



COLUMBIA COUNTY  
CONSERVATION DISTRICT

## Saving Rain for a Sunny Day

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*Conserving Natural Resources for Our Future*

## ACKNOWLEDGEMENTS

### FINANCIAL AND TECHNICAL SUPPORT PROVIDED BY:



Pennsylvania Association of Conservation Districts, Inc.



Pennsylvania DEP Chesapeake Bay Program



Columbia County Conservation District

### EMPTY BARRELS PROVIDED BY:

Aqua Pennsylvania, Bear Gap

Wise Foods, Berwick



## WORKSHOP OVERVIEW

### WATER BASICS

- The Blue Planet
- Watersheds
- Stormwater



### RAIN BARRELS & RAIN GARDENS

- What you can do to make a difference in your own backyard
- Stormwater management at the local level



## WATER BASICS: "THE WATER PLANET"



- 2/3 of the Earth is covered by water
- 97% in oceans
- The remaining 3% is freshwater....BUT...
- Most of the 3% is unavailable, SO...

**< 1% of the Earth's water is available for use**



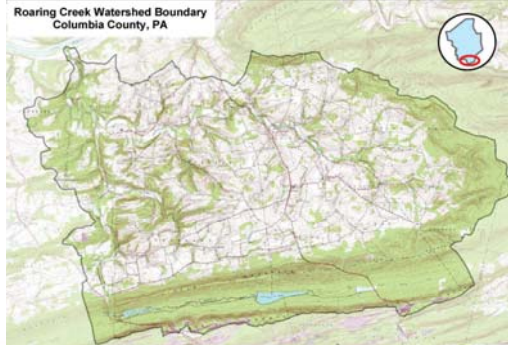
# WATER BASICS: WATERSHEDS

*"Wherever you are, you are in a watershed"*  
*"We all live downstream"*

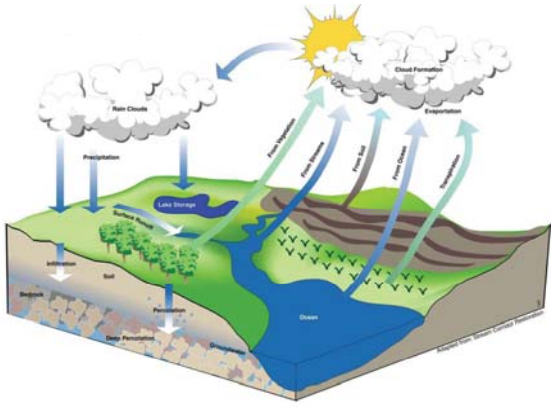


# WATER BASICS: WATERSHEDS

**WATERSHED:** *an area of land that drains into a body of water, such as a lake, stream, or ocean.*



# WATER BASICS: The Hydrologic Cycle

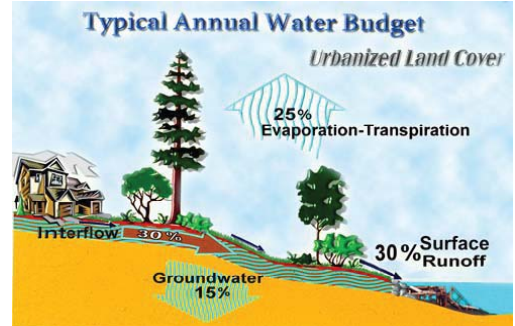


## In Natural Conditions



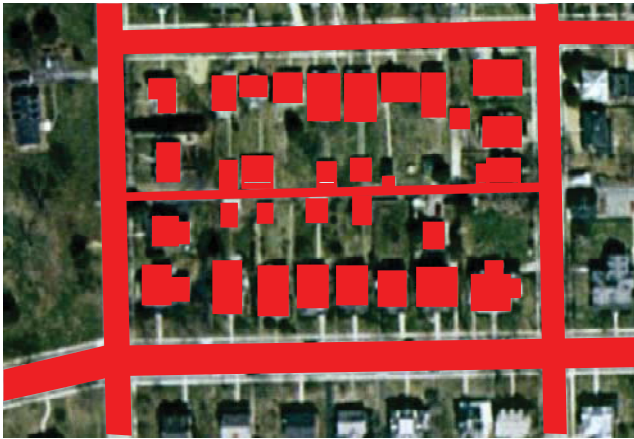
Courtesy May, U of W

## In Developed Conditions



Courtesy May, U of W





## WATER BASICS: STORMWATER

***STORMWATER:*** *an abnormal amount of surface water due to a heavy rain or snowstorm*

Webster's New Millennium™ Dictionary of English, Preview Edition (v.0.9.6)



CCCD photo/ Barry Travelpiece



Internet



## STORMWATER – WHY WE CARE

### NONPOINT SOURCE POLLUTION:

*a.k.a polluted runoff*

- Comes from many diffuse sources
- Caused by rainfall or snowmelt moving over and through the ground



Source: <http://www.epa.gov/owow/nps/ga.html>



## STORMWATER – WHY WE CARE

### NONPOINT SOURCE POLLUTION:

- As the runoff moves, it picks up and carries away natural and human-made pollutants



<http://www.epa.gov/owow/nps/ga.html>

- Pollutants are deposited into lakes, rivers, wetlands, the Chesapeake Bay, and underground sources of drinking water



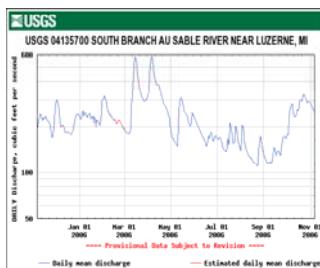
## WATER BASICS: STORMWATER & STREAMS

### URBAN



**Flashy!**

### RURAL



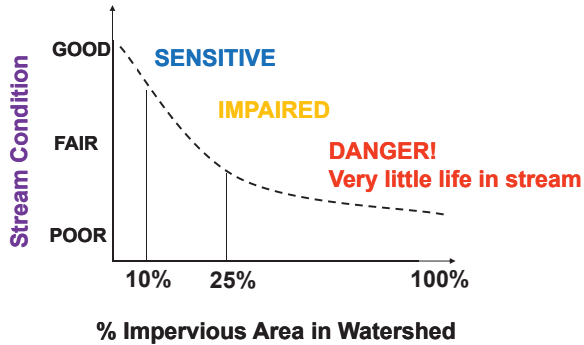
**More normal**



## June 2006



## WATER BASICS: STORMWATER & STREAMS



## WATER BASICS: TAKE HOME POINTS

- WATER IS A FINITE RESOURCE – USE WISELY
- EVERY RAINDROP FALLS IN A WATERSHED
- AS WATER MOVES THROUGH THE WATERSHED, POLLUTION IS CARRIED ALONG WITH IT
- STREAM FLOODING IS NATURAL, BUT WE MAKE IT MORE FREQUENT AND INTENSE
- YOU CAN MAKE A DIFFERENCE!



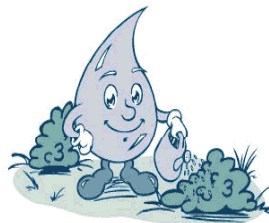
## Rain Barrels



A rain barrel is a collection system that stores roof top runoff to be used later -- for activities such as lawn & garden watering, car washing, & window cleaning.



## Use Rainwater to Water Plants



- Natural, no added chemicals, better for plants
- Reduces stormwater runoff
- Streams will be cleaner
- Saves groundwater for drinking & washing
- **Free! Saves Money!**



## Rain Barrels



## Rain Barrel Anatomy & Construction



## Rain Barrel Installation



## Rain Barrel Installation



## Rain Barrel Myths

- It's UGLY
- It's a mosquito breeding ground
- It will catch all the water from my roof
- It can be used all year



## Ugly? It Doesn't Have to Be!



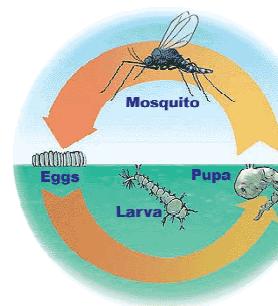
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## The State 'Bird'

### Mosquito Life Cycle



Mosquitos take about seven days to complete life history. The first three stages: eggs, larva and pupa are aquatic. Therefore the best way to prevent mosquito breeding is to remove the stagnant water.





## Pesticides Used for Mosquito Control

MosquitoDunks, with *Bacillus thuringiensis israelensis*, can be placed in rain barrels to control mosquito larvae if screening is not used.



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## How Much Runoff?

**To estimate the runoff from a roof:**

- Multiply the roof's length x width = square feet
- Multiply sq. ft. x 0.6 x rainfall in inches = gallons (0.6 is a conversion factor)

**For example, if your roof is 28' x 40' = 1120 sq. ft, and you have a 1/4 inch rainstorm:**

**Rain caught (in gallons) = 1120 sq. ft. x 0.6 x .25 inches = 168 gallons**



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## Rain Barrel Myths

- Don't forget to drain your rain barrel when the temperatures will drop below freezing

