# Patapsco River
## 2024 Report Card

Patapsco Heritage Greenway (PHG) is a non-profit organization dedicated to protecting, interpreting, and restoring the environment, history, and culture of the Patapsco River Valley. The Patapsco Valley is a certified Maryland Heritage Area, a designation by the Maryland Historical Trust that supports collaboration between individuals, nonprofits, businesses, and governments to protect the region's environmental and historical value.

In 2021, PHG started a volunteer water quality monitoring program in partnership with the Chesapeake Monitoring Cooperative (CMC). PHG adopted the methodologies and quality assurance procedures of the CMC, thereby joining a large regional network of programs collecting similar data of known quality. Since then, the program has grown in number of volunteers engaged, parameters measured, sites assessed, types of monitoring performed, and data users.

During the 2023–2024 sampling year, PHG monitored 11 stations from Woodbine to Elkridge. Temperature, dissolved oxygen, pH, conductivity, nitrite, phosphorus, clarity, and *E. coli* bacteria are measured monthly. Twice a year, the benthic macroinvertebrate community is assessed using the procedures of the Izaak Walton League of America's Save Our Streams program.

PATAPSCO HERITAGE GREENWAY

CMC Chesapeake Monitoring Cooperative

ALLIANCE for the Chesapeake Bay

LIVE GREEN HOWARD

THE IZAAK WALTON LEAGUE OF AMERICA

UMCES Integration and Application Network

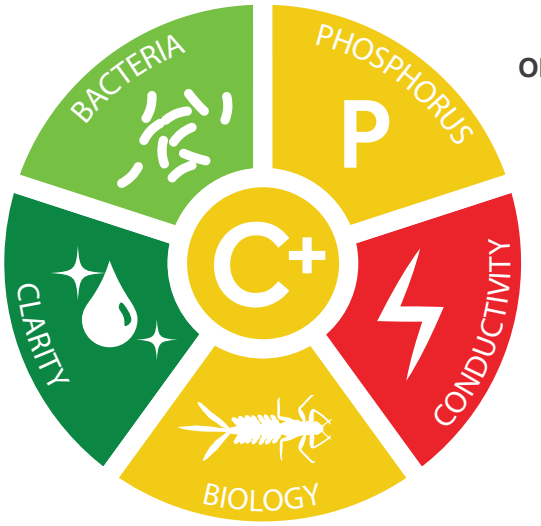
100 YEARS OF SCIENCE

# The Patapsco River is in moderate condition

For the third year in a row, the Patapsco River is moderately healthy overall. Water clarity is consistently very good in the non-tidal Patapsco River. This is important for underwater plants and organisms that need sunlight to filter down to the bottom of the waterway. Conductivity has been too high year-round since monitoring began, likely due to years of excessive and inefficient winter salting practices. Phosphorus measurements tend to spike in the spring and fall, but are good the rest of the year, resulting in a moderate score overall. Bacteria levels were low, earning a good score.


The biological assessment shows that the river is in moderate condition. Benthic macroinvertebrates are sensitive to pollution and therefore reflect the quality of the river as a suitable habitat.

Baseflow contributions to the river, human use and development, and pollution inputs can all vary considerably from station to station. Some pollutants accumulate downstream, but others settle to the bottom and stay in place. This may explain why the tributary sites, Sucker Branch, Bull Branch, Miller Run, and Deep Run, have higher readings of conductivity, phosphorus, and bacteria, and tend to score lower than the main stem sites each year.

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|---|---|---|---|---|
| A Very Good 100–80% | B Good 79–60% | C Moderate 59–40% | D Poor 39–20% | F Very Poor 19–0% |

## Is it safe to swim in the river?

Generally, swimming is permitted in the Patapsco River, but visitors must consider rain and safety before swimming. Avoid contact with the river for 48 hours after more than 1 inch of rain. You are more likely to encounter disease-causing bacteria in the river after a storm, because the rain washes harmful bacteria into the water. At any point, if the river looks cloudy or is moving faster than normal, do not go swimming.

## How is the data used?

The Maryland Department of the Environment uses this data in a biennial Integrated Report to the U.S. EPA. This data provides insight on Maryland waters, which is required by the Clean Water Act. We also use the data to guide our own programming, like determining locations for stream cleanups and starting a Salt Watch program.

# What do the indicators tell us?

## Conductivity

Conductivity is the ability of the water to conduct electricity and is based on the number of charged particles, like chloride, in the water column. Excessive conductivity causes organisms stress and can affect their ability to regulate their internal chemistry.

## Phosphorus

Phosphorus is a critical nutrient in our aquatic food web, but too much can be a problem. Even a modest increase can cause a chain of undesirable events including accelerated plant growth, algae blooms, low dissolved oxygen, and the death of some aquatic animals.

## Bacteria

Bacteria are everywhere in our environment, but some bacteria can make water unsafe for contact. We measure *E. coli* bacteria in the water because some kinds of *E. coli* are pathogenic, and high numbers of *E. coli* represent an increased risk to humans of becoming sick after coming in contact with the water.

## Clarity

Particles in the water cause it to appear cloudy and can smother aquatic plants and animals. Particles can come from various sources of erosion and runoff.

## Biology

A diverse and pollution sensitive benthic macroinvertebrate community is an indicator of a healthy stream. Conversely, finding only organisms that are tolerant to pollution tells a different story. All these organisms (dragonfly nymphs, worms, snails, fly larvae) are also an important foundation for a healthy aquatic food web.

# Tracking Chloride

For the third year in a row, conductivity is the lowest-rated parameter in the non-tidal Patapsco River. Sites all along the river have high levels of conductivity year-round, with peaks occurring after winter storm events when surfaces have been treated with road salt.

Chloride, a main ingredient in road salt, is easy for volunteers to measure using a Salt Watch Kit. A kit includes test strips and instructions for how to test your waterway. You can request a free Salt Watch Kit at *iwla.org/salt-watch*.

PHG offers Smart Salter workshops where you can learn how to use salt more efficiently on walkways, how to test for chloride using a Salt Watch Kit, and how to enter your data into a database for tracking chloride nationally. Check out upcoming workshops at *patapsco.org/events*.

# How do you make a report card?

The overall scores and the individual parameter scores are determined by analyzing a year of water quality data from our monitoring stations. This report card analyzed data from May 2023 to April 2024. Scores are calculated using the Mid-Atlantic Tributary Assessment Coalition's data analysis protocols for non-tidal stream indicators and are out of 100 possible points. As part of the Chesapeake Monitoring Cooperative, our data are publicly available on the CMC Data Explorer (*cmc.vims.edu/data-explorer*).

The map and scores you see here reflect thousands of hours of hard work and dedication by staff and volunteers, and we couldn't have done it without the generous support of our funders and donors.

# Removing Dams

In the past, many dams harnessed the power of the Patapsco River to run mills and generate electricity. Daniels Dam once provided horsepower for now-destroyed canvas mills and generated surplus electricity for BG&E. Daniels Dam is the last remaining dam on the mainstem of the non-tidal Patapsco River. The dam is aging and requires costly repairs to safely remain in place.

The Maryland Department of Natural Resources is evaluating the future of the dam and surrounding area. The study will consider whether or not to remove the dam. Removal of other dams along the Patapsco has improved ecosystem health and restored access to natural habitats. Removing this dam increases river connectivity for migrating fish like shad and eels. Public input for the study is important; contribute your thoughts by emailing *DanielsDamOutreach@AmericanRivers.org*.

To learn more about the Daniels Dam Feasibility Study, scan this QR code or visit *dnr.maryland.gov/publiclands/Pages/daniels-dam-feasibility-study.aspx*.

# How can you help?

- Become a PHG Salt Watcher and help collect data on chloride.
- Choose a section of your yard to be more wild; mow less and leave fall leaves there.
- Plant native plants to help feed local insects and birds and to help reduce need for extra fertilizing and watering.


## Acknowledgments

Report card produced and released in August 2025 by Patapsco Heritage Greenway (PHG) in collaboration with the Integration and Application Network, University of Maryland Center for Environmental Science, and the Howard County Office of Community Sustainability. The data collected for this report card are the collective effort of PHG in conjunction with many dedicated volunteers. Critical support for the project was provided by the Alliance for the Chesapeake Bay, the Chesapeake Monitoring Cooperative, and the Izaak Walton League. Daniels Dam photo from Wikimedia Commons. All other photos courtesy of Patapsco Heritage Greenway.