Sparisoma aurofrenatum (Redband Parrotfish)

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

Fig. 1. Redband parrotfish, *Sparisoma aurofrenatum.*

[http://media.eol.org/content/2012/10/27/19/91541_orig.jpg, downloaded 10 March 2016]

TRAITS. The teeth of parrotfish are fused together, which creates a pair of plates similar to the beak of a parrot, hence their name. They are protogynous hermaphrodites, this means they are born as female and some undergo a sex change to male during their lifespan, usually at a length of about 17cm (Allsop and West, 2003). Male redband parrotfish have a red line or band running from the corner of the mouth (Fig. 1), and jet-black spots and a yellow blotch on the sides, over the pectoral fins (Smith, 1997) (Fig. 2). Females are greenish-brown, with darkish blue on the sides and back, and red underneath (Randall, 1996). Juveniles are red-brown, with two white stripes and a black spot at the back of the upper gill cover (Fig. 3). Redband parrotfish can grow to a maximum length of 28cm (Robins and Ray, 1986), but have a common length of 20cm (Randall, 1978). They have a total of 10 dorsal soft rays, 9 dorsal spines, 9 anal soft rays and 3 anal spines (Smith, 1997).

DISTRIBUTION. This species is known to have a widespread existence in the western Atlantic, from Bermuda and Florida (USA), throughout the Caribbean islands including Trinidad and Tobago, to Venezuela (Fig. 4).

HABITAT AND ACTIVITY. This species occupies coral reefs (Fig. 1) and the juveniles occupy adjacent seagrass beds. They often rest on the bottom either alone (solitary) or in small groups (Lieske and Myers, 1994). They are found in mostly shallow waters between an upper depth limit of 2m and a lower depth limit of 20m, this is due to their lack of ability to swim in very strong currents (Boschung, 1983). They inhabit clear coral and algal-rich reefs and feed on algae. They are diurnal, meaning that they are active during the day.

FOOD AND FEEDING. A vital reason for *Sparisoma aurofrenatum* to inhabit coral reefs is due to the fact that it is the location of their food source, namely algal matter and nutrition from coral polyps. This species is herbivorous but not entirely vegetarian since they eat coral polyps (animals) as well. They have specialized teeth which are used to grind the coral to get to the polyps. Since their teeth are used for grinding the hard coral, it becomes worn away and therefore continuous growth takes place in the teeth. Their beak like mouth is used to scrape algae from rocks and coral, they prefer turf algae. They digest a mixture of coral and algae, the indigestible material is excreted as sand on the reef. This manner of feeding plays an important role in distributing and manufacturing coral sand in the reef, it also prevents suffocation of the coral by a high concentration of algae.

POPULATION ECOLOGY. The individuals are typically solitary or live in small groups (Lieske and Myers, 1994). They form harem groups which consist of one dominant male and several smaller females (Allsop and West, 2003). Since this is a hermaphrodite species, individuals start off as females, known as the primary phase, and then experience a sex change to males which is known as the terminal phase. This serves to ensure that reproduction continues in the case that a dominant male is lost.

REPRODUCTION. Breeding can take place year round and it tends to occur mostly during mornings. Gametes are released in the water by the female for external fertilization by the male. This is known as aggregated spawning where the individual rushes upward to release either sperm or eggs at the peak of the upward dash. Eggs may be up to 1mm in diameter, spherical and buoyant. Larvae hatch after about 25 hours (FMNH, 2015).

APPLIED ECOLOGY. There are no major known threats to this species, it occurs in several marine protected areas in its widespread distribution. The IUCN listed the species as of least concern with the most recent update (Rocha et al., 2012). There are no conservation measures in place specifically for this species. In Bermuda, fisheries for parrotfishes are closed permanently. Parrotfish are famous for their intriguing colours and are a favourite in aquarium show tanks. These fishes also serve as a major attraction for coral reef visitors.

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Fig. 2. Redband parrotfish male colours.

[http://media.eol.org/content/2015/01/18/00/81005_orig.jpg, downloaded 10 March 2016]

Fig. 3. Redband parrotfish juvenile.

[http://www.puravidadivers.com/reef-fish-count-in-west-palm-beach-florida/juvenile-redband-parrotfish-sparisoma-aurofrenatum, downloaded 10 March 2016]

Fig. 4. Redband parrotfish geographic distribution map.

[http://fishbase.org/images/aquamaps/native/pic_Fis-30665.jpg, downloaded 10 March 2016]