

## *Xyrichtys novacula* (Pearly Razorfish)

Family: Labridae (Wrasses)

Order: Perciformes (Perch and Allied Fish)

Class: Actinopterygii (Ray-finned Fish)



**Fig. 1.** Pearly razorfish, *Xyrichtys novacula*.

[<http://www.fishbase.org/summary/4581>, downloaded 12 March 2017]

**TRAITS.** The pearly razorfish *Xyrichtys novacula* is pale green in colour, and their bodies usually have no conspicuous markings (Fig. 1). The total length of females ranges from 10-18cm while males range from 15-20cm. They usually have 9 dorsal spines, 12 dorsal soft rays, 3 anal spines and 12 anal soft rays. It is an elongate fish with the front of its head having a sharp edge, due to its snout being blunt (Smith, 1997). Its head has a faint pattern of alternating light orange and light blue vertical lines (Randall, 1996).

**DISTRIBUTION.** The species can be found over a large area of the western Atlantic from North Carolina, USA, to Brazil, including the northern part of the Gulf of Mexico and some parts of the Caribbean (Fig. 2). The species can also be found in the eastern Atlantic from France to Angola, including the Mediterranean Sea and the Canary Islands and Azores (Robins, 1986).

**HABITAT AND ACTIVITY.** The species inhabits clear, marine waters that are shallow, and can be found near coral reefs and seagrass beds (Schneider, 1990). However, they can also be found living in waters up to 90m in depth (Golani et al., 2006). They are known to make use of coral debris to build their nests. (Gomon, 1978). The species is more active during the daytime

and less active at night, when they bury themselves in the sand. According to Cardinale et al. (1998), the species in the eastern Atlantic tends to stay buried in the sand during cold periods.

**FOOD AND FEEDING.** *X. novacula* preys mainly on benthic organisms. Its main sources of food are molluscs, shrimps and crabs (Gomon, 1978). The stomachs of *X. novacula* that were collected at Capo d'Orlando showed that their main prey were bivalves, especially the species *Acanthocardia tuberculata*. Juveniles were found to feed on smaller, more vulnerable prey while adults predated on larger prey (Castriota, 2005).

**POPULATION ECOLOGY.** The species' populations are considered to be stable since they are common throughout most areas they inhabit. The species is also fished commercially (Pollard, 2010). They are solitary fish that can sometimes be found in small groups (Golani et al., 2006). *X. novacula* shows territoriality during spawning seasons only, when males need to defend their territory against other males. It is also a harem species in which females mate with dominant males (Cardinale et al., 1998).

**REPRODUCTION.** *X. novacula* is a protogynous hermaphrodite, in which 10% of the population are primary males and begin life as males. The other 90% are females, which may change into males when they grow large (Cardinale et al., 1998). Females lay eggs which are then fertilised by males that release their sperm over the eggs. The sex change can be identified by a change in length of the pelvic fin, change in coloration and head shape. In the eastern Atlantic, the spawning season usually begins in August and ends in October (Cardinale et al., 1998). Dominant males tend to choose females that are larger and older based on their coloration pattern, because larger females result in increased fecundity. The size of males has a direct result on mating as size dictates which males become the dominant, breeding ones (Cardinale et al., 1998).

**BEHAVIOUR.** This species is solitary but can live in small groups. When threatened, they burrow head first in the sand (Gomon, 1978). Dominant males tend to be more territorial since they have to defend mating females, and resources needed by those females, from other males in their territory (Cardinale et al., 1998).

**APPLIED ECOLOGY.** According to the IUCN Red List, *Xyrichtys novacula* is listed under Least Concern since the species can be found in many areas in the eastern and western Atlantic regions and throughout the Mediterranean Sea, with a stable population (Pollard et al., 2010).

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Posted online: 2017



**Fig. 2.** Geographic distribution of the pearly razorfish.

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