



## Care, Educate, Inspire

Stewardship is about working together to care for the environmental and cultural resources of Fairfax County. People become stewards for different reasons. They may want to help ensure clean water and air. They may wish to share something with their children. They may be inspired by spiritual beliefs. Whatever prompts our commitment, it is easy to take an active role in stewardship. It can be a small and simple thing, or it can be much bigger. Either way, it all adds up to a Fairfax County that looks to its past with pride and to its future with confidence.

You can learn more about Fairfax County Stewardship, the Board of Supervisors' 20-year environmental vision and the Fairfax County Park Authority at [www.fairfaxcounty.gov/parks/stewardship](http://www.fairfaxcounty.gov/parks/stewardship) or call 703-324-8674



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# Fairfax County Stewardship



## Water

## Clean Streams

### Quality Water

Stream water quality is critical to our enjoyment of water resources. However, most streams in Fairfax County have been rated below average for water quality. A combination of waste, nutrient and physical pollution have degraded our county streams to the point where they are no longer what they once were. In the U.S., approximately 500,000 tons of pollutants pour into lakes and rivers each day. Nationwide, about 11% of pollution in rivers comes from storm sewers and urban runoff. Almost 50% of the world's fresh water is polluted.



*Stormdrains channel water from an impervious surface (usually a road) directly into the nearest stream. Stormdrains are not connected to sewers, so anything on the road or poured down the drain quickly becomes a water pollutant.*

Poor water quality also affects fish and other aquatic life. Four quarts of oil can cause an eight-acre oil slick if spilled or dumped down a storm sewer, coating wildlife and preventing oxygenation of the water. Swimming pool water drained too quickly can cause a fish kill several hundred feet long. Uncontrolled erosion can fill in stream bottom habitat and destroy local aquatic life.



*Even a small area of wetland qualifies for protection. Often misunderstood as a smelly, swampy nuisance, wetlands are an important link in the water purification chain and provide rich wildlife habitats.*

### Vernal Pools and Wetlands

Long considered wasteland, wetlands received recognition as important habitats as early as the mid 1800's. However, it wasn't until passage of the Clean Water Act in 1971 that wetlands began to receive federal protection against filling, draining or alteration. Wetlands are associated with some of the most important functions of water quality preservation and they are associated with some of the most diverse wildlife habitat.

Fairfax County's most widely known wetland, **Huntley Meadows**, is recognized for its ability to provide habitat to approximately 200 species of birds. Other wetlands are spread throughout parkland. The vernal pools of **Accotink Stream Valley Park** are home to millions

of woodfrogs, frogs that sound like ducks when they call for mates in the early spring. Beaver, cattails, and dragonflies all enjoy wetland habitats.



## When Rain Meets Pavement

In the 1950s, land was cheap and stormwater management was non-existent.

In the 1970s, the earliest days of the Clean Water Act, stormwater management in urban and suburban areas focused on moving the water to the stream as fast as possible.

### In the 1990s things started to change.



*Rain barrels can effectively trap water from your roof. And yards benefit when they're watered with rain water instead of tap water.*

before they can affect stream quality. (To learn more about stormwater features and why slower water is better, see [www.fairfaxcounty.gov/living/environment/](http://www.fairfaxcounty.gov/living/environment/)).



*Rain gardens are designed to clean stormwater, slow runoff and increase ground water through infiltration. Vegetation and engineered soils act together to improve water quality throughout Fairfax County.*

By 1999, strict regulation throughout the Chesapeake Bay Watershed and in Virginia meant that stormwater must be cleaner than ever. Some of the features you may have noticed include wet ponds, dry "detention" areas, rain gardens, pervious pavers and rain barrels. These features all act to slow stormwater before it reaches streams and to remove nutrients and other pollutants

*Filthy water cannot be washed.*  
West African Proverb

## Clean Streams

The Park Authority is entrusted with over 400 miles of stream or "riparian" areas. Since 1999, many of these areas have been protected by the Chesapeake Bay Preservation Ordinance ([www.fairfaxcounty.gov/dpwes/environmental/cbay/](http://www.fairfaxcounty.gov/dpwes/environmental/cbay/)). Although the state of the science is ever changing, and what is taught today is different than what was taught 30 years ago, it is clear that healthy streams depend on a healthy landscape. The critical first 100 feet of land on either side of a stream needs particu-



*These tree protectors help keep planted shrubs and trees out of reach of hungry deer so they can stay healthy enough to grow into tomorrow's riparian buffer.*

lar care and attention. If a stream bank has plenty of thriving, native vegetation, the stream is healthier. The vegetation acts as a buffer, reducing nutrient and temperature pollution, reducing the energy and force of stormwater runoff and increasing habitat for desirable wildlife such as hawks, owls, herring and trout.

**Healthy stream buffers necessitate a shift in the Park Authority's land management practices.** No longer will grass be mowed to the edge of a stream. Instead, tall grasses, native wildflowers and, where possible, native trees and shrubs will replace the lawn-like areas. This "natural landscaping" approach

Air quality sees benefits from reduced mowing too. Each weekend, about 54 million Americans mow their lawns, using 800 million gallons of gas per year and producing tons of air pollutants. Just imagine what we could do by reducing the mowed acreage in the county by just 10%. Reducing the frequency of mowing helps even more. Actions taken to help create cleaner water can benefit air quality too.

returns heavily used urban parkland to a more natural state. This practice will continue to expand as the county strives to protect air and water quality.

## Stream Restoration

If you walk the stream valleys of Fairfax County, you will notice that streams change over time. A meander or bend in a stream may no longer be there after a large storm. A stream can also shift downward, such as along Pimmit Run and Turkeycock Run. Large volumes of fast moving water can create steep banks over 10 feet above the surface of the water. Besides causing a safety concern, these streams erode soil that has been in place for centuries. Soil scientists can point out key dates in history by examining the soil record exposed when a stream cuts into the earth's crust. It takes hundreds of years for soil to develop, yet the storm flow in a degraded stream can wash that soil away in less than an hour.

There are many forms of stream restoration — all have their uses.

Stream engineers study factors such as how much water normally flows in a stream (base flow), how much water flows in a stream during a flood, shape of stream, size of stream and the degree of impervious surface in the watershed. All of these factors determine if a stream restoration can be somewhat simple, such as live staking, or much more complicated, such as rechannelization. Which solution or suite of solutions is used depends on the state of the stream and the



*A recent stream restoration at Little Pimmit Run will improve stream water quality and stabilize the catastrophic erosion that was occurring. It cost over \$500 a linear foot, but could be undermined by poor maintenance, cutting down the riparian buffer or an increase in impervious surface in the watershed.*

funding available. Typical solutions range from redirecting the water before it gets to the stream, to dealing with the water once it is in the stream, using biologs, rip-rap, cross veins or rechannelization. Rechannelization is a drastic step and may require the removal of old trees. Without an engineered solution, these trees would eventually be lost to the effects of the stream, and removing them in a safe manner can prevent further degradation of the stream.

## If not you, who? Big things.

**Practice proper waste disposal.** Despite how convenient it may seem, dumping motor oil and chemicals into stormdrains damages the environment. Fairfax County Citizen Recycling and Disposal centers will accept motor oil and many other household hazardous waste materials. For more info, visit [www.fairfaxcounty.gov/living/recycling/](http://www.fairfaxcounty.gov/living/recycling/).

## If not you, who? Small things.

**Leave a buffer.** Do you have a stream in your backyard? Mow a little less along the bank. The tall grass will trap pollutants before they get to the stream, stem erosion by slowing water flow down the banks and save you time.

