Sparisoma viride (Stoplight Parrotfish)

Family: Scaridae (Parrotfish)
Order: Perciformes (Perch and Allied Fish)
Class: Actinopterygii (Ray-finned Fish)

Fig. 1. Stoplight parrotfish, *Sparisoma viride.*

[https://rollingharbour.files.wordpress.com/2013/02/stoplight-parrotfish-c2a9melinda-riger-gbs.jpg, downloaded 10 March 2015]

TRAITS. Parrotfish are given this name due to their teeth being fused together like the beak of a parrot. Stoplight parrotfish are named due to the red-green coloration of the juvenile fish. They possess distinctive feature which as them apart from other species of parrotfish (genus *Scarus*). In *Sparisoma* the teeth of the upper jaw fit into the teeth of the lower jaw (FMNH, 2015). Also they contain a plate of teeth around their throat which aids in the grinding of their main food, coral. Their bodies are compressed and long and their head is rounded with a row of scales on their cheeks (Fig. 1). Their colour differences in both the red-green juvenile (Fig. 2) and the bright green, blue red and yellow adults are a distinguishing feature. They can grow up to 55cm long and can weigh 1.5kg (FMNH, 2015).

DISTRIBUTION. Parrotfish are found mostly in coral reefs (since coral is their main source of food). The stoplight parrotfish is endemic in tropical waters in the western Atlantic Ocean (Fig. 3), including Florida, Bermuda, Bahamas and throughout the Caribbean Sea south to Brazil. They are also found along the eastern and western boundaries of the Gulf of Mexico.

HABITAT AND ACTIVITY. Parrotfish live mostly in shallow waters (3-50m) in coral reefs or around it in tropical waters. They are diurnal (active in the day) and secret an envelope at night in which they sleep, which smells bad and is distasteful to aid in protection from predators and also conceals them from these predators.

FOOD AND FEEDING. Parrotfish are primarily herbivores. Using their specialized teeth these fishes graze on corals and obtain nutrition from the coral polyps and algae growing on the coral. The rest of the coral is indigestible and it therefore excreted as sand on the coral reef. Parrotfish usually return to the same place to excrete and this forms hills of white sand (Bruggemann et al., 1994).

POPULATION ECOLOGY. They usually feed in large groups, sometimes which other related species. This is done so that they would not be chased away by territorial fishes and also to deter predators. The most a parrotfish can live to is 20 years but most live less than 5 years.

REPRODUCTION. Parrotfish possess the most unusual and complex reproductive methods. Sex changes are common among parrotfish due to either males or females being low in population density. Primary males remain males throughout their life, but secondary males (also called super males or terminal phase males) (Fig. 4) are born female and undergo sex changes if necessary (Encyclopedia of Life, 2015). Spawning occurs year round usually at dawn in the deeper reef areas with peak season in the summer time. Secondary males pair with one female and defend a territory, while primary males form a small group to mate with females away from territories. This type of spawning is called aggregated spawning where an individual may rush upward to release either sperm or eggs at the peak of these upward dashes. After reproduction the fish return to their natural habitat. The eggs are 1mm in diameter, buoyant and spherical and after 25 hours larvae are released (FMNH, 2015).

BEHAVIOUR. During the juvenile phase the stoplight parrotfish has a dark reddish-brown body (Fig. 3) and as they mature the primary males and females develop more red within their bodies with greys, browns and black also seen. The brightest colours are present in the secondary males (Fig. 4) which are green, blue, red and yellow. These colours of secondary males become more intense when they are defending their areas during spawning.

APPLIED ECOLOGY. Parrotfish are currently not listed within the IUCN and are therefore under no threat so far. Certain species of parrotfish can cause ciguatera (fish poisoning sickness) in humans and can therefore be very dangerous and cannot be eaten. They are also hunted for their scales which humans can use as decorative pieces (Encyclopedia of Life, 2015). They are known for their beauty and are therefore wanted by many for aquarium show tanks. Parrotfish can therefore be a source of attraction for tourist which can in turn benefit the economy but to the detriment of the species itself.

REFERENCES

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Fig. 2. Juvenile stoplight parrotfish.

[http://www.bing.com/images/search?q=juvenile%20stoplight%20parrot&qs=n&form=QBIR&pq=juvenile%20stoplight%20parrot, downloaded 24 March 2015]

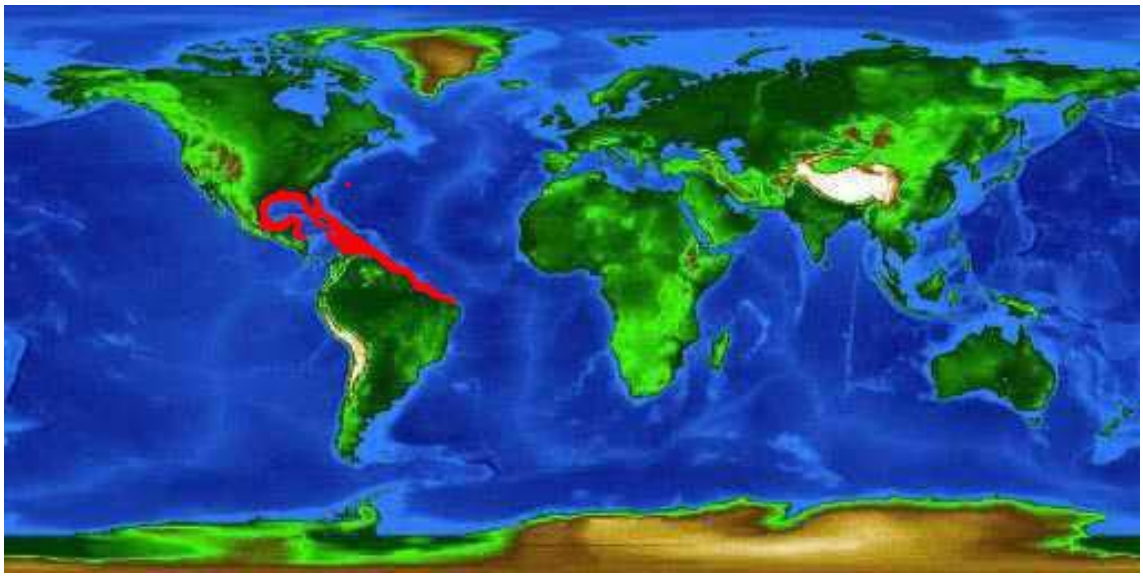

Fig. 3. Geographic distribution of stoplight parrotfish.

[http://www.flmnh.ufl.edu/fish/gallery/descript/sparrotfish/stoplightparrotfishbasemap.JPG downloaded 29 March 2015]

Fig. 4. Secondary male (terminal phase) stoplight parrotfish.

[http://www.flmnh.ufl.edu/fish/gallery/descript/sparrotfish/supermale.JPG
downloaded 29 March 2015]