

## Puffer

*Sphaeroides maculatus* (Bloch and Schneider) 1801  
[Jordan and Evermann, 1896-1900, p. 1733.]

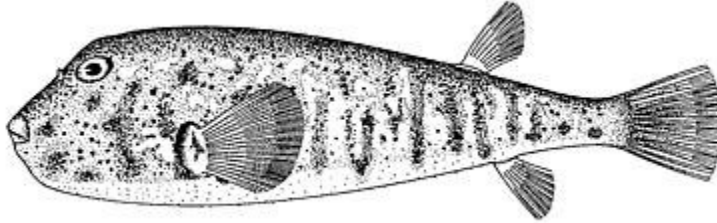


Figure 280 - Puffer (*Sphaeroides maculatus*), Connecticut.  
From Jordan and Evermann. Drawing by W. S. Haines.

## Description

When the puffer is not inflated it is moderately slender (about three times as long as deep), about as thick as it is deep, and it tapers from abreast the gill opening to a rather slender caudal peduncle in one direction, to a rounded snout in the other. Its very small mouth is situated at the tip of the snout as it is in the triggerfishes and filefishes. It has no true teeth but the bones of its upper and lower jaws form cutting edges, each divided in the middle by a suture, giving the appearance of two large incisors above and two below. The gill openings are very small and set oblique, but their obliquity is the reverse of that of the filefishes (p. 521), i. e., backward and downward. The eyes are set very high and are horizontally oval in outline. The skin has no scales, but the sides of both head and body, the back from snout to dorsal fin, and the belly as far back as the vent are rough with small, stiff, close set prickles; those on the back are bluntish and nearly vertical while those on the sides and belly are rather sharp, pointing backward when the fish is not inflated, but erect when it is.

There is no spiny dorsal fin. The soft dorsal fin is very short (8 rays), rhomboid in outline, about twice as high as it is long, and set far back close to the caudal peduncle. The anal fin (7 rays) is similar to the dorsal in shape and size, and arises close behind it. The caudal fin is of moderate size, weakly rounded, with angular corners. The pectorals are fan-shaped, and are situated close behind the gill openings. There are no ventral fins.

The most interesting morphologic character of the puffer is its ability to inflate itself with air or with water if it is handled or at the slightest disturbance of any sort, until the skin of the belly is stretched tight as a football, and the fish is almost globular. In this condition, it floats at the surface, belly up, and apparently helpless. Leave it alone, however, and it soon deflates, discharging the air or water suddenly, and shrinks back to its normal dimensions.

## Color

Dark olive green above, sometimes ashy or dusky, the sides greenish yellow to orange, crossbarred with 6 to 8 rather indefinite dark bands or blotches. The belly is white.

## **Size**

The puffer is said to grow to a length of 14 inches, but few of them are more than 10 inches long. Females average larger than males.

## **Habits**

The puffer is an inshore fish, often coming in to the tide line. It runs up into slightly [page 527] brackish water in various estuaries, and seldom is caught more than a few fathoms deep, or more than a mile or two from land. Throughout the northern part of its range it belongs in the rather numerous and varied category of "summer" fishes, taken from April to November in Chesapeake Bay, from late May or early June to October or early November along southern New England. It is probable that when the puffers disappear from their usual summer haunts, with the onset of cold weather, they merely descend into somewhat deeper water nearby, to spend the winter on bottom in a more or less quiescent state.

Puffers feed on small crustaceans of all sorts especially on crabs, shrimp, isopods and amphipods, as well as on small mollusks, worms, barnacles, sea urchins, and other invertebrates, which they find on bottom. Young fry of 7 to 10 mm., examined by Dr. Linton at Woods Hole, had eaten copepods as well as crustacean and molluscan larvae. And they are only too ready to take bait, if the hook is small enough. Where they are plentiful they may be nearly as much of a nuisance in this way as the cunners.

Puffers spawn in shoal water close to the shore, from mid-May, in Chesapeake Bay, and from early June through the summer off southern Massachusetts. And they are prolific. The ovaries of a Chesapeake Bay female, 10½ inches long contained (estimated) about 176,000 ova.[7] the eggs (about 0.9 mm. in diameter, with many small oil globules) sink and stick fast to each other or to whatever they chance to touch. Incubation occupies 3½ to 5 days at a temperature of about 67°-68° F. (20° C.). The larvae are about 2.4 mm. long at hatching, and are brilliantly pigmented with red, orange, yellow, and black. In 3 days the mouth functions, and when they are 7 mm. long the young fish show most of the diagnostic characters of the adults,[8] and can inflate themselves even more, in fact, until the bulging skin entirely hides the dorsal and anal fins.

## **General range**

Atlantic coast of the United States from Florida to Cape Cod in abundance; to Casco Bay in small numbers, and perhaps to the Bay of Fundy as a stray.

## **Occurrence in the Gulf of Maine**

Anglers find the puffer only too plentiful along the southern shores of Massachusetts, but the elbow of Cape Cod marks the eastern and northern limit to their presence in any numbers. They have been reported at Monomoy, Truro, and Provincetown. Cape Cod Bay may perhaps support a small resident population, for Prof. A. E. Gross informs us that he has seen as many as four or five taken at one time in a pound net at Sandy Neck, Barnstable, at a tide, in the summer of 1920; besides others stranded there on the beach.[9] And we have heard of others there recently, or nearby. Storer described them as common at Nahant, a few miles northeast of Boston, but this seems to have been an error, for Wheatland (1852, p. 214) writing about the same period, not only spoke of them as seldom seen in Massachusetts Bay, but considered a single specimen taken in Salem Harbor in the summer of 1848 as worthy of a note. And this remained the only positive record for a puffer for Essex County until August 24, 1920, when one was caught at Gloucester.[10]

The only records of puffers north of Cape Ann that have come to our notice are of two taken in a trap in Casco Bay in 1896, and of one taken near Long Island, off Portland Harbor, Maine, on July 24, 1933. But there may be a small local population in Casco Bay, and in the vicinity of Boothbay Harbor, Maine, for L. W. Scattergood[11] writes us that the pound net fishermen have long been acquainted with them there and that he had received three specimens recently from Pemaquid Point where the fishermen report them as commonest in June. A skeleton, apparently of a puffer, has been found on the shore of Minas Basin, at the head of the Bay of Fundy on the Nova Scotian side.[12]

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[7] Hildebrand and Schroeder, Bull. U. S. Bur. Fish., vol. 43, Pt. 1, 1928, p. 348.

[8] Welsh and Breder (Zoologica, New York Zool. Soc., vol. 2, No. 12, January 1922, N. Y.) describe the early stages in the life history of the puffer.

[9] the Auk, vol. 40, 1923, p. 24.

[10] This specimen, reported by MacCoy (Bull. 67, Boston Soc. Nat. Hist., 1933, p. 9) is in the Museum of Comparative Zoology.

[11] Letter dated September 19, 1951, U. S. Fish and Wildlife Service.

[12] Reported to us (1951) by Dr. A. H. Leim of the Fisheries Research Board of Canada.

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**Fishes of the Gulf of Maine** by Bigelow & Schroeder is the seminal work on North Atlantic fishes. It was originally published in 1925 with William Welsh, a Bureau of Fisheries scientist who often accompanied Henry Bigelow on his research cruises. In the late 1920's, Bigelow began a long association with William C. Schroeder, publishing a number of papers and reports on fishes of the North Atlantic, including the first revision of *Fishes of the Gulf of Maine*. This excerpt is from that 1953 edition.

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