

Bodianus rufus (Spanish Hogfish)

Family: Labridae (Wrasses)

Order: Perciformes (Perch and Allied Fish)

Class: Actinopterygii (Ray-finned Fish)



Fig. 1. Spanish hogfish, *Bodianus rufus*.

[<http://www.100fishid.com/#!/master-test/c1pwt>, downloaded 2 March 2016]

TRAITS. The Spanish hogfish is a slender fish with an appealing coloration as its body is mainly yellow with either a purple or blue highlight (McGinley, 2011) on the upper side of the body (Fig. 1). In shallow water this species adapts a blue upper body and in deep water a red upper body is seen (Smith, 1997). This species ranges from 20-40cm in length (McGinley, 2011) and is covered by large scales. The Spanish hogfish has a slimy outer layer of mucus which provides a protection against infection and parasites (Spanish Hogfish, 2016). Males are larger than females. This species exhibits sequential hermaphroditism which is the ability to change sex at some point in the fish's life span. When a dominant male fish dies in a harem, the largest female fish will change sex (Hoffman et al., 1985).

DISTRIBUTION. Spanish hogfish are found in the western Atlantic from Bermuda and southern Florida to the Gulf of Mexico and Caribbean Sea, to southern Brazil (Fig. 2). The species is native to Trinidad and Tobago (Xie and Russell, 2010).

HABITAT AND ACTIVITY. Spanish hogfish are diurnal (active in the daytime) (Reebs, 2002), and mainly inhabit tropical shallow waters in particular coral or rock reefs with depth of 1-70m as well as algae-covered reefs and seagrass meadows (Xie and Russell, 2010). A study in Panama showed that juveniles had a certain amount of habitat specificity, they were found near large coral heads such as *Monastrea cavernosa*, where they act as cleaners (Xie and Russell, 2010).

FOOD AND FEEDING. The Spanish hogfish is an omnivore (McGinley, 2011). The adult fish eat prey including molluscs, for example snails, mussels and squid, crustaceans, for example *Mysis* and brine shrimp, echinoderms such as brittle stars and sea urchins, worms, and small fish (Xie and Russell, 2010). This species uses its powerful jaws and anterior canine teeth to crush hard shells from meals such as snails (Bester, 2013). The juveniles' diet consists mainly of parasites from their clients' bodies (Bester, 2013).

POPULATION ECOLOGY. *Bodianus rufus* are found in harems with a dominant male guarding and mating with approximately twelve females (Hoffman et al., 1985).

REPRODUCTION. This species is a protogynous hermaphrodite (Bester, 2013), meaning it undergoes a sex change from female to male, which takes up an average of 5.6 days (Hoffman et al., 1985). Spanish hogfish are egg-laying fish; the eggs are pelagic (open-water) and development of larvae is rapid (Bester, 2013). Spawning usually occurs at dusk, and mating takes place all year. Spanish hogfish exhibit no parental care (Hoffman et al., 1985).

BEHAVIOUR. The Spanish hogfish juvenile behaviour is quite different from the adult fish. The juvenile fish act as cleaners and are the most common cleaner fish in the coral reef (Fig. 3) (Xie and Russell, 2010). They remove mucus, diseased tissue, parasites and fungus which is beneficial for other fish including tank mates as the Spanish hogfish is a prime aquarium fish (Bester, 2013). A study in Brazil observed that the Spanish hogfish cleaned three nocturnal fish species during the day; *Rypticus saponaceus*, *Myripristis jacobus* and *Odontoscion dentex* (Coni et al., 2010). Juvenile Spanish hogfish move in circular patterns around coral heads to advertise cleaner services (Wicksten, 1995). The behaviour of the fish changes as they grow in size to about 8cm, this is when they switch their diet to feeding on invertebrates (McGinley, 2011). The mature adult Spanish hogfish is aggressive towards smaller fish.

APPLIED ECOLOGY. It is listed by the IUCN as Least Concern (Xie and Russell, 2010). There are no major threats but exploitation from overfishing, habitat degradation and chemical dispersant used after oil spills are prospective threats (McGinley, 2011). There is minor conservation action specific to the Spanish hogfish but there are no laws in place to control domestic and international trade. Florida State has a law where minimum size is two inches and maximum size is eight inches, for the aquarium trade (Xie and Russell, 2010). In some regions it is used for subsistence consumption however it may cause ciguatera poisoning (Xie and Russell, 2010).

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Fig. 2. Spanish hogfish geographic distribution.

[http://www.aquamaps.org/receive.php?type_of_map=regular downloaded 10 March 2016]



Fig. 3. Juvenile Spanish hogfish acting as a cleaner for a French grunt.

[<http://www.thelivingsea.com/underwater/photos/6114237042/Cleaning-behavior-between-fish.html> downloaded 10 March 2016]

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