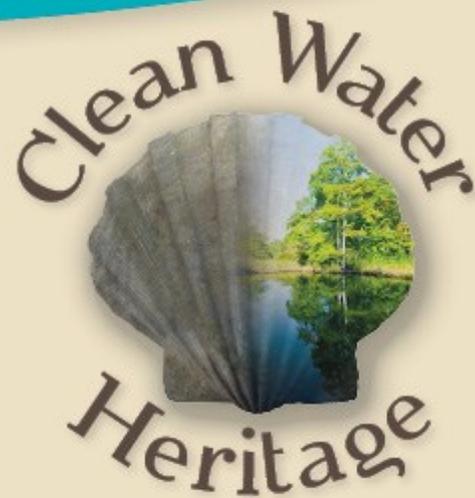


2016 Powhatan Creek Watershed



Water Quality Report



Restore & Protect

www.jamescitycountyva.gov/857/Stormwater

James City County Water Quality Strategies

As part of a long term commitment to environmental stewardship, James City County volunteers and staff have been gathering information about stream health throughout the County since 2008. The goal of collecting water quality information is to be able to identify emerging water quality problems, target areas for restoration and preservation, document improvements from citizen and County actions and provide educational and volunteer opportunities for the public.

Volunteers and staff collect two types of data: one looks at the types of small creatures that live in streams and the other provides an indication of the amount of harmful bacteria present in a stream. Together, this information provides evidence of the overall health of the County's waterways.

The following information is a summary of known water quality conditions in the County, gleaned from data collected by the Virginia Department of Environmental Quality, from the County's volunteer water monitoring program and from completed James City County watershed management plans. As more information becomes available, this report will be updated.

Powhatan Creek Watershed

The Powhatan Creek Watershed is the largest watershed in James City County. Significant growth has occurred in this watershed over the past several years, including New Town, Warhill, the Prime Outlet expansion and new residential neighborhoods. The lower Powhatan floodplain area has increased due to upstream development and road crossings. So far, Powhatan Creek is the only County watershed with a non-tidal Federal Emergency Management Agency (FEMA) 100-year floodplain study due to the flooding conditions in the lower watershed.

Water Quality Conditions

The Virginia Department of Environmental Quality (VADEQ) has Powhatan Creek on its impaired waters list for: enterococcus bacteria, benthic macroinvertebrates, estuarine assessments and polychlorinated biphenyls (PCBs). There are swimming and fishing advisories in effect for Powhatan Creek because people might get sick due to the levels of bacteria and toxins like PCBs. The impairments for benthic macroinvertebrates and estuarine assessments reflect that the water is not able to sustain the aquatic life that should be found in it.

In 2006, VADEQ listed Powhatan Creek as impaired for bacteria on its list of impaired waters due to the high bacteria counts at their two monitoring stations. James City County has been conducting bacteria sampling at seven locations since 2009. The findings are consistent with VADEQ, showing no identifiable hotspots at this time. In 2010, James City County and the Commonwealth of Virginia developed a plan to minimize the bacterial loadings which have consistently shown high numbers.

Through the Stormwater Division's Water Quality Monitoring Program, and the efforts of County staff and citizen volunteers, overall results from the nine monitoring locations in Powhatan Creek watershed show that Powhatan Creek receives unacceptable water quality scores most of the time. However, those monitoring locations that drain smaller, less-developed areas in Powhatan Creek produce acceptable results and meet Virginia's water quality standards.

Problems in the Watershed

- Storms have caused major flooding of garages and outbuildings and at the culvert crossing downstream of Route 5. Increasing the floodplain from upstream urbanization has reduced drainage areas.
- Bacteria levels are too high for swimming or food consumption.
- The tidal portion of Powhatan Creek has shown

significant levels of PCBs due to its connection with the James River.

- In 2000, six subwatersheds were sensitive, while five were degraded. By 2012, four were sensitive, seven were degraded and two were considered nearly unable to support aquatic life.
- Runoff volumes for the planning of many developments in the watershed have been based on data from 1976 that does not take into account all of the impact occurring from development in the watershed since that time.

Completed Studies and Plans

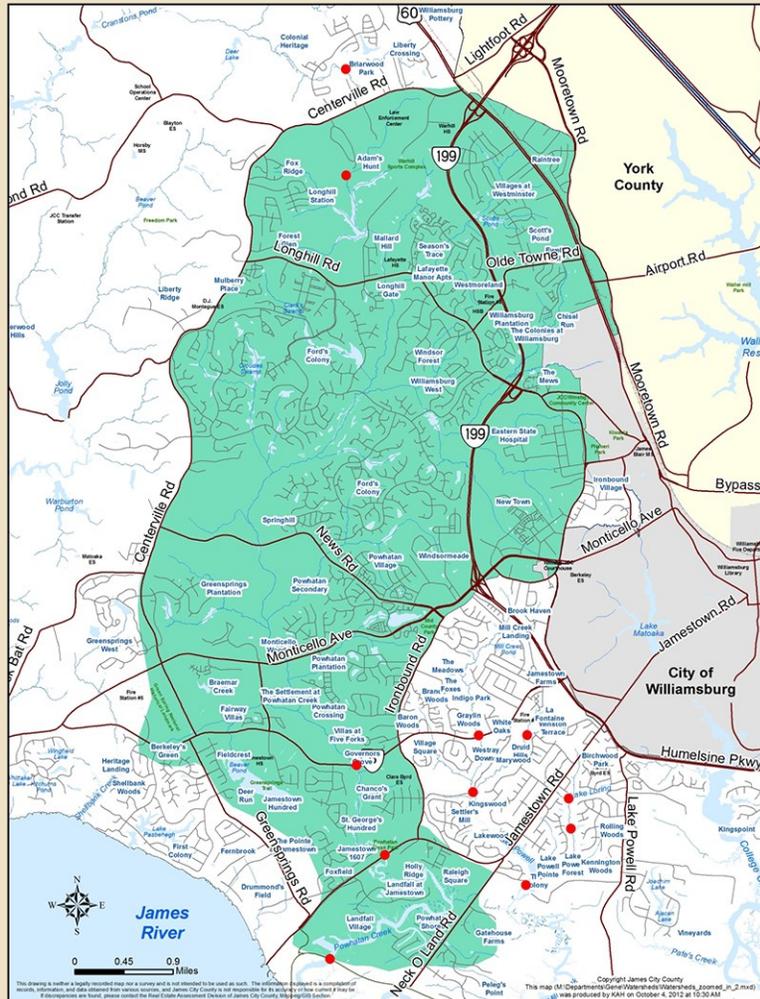
- Implementation Plan for the Fecal Coliform TMDL for the Mill Creek and Powhatan Creek (HRPDC, 2011)
- 2009 Powhatan Creek Floodplain Study (WEG, 2009)
- Bacteria Total Maximum Daily Load for Mill Creek and Powhatan Creek (VADEQ, 2008)
- Powhatan Creek Flood Study (WEG, 2008)
- JCC Stormwater Route 5 Culvert Crossing Flooding Study (WEG, 2008)
- Scotts Pond Phase I and II Stream Restoration Project (WEG, 2008)
- Route 5 Culvert Crossing Study (2007)
- Powhatan Creek Watershed Management Plan (CWP, 2001)
- Upper Powhatan Creek Drainage Study (MWA, 1996)
- Drainage study of Upper Powhatan Creek Watersheds (CDM, 1987)
- USDA Soil Conservation Service Flood Study (1976)

What Can Citizens Do?

- Clean up after your pet. Pet waste contains bacteria and viruses that are harmful to people and the environment.
- Fertilize properly. Learn about your soil and the type of grass in your yard to make a responsible fertilizing plan. Contact Turf Love at 757-564-2170 for help in identifying your yard needs.

- Leave a natural plant buffer around streams or stormwater ponds. Vegetation filters pollutants before they get to the water.
- Don't put fats and oils down the drain. Fatty deposits build up in the sewer system and can lead to sanitary sewer overflows, leaving harmful bacteria and viruses in the environment.
- Wash your car on the grass, not on pavement. Soap and grease will be filtered through the grass and soil before getting into groundwater.
- Plant a rain garden. These beautiful landscaped areas can act as a trap for rain water and can prevent erosion in areas where there is a lot of stormwater run-off.
- Power-wash with care. Look for cleaning products with environmentally-friendly ingredients.
- Don't put leaves and yard clippings in road ditches or on top of storm-drain inlets. Collect leaves and clippings for compost or drop off them off at a County transfer station.
- Go to askhrgreen.org for more helpful ideas.

Powhatan Creek Watershed Map



For More Information

If you are interested in more information, go to jamescitycountyva.gov/857/stormwater or call 757-259-1446.

James City County continues to be proactive in the protection and preservation of natural resources in its commitment to create and sustain a quality community. Remember...caring for our natural resources requires a team effort. Together, we can make sure water quality in Powhatan Creek Watershed is protected for generations to come.