

The Pohick Creek Watershed



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Healthy Watersheds, Healthier Communities

Fairfax County Stormwater Planning Division

Fairfax County Watersheds



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The Pohick Creek watershed is located in southern Fairfax County and has a drainage area of 36.5 square miles. More than 34 square miles of the watershed are in Fairfax County while the other 6 percent of the land area is in the U.S. Army base at Fort Belvoir.

WHAT IS A WATERSHED?

A watershed is an area of land that drains to a particular lake, stream or other water body. Watersheds covered with vegetation capture stormwater, filtering it through roots and soil and slowing its flow to receiving water bodies such as streams, lakes, wetlands and rivers.

Population in Fairfax County

The population of Fairfax County has increased significantly during the last several decades, surpassing 1 million residents in 2002.

1980 population: 596,901

1990 population: 818,584

2000 population: 969,749

2006 population: 1,037,311

2025 population: 1,197,796*

**Source: Fairfax County Department of Systems Management for Human Services, 2004*

Considerable changes to county land use have occurred to accommodate this population growth. Additional structures (such as houses, schools and roads) were constructed, increasing the area of land covered by impervious surfaces.





How Development Affects Streams

Percent Impervious Area – Percent impervious area is a measure of the amount of development in the watershed. This is the percentage of the land surface covered by roads, parking lots, driveways and rooftops that prevents rainfall from infiltrating into the soil. Currently, 8.36 square miles (22.9 percent) of the Pohick Creek watershed is impervious area.

Changes in land use and an accompanying increase in the percent impervious area adversely impact streams by increasing erosion and sedimentation. These factors contribute to pollution and degrade water quality and wildlife habitat.

The future growth in these watersheds is determined by the Fairfax County Comprehensive Plan, which limits the total impervious area through zoning densities.



Based on future condition estimates, the watershed is very close to maximum build-out with less than one-half of one square mile of additional impervious cover predicted.

Map of Pohick Creek watershed

Stream Erosion and Sedimentation – Changes in land cover and runoff patterns associated with development increase runoff and stream flow during storms. These increased flows may cause stream bank erosion. The loss of natural vegetation by clearing trees or mowing along stream banks also contributes to erosion.

Stream bank erosion creates sediment, which also results from uncontrolled runoff from construction sites, winter road sand and other land disturbances. This sediment degrades the habitat of wildlife in the stream. Ultimately the sediment moves downstream, degrading and filling downstream waters, including the Potomac River and Chesapeake Bay.

As stream banks erode, trees and other streamside structures may fall into the streams and create snags that block the stream channel. These snags can block fish, generate localized flooding and cause further stream erosion.



Many of the streams exhibit stream bank erosion that results from development and loss of stream buffer vegetation.

The county conducted the Stream Physical Assessment survey in 2003 to document the conditions of the streams countywide, including areas with accelerated erosion issues. Most of the streams in these watersheds show some impact from stream bank erosion.





Water Quality – Urbanization increases the amount of pollutants that wash off the land and enter the streams. These pollutants affect the aquatic life in the stream and the health of the downstream Potomac River and Chesapeake Bay.

From your backyard to the Bay: what occurs in your neighborhood affects everything downstream. When it rains, water washes over the land, picking up contaminants including oil and grease from roads and parking lots; fertilizers, herbicides and pesticides from lawns and gardens; household chemicals that were improperly disposed of; and litter. This water flows into storm drains, which discharge directly to our local streams.

The county and other groups regularly monitor water quality at various locations in the watershed. The sampling shows that the Pohick Creek watershed contains some of the best and worst water quality in the county.

Over the past few years, the number of impaired water bodies in the Pohick Creek watershed has increased. Sections of Pohick Creek and Pohick Bay have been listed on the U.S. Environmental Protection Agency (EPA) 303(d) list of impaired waterbodies. Plans to address the sources of these impairments are to be completed by the Virginia Department of Conservation and Recreation.



A complete list of impairments and plan implementation dates is available at www.deq.virginia.gov/wqa.

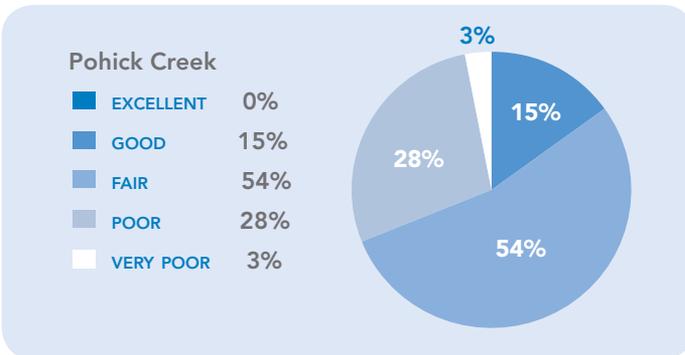
Portions of the streams are in good condition and provide good habitat.

Habitat – Stream erosion, sediment deposition, changes in water quality and the loss of natural stream bank and floodplain vegetation affect the habitat in the streams. The habitat quality affects the types and numbers of fish and other animals that live in the streams.

The county's Stream Protection Strategy (SPS) monitoring program includes detailed biological monitoring of the fish and aquatic insects (benthic macroinvertebrates) living in streams. Volunteers from the Audubon Naturalist Society and the Northern Virginia Soil and Water Conservation District perform similar monitoring. This sampling provides an indication of the health of the streams.

The results of the 2001 baseline SPS monitoring study indicate that the overall health of streams in the Pohick Creek watershed ranges from "excellent" to "very poor" on a five-category rating scale. The majority of the sites were rated as "fair" to "very poor" for biological integrity. The results of the 2003 Fairfax County Stream Physical Assessment rated the physical habitat of 85 percent of the streams as "fair" or lower.

Stream Habitat Condition





Stormwater Management History

The stream conditions are better than expected for the current development density. This can be attributed to protective land use designations and stormwater controls that were established in response to past storm events. Since 1972, Fairfax County has required that new development projects include controls such as detention ponds to limit peak runoff rates to control flooding. In 1982, water quality treatment of stormwater was required in the Occoquan watershed, and in 1993, the county extended water quality treatment countywide as a result of the Chesapeake Bay Ordinance. A large portion of this watershed was developed after these stormwater control requirements took effect.

Dam Safety – The Federal Watershed Protection and Flood Prevention Act of 1953 (Public Law 83-566) funded the construction of six large dams within the Pohick Creek watershed. These dams, commonly referred to as PL-566 dams, were built between 1970 and 1985 and designed as structural measures to reduce flood damage within the Pohick Creek watershed. In addition to flood control, the dams were used as sediment control measures to enhance watershed conservation practices in anticipation of extensive development in the watershed.

All six PL-566 dams are regulated under the Virginia Dam Safety Act, administered by the Virginia Department of Conservation and Recreation, Division of Dam Safety and Floodplain Management. The Act regulates all dams that are at least 25 feet high with an impoundment capacity of 15 acre-feet or greater, or at least six feet high with an impoundment capacity of 50 acre-feet or greater.

The Fairfax County Department of Public Works and Environmental Services Stormwater Planning Division Dam Safety Program, under the authority of the Fairfax County Public Facilities Manual, is responsible for maintaining these dams.

The PL-566 dams in Pohick Creek include:

| | |
|---------------|----------|
| Lake Mercer | (Dam #1) |
| Lake Barton | (Dam #2) |
| Woodglen Lake | (Dam #3) |
| Lake Royal | (Dam #4) |
| Lake Braddock | (Dam #7) |
| Huntsman Lake | (Dam #8) |

Pohick Creek is also home to Burke Lake, Fairfax County's largest lake, which covers more than 213 acres. The Virginia Department of Game and Inland Fisheries owns the lake, while the surrounding Burke Lake Park is owned by the Fairfax County Park Authority.

Stormwater Management Facilities – As a result of stormwater policies initiated since 1972, about 268 stormwater control ponds have been built in the Fairfax County portion of the watershed. The long-term maintenance and operation of these facilities is important for protecting and maintaining the quality of the local streams.

Based on a stormwater management study performed in the late 1980s, the county strategically placed larger regional stormwater ponds in rapidly developing areas. These regional ponds were designed to replace several smaller ponds that would be needed to serve individual developments. This study identified and spurred planning for 10 regional ponds in the

Pohick Creek watershed, but only one pond was constructed.



The status of regional ponds in the Fairfax County stormwater management plan has been the subject of various studies and reports to the Board of Supervisors. Regional ponds are just one of many stormwater management tools.

Map of proposed regional pond locations





Parks in the Watersheds

Parkland is an important feature in all watersheds. The Pohick Creek watershed includes large areas of parkland maintained by the Fairfax County Park Authority and the Northern Virginia Regional Park Authority. These parks and other dedicated open areas protect much of the stream valleys and other areas in the watershed from development. Dedicated parkland comprises 9.9 square miles or 29 percent of the watershed's land area.

Why We Need Watershed Management Plans

A watershed management plan serves as a tool to identify and address the issues impacting our environment, with the ultimate goal of protecting and restoring county streams and other water resources. There are many new technologies and creative planning tools that can be applied to restore and protect our watersheds.

Fairfax County has developed three main goals applicable to all watersheds during the planning process:

1. Improve and maintain watershed functions in Fairfax County, including water quality, habitat and hydrology.
2. Protect human health, safety and property by reducing stormwater impacts.
3. Involve stakeholders in the protection, maintenance and restoration of county watersheds.

Reasons to Participate

Environmental stewardship is everyone's responsibility. By participating in your watershed's management planning process, you can help protect and improve the quality of your community and environment.

For more information on the countywide watershed planning process and the Pohick Creek Watershed Management Plan, please visit the Watershed Planning Web site at www.fairfaxcounty.gov/dpwes/watersheds.

The Pohick Creek Watershed Management Plan is being developed by:

Fairfax County Department of Public Works
and Environmental Services
Stormwater Planning Division
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Fairfax, VA 22035
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To request reasonable ADA accommodations or alternative format of materials, call the Stormwater Planning Division at 703-324-5500, TTY 711.



Contact us with questions or to get involved in your watershed plan.



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