Sharks and Rays of Virginia’s Seaside Bays

H. Dickson Hoese

ABSTRACT

Seven sharks (Carcharias taurus, Mustelus canis, Negaprion brevirostris, Carcarias milberti, Sphyrna zygaena, Squallus acanthias, and Squatina dumerili) and six batoids (Raja eglanteria, Dasyatis centroura, D. sayi, Gymnura altavela, G. micrura, and Rhinoptera bonasus) are reported from the Seaside of the Eastern Shore of Virginia. Mustelus canis may be the most common Seaside shark, but young Carcarias milberti are common enough to support a small commercial fishery, and the remainder of the species are not uncommon. Negaprion brevirostris is reported for the first time from Virginia; four males taken from the Wachapreague area in 1961. Deep channels and lack of a salinity barrier may explain what seems to be a rich Seaside elasmobranch fauna. The shark fauna seems more closely related to the outer coasts of Maryland, Delaware, and New Jersey than to Chesapeake Bay, although more collections in the lower bay are needed.

Introduction

Although the species of fishes occurring in Chesapeake Bay are fairly well known from the studies of Hildebrand and Schroeder (1928) and several later authors, there has been little study of the fishes of Virginia’s Eastern Shore, especially from the Atlantic ocean side or Seaside. However, Schwartz (1961) recently studied the fishes of Chincoteague and Sinepuxent Bays, the area adjacent to and just north of this study area. The Seaside, as used herein, refers to the bay areas of Virginia’s outer coast, from the Maryland line south to Cape Charles along the Atlantic Ocean.

Bean (1891:93-4) listed Scyllium terraneae and Gymnura micrura (as Pteroplatea macrura) from the town of Cape Charles in Chesapeake Bay. Other species have been recorded at Cape Charles from time to time (Evermann and Hildebrand 1910; Hildebrand and Schroeder 1928). Fowler (1913, 1927, 1930) listed fishes, including several sharks, from Chincoteague, Virginia, at the southern end of Chincoteague Bay. Hamilton and Smith (1941) also listed a ray from the same area. Fowler (1912) reported on collections at Cedar and Parramore Islands, apparently the only published records of species from the Seaside south of Chin-

coteague. He listed Mustelus mustelus (= canis) and Raja erinacea from off Cedar Island.

This paper records six batoids and seven sharks from the Seaside of the Eastern Shore of Virginia and presents certain distributional, morphometric, and ecological data. Specimens were obtained from sport fishermen, pound nets, seine nets, and the shark fishery at Willis Wharf in 1960 and 1961. Several individuals were very helpful in obtaining specimens and providing information, especially Mr. Tom Burton, Jr., Mr. Preston Richardson, and Rev. H. L. Bowers, Jr. of Wachapreague; Mr. Jack Smith, a shark fisherman of Willis Wharf, Mr. Milton Peppler of Newark, Delaware, and Dr. S. H. Hopkins of the A. & M. College of Texas. Dr. F. J. Schwartz of the Chesapeake Biological Laboratory provided information, encouragement, and criticized the manuscript. Measurements follow Bigelow and Schroeder (1948).

Sharks

Carcharias taurus (Rafinesque). Sand Shark.—Both Fowler (1927:89) and Schwartz (1961:389) reported sand sharks from Chincoteague, but there is only one published record from Chesapeake Bay in Virginia (Bigelow and Schroeder 1948:105). However, W. H. Massmann (personal com-
munication) reports two other specimens from within the bay also in Virginia.

One juvenile, an adult estimated over 5 feet long, and one over 6 feet long were observed in a shark fisherman's catch from Machipongo Inlet on July 19, 1960. Scattered juveniles were noted in sport fisherman's catches near Wachapreague Inlet in August and September 1960. A single male, 130 cm, taken on October 11 was the latest observed capture in 1960. Six large individuals (7-8 feet) were taken from Bogue's Bay on July 12, 1961 (F. J. Schwartz, personal communication).

**Mustelus canis** (Mitchill). Smooth Dogfish—Numerous adult and young dogfish were caught by flounder fishermen during June through September 1960 and 1961. The earliest record in 1960 is a female with six foetal young taken near Wachapreague Inlet on May 7. Bigelow and Schroeder (1948:249) wrote that smooth dogfish appear off the Eastern Shore in May. This shark is well known to all local fishermen and appears to be the most abundant species in the summer. Young individuals are sometimes called "nurse sharks" by local fishermen, a name it is known by in Bermuda (Baughman and Springer 1950:100). This name may be the basis of Lugger's (1877:90) unconfirmed record of *Ginglymostoma* in the lower bay, since *Mustelus* was not in his list and remained unreported until 1915.

**Negaprion brevirostris** (Poey). Lemon Shark—Four lemon sharks were captured at Wachapreague and vicinity in 1961. A nine foot specimen reportedly weighing 235 pounds was taken from Metomkin Bay in July 1960 and authenticated by two photographs in the Eastern Shore News. Two large sharks taken from the Wachapreague dock in August 1960 were not examined but their general descriptions fit *Negaprion*. Sharks with "two fins" are often seen at the coastal towns of Wachapreague and Quinby, especially in the evening. This information suggests that *Negaprion* is not uncommon, even though previously known north of North Carolina as a stray, from New Jersey (Fowler, 1952:93). However, Springer (1950:350) said that lemon sharks range to Chesapeake Bay without giving data.

The four 1961 specimens were taken from June 24 through September 7 in water temperatures of 23 to 30°C and salinities of 31.0 to 33.6%. All four were mature males. The June 24 specimen had a small remora, *Echeneis naucrates*, attached to its caudal peduncle. Two of the specimens from Wachapreague fed on the remains of fishes (*Paralichthys, Sarda, Coryphaena*) undoubtedly obtained in the channel where they are discarded by the sport fishery. Some ate *Synodus* (1), an unidentified eel (1), soft blue crabs, *Callinectes* (1), *Sphaeroides* (1), and fish remains (2). These sharks were all taken by hook baited with either menhaden (*Brevoortia*) or ray (*Gymnura*).

Comparisons of these larger males (Table 1) with a smaller male and female (Bigelow and Schroeder 1948:311) and a series measured by Springer (1950) clearly show a proportional increase in height and decrease in base length of the median and pectoral fins with size. However, the relative placement of the fins is similar in all specimens. The snout is proportionately shorter and the eye smaller in larger specimens.

**Carcharhinus (= Eulamia) milberti** (Müller and Henle). Brown Shark—This is one of the most common Seaside sharks. It is the main and sometimes only species taken in the shark fishery. Numerous individuals were examined at Willis Wharf on July 19, 1960 and June 30, 1961. All were immature sharks about four feet long. A 91 cm *C. milberti* taken off Cedar Island in the Atlantic Ocean on October 3, 1960 and one (81.3 cm) from The Gulf (just north of the town of Cape Charles) on October 12, 1961 were the latest captures in the year. Hildebrand and Schroeder (1928:48) stated that *C. milberti* is not rare in Chesapeake Bay in the fall. Fowler (1930:47) reported this species from Chincoteague and Uhler and Lugger (1876:162) found it common in Worcester County, Maryland. Recently Schwartz (1960c) reported young brown sharks from Chesapeake Bay, Maryland, and stated that the bay may be a spawning ground. Massmann (In Springer 1960:13) stated that this appeared to be the most