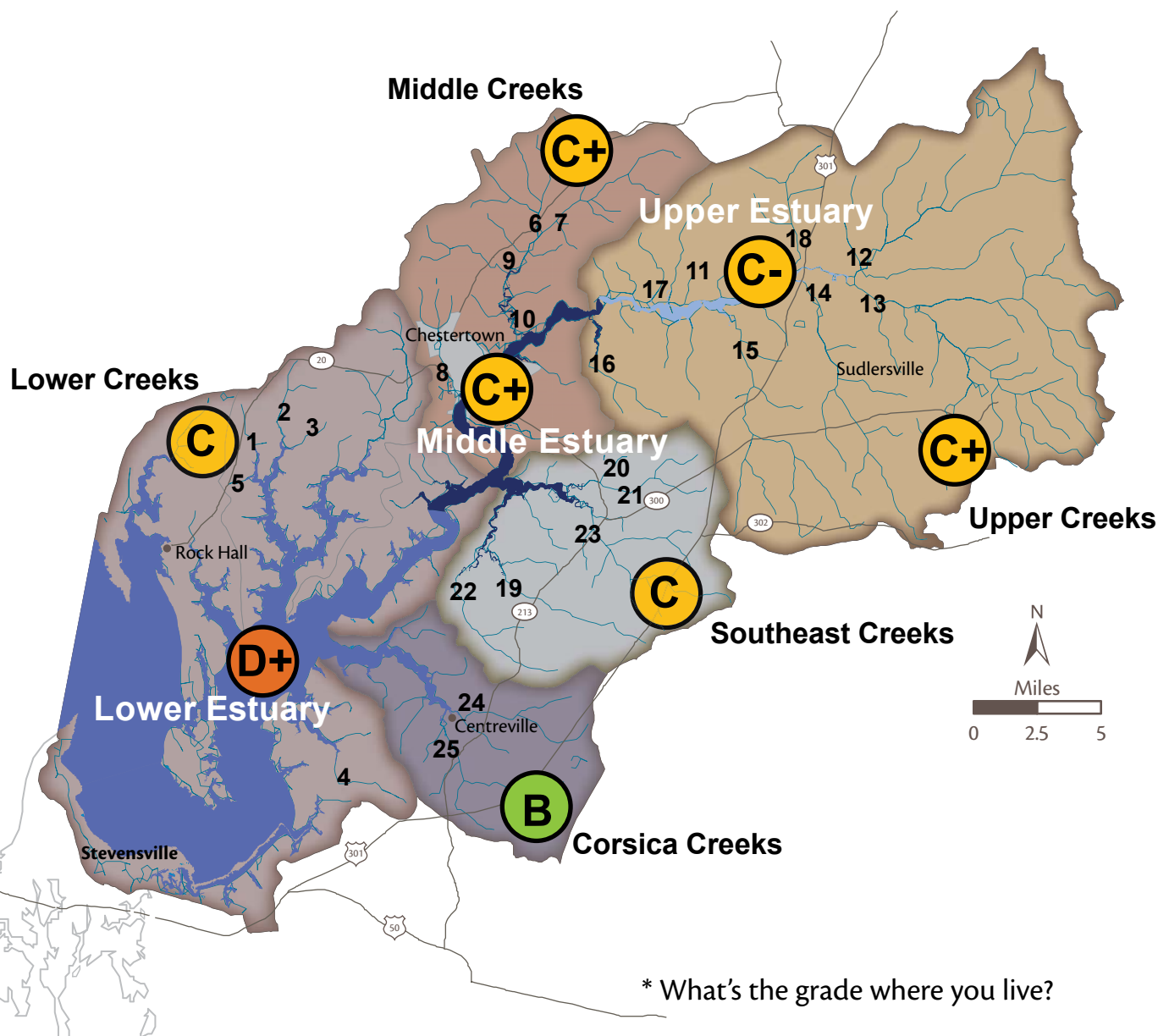


2009 Chester River Report Card



Protecting Families by Stopping Pollution



Creeks Final Grade

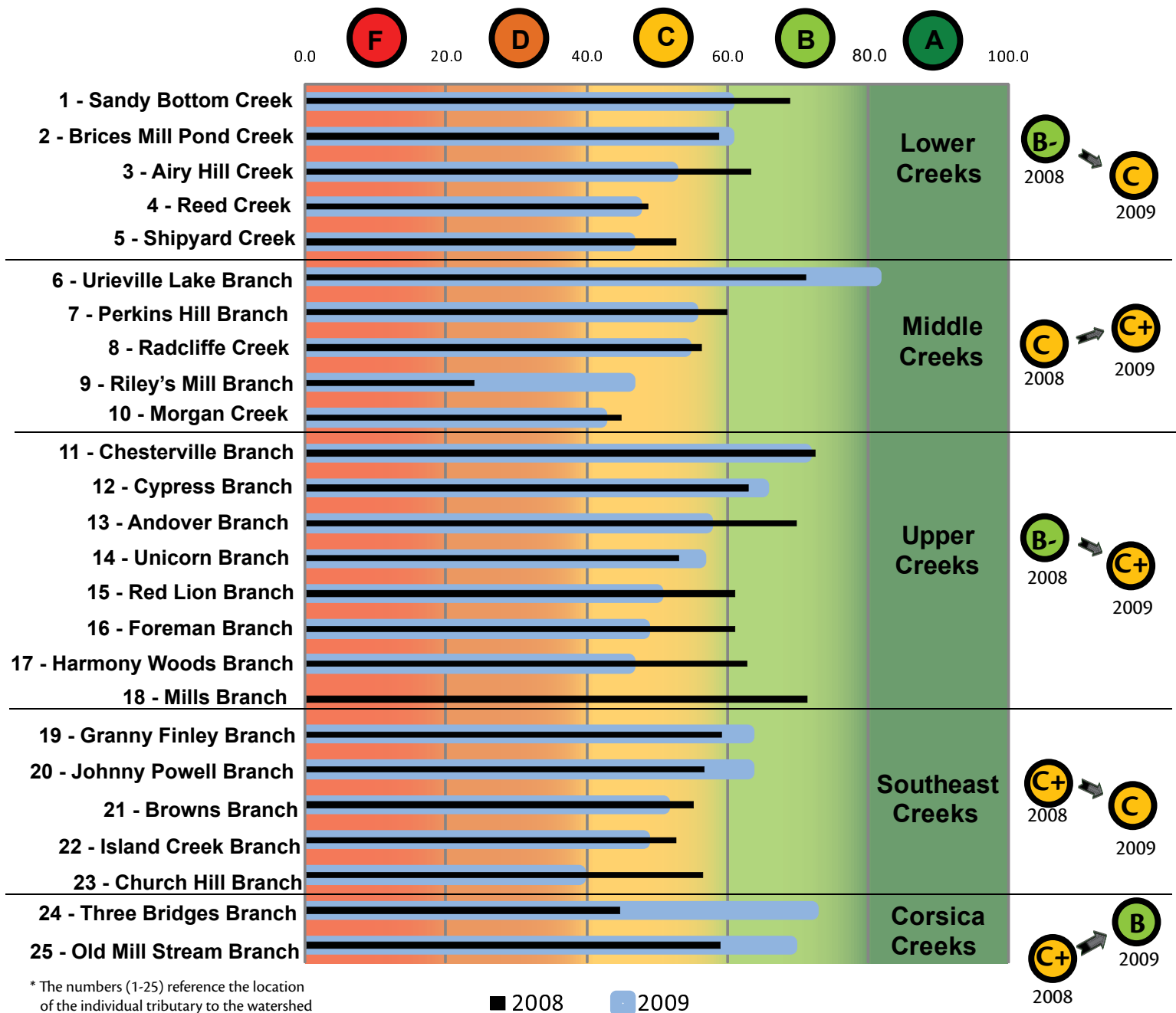
There was no change in the "C+" final grade for the creeks of the Chester River. Most remarkable is the major improvement seen within the Corsica Creeks. There have been substantial resources applied to this sub-watershed and these efforts appear to be paying off. The improvement was almost a whole letter grade due to the decrease of the nitrate and ammonia levels. The Middle Creeks also showed slight improvement attributable to a reduction of ammonia levels. The Upper, Lower and Southeast Creeks dropped letter grades. Each region has specific water quality issues.



Estuary Final Grade

The final grade for the Estuary portion of the Chester River was a "C-" which is an improvement from last year's "D". Dissolved oxygen scores increased in each section of the estuary. More data were available this year than in 2008. This allowed for a more complete analysis of the estuary. Water clarity remained poor throughout the estuary.

Chester River Tributary Grades



What do the grades mean?



All water quality and biological health indicators meet desired levels. Quality of water in these locations tends to be very good, most often leading to very good habitat conditions for fish and shellfish.



Most water quality and biological health indicators meet desired levels (60% to 79%). Quality of water in these locations tends to be good, often leading to good habitat conditions for fish and shellfish.



There is a mix of healthy and unhealthy water quality and biological health indicators (40% to 59%). Quality of water in these locations tends to be fair, leading to fair habitat conditions for fish and shellfish.



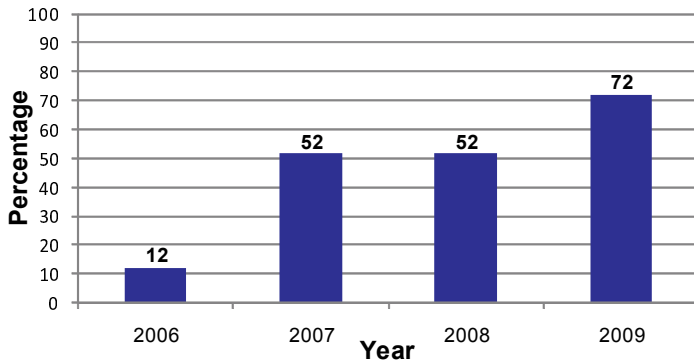
Some or few water quality and biological health indicators meet desired levels (20% to 39%). Quality of water in these locations tends to be poor, often leading to poor habitat conditions for fish and shellfish.



Very few or no water quality and biological health indicators meet desired levels. Quality of water in these locations tends to be very poor, most often leading to very poor habitat conditions for fish and shellfish.

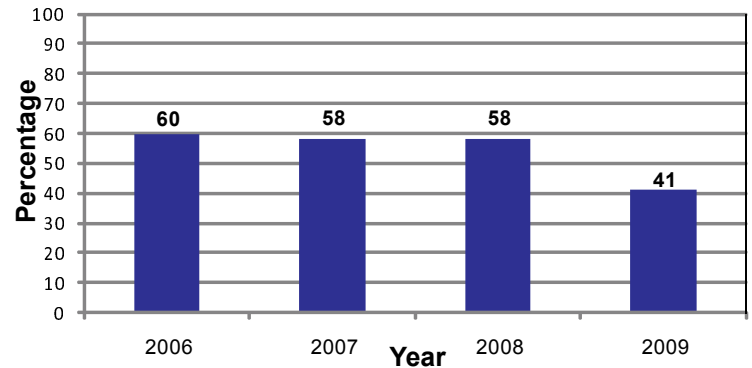
MOST AND LEAST IMPROVED TRIBUTARIES OF THE CHESTER RIVER

Three Bridges Branch



The Three Bridges Branch has shown the most improvement of the Chester River tributaries between 2008 and 2009. The graph above displays continual improvement of this creek over the past four years. The greatest improvements have been recorded in the reduction of nitrate and ammonia levels. The four year period also reveals slight improvement of oxygen levels and water clarity. All of these improvements mean greater stream health and contribute to biological diversity and habitat. The Corsica Creeks have received significant state funding, which plays an important role in improving stream health.

Church Hill Branch

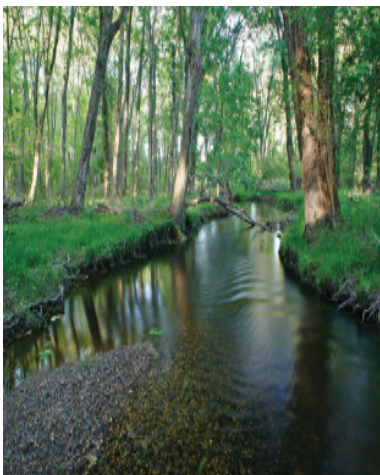


The Church Hill Branch has shown the least improvement from 2008 to 2009. The graph above shows that the trend over a four year period is a steady decline in tributary health. The primary pollutant is nitrate levels. These levels in 2006 earned a grade of 52% (C) compared to a 5% (F-) in 2009. Turbidity and ammonia levels have increased, also causing degradation but to a lesser extent. So why the decline in water quality? The Southeast Creeks are in an area that is rapidly developing. This area also contributes the greatest agricultural nutrient loading to the Chester River. This is evident in the high nitrate and ammonia levels.

UNDERSTANDING TRIBUTARIES AND HOW THEY ARE POLLUTED

A tributary is a stream that drains upland areas before flowing into a larger stream or body of water. When it rains, water moves over the land and can pick up pollutants and carry them to the tributaries. There are more than 20 tributaries which drain into the Chester River. The area of land that drains into a particular body of water is a watershed. The Chester River Watershed is comprised of the tributaries which drain into the river as well as the land which drains into these tributaries. Point source pollution, such as wastewater treatment plants and industries, can compromise tributary health. Non-point source pollution, or pollution that cannot be attributed to a specific location, is a primary impediment of water quality. Storm water runoff from roads, parking lots, agricultural areas, and construction sites carry pollutants and sediment into the tributaries and river. As citizens of the Chester River Watershed, we can make a difference by using best management practices (BMPs) to reduce non-point source pollution.

Photos by: Tyler Campbell



BE THE SOLUTION TO TRIBUTARY POLLUTION

What you do upstream, even on land, affects what happens downstream. Here are easy ways that you can be a good steward of the river from home.

- Limit the use of pesticides and fertilizers
- Use non-toxic biodegradable cleaners
- Use low or no phosphorus detergents
- Properly dispose of toxic materials
- Never pour unwanted chemicals on the ground
- Maintain home septic systems
- Repair leaky faucets, toilets and pumps
- Turn off lights, TVs and computers
- Hang your clothes out to dry
- Invest in energy-efficient appliances
- Unplug cell phones, chargers and devices
- Landscape with plants that have low needs for water, fertilizers and pesticides
- Plant native trees, grasses and shrubs
- Cultivate plants that discourage pests
- Preserve existing trees, and plant trees and shrubs to reduce erosion and promote infiltration of water into the soil
- Compost your yard trimmings and kitchen waste
- Apply mulch on bare ground
- Reduce, reuse, recycle
- Grow a garden, even if it is a small one
- Support locally grown agriculture
- Clean up after your pet

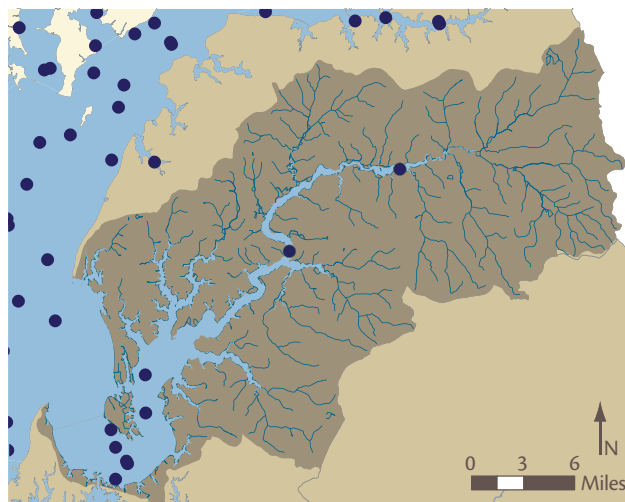
CHESTER TESTERS: THE CITIZEN SCIENTISTS WHO PROVIDE CRUCIAL DATA FOR CHESTER RIVER WATERSHED

Citizen Scientists

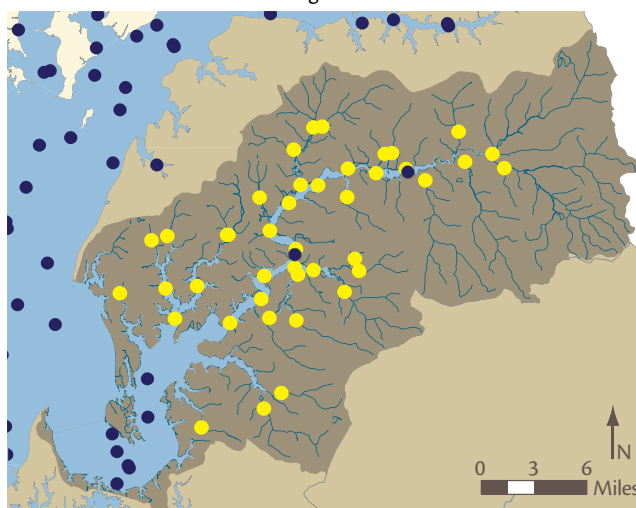
Citizen scientists are local volunteers trained according to quality operating procedures to collect accurate environmental data. Since state and federal agencies do not cover the majority of our watershed, the data collected are crucial for a comprehensive understanding of our river. Citizen scientists monitor the tributaries of the Chester twice a month. The data they collect inform us of current environmental conditions, help target sources of pollution and track progress of implemented management practices. The citizen scientists' data are contained within the pages of this annual report card, which would not be possible to produce without their efforts.

Chester Tester Program

- The Chester Tester volunteer program began in 1995
- It began as a local effort to monitor the waters of the Chester River
- There were 15 original monitoring sites which were located mostly at the ends of community docks
- These 15 sites were monitored for: dissolved oxygen, pH, water clarity and temperature
- In 2006 the program was revamped to include 19 sites
- These sites target the non-tidal waters further up the tributaries; they continued monitoring pH and temperature values but also began monitoring nitrate, ammonia, phosphate and turbidity levels
- Today there are 26 non-tidal sites monitored twice a month by the 50+ Chester Tester citizen scientists
- These citizen scientists meet quarterly for quality assurance training hosted by CRA and LaMotte
- The data serve the interests of CRA as well as state and federal agencies such as MDE, DNR, NOAA, USGS



● Chesapeake Bay Program monitoring sites



● Chester River Association monitoring sites
● Chesapeake Bay Program monitoring sites

Thank You Chester Testers

Andy Goddard
Ann Murray
Bill Wise
Chris Mourse
Darryl Calloway
Dawn Hoffstetter
Doug Clark
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Frank Rush
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Jim Trumbauer
Jon Stine
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Kent Kerbel
Ladd Rutherford
Liz Anger
Lucinda Wakefield
Lydia Johnson
Mary Leventhal
Myron Richardson
Neil Blackmore
Richard Svoboda
Robin Myers
Steve Layden
Ted Hornaday
Ted Newcomen
Vic Pfeffer

SUPPORT THE CHESTER RIVER ASSOCIATION, IT'S YOUR RIVER

Support the Chester River Association (CRA):

- Donate or become a member of CRA
- Become a volunteer Chester Tester or a committee member
- Immediately contact CRA if you discover a problem, so that we can follow up with the appropriate department

To contact the CRA:

Email: info@chesterriverassociation.org

Phone: (410)-810-7556

Website: www.chesterriverassociation.org

Important numbers:

Maryland Department of the Environment....(410)- 537-3000
MDE Eastern Shore Field Office.....(410)- 901- 4020
MDE Fish Kills and Algae Blooms.....(800)- 285- 8195 (daytime #)
(888)- 584- 3110 (after hours #)
MDE Hazardous Material & Oil Spills.....(866)- 633 - 4686
MDE Sediment, Wetland Emergency.....(410)- 537 - 3510
MDE Public Bathing Beaches Info.....(410)- 537- 3906
County Environmental Health Services
Kent County.....(410)- 778 - 1350
Queen Anne's County.....(410)- 758 - 0721

The Chester River Association (CRA) would like to thank the Chesapeake Bay Trust for funding this report card and to the dedication of the Chester Tester Volunteers. We would also like to thank the Chesapeake Bay Program and its partners for providing data for the tidal regions. This project would not have been possible without the contributions and support of the following individuals and agencies:



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