

Sand Shark

Carcharias taurus Rafinesque 1810
[Bigelow and Schroeder, 1948 p. 100.]
[Garman, 1913 pl. 6, figs. 1-3.]

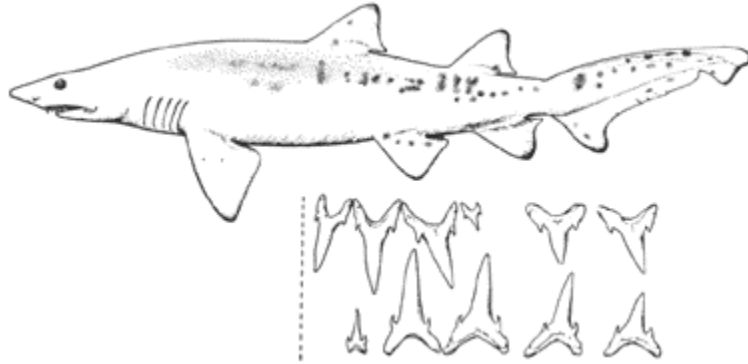


Figure 4 - Sand shark (*Carcharias taurus*), about 40 inches long, Cape Cod; and upper and lower teeth from front part of mouth of a larger specimen from New Jersey, about natural size. From Bigelow and Schroeder. Drawings by E. N. Fischer.

Description

The large size of the second dorsal fin, and of the anal as well (which is about equal to the first dorsal instead of much smaller) is of itself enough to distinguish this species from all other Gulf of Maine sharks. The fact that the first dorsal fin is located but little in front of the pelvics, and that the trunk seems crowded with fins of equal size, is a useful field mark. We may also point out that the pectoral fins are not much larger than the other fins—triangular rather than sickle-shaped; that the upper lobe of the tail is nearly one-third as long as head and body together and notched near its tip, with the lower lobe about one-third as long as the upper lobe; and that the head is flat above, the snout short, conical with rather sharp tip. The teeth also (alike in the two jaws) are diagnostic, being long, narrow, sharp-pointed, and smooth-edged, with one (rarely two) small spurs ("denticles") on either side near the base.

Size

Most of the sand sharks that are caught in the northern part of their American range, from Delaware Bay to Cape Cod, are immature, of perhaps 4 to 6 feet. But adults up to 8 or 9 feet long are reported there from time to time, especially from the vicinity of Nantucket, where a commercial shark fishery yielded many of them in [page 19] the early 1920's. And large ones, alone, have been reported from North Carolina, southward. The greatest recorded length is 10 feet 5 inches, from southwestern Florida. And the sand shark does not mature sexually until perhaps 7 feet long, or more. A weight of 250 pounds is recorded for one 8 feet 10 inches long, showing how much lighter a fish this is, length for length, than various other sharks.

Color

Light gray-brown above, darkest along back, snout, and upper sides of pectorals, paling on the sides to grayish white on lower surface; sides of trunk rearward from pectorals variously marked with roundish to oval spots, of which there may be upwards of 100, varying in color from yellowish brown to ochre yellow. The rear margins of the fins are edged with black on some specimens, but not on others.

Habits and food

Despite its trim appearance and voracious appetite, this is a comparatively sluggish shark, living mostly on bottom or close to it; more active and taking a bait more freely at night than by day. During its summer visits to the New England coast it holds so close to the coast that it has never been reported from Georges Bank, or from the outer part of the Continental Shelf. Most of those caught are from depths not greater than 1 to 5 fathoms, occasionally perhaps as deep as 10 fathoms, and many come right in to tide line along the beaches. They may sometimes be seen moving slowly to and fro at the surface, over bars, with dorsal and caudal fins showing above the water; and they sometimes enter the mouths of rivers. They capture great numbers of small fish, which are their chief diet, particularly menhaden, cunners, mackerel, skates, silver hake, flounders, alewives, butterfish, and south of Cape Cod, scup, weakfish, and bonito. Sand sharks have been seen surrounding and harrying schools of bluefish; they have even been known to attack nets full of bluefish, which gives a measure of their voracity. They also eat lobsters, crabs, and squid.

Breeding

The eggs of the sand shark are hatched within the parent and are retained there until the resultant young are ready for independent existence, but there is no placental connection between mother and developing embryo. It has recently been discovered that while a ripe female contains a large number of eggs, only two embryos develop as a rule, one in each oviduct; they are nourished (at least largely) by swallowing the unfertilized eggs [30] with which the stomach of the embryo becomes greatly distended. Females with large embryos have so far been reported only from Florida and from Louisiana, whereas others taken near Woods Hole have contained eggs only, making it likely that the small specimens that are so common along southern New England have come from a more southerly birthplace.

General range

Coastal waters on both sides of the Atlantic; Maine to Florida and Brazil in the west; Mediterranean, tropical West Africa, Canaries, and Cape Verdes in the east; also South Africa; represented in Argentine waters and in the Indo-Pacific by close relatives.

Occurrence in the Gulf of Maine

The sand shark is by far the most common of its tribe, next to the smooth and spiny dogfishes, along southern New England and at the westerly entrance to the Gulf of Maine. It is plentiful at Woods Hole from June to November, to be found anywhere in that region in shoal waters, even coming up to the wharves. At Nantucket, too, it is so abundant that shark fishing, with the sand shark as the chief objective, is a popular sport. The facts that a catch of about 1,900 sharks by three boats on Horseshoe Shoal, in Nantucket Sound, June to September 1918, was mostly of this species, as was another catch of 350 sharks, taken near Nantucket in the early 1920's, illustrate their numbers there. Scattered sand sharks are also caught along the outer beaches of Cape Cod by surf anglers (published records are for Monomoy, Chatham, and Provincetown) and there are enough of them along this stretch of beach in some summers (1951 was a case in point) for them to be a nuisance to anglers casting for striped bass in the surf at night.

In August 1947 we saw a large one at the surface pursuing a striped bass, that was being hauled aboard a fishing boat on a hand line, in the eastern side of Cape Cod Bay, where fishermen tell us that this is not an unusual happening. But this appears to be the northern boundary to their occurrence in any numbers, or with regularity. True, they are recorded at Cohasset, on the southern shore of Massachusetts Bay, where we caught one about 4 feet long, years ago in Boston Bay, and at Lynn, Mass. But so rarely does it stray north of Cape Ann that it has been reported only [page 20] twice from Casco Bay, and once from St. Andrews, New Brunswick, near the mouth of the Bay of Fundy, its most northerly known outpost, where one was taken in a weir in 1913.

In New England waters the sand shark occurs only as a summer visitor. The winter home of those that summer along the northeastern United States is not known, nor has any increase been noted in Florida waters (where they are taken at all times of year) coincident with their winter disappearance from the northern part of their range. Like various bony fishes they may move offshore, and perhaps southward, to escape winter chilling.

Importance

There were commercial fisheries for the sand shark around Nantucket during the first quarter of the present century, but these were short lived, reputedly because of exhaustion of the local stock. And the sand shark is of no commercial importance on the New England coast at present. Westward from Cape Cod it is of some interest to anglers, who catch considerable numbers, both as objects of special pursuit, for it takes almost any natural bait readily, or incidentally while surf casting for better fish. But it is not plentiful enough in the Gulf of Maine to be worth fishing for.

There is no record of attacks by sand sharks on human beings in North American waters, though bathers often come close to them. Our own experience bears this out; in fact, it is looked upon as a harmless nuisance on the New England coast wherever it is plentiful enough to be familiar. But its relative (or relatives) of East Indian waters have a more sinister reputation.

[30] For an account of the embryos, see Springer, Copeia, 1948, No. 3, pp. 153-156.

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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