope downward and forward (Fig. 1) (Wikipedia, 2016). Anterior nostrils smaller than posterior nostrils which tend to be up to five times larger. Pronounced teeth with extensively developed canines (Craig et al., 2011). Able to reach lengths of 100cm, the common length is approximately 40cm. Exhibits sexual dimorphism in which males display dark pectoral fins and a pale coloured head, especially during courtship, whereas females exhibit bright orange pectoral fins (Tuz-Sulub et al., 2006).

**DISTRIBUTION.** Distributed in the western Atlantic, Gulf of Mexico, and throughout the Caribbean namely, Haiti, Jamaica, Cuba and Trinidad and Tobago (Tuz-Sulub et al., 2006).

**HABITAT AND ACTIVITY.** This grouper inhabits subtropical marine waters, predominantly those that are reef-associated, at depths ranging from 1-60m. The coral reef surroundings are integral to the feeding and general behaviour of the grouper. Although primarily diurnal, they do

hunt at dusk and spawn late at night into early morning (9p.m.-3a.m.). Although they are predominantly sedentary fish, they are powerful swimmers that can cover short distances rapidly. This ability is mostly used in their feeding strategy.

**FOOD AND FEEDING.** Like other groupers, the tiger grouper is carnivorous, a robust predator that feeds mainly on other fish. Feeding mostly takes place during the dusk. Resting on or among corals and sponges, it is described as an ambush predator (Lieske and Myers, 1994). The grouper makes use of its preferred surroundings by hiding amongst the coral and patiently awaiting prey, mostly consisting of other fish, to swim past. Upon coming into close proximity, this usually sedentary predator lunges at prey with its wide open mouth and draws them in with a powerful suction that occurs with the opening of the mouth. The prey is swallowed whole by a mouth full of rasp-like teeth that cover from the jaws to the palate (De Kluijver et al., 2016).

**POPULATION ECOLOGY.** The tiger grouper is a predominantly solitary species that are usually spotted individually. Although it is widely spread throughout the western Atlantic and Gulf of Mexico, this grouper species is one of the more common ones found within the Caribbean, Bahamas and Florida (Lieske and Myers, 1994).

**REPRODUCTION.** While sexually mature and active, the tiger grouper displays different colorations than what is usually considered the norm. Males tend to develop a pale yellow or bronze head, black pectoral fins and a white spot at the base of the anal fin (Fig. 2). Females predominantly retain their usual colour but develop the similar white spot as seen in males. This species of grouper forms spawning aggregates, which can consist of tens to hundreds of sexually mature males and females. In these aggregates, these usually solitary fish come together in large groups for the sole purpose to reproduce, most commonly preceding a full moon (Sadovy et al., 1994). During these spawning aggregations, the amount of eggs that the tiger grouper may spawn ranges from 0.8-6 million eggs per night although the vast majority does not make it to maturation. The developing egg has a distinct curved larva and central yolk. This larva is the initial phase of the grouper and when newly hatched, measure 1.4-1.7mm. While in this larval stage, the grouper is very sensitive to environmental conditions and so there is a high mortality rate amongst larvae that result from minor stress. As they grow from the larval stage to the juvenile stage, the tiger grouper undergoes drastic changes in their shape.

**BEHAVIOUR.** The tiger grouper is known to be a protogynous hermaphrodite which means that upon hatching, the larva and all eventual juveniles are female and upon attaining a certain size, switch their sex to male. For this reason, the majority of the larger groupers are male whilst the smaller ones are female. Very little is known about the behaviours of these fish in terms of their response to predators and communication as they are very solitary animals. However they do exhibit some form of communication with other fish when they visit cleaning stations. When they want to be cleaned upon visiting cleaning stations, they display a distinctive red colour and flare their gills and mouth. This seems to signal to the fish that operate the cleaning station that they wish to be cleaned (De Kluijver et al., 2016).

**APPLIED ECOLOGY.** The tiger grouper is not listed as an endangered species by the IUCN and is in fact a species of least concern (IUCN, 2004). As this species is a protogynous hermaphrodite, the largest sizes are usually male. Therefore fishermen unknowingly predominantly capture males

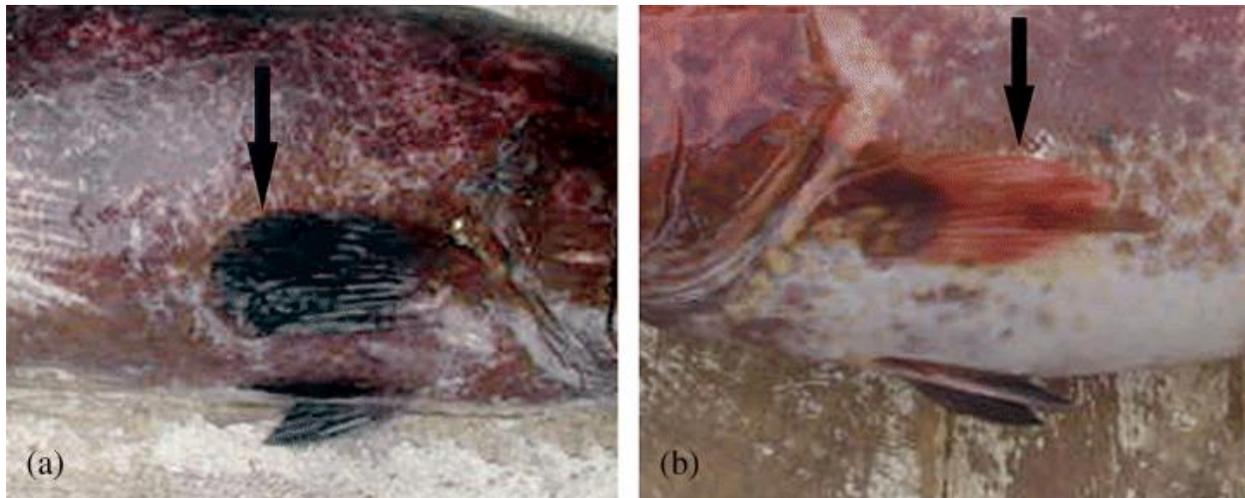
due to their size. This unbalances the sex distribution and prolonged overfishing would decrease the reproduction growth rate as less males would be available to facilitate egg fertilization.

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**Fig 2.** Colour variation among pectoral fins of male (left) and female (right).

[<http://onlinelibrary.wiley.com/doi/10.1111/j.1095-8649.2006.01241.x/full>, downloaded 10 March 2016]