

Objectives for Today

- Continue discussion on BMPs

Riparian Area Defined

- A three-dimensional zone of interaction that includes terrestrial and aquatic ecosystems
 - Extending down into the groundwater and up above the canopy
 - Up and down the length of the water course, origin to outlet
 - Laterally into the terrestrial ecosystem along the water course at a variable width

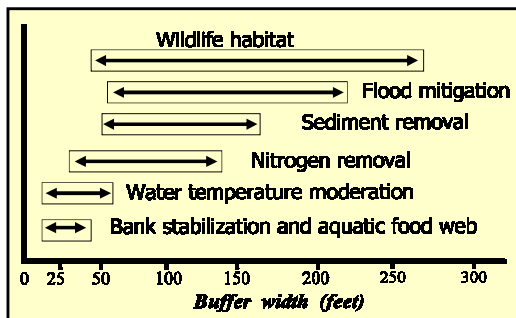
Desired Riparian Forest Area Functions

- Transform excess nitrogen and phosphorous
 - Particularly when adjacent to farm lands
- Trap and filter sediment
- Moderate water temperature
- Provide aquatic and terrestrial wildlife habitat
 - Food and shelter
- Reduce flood and storm water effects
- Channel and bank stability

The aquatic and riparian ecosystems together provide a cool moist corridor meeting one or more of the habitat needs for the majority of wildlife species.

Riparian Forest Areas Help
Maintain Water Quality

Function Widths

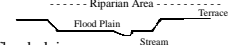


Field Guide to Riparian Areas of Streams and Rivers

A. Flood Plain & Terrace Slopes are Identifiable

The Riparian Area consists of:

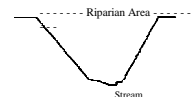
- The Stream
- The Flood Plain & Wetlands
- The Terrace Slopes adjacent to the flood plain
- One Tree Length on top of each terrace



AA. Neither the active Flood Plain nor its Terrace Slopes are Identifiable

B. Slopes Steep (> 5%) adjacent to stream or flood plain

- The Stream & Wetlands
- The Slope to its top
- One Tree Length beyond slope top



Field Guide to Riparian Areas of Streams and Rivers

AA. Neither the active Flood Plain nor its Terrace Slopes are Identifiable

BB. Slopes Gentle (<5%) adjacent to stream or flood plain

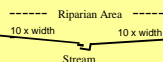
C. Streams < 10 Feet Wide at Bankfull

- The Stream & Wetland
- One Tree Length on each side



CC. Streams > 10 Feet Wide at Bankfull

- The Stream & Wetland
- 10 x Bankfull Width on each side



- **Streams < 10 Feet Wide at Bankfull**

- The Stream & Wetland
- One Tree Length
 - on each side

- **Streams > 10 Feet Wide at Bankfull**

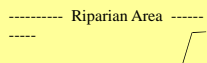
- The Stream & Wetland
- 10 x Bankfull Width
 - on each side

Field Guide to Riparian Areas of Lakes and Wetlands

A. Slopes Steep (>5%)

adjacent to lake or wetland

- The Lake or Wetland
- The Slope
- One Tree Length beyond slope top



AA. Slopes Gentle (<5%) adjacent to lake or wetland

- The Lake or Wetland
- One Tree Length beyond ordinary high water mark



Some Key Points

- The number of functions contributing to riparian ecosystem processes decreases with distance from the water.
- The distance at which a particular function is no longer important may be difficult to determine.
- The size of the riparian area varies along the stream, may vary from one bank to another, and is unrelated to the size of the stream

Forest Operation Guidelines

- Ensure that topsoil and duff within the entire area of the filter strip remains undisturbed.
- Extraction equipment (skidders and forwarders) should not be operated within the filter strip.
- Roads and trails should be kept at least 100 feet from water courses, except for at stream crossings.
- Locate landings at least 200 feet from water courses.
- Avoid felling trees into or across water courses or water bodies.
- Leave enough trees to maintain sufficient shade so that water temperature is not significantly affected.

Remember.....

- The Riparian Area is:
 - NOT a no cut zone
 - NOT a no equipment zone
 - NOT a zone of minimum BA requirements
- It IS a zone to be managed for water resource objectives
- Guidelines and regulations vary from state to state

Why?

- 90% of sediment from harvesting operations attributable to access system
- proper planning can reduce the area impacted by access system to below 10%
- proper planning can reduce the impact of storm events during the harvesting operation
 - effective harvest system
 - proper timing

Harvest Disturbance Study

- Study measured the total area disturbed on 44 NIPF parcels in the Catskill/Delaware Watershed region harvested between 1999-2001
- Average percent disturbed (6%) noticeably lower than reported in previous studies
- Study also suggests that BMP planning can result in greater disturbance as practitioners avoid steep and unstable slopes
- Target: 10%

Critical Items to Secure

- Secure map of property in question
 - Locate property boundaries
 - Locate timber sale boundaries
- Secure a USGS topographic map of the area
- Secure aerial photographs of the area
- Secure a soil survey of the area

Critical Items to Identify

On-site evaluation by forester and logger

- Identify location of existing roads
 - re-use?
- Identify all necessary stream crossings
 - contact your local DEC representative for necessary permits (if needed)
- Identify areas of special concern (ponds, lakes, vernal pools, wetlands, special wildlife habitat)
- Identify riparian areas (streamside management zones, filter strips)
- Start assessing access system

Must integrate landowner objectives

- What is the purpose of the harvest?
 - improving growth of residual stands
 - promoting forest regeneration
 - promoting wildlife habitat
 - promoting recreation opportunities
- Never lose sight of landowner needs when planning the access system

Access Systems

- Seek proper balance between roads and skid trails

Forest Roads

- grades of 3 - 10% (page 20 of field guide)
- minimize need to cut and fill

Skid Trails

- keep at about 15% (page 34 of field guide)
- not to exceed 30%
- grades greater than 15% should not exceed 300 feet

Landings

- locate at least 200ft from water bodies

Re-examine your maps

- Now that you have a feel for the site, start planning your access system
- Look at your topographic and soil survey maps
- Start sketching out an access system
- Keeping in mind
 - location of timber
 - topography
 - sensitive areas
 - maintaining reasonable grades
 - integrating landowner objectives

Significance of soil information

- Soil types will influence location of roads and skid trails
 - clearly must balance with topographic issues
- Soil types will influence the decision when to harvest

Scenario:

- topography of woodlot may force you to place access system through sensitive soils
 - mitigate with proper timing of harvest (winter or dry)

Planning: The most important BMP

In the long run, proper planning will:

- save time and money for the operators
- increased your odds of satisfying the landowner
- minimize the sale area dedicated to the access system
- ensure conservation of soil and water resources