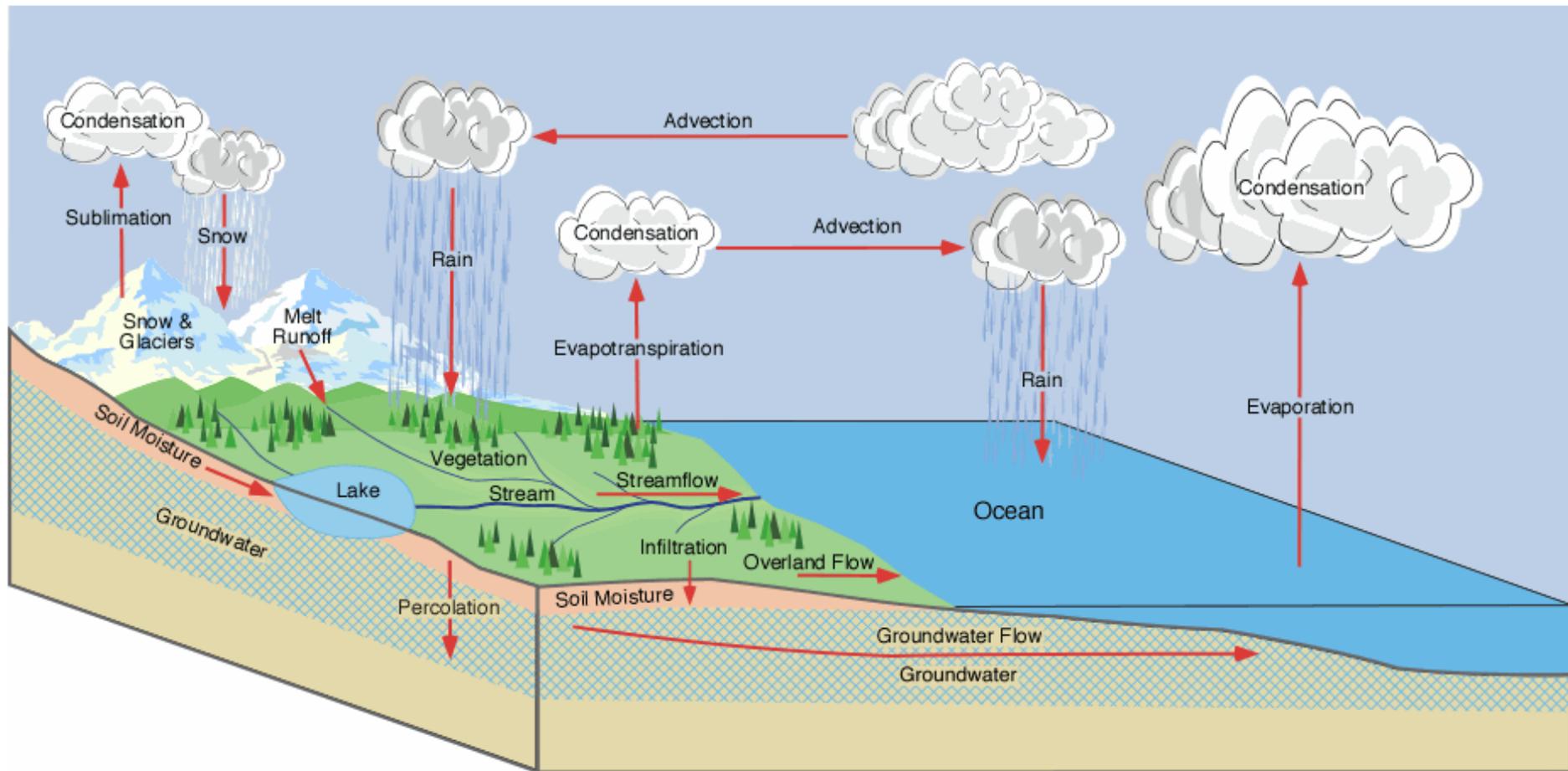


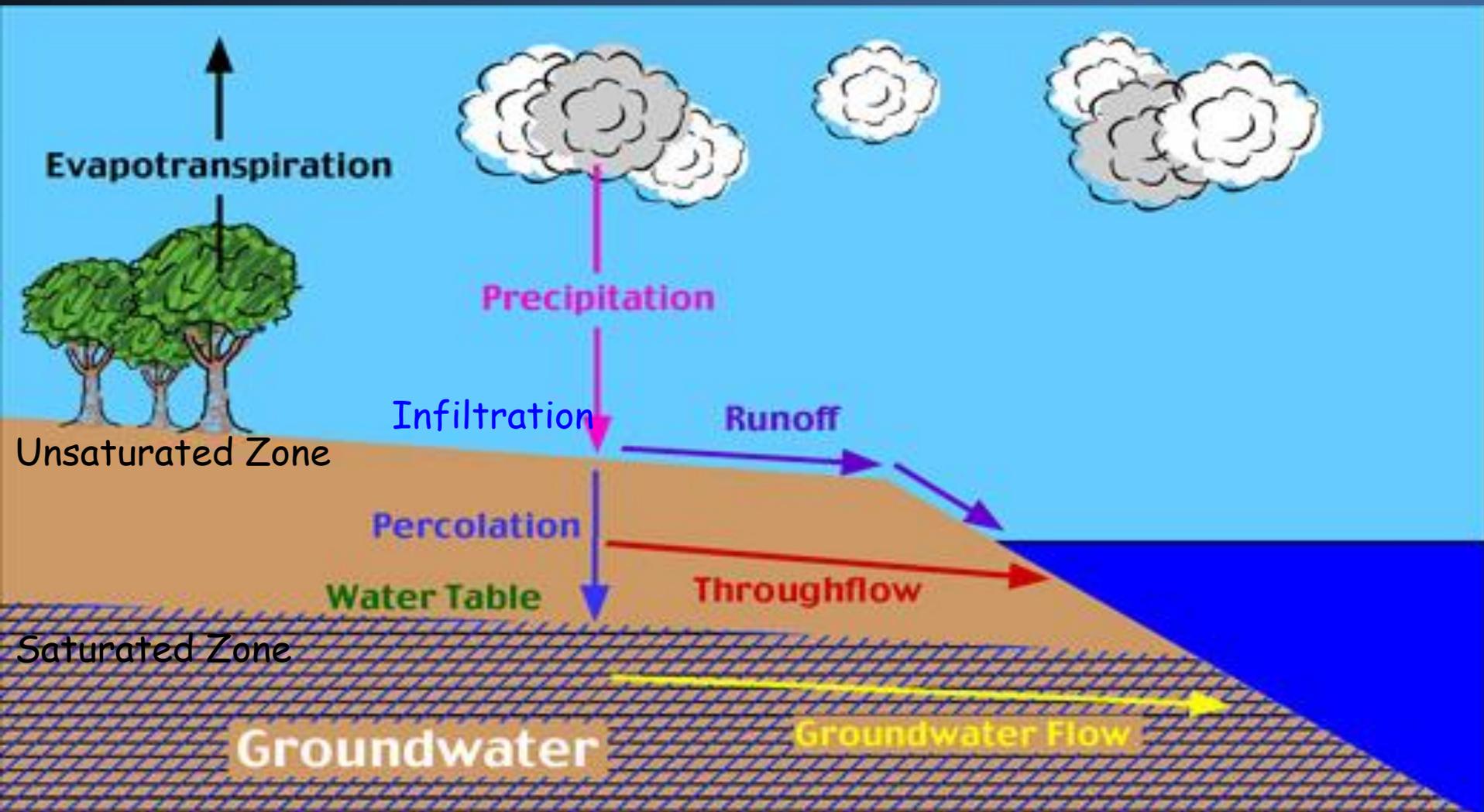
# Managing Your Stormwater: What can you do to help?

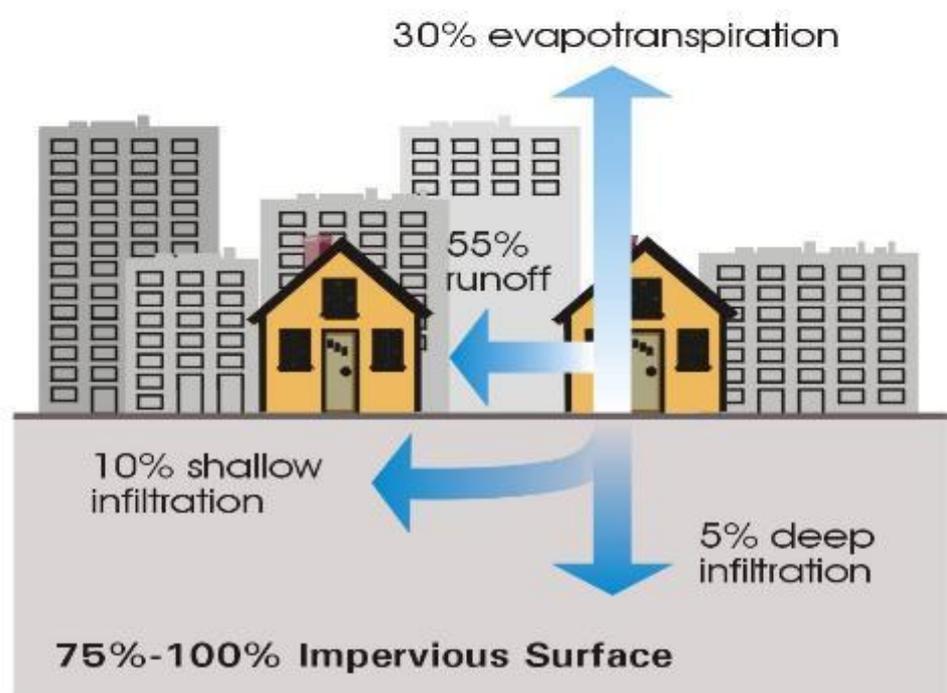
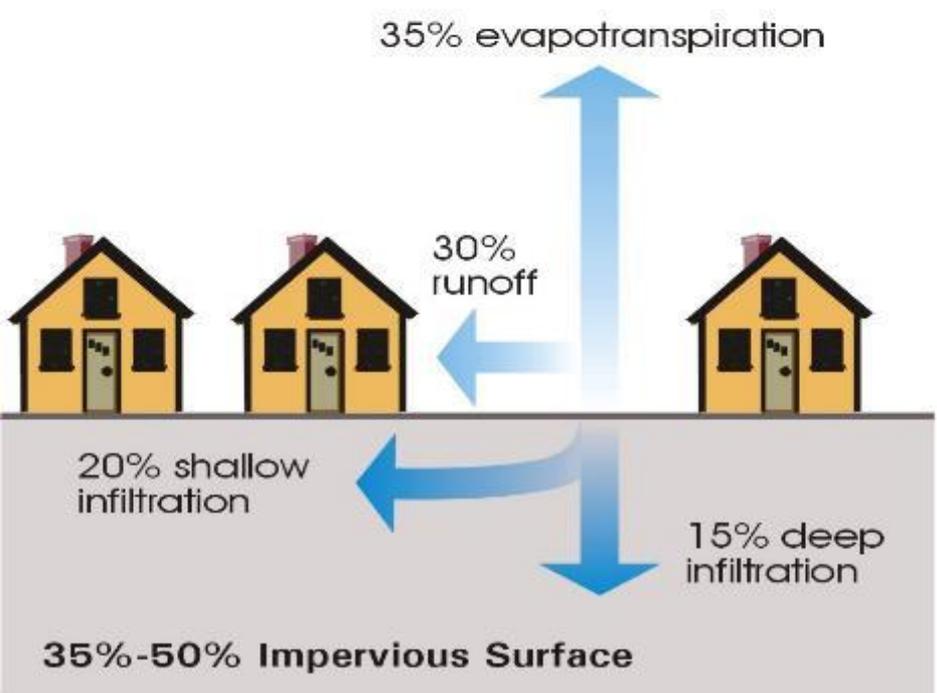
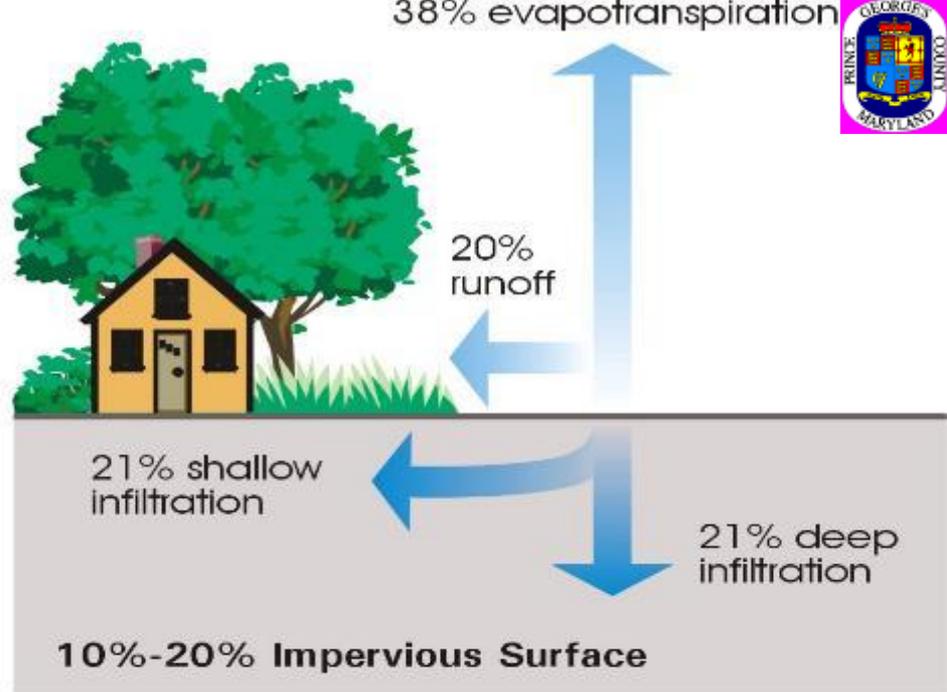
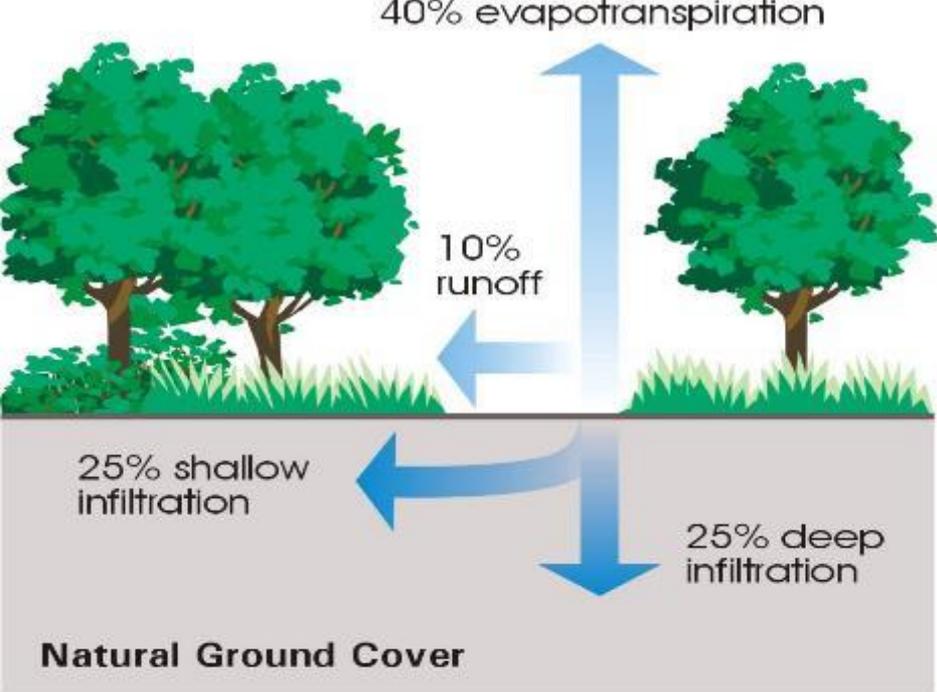


Jacqueline U. Takacs  
Watershed Restoration Specialist  
UME/Maryland Sea Grant

# Hydrologic Cycle







# What is Stormwater Runoff

- Water that originates as a result of a precipitation event that does not infiltrate into the soil and flows over land into receiving surface waters.



# Stormwater is how pollution enters our water bodies



**Bacteria**



**Trash**



**Erosion/Sediment**



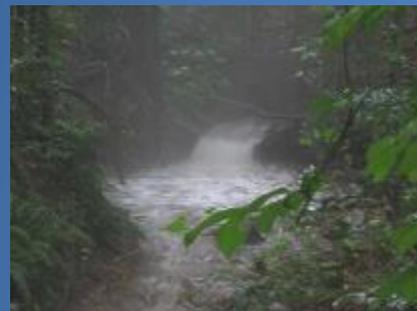
**Stormwater**



**Nutrients**



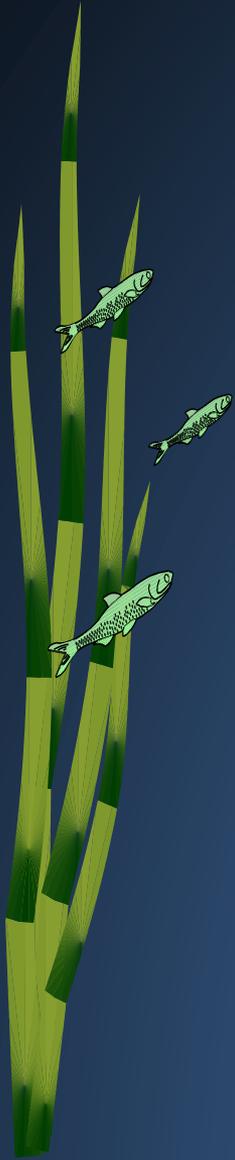
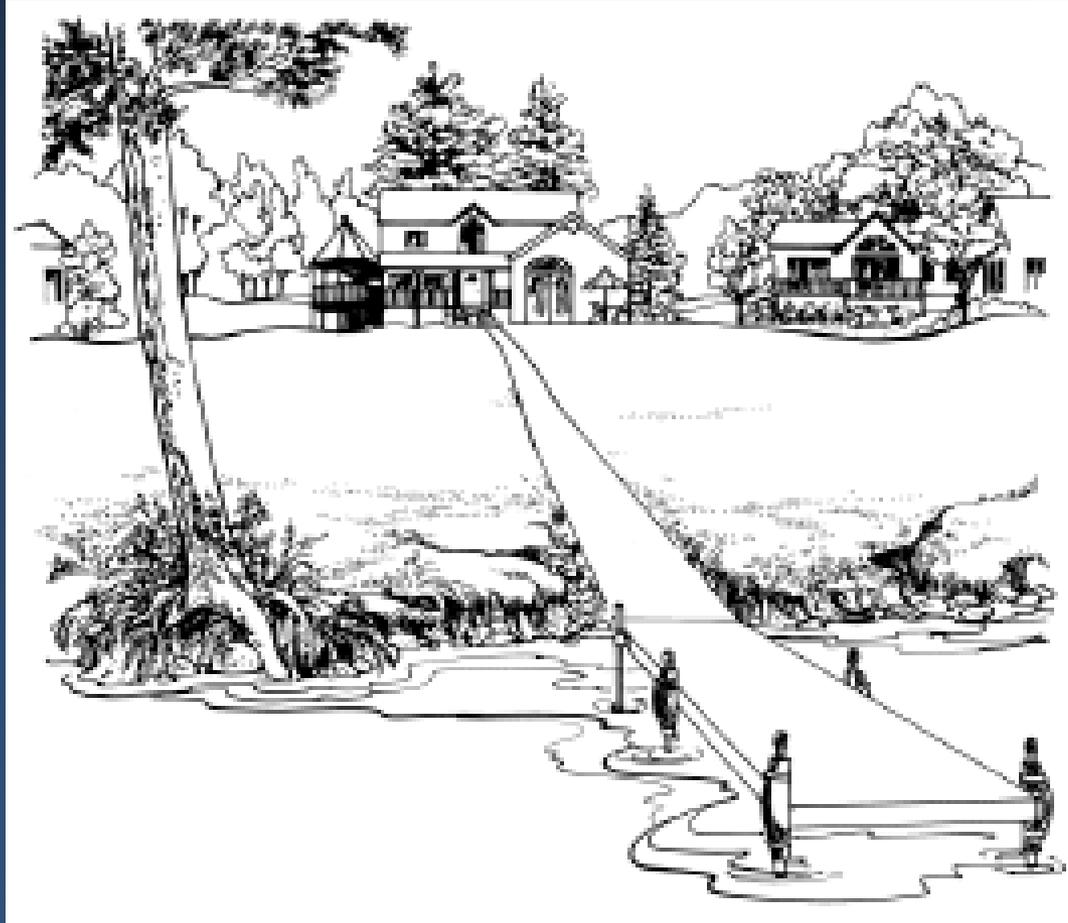
**Toxics**



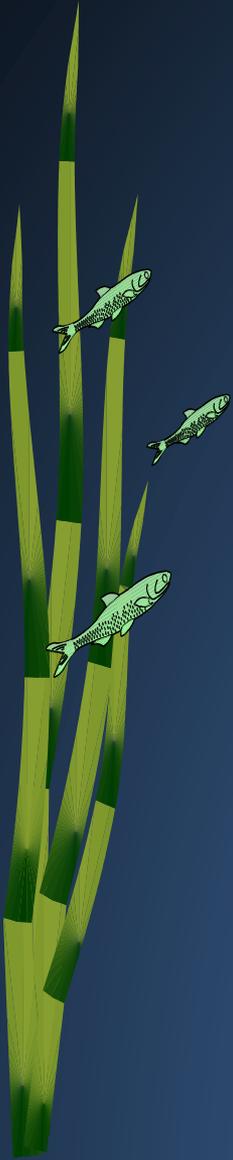
**Thermal**

**Engage in Practices that  
Reduce Runoff and Pollutants**

# Areas of Concern



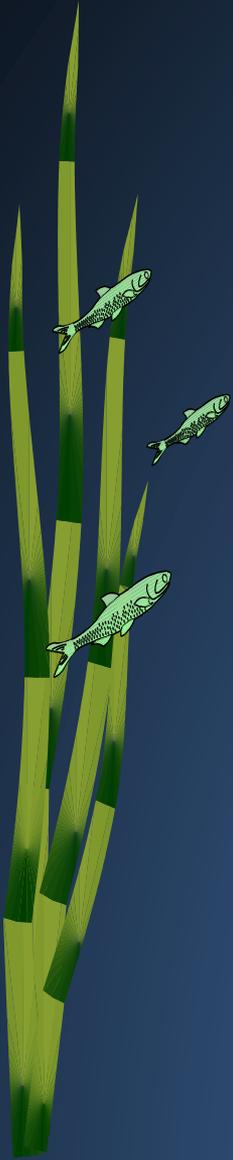
# Areas of Concern



# Managing Your Impervious

Increase Infiltration

Removal and/or Replacement



# Managing Your Impervious

## Downspout Disconnection

Redirecting downspouts from impervious surfaces and stormwater conveyance systems to permeable areas.



# Managing Your Impervious

## Downspout Disconnection



# Managing Your Impervious

## Rain Barrels

A device for small-scale rainwater harvesting.

Positioned at the end of a building drainage system.

Collect, store, reuse rainwater

Recycled or purpose-built

Often 55-85 gallons



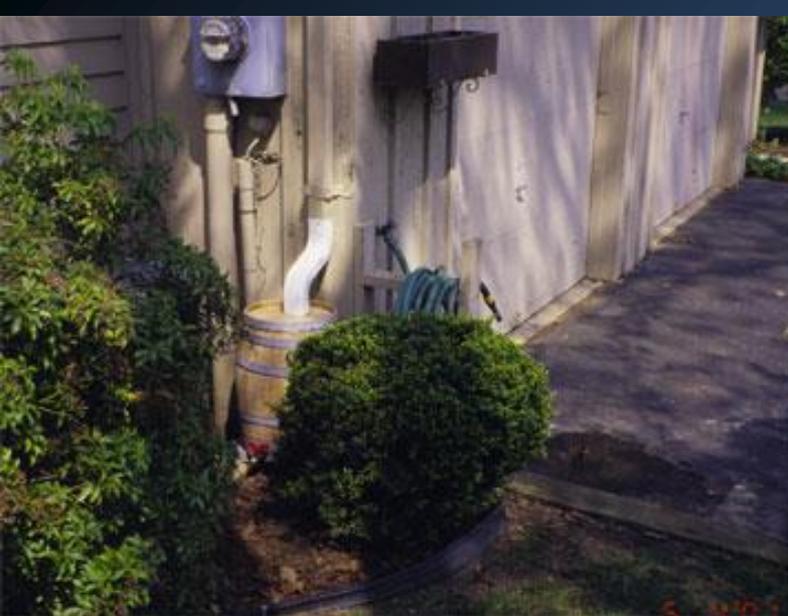
# Managing Your Impervious



## Rain Barrels

1,000 Square feet. of roof = 600 gallons of water from every 1" of rain

A rain barrel can save approx. 1,300 gallons of water during summer months



# Managing Your Impervious



Image courtesy of A.Rockler

## Rain Gardens

Rain gardens are shallow depressions that are placed between stormwater runoff sources (roofs, driveways, parking lots) and runoff destinations (storm drains, streets, streams).

# Managing Your Impervious



## Rain Gardens

Soil and plants filter pollutant from water

Allow runoff to soak into the ground



***SLOW it DOWN and SOAK it UP***

# Managing Your Impervious

## Rain Gardens

Designed to hold water for typically less than 48 hours

- Eliminates concern about mosquito habitat
- Pathogens are left high & dry = they die





+ 4 Hours



+18 Hours



# Managing Your Impervious



## Conservation Landscaping

“Landscaping with specific goals of reducing pollution and improving the local environment.”



# Managing Your Impervious

## Conservation Landscaping

Is designed to benefit the environment and to function well for human use.

Contains locally native plants that are appropriate for site conditions.

Has an ongoing management process to remove existing invasive plants, and to manage the property to prevent future alien plant invasions.

Provides wildlife habitat.



# Managing Your Impervious

## Conservation Landscaping

Promotes good air quality.

Conserves water and promotes good water quality.

Promotes healthy soils, composts plant waste on site, and amends disturbed soils to encourage native plant communities.

Works with nature to be more sustainable with less input.



# Managing Your Impervious



## Pervious Surfaces

Replacing impervious surfaces with more permeable surfaces.

This includes: pervious concert/asphalt, interlocking brick paver, grass-crete

# Managing Your Impervious



## Pervious Surfaces

Because pervious paving allows water to penetrate its surface:

- it causes less run-off into the water
- lets the ground filter out pollutants

# Managing Your Impervious

## Pervious Surfaces

During the winter, the air beneath pervious pavement circulates, causing the ice to melt more quickly and the water to drain.

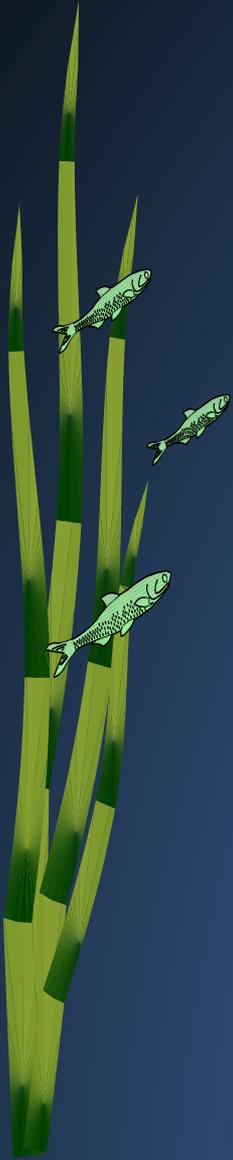
This prevents sitting water in parking lots that often becomes black ice



# Managing your Landscape

Turf Management

Shoreline Management



# Managing your Landscape

## Yard Maintenance



### Fertilization:

- Fertilizer regulations
- Soil testing
- Clean over-spray
- Stay 25' away from waterways

### General:

- Proper mower height
- Mulch clippings
- Irrigation when needed
- Plant ground cover
- Proper use of pesticides

# Managing your Landscape

## Plantings

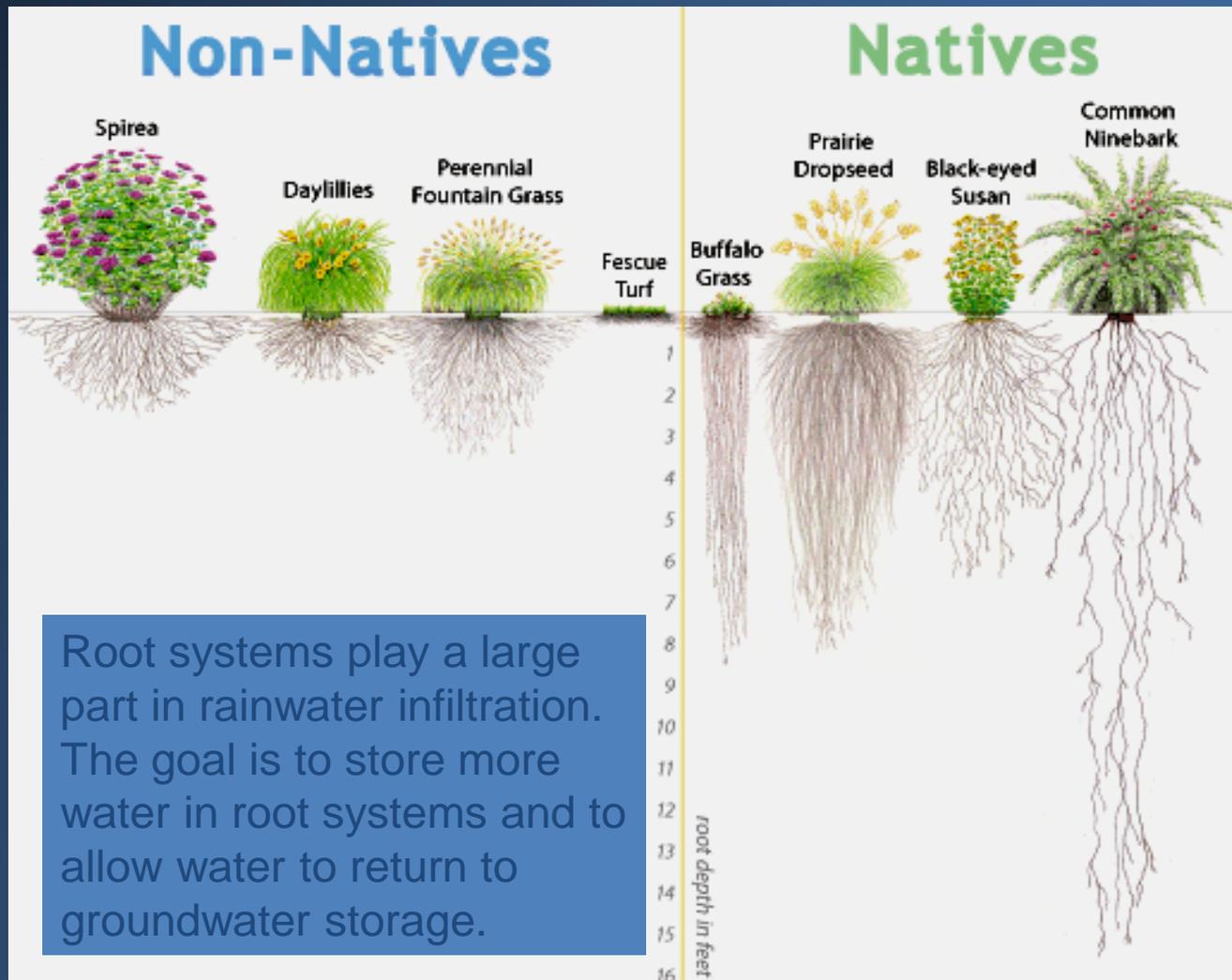
Plant trees

Native plants

Invasive Removal



# Getting to the Root of the Problem



# Managing your Landscape

## Shoreline Buffers



*Photo by Nancy Cairn Miller*

Establish a buffer zone of plants along the water's edge and a "no-mow" zone along the bank.

# Managing your Waste

Pet Waste

Septic Systems



# Managing your Landscape

## Pet Waste



**Arlington Echo**  
Arlington, Virginia

**WSA**  
Watershed Science & Analytics

**POOP HAPPENS... DEAL WITH IT!**

Please Help Keep Our Water Clean

Pick Up Your Pet's Waste

*Rain water carries these pollutants to the Bay!*

**ANNE ARUNDEL COUNTY**  
DEPARTMENT OF PUBLIC WORKS

Removal of pet waste is required by AAC law  
Article 12 SEC 40909; Fines up to \$500

Funded by

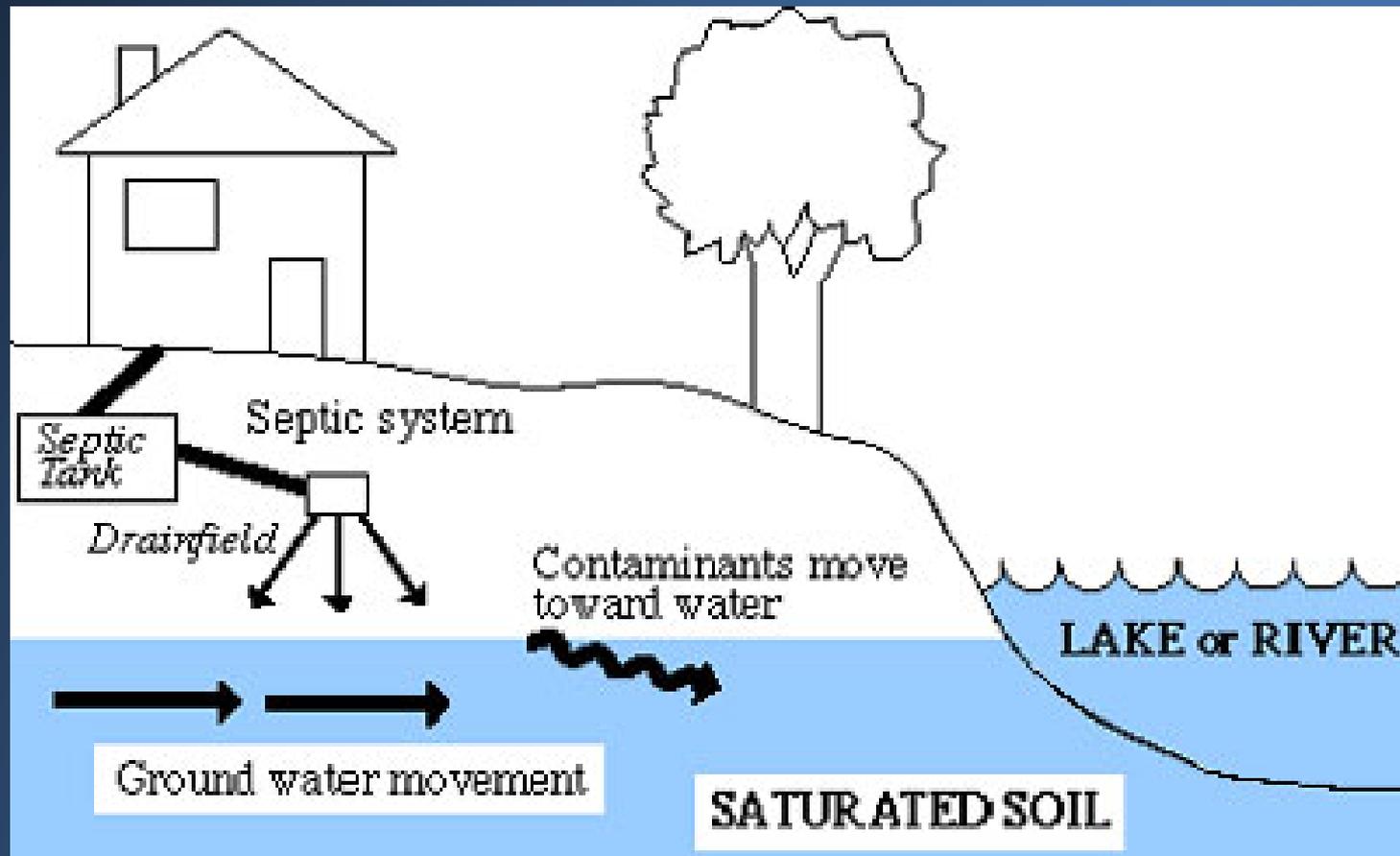
**NOAA**  
CHESAPEAKE BAY OFFICE

**The Chesapeake Foundation**

**UNIVERSITY OF MARYLAND SYSTEM**

# Managing your Landscape

## Septic Systems



**How do we get people /properties engaged?**

# Getting it done!

## *LakeWise Program*



### 3 Components:

- 1 Public workshops/classes on variety of lake-friendly landscaping practices
- 2 Award/certification recognizing lake-friendly properties
- 3 A group of trained volunteers that provide technical assistance to property owners

# Getting it done!



## Public Workshops



# Getting it done!

## Property Recognition



# Getting it done!



## Training Leaders

Volunteers are trained in the practices that best protect the lake

Work with their lake community to conduct property assessments

Offer technical assistance for BMP implementation

Certify *LakeWise* properties

