

Holocentrus rufus (Longspine Squirrelfish)

Family: Holocentridae (Squirrelfish)

Order: Beryciformes (Night Fish)

Class: Actinopterygii (Ray-finned Fish)



Fig. 1. Longspine squirrelfish, *Holocentrus rufus*.

[<http://www.ryanphotographic.com/holocentridae.htm>, downloaded 27 March 2015]

TRAITS. The longspine squirrelfish is a beautiful, brightly coloured species. The body accentuates its charming silvery-red, irregular, thorny scales and its golden orange stripes from head to tail (Fig. 1). They have a streamlined body with a distinctive dorsal fin jutting up at the rear end, with a white spot located at the top of each dorsal spine (McGinley, 2009). The longspine squirrelfish usually ranges from 12-25cm in length (McGinley, 2009). This species has a relatively large eye. There are no clear distinctions between male and female longspine squirrelfish.

DISTRIBUTION. They are distributed along the south-eastern coast of the United States to northern South America and Brazil (McGinley, 2009). They inhabit shallow coral reefs in the Caribbean for example Trinidad and Tobago and Bermuda.

HABITAT AND ACTIVITY. The longspine squirrelfish could be found close to or in dark crevices in coral and stony reefs in warm tropical waters at depths of up to 100m (Fig. 2). They are most commonly at depths of 30-70m, and are rare in shallow waters. *Holocentrus rufus* is a nocturnal fish and remains in holes or caves in the reef structure during daylight (Luczkovich and Kevsenkothen, 2007). During the night, the longspine squirrelfish comes out of the dark crevices and moves to the sea bed where there is a highly diverse ecosystem and it can hunt its prey. They are territorial over their crevices and do not share them with another fish of the same species. These medium-sized fish are attacked by predators that are greater in size so they maintain a group ranging from 8-10 individuals when active at night.

FOOD AND FEEDING. *Holocentrus rufus* are totally carnivorous, and are nocturnal feeders (McGinley, 2009). They have very large eyes for the maximum use of ambient light and small teeth so they digest prey whole. These benthic feeders come out at night rummaging through dead and decaying matter for their food. They feed mainly on zoobenthos (bottom-living animals) such as crustaceans and molluscs found on the sea bed.

POPULATION ECOLOGY. The longspine squirrelfish usually moves in schools of 8-10 individuals (Fig. 3). They are territorial and defend their retreats from conspecifics. *Holocentrus rufus* is slow in developing and has a fairly long lifespan.

REPRODUCTION. The longspine squirrelfish has an extraordinary life cycle. They have two mating seasons per year and have a composite life cycle, with a pelagic stage and a benthic stage (Lamar University, 2015). They reproduce by external fertilization and do not show any parental care. During January through March and again in fall, the female longspine squirrelfish deposits its eggs and the male deposits its sperm into the water where fertilisation takes place (Lamar University, 2015). After a period of time the egg developed into different larval stages. The rhynchichthys stage are thin and silvery, with five spines at the front (rostral) and on the operculum and head, as in other squirrelfish (Fig. 4). The rhynchichthys further develops into the next pelagic stage the meeki, with less noticeable spines and more streamlined. The silvery pelagic larvae change into the benthic juvenile stage when the necessary conditions are acceptable (De Kluijver et al., 2015). Afterwards the body colour is rapidly changed from silvery to orange and the longspine squirrelfish is developed.

BEHAVIOUR. The longspine squirrelfish uses different methods in protecting itself and its habitat. It uses various sounds called grunts and staccatos, produced by their swim bladders, to safeguard itself from predators (Winn et al., 1964). These vocalizations have a frequency of 75-600Hz and are loud enough to signal an alarm that an intruder is around (Luczkovich and Kevsenkothen, 2007). These beautifully coloured fish do not only use calls to protect themselves from intruders but for courtship in the mating season.

APPLIED ECOLOGY. The longspine squirrelfish is not listed by IUCN because there are not any threats to their population. However, the longspine squirrelfish is an edible dish for humans but it is rarely eaten because of its medium sized body which has little value (Mc Ginley, 2009). Rather, they have other commercial uses and are kept as pets in aquariums because of their unique brightly coloured body and their interestingly large eyes. They do not pose any threat to human beings.

REFERENCES

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Fig. 2. Longspine squirrelfish by the crevice of a coral reef.

[<http://robertzoble.com/Squirrelfish.html>, downloaded 20 May 2015]



Fig. 3. Longspine squirrelfish in typical group of about 10 individuals.

[<http://www.phoriginal.com/images/tektite/Tektite%20Longspine%20Squirrelfish%20sm.jpg>, downloaded 29 March 2015]

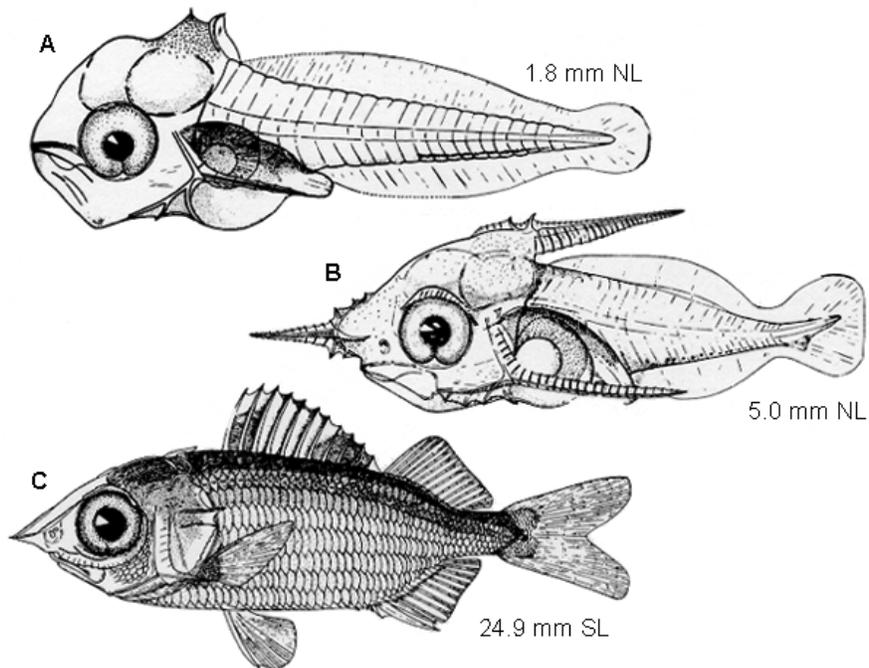


Fig. 4. Larvae and juvenile of a squirrelfish (dusky squirrelfish - *Sargocentron vexillarium*).

[<http://www.fishbase.org/photos/PicturesSummary.php?ID=3251&what=larvegg>, downloaded 20 May 2015]

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