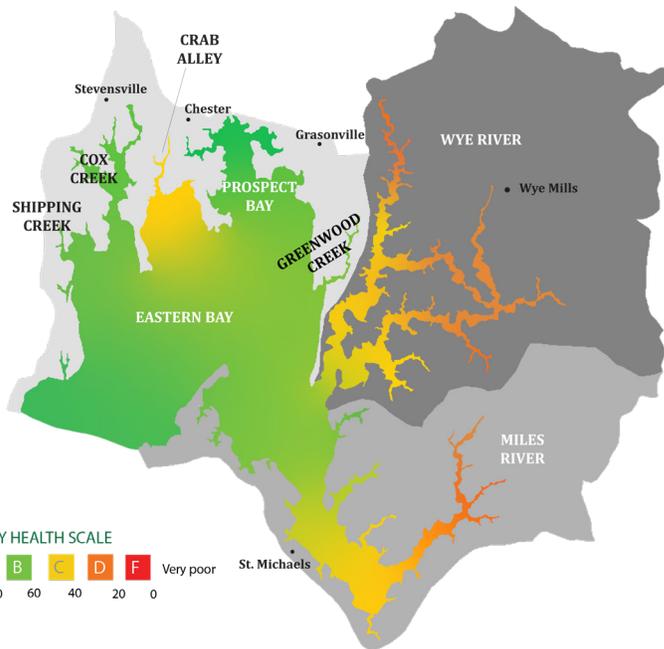


MILES, WYE, & EASTERN BAY REPORT CARD

2022



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

- DISSOLVED OXYGEN
- TOTAL NITROGEN
- 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.

The 2022 Water Quality Index scores for the Miles River, Wye River Complex, and Eastern Bay Complex show that poor water clarity, likely due to algae and sediment particles in the water column, is a major threat to these waterways. All of the major tributaries showed declining conditions in 2022 compared to the long term average for these sampling stations.

The Wye River Complex scored a D+ in 2022, showing impairments from phosphorus and chlorophyll *a*, declining water clarity scores, and moderate nitrogen scores. The Miles River scored a C+, with poor water clarity and moderate levels of nutrients, and chlorophyll *a*. Eastern Bay had the best score of any tributary in the complex, which is expected given its low land to water ratio. However, it also had poor water clarity scores and moderate scores for chlorophyll *a*. Crab Alley and Greenwood Creek showed moderate scores with a declining trend.

Ben Ford, Miles-Wye Riverkeeper
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| | DISSOLVED OXYGEN | TOTAL NITROGEN | TOTAL PHOSPHORUS | WATER CLARITY | CHLOROPHYLL A | WATER QUALITY INDEX | 2022 GRADE |
|-----------------|------------------|----------------|------------------|---------------|---------------|---------------------|------------|
| Eastern Bay | 57% | 73% | 78% | 67% | 66% | 68% | B |
| Shipping Creek | 100% | 71% | 58% | 33% | 60% | 64% | B- |
| Cox Creek | 100% | 76% | 69% | 38% | 60% | 68% | B |
| Crab Alley | 92% | 51% | 47% | 24% | 40% | 51% | C |
| Prospect Bay | 93% | 78% | 73% | 42% | 60% | 69% | B |
| Greenwood Creek | 93% | 67% | 56% | 22% | 37% | 55% | C |
| Wye Narrows | 63% | 43% | 22% | 22% | 24% | 35% | D |
| Wye River | 67% | 52% | 29% | 31% | 39% | 44% | C- |
| Wye East | 72% | 40% | 20% | 29% | 30% | 38% | D+ |
| Miles River | 78% | 59% | 42% | 34% | 41% | 51% | C |

BACTERIA MONITORING ON THE MILES, WYE, & EASTERN BAY | 2022

| Site | Pass Rate | Average Failing CFU* |
|------------------------|-----------|----------------------|
| Drum Point Beach | 60% | 257 |
| Broad Cove Claiborne | 33% | 250 |
| Claiborne Beach | 67% | 885 |
| Tunis Mills Bridge | 60% | 4958 |
| Miles River Yacht Club | 73% | 6203 |
| Matapeake Beach | 67% | 426 |

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.

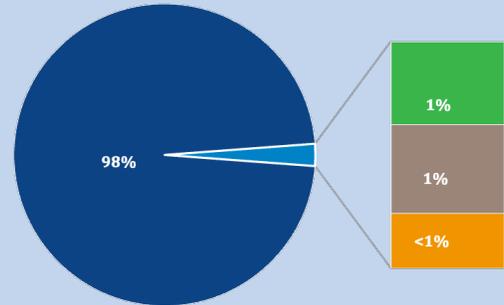
The tide, recent rain fall, water temperature, and distance from bacteria source all play a major role in how often a site might experience high levels of bacteria pollution.

Thank you to our sponsors and volunteers for making our bacteria testing program possible—and to those using our pumpout boat to help keep marine waste out of the Miles & Wye rivers!

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.

BACTERIA eDNA SOURCE TRACKING ANALYSIS

Copies per 100ml

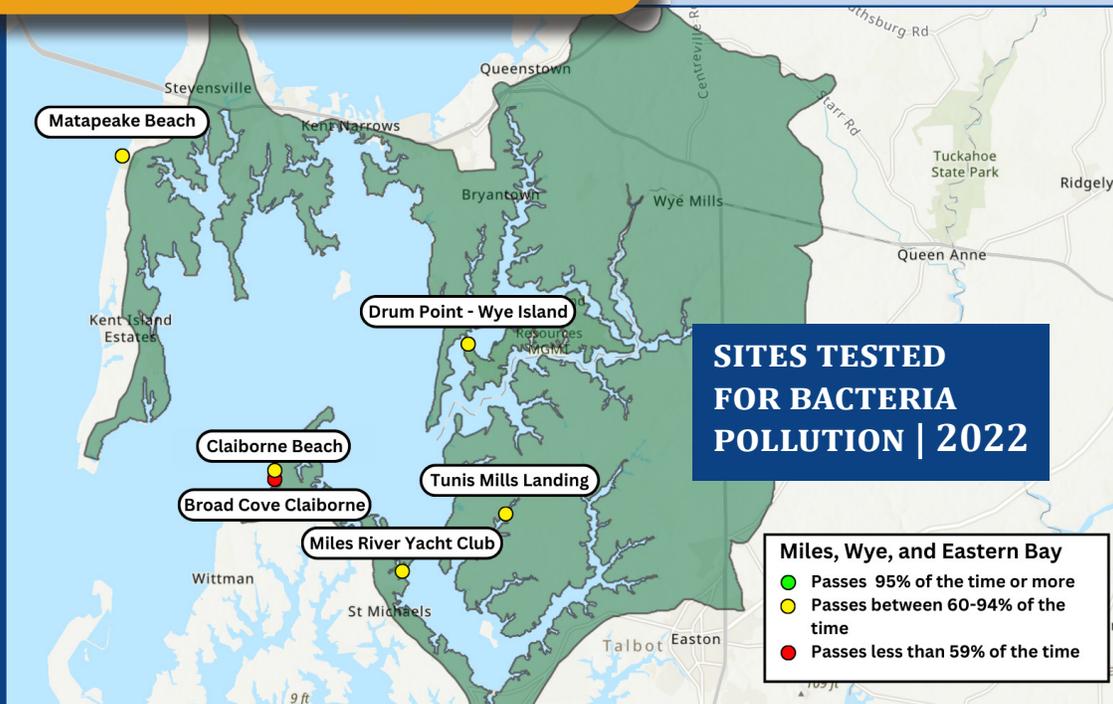


■ Human: 151,443 ■ Poultry: 1,337 ■ Swine: 1,443 ■ Dog: 882

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.

SITES TESTED FOR BACTERIA POLLUTION | 2022



Miles, Wye, and Eastern Bay

- Passes 95% of the time or more
- Passes between 60-94% of the time
- Passes less than 59% of the time