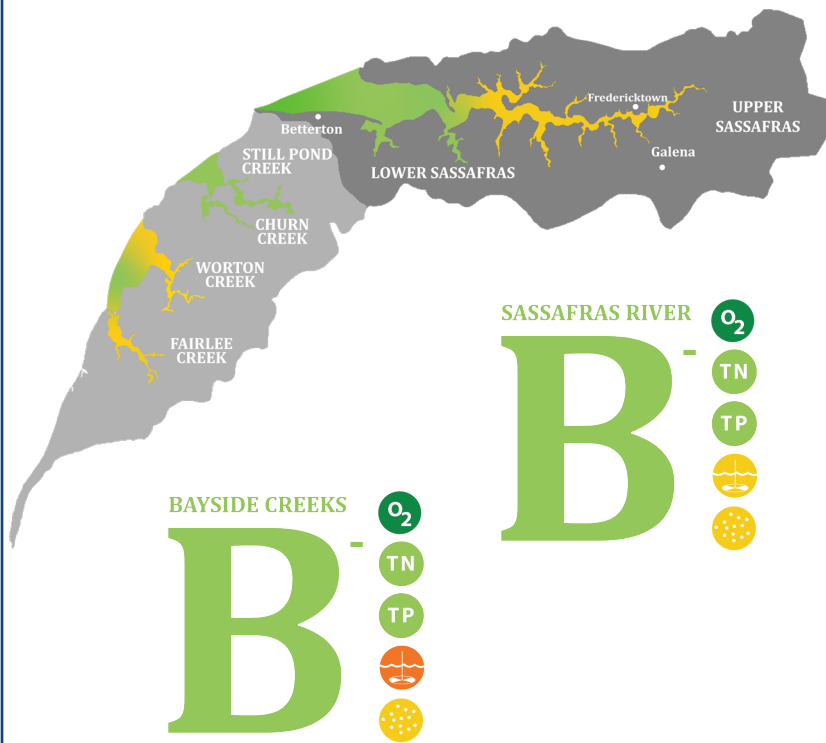


SASSAFRAS RIVER & BAYSIDE CREEKS REPORT CARD

2023

BAY HEALTH SCALE








One of the major water quality themes for 2023 was the increased salinity we experienced throughout much of the year. Since the SassafRAS is primarily considered a tidal fresh river, salinity levels that were 3-5 times higher than normal had significant impacts on both water quality and ecosystem health. Less rainfall did reduce the amount of nutrient surface runoff, but the 2023 water quality scores for the SassafRAS River and Bayside Creeks show that excess phosphorus, low water clarity, and high levels of chlorophyll *a* continue to be detrimental to the health of these waterways.

The overall Water Quality Index shows that the Upper SassafRAS only meets acceptable water quality standards 54% of the time, the Lower SassafRAS only meets these standards 71% of the time, and the Bayside Creeks only meet these standards 62% of the time.

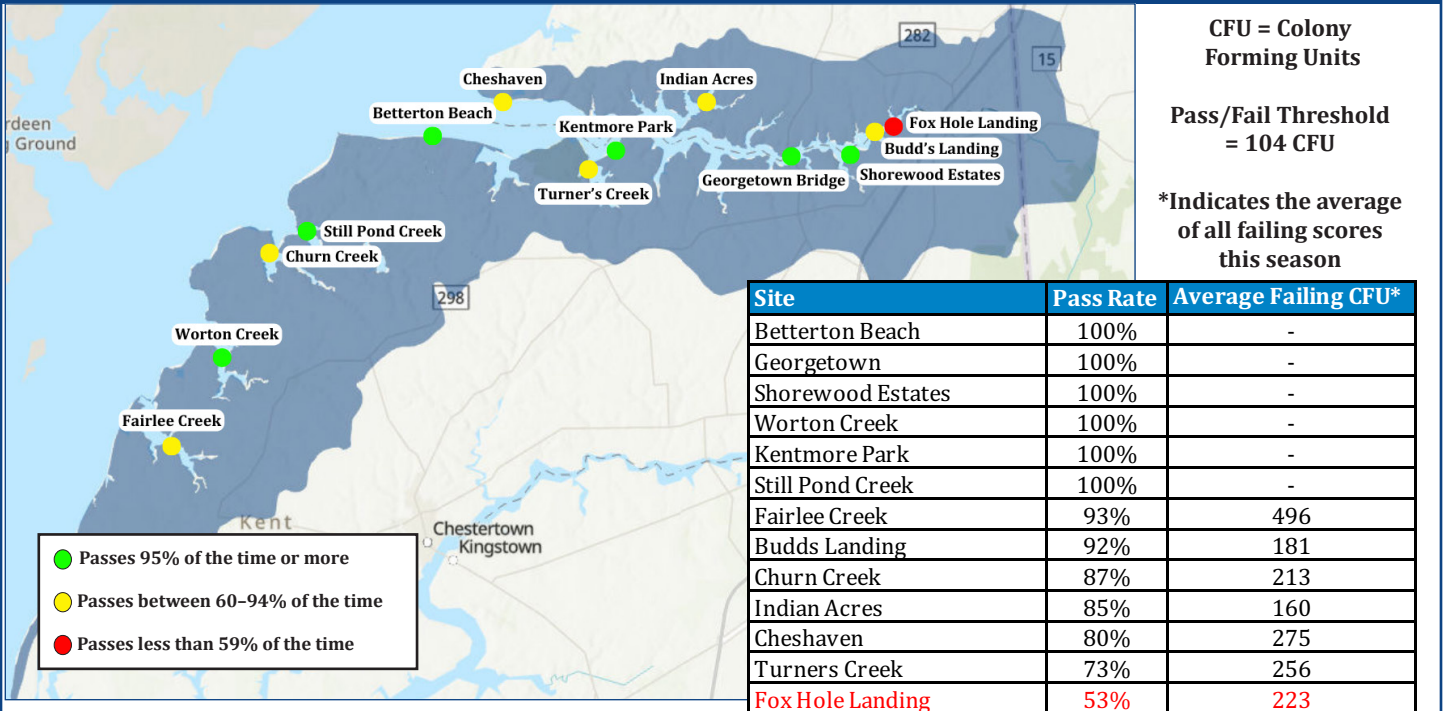
Zack Kelleher, SassafRAS Riverkeeper
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-  **DISSOLVED OXYGEN**
 -  **TOTAL NITROGEN**
 -  **TOTAL PHOSPHORUS**
 -  **WATER CLARITY**
 -  **CHLOROPHYLL A**
- ShoreRivers uses Mid-Atlantic Tributary Assessment Coalition scientific protocols to collect 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.

	DISSOLVED OXYGEN	TOTAL NITROGEN	TOTAL PHOSPHORUS	WATER CLARITY	CHLOROPHYLL A	WATER QUALITY INDEX	2023 GRADE
SassafRAS River	95%	64%	63%	42%	43%	61%	B-
Churn Creek	100%	68%	78%	50%	35%	66%	B
Fairlee Creek	100%	68%	65%	33%	20%	57%	C+
Still Pond Creek	100%	63%	70%	40%	65%	68%	B
Worton Creek	83%	65%	53%	33%	55%	58%	C+

BACTERIA MONITORING ON THE SASSAFRAS & BAYSIDE CREEKS | 2023



Each season our volunteer SwimTesters, as a part of the Swimmable ShoreRivers program, test for bacteria pollution at shoreline sites along our rivers, including popular public access locations, marinas, yacht clubs, and town piers. These 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 the level of risk that bacteria levels pose for water contact activities. **In 2023, Sassafras sites passed 87% of the time, and Bayside Creeks sites passed 95% of the time.**

The Fox Hole Landing, Budds Landing, Shorewood Estates, Kentmore Park, and Cheshaven sites are all paid for by residents of those neighborhoods. We are especially thankful for all of the strong community support for this program. In the table above, the “average failing CFU” value indicates when a site fails to meet water quality standards, how significantly (on average) it falls. **The average failing CFU in 2023 was 258, compared to 486 in 2022. Tidal flow, temperature, and rainfall vary at each site and can cause bacteria levels to spike at various rates, contributing to failing results.**

BACTERIA MONITORING STUDY SUPPORTS TIPS FOR SAFE SWIMMING

Thanks to funding from the Chesapeake Bay Trust, Morgan Buchanan, ShoreRivers’ Education Programs Coordinator, conducted a continuous bacteria monitoring study at Morgan Creek Landing on the Chester River to better understand the relationship between tidal cycles and bacteria pollution in our waterways.

Results support our understanding that outgoing tides bring the highest bacteria levels of each tidal cycle. This can be seen in the figure to the right, showing results for the tidal cycle sampled on July 11, 2023, which saw no rain in the 24 hours prior to sampling. The highest bacteria level that day occurred one hour prior to low tide and with a reading of 471 CFU, whereas the average bacteria level that day was 124 CFU.

