

# KEEP IT CLEAN: HOW BMPS ON THE GROUND PROTECT WATER QUALITY IN MONROE COUNTY



Maggie Sullivan, Watershed Coordinator

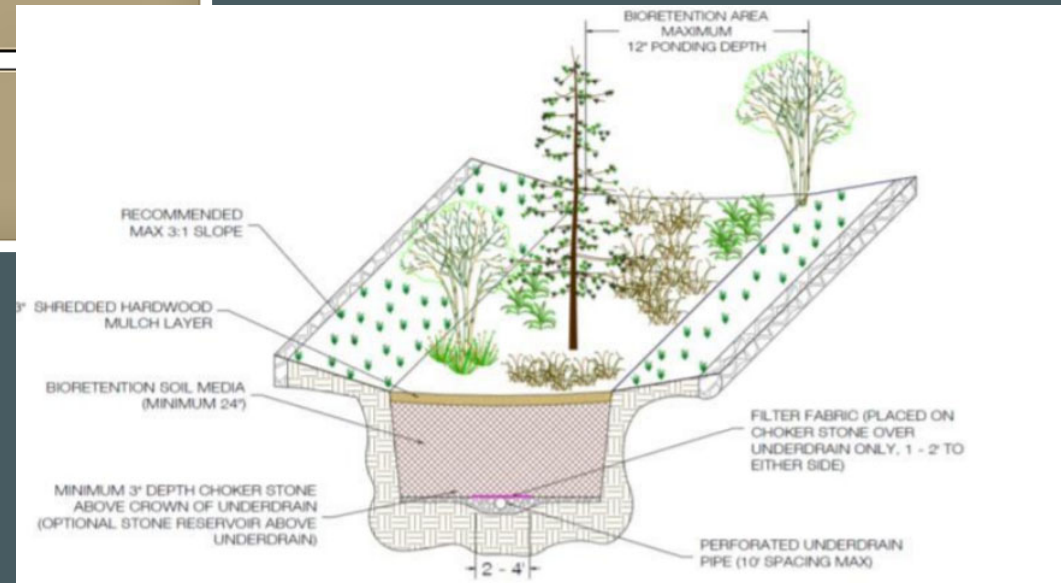
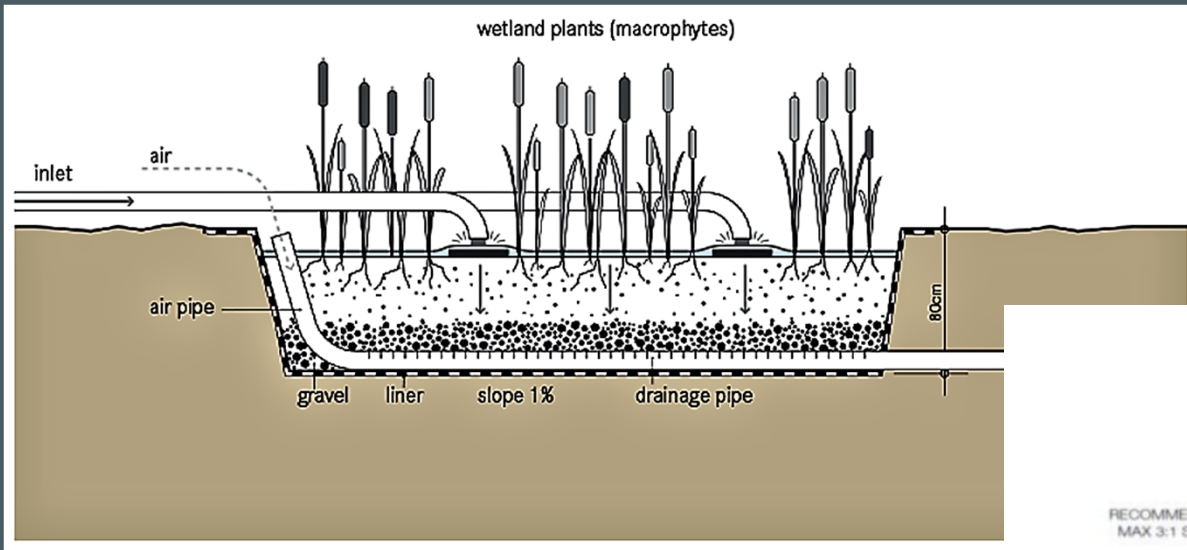


# Introduction





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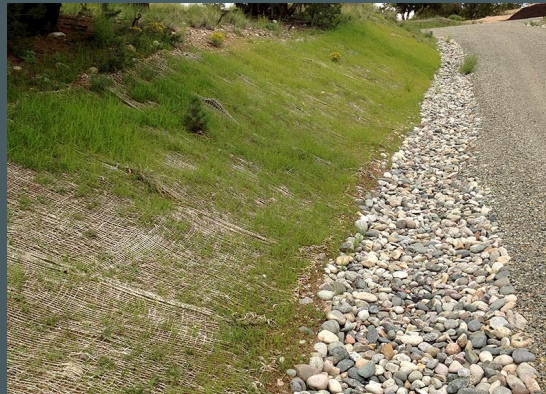
# Permits, Checklists, and Inspections, Oh My!







# Why Do We Do This Stuff?





# Water Quality!



- Lake Monroe
  - Constructed 1964
  - Flood control



# Lake Monroe



- Recreation
- Wildlife
- Drinking Water







# Over 130,000 People Get Their Drinking Water From Lake Monroe

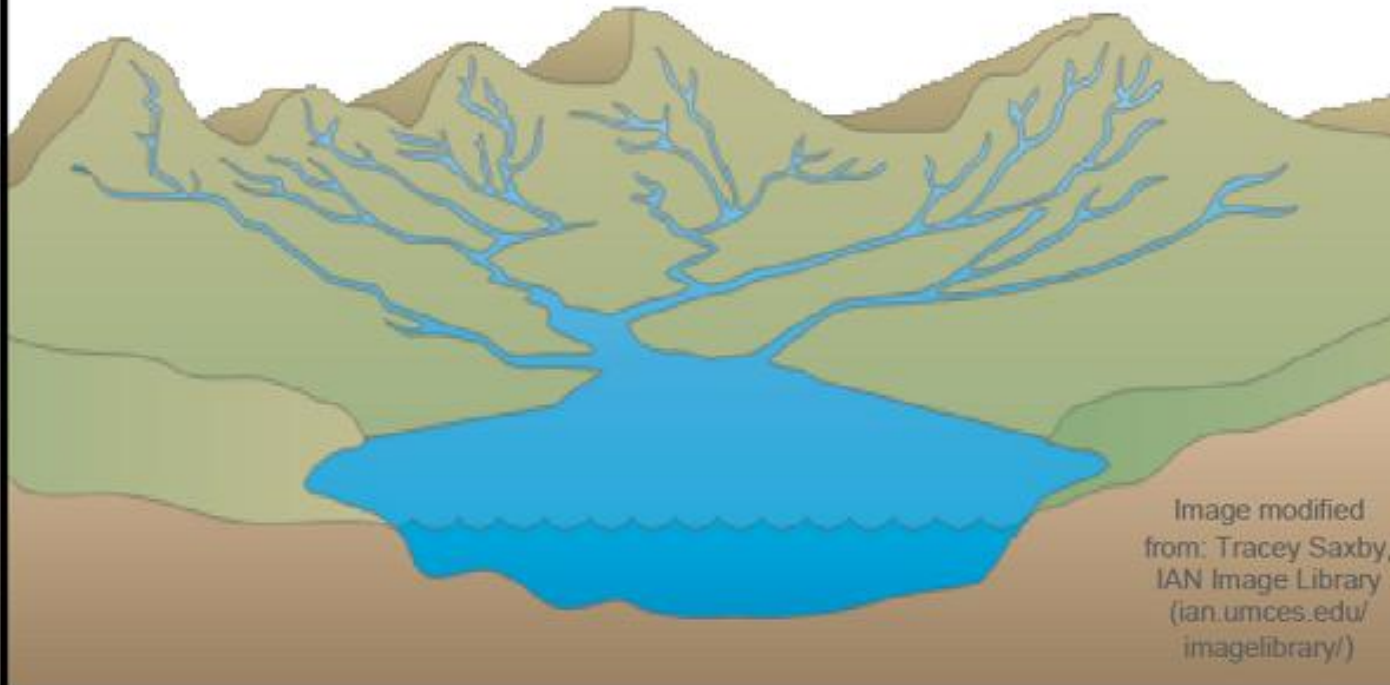




# Developing a Watershed Management Plan

- **What is a Watershed Management Plan (WMP)?**
  - Clear identification of problems and solutions
  - Concrete plan of action for addressing water quality goals
- **Essential Characteristics**
  - Data-Driven
  - Addresses Stakeholder Concerns
  - Supported by Community
  - SMART Goals – Specific, Measurable, Attainable, Relevant, Time-based

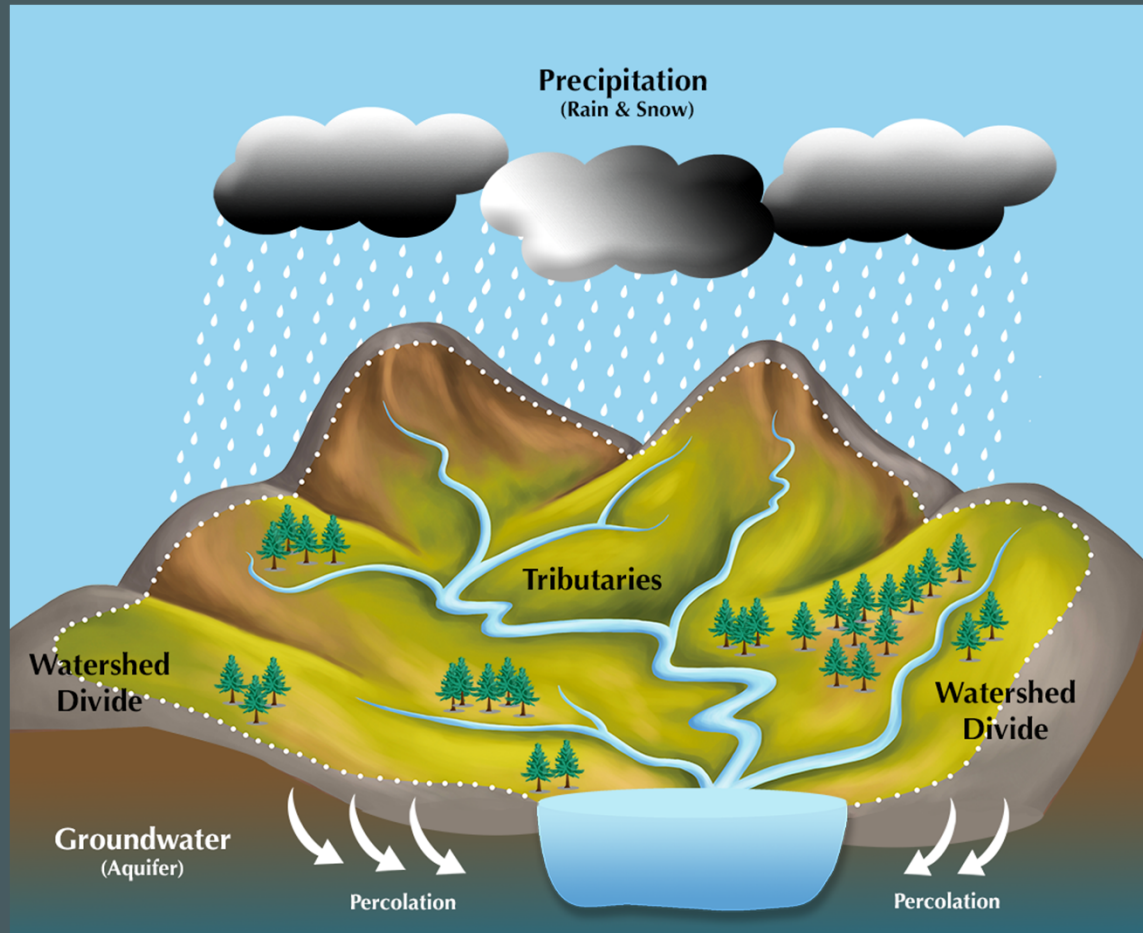
## What is a Watershed?



**Watershed**—the area that drains into a lake, stream, or river



# Water Flows Downhill

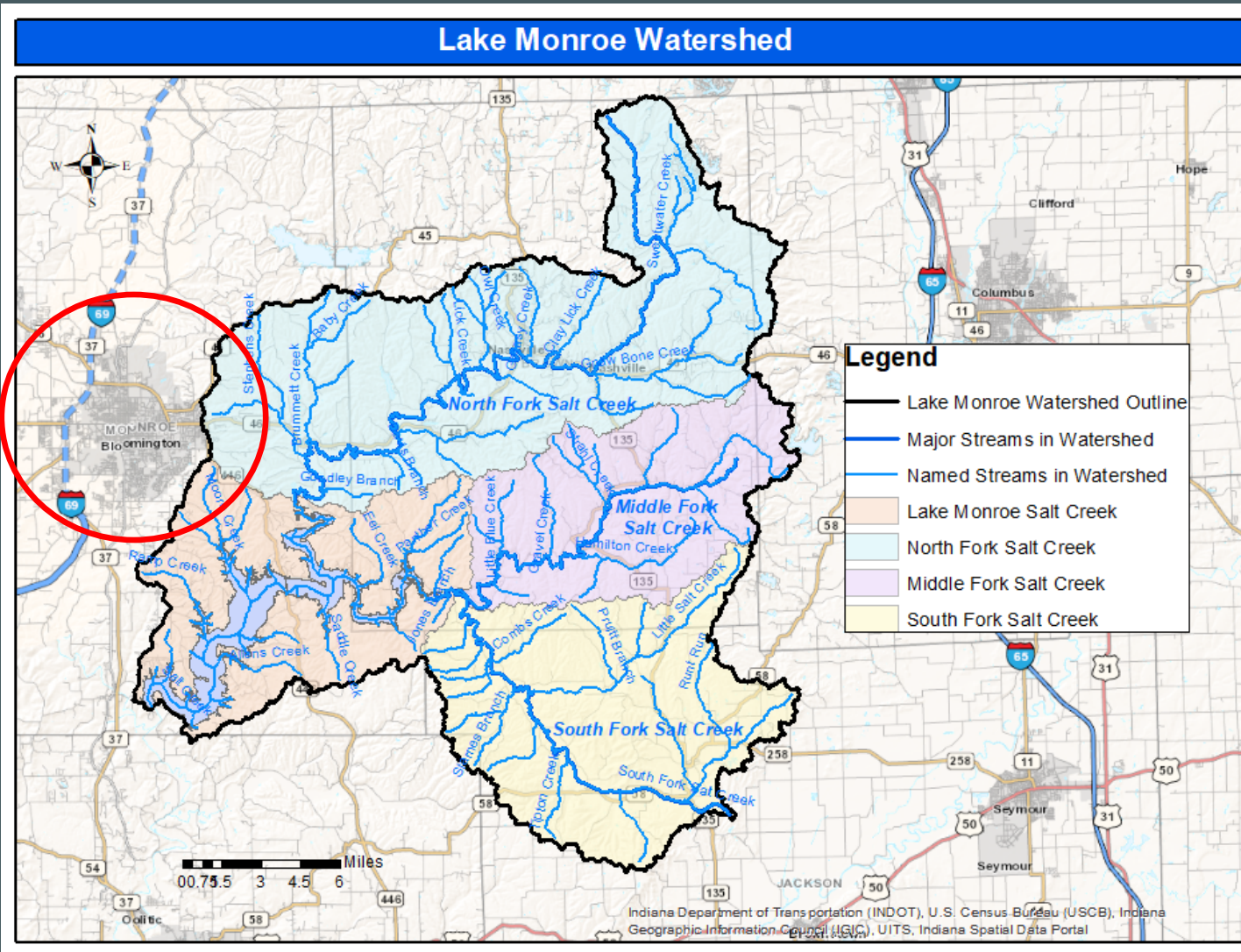




# Do You Live in a Watershed?



**YES! EVERYONE LIVES IN A WATERSHED!!**





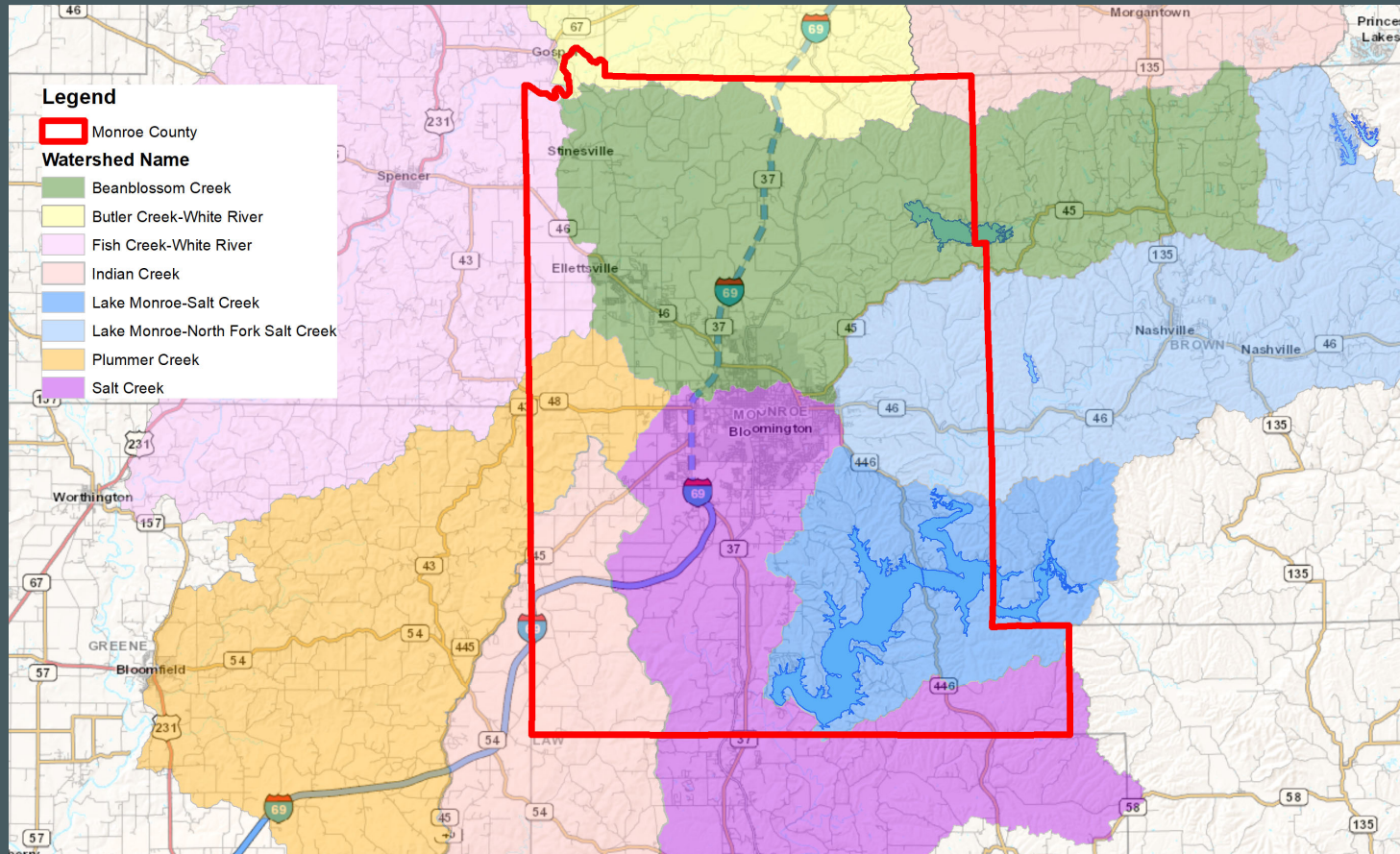


## What If Your Project Isn't Near Lake Monroe?

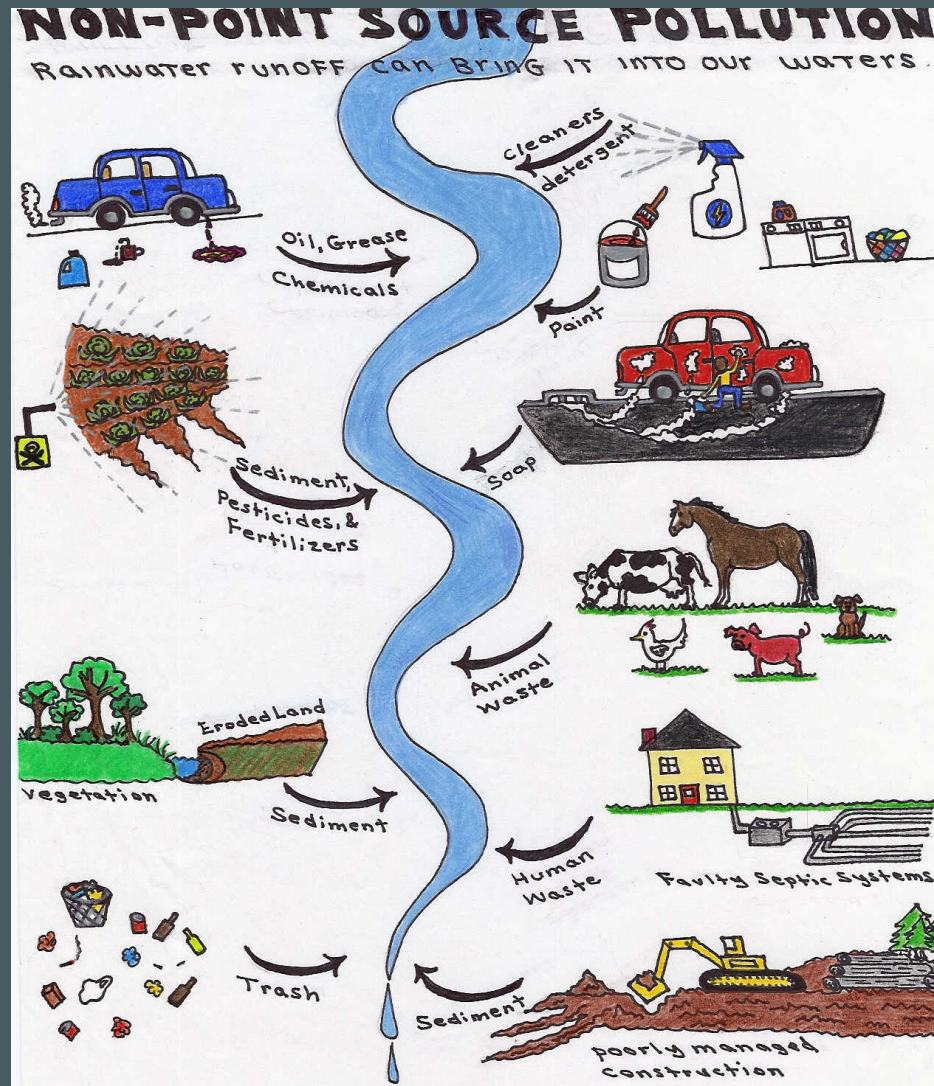


It Might Still Be In The Lake Monroe Watershed

# Even If Your Project Isn't In The Lake Monroe Watershed...



...It Is In Somebody's Watershed!







# Watershed Management Plan Development Process

- Listen to Stakeholder Concerns
- Educate and Engage Public
- Gather Data (historical studies, field observations, water quality monitoring)
- Confirm Problems
- Set Goals
- Identify Critical Areas
- Choose Projects to Meet Goals





# What are the Top Water Quality Concerns?





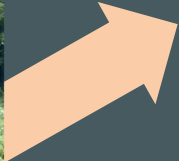
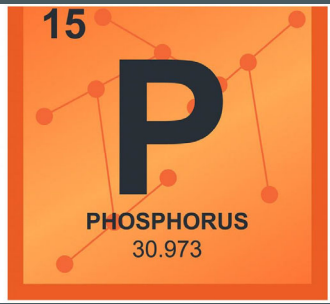




# Sediment



# Nutrients








# E. Coli





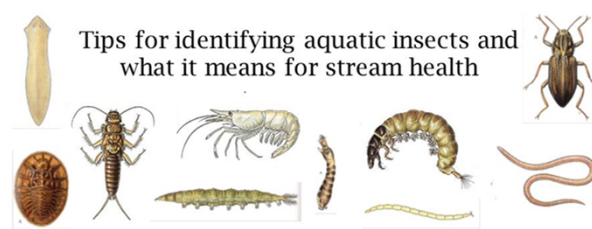


# Low Biological Integrity



**Macroinvertebrate Mayhem!**

Tips for identifying aquatic insects and what it means for stream health





# Trash and Plastic

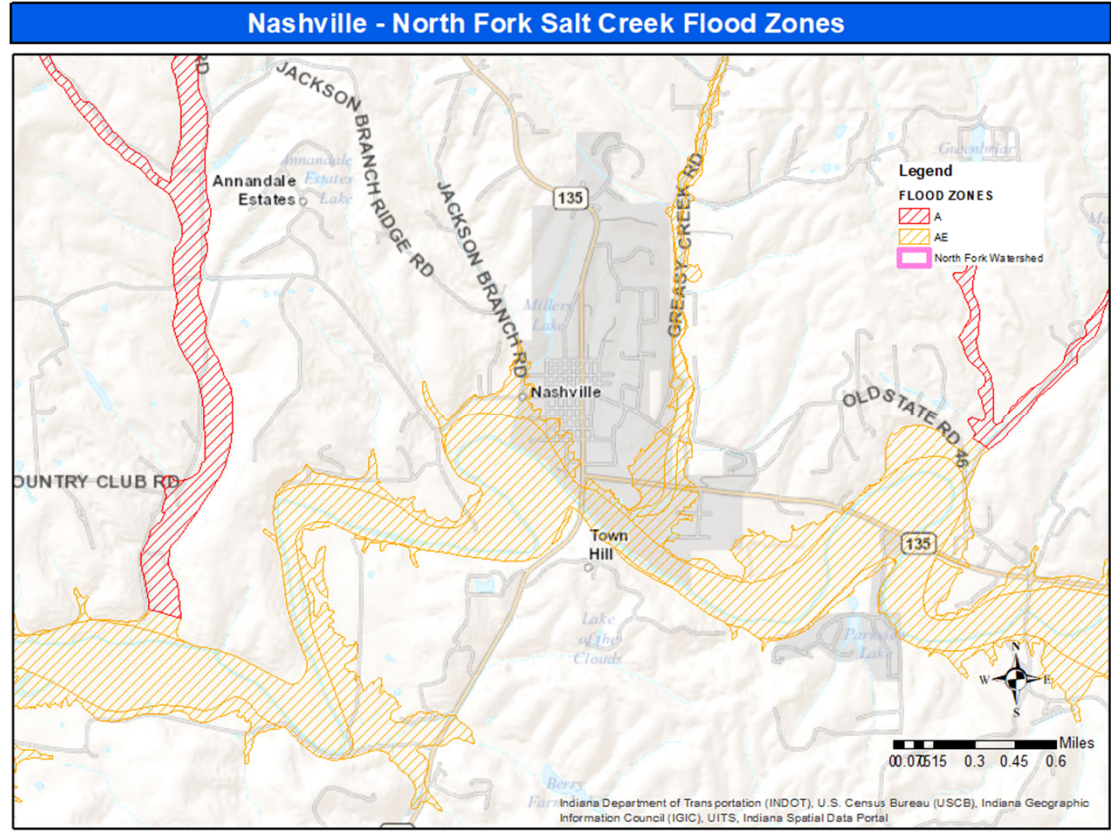


# Invasive Plants





# Flooding/Floodplains





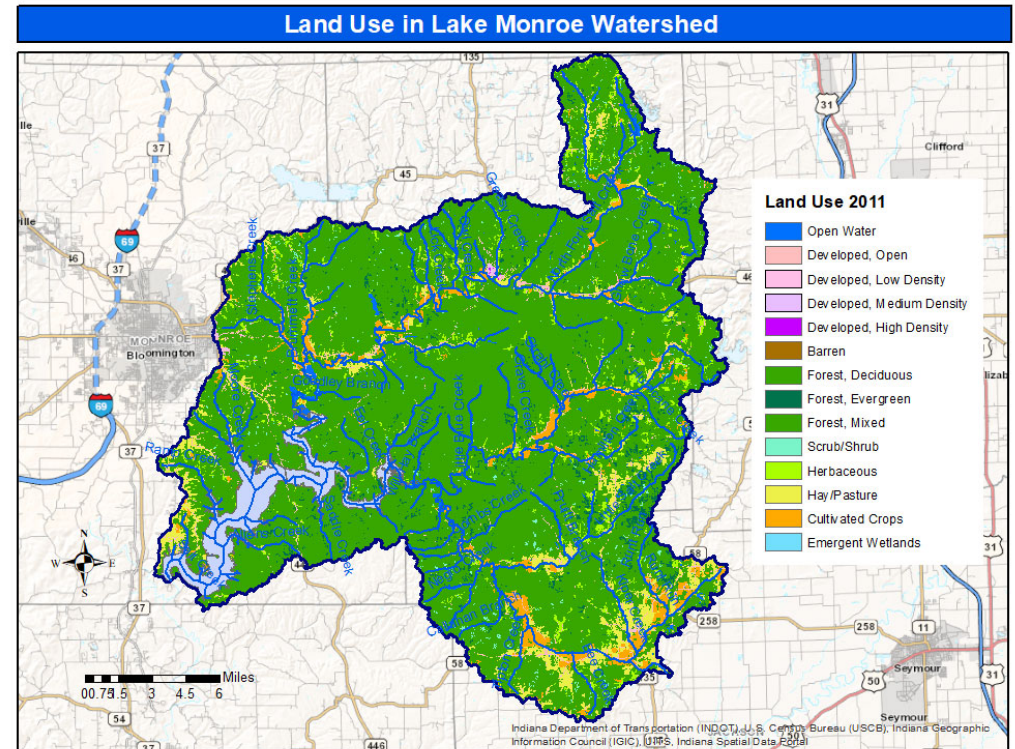
# Recreational Impacts







# Forest & Forest Management







# Lack of Single Governing Body



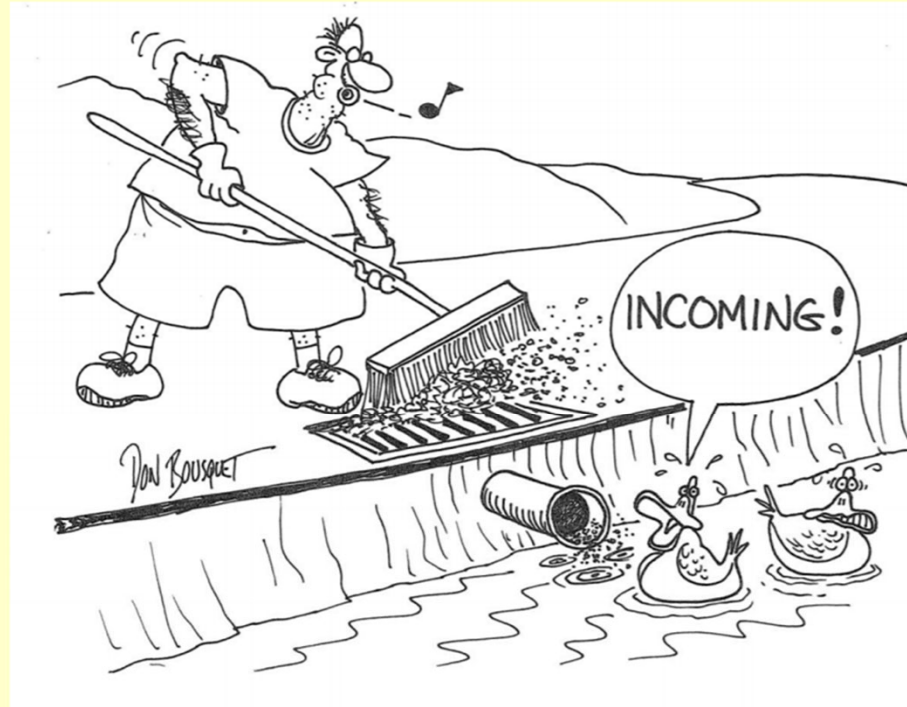


# Potential Deregulation





# Lack of Education/ Awareness



*It's no joke: whatever enters a storm drain flows directly into our local waters. The storm drain system provides no filters and no treatment. Help us keep our waters clean. [insert tip]\**





# Key Concerns

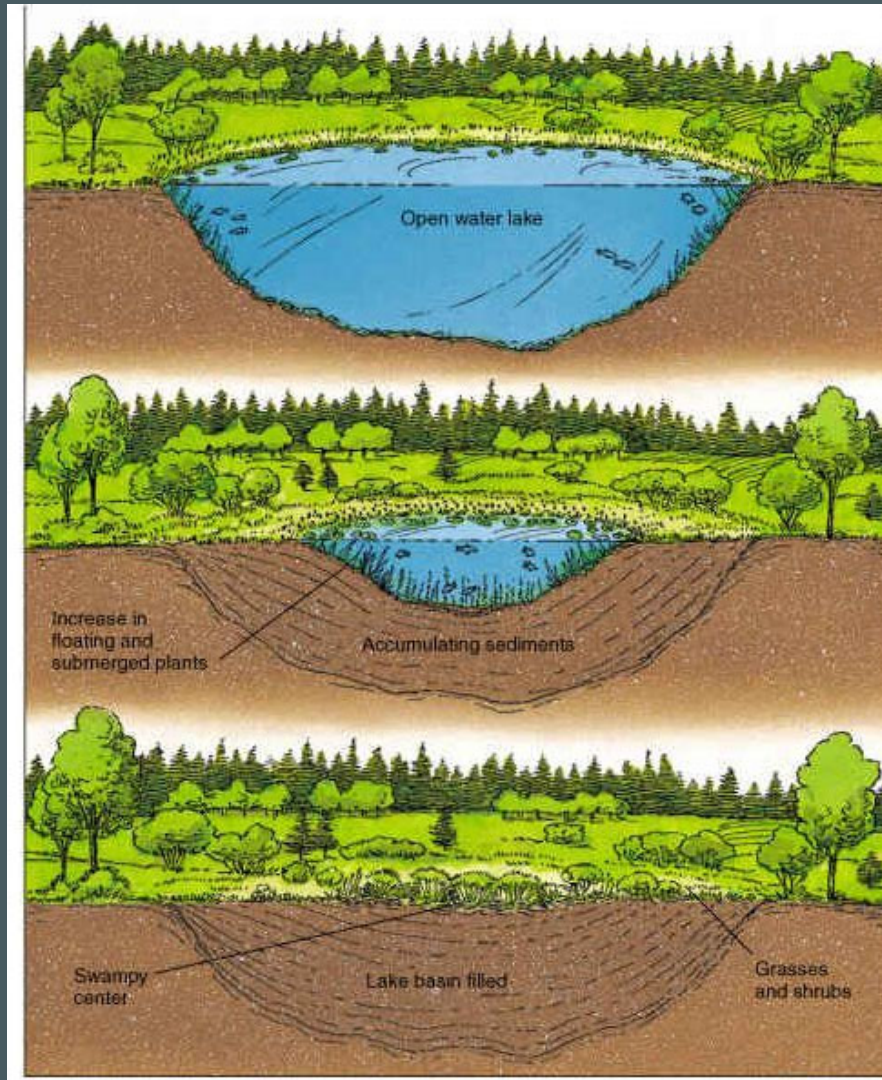
...for construction sites

- Sediment
- Nutrients
- E Coli
- Low Biological Integrity
- Trash and Plastics
- Invasive Plants
- Flooding and Floodplains
- Recreational Impact
- Forest & Forest Management
- Lack of a Single Governing Body
- Potential Deregulation
- Lack of Education and Awareness



# Why is Sediment a Problem?





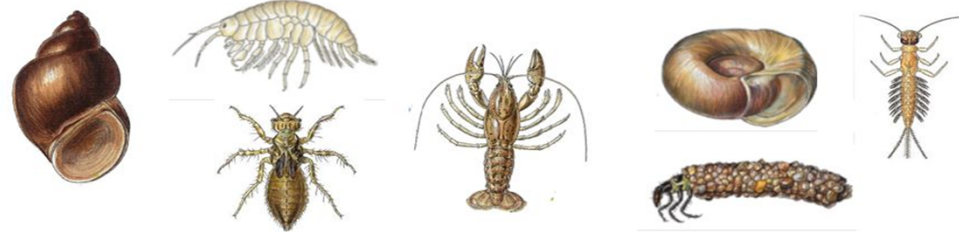




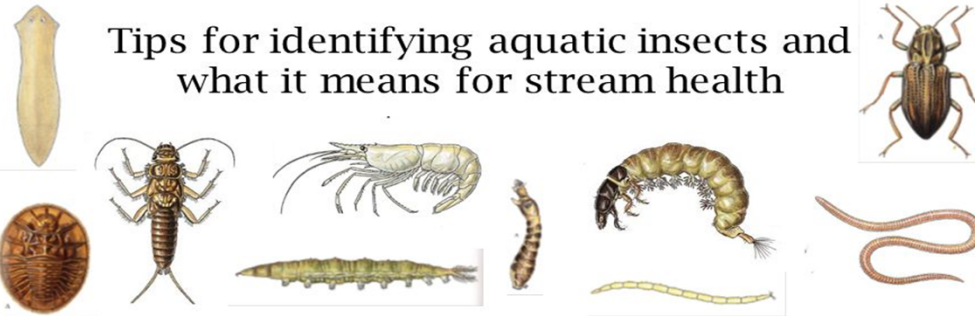
# Sediment & Stream Habitat



# Healthy Water = Healthy Fish Food



## Macroinvertebrate Mayhem!





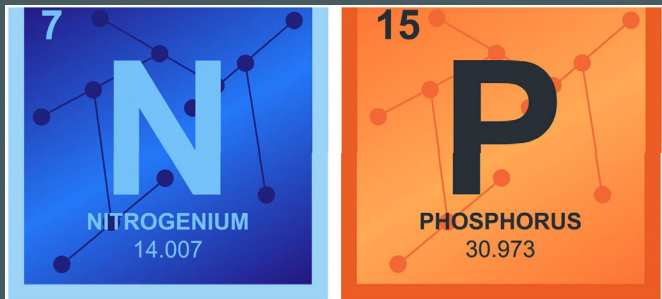
# Healthy Water = Healthy Fish







# Why Are Nutrients A Problem?



Harmful Algal Blooms

# Harmful Algal Blooms



- Blue-Green Algae = Cyanobacteria (not plants)
- Many species
- Some produce toxins sometimes



# Harmful Algal Blooms



- Limits Recreation
- Potential Health Impact
- Increases Complexity of Drinking Water Treatment







# Harmful Algal Blooms



## Contributing Factors

- High Nutrient Levels
- Low Flow/Movement
- Warm Temperatures



# Why Are Trash and Plastic a Problem?







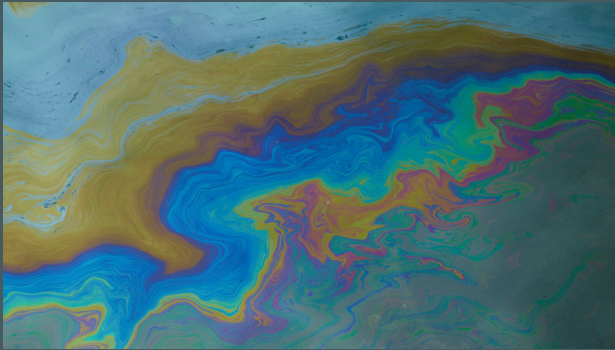
# Why Are Invasive Plants a Problem?







# What Else Might Run Off a Construction Site?





# How Can You Help?





# Follow the Plans







# Erosion & Sediment Control



## “Belt & Suspenders” Approach

### Erosion Control (Minimize Erosion)

- Site Preparation
- Vegetative Stabilization
- Mulching

### Sediment Control (Keep It On Site)

- Silt Fencing
- Storm Drain Inlet Protection
- Sediment Basins
- Street Sweeping



# Erosion Control – Planning





# Erosion Control - Minimize Bare Land

DON'T FARM  
**NAKED**



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PLANT COVER CROPS

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**PRACTICAL farmers**  
*working together, always learning*





# Erosion Control - Vegetative Stabilization

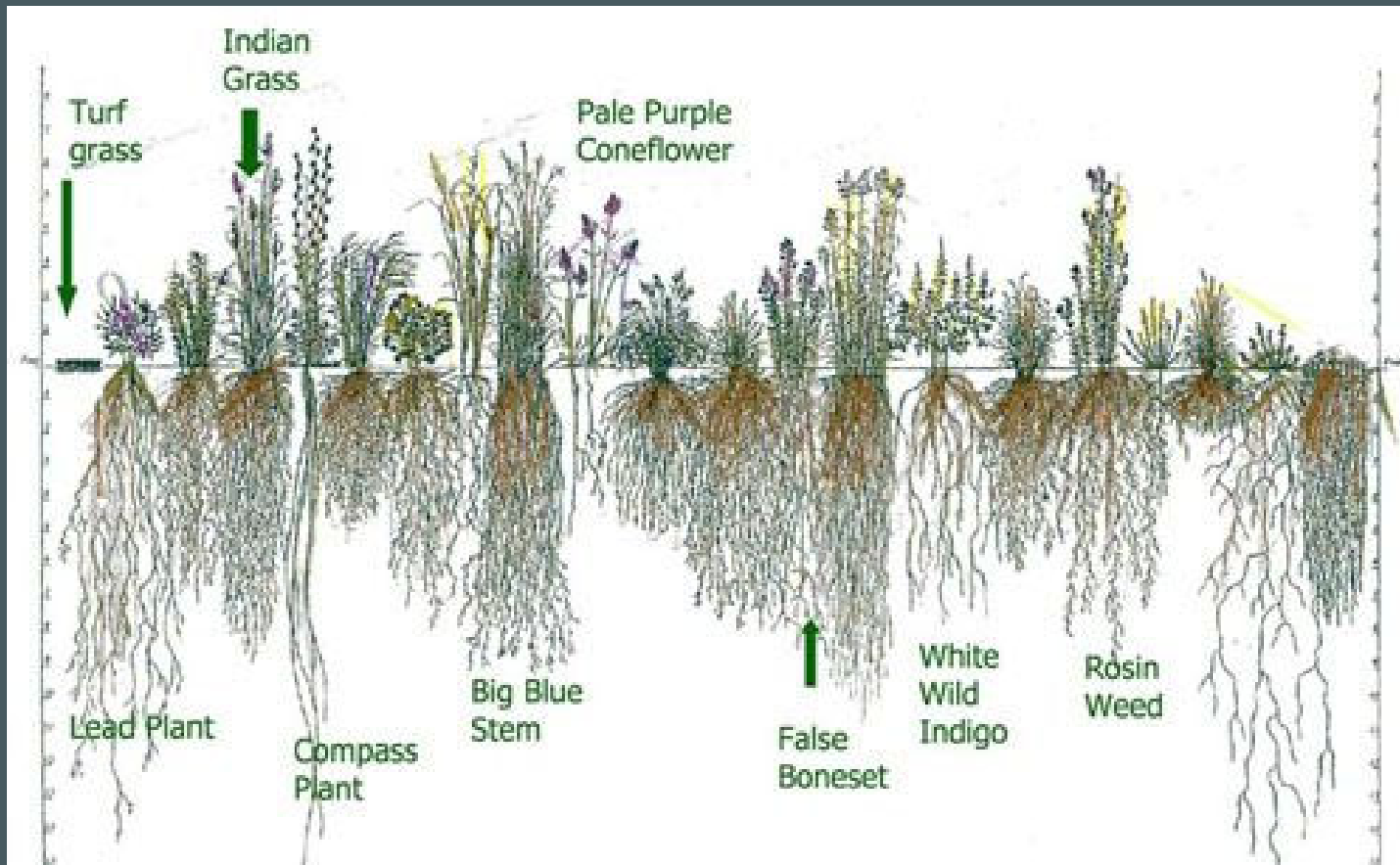




# Erosion Control - Vegetative Stabilization



# Erosion Control – Plant Selection



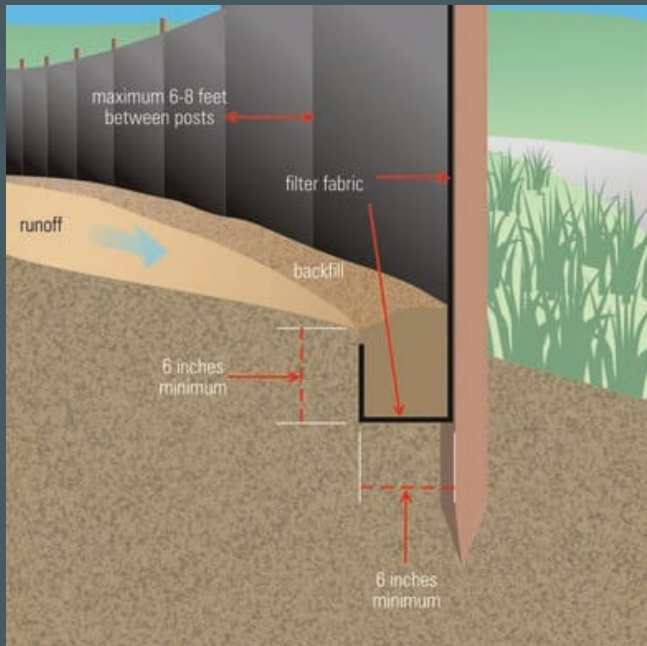




# Erosion Control - Mulching



# Sediment Control – Silt Fence





# Sediment Control – Sediment Basin







# Sediment Control – Storm Drain Inlet Protection





# Sediment Control – Street Sweeping







# Sediment Control – Equipment Cleaning







# Sediment = Nutrients





# Thinking Beyond Sediment & Nutrients



# Trash







# Spill Prevention, Countermeasure & Control





# Concrete Washout

75%  
Max  
Fill





# BMP Housekeeping







You've Got This!





# What About Lake Monroe?





# Lake Monroe Watershed Management Plan January 2022







# Potential Actions – Restore Riparian Buffer





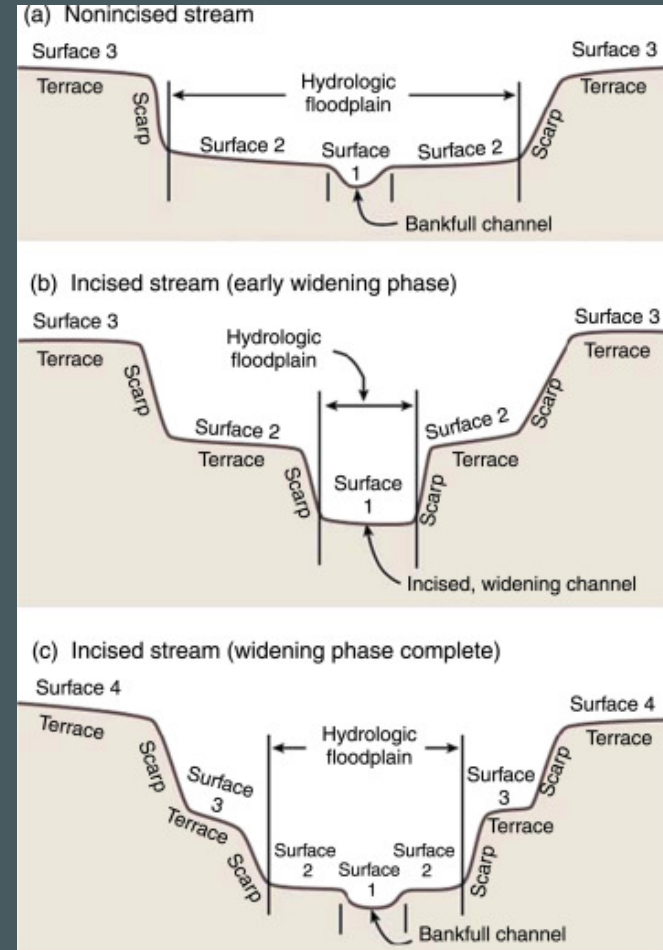
# Potential Actions – Restore Wetlands







# Potential Actions – Restore Streams







# Potential Actions – Agricultural BMPs



Fencing Livestock from Streams



Cover Crops & No Till Planting



## Potential Actions – Construction Site BMPs







## Potential Actions – Forestry BMPs







## Potential Actions – Septic System Maintenance





# Potential Actions - Education

**I'm a clean water SUPERHERO!**

Beginning today \_\_\_\_\_, I will make good choices that help protect my lakes and rivers!

*Clear Choices Clean Water certifies that*

\_\_\_\_\_ is a Clean Water Superhero!

*Ronoff Riley*

ClearChoicesCleanWater.org



**Do Your Part. Be SepticSmart!**

SEPA



**You're not just fertilizing the lawn.**

**nsp**  
neponset  
stormwater  
partnership



# Action Plan

- Voluntary
- Cost-Share Program
- Demonstration Sites
- Field Days
- Education







# Be a Watershed Protector!

- Pump your septic tank every 3 years
- Use fertilizers sparingly (especially phosphorus)
- Leave a buffer of plants along streams, lakes, and ponds
- Pick up after your pet
- Leave no trace when boating, hiking or otherwise enjoying Lake Monroe
- Join Friends of Lake Monroe  
[www.friendsoflakemonroe.org/membership](http://www.friendsoflakemonroe.org/membership)



# Thank You

Questions? Comments? Concerns?

Maggie Sullivan

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