

Labrisomus nuchipinnis (Hairy Blenny)

Family: Labrisomidae (Blennies)

Order: Perciformes (Perch and Allied Fish)

Class: Actinopterygii (Ray-finned Fish)



Fig. 1. Hairy blenny, *Labrisomus nuchipinnis*.

[<http://www.fishbase.org/photos/PicturesSummary.php?ID=3735&what=species>, downloaded 10 March 2017]

TRAITS. *Labrisomus nuchipinnis* is a marine fish up to 23cm in length (Robins and Ray, 1986). These fish possess a total of 11-13 dorsal soft rays, 18-19 dorsal spines, 18-19 anal soft rays, and 2 anal spines. Each side of the upper posterior part of the head has a transverse row of cirri (projections). There is a black spot with a pale edge on the operculum, and a dark spot in front of the dorsal fin in most fish. The body has four irregular dark brown bars (Fig. 1). Males are characterised by a red colour on the chest, abdomen and lower part of the head (Randall, 1996). Females may appear with a spotted body pattern. The eyes are large and bulging, with courtship behaviour facilitating colour changes to attract a mate.

DISTRIBUTION. Widely distributed along the coast of the western Atlantic (Fig. 2), *L. nuchipinnis* can be found in the Bahamas, Florida, the Gulf of Mexico, Bermuda and the Caribbean

(Cervigón, 1994). They can also be found along the eastern Atlantic, along the coast of West Africa to Guinea.

HABITAT AND ACTIVITY. *Labrisomus nuchipinnis* is non-migratory and dwells at the bottom of shallow waters (Cervigón, 1994). They are diurnal, meaning active during the day. They prefer areas such as reefs, seagrass beds, rocky and rubble shores with algal mats, often found sheltering in crevices or holes. They are reef-associated carnivores preying on other aquatic animals, primarily gastropods and crustaceans, but also fish, sea urchins, polychaete worms and brittle stars (Randall 1996). *L. nuchipinnis* can be found at depths of 5-10m and a temperature range of 22.1-28.5°C (Gibran et al., 2004). If their habitat is disrupted, they may move to a new location quickly.

FOOD AND FEEDING. Based on studies done by Sazima (1985), *L. nuchipinnis* have been shown to utilise a sedentary feeding strategy. Specifically, they have been classed as sit-and-wait predators which is suited to their benthic lifestyle. This strategy is carried out in the form of an ambush, as the fish remains motionless, waiting on the arrival of its prey. Once its prey arrives the fish quickly launches toward it from close quarters. Furthermore, they may adjust their colour pattern to better camouflage with their surrounding environment. This improves their ability to capture their prey, as well as evade predators.

POPULATION ECOLOGY. Adult males of *L. nuchipinnis* are territorial, whereas the larvae are pelagic, eventually settling to the bottom when they enter the juvenile stage. The population of *L. nuchipinnis* may be locally abundant (Humann and DeLoach, 2002). According to Smith (1997), in the Caribbean they are the predominant species of Labrisomid.

REPRODUCTION. These fish are oviparous and spawn in territories. *L. nuchipinnis* reproduces all year but rates of reproduction are elevated during the summer. The eggs are demersal and adhere to the side of rocks covered in algae. Prior to adhesion these rocks are cleaned by the males. The eggs are defended by the males as the females are driven away in a display of paternal care. The males are especially territorial, guarding the nests that contain eggs and may display polygamous activity.

BEHAVIOUR. Courtship: The reproductive success of *L. nuchipinnis* is dependent on successful courtship (Gibran et al., 2004). The mating of *L. nuchipinnis* occurs in a repeated cycle of three events known as the mating cycle (Fig. 3). The first stage of courtship is attraction and identification at which point the red-cheeked male is positioned perpendicularly to a female. This occurs over a rocky area known as the spawning site. The next stage is arousal and appeasement which is initiated by the females (Fig. 4). The female moves along the male and nudges the upper side of his head 2-3 times. The male reciprocates this action and the both move to better position themselves above the spawning site. The final stage is known as synchrony wherein the male remains perpendicular to the female, biting the sides of her body as well as her dorsal fin and upper body (Gibran et al., 2004). The male may also use his tail to rub her body laterally and he does this while she rubs the rocky wall of the spawning site. As she does this her body quivers and maintains an erect dorsal fin while her anal fin shakes. These actions allow the eggs and sperm to be released resulting in fertilization. At this point mating has been a success.

Parental care: In the case of *L. nuchipinnis* there is a reversal of sexual roles. After the mating display the male carries out “nest-fanning”, the female is driven out of the spawning site

by the male who follows by swimming over the site without touching it. While he does this, he flaps his pectoral fins in an action described as fanning the nest (Gibran et al., 2004). Subsequently, the male swims around the rock where the eggs are laid in an action termed “nest patrolling”. The male swims in a circular route, protecting the nest from the possible attack of other fish. After this is completed, he returns to the original mating pointing where the female is waiting. The cycle then restarts after a short break. The average time taken for the mating cycle is 65 seconds, shorter in polygamous situations as there is no break following return from patrol (Gibran et al., 2004).

APPLIED ECOLOGY. This species has a wide distribution, with an estimated large population. In addition it faces no known major threats. For these reasons it has been listed as Least Concern (IUCN, 2017). The species is not a threat to humans and is used commercially as aquarium pets.

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Author: Joshua T. Laborde

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Fig. 2. Occurrence of *Labrisomus nuchippinnis*: red shows maximum probability.

[http://www.aquamaps.org/receive.php?type_of_map=regular, downloaded 10 March 2017]

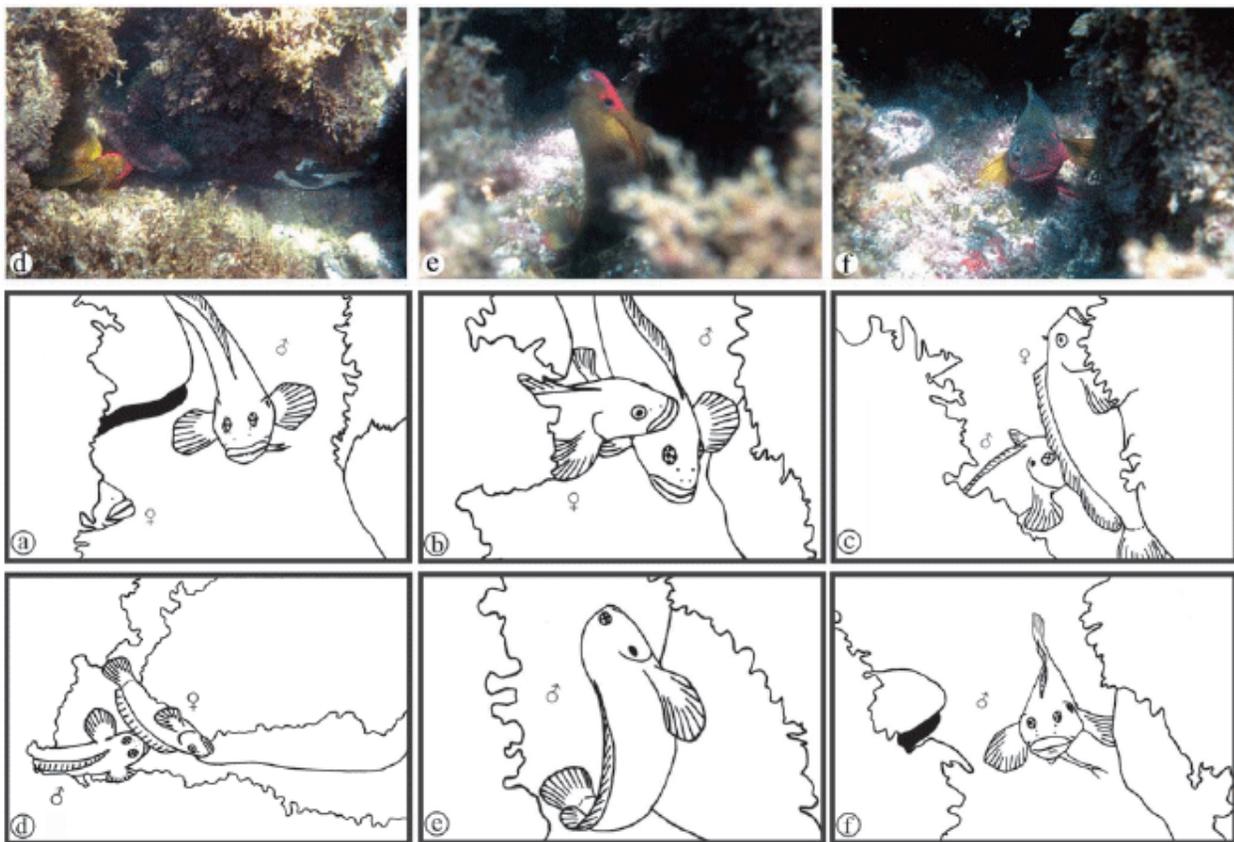


Fig. 3. Mating cycle of *Labrisomus nuchippinnis*.

[<http://www.scielo.br/img/revistas/ni/v2n3/html/a09fig01.html>, downloaded 10 March 2017]



Fig. 4. Male (left) and female (right) *L. nuchipinnis* during the arousal stage.

[<http://www.reef.org/enews/articles/visit-reef-discussion-forum-today>, downloaded 10 March 2017]

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