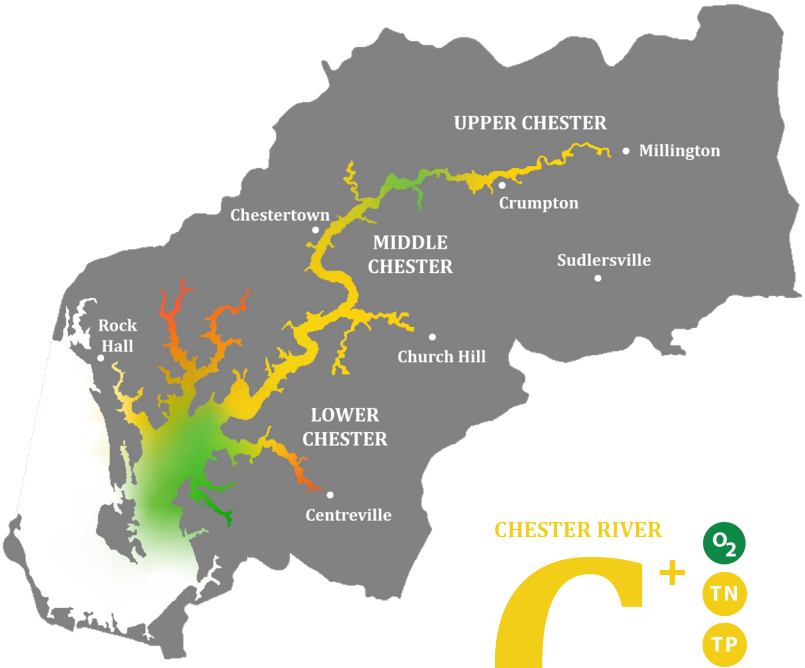
Chester River Report Card

2022

BAY HEALTH SCALE

Very good A B C D F Very poor

100% 80 60 40 20 0



CHESTER RIVER

C+

O2 TN TP

Our 2022 data shows that phosphorus, sediment, and chlorophyll *a* remain the Chester River's largest threat, with its main stem scoring between 44–55%, and each of its tributaries scoring between 20–45% for these parameters. Impacts from climate change will continue to augment these threats through increased rainfall and rising tides. Unfortunately, a decline in bay grass beds in the middle and upper Chester over the past two years has weakened our river's natural defense against nutrient and sediment loads.

In the face of these challenges, the Chester River Water Quality Index is consistent with last year's report, and the overall index for every tributary has improved by 6–8% except Southeast Creek, which remained consistent. As innovative restoration practices on land continue to reduce surface erosion into our waterways, and as upgrades are made to septic systems and wastewater facilities, we predict these scores will continue to improve.

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SHORERIVERS

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.

	DISSOLVED OXYGEN	TOTAL NITROGEN	TOTAL PHOSPHORUS	WATER CLARITY	CHLOROPHYLL *A*	WATER QUALITY INDEX	2022 GRADE
Chester	83%	60%	45%	44%	55%	57%	C+
Corsica	78%	34.2%	12.3%	28.7%	22.9%	35%	D+
Grays Inn	75%	67%	45%	36%	26%	50%	C
Langford	55%	52%	30%	29%	25%	38%	D+
Southeast Creek	100%	47%	22%	25%	40%	47%	C

BACTERIA MONITORING ON THE CHESTER | 2022

Site	Pass Rate	Average Failing CFU*
Millington Waterfront Park	40%	698
Crumpton Landing	63%	748
Fairview Park	87%	5292
Morgan Creek	40%	3049
High Street Dock	75%	2862
Quaker Neck Landing	69%	293
Conquest Preserve	87%	2973
Corsica River Yacht Club	94%	110
Centreville Wharf	75%	278
Broadneck Landing	33%	5357
Skinners Neck Landing	56%	2551
Bogles Wharf	87%	2610
Jackson Creek Landing	80%	444

CFU = Coliform Forming Units

Pass/Fail Threshold = 104 CFU

***Indicates the average of all failing scores this season**

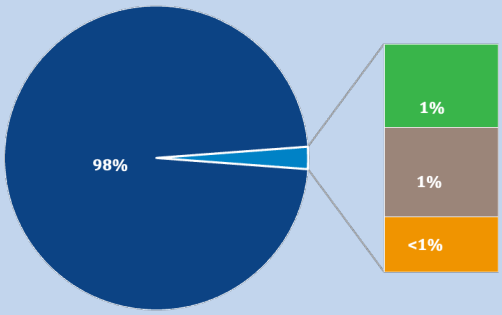
As part of the Swimmable ShoreRivers program, volunteer SwimTesters sample for bacteria at popular public access locations. Tests are conducted weekly from Memorial Day through Labor Day. The program follows the Environmental Protection Agency's standard protocols for collecting and analyzing samples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

Land use, tide, and temperature vary at each location, and major rain events are almost always connected to spikes in bacteria levels at any site.

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.