

Scorpaenodes caribbaeus (Reef Scorpionfish)

Family: Scorpaenidae (Scorpionfish)

Order: Scorpaeniformes (Mail-cheeked Fish)

Class: Actinopterygii (Ray-finned Fish)



Fig. 1. Reef scorpionfish, *Scorpaenodes caribbaeus*.

[http://www.reef.org/reef_files/enews/ReefScorpionfish_dominica10.jpg, downloaded 22nd March 2015]

TRAITS. The reef scorpionfish possesses a bony body with several poisonous or venomous spines protruding from the top of its back. The spines are coated with a special type of mucus which contains the toxin itself (Wikipedia, 2014). The toxins are produced in specialised venom sacs situated in grooves under the fins. This species also has several small tassels which extend from the head as well as multiple specks and small warts throughout the body of the fish which aid in camouflage since they give the appearance of an uneven coloured surface matching the direct environment the animal is in. The fish has broad fins in a fan like configuration. It has a terminal mouth with maxilla extending past the eye. It possesses small teeth arranged in narrow

bands within the mouth. The tail of the fish is relatively short with respect to its body size however it is heavily notched. The size of a mature reef scorpionfish ranges from 17-35cm with an average weight of 1-1.5kg (Love et al., 1987).

DISTRIBUTION. The reef scorpionfish has a geographical distribution including Northern South America, Bahamas to Panama, Western and Southern Caribbean and the Antilles (Fig. 2).

HABITAT AND ACTIVITY. The reef scorpionfish is found in tropical reefs and rocky crevices, meaning they live in relatively shallow water, between 5-55m in depth, where there is high visibility, hence why camouflage is imperative for this species. They are nocturnal fishes and will therefore spend the majority of the day resting, hidden in between coral. During the night time, they will hunt small fishes from those very spots, catching them by surprise. They are an omnivorous species, usually hunting small fish, aquatic snails and small crustaceans. In most cases the scorpion fish will be the most dominant predator in its environment, hence not having many predators. This allows the scorpionfish to quickly attack and eat the unsuspecting prey. This species is solitary in nature, with individuals being alone except for when they pair up during the mating season.

FOOD AND FEEDING. The reef scorpionfish is very good at camouflage and hence implements this technique as an imperative part of its hunting arsenal. This species will feed mostly on small fish by remaining motionless in between rocky crevices or in coral. Due to its superior camouflage the reef scorpionfish is not seen by smaller fish seeking food or shelter making them the ideal food source. This can attribute to the fact that over 65% of the species' food source is small herbivorous fish, with the remaining coming mostly from aquatic snails and small crustaceans. The mechanism of feeding employed by the fish is not very intricate, it occurs as follows. The scorpionfish will remain motionless and camouflaged, unseen by the smaller fishes, when a prey comes by the predator will vacuum suck the prey towards itself, which is then eaten using the narrow row to teeth within the mouth. Due to this pattern of feeding this species is considered an ambush predator since the fish needs to stealthily get into striking distance before they can attack.

POPULATION ECOLOGY. The reef scorpionfish is a solitary nocturnal ambush predator, therefore the fish will be found by itself and will rarely ever be found in groups. The only period that pairs of fish of this species can be seen is during mating season, which is discussed in the Reproduction section. Their solitary behaviour can be attributed to the way they hunt and acquire food, that is by individually ambushing prey and hiding in coral, hence having schools of these fish hunting together may make it more difficult to single out prey and will require a complete change in feeding behaviour (Love et al., 1987). The lifespan of individuals of this species ranges between 10-15 years.

REPRODUCTION. Mating season for the reef scorpionfish occurs between May and June, when the waters are warm. This species is oviparous, meaning they reproduce through laying eggs. The female fish will release on average between 2000 and 15000 eggs directly into the water, immediately after the male reef scorpionfish will release sperm cells into the water, thus fertilizing the eggs. The pair of fish will then hide, not to draw suspicion to their eggs by predators, the transparent eggs then float to the surface (Clotherier, 1950). Within two days the eggs hatch with the fry remaining close to the surface until they become over an inch in size after

which they return to the coral reef beneath where they will begin their solitary journey, with no further parental input.

BEHAVIOUR. The majority of the reef scorpionfish's juvenile life is spent hiding among coral and rocky crevices and ambushing prey from within protection (Greenfield, 1974). This is done since although this species does not have many natural predators, the relative size of the juvenile fish make them vulnerable prey for bigger carnivorous or omnivorous fish. This species uses its poisonous spines to protect itself from predators. Due to the fact that these fishes are solitary creatures, not much is known about the communication between individuals apart from when pairs interact during mating.

APPLIED ECOLOGY. The reef scorpionfish is not on any endangered species list nor is it considered to be a vulnerable species. This being said however the relative numbers of this fish has seen decline in the last few decades as although the species has no real natural predators, many fish are caught by humans for sale as exotic aquarium fish. This is very evident in the species population located between the Coast of Florida and the Bahamas, with heavy fishing and habitat destruction leading to reduced numbers (Love et al., 1987).

REFERENCES

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Fig. 2. Geographical distribution of reef scorpionfish.

[<http://www.fishbase.org/summary/3946>, downloaded 23 April 2015]

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