

Scarus taeniopterus (Princess Parrotfish)

Family: Scaridae (Parrotfish)

Order: Perciformes (Perch and Allied Fish)

Class: Actinopterygii (Ray-finned Fish)



Fig. 1. Princess parrotfish, *Scarus taeniopterus*.

[<http://www.wetwebmedia.com/pix%20of%20the%20day%20marine/POTD%20SW%20Arch%20361-390/swpotd%20368.htm>, downloaded 28 March 2015]

TRAITS. Maximum size of both males and females is 30cm. The teeth of the princess parrotfish are fused to create a pair of plates similar to a beak, when the mouth is closed the upper and lower dental plates overlap. There are about 40-52 gill rakers. The caudal fin has a slightly rounded shape. They normally have about 7 pre-dorsal scales, 3 rows of scales on each cheek and 6-8 in the first body row. In terms of colour the initial phase parrotfish possess 3 dark brown stripes and whitish stripes alternating, the first along the back and the lowermost stripe passes through pectoral-fin base. Terminal phase parrotfish males have a blue-green and orange colour along with a broad pale yellowish stripe anteriorly on body beneath pectoral fin. Typically on the head there are two narrow blue-green stripes, one that passes through the upper and the other one through the lower part of the eye (Fig. 1).

DISTRIBUTION. Princess parrotfishes typically exist in and around coral reefs in Bermuda, the eastern Gulf of Mexico, the Bahamas, southern Florida and throughout the Caribbean.

HABITAT AND ACTIVITY. Princess parrotfish behaviour is similar to that of other species of parrotfishes, meaning that at depth of about 3-25m they move around the coral reefs. They are considered to be mostly herbivorous, moving in groups to feed on algal mats and the reef. Their grinding teeth are used to grind corals to obtain the algae-filled polyps within. A large portion of sand in the parrotfish's home range constitutes of the ground-up, undigested coral they excrete. Morning and evening migration take place repeatedly along narrowly defined routes. They usually leave at first light and return at dawn. There is evidence that the same fishes rest in the same schools day after day and may feed together night after night.

FOOD AND FEEDING. Although they are herbivores they are not strictly vegetarian as they consume coral polyps. Their feeding activity plays an important role in the process of spreading and manufacturing coral sand in the reef environment, and normally prevents the coral being suffocated due to the presence of algae. Continuous growth takes place in the parrotfish teeth as they are worn away from feeding. Certain parts of the rocks can be broken down by the digestive system of the parrotfish, the remainder is excreted as sand, which has an impact on the formation of certain small islands in the Caribbean and the accompanying beach. On average a parrotfish is able to excrete about 90kg of sand a year.

POPULATION ECOLOGY. Parrotfishes are generally sedentary with respect to territoriality and home range behaviour patterns. Home ranges may be defended, however territoriality may be abandoned for clustering behaviour periodically to keep predators away. They are utterly dependent upon the reef for food and shelter from predators, and this selection is heavily against wandering. Most parrotfishes tend to live to about 5 years on average.

REPRODUCTION. There are two types of males, primary and secondary. Primary males are those males born male, however secondary males are females that have become male by undergoing a change in sex. Individual parrotfishes go through three separate stages, which differ by colour and sexual maturity. The first phase consists of juveniles which are of dull colour and have not reached sexual maturity. The initial phase (IP) is the second phase, which includes females and males that cannot be differentiated without actually examining them internally. Terminal phase (TP) is made up of mature males; they display bright colours. These TP males typically dominate reproduction. When a TP male dies this normally signals an IP female to undergo changes in behaviour and sex. The IP males display what is known as 'sneak spawning' by infiltrating the harem of a TP male by pretending to be a female. The IP male follows the spawning pair while releasing a mist of sperm into the water column during the peak time for mating thus attempting to overwhelm fertilization by the TP male, as IP males are able to produce more sperm.

BEHAVIOUR. Males typically become brighter in colour while defending territory, suggesting that visual prompts are used to frighten competitors. Parrotfishes typically spawn year round. This species typically migrates to the fringes of their coral habitat in order to spawn. Spawning can relate to the lunar cycle as it affects tidal levels, as it has been ascertained that high tide is preferred for spawning. TP males rely on aggressive behaviour in order to spawn and IP males

are capable of 'sneak spawning.' Aggressive behaviour by males is usually marked by brightening of the colouration.

APPLIED ECOLOGY. The princess parrotfish has a Least Concern (LC) ranking in the IUCN. Therefore this body does not consider the survival of the species to be in any great danger for the moment. They are harvested at reefs by fishermen for sale at markets for subsistence, and are also captured to be sold as pets to be kept in aquariums.

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Author: Joshua Williams

Posted online: 2015