Cryptotomus roseus (Slender Parrotfish)

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

Fig. 1. Slender parrotfish, *Cryptotomus roseus*.

[http://www.inaturalist.org/taxa/98731-Cryptotomus-roseus, downloaded 9 March 2016]

TRAITS. Slender or bluelip parrotfish are protogynous hermaphrodites, changing their sex initially from female (known as the initial phase) to male (known as the terminal phase). In the initial phase, they exhibit a muted colouration of red, grey or brown tones, and in the terminal phase, they display the bright colours that the family Scaridae is known for, with an olive appearance interspersed with pink dots throughout the total length, and a lateral salmon stripe dotted with green spots (Fig. 1). Juveniles feature more drab shades of grey or brown, although there is known to be extensive colour variation among individuals of the same sex and phase, as is common in most species of parrotfish (Lieske and Myers, 1999). *Cryptotomus roseus* is the smallest species of the family Scaridae, reaching 13 cm in total length. The body is thin and long with large eyes. They have a trademark beak-like jaw, with the jaw teeth fused at the base and a pharyngeal apparatus present in the throat, which acts as a secondary jaw. The pelvic fins are short, and the anal fins and dorsal fins are relatively long, with the caudal peduncle being short and narrow. 13 pectoral fin rays, 10 dorsal fin rays, and 9 anal fin rays are present (Froese and Pauly, 2015).

DISTRIBUTION. Slender parrotfish are found mainly in coral reefs. They are native to the warm coastal waters of the Caribbean Sea, and in the Gulf of Mexico. They can also be found along the coast of South Carolina and Florida, and on the Atlantic coast of many Caribbean Islands and Brazil (Fig. 2). They are also native to Trinidad and Tobago (IUCN Red List, 2016).

HABITAT AND ACTIVITY. Slender parrotfish are demersal, living near the sea floor in clear, shallow waters, where seagrass beds and macroalgae occur (Fig. 3). They also reside around coral rubble and stands of gorgonians in coral reefs, at depths of 30m, and at optimal temperatures of 23-27°C. On coral reefs they, along with other species of parrotfish, can comprise most of the fish biomass. They are active during the day, and operate in schools, feeding on seagrass and algal-coated coral. They, and others of the family Scaridae, are responsible for creating much of the sediment on the sea floor around reefs, by grinding bits of coral in their food, using their pharyngeal apparatus (Encyclopedia of Life, 2016).

FOOD AND FEEDING. Slender parrotfish are herbivorous, diurnal (day-time) feeders, feeding mainly on seagrasses such as *Thalassia*. They also graze for algae covering coral and pulverise coral fragments as they feed, helping to create the considerable coral rubble on the reef floor. They are primary consumers, and have few predators (Westneat, 2002).

POPULATION ECOLOGY. *Cryptotomus roseus* have been found to be uncommon in their habitats, though they are widely dispersed in the Caribbean and Brazil (Robertson and Warner, 1978). Along the southeast Brazilian coast, Underwater Visual Census have indicated densities in shallow reefs of 0.3-0.5 individuals per 40 m^2. At the extreme southern end of this range, even lower densities of 0.1 individuals per 40 m^2 were recorded. They typically forage in schools. Currently, little information is known about population parameters (IUCN Red List, 2016).

REPRODUCTION. *Cryptotomus roseus* is a monandric species, with larvae (Fig. 4) growing into juvenile and adult females, but a certain percentage then changing into terminal phase males. They have a total length of 5.7cm at sex change. Breeding has been found to take place in the early afternoon, and terminal phase males become aggressive to each other. They form leks, gathering together to showcase displays to attract females (inaturalist, 2016). The terminal phase males have been observed to pair with a smaller female for spawning, or court entire schools of females. No parental care has been observed (Westneat, 2002). Breeding occurs year-round, but many females have been shown to have inactive ovaries, indicating that they do not continuously produce eggs (Robertson and Warner, 1978).

BEHAVIOUR. No strong signs of territoriality by terminal phase individuals have been observed. Initial phase fish moved in pairs or schools of about a dozen individuals during the day, grazing for food, and a terminal phase fish may be present in some groups (Robertson and Warner, 1978). Although slender parrotfish do not have many predators, at night they bury themselves in the sand and secrete a mucous cocoon over their body from mucous glands in the gills as a defensive mechanism against moray eels or reef sharks, while they sleep (Encyclopedia of Life, 2016).

APPLIED ECOLOGY. As of 2012, The International Union for the Conservation of Nature (IUCN) has listed the species *Cryptotomus roseus* under the category of "Least Concern." There

are no major threats to this particular species, except for the loss of habitat that may occur as a result of degraded coral reefs. Little is known about the levels of harvesting, but slender parrotfish are less prized than other species of the family Scaridae for use in aquariums, possibly due to its small comparative size (IUCN Red List, 2016). They are also not typically marketed for food (Westneat, 2002). Additionally, they are harmless to humans, and are not involved in any human diseases. No conservation measures are operational for this particular species, however their habitats are found in many Marine Protected Areas in the Caribbean Sea, The Gulf of Mexico, and Brazil (IUCN Red List, 2016).

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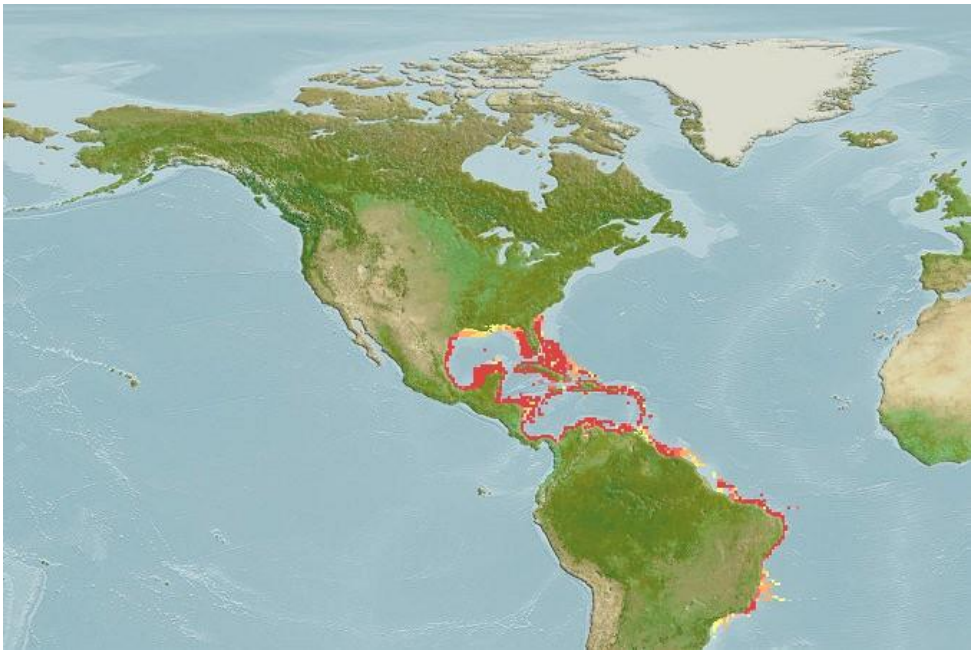

Fig. 2. Slender parrotfish geographic distribution.

[http://www.obis.org.au/cgi-bin/cs_map.pl, downloaded 7 March 2016]

Fig. 3. *Cryptotomus roseus* are demersal, inhabiting seagrass beds.

[http://www.doppstein.com/ceramic_arts/frontpages/travels/anguilla07/fish/pages/Bluelip%20Parrotfish%20c.htm, downloaded 5 March 2016]

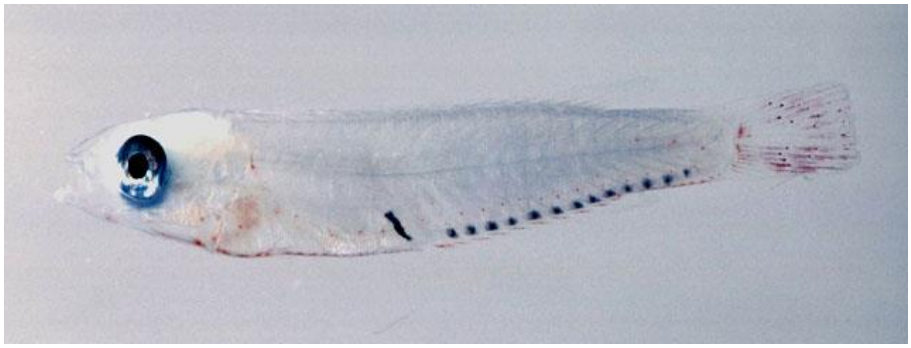

Fig. 4. Larval stage of *Cryptotomus roseus*.

[http://fishbase.org/photos/PicturesSummary.php?ID=3674&what=larvegg, downloaded 6 March 2016]