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Chesapeake Bay Gateways Network, 410 Severn Avenue, Suite 109, Annapolis MD 21403

Boats for the Bay

Whether it's a deadrise or skipjack, a punga or a bugeye, classic Chesapeake workboats are anchored in tradition. Early log-built canoes, sleek schooners and versatile sailing skiffs all inspired builders to craft variations that matched hull shapes, sailing rigs and other features to the promise and perils of working the Chesapeake Bay.

From the beginning, mariners needed maneuverable, shallow-draft vessels suited to the narrow inlets and shoal waters of the Bay and its tributaries. In the 1800s, exploding demand for Chesapeake oysters drove the evolution of larger, faster boats that could work far from shore in all kinds of weather. New technology supported many changes: sawmills cut lumber for boatbuilders, refrigeration and canning methods improved, and roads and rail lines promised ready access to distant markets. And while small operations continued with traditional gear—hand tongs, dip nets and hand seines—with time, increasingly efficient scrapes, dredges and fishing apparatus became available to help watermen maximize their catches.

The Chesapeake's first workboat was the Native-made dugout canoe hollowed from a single log. Fire and oyster-shell scrapers were used to accomplish the task. Colonial settlers learned to fashion larger, more seaworthy canoes of three, five, and even seven logs, all with a streamlined form. With time, these vessels were rigged for sailing the Bay and its tributaries, and distinctive variations were crafted in Poquoson near the York River and in the Eastern Shore communities of Tilghman's Island and Pocomoke. As large lumber became scarce and milled lumber became available, frame-and-plank construction gradually replaced whole logs. By 1880 more than 6,000 boats in the "log-built" tradition were working the Bay, including the brogan and its descendants, the bugeye. Both could carry larger loads and withstand storms that thundered across the Bay during the winter oystering season.

The bugeye *Edna E. Lockwood*, built in 1889 at Tilghman Island, Maryland, is the last of the log-built bugeyes afloat. In the 1970s the vessel was restored at the Chesapeake Bay Maritime Museum.

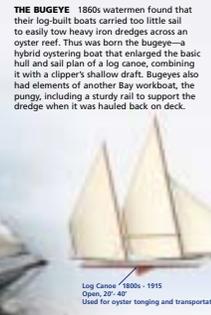


Virginia's Powhatan Indians called their log canoes *quintans*. The largest were 4' deep and 50' long and could carry up to 40 persons. The Maritime Museum Library and Archives.

A long, artfully decorated clipper bow added grace and flourish. The name "bugeye" may have evolved from "buckie"—the name early Scottish immigrants bestowed on oyster shells. Deft sailers with a large cargo capacity and yacht-like speed, bugeyes were ideal for dredging oysters in the Bay's deeper reefs and racing them to market. But they were expensive and complicated to build, and as oyster harvests declined in the 1890s they became an uneconomic luxury. Yet even as watermen shifted to the smaller skipjacks, pleasure sailors kept the class, classic bugeye on view all around the Bay.



Log canoe being built by Clyde Smith of Poquoson, Virginia, in 1935. The Maritime Museum.



Log Canoe 1800s-1915 Open, 20'-40' Used for oyster tonging and transportation

Brogan 1850s-early 1900s Half-decked, 40'-45' Used for oyster crumping

Where to see classic Bay workboats
Many Chesapeake Bay Gateways offer a chance to see classic workboats and learn more about the watermen's way of life.

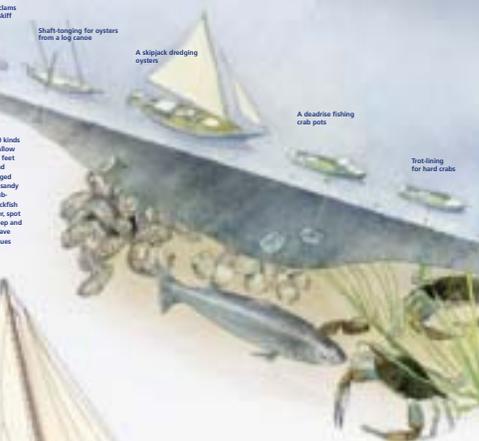
Use www.baygateways.net to find detailed information on how to visit and explore Bay boats at these Gateways:

- Western Shore**
 - 1 Annapolis City Dock Annapolis, MD
 - 2 Annapolis Maritime Museum Annapolis, MD
 - 3 Captain Salem Avery House Shady Side, MD
 - 4 Calvert Marine Museum Solomons, MD
 - 5 Piney Point Lighthouse Museum and Park Piney Point, MD
 - 6 Reedville Fishermen's Museum Reedville, VA
 - 7 Watermen's Museum Yorktown, VA
 - 8 The Mariner's Museum Newport News, VA

- Eastern Shore**
 - 9 Chesapeake Exploration Center Chester, MD
 - 10 The Wharves at Choptank Crossing Denton, MD
 - 11 Chesapeake Bay Maritime Museum St. Michaels, MD
 - 12 Richardson Maritime Museum Cambridge, MD
 - 13 Nathan of Dorchester Cambridge, MD
 - 14 J. Millard Tawes Historical Museum Crisfield, MD
 - 15 Smith Island Center Ewell, MD



Seafood Harvests
Chesapeake Bay is home to more than 200 kinds of fish and shellfish. The Chesapeake's shallow depth—a quarter of the Bay is less than six feet deep—and varying salinities create rich and diverse habitats for these species. Submerged grasses in shallow channels hide like crabs, sandy bottom areas support clams, and former sub-station oyster reefs. Fishes, including rockfish (striped bass), flounder, menhaden, croaker, spot and a host of others, are found in both deep and shallow waters. Over time, watermen have developed both diverse boats and techniques for harvesting this abundance.



Shrimp-tonging for oysters from a log canoe. A skipjack dredging oysters. A deadrise fishing crab pots. Trot-tonging for hard crabs.

In the mid-1800s another Chesapeake workboat type appeared: the punga. Inspired by the larger Baltimore Clipper, pungies had graceful lines with a flaring bow and could fish oyster reefs in deep water. With a keel adding stability and two tall, aft-raking masts, pungies sailed with a schooner rig. By tradition pungies also wore a striking paint job—green and a rosetan "pungy pink." Although expensive to build and unsuited for shallow waters, pungies could carry ample loads and worked the Bay as oyster dredgers and freight carriers for about 100 years. In 1852 a visiting British naval officer called pungies "the most elegant and yacht-like merchant vessels in the world."

Log Canoes
For short journeys in shallow water, colonialists also turned to the sailing skiff to take advantage of Bay breezes. By the 1800s Chesapeake creeks and shallows teemed with open crabbing skiffs that one person could easily maneuver while dip netting or running a trot-line for crabs. Historians chronicle at least a half-dozen skiff sailing rigs, along with hull types ranging from flat-bottomed to V hulls and every permutation in between.

Skiffs and Beyond
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THE SKIPJACK The skipjack or "bateau" is a prime example of workboat evolution. Short on funds but long on boat-building skills, 1800s oystermen strengthened and widened the skiff hull, added a second sail, and fashioned a clipper bow. For stability they shaped a V bottom with a low angle (deadrise) to the water, in some cases adding a second mast. The result was an easy-to-build, inexpensive workhorse that could haul two dredges at once. After the skipjack appeared on the Chesapeake in the 1890s, it became the Bay's premier oystering workboat.

THE DEADRISE A Chesapeake "deadrise" is a gasoline or diesel powered vessel with a small forward cabin, strong planking, and a V bottom that sharpens toward the bow. The result is a hydrodynamic vessel that handles well in open water. Motor-driven deadrises debuted on the Bay around 1910. Demand for them soared: a deadrise could take a punishing day on the Bay, didn't rely on wind for propulsion, and could be operated by a waterman working alone.

Punga 1600s-1940 Derived from the Baltimore Clipper, 30'-80' Used for oyster dredging and freight

Log Canoe 1800s-1915 Open, 20'-40' Used for oyster tonging and transportation

Brogan 1850s-early 1900s Half-decked, 40'-45' Used for oyster crumping

Skiffs and Bateaus 1700s-1800s Flat-bottomed with a simple rig Used for transportation, crabbing and fishing

Skipjack 1800s/1920s-present V bottom hull with moderate deadrise, 25'-60' Used for oyster dredging

Deadrise 1910-present Engine-powered boat with a V bottom Used for fishing, oyster tonging and crabbing

The Builders
Countless log canoes, deadrises and other workboats were "backyard" boats built without drawn plans. Only a knowledgeable mariner could attempt this "rack-of-eyes" method for determining how a hull should be shaped. A workboat's features reflected personal preferences and budgets for elements such as workpace and the location of the tiller. The boat's expected operating conditions figured in, too. A waterman working the upper Bay would likely favor an extremely shallow draft that would allow a vessel to venture farther up shallow tributaries, while a boat destined to work the choppy lower Bay need ed heavy-duty planking. Stern design gave clues to a deadrise's geographic origin. An angled "huck" stern almost certainly meant a Maryland boat, while a deadrise with a rounded stern hailed from the Virginia hamlet of Deltaville. A diamond or V-shaped one came from Poquoson to the south. Today a few master boatwrights still carry on the Chesapeake's rack-of-eye tradition.



The skipjack Robert L. Webster dredging oysters. When this photograph was made in 1953, the 60-foot boat had been working Bay waters for 38 years. M.S. Thomas

Working the Water
Oystermen braved the most brutal conditions. Cramped vessels housed rats, lice and bedbugs alongside crews, and winter weather could freeze dredge crews to work in icy winds that froze their Bay-soaked clothing. Working hours were spent operating a dredge or culling through waist-high piles of oysters. In the 1880s this arduous toil earned about \$11 a day.

The lives of many watermen centered on farming, with fishing being a part-time or seasonal affair—in spring seeking eels, shad and herring, crabbing in summer, oystering in winter. Following Native tradition, some watermen used oysters as currency. In one Maryland town, the owner of the local newspaper accepted the shellfish as payment for subscriptions. Cramped vessels housed rats, lice and bedbugs alongside crews, and winter weather could freeze dredge crews to work in icy winds that froze their Bay-soaked clothing. Working hours were spent operating a dredge or culling through waist-high piles of oysters. In the 1880s this arduous toil earned about \$11 a day.

The introduction around 1900 of gasoline-powered winches for hauling in dredges eased some of the labor, but the waterman's life was chancy physically and financially. Ashore, oyster shuckers averaged \$5 a week to a few dollars a week in the Great Depression of the 1930s, an oysterman might garner the grand sum of forty cents a bushel. From the 1600s on, African Americans—male and female, young and old, slave and free—drew a livelihood from the Chesapeake. In 1860, a Federal census listed more than 2,000 blacks working in the Bay waters. After the Civil War, blacks formed thriving communities in many places around the Bay, often combining farming with seasonal occupations as oystermen, crabbers, crab pickers, oyster shuckers and dockworkers. Others prospered as boat builders, caulkers and workboat captains.

In 1850 miners digging California gold clasp in San Francisco and stock up on tinned Chesapeake oysters. By the 1860s the Bay's seafood bounty had become a hugely valuable commodity. Ravenous demand for oysters in Northern cities led the way. Leaving depleted New England oyster beds in their wake, northern boats had sailed into the Chesapeake shortly after 1800 bringing large iron dredges capable of gathering virtually every oyster in their path. Maryland and Virginia legislatures soon outlawed dredging and restricted oystering to residents, but the die was cast. Bay watermen already proficient in tonging and "scraping" oyster beds flouted regulations and added dredges to their outfits.

The Oyster Boom
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By the 1880s Chesapeake Bay was the nation's main oyster producer and a rich source of crabmeat, clams, fish and fish products such as fertilizer and oil. Hundreds of workboats and thousands of watermen competed for the richest hauls. An 1880 government report tallied nearly 49,000 people directly employed in Bay fisheries, harvesting over 250 million pounds of seafood and generating the then-primarily annual revenue of more than \$8.3 million. Over the winter of 1884-1885, Maryland oystermen alone hauled aboard 15 million bushels. It was an astonishing take, but never again would the Bay produce so many oysters in a single season.

By the 1890s, over-harvesting and dredge damage to oyster reefs had significantly reduced the Bay's oyster population. In the 20th century, pollution and disease exacerbated the problem. Today oyster harvests average less than 1 percent of the bounty of old and the era of workboat "dredge" fleets has drawn to a close. In recent years watermen have also seen their annual catch of blue crabs plummet. In response to concerns over declining fisheries and Bay water quality, the Chesapeake Bay Program (www.chesapeakebay.net) launched efforts to conserve and restore the Chesapeake. While many issues remain, successes include the rebound of rockfish, another signature Bay species.

Changing Times
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WORKING THE BAY

Chesapeake Bay workboats are in a class by themselves with a tradition to match.

Crafted to meet the challenges of shallow depths or pounding waves, vessels ranging from log canoes to skipjacks and deadrisers were indispensable for harvesting the Bay's bounty of oysters, crabs and fish. Today some of these historic vessels still work the water, and others have found safe harbor around the Bay, exemplars of the Chesapeake's unique maritime heritage.

A workboat's sail plan helped determine the boat's maneuverability and how fast it would sail under different conditions. Many Bay workboats had a leg-o-mutton rig, with triangular sails set behind the mast. The rig's large area was designed to provide the power to haul the dredges.

The skipjack typically carried a triangular mainsail and jib set on a sharply raked (angled) mast.

Oysters piled on deck for culling—the step in which undersized (less than 3") and damaged oysters and debris are thrown back. A skipjack's distinctive wide deck is designed to provide ample space for both catch and crew.

All skipjacks had an elongated, schooner-like bow. Smaller vessels were half-decked, larger ones completely decked over.

Most skipjacks were constructed mainly from the heartwood of large loblolly pines. In general, the hull and decking had to be massively built in order to bear the mechanical stresses associated with hauling the heavy iron dredge across oyster reefs.

The low sides (freeboard) of a skipjack made it easier to handle the dredges, which were typically mounted just aft of the cargo hatch. Early dredges were manually operated; when power dredges came into use, the freeboard was increased to help sustain the weight of the heavy motors used to haul up oysters.

Maryland regulations generally allowed only sail-powered vessels to dredge (often pronounced "drudger") for oysters. Skipjacks usually carried a sturdy push boat attached to davits at the stern. Basically a floating motor, the push boat could propel the sailing vessel when there was too little wind.

A typical cabin had several bunks and a small galley. A crawl space connected the bunk area to the hold. In early skipjacks this space was a recessed standing well for the dredge operator.

The angle at which the floor of a boat rises to meet the lower sides to create a V-shape is called "deadrise." Bay workboat builders gave V-hulls different degrees of deadrise, depending in part on needs and local preferences. In early skipjacks the bottom was almost flat; builders found that adding moderate deadrise to the rear of the hull made the boat much more stable.

A typical dredge consists of an iron frame with an attached bag of iron rings, S-hooks and netting. A chain connected to the eye of the dredge is attached to a cable that coils around the winder. Metal teeth along the lower end detach oysters as the dredge is hauled over a bed; the oysters tumble into the bag until it is hauled to the surface and opened on deck. Both dredges are hauled back at the same time.

Oystering fleet including many skipjacks, January 1926. Up to 1,000 of these graceful workboats once piled the Bay. Fewer than a dozen operate today.

Image: Scott Elzer / Calvert Marine Museum