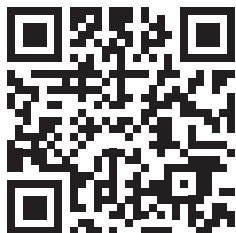
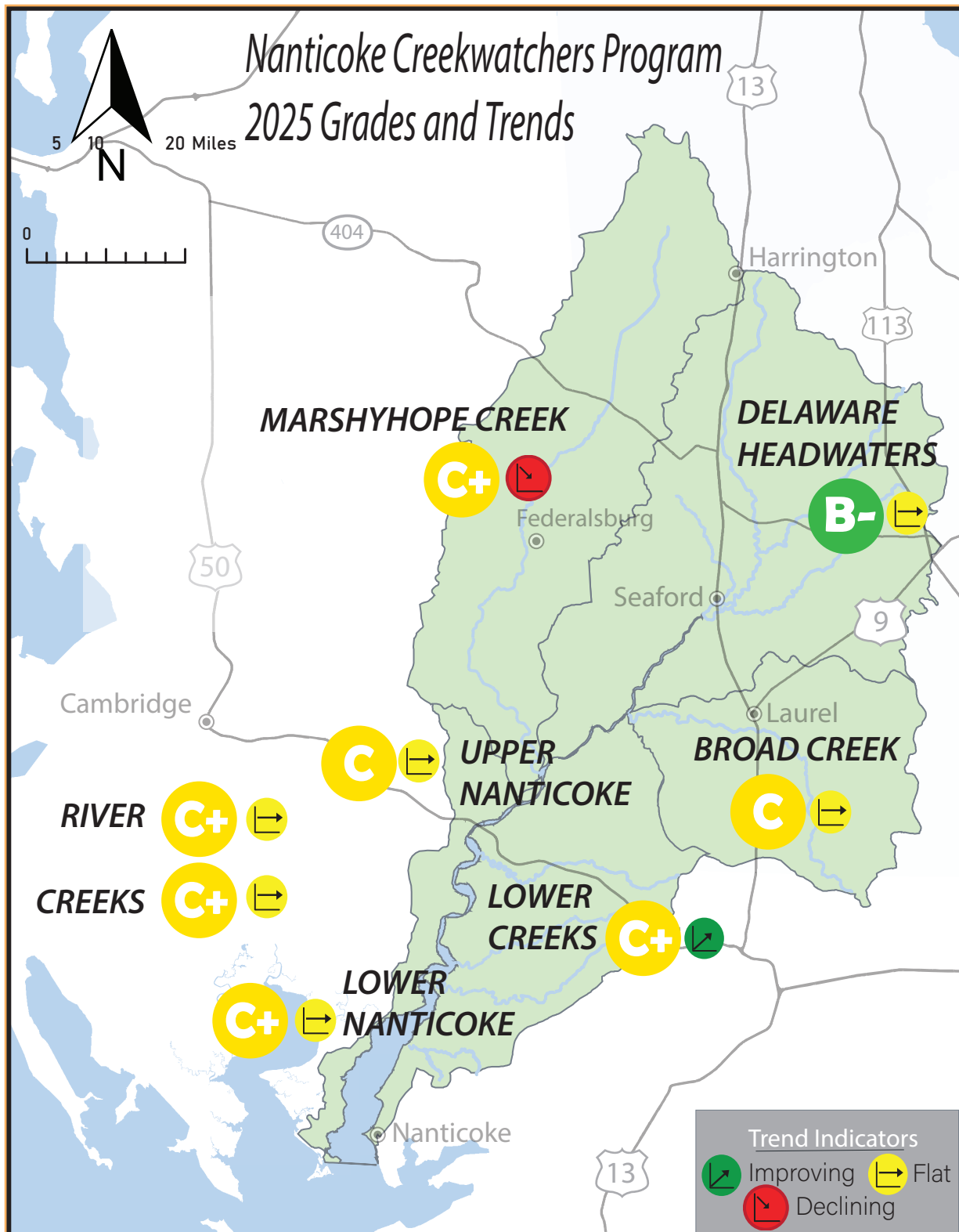


2025 NANTICOKE RIVER REPORT CARD



NanticokeRiver.org

For the 2025 Nanticoke River Report Card, Nanticoke Watershed Alliance used data collected by volunteer Nanticoke Creekwatchers during the 2025 season, which ran from late March through early November. We were unable to use data from the two Chesapeake Bay Program sites we regularly include, one station in Sharptown and another in Tyaskin, since the data were not available as of report card development. Results were again mostly flat and followed similar trends seen in the 2023 and 2024 seasons. The Delaware Headwaters was the only region to score higher than C+, maintaining its solid B- rating, while Marshyhope Creek edged downward from a B- to a C+. The Lower Creeks edged up slightly to a C+.



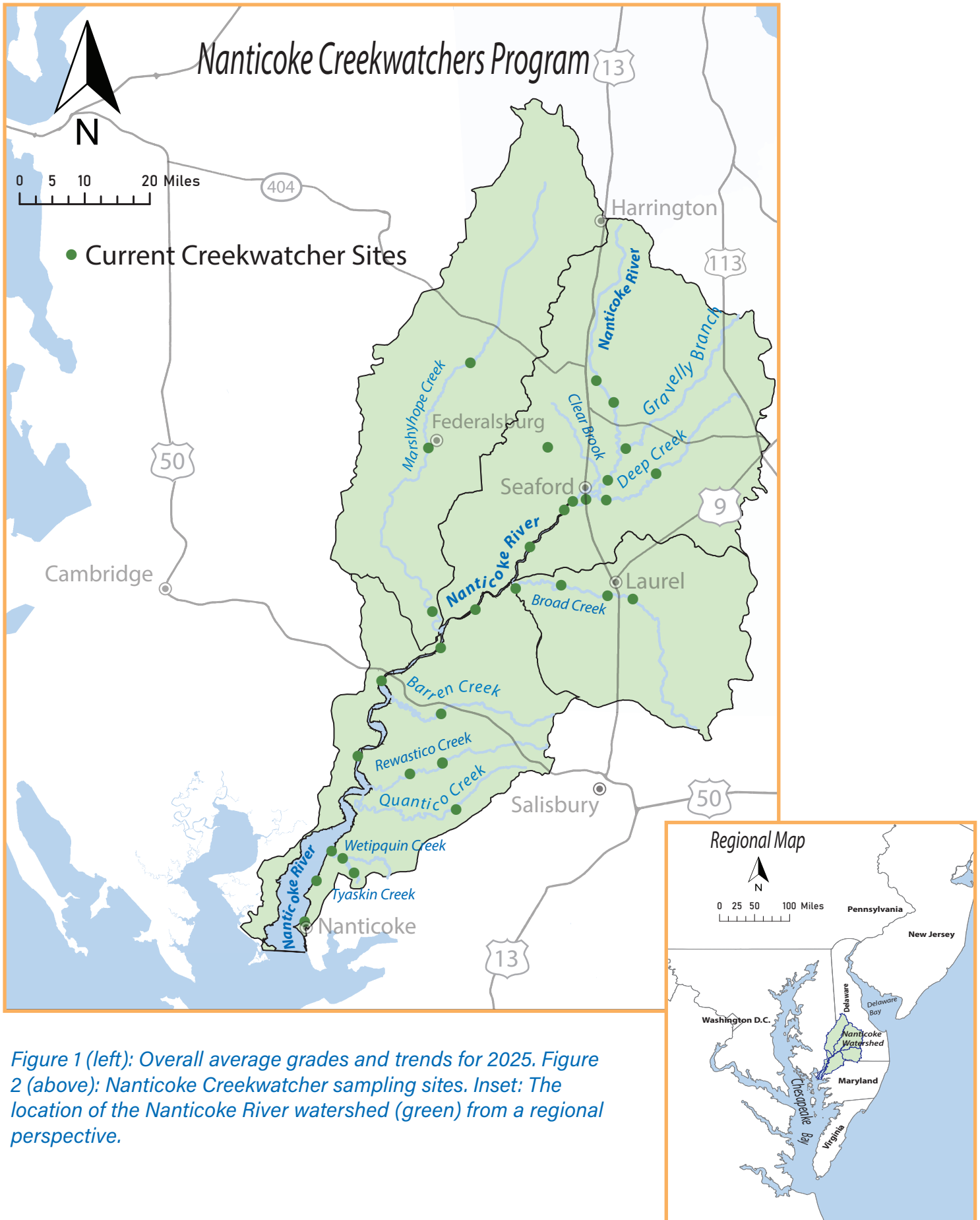


Figure 1 (left): Overall average grades and trends for 2025. Figure 2 (above): Nanticoke Creekwatcher sampling sites. Inset: The location of the Nanticoke River watershed (green) from a regional perspective.

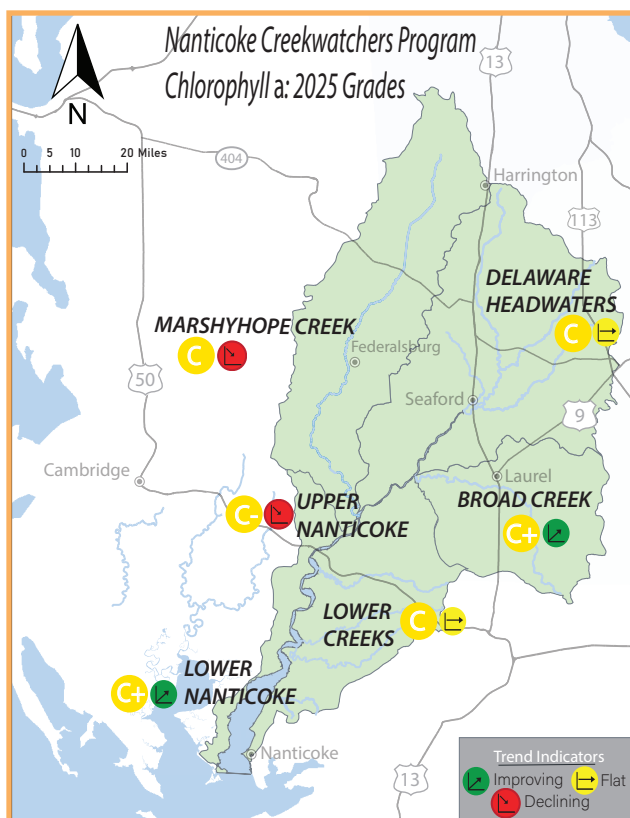


Figure 3 (above): Chlorophyll a grades in 2025.

CHLOROPHYLL A (upper-left) is a measurement of algae present in tidal waterways.

In 2025, Broad Creek improved from a C to a C+. Far more impressive, Broad Creek scored a D in 2023 and in several years prior to that. Otherwise, the Lower Nanticoke bumped up a partial grade from a C to a C-, while Marshyhope Creek and the Upper Nanticoke dropped to C and C-, respectively.

NITROGEN (lower-left) is a naturally-occurring element that is required for plants to grow and is commonly found in lawn and garden and agricultural fertilizers. Like phosphorus, excessive amounts of nitrogen in waterways can help fuel algal blooms (some of them harmful to human and animal health) and cause low dissolved oxygen and fish kills. Excessive nitrogen in the form of nitrates can also cause health issues. **The Marshyhope Creek and Lower Creek regions saw slight improvements in 2025, while the other four regions were flat.**

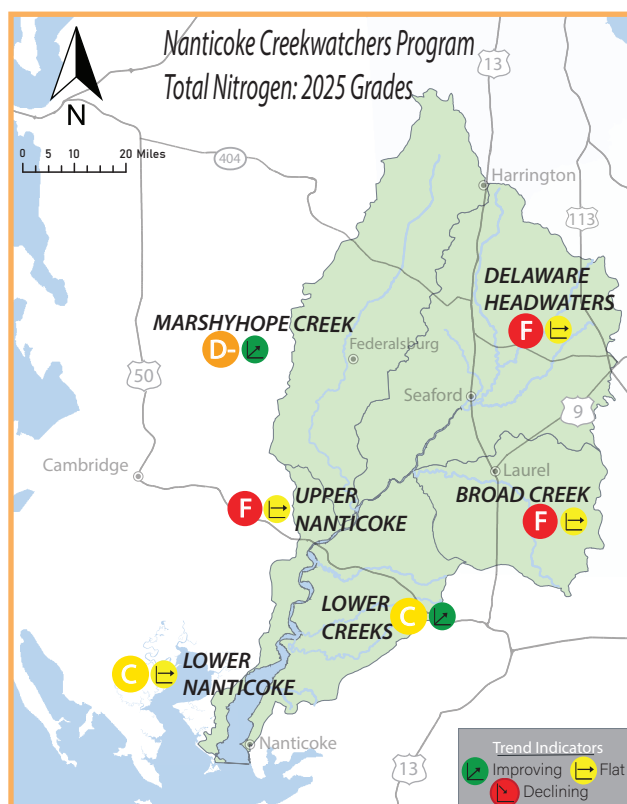


Figure 4 (above): Total nitrogen grades in 2025.

PHOSPHORUS (p. 5, upper-right) is the other major nutrient responsible for algal blooms and a number of water quality-related issues in waterways, along with nitrogen. **Broad Creek dropped a full letter grade from a B- in 2024 to a C- in 2025; the Upper Nanticoke slightly declined to a C. Marshyhope Creek and the Lower Nanticoke both slightly improved.**

WATER CLARITY (p. 5, lower-right) is related to nutrient pollution, as storm-related runoff can easily overwhelm waterways with soil, chemicals, and nutrients. Murky waterways are unable to support aquatic life such as freshwater mussels, oysters, and aquatic grasses.

The Upper Nanticoke dropped from a C- in 2024 to a D in 2025. Marshyhope Creek and Lower Creek slightly declined. The Delaware Headwaters bounced back to a B-.

2025 Highlights

- All regions were overall flat except for Marshyhope Creek, which declined from a B- in 2024 to a C+, and the Lower Creeks, which improved from a C in 2024 to a C+. Both of these changes were minor.
- Delaware Headwaters scored a B- again, the sole region to earn an overall grade above C+.
- Broad Creek's CHLOROPHYLL *a* grade improved for the second year in a row. When compared with grades in seasons prior to 2024, the region is showing a remarkable improvement. It remains to be seen whether this trend will continue into 2026.
- NITROGEN grades were mostly flat, although two regions showed slight improvements.
- PHOSPHORUS improved slightly in the Delaware Headwaters, Marshyhope Creek, and the Lower Nanticoke, while declining in the Upper Nanticoke and Broad Creek.
- WATER CLARITY grades were mostly either flat or declined. The Upper and Lower Nanticoke regions, as well as the Lower Creeks, scored Ds and a D+, respectively.
- DISSOLVED OXYGEN remains healthy in all six regions.
- CONDUCTIVITY was mostly flat, with the exception of Broad Creek, which saw improvement.

The Nanticoke Watershed Alliance uses multithreshold criteria developed by the Mid-Atlantic Tributary Assessment Coalition (MTAC) to analyze and grade sites and regions. See ian.umces.edu for more information.

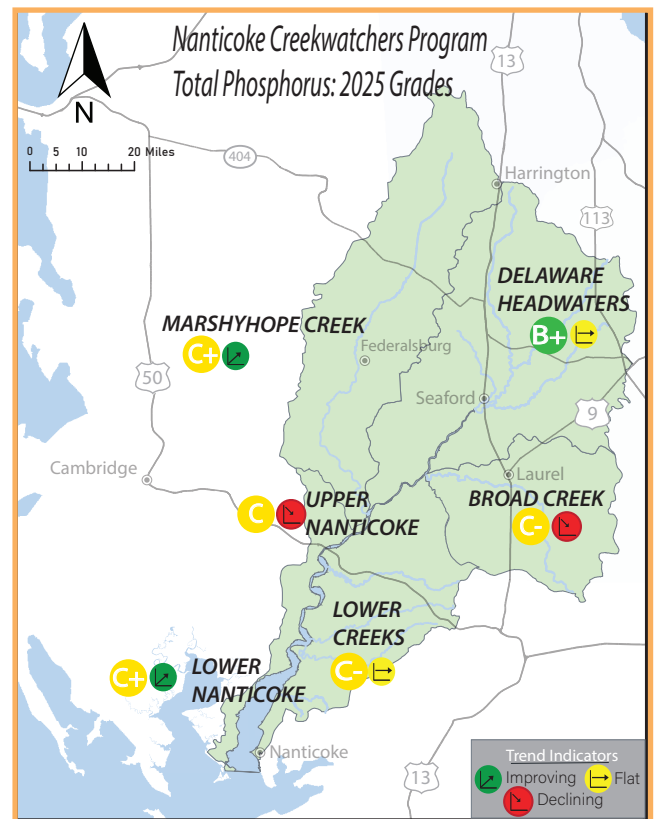


Figure 5 (above): Total phosphorus grades in 2025.

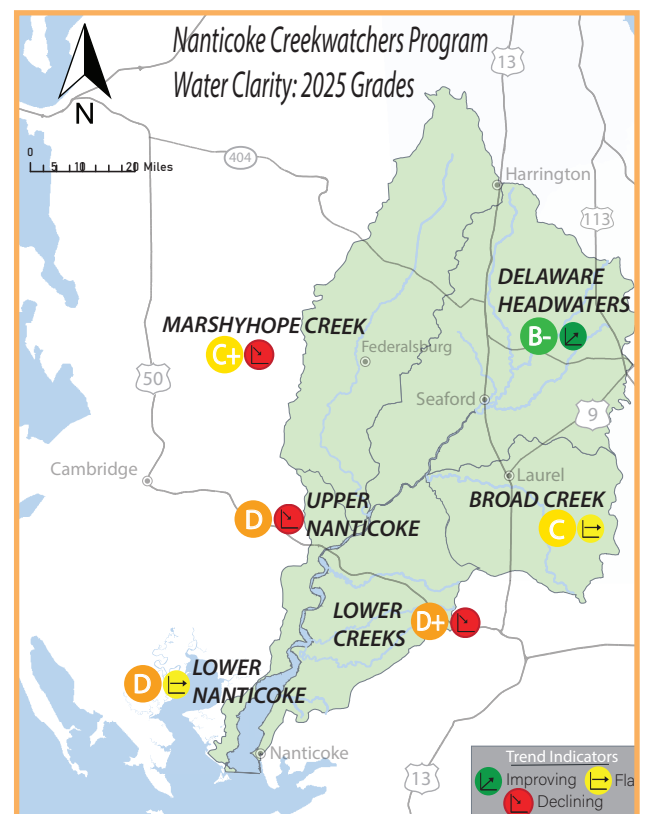


Figure 6 (above): Water clarity grades in 2025.

In general, **DISSOLVED OXYGEN** (right) is a strong indicator throughout the Nanticoke River region. **In 2025, dissolved oxygen continued to be excellent throughout the Nanticoke River watershed, with all scores flat. However, some sites continued to struggle in this area, including Lower Creek sites on the Quantico, Rewastico, and Tyaskin Creeks.**

Dissolved oxygen can vary according to the water depth, and Creekwatchers take measurements at multiple depths. Low dissolved oxygen can be caused by decaying algal blooms or leaf litter and extremely warm water temperatures. Waterways that feature tree buffers and mature canopy tend to have lower water temperatures and higher dissolved oxygen. Low or no dissolved oxygen can create a number of issues, including fish kills and dead zones.

Figure 7 (above-right): Dissolved oxygen grades for 2025.

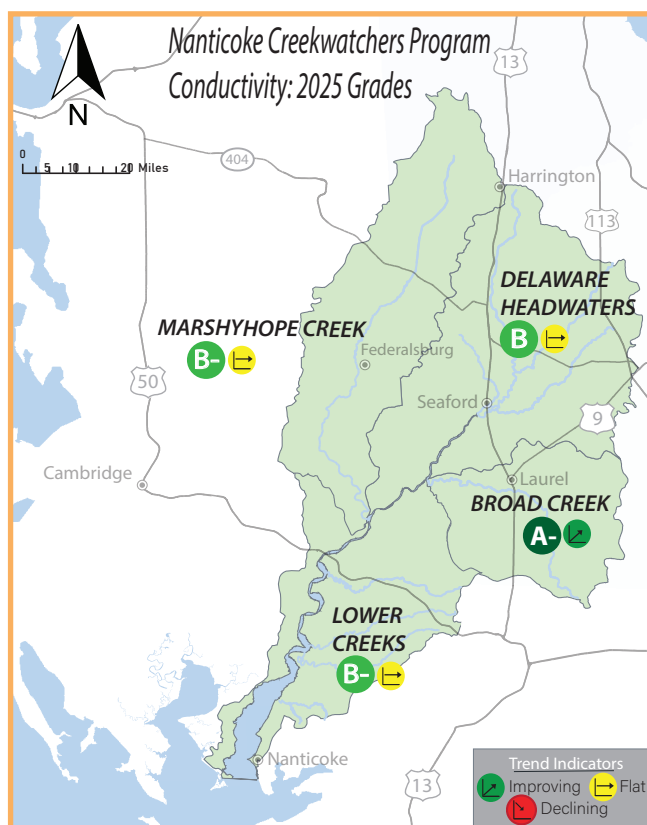
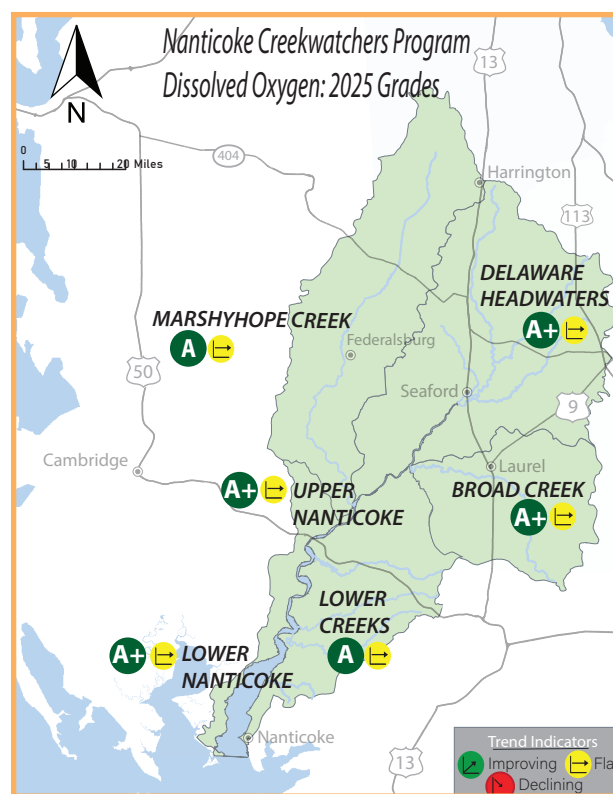


Figure 8 (above): Conductivity grades for 2025.

Conductivity measures the concentration of ions in nontidal waterways. (At tidal sites, Creekwatchers collect salinity data. Accordingly, we do not measure conductivity at any river sites, so the Upper Nanticoke and Lower Nanticoke regions do not receive conductivity grades.) As compounds enter waterways through runoff, they break down into smaller parts, including ions. Excessive ion concentrations can decrease pH levels, making waterways more acidic and harming plants and animals.

In 2025, conductivity grades were flat except for Broad Creek, which improved from a B- to an A-. Conductivity grades continued to be good.



Download or view our data at the Chesapeake Data Explorer, which is provided by the Chesapeake Monitoring Cooperative.

CMC.VIMS.EDU

THANKS TO OUR 2025 NANTICOKE CREEKWATCHERS!

Gavin Anderson
Jessica Anderson
Bill Ayrey
Richard Ball
Joel Brown
Amber Cockey
Genevieve Cockey
Isabel Cockey
Robin Cockey
Kathy Gawinski

Jean Hendrickson
Pat Hickson
Teresa Hickson
Erin Kim
Tedi Kohinke
Beth Kopicki
Josh Krueger
Avi Levanovsky
Laura McCann
Mike Murphy

Lynn Parks
Tim Parks
Jeff Phillips
Melissa Radcliffe
Sam Radcliffe
Bonnie Rose
Dave Rose
Dana Seyfried
John Vrabel
Tom Wright

Nanticoke Watershed Alliance would like to especially thank Creekwatcher Richard Ball for his 18 years of service. For many years, Richard monitored sites in the Fishing Bay watershed and moved to sites on the Nanticoke River after the Fishing Bay program concluded. Richard has always been a key part of our program. He attended training annually, ensuring that he was following our protocol, although he could have (and did) train and mentor interns and other Creekwatchers. We're grateful for Richard's early and on-going support of the Nanticoke Creekwatchers Program and wish him the best in his well-deserved retirement.



(Above) Richard Ball accepts congratulations from Beth Wasden at the End of Season Dinner. (Bottom-left) Erin Kim prepares to grab a water sample at Quantico Creek. (Bottom-right) Tom Wright wades in at Middleford.



Nanticoke Watershed Alliance serves the Nanticoke River watershed through outreach, education, and dialogue. We recently moved and invite you to visit us at our new office at 121 S. Conwell St. in Seaford to learn more about us and how you can get involved.



SAVE THE DATE

OPEN HOUSE

09.11.2026

**Drop in anytime between
4:00 - 6:30 PM**

**121 S Conwell Street
Seaford, DE 19973**



The Nanticoke Watershed Alliance would like to thank the following organizations for their contributions and support of the Creekwatchers program during the 2025 season:



CMC
Chesapeake Monitoring
Cooperative

Project Supervisor/Author:
Beth Wasden

Published: July 2026