

Sphoeroides testudineus (Checkered Puffer)

Family: Tetraodontidae (Pufferfish)

Order: Tetraodontiformes (Pufferfish, Triggerfish and Boxfish)

Class: Actinopterygii (Ray-finned Fish)

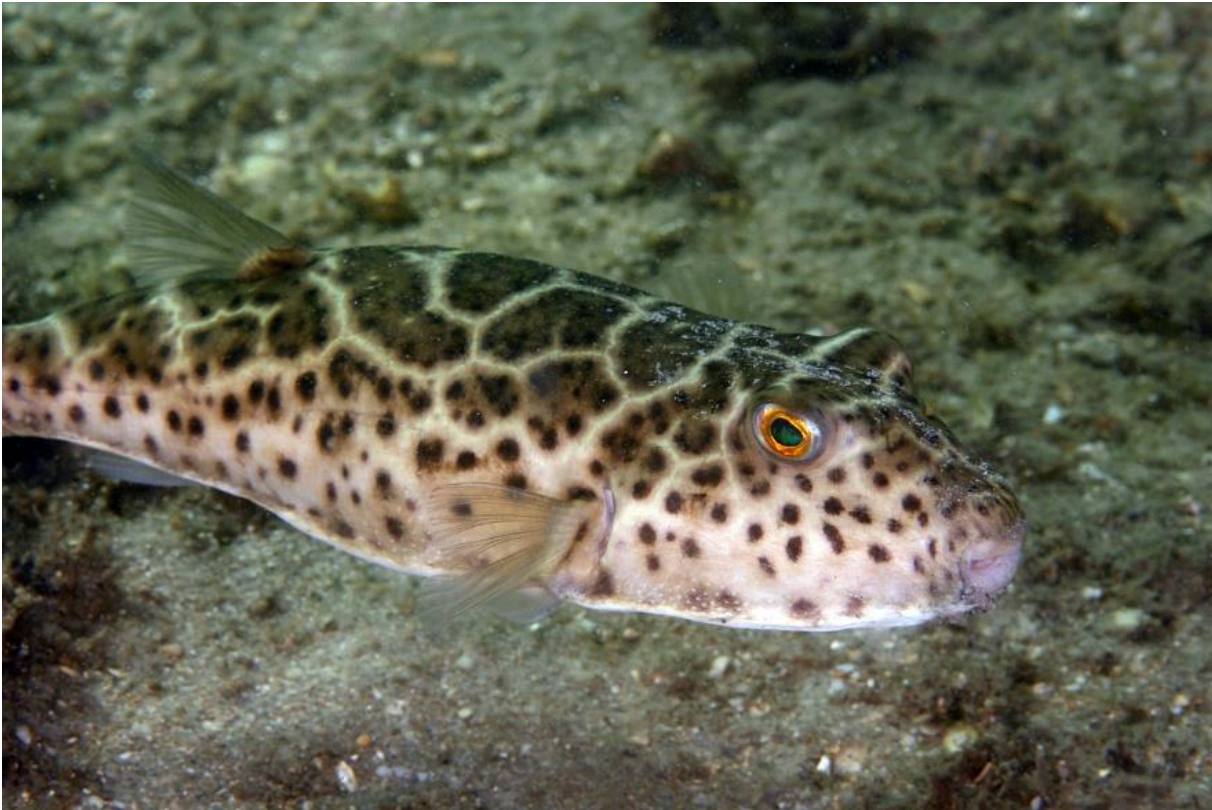


Fig. 1. Checkered puffer, *Sphoeroides testudineus*.

[<https://www.flickr.com/photos/mentalblock/11696796066/in/photostream/>, downloaded 2 March 2016]

TRAITS. *Sphoeroides testudineus*, or the checkered puffer, owes its name to its unique ability to “puff up” or inflate itself with air or water when threatened. As suggested by its family name Tetraodontidae, meaning “four teeth”, the checkered puffer has four tooth plates, two on top and two on the bottom, forming a strong beak-like mouth, useful for cracking the shells of prey (Carpenter, 2002). Colour is tan to yellowish, with distinct whitish lines forming a web-like network on the back. These lines surround olive green to brown areas along the length of the back, resembling a turtle shell pattern, giving the species name (Fig. 1). There are dark bands on the caudal fin, a whitish underside, and prickles on the back and underside. Fin morphology: no anal or dorsal spines, 7 anal soft rays, 8 dorsal soft rays. Length usually 10-18cm, maximum 38.8cm and 400g. This puffer is highly poisonous; contains toxins in organs such as the skin, intestines, liver and reproductive organs, making it dangerous to consume.

DISTRIBUTION. Occurs from the western Atlantic coasts of Rhode Island (USA) to the southern Gulf of Mexico (Robins and Ray, 1986), throughout the Caribbean to the south-eastern coast of Brazil (Targett, 1978). It is native to Trinidad and Tobago (IUCN, 2016).

HABITAT AND ACTIVITY. Very tolerant to a wide range of salinities, allowing for a very diverse range of habitats. *Sphoeroides testudineus* inhabits shallow marine to brackish waters, commonly at depths of 1-12m, temperature range 22-27°C. Occurs over soft bottoms, such as silt and sand. Found in bays, tidal creeks, seagrass beds, mangrove swamps and on the periphery of fresh water areas (Figueiredo and Menezes, 2000). In a Honduran mangrove swamp it was found that they spent about 60% of the time resting, protected by the surrounding network of mangrove roots.

FOOD AND FEEDING. Checkered puffers are voracious predators. Like other members of the Tetraodontidae family, the trophic strategy of this fish is to use its beak-like jaw and strong tooth plates to crush the hard shells of its prey. Juveniles and adults mostly feed on gastropods, bivalves and crabs, although the diet gradually becomes more crab and bivalve dominant with an increase in size. The diet can range from amphipods, isopods and hermit crabs, to sipunculids, tunicates and barnacles as well as seagrass and detritus. This species is aggressive, and may restrict the feeding ranges of other members of the genus by competitive exclusion (Targett, 1978).

POPULATION ECOLOGY. The checkered puffer is one of the most abundant fish species in mangrove areas and along estuarine coastlines (Targett, 1978). In Mexico it is one of the eight most dominant fish species around the Yucatan coasts, and the most numerically abundant fish species in Rio Largaritos Estuary, accounting for 71.5% of fish biomass (Vega-Cendejas and de Santillana, 2004). Similarly, in Brazil this fish is one of the most abundant of species in the Piraquê-Açu Estuary, accounting for 18.2 % of the total fish biomass (Figueiredo and Menezes, 2000). It does not form schools, but sometimes large aggregations are found together. There is a 1:1 sex ratio. Juveniles are found on seagrass beds and around mangrove roots.

REPRODUCTION. *Sphoeroides testudineus* is egg laying, fecundity averages 1146 eggs/gram of body weight (Targett, 1978). The spawning period is late spring to early fall in Florida, and October through February in Brazil. It reaches a mean length of 13cm at first maturity (Figueiredo and Menezes, 2000).

BEHAVIOUR. Puffers can inflate themselves with water or air when disturbed or threatened, taking up a globular form (Fig. 2), making it difficult for predators (Robins and Ray, 1986). When frightened, it may also bury itself in the sand.

APPLIED ECOLOGY. Listed by IUCN as Least Concern, as it is widely distributed, and abundant in parts of its range. Not targeted by consumption fisheries. No major threats; taken as bycatch in shrimp trawls in Brazil. There have been no quantifiable population decreases, however checkered puffers may be subject to decreases in population due to habitat loss of mangrove and seagrass beds. Conservation action: Prohibited fishery in Florida established in 2002. Unfit for human consumption due to its toxic properties.

REFERENCES

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Posted online: 2016



Fig. 2. Inflated checkered puffer.

[<http://www.roughfish.com/content/puffer-checkered-mnbowfinangler>, downloaded 2 March 2016]