

The Why's and How's of Riparian Buffers

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Agenda: A top down approach.

- Big Picture - Federal Level; Why do we care?
- What's happening at the state level?
- How does this translate to us locally?
- Solutions to the problems.
 - Expensive Vs. Low Cost
- Riparian Buffers: What are they?
- Buffer Design
 - Buffer Benefits At Varying Widths
 - Selecting Goals: What are you trying to achieve?
 - Plant Selection: Native vs. Ornamental vs. Invasive
 - Installation Considerations
 - Permitting
- Help isn't far away!
 - Local Free Resources
 - Consultants and Contractors
 - Local Nurseries



Cuyahoga River in Cleveland, OH
&
The Clean Water Act of 1972







3 Most Important Bay Pollutants

Nitrogen

Phosphorous

SEDIMENT



TMDL = Total Maximum Daily Load

WIP = Watershed Implementation Plan

BMP = Best Management Practice



Sources of Sedimentation/Causes of Erosion

- Water Erodes
 - Houses, People, Business, Earth
- Natural Sediment Balance
 - Remove/Replace
- What Accelerates Erosion?
 - People
 - Stop Mowing to Edge of Creek!
 - Animals: Fence the livestock out.
 - Impervious Surfaces
 - Lawns
 - Land Use
 - Where's your buffer?
 - Unnatural Sediment Balance



























Solutions: High Cost vs. Low Cost (Not always a simple decision)

Rock Toe Protection & Bank Grading - L

Dumped Rock - L

Rock & Log Deflectors - M

Mud Sills - L-->M

Buffers - L-->H

Stream Restoration: Geometric Changes - H

Cross Rock/Log Vanes - H

Channel Reconstruction/Relocation - H

Goals and Objectives

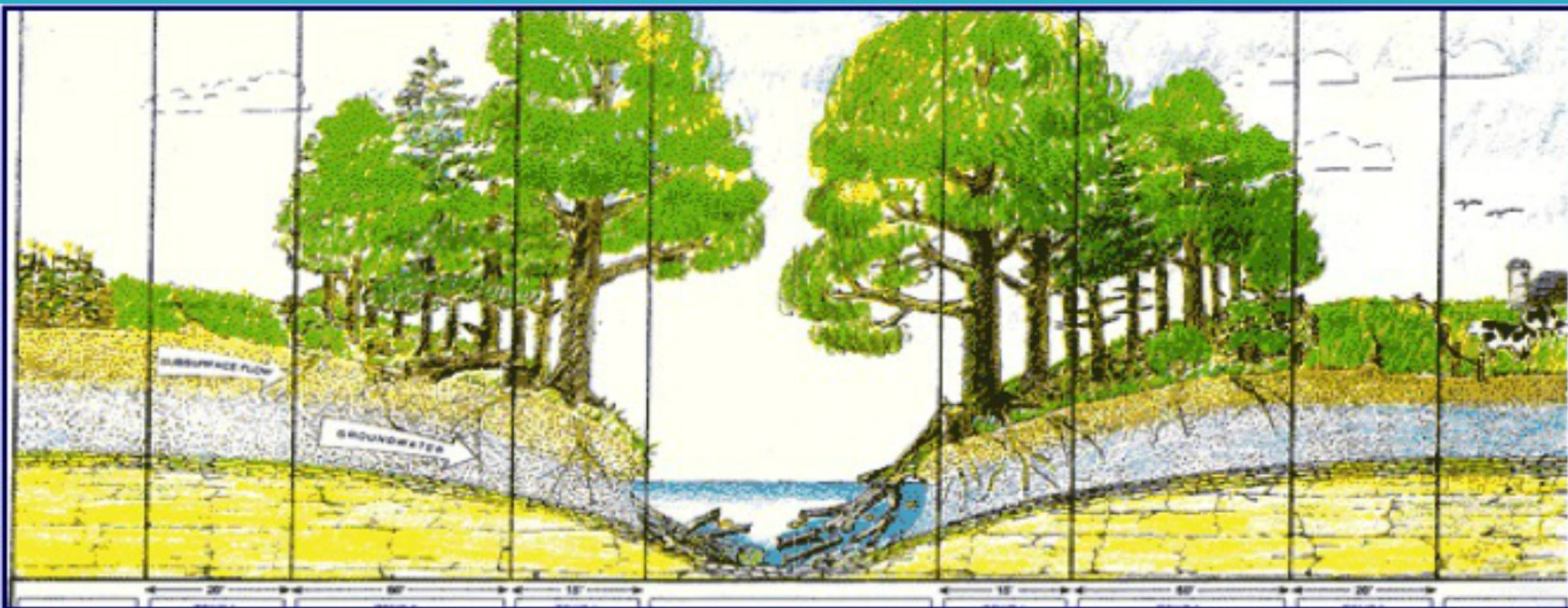
- Habitat Restoration/Protection
- Reduce Sedimentation
- Protect Infrastructure
- Aesthetics
- Reduce Loss of Land
- All of the Above

Goals and Objectives

- Landowner
- Designer
- Applicant/Owner
- Funding Source
- Resource Agencies
- Local Watershed Groups

Do the goals and objectives of everyone align?

Figure 1. Cross section of an alternative buffer design.



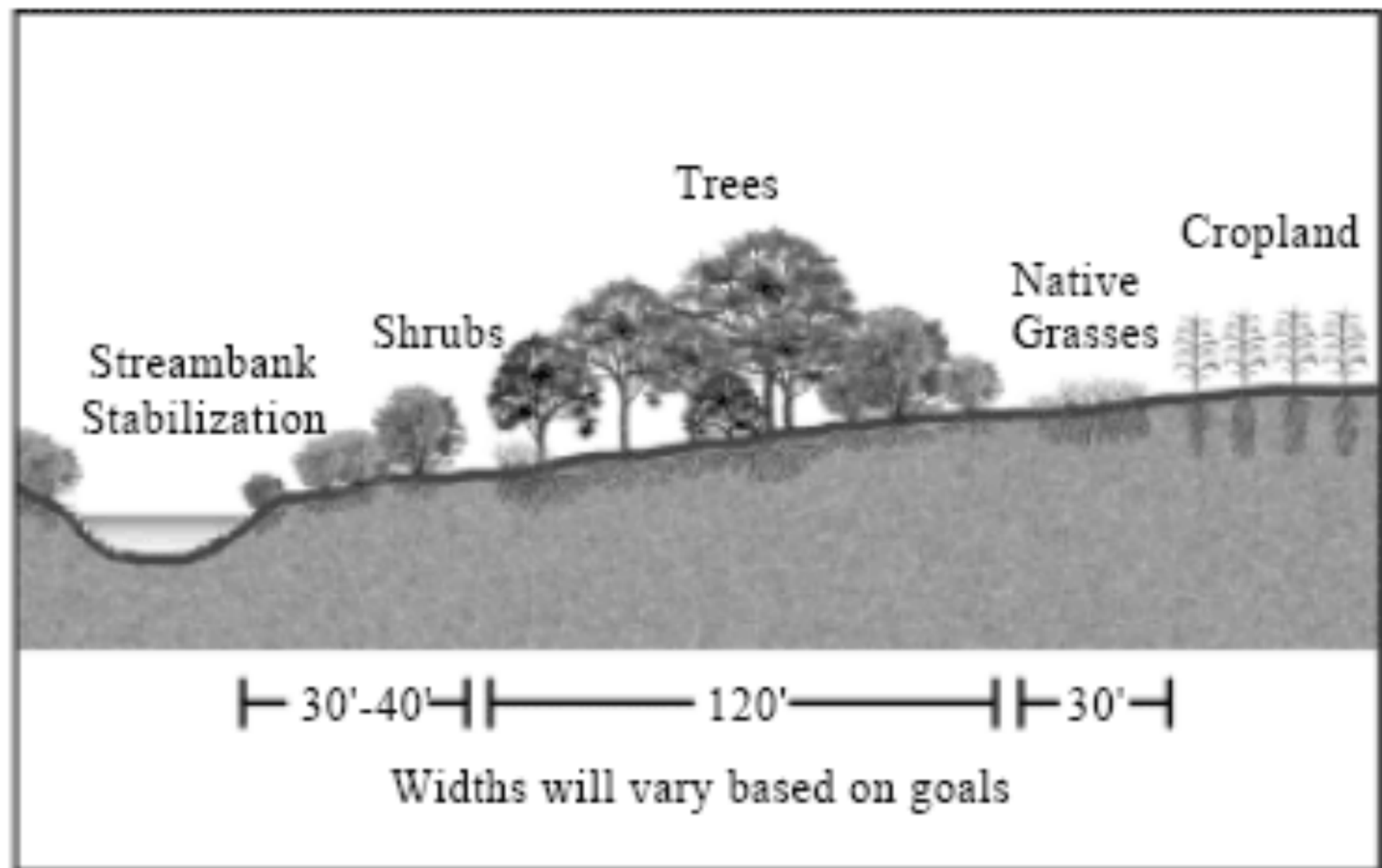
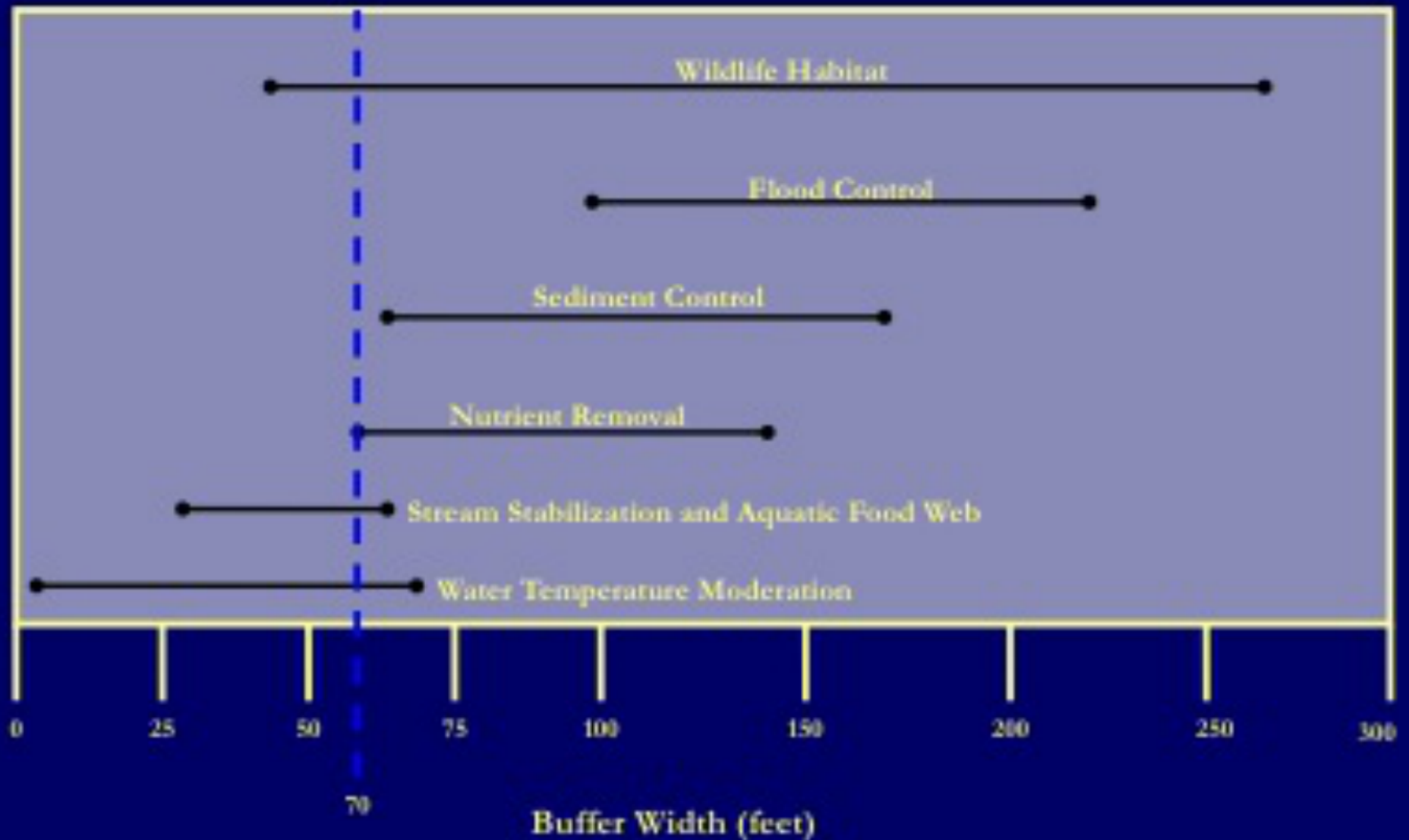
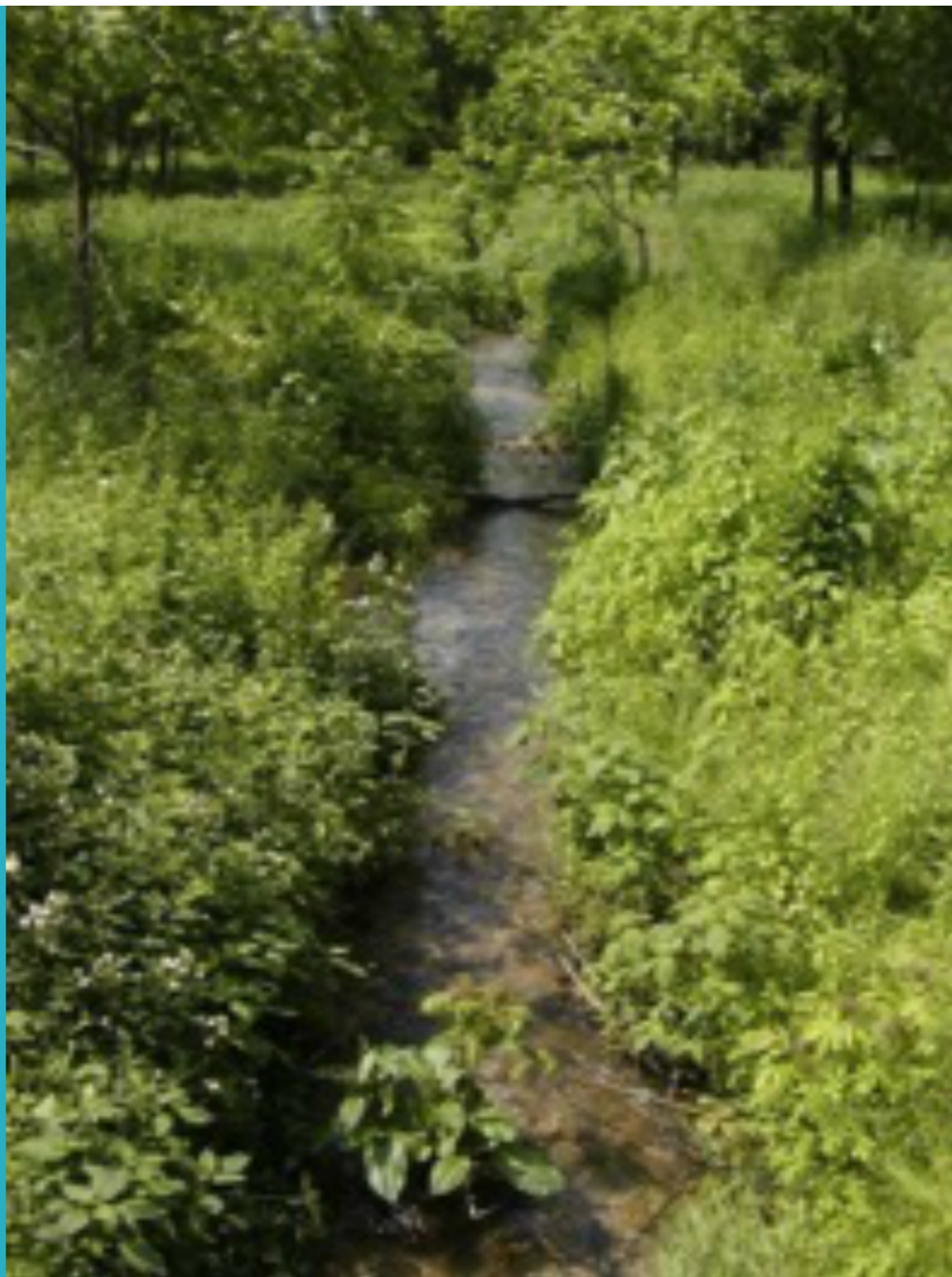


Figure 1. Cross section of an alternative buffer design.

Benefits of Buffers







Riparian Buffer Design & Plant Selection

- Think about how you might use your buffer.
 - Picnic area.
 - Access to the creek.
 - Shade
- What else can you accomplish with your buffer?
 - Rain Gardens
 - Vegetable Gardens
 - Stormwater Infiltration Pits
- Plants are the whole point in a buffer. Select them well.
 - Seeds Vs. Live Stakes Vs. Containerized
 - Soil Types? Will your desired plants grow in your area?
 - See Plant List Provided

Installation Considerations

- Understand the Site Constraints
 - Why chop down a forest to put in a few rocks?
- What Equipment is Needed?
 - Do you need to prep the soil?
 - Are you planting container plants?
- Have a Plan: Even for small projects
 - Don't Box Yourself In!
- Understand Stream Level
 - What Happens When the Water Rises/Lowers?







 Bobcat

 Bobcat







Permitting

- Any work around streams & other water bodies requires the appropriate Federal, State, and Local authorizations including Erosion and Sediment Control
- Work with the resource/permitting agencies from the beginning.
- Be Patient
- Build in as many benefits to projects as possible.
 - IE: Habitat enhancement in addition to stabilization.

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