

Bothus ocellatus (Eyed Flounder)

Family: Bothidae (Flounders)

Order: Pleuronectiformes (Flatfish)

Class: Actinopterygii (Ray-finned Fish)



Fig. 1. Eyed flounder, *Bothus ocellatus*.

[http://fishbase.org/images/species/Boman_u0.jpg, downloaded 8 March 2016]

TRAITS. The eyed flounder has a maximum size of 16cm but is commonly 12cm in length. The females are larger and can travel longer distances. The pale brown or grey ocular side (eyed or upper side) is usually spotted or mottled, however, the colour of the body depends upon the habitat or environment. The colour change can occur 2-8 seconds to blend with the environment. On the left side of the head, there are two large, protruding eyes. In males, the eyes are well separated. There is a spine at the tip of the snout in males, as well as a bony protrusion above the lower eye. On the anterior portion of the caudal fin, there are two dark spots, as well as one above the median rays; however, the spots can be absent (Gutherz, 1967). There are 76-91 dorsal fin rays; 58-68 anal fin rays; 8-10 pectoral fin rays on the ocular side; 17 caudal fin rays, 6 pelvic fin rays; and 70-78 lateral line scales. *Bothus ocellatus* closely resembles *Bothus robinsi*, the two-spot flounder, but can be distinguished by the two spots: on the eyed flounder the spots are one above the other while on the two-spot flounder, one spot is anterior to the other.

DISTRIBUTION. Widespread throughout the Caribbean Sea, Gulf of Mexico and the western Atlantic along the U.S. coast (Fig. 2) in depths of 5-95m, commonly around 50m. The eyed flounder is native to Trinidad and Tobago, as well as most Caribbean islands, Brazil, Colombia, Guyana, and Venezuela (Munroe, 2015). The females are usually inshore, but migrate offshore for spawning.

HABITAT AND ACTIVITY. The eyed flounder is a nocturnal animal found in coral rubble or sea grasses on sandy substrata in depths of 5-95m (Munroe, 2015). They change to the colour of the environment and bury themselves into the sand using their fins; with the only visible part of the body being the eyes. The larvae are usually difficult to see as they are transparent. A prospective threat to this species comes in the form of habitat loss.

FOOD AND FEEDING. *Bothus ocellatus* is a carnivore and lies at the third trophic level. Two thirds of the diet consists of crustaceans, such as crabs, shrimps, amphipods and the other third is fish (Bailly, 2015). The eyed flounder can be considered a predator. The fish motionlessly waits for a potential prey in the camouflage of the sandy substrata and grabs it in a second (Lieske and Myers, 1994).

POPULATION ECOLOGY. Harem social groups can be seen, with males defending the territory. In the wild, these fish can survive 3-10 years (Munroe, 2015). The eyed flounder is abundant in its native area.

REPRODUCTION. *Bothus ocellatus* can be found in harem social groups when in courtship, where there is a dominant male fish with a number of subordinate females. Courtship behaviour begins before sunset whilst spawning begins at sunset of December and January. The male moves beneath the female and they rise approximately 15-17cm above the substrata and they release a haze of gametes (Munroe, 2015). The male attempts to mate with each female in its harem daily (Munroe, 2015). Females can release up to 100,000 eggs. There is no parental care. Each eyed flounder begins life with an eye on each side of the head. However, the fish undergoes a metamorphosis during larval development, in which, the right eye migrates to the left side of the head; the dorsal and anal fins are elongated; the body flattens and the swimbladder is lost, as the buoyancy needed for active swimming is not needed. In the plankton, the eggs and larvae are often consumed by jellyfish, shrimps and fish.

BEHAVIOUR. In order to better camouflage themselves against their main predator, the lionfish, they change their colour and pattern (Fig. 3). Other predators include sharks, bluefish, cobia, stingrays and moray eels. The eyed flounder is not a targeted species but is caught by trawling fisheries (Munroe, 2015). The colour of the body, although dependent upon the environment, is also a reflection of the fish's emotional state. Pale-coloured animals are usually the ones that are threatened. The colour change aids the eyed flounder in avoiding predation, as well as being a predator.

APPLIED ECOLOGY. On the one hand, due to its small size, the eyed flounder is of little commercial importance, are rarely consumed by humans, and often an inconvenience to shrimp trawl fisheries when entangled in the nets and cannot be removed easily. On the other hand, they

can be seen in marine aquarium trade. There are no conservation measures put in place by the IUCN for this species.

REFERENCES

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- Munroe, T. (2015). *Bothus ocellatus*. The IUCN Red List of Threatened Species 2015: e.T16425468A16509797. <http://dx.doi.org/10.2305/IUCN.UK.2015-4.RLTS.T16425468A16509797.en>. Downloaded on 09 March 2016

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Fig. 2. Eyed flounder geographic distribution.

[<http://maps.iucnredlist.org/map.html?id=16425468>, downloaded 8 March 2016]



Fig. 3. An eyed flounder camouflaged with the environment.

[<http://www.geoffschultz.org/Reef/Fish/images/20050618-160527.JPG>, downloaded 9 March 2016]

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