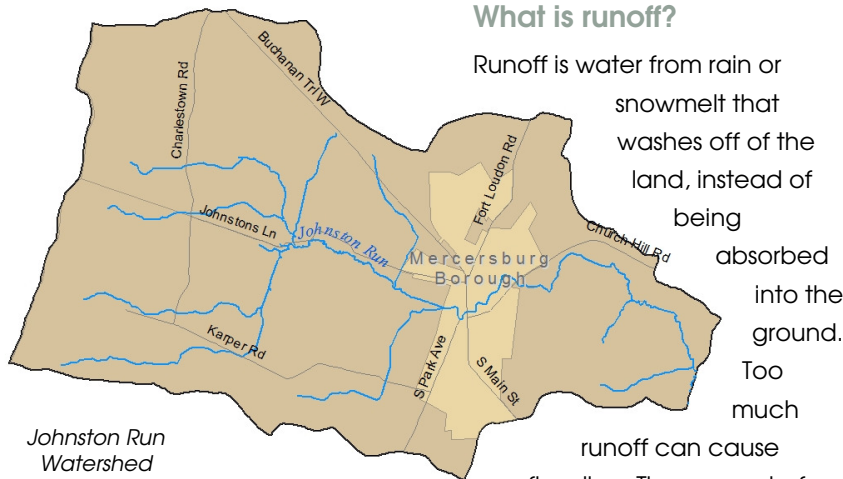


# JOHNSTON RUN WATERSHED

## WATERSHED BASICS

### What is a watershed?

A watershed is an area of land that drains to a common body of water, such as a stream, lake, estuary, wetland, or ocean. Examples include Johnston Run, the Potomac River, and the Chesapeake Bay. Elevated landforms, such as Cove Mountain, and ridgelines serve as watershed divides.



Johnston Run Watershed

### Why is a healthy watershed important?

Everyone lives in a watershed and depends on its health to support their quality of life. Watershed health is linked to farming, drinking water, and economic vitality. Wildlife such as trout, salamanders, and bald eagles depend on healthy forests and clean water.

### What impacts the health of the watershed?

The condition of a watershed depends on natural resources (forests, geology, soils) but also on human influences. Roads, farming, septic systems, lawn care, waste disposal, and everyday interactions with our environment can have negative or positive impacts.

### What is runoff?

Runoff is water from rain or snowmelt that washes off of the land, instead of being absorbed into the ground. Too much runoff can cause flooding. The amount of runoff is determined by the type of soils, slopes, and the land use such as forest, agricultural, or a parking lot.

### What can cause stream instability and erosion?

The greatest causes of stream instability in an area like Johnston Run are changes in runoff from forest loss, and lack of stream bank vegetation. Roots of stream bank trees and shrubs hold the stream banks together, reduce the erosive effects of high stream flow, and increase bank stability. When

vegetation is cleared, the channel loses that protection and erosion can be severe.

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*Riparian vegetation consists of streamside trees, shrubs, and grasses important for stream bank stability, shading, and water quality.*

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### What is a watershed plan?

Watershed managers attempt to understand the watershed's historic, existing, and potential future condition and put in place positive land use and social changes to restore, enhance, and protect the watershed's resources. A good watershed plan has input from everyone in the community.

### Management strategies?

Strategies for watershed management will depend on the types of issues but can include conservation easements, reforestation, stream bank stabilization, wetland enhancement, agricultural best management practices, and stormwater retrofits.

### WHAT CAN I DO?

- Pick up after your pets
- Properly dispose of household hazardous waste (e.g., paint, oil, fuel)
- Reduce use of fertilizers and pesticides
- Plant a tree!!

# JOHNSTON RUN WATERSHED

## Watershed Characterization

Located in Franklin County, Pennsylvania, the Johnston Run watershed drains directly into the Conococheague Creek, which is a tributary of the Potomac River. The Johnston Run watershed is approximately 8.5 square miles in area, and includes 15.6 miles of mapped stream channel.



Johnston Run in  
Mercersburg Borough

## Watershed Concerns

Excessive **sediment, nutrients,** and **flooding** are of concern in the Johnston Run watershed. Land management decisions impact the amount of stormwater/surface runoff, stream erosion, and flooding; which affects stream quality, property values, and safety.

### Nutrients

Although nutrients, specifically phosphorus and nitrogen, are naturally found in the environment, excessive nutrients in streams decrease oxygen levels and harm biological communities. Nutrient sources can include fertilizers,

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*In 2007, low oxygen levels resulting from manure laden runoff caused a fish kill in Johnston Run impacting hundreds of fish.*

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animal waste, sewer leaks, and unmaintained septic systems.

## Impaired Waters

Under the Federal Clean Water Act, the state of Pennsylvania is required to assess and report on the quality of waters throughout the state. Where designated uses are not fully supported, states must list these water bodies as impaired waters. States are then required to develop plans to address impairment and improve water quality. Currently, nine stream segments in the Johnston Run watershed are impaired due to sediment and/or nutrients.

## Riparian Vegetation

The majority of the Johnston Run watershed is undeveloped and consists of agricultural and forested land, however riparian buffer width varies throughout the watershed with excellent buffers in forested areas and depreciated buffers for streams adjacent to roadways (e.g. through Mercersburg), in pasture, and mowed/cultivated fields.

## How can I get involved?

The **Johnston Run Revitalization Council** needs your help!

Contact **Laura Puckett**, Stream Project Manager, to get involved in community improvement projects.

Email [lauraepuckett@gmail.com](mailto:lauraepuckett@gmail.com)

Phone 717-404-3698

Website [www.MPMCproject.org](http://www.MPMCproject.org)



## QUICK FACTS:

- Drains to the Conococheague Creek and ultimately the Chesapeake Bay
- Size:
  - 8.5 square miles
  - 4.0 sq mi in Montgomery
  - 3.5 sq mi in Peters
  - 0.9 sq mi in Mercersburg
  - 0.02 sq mi in Warren15.6 miles of stream
- Physiography:  
Situated at the foothills of Cove Mountain
- Land Use:
  - Agriculture – 52%
  - Forested – 30%
  - Developed – 18%
- Biological Condition:  
Johnston Run Watershed is home to many sensitive species including the barn owl
- Important Wildlife Habitats:
  - Charlestown Ponds
  - Mercersburg Meadow
  - Mercersburg Woods
- Water Quality:
  - 66% of streams impaired
  - 34% of streams non-impaired
- Designated Use:  
Aquatic Life - Warm Water Fishes
- Cause of Stream Impairments:  
Nutrients and siltation (sediment); 84% from agricultural sources and 16% from urban runoff/storm sewers  
(Source: PA DEP, 2010)