

Riparian Buffers



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Today's Presentation



- Buffer Definitions
- Buffer Benefits
- Overview of the Neuse, Tar-Pamlico, and Catawba buffer rules

Riparian Buffer



An undisturbed, naturally vegetated strip of land which lies along a stream, river or lake and provides such functions as protecting water quality, providing wildlife habitat and storing flood waters.

Functions of Buffers

- Trap and remove sediment in runoff
- Reduce bank erosion
- Trap and remove nutrients such as P and N
- Contribute leaves and woody material to streams
- Store flood waters
- Maintain habitat for fish and wildlife
- Help maintain base flow in stream channels
- Maintain and improve the aesthetic appearance of stream and river corridors
- Provide opportunities for recreation

How Do Buffers Protect Water Quality?



- Keep new development and land disturbing activities away from surface waters

How Do Buffers Protect Water Quality?



Lake Rhodhiss, Burke County

- Reduce the amount of impervious surfaces near lakes and streams.

How Do Buffers Protect Water Quality?

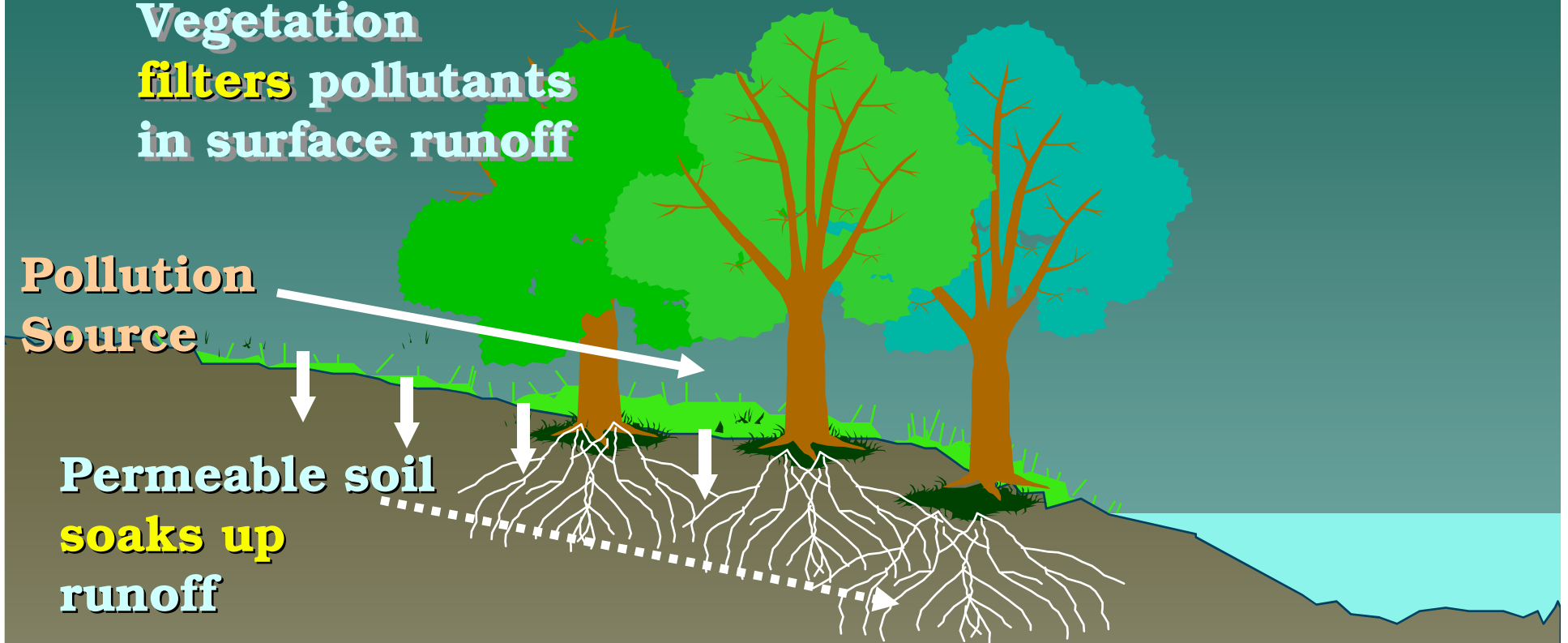
Vegetation
filters pollutants
in surface runoff

Pollution
Source

Permeable soil
soaks up
runoff

Roots of vegetation **absorb**
subsurface nutrients.

Riparian Buffer = Filter + Sponge



Sediment



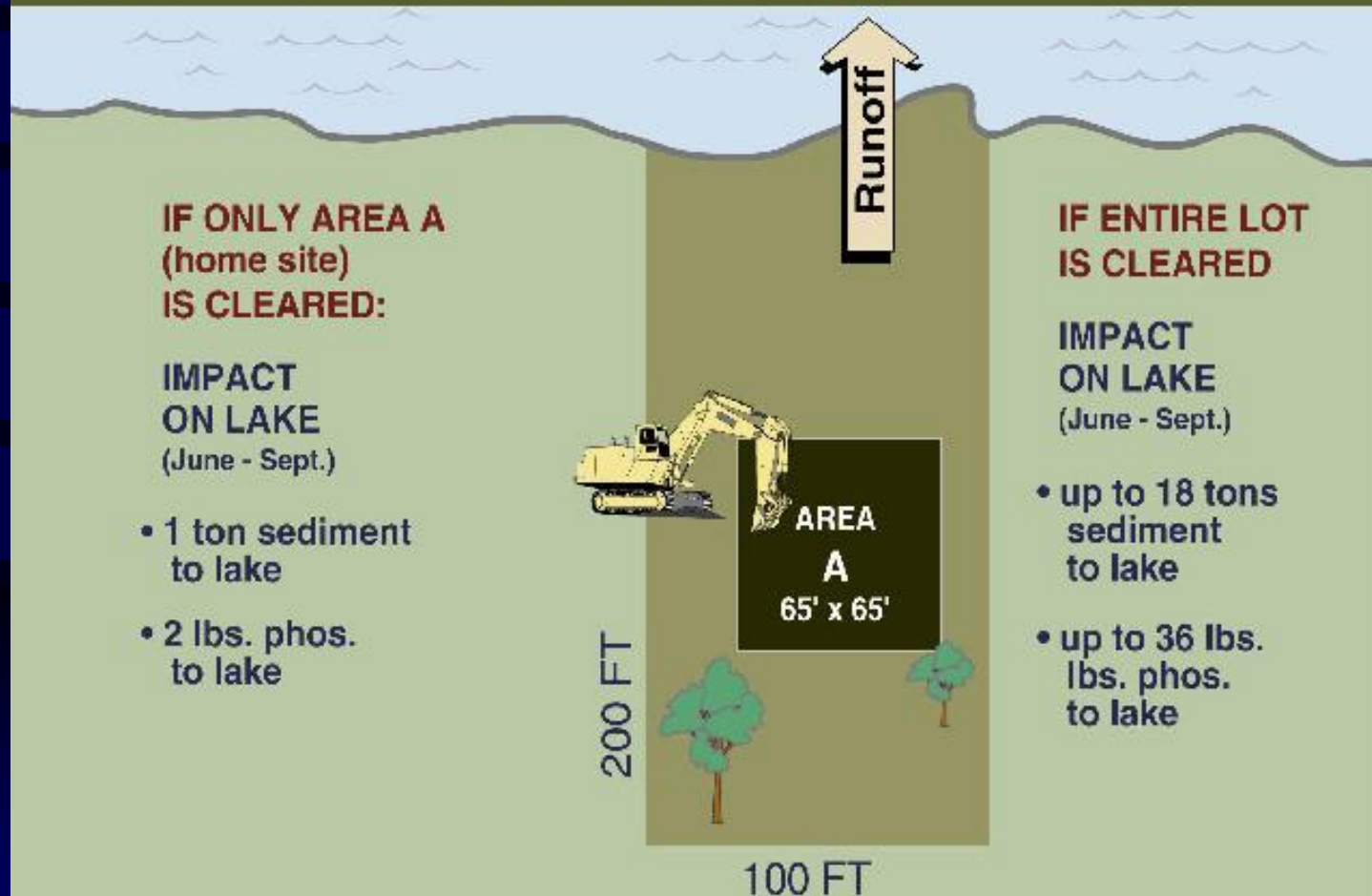
Lake Hickory

- North Carolina's top water quality pollutant
- Sediment inputs from construction activities to streams have been measured to exceed 200 tons per acre

Short-term Benefits

Control of Sediment and Nutrients

Lake lot soil losses during construction



Source: Wisconsin Dept. of Natural Resources

The Wisconsin Lakes Partnership



Long-term Benefits

Shoreline stabilization, protection of woody debris, reduced runoff, improved aesthetics, etc.



Lake James

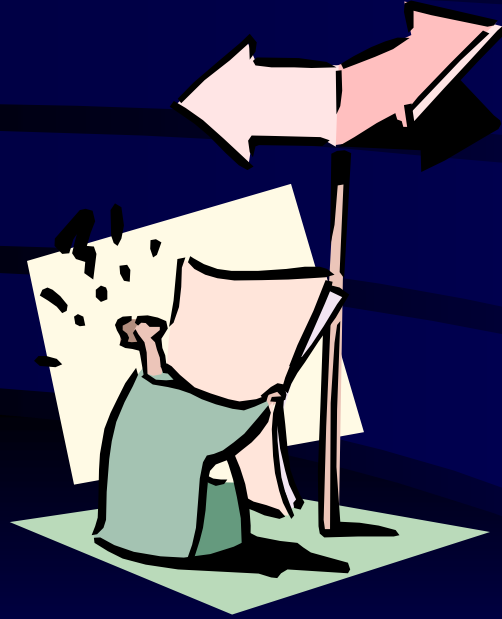
Riparian Buffers

- Water quality and other benefits of buffers are generally acknowledged -- most disagreements center on three issues.
 - Buffer width
 - Allowable uses within the buffer
 - Vegetation

Recommended Buffer Widths by Various “Experts”

- 50-100 for most streams and wetlands (Castelle and others, 1994)
- 35 feet for NC Coast Plain streams (Gilliam and others, 1997)
- 50 feet for NC Piedmont streams (Gilliam and others, 1997)
- 30 feet for Mountain streams with stormwater control (Mountain Stream Technical Advisory Committee, 1999)
- 50-100 feet for Georgia streams (Wenger, 1999)

Major Components for the Buffer Rule



- Applicability
- Vegetation
- Buffer Width
- Table of Uses
- Mitigation
- Delegation

Where does the Neuse buffer apply?

Applies to:

- Perennial streams
- Intermittent streams
- Lakes
- Ponds
- Estuaries
- Modified natural streams

Does not apply to:

- Ditches
- Manmade conveyances
- Ephemeral streams
- Manmade ponds & lakes outside natural drainage ways

Where does the Catawba buffer apply?

- Applies to Catawba mainstem below Lake James and to mainstem lakes from Lake James to Lake Wylie
- Does not apply to Catawba River above Lake James

Vegetation

- The rule applies to all streams regardless of adjacent vegetation. However, exemptions are given for “existing uses” such as agriculture, buildings, utilities, roads, etc.



Exemptions

All existing uses grandfathered (examples)

- Lawns
- Gardens
- Buildings
- Cultivated fields
- Driveways
- Paved surfaces
- Pastures
- Marinas



Buffer Width

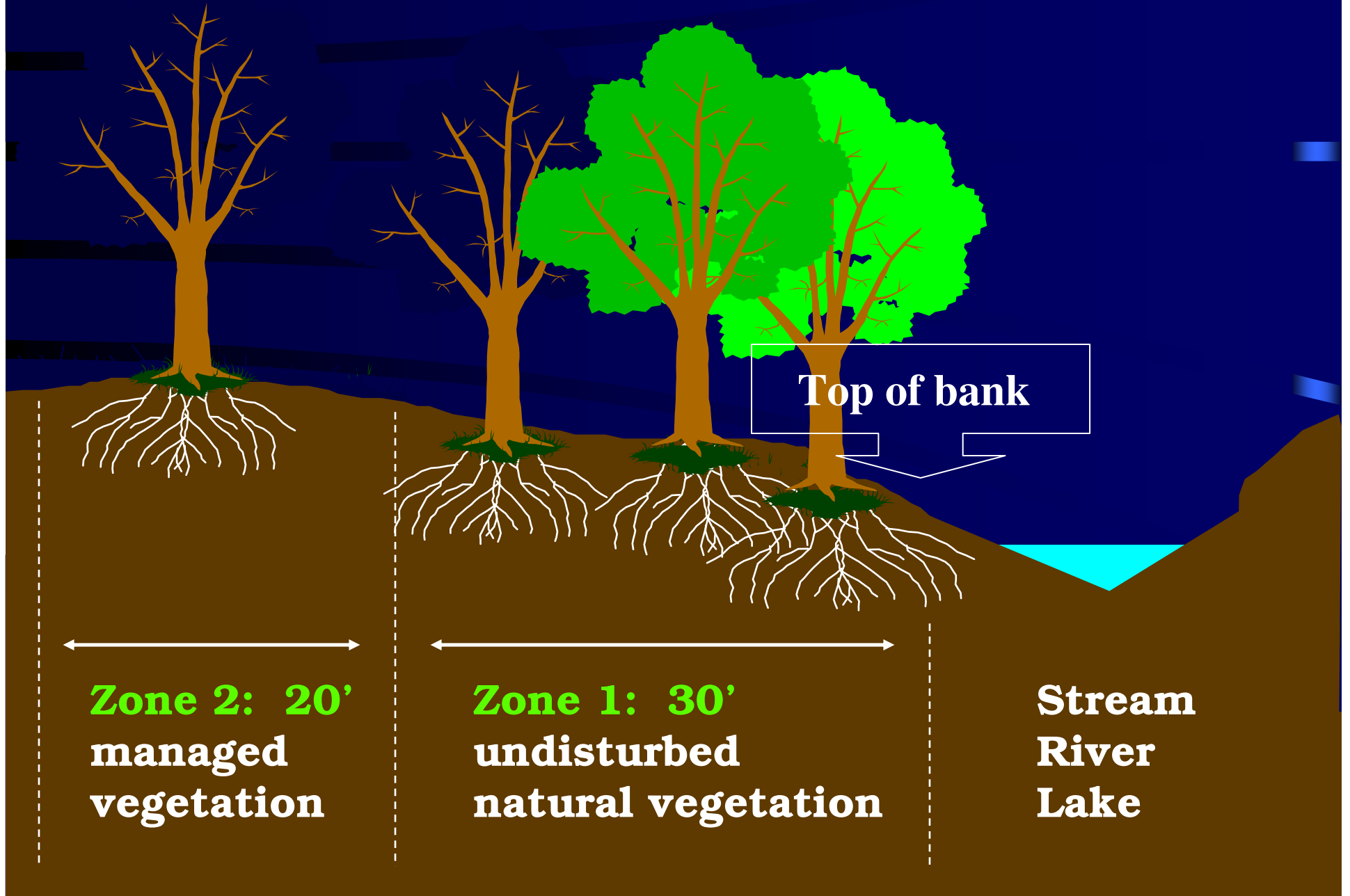
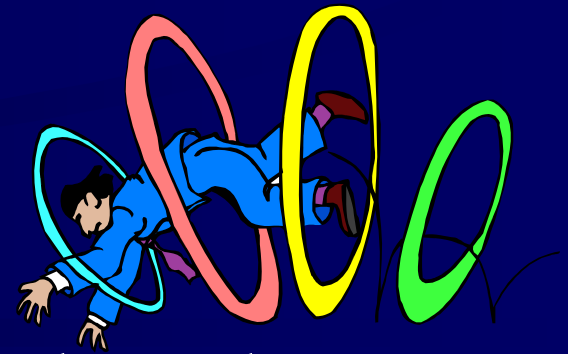


Table of Uses



There are 78 different uses listed in the rule, each classified as either:

- Exempt (no DWQ review required)
- Allowable (DWQ review)
- Allowable with Mitigation (DWQ review) or
- Prohibited (variance option)

The uses include road and railroad crossings, utility crossings, utility corridors, pathways and trails and water-dependent activities.

Example of Exemptions

- Footprint of existing, ongoing uses.
- Grading and revegetating in Zone 2.
- Mowing and harvesting in Zone 2
- Driveway crossings < 25 ft. wide for individual lots.
- Road and utility crossings < 40 ft. wide.
- Plantings, pruning, removal of nuisance or dangerous vegetation.
- One-time fertilization to reestablish plants.

Table of Uses - Examples (Catawba)

- View corridors (*exempt* if trim underbrush and lower tree limbs without cutting trees)
- Properties that have been subdivided by an approved preliminary subdivision plat within 2 years (*exempt* if uses in Zone 2, *allowable* if uses in Zone 1)
- Properties that are included on a recorded subdivision plan (*exempt* if uses in Zone 2, *allowable* if uses in Zone 1)

Mitigation

- An option if activity classified as allowable with mitigation.
- May be a condition for variance approval.
- Mitigation is subject to a multiplier.
- Can do mitigation through paying a fee, donating property, or doing own mitigation project.

Delegation

- Local governments may request delegation from the EMC.
- Local governments must have staff, resources, and necessary authority to implement.
- Local governments will take over rule implementation except for mitigation program.

Text of Riparian Buffer Rules



Neuse Riparian Buffer Rules

<http://h2o.enr.state.nc.us/nps/neuse.htm>

Tar-Pamlico Riparian Buffer Rules

<http://h2o.enr.state.nc.us/nps/tarp.htm>

Catawba Temporary Buffer Rules

<http://h2o.enr.state.nc.us/nps/catawba.htm>