



Poorly constructed private access roads can contribute sediment to streams



Stabilization of construction sites prevents siltation of waterways

Rappahannock County Clean Streams Initiative



NPS Pollution's Effects

Life in Virginia's rivers, streams, lakes & bays could not exist without nutrients, but too much of a good thing often causes more harm than good. Nutrients over-enrich our waterways causing algal blooms which deplete oxygen. This makes the oxygen unavailable to fish & and other aquatic organisms so they suffocate & die. The algae also cloud the water & coat underwater vegetation, cutting much-needed sunlight.

Sediment clouds water too but also obstructs waterways, can lead to localized flooding and interferes with aquatic system life by the smothering of native habitat for fish and their food supply. Natural erosion and sedimentation occur at a lower rate than that resulting from man's land altering activities. Excessive sedimentation of stream channels also leads to destabilized stream banks which can result in further sedimentation.

Elevated levels of bacteria in streams can make local waterways unsafe for instream recreational use.

Underwater plants & aquatic animals are particularly threatened by NPS pollution. Oysters, shad, herring, striped bass & submerged aquatic vegetation — considered by many to be the foundation of a stable aquatic ecosystem — are damaged by this pollution.

For More Information

- Culpeper Soil and Water Conservation District <http://www.culpeper.vaswcd.org>
- Rappahannock County http://www.eoffice.com/offices/_540/675/5330/my_webserver/files/newsite/homepage.html
- Nonpoint Source Pollution & You <http://www.dcr.virginia.gov/sw/nps.htm>



A view of the South Fork of the Thornton River at Route 612 in Rappahannock County



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Paid for with funds from the Water Quality Improvement Fund through the Virginia Department of Conservation and Recreation

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Under average, everyday conditions, creeks, streams and rivers drain the land and as the water moves from higher to lower elevations, it carries with it a mix of substances: soil, nutrients, manures, bacteria, organic materials, etc. Under these average, everyday conditions, many of these substances are in relatively low amounts in the streams except for areas where land is intensively used and under-managed for conservation. When it rains, however, the situation changes. Surface runoff from rain events flushes even greater amounts of sediment, nutrients and other substances (pollutants) from the land into waterbodies. Now even areas that under normal, drier conditions seemed to not contribute to water pollution, become sources of these same pollutants. Public understanding of the dynamics of rain event runoff, pollutant sources and the current mechanisms in place to protect streams from the degradation due to excessive pollution is the goal of a new grant project sponsored by Rappahannock County under the Virginia Water Quality Improvement Fund (WQIF).

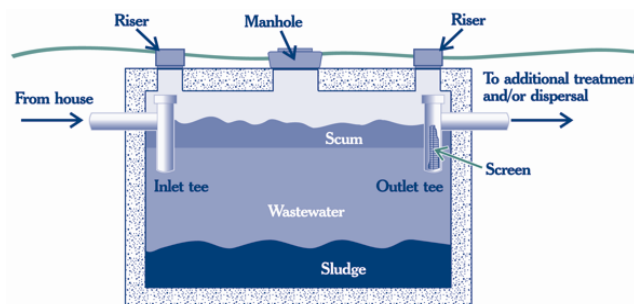
The grant project in Rappahannock County is called the **Clean Streams Initiative**. Through this project Rappahannock County will:

- Develop a local stormwater ordinance to provide stream protection from development projects
- Enhance its erosion and sediment control program to provide better oversight of non-agricultural land disturbing activities

- Identify opportunities for zoning and subdivision ordinance amendments supporting water quality aspects
- Identify opportunities for county code changes that would support conservation efforts.
- Promote septic system maintenance throughout the county with several areas being selected to receive 50 percent cost share for tank pumping and system repairs.
- Offer public education seminars on septic system maintenance, erosion and sediment control, stream buffers, nutrient management planning and other water quality topics.

Implementation of the Clean Streams Initiative will require the efforts of many organizations who will contribute to the project:

- Virginia Department of Health
- Culpeper Soil & Water Conservation District
- RappFLOW
- Last but not least, individual citizens who evaluate their own impact on local waterways



Regular pumping & maintenance of septic systems prolongs system life & helps to prevent ground and surface water contamination

Why Clean Streams Initiative?

Stormwater runoff, septic systems, live construction sites, excessive use of fertilizers and manures and other land uses all have the potential to be sources of water pollution when under-managed. Because these forms of pollution do not come out of a pipe they are called nonpoint source pollution (NPS).

NPS, true to its name, covers all pollution that cannot be linked to a specific source. The majority of pollution that is carried to our waters is NPS.

In Virginia, NPS pollution occurs mainly through stormwater runoff. When it rains, runoff from farmland, city streets, construction sites & suburban lawns, roofs and driveways enters our waterways. NPS pollution can be unnoticed for years, which makes it more difficult to control.

The four major forms of NPS pollution are:

Sediments are soil particles carried by rain-water into waterways. By volume, sediment is the greatest pollutant.

Nutrients are substances that help plants and animals grow. Nitrogen and phosphorous, found in fertilizer & animal waste, concern NPS officials the most.

Toxic substances are chemicals, such as metals, battery acid & motor oil, that cause human & wildlife health problems.

Pathogens are disease-causing microorganisms present in human and animal waste. Most pathogens are bacteria.



Riparian buffers filter runoff before it enters streams