



The Chesapeake Bay and Its Watershed

General Facts

- The Chesapeake Bay is an estuary: a body of water where fresh and saltwater mix. It is the largest of more than 100 estuaries in the United States.
- About 35 million years ago, an asteroid hit the ocean off the East Coast of North America. Its impact formed a 53-mile diameter crater that now lies buried beneath the Chesapeake Bay.
- While the bay was formed just 10,000 years ago when glaciers melted causing sea levels to rise and flooding the Susquehanna River valley, the impact crater helped to determine the location and shape of the southern Chesapeake Bay.
- The Chesapeake Bay watershed stretches approximately 524 miles from Cooperstown, New York to Norfolk, Virginia. It includes parts of six states—Delaware, Maryland, New York, Pennsylvania, Virginia and West Virginia—and the entire District of Columbia.
- The area of the watershed is about 64,000 square miles (41 million acres). The Bay receives about half its water volume as drainage of freshwater from its enormous watershed and the other half as saltwater from the Atlantic Ocean.
- The Chesapeake Bay's land-to-water ratio is 14:1, the largest of any of any of the large enclosed coastal water bodies in the world. Translated, this means there is a lot of land draining into very little water. Dilution cannot be the solution. Actions taken on land have an outsized impact on the Bay's health.
- Approximately 95 percent of the land in Maryland drains to the Bay, while 60 percent of the land in Virginia, a much larger state, drains to the Bay. Over 50 percent of the land in Pennsylvania drains to the Chesapeake Bay, from the Susquehanna and the Potomac rivers.
- Pennsylvania is the largest landholder in the watershed, making up 35 percent of the total Chesapeake Bay drainage basin (14,358,159 acres). Virginia is next at 34 percent or 13,927,700 acres; Maryland is third with 14 percent or 5,904,400 acres. Collectively, these three states make up 83 percent of the watershed and account for 90 percent of the pollutant load.
- The Chesapeake Bay watershed is home to almost 18 million people.
- There are nearly 1,800 local governments in the Bay watershed, including towns, cities, counties and townships. Approximately 1,100 of them are in Pennsylvania.
- The Chesapeake Bay straddles the Mason-Dixon Line encompassing both traditionally northern and southern forms of government.

General Facts

continued

- The Bay itself is about 200 miles long, stretching from Havre de Grace, Maryland, to Virginia Beach, Virginia. Its width ranges from four miles near Aberdeen, Maryland, to 30 miles near Cape Charles, Virginia.
- A few deep troughs run along much of the Bay's length and are believed to be remnants of the ancient Susquehanna River. The deepest part of the Bay, located southeast of Annapolis near Bloody Point, is called "The Hole" and is 174 feet deep.
- The mouth of the Chesapeake Bay is about 12 miles wide between its northern point near Cape Charles, Virginia, and its southern point close to Cape Henry, Virginia.
- The surface area of the Bay and its tidal tributaries is approximately 4,480 square miles.
- The Bay and its tidal tributaries have 11,684 miles of shoreline—more than the entire U.S. west coast.
- The Bay is surprisingly shallow. Its average depth, including all tidal tributaries, is about 21 feet.
- The Chesapeake Bay holds more than 18 trillion gallons of water.
- The Bay supports roughly 3,600 species of plants and animals, including 348 species of finfish, 173 species of shellfish and 2,700 species of plants.
- The Bay produces about 500 million pounds of seafood per year.
- The Chesapeake region is home to at least 29 species of waterfowl. Approximately 284,000 acres of tidal wetlands grow in the Chesapeake Bay region.
- Forests cover 58 percent of the Chesapeake Bay watershed.

Rivers

- Approximately 51 billion gallons of water flow into the Bay each day from its freshwater tributaries.
- Major rivers emptying into the Bay include the James, York, Rappahannock, Potomac, Patuxent, Patapsco and Susquehanna from the west and the Pocomoke, Wicomico, Nanticoke, Choptank and Chester from the east.
- Collectively, the Chesapeake's three largest rivers—the Susquehanna, Potomac and James Rivers—provide more than 80 percent of the fresh water to the Bay.
- The Susquehanna River is the Bay's largest tributary and contributes about half of the Bay's total freshwater flow (about 19 million gallons per minute) and about 90 percent of the freshwater flow to the upper Bay.
- The Chesapeake Bay watershed has 150 rivers and streams, and many hundreds of smaller tributaries. There are more than 100,000 stream miles in the watershed.

History of the Bay Restoration

- The Chesapeake Bay was the first estuary in the nation targeted by Congress for restoration and protection.
- In the late 1970s, U.S. Senator Charles “Mac” Mathias (R-Md.) sponsored a congressionally funded \$27 million, five-year study to analyze the Bay’s rapid loss of wildlife and aquatic life. The study, which was published in the early 1980s, identified excess nutrient pollution as the main source of the Bay’s degradation.
- The EPA study, in turn, triggered the largest, most coordinated clean-up effort in the nation, one that would ultimately bring the six watershed states, the District of Columbia, the Chesapeake Bay Commission and nine federal agencies together. The study triggered the creation of both the Chesapeake Bay Commission (1980) and the Chesapeake Bay Program (1983).
- Given the interstate nature of the study, the legislatures of Maryland and Virginia wanted a state-focused, policy-making body in place in time for the study’s release and formed the Chesapeake Bay Commission. Pennsylvania joined in 1985.
- Once formed, one of the Commission’s earliest actions was to serve as the lead sponsor of a conference to receive the results of the study.
- That conference triggered the creation of the federal-state partnership known as the “Chesapeake Bay Program” and all agreements and directives to follow.
- The original Chesapeake Bay Agreement was a simple, one-page pledge signed in 1983. The agreement recognized that a cooperative approach was necessary to address the Bay’s pollution problems.
- The 1987 Chesapeake Bay Agreement set the first numeric goals to reduce pollution and restore the Bay ecosystem. Among other goals, the agreement aimed to reduce nitrogen and phosphorus entering the Bay by 40 percent by 2000.
- In 2000, Bay Program partners signed Chesapeake 2000, a comprehensive agreement that set a clear vision and strategy to guide restoration efforts through 2010. The partners committed to reducing nutrients and sediments sufficiently to remove the Bay and its tidal tributaries from the list of impaired waters under the Clean Water Act.
- By 2009, it was clear that Bay Program partners needed to dramatically accelerate the pace of Bay restoration.
- Following a lawsuit and settlement with the Chesapeake Bay Foundation, in 2010 the EPA established the landmark Chesapeake Bay Total Maximum Daily Load (TMDL). The Chesapeake Bay TMDL is a federal “pollution diet” that sets limits on the amount of nutrients and sediment that can enter the Bay and its tidal rivers to meet water quality goals.
- By the start of 2011, each of the seven Bay jurisdictions had created their first Watershed Implementation Plan (WIP) that spelled out detailed, specific steps the jurisdiction would take to meet these pollution reductions required by the TMDL by 2025. Jurisdictions updated their initial plans in 2012, issuing Phase II WIPs. The Bay jurisdictions also use two-year milestones to track and assess progress toward completing the restoration actions in their WIPs.

History of the Bay Restoration continued

- With a new Chesapeake Watershed Agreement signed in 2014, the Bay partners reaffirmed their recognition of the role and necessity of the Chesapeake Bay TMDL in driving pollution reductions. This Agreement further strengthened the region's commitment to have practices and controls in place that are expected to achieve 60 percent of the nutrient and sediment pollution load reductions by 2017 and to have all practices and controls installed by 2025.
- The Midpoint Assessment, meant to evaluate progress towards meeting 60 percent of pollution reductions by 2017, was finalized in 2018. It found that the jurisdictions exceeded the 60 percent goals for reducing phosphorus and sediment, but they did not achieve their 2017 goal for reducing nitrogen. The Midpoint Assessment also involved updating the Chesapeake Bay suite of models to their most robust form yet.
- In 2019, each jurisdiction created a third iteration of their WIP, also known as Phase III WIPs. The Phase III WIPs guide the final stage of local and state Bay restoration efforts through 2025 to achieve clean water. Clean water is defined as meeting standards for dissolved oxygen (DO), water clarity/submerged aquatic vegetation (SAV) and chlorophyll-a (a measure of algae that indicates nutrient pollution).
- In May 2020, the Chesapeake Bay Foundation and its partners filed a Notice of Intent (NOI) to sue the United States EPA for violating the Clean Water Act. The Attorneys General of Virginia, Maryland and the District of Columbia filed similar notices. They argue that the Phase III WIPs of Pennsylvania and New York fail to fully account for 100% of the necessary nutrient reductions by 2025. The CBF et al. NOI also claims that by not imposing any consequences on NY and PA, EPA has acted in an "arbitrary and capricious" manner in violation of both the Clean Water Act and the Administrative Procedure Act.

Bay Economy

- The *2016 Fisheries Economics of the U.S. Report* by the National Oceanic and Atmospheric Administration (NOAA) indicates that the commercial seafood industry in Maryland and Virginia contributed \$1.4 billion in sales, \$538 million in income, and almost 23,000 jobs to local economies.
- In FY19 the Port of Virginia helped create more than \$2 billion in new business investment in Virginia. That business investment helped create more than 2,800 jobs and over 2.9 million square feet of development according to the Port's Annual Report.
- According to economic analysis commissioned by the Maryland Port Administration, in 2017 the port of Baltimore generated \$3.3 billion in salaries, \$2.6 billion in business revenues, \$395 million in state and local tax and 37,300 jobs (including both direct and induced).
- The Bay's outdoor economy also generates significant spending – with wildlife watchers alone spending \$483 million, \$958 million, and \$1.2 billion in Maryland, Virginia, and Pennsylvania, respectively, according to the 2011 *National Survey of Fishing, Hunting, and Wildlife-Associated Recreation*.

Source for information above is the Chesapeake Bay Commission, the Chesapeake Bay Program (<http://www.chesapeakebay.net/discover/bay101/factshttp://www.chesapeakebay.net/about/how/history>) and the PA DEP. Last updated: 6-10-2020

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