

Riparian Forest Buffer Technical Guidance

Pennsylvania Department of Environmental
Protection

Bureau of Watershed Management
Agricultural Advisory Board Meeting
April 15, 2009

Overview

- **Background**
 - **Benefits of Riparian Forest Buffers**
 - **Stream ReLeaf**
 - **Riparian Forest Buffer Initiative**
- **Guidance**
 - **Purpose**
 - **Criteria for Existing and Established**
- **Toolkit**

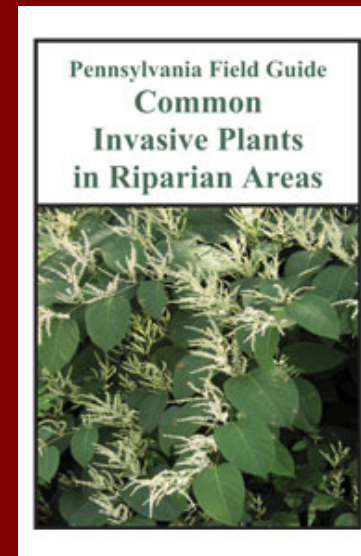
Benefits of Riparian Forest Buffers



- **Stabilize stream banks.**
- **Shade stream to optimize temperature and light conditions for aquatic organisms.**
- **Reduce pollutant levels (e.g. nutrients and sediments) reaching stream.**
- **Increase instream processing of pollutants.**
- **Attenuate flooding.**

Stream ReLeaf 1998 - 2008

- **Accomplishments**
 - **Restoration**
 - 3,714 miles (48,157 acres) – Statewide
 - 3,289 miles (41,255 acres) – Chesapeake Bay
 - **Protection**
 - 403 miles (6,083 acres)
- **Challenges**
 - **Maintenance**
 - **Permanent Protection**





courtesy Arthur Brühlmeier







Riparian Forest Buffer Initiative - 2009



- **Regulatory Component**
- **Technical Assistance**
- **Financial Assistance**

Regulatory Component

- **Encourage use of Riparian Forest Buffers in current permit decisions**
 - Mining
 - NPDES construction activities
 - Brownfields
- **Incorporate Riparian Forest Buffer language into revisions to Chapter 102 regulations**

Technical Assistance Component

- **Riparian Forest Buffer Technical Guidance**
- **Pennsylvania Stream ReLeaf Buffer Toolkit Update**
- **Training**



Purpose of Guidance

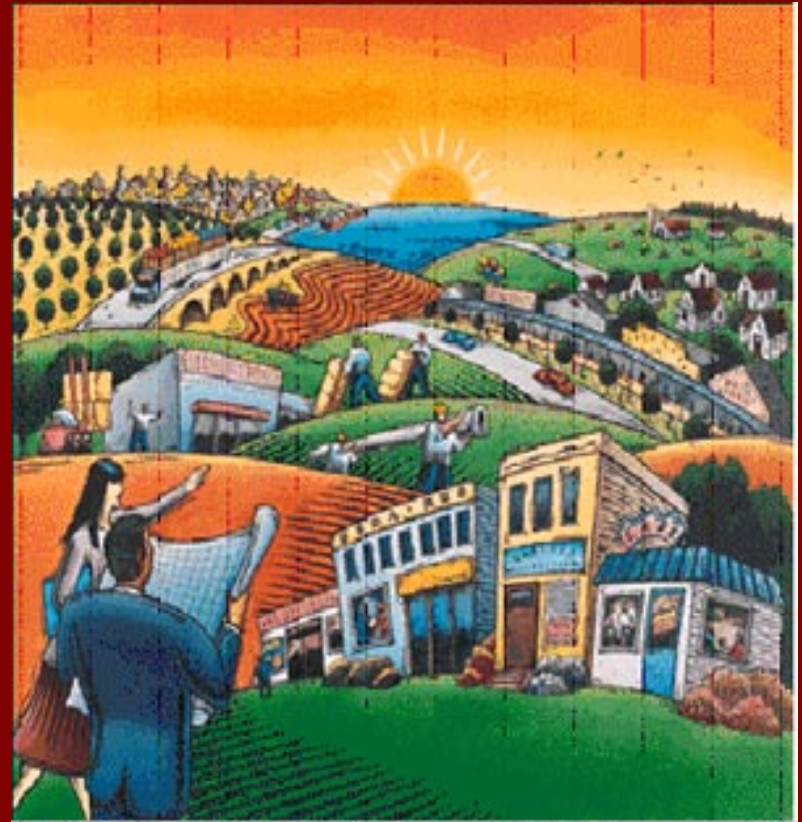
**Assist DEP in making
Riparian Forest
Buffer
recommendations:**

- Regulatory programs**
- Voluntary programs**
- Grant programs**



Purpose of Guidance - continued

Assist outside entities in developing science-based guidelines or policies regarding Riparian Forest Buffers.



Definition: Riparian Forest Buffer

- Area of native trees, shrubs and forbs.
- Along surface waters
- Maintained in natural state/ sustainably managed.

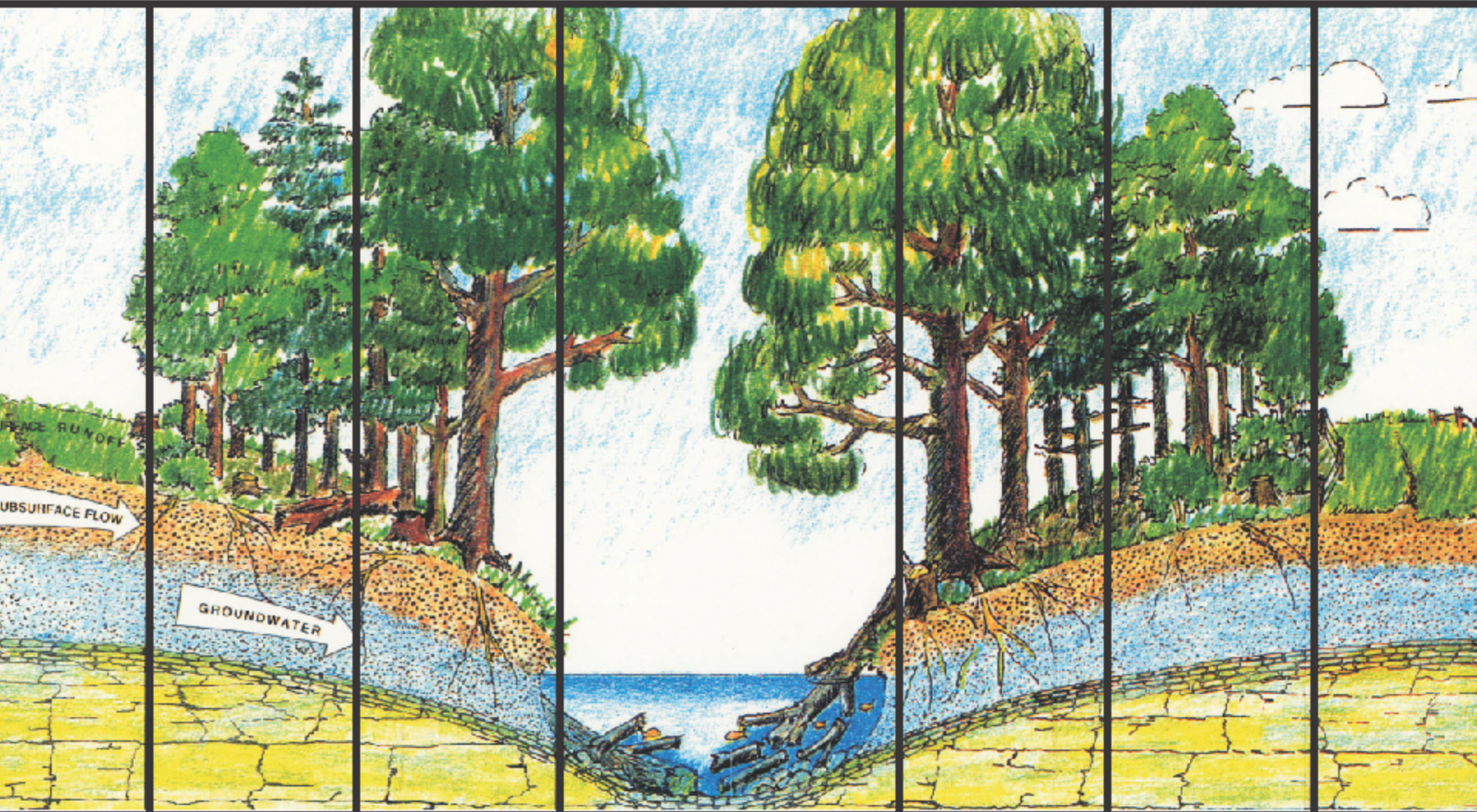


Recommended Composition for Existing Riparian Forest Buffers

- **Minimum 60% uniform canopy cover**
- **0% Pennsylvania Noxious Weeds**
- **Less than 25% invasive species**
- **Concentrated flow/ accelerated erosion and sedimentation controlled in area that is up grade and adjacent to buffer**



RIPARIAN FOREST BUFFER



Minimum
50 - 75'

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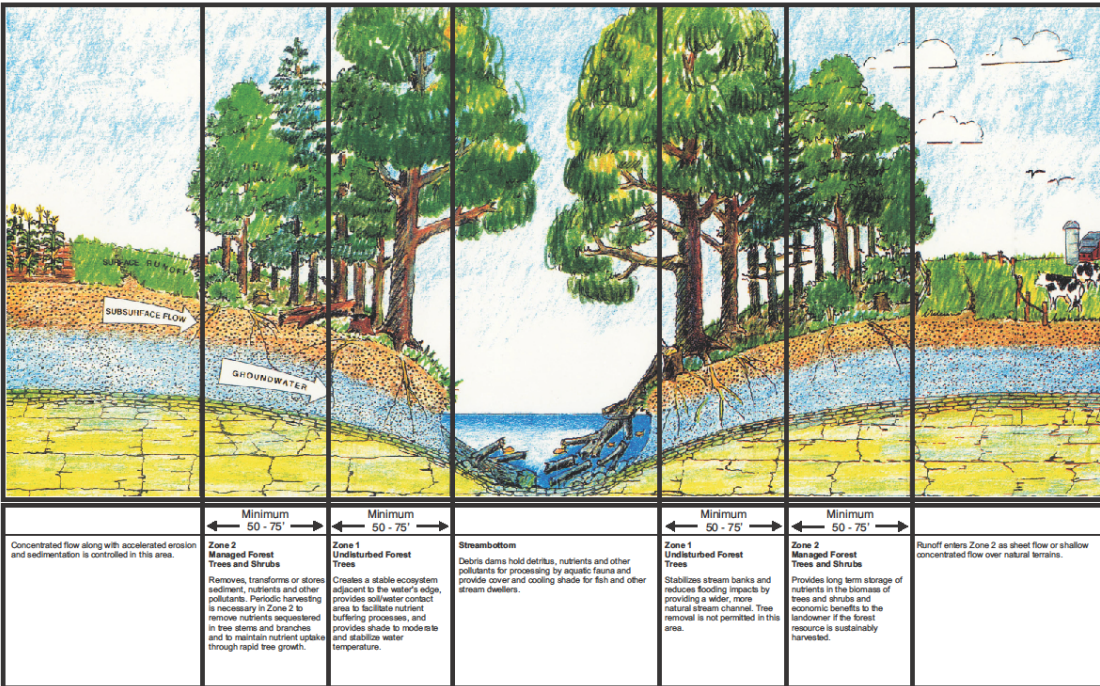
Minimum
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<p>with accelerated erosion collected in this area.</p>	<p>Zone 2 Managed Forest Trees and Shrubs</p> <p>Removes, transforms or stores sediment, nutrients and other pollutants. Periodic harvesting is necessary in Zone 2 to remove nutrients sequestered in tree stems and branches and to maintain nutrient uptake.</p>	<p>Zone 1 Undisturbed Forest Trees</p> <p>Creates a stable ecosystem adjacent to the water's edge, provides soil/water contact area to facilitate nutrient buffering processes, and provides shade to moderate and stabilize water.</p>	<p>Streambottom</p> <p>Debris dams hold detritus, nutrients and other pollutants for processing by aquatic fauna and provide cover and cooling shade for fish and other stream dwellers.</p>	<p>Zone 1 Undisturbed Forest Trees</p> <p>Stabilizes stream banks and reduces flooding impacts by providing a wider, more natural stream channel. Tree removal is not permitted in this area.</p>	<p>Zone 2 Managed Forest Trees and Shrubs</p> <p>Provides long term storage of nutrients in the biomass of trees and shrubs and economic benefits to the landowner if the forest resource is sustainably harvested.</p>	<p>Runoff enters Zone 2 as concentrated flow over</p>
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Recommended Composition for Newly Established Riparian Forest Buffers

RIPARIAN FOREST BUFFER



- Zone 1 – Undisturbed Forest (Native Trees)
- Zone 2 – Managed Forest (Native Trees and Shrubs)
- Concentrated flow/ accelerated erosion and sedimentation controlled

Riparian Forest Buffer Width on All Streams



- 100 feet from top of streambank or normal pool elevation of lakes, ponds and reservoirs
- Scientific research indicates significant benefits occur with buffers of 100 feet or greater

Riparian Forest Buffer Width on Special Protection Waters

- 150 feet from top of streambank or normal pool elevation of lakes, ponds and reservoirs
- Exception Value (EV) and High Quality Waters



Pennsylvania Stream ReLeaf Buffer Toolkit Update



Forest Buffer Toolkit

Replanting
Pennsylvania's
Streamsides



- **Functions of Riparian Forest Buffers**
- **Establishment**
- **Maintenance**
- **Permanent Protection**



Financial Assistance

- **2009 Growing Greener Round priority category**
 - Riparian Forest Buffer restoration and protection
- **Continue the Conservation Reserve Enhancement Program (CREP)**
 - 23,000 acres restoration
 - 220 landowners have protection agreements on existing buffers
 - 4 year maintenance requirement





