

## Scup

*Stenotomus versicolor* (Mitchill) 1815

[Jordan and Evermann, 1896-1900, p. 1346, as *Stenotomus chrysops* (Linnaeus), 1766.]

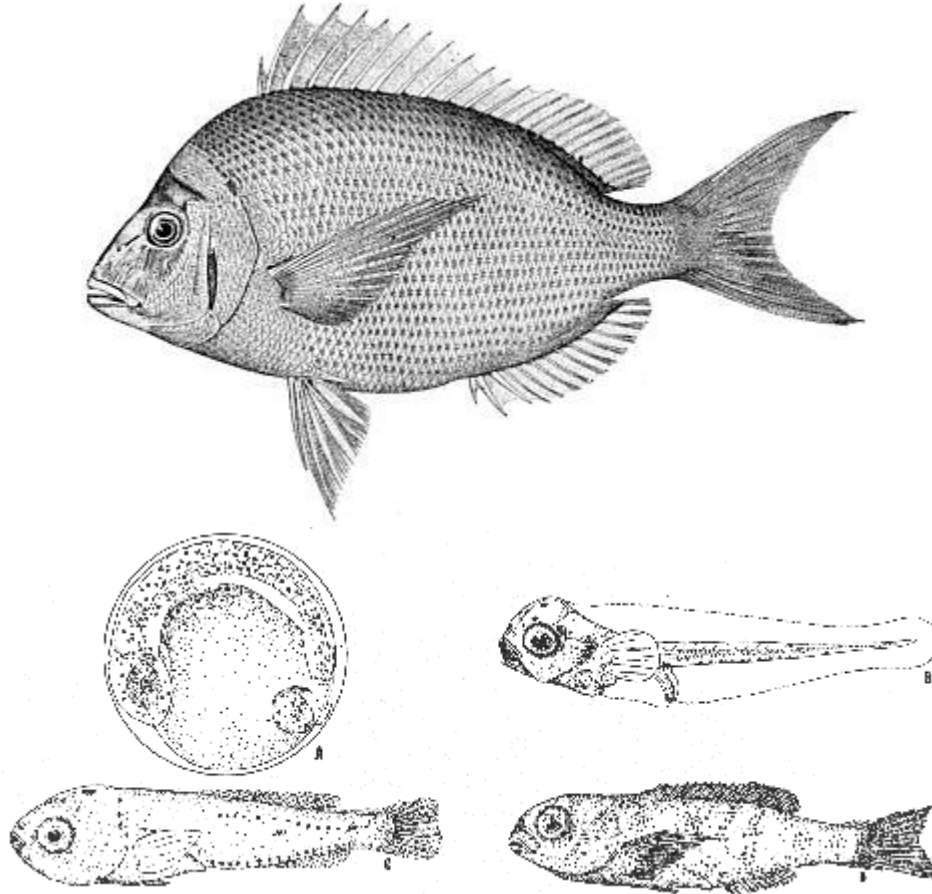


Figure 214 - Scup (*Stenotomus versicolor*). Adult, Woods Hole;  
from Goode, drawing by H. L. Todd;

- A, egg;
- B, larva, 3 days old, 2.8 mm.;
- C, larva, 10.5 mm.;
- D, larva, 25 mm.

A-D, after Kuntz and Radcliffe.

## Description

Although the scup is not marked by any one outstanding character it is made easily recognizable by the fact that the spiny portion of its dorsal fin is considerably longer and higher than the soft-rayed portion, which, with its deeply lunate caudal fin, separates it from all other Gulf of Maine fishes of similarly deep and sidewise-flattened bodies. The scup is about one-half as deep as it is long (to the base of the tail fin) and very thin through, recalling a butterfish (p. 363). But the dorsal profile of its rather short head is slightly concave instead of convex, and its scales rather large, thick and firmly attached; not small, thin and easily detached as they are in the butterfish.

The mouth of the scup is small, its eyes are situated high up on the side of the head, and the margins of its gill covers are rounded. It has one [page 412] long dorsal fin originating over the pectorals and preceded by a forward-pointing spine; the spiny (12 spines) and soft (12 rays) parts are continuous, forming a single fin. As a whole the dorsal fin is moderately high, its first spine much shorter than the others, its rear corner rounded, and it can be laid back in a groove along the mid line of the back. The anal (3 spines and 11 or 12 rays) is nearly as long as the soft part of the dorsal, under which it stands, and is almost even in height from front to rear, but with the first spine shorter than the others. The anal fin is depressible in a conspicuous groove, like the dorsal. The caudal is deeply concave with sharp corners. The pectorals are very long (reaching to even with the soft part of the dorsal), sharp pointed, and with slightly concave lower rear margins. The ventrals, situated below the pectorals, are of moderate size.

## Color

Dull silvery and iridescent, somewhat darker above than below; the sides and back with 12 to 15 indistinct longitudinal stripes, flecked with [page 413] light blue and with a light-blue streak following the base of the dorsal fin. The head is silvery, marked with irregular dusky blotches; the belly is white. The dorsal, caudal, and anal fins are dusky, flecked with blue; the pectoral fins of a brownish tinge; the ventrals white and bluish, and very slightly dusky; the iris silvery; the pupil black.

## Size

The scup is said to reach a length of 18 inches and a weight of 3 to 4 pounds, but adults usually run only up to about 12 to 14 inches, and weigh only 1 to 2 pounds.

## Habits

Scup are inshore from early April at the mouth of Chesapeake Bay, and from early May northward to southern Massachusetts. Most of them withdraw from the coast late in October, though some few linger through November, and an occasional fish into December even as far north as the vicinity of Woods Hole.

It has been known for the past 20 years or more that many scup winter off Virginia and off northern North Carolina, in depths of 20 to 50 fathoms, where large commercial catches are made yearly by otter trawlers from January to April,[45] with a few as deep as 90 fathoms or so. And marking experiments have proved that some of the scup that summer along southern Massachusetts migrate southward in autumn as far as to the offings of Chesapeake Bay and of northern North Carolina for the winter, at least in some years, and vice versa.[46]

Scup have, however, been taken during the past few winters in depths of 45 to 70 fathoms off southern New England, in numbers large enough to show that part of the northern contingent of the species simply moves offshore in autumn, to come inshore again in spring.[47]

Differences in the locations where the largest catches are made in cool winters and in warm make it likely that a preference for water at least as warm as about 45° F. is the factor that determines how far seaward the scup move off any part of the coast in any particular winter.[48] And they are so sensitive to low temperatures that large numbers have been known to perish (both large ones and small) in sudden cold spells in shallow water.

It appears that different bodies of scup move inshore successively in spring, for in 1950 the Albatross III took 2,700 scup in 15 hauls at 45 to 55 fathoms, in the Hudson Gorge, on May 11-18, which is one or two weeks after the earliest scup, ordinarily appear inshore near New York. And the fact that scup are more plentiful in June and July than in May points in the same direction.

It has been said that the first fish to arrive in spring are the large adults, with the immature fish following later. But there is no definite rule in this regard.

During their summer stay inshore, the scup tend to hug the coast so closely that a line drawn 5 or 6 miles beyond the outermost headlands would probably enclose the great majority of the total population at that time of year.

Scup usually congregate in schools. The young fry come close in to the land in only a few feet of water. Large fish, however, are seldom caught in summer in water shallower than 1 or 2 fathoms (occasionally at the surface), or deeper than 15 to 20 fathoms. They prefer smooth to rocky bottom, which results in a distribution so local that one trap at Manchester, on the North Shore of Massachusetts Bay, took small numbers of scup in 1885, 1886, and 1887, while another trap close by did not yield as much as one fish. They are bottom feeders in the main, seldom rising far above the ground, the adults preying on crustaceans (particularly on amphipods) as well as on annelid worms, hydroids, sand-dollars, young squid, and in fact on whatever invertebrates the particular bottom over which they live may afford. They also eat fish fry to some extent, such free-floating forms as crustacean and molluscan larvae, appendicularians, and copepods. The young feed chiefly on the latter and on other small Crustacea. Adult scup, like most other fish, cease feeding during spawning time, for which [page 414] reason few are caught then, but they bite very greedily throughout the rest of the summer on clams, bits of crab, and sea worms (Nereis), as do the immature fish throughout their stay.

Along southern New England scup spawn from May to August, but chiefly in June. Probably spawning both commences later and continues later for the few fish that manage to summer in Massachusetts Bay, and it may be assumed that they spawn wherever they summer.

The eggs are buoyant, transparent, spherical, rather small (about 0.9 mm. in diameter), and have one oil globule. Incubation occupies only about 40 hours at 72° (probably two to three days in the June temperatures of Massachusetts Bay) and judging from the season of spawning at Woods Hole, it is not likely that development can proceed normally in water colder than about 50° F. At hatching the larvae are about 2 mm. long, the yolk is fully absorbed within 3 days when the larva is about 2.8 mm. long, and there is then a characteristic row of black pigment spots along the ventral margin of the trunk. At 25 mm. The pectorals have assumed their pointed outline and the caudal fin is slightly forked, but the ventrals are still so small and the body so slender, that the little fish hardly suggest their parentage until they are somewhat larger.[49]

In southern New England waters fry of 2 to 3 inches, evidently the product of that season's spawning, have been taken in abundance as early as September; they are 2½ to 3¼ inches long in October, and they may be as long as 4 inches at Woods Hole in November. Apparently young scup grow very little during the winter, for many of 4 inches are seen in the spring, probably the crop of the preceding season. According to Neville's unpublished studies,[50] scup average about 4¼ inches (11 cm.) long at one year of age (from hatching), about 6¼ inches (16 cm.) at two years, about 77/8 inches (20 cm.) at three years, about 9 inches (23 cm.) at four years, and about 9¾ inches (25 cm.) at five years. If this age schedule is correct, the ages of the large fish of 12 to 15 inches, weighing 1½ to 2½ pounds are considerably greater than the 3 to 5 years that have been credited to them, following Baird's[51] estimate.

### **General range**

East coast of the United States, from North Carolina to Cape Cod; casual in the Gulf of Maine as far as Eastport, Maine.[52]

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

Although the scup is one of the most familiar of shore fishes right up to the elbow of Cape Cod, with the southern coast of Massachusetts and its off-lying islands yielding annual catches of 1 million to 2 million pounds in good years, very few find their way past Monomoy Point into the colder waters of the Gulf of Maine.

The first definite mention of scup caught north of Cape Cod is Storer's statement that one was taken at Nahant in 1835, and another in 1836, but that it was never seen there before. Possibly these and one picked up dead at Cohasset in 1833[53] were the survivors of a smack load that had been liberated in Boston Harbor a year or two earlier, and a similar plant was made in Plymouth Bay in 1834 or 1835. There is no reason to suppose that these planted fish established themselves. But when the practice of setting mackerel nets outside Provincetown Harbor was first adopted (about 1842) a few scup were taken in them from year to year; odd fish were caught in Cape Cod Bay yearly and between Boston and Cape Ann during the period 1860 to 1867; and a number were taken in a weir on Milk Island near Gloucester in 1878. It has been learned since (mainly from the catches of the pound nets and traps) that there were a few scup in northern Massachusetts waters in most years (or terms of years) down to the first decade or so of the present century, alternating with other years, or terms of years, when only an occasional fish was taken, or none.

In most of the years for which information is available, and when there have been any scup north of Cape Cod, the combined catches of the various traps have run from less than 100 pounds to 1 to 2 thousand pounds at most, whether for Cape Cod Bay or for the northern side of Massachusetts Bay (Essex County).[54] But Cape Cod Bay seems to have seen what might almost be called peaks of abundance in 1879 (catch, about 7,000 fish); in 1882-1885 (yearly catches 2,372-5,354 fish); [page 415] in 1887,[55] in 1890 (1,890 fish); and in 1895-1896 (14,362 and 5,083 fish, respectively); also the northern side of Massachusetts Bay in 1909-1910 (8,417 pounds[56] and 4,181 pounds); both Cape Cod Bay (6,000 pounds) and the north shore of Massachusetts Bay (3,217 pounds) in 1917.

The cataclysmic shrinkage that took place in the stock of scup off southern Massachusetts between 1896 (prior to which the annual catch there had usually run from 1 to 3 million pounds) and 1902, when it fell to only about one-tenth as much (about 200,000 pounds) appears to have involved the scup in Cape Cod Bay also, for none at all were reported there from 1907 through 1911, or in 1918-1920,[57] except that there was an unusually large run there in 1917. But 1908, 1909, and 1919 were good scup years for the north shore of Massachusetts,[58] "good," that is, for those northerly waters, suggesting that when conditions favor, a small independent population may be present there. Perhaps the fact that larger catches than usual are not always registered in both these regions in the same year may point in this same direction.

No scup were reported from Essex County for 1919, 1928, or 1930; nor were enough taken in Cape Cod Bay in those years to cause any local comment.[59] Though the fisheries statistics do not throw any light on the status of the scup north of Cape Cod subsequently,[60] there cannot have been many of them in Cape Cod Bay regularly at any time during the past 15 years or so, for the only scup that were taken in a set of 8 traps at North Truro from 1935 down through 1950 were 125 pounds taken on June 28, 1938, evidently one small school of perhaps 100-125 individuals.[61] And 33 barrels (about 4,950 pounds) taken in a trap at Sandwich on the southern shore of Cape Cod Bay on Sept. 15 or 16, 1944, after a heavy gale, were the only scup caught in this set of traps from 1944 to 1950.[62] It would be interesting to know whether they came through the Cape Cod Canal or around the Cape.

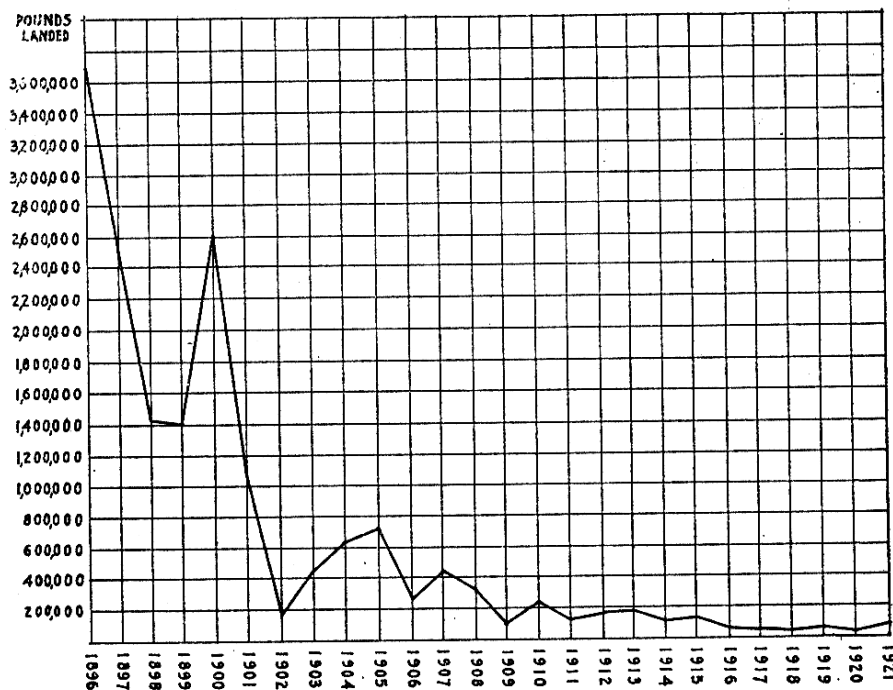


Figure 215.—Scup (*Stenotomus versicolor*). Annual catch of scup (pounds) in pound nets and traps in Massachusetts, from statistics published by the state commissioner of Fisheries and Game.

Thus the presence of considerably greater numbers of scup on the southern coast of Massachusetts since about 1928 than had been there during the preceding decade[63] seems not to have been reflected in Cape Cod Bay except in sporadic cases. And we have not heard of any caught in the northern side of Massachusetts Bay during the past few summers.

In any case, Cape Ann is the northern boundary to the usual range of the scup. In 1896, a year of plenty not only in Massachusetts Bay but to the south in general, occasional specimens were taken daily in Casco Bay in the Small Point traps during the first half of July, and in July 1951, three were reported from Small Point, Maine, sporadic visits such as may be expected of any southern stray. In 1938 about 100 pounds of scup were landed in Lincoln County, Maine, probably from nearby, [page 416] and they have been reported from Eastport.[64] But we suspect that porgies in St. Marys Bay, Nova Scotia, reported to Knight[65] were some other fish.

Probably such scup as spread north of Cape Cod in favorable summers withdraw southward again (if they survive) in autumn to the same offshore wintering grounds to which the much more numerous scup repair from the southern shores of Massachusetts. The fact that small scup, probably devoured on their way offshore, have been found in autumn in cod stomachs on Nantucket Shoals, where scup certainly are not common in summer, points in this direction. There is no reason to believe that any of these fish winter in the deep basin of the Gulf of Maine.

## **Importance**

Scup are never plentiful enough anywhere north of the elbow of Cape Cod to be of importance, whether commercially or to the angler. But this is an important food fish to the westward and southward where it is plentiful. Landings ran, for example, between about 3,300,000 pounds and 5,600,000 from the southern coast of New England and between about 3,300,000 and 4,300,000 pounds from New York, for the years 1945-47. The "porgy", as it is commonly called along that part of the coast, is also a favorite with anglers, for it bites greedily and is a good pan fish. Great numbers of them are caught on hook and line for home consumption.

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[45] Reported catches for 1930-1931 (the only winter for which statistics are readily available) were 9,684 pounds in December, 495,312 pounds in January, 637,595 pounds in February, 653,276 pounds in March, and 76,322 pounds in April (Pearson, Investigational Report, No. 10, U. S. Bur. Fish., 1932, p. 14, table 2). In February 1930 Albatross II trawled three off Chesapeake Bay in 93 fathoms.

[46] One scup, tagged in summer near Woods Hole, was recaptured in winter off northern Virginia; two off Chesapeake Bay; and one off northern North Carolina (Neville, Fishery Circular No. 18, U. S. Bur. Fish., 1935, p. 3, fig. 3). Three tagged in winter off Virginia were recaptured in summer along New Jersey.

[47] We counted from 1 to 40 scup per haul in 17 trawl hauls out of a total of 44 hauls, on the Eugene H off Rhode Island and southern Massachusetts, Jan. 27 to Feb. 3, 1950, at depths of 47 to 67 fathoms; a dragger that caught 7 to 30 bushels in 3 hauls nearby at the time reported catches of 2,000 to 5,000 pounds as sometimes made in the vicinity at that same season; and the Priscilla V reported taking 445 pounds on Jan. 12, also 1,230 pounds on Jan. 21, 1950, at 52 to 54 fathoms, some 75 to 82 miles south of No Mans Land off Marthas Vineyard. The Eugene H fishing near Hudson Gorge in about 62 fathoms, caught 30,000 pounds of scup on a trip April 1-6, 1953.

[48] For details, see Neville, Fishery Circular No. 18, U. S. Bur. Fish., 1935.

[49] Kuntz and Radcliffe (Bull. U. S. Bur. Fish., vol. 35, 1918, p. 106) describe the early development of the scup.

[50] Information from James A. Mason, of the U. S. Fish and Wildlife Service.

[51] Rept. U. S. Comm. Fish. (1871-1872) 1873, p. 228.

[52] the southern scup, *Stenotomus chrysops* (Linnaeus) 1766, which was first reported from Charleston, S. C., ranges northward about to Cape Hatteras.

[53] Goode, Fish. Ind. U. S., Sect. 1, 1884, p. 387.

[54] Statistics of the shore fisheries were published by the State of Massachusetts in the Annual Reports of the Commissioner of Fisheries and Game for 1879-1911 and 1917-1919; of the Division of Fisheries and Game for 1920 and 1921.

[55] the reported catch for the town of Barnstable for that year was so large (69,168) as to suggest that it included scup from the south shore.

[56] If all these really were scup and not some other fish.

[57] No information is available for the years 1912-1916.

[58] Pound net catches for Essex County of 1,203 pounds, 8,417 pounds and 4,181 pounds, respectively.

[59] Catches reported for those years for Barnstable County include not only such scup as may have been taken in Cape Cod Bay, but the catches (doubtless far larger) for the southern coast, which does not fall within the limits of the Gulf of Maine.

[60] We are informed by William Royce of the U. S. Fish and Wildlife Service that catches since 1931 have been credited to the home ports of the vessels making them, wholly irrespective of where the fish were caught or landed. There is no reason to suppose that any significant part of the landings of scup, reported for Essex County since then (which reached a maximum of 7,945,209 pounds for 1938) actually came from Massachusetts Bay, or from anywhere in Massachusetts waters, for that matter.

[61] Information from the Pond Village Cold Storage Co.

[62] Information from Benjamin Morrow, who operates these traps.\

[63] the yearly landings of scup for Massachusetts rose from not more than 100,000 pounds for the decade 1912 to 1921 to about 1,100,000 pounds for the 5 years 1943-1947. But there is no way of knowing how large a part of the catches reported during the latter period were actually taken in Massachusetts waters and not farther west and south along the coast.

[64] A specimen taken many years ago recorded by Kendall (Occ. Pap. Boston Soc. Nat. Hist., vol. 7, No. 8, 1908, p. 103).

[65] Descript. Cat. Fishes Nova Scotia 1866, p. 13.

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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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