

Colomesus psittacus (Banded Puffer)

Family: Tetraodontidae (Pufferfish)

Order: Tetraodontiformes (Pufferfish, Triggerfish and Boxfish)

Class: Actinopterygii (Ray-finned Fish)



Fig. 1. Banded puffer, *Colomesus psittacus*.

[<http://aquariumitaly.blogspot.com/2010/01/colomesus-psittacus.html>, downloaded 9 March 2016]

TRAITS. Fish belonging to the family Tetraodontidae are notable since they hold the smallest vertebrate genome (Neafsey and Palumbi, 2003). Their unique tough skin is commonly covered in small spines. They also possess a dental plate with a joint through the middle, similar to a beak, and a small gill opening in front of the pectoral fin base (Fig. 1). They lack ribs, fin spines and pelvic fins and have a single dorsal and anal fin. They possess the ability to inflate their abdomens using water when alarmed or distressed (Fig. 2) and are capable of generating and gathering toxins, such as tetrodotoxin and saxitoxin found in the gonads, skin and liver. The banded puffer *Colomesus psittacus* reaches maturity at about 18cm and has a yellow back with dark bands, and a pale belly.

DISTRIBUTION. Located primarily in brackish water and coastal marine environments, ranging from Cuba to Brazil (Amaral et al., 2013). The known range for this species is eastwards from the Parque Nacional in Colombia, through the north of Venezuela, the Gulf of Paria and Orinoco Delta, then south through the mouth of the Amazon. Sergipe in southern Brazil reflects the southernmost record of the species, which can also be seen in Caribbean islands, including Trinidad and Tobago and the Bahamas.

HABITAT AND ACTIVITY. *Colomesus psittacus* is a diurnal species (Giarrizzo and Krumme, 2009). They do not occur in schools but rather exist as solitary or in small groups of two or three. It is found resident in creek mangroves and estuaries (Barletta et al., 2005) and can be found commonly over soft bottoms (Uyeno et al., 1983). *Colomesus psittacus* feeds mainly on molluscs and is considered as a carnivorous species. In a mangrove forest of *Avicennia germinans* and *Rhizophora mangle*, this species specifically consumes molluscs and crabs (Krumme et al., 2007).

FOOD AND FEEDING. Lives near the soft bottom and uses its strong jaws to crush molluscs and crustaceans. There is a shift in the diet of *C. psittacus* when it becomes around 18cm in length, signalling maturity. At this point they begin feeding on moving crabs (Brachyura) instead of sessile barnacles (Cirripedia) (Giarrizzo et al., 2010). Crabs are also favoured during drier seasons. *C. psittacus* show maximum foraging at high tide in daylight (Krumme et al., 2007).

POPULATION ECOLOGY. A euryhaline (tolerant of brackish water) species of a solitary nature or occurring in groups of two to three. The banded puffer has the second highest abundance of estuarine species in the lower region of the 'Estuary de Caeté, located in tidal mangrove creeks (Giarrizzo and Krumme, 2009).

REPRODUCTION. Very little information has been published about reproduction in this species, but *Colomesus psittacus* is thought to have relatively continuous reproductive activity in Brazilian mangrove creeks (Giarrizzo and Krumme, 2009).

BEHAVIOUR. During spring tides, the banded puffer was seen at the surface of the flooded mangrove in water no greater than 10 cm deep, foraging for insects and Brachyuran crabs. At times of these surface outings, the dorsal warning coloration functions to keep away predators such as raccoons and egrets. Puffers possess three mechanisms they use to fend off predators: their poisonous nature, ability to inflate (Fig. 2), and black and yellow dorsal markings as warning colours.

APPLIED ECOLOGY. The toxicity of *C. psittacus* limits its use in northern Brazil, but two alternative uses exist for the puffer. Fish may either be caught and filleted and exported to Asia or may be used ornamentally in the Aquarium trade (Aquarium Italy, 2010). Its affiliation with mangroves leads to the inference that there may be population declines in *C. psittacus*, however there are no conclusive population decreases in the species. Over the past 25 years, 25% of mangrove habitat has been lost in the Caribbean (FAO, 2007).

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Fig. 2. Banded puffer defensive display.

[<http://www.abc-sportvissen.be/fotos/fotos-visreizen/sur7.jpg> , downloaded March 10 2015]