



## Life In and Around the Waters of the Chesapeake Bay - 1608

### Life in the Bay

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The Chesapeake Bay of 1608 was bordered by hundreds of thousands of acres of submerged aquatic vegetation, consisting of a wide variety of rooted and flowering plants. Freshwater streams hosted a dozen or more species, including wild celery, common waterweed, horned pondweed, and redhead grass. Tidal fresh and brackish waters contained mostly widgeon grass and eelgrass. This vast complex of streams and marshland provided havens for juvenile fish, small fish species, blue crabs, and various invertebrates. Today, the area has declined to an estimated seventy-four thousand acres.

John Smith encountered shorelines thick with vegetation. In those days, tuckahoe (arrow arum), pickerelweed, wild rice, and cow lily were found in freshwater areas as well as in tidal fresh and brackish waters. Saltmarsh cordgrass dominated the saltier marshes. Waterfowl and shore birds fed on seed plants such as black needlerush and three-square sedges.

Smith described the great variety of fish he found in the Bay and its tributaries:

*Of fish we were best acquainted with Sturgeon, Grampus [pilot whales], Porpus, Seales [river otters], [and] Stingraies, whose tailies are very dangerous. Bretts, Mulletts, white Salmonds, Trowts, Soles, Plaice, Herrings, Conyfish, Rockfish [striped bass], Eeles, Lampreys, Catfish, Shades [shad], Pearch of three sorts, Crabs, Shrimps, Crevises, Oysters, Cocles [whelks], and Muscles.*

Later writers who saw the Bay in its 17th-century splendor described the massive spawning runs of anadromous fishes. These included striped bass, white perch, and sturgeon. Menhaden, not truly anadromous, was also seen in such quantities that it was likely the fish that Smith and his crew attempted to catch with a frying pan on the Potomac River in June 1608. Resident predator fish—aside from those like the striped bass that feed opportunistically on spawning fish—included the longnose gar, bowfin, and chain pickerel. Eels, which were spawned in the Sargasso Sea, made their way to the Bay and other coastal waters to swim upstream and live most of their adulthood before returning to the sea to spawn and die.

Temporary visiting species frequently included vast numbers of bluefish and Spanish mackerel, as well as kingfish, black drum, and red drum. Sandbar sharks, as well as various skates and rays, were seen in the lower Bay, as Smith knew from painful personal experience. Marine mammals included dolphins, pilot whales, and loggerhead turtles. Among the permanent residents of the Bay and its tributaries were perch, catfish, bullhead, bay anchovies, silversides, and winter flounder. Crustaceans included crawfish, blue crab, whelks, mussels, clams, and oysters.

One translation of the Algonquian word for the Chesapeake is “The great shellfish bay.” Whether or not the translation is accurate, it offers linguistic support for the scientific fact of the Bay’s once-vast abundance. Today, the populations of many species are far lower than they were in 1608. Notoriously, the

numbers of oysters, other shellfish, and sturgeon have either declined dramatically or have virtually disappeared. The causes are well-known: overharvesting, urban and suburban development, pollution, and excessive amounts of nutrients from agricultural runoff are among the leading contributors to the Bay's decline from its colonial role as America's premier fishing ground to today's fragile ecosystem that's seemingly near collapse. In addition, introduced non-native species such as carp, the Asiatic clam, and the European zebra mussel threaten the indigenous populations.

## **Life Beside the Bay**

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Most of the Chesapeake Bay drainage was covered by deep forest in 1608. The characteristics of that forest, however, varied dramatically from place to place, as the writings of Smith and others reveal. In some places, the forest was park-like, with large trees shading relatively undergrowth-free ground beneath. Depending on location, this condition might have been due to natural forces—from extensive browsing by deer, or as the product of hardwood forest at maturity—or the bare undergrowth may have been due to periodic intentional burning by Indians. In other places, the undergrowth was so thick as to be almost impenetrable. The forests, then as now, were subject to change not only from the natural progression of species and human activity, but also from drought, flood, lightning, and hurricanes.

The species of trees that Smith saw likewise varied widely depending on location. In Bay-area wetlands, the bald cypress—the tree of choice for Indian canoes—grew in company with black gum, sweetgum, green ash, and red maple. The understory consisted of American holly, poison ivy, Virginia creeper, coastal pepper bush, and southern arrowwood. Along the edges of watercourses, Smith encountered sycamores, river birches, slippery elms, tulip poplars, red maples, and black gums. The dominant evergreen along tidal marshes was the loblolly pine. Smith was most excited, however, about the magnificent oak, beech, walnut, hickory, ash, elm, and chestnut trees he saw, because of their potential commercial value.

A large number of trees and bushes produced useful nuts, seeds, and fruits. Besides acorns, walnuts, hickory nuts, and pine seeds, Smith found mulberries, crabapples, persimmons, wild plums, passion fruit, blueberries, blackberries, raspberries, elderberries, huckleberries, and wild grapes. In addition, Smith learned from the Indians about wild salad plants and two other wild plants that could produce bread flour: little barley and tuckahoe (arrow arum).

The forests by the Bay were home to several species of land animals, many of which Smith identified. The opossum and raccoon, new to the Europeans, are still common and still known by their Powhatan names. Deer, squirrels (including flying squirrels), rabbits, bears, wolves, bobcats, foxes, marten, skunks, weasels, minks, otters, and beavers were also abundant. Later residents or visitors to the Bay's western and northern drainages occasionally wrote of elk and bison, but no bison bones have been identified at Native archaeological sites close to the Bay.

Birds included a wide variety of songbirds such as the cardinal, which was new to the English. Eagles, hawks, quails, and wild turkeys were common. Passenger pigeons were famously described as migrating by the millions in seemingly endless clouds, but are now extinct. Waterfowl flew into and around the Bay, especially as various species migrated in the spring and autumn. They included wood ducks, green-winged teal, ring-necked ducks, pintails, long-tailed ducks, common loons, scaups, Canada geese, and other varieties, in numbers that stunned the English.

The changes in faunal and floral concentrations in the Chesapeake Bay watershed between 1608 and the present have been as dramatic as the changes to the fish, shellfish, and water plants of the Bay itself. In 1608, perhaps 90 percent of the Bay watershed was woodland; by the end of the nineteenth century, after

two centuries of agricultural and urban development, it was about 25 percent. Consequent loss of habitat has been a major factor in the decline of many animal species. The passenger pigeon and wolf were hunted to extinction. In general terms, species that required undisturbed habitat have declined or vanished; those that thrive on disturbed habitats such as farm fields, industrial sites, and housing developments—those that do well in association with humans—have persisted or even increased in numbers. English house sparrows, for example, have done well; the Carolina parakeet is no more. Among once-numerous animals, white-tailed deer still are thriving in part because their natural predators are no longer present, having been extirpated.

The appearance of the Bay and its tributaries today, compared to Smith's time, varies widely from one place to another. From the water, much of the Bay's shoreline may appear similar in the absence of obvious development, especially in areas where reforestation has occurred. Closer inspection, however, usually reveals signs of human activity, such as the lining of banks with rubble stone to reduce erosion, or modern dwellings hidden among the trees. The former steel plant at Sparrows Point on the Patapsco River is hard to miss, but the Great Falls of the Potomac and parts of the Patuxent River still look much as they did when Smith saw them. The views around the Bay—whether thick with manmade structures, or almost pristine—are as varied as the Bay itself.