

## Brook Trout

*Salvelinus fontinalis* (Mitchill) 1815  
[Jordan and Evermann, 1896-1900, p. 506.]

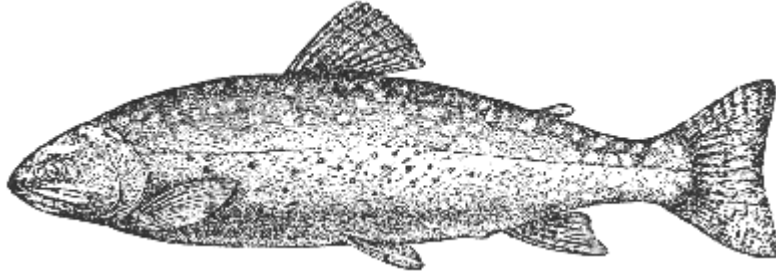


Figure 53 - Brook trout (*Salvelinus fontinalis*), about 15¾ inches long.

### Description

Although brook trout vary widely in general form in different streams, they are usually salmon-like in shape when taken in salt water, that is, about one-fourth as deep as long, tapering gracefully to a small head. The nose of a trout, however, is blunter than that of a salmon, and its head is longer in proportion, the total length of the fish (not counting the caudal fin) being about four and one-half times that of the head,[46] while its mouth (gaping back of the eye) is relatively larger. The general arrangement of the fins, including the "adipose," parallels that of the salmon, but the ventral fins stand under the middle of the dorsal, thus farther forward in relation to the latter than in its larger relative. All the fins, too, are relatively larger, particularly the ventrals; as a rule the anal has one less ray in the trout (usually 8) than the salmon, but the number of dorsal rays (about 11) is the same. The tail of the sea trout is less forked than that of a young salmon of equal size.

Examination of the scales and of the teeth is the most positive means of distinguishing brook trout (in European terminology this is a "charr") from young salmon, for the teeth on the roof of the mouth of the trout are confined to a cluster near the front, instead of extending backward in a row along its midline as in the salmon; and the scales of the trout are so tiny as hardly to be visible whereas those of the salmon are large and easily seen.

### Color

Trout living in salt water almost wholly lack the yellow and red tints so conspicuous on their freshwater relatives. They are steel blue or bottle green on the back, with cheeks and sides silvery like a salmon and with a white belly. The sides above the lateral line are more or less dotted with pale yellow spots, but the dark vermiculate markings so characteristic of the fresh-water brook trout are rarely seen on the trunk of sea run fish, though evident as wavy crossbars on the dorsal [page 121] fin and on the corners of the caudal fin. The sides and flanks below the level of the lateral line usually are strewn with small pale vermillion dots, but the ventral fins are often plain white; at most, the pink edging so conspicuous in trout caught in fresh water is faint on fish in salt water.

## General range

Eastern North America, north to the outer coast of Labrador, west to Minnesota, and southward to Georgia along the Allegheny Mountains.

## Occurrence in the Gulf of Maine

Brook trout are plentiful in many of the river systems and smaller streams that empty into the Gulf of Maine. Some of the trout in some of these seek salt water after the breeding season, to remain there over the winter. This applies particularly to the brooks that flow through the sands of Cape Cod, several of those on its southern slope being famous for their sea-trout fishing. These, however, lie outside our present province, and only a couple of small streams on the Massachusetts Bay side of the Cape still support a race of trout that run down to the sea regularly. One or two small brooks tributary to Ipswich Bay, and the Merriland River, emptying between Wells and Kennebunkport, Maine, are the only places between Cape Ann and Cape Elizabeth where we have heard of sea run trout.

We cannot say how generally sea trout may now exist in the streams of eastern Maine, but according to Evermann[47] trout once inhabited the tidal portions of many of the brooks that empty into Casco Bay, and they still may. Some of good size are caught also in the Belfast River waters, tributary to upper Penobscot Bay.[48] Huntsman found no definite evidence of trout in salt or brackish water on the New Brunswick side of the Bay of Fundy, but local inquiry has elicited the information that there are fish of this habit in a few streams (notably in Salmon River) on the north and west coasts of Nova Scotia, where many streams formerly held sea run trout that have been fished out long since.

The "sea trout" are indistinguishable from the ordinary brook trout anatomically.[49] they are simply fish that have the habit of running down to salt water, and most of the trout never leave fresh water, even in streams offering free access to the sea, cold enough throughout their lengths, and harboring these "salters" (as they are called on Cape Cod). All who have given special attention to our sea trout are agreed on this. It is still an open question whether the habit is hereditary or whether it is acquired independently by each individual fish. We incline to the first view, chiefly because sea trout are slow in reestablishing themselves in any stream where they have been brought to a low ebb by hard fishing. The trout that follow this habit grow much more rapidly on the abundant rations the salt estuaries provide than do most of their relatives that remain in the brook. Sea fish weigh from 1 to 3 pounds in streams where few of the fresh-water trout exceed half a pound.

On Cape Cod the sea trout go down to salt water in November immediately after spawning, to winter there. They begin to run again in April, and all of them are in brackish or fresh water by mid-May. But it is said that they do not appear until later in the Nova Scotia streams tributary to the Bay of Fundy (we cannot vouch for this).

While in salt water (at least along Cape Cod) the trout feed chiefly on shrimps or on gammarid Crustacea, on mummichogs (*Fundulus*), and on other small fish. Trout never stray far from the stream mouths; hence they have no place[50] in the fish fauna of the open Gulf.

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[46] Some trout are longer headed.

[47] Rept. U. S. Comm. Fish., (1904) 1905, p. 105.

[48] Towne, Striped Bass Survey, Maine Development Comm. and Dept. Sea and Shore Fisheries, 1940, p. 21.

[49] there is another species of sea trout (*Salvelinus alpinus*) in northern Canadian waters which is very plentiful along the coast of northern Labrador.

[50] Trout are taken about Woods Hole, occasionally, in winter.

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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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