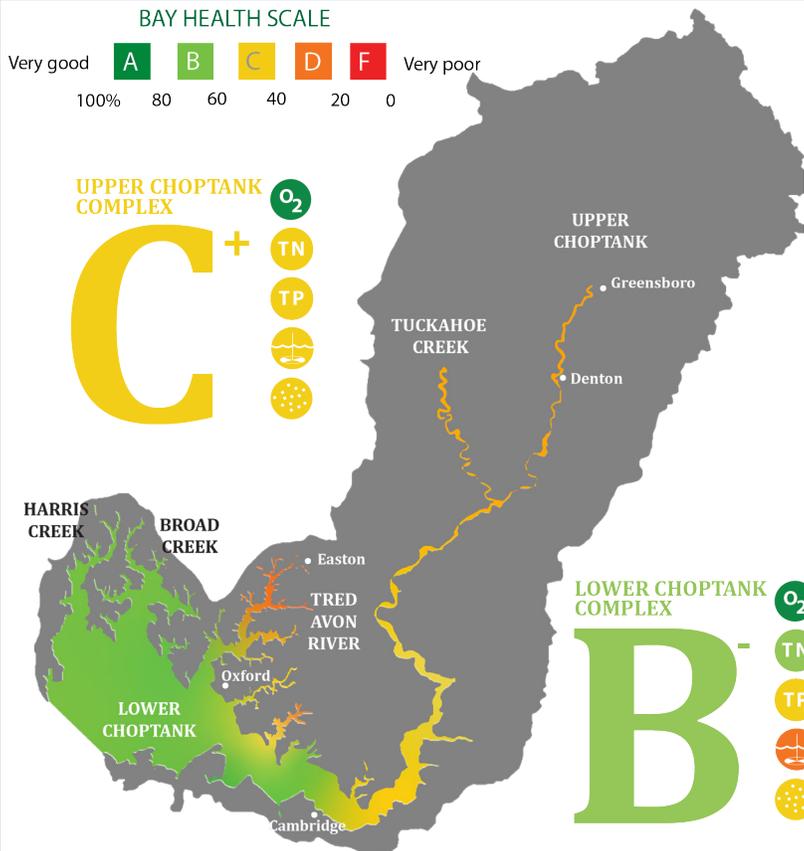


CHOPTANK RIVER REPORT CARD

2022



The 2022 water quality grades for the Choptank River show that **phosphorus, chlorophyll *a* and water clarity** remain the largest threats to water quality in the lower Choptank River complex, while **nitrogen** also threatens the upper Choptank River complex.

The **2022 overall grades** are consistent with the eight-year trend for these segments of the river, showing that water quality remains steady in the face of changing landuse, population growth, and variations in yearly weather patterns. **Dissolved oxygen** levels remained good to very good at almost all sampling locations, which represents conditions that support aquatic life. Results for **La Trappe Creek** were concerning, where scores for dissolved oxygen, total phosphorus, and chlorophyll *a* were among the lowest of all tributaries sampled. The **upper Tred Avon River** and the upper Choptank River mainstem also show indications of pollution hotspots with grades representing poor water clarity, phosphorus, and chlorophyll *a* scores.

■ = see chart below for a list of what each complex includes

- O₂** DISSOLVED OXYGEN
 - TN** TOTAL NITROGEN
 - TP** TOTAL PHOSPHORUS
 - WATER CLARITY**
 - CHLOROPHYLL A**
- ShoreRivers uses Mid-Atlantic Tributary Assessment Coalition scientific protocols to collect and evaluate water quality data. A numeric **Water Quality Index** is calculated using established thresholds for water quality parameters, then converted to a letter grade.

Matt Pluta, Choptank Riverkeeper

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	DISSOLVED OXYGEN	TOTAL NITROGEN	TOTAL PHOSPHORUS	WATER CLARITY	CHLOROPHYLL A	WATER QUALITY INDEX	2022 GRADE
Lower Choptank River Mainstem	76%	75%	64%	42%	56%	63%	B-
Harris Creek	100%	91%	74%	40%	70%	75%	B+
Broad Creek	92%	81%	79%	44%	78%	75%	B+
Irish Creek	100%	83%	73%	38%	60%	71%	B
Tred Avon River	74%	70%	53%	36%	54%	57%	B-
Island Creek	92%	66%	50%	31%	43%	56%	C+
La Trappe Creek	50%	60%	42%	29%	27%	42%	C-
Bolingbroke Creek	92%	64%	48%	24%	40%	54%	C
Upper Choptank River Mainstem	100%	24%	49%	52%	56%	56%	C+
Tuckahoe Creek	88%	57%	58%	39%	46%	58%	C+

BACTERIA MONITORING ON THE CHOPTANK | 2022

Site	Pass Rate	Average Failing CFU*
Red Bridges	20%	213
Hillsboro Landing	25%	239
Denton, Crouse Park	53%	287
Choptank Marina Beach	47%	580
Bill Burton Beach	87%	705
Sailwinds Park Beach	60%	200
Willis St. Beach	27%	863
Gerry Boyle Park Beach	64%	354
Hambrooks Bay Beach	60%	255
Trappe Landing	43%	523
The Strand, Oxford	80%	1001
Bellevue Beach	53%	169

CFU = Coliform Forming Units
Pass/Fail Threshold = 104 CFU

*Indicates the average of all failing scores this season

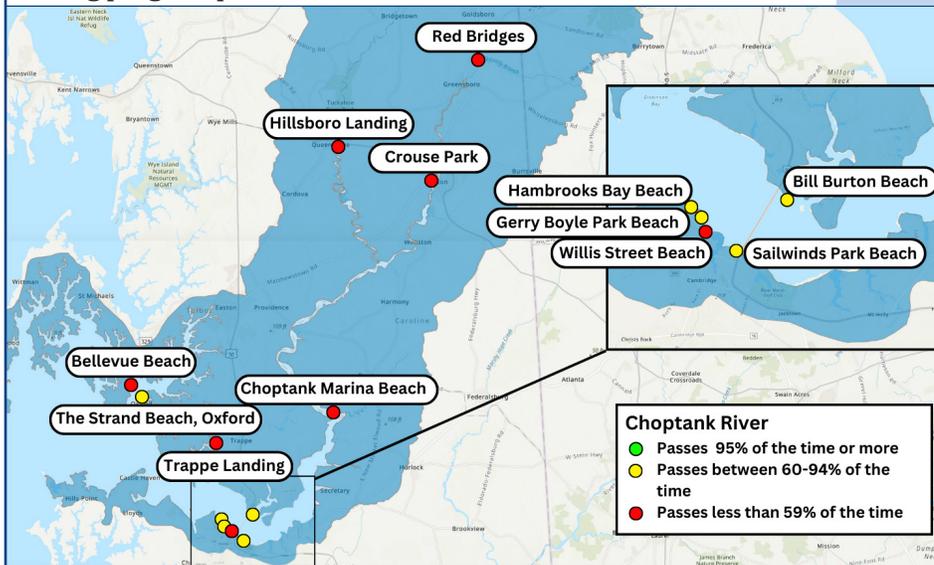
As part of the Swimmable ShoreRivers program, volunteer SwimTesters sample for bacteria at popular public access locations. Tests are conducted weekly from Memorial Day through Labor Day. The program follows the Environmental Protection Agency's standard protocols for collecting and analyzing samples and uses a pass/fail system to determine if bacteria levels are safe or unsafe for swimming.

In urban areas like Cambridge, sewage from outdated sewer lines mixes with stormwater during large rain events, delivering bacteria-laden water to the river. City leadership in Cambridge has prioritized upgrading the faulty waterfront sewer lines—a much needed upgrade that we're hopeful will reduce the amount of bacteria pollution washing into the Choptank. Septic systems around some more of our rural testing sites like Trappe and Hillsboro Landing, Red Bridges and Choptank Marina Beach are likely influences on bacteria at those beaches.

Bacteria is a localized source of pollution which explains why beaches located across a river from one another—like The Strand and Bellevue Beach, and Sailwinds Park and Bill Burton Beaches—can have different bacteria readings and rate of passing results.

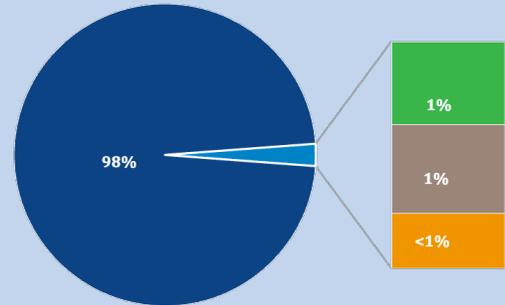
We're especially thankful for strong community support for this program from watershed residents—our Trappe Landing, Choptank Marina Beach, Bellevue, Crouse Park, and Red Bridges sites are all paid for by residents of those neighborhoods!

Thank you to our sponsors and volunteers for making our bacteria testing program possible!



BACTERIA eDNA SOURCE TRACKING ANALYSIS

Copies per 100ml



■ Human: 151,443 ■ Poultry: 1,337 ■ Swine: 1,443 ■ Dog: 882

Thanks to generous funding from **our members** and the Cornell Douglas Foundation, ShoreRivers has begun tracking the sources of bacteria pollution **in our rivers using eDNA testing**. This new type of testing measures the number of eDNA copies (genetic material found in the environment) per 100ml of sample water and identifies the specific animal groups present.

Results from 2022 testing indicate the overwhelming majority of eDNA present in our rivers is human, making shoreline septic systems, wastewater treatment outfalls, and illegal marine discharge key sources to monitor in the year ahead.

DID YOU KNOW that common practice is to pump out a septic system every three–five years? And if you're operating a Best Available Technology system, make sure that it's plugged in, turned on, and running properly. Failing or underperforming septic systems can cause bacteria and nutrient pollution to flow directly into our rivers, making them unsafe to swim in and to eat shellfish from.

SITES TESTED FOR BACTERIA POLLUTION | 2022