Forest Management and In-Stream Wood

University of New Hampshire Cooperative Extension

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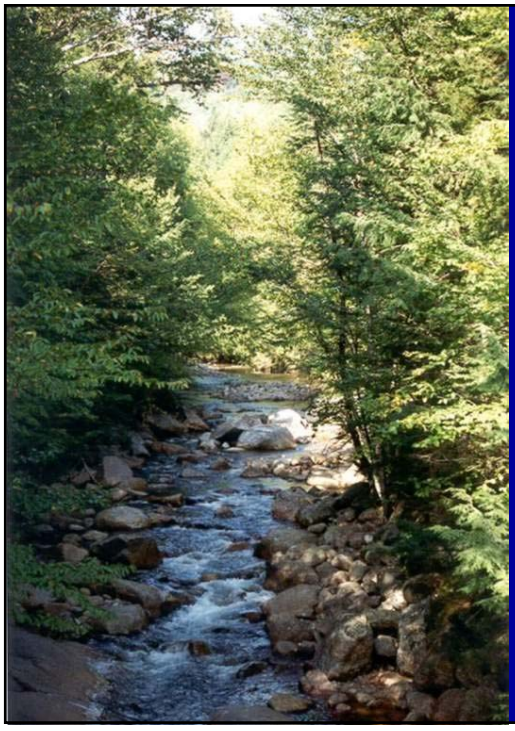
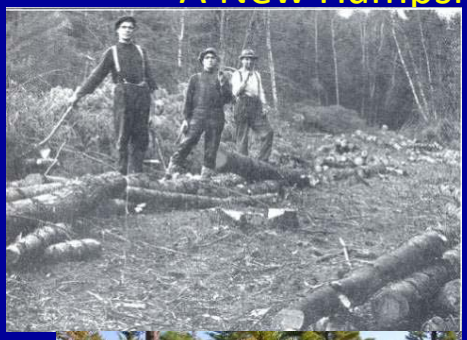


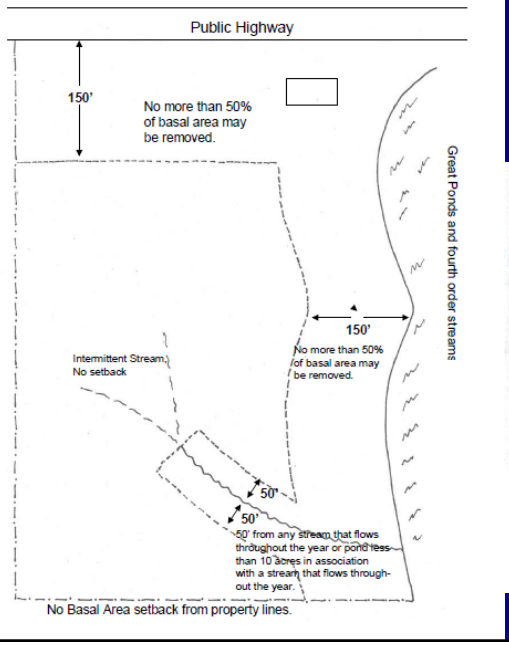
My agenda

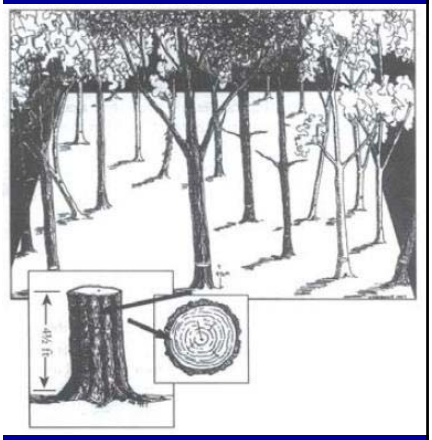
- Forest management in New Hampshire
- Two timber harvesting laws—the basal area law and slash law
- Two important and relevant references
- Best management practices
- Riparian forests

Timber Harvesting
A New Hampshire Tradition

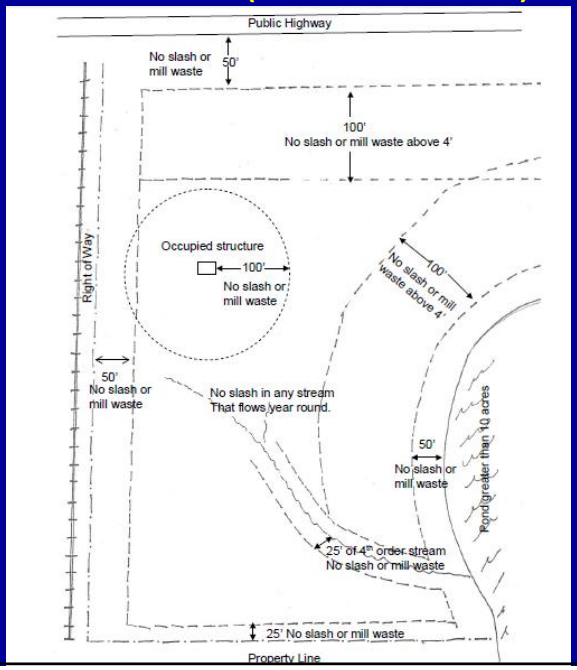


Basal Area (RSA 227 -J:9)



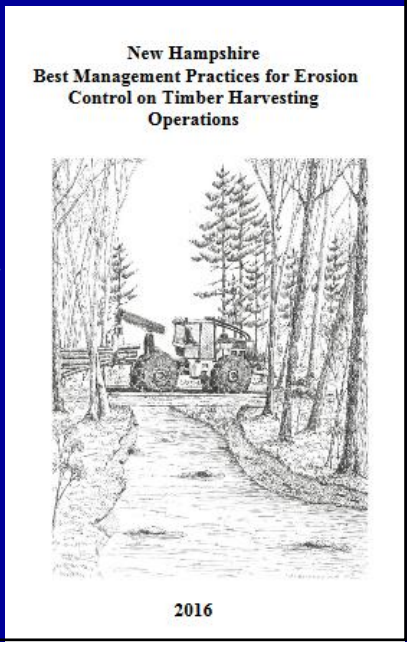


Slash Law (RSA 227 -J:10)



Best Management Practices- BMPs

Practices determined by the State to be most effective & practical means to control non-point & point pollution at acceptable levels. Found



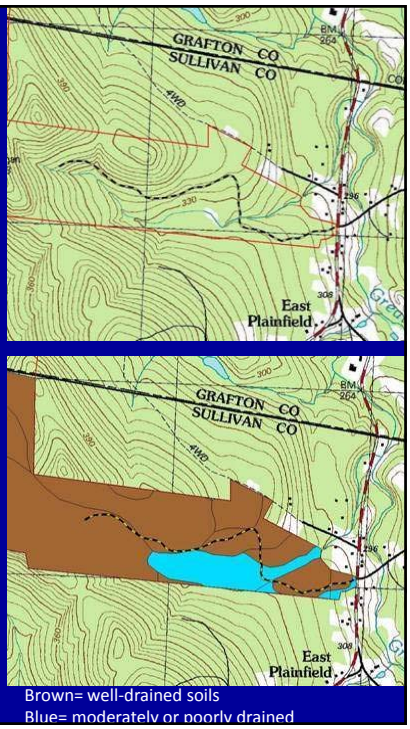
NH 2016 evaluation of BMPs

BMPs stabilized soil:

- 82% of the time at crossings
- 87% at approaches outside 50' buffer
- 74% at approaches inside the buffer.

Planning BMPs

- Lay out harvest when "no" snow
- Minimize number of stream/wetland crossing
- Locate stream crossings first, narrow channel, least gradient possible
- Approach straight & level for 50 feet on each side
- Banks firm and level
- Don't site where accumulation of instream wood and sediment
- Minimize length, width and number of roads
- Locate roads on well-drained soils where possible
- Relocate existing roads to avoid problem areas



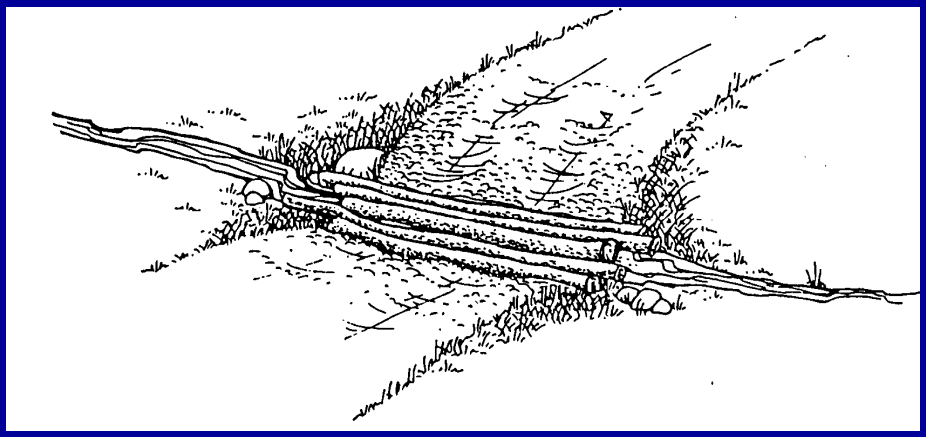
Brown= well-drained soils
Blue= moderately or poorly drained

Construction BMPs

- Install crossing structures at right angles to stream channel
- Stabilize approaches and exposed soil at crossing
- Construct in periods of low flow
- Use waterbars to divert runoff from roads
- Don't terminate ditches directly into stream

Types of Crossings
-Poled Fords- temporary
-Stone Fords- permanent
-Culverts- permanent
-Bridges- either

Poled Fords



Temporary stream crossing

- Defined channel using logs as the roadbed
- Logs placed in direction of water flow

Poled Ford

Before **After**

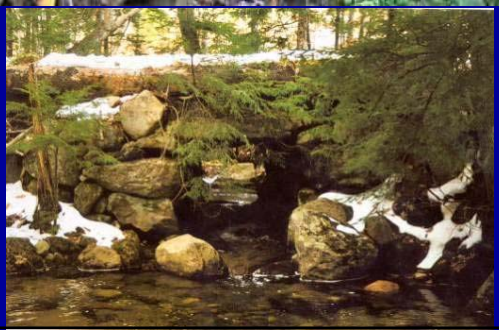
Stone Ford with Boxed Culvert

Corduroy

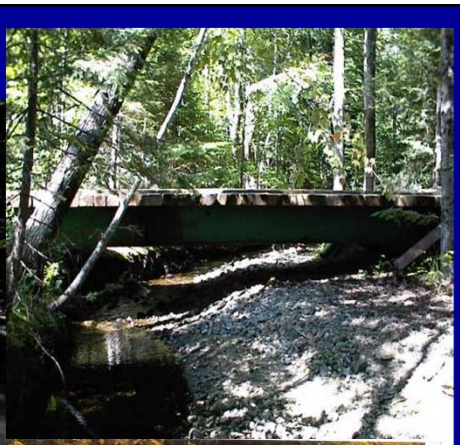
Crossing of a wet area where **no defined** channel using logs as a roadbed.
Place poles or cull logs perpendicular to the direction of travel across wet area.
Can be left in place

Culverts

- Install culverts that are large enough to pass flood flow
- Avoid side-by-side
- Stabilize inlet and outlet of culverts with stone
- Install in line with stream
- Align road perpendicular to culvert
- Extend outlet/inlet of culvert one foot or more beyond road bed
- For aquatic-organisms
  - Place culvert in natural channel
  - Dig culvert in streambed so inside has natural substrate
  - Use open-bottom culvert
- Maintain



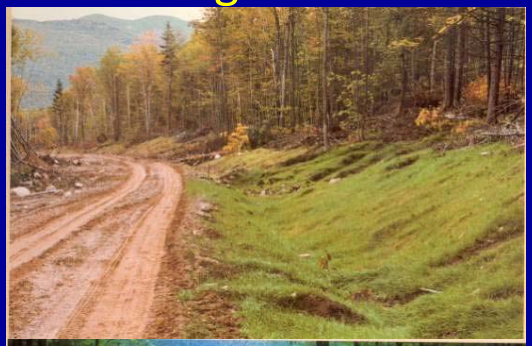
Bridges

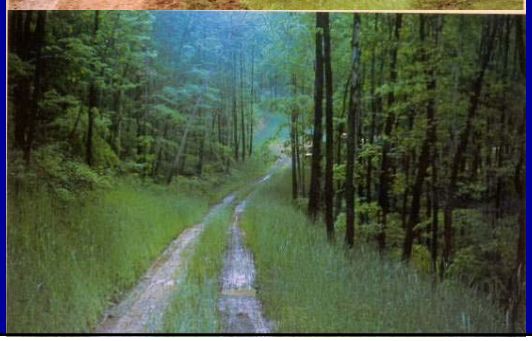


A permanent bridge on a truck road.

Temporary Bridge

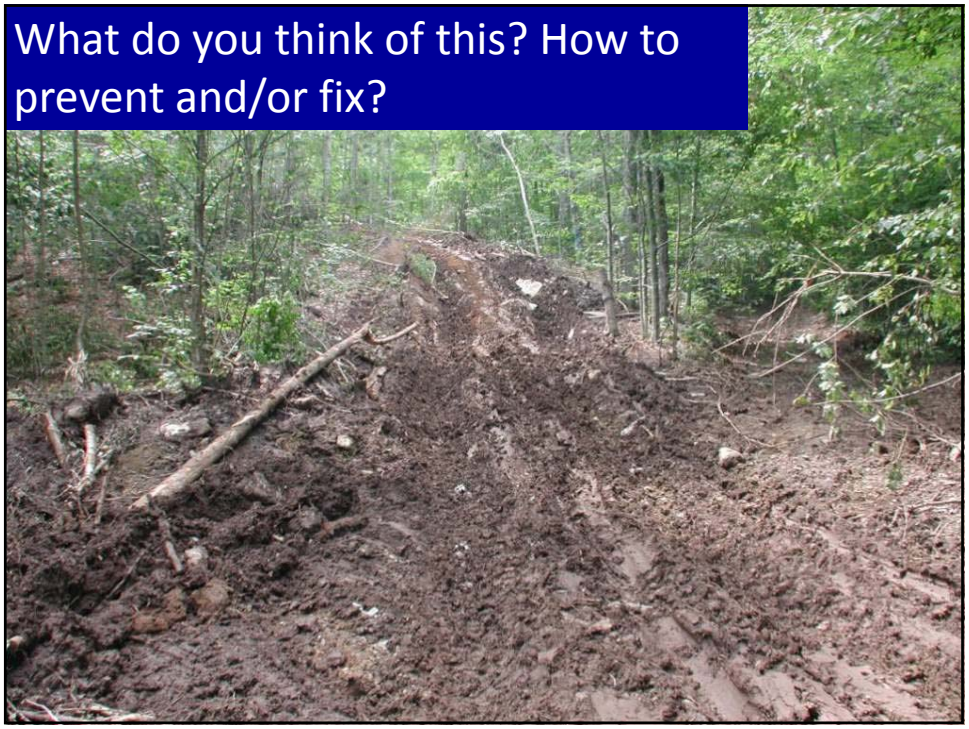
Putting Roads & Trails to Bed BMPs



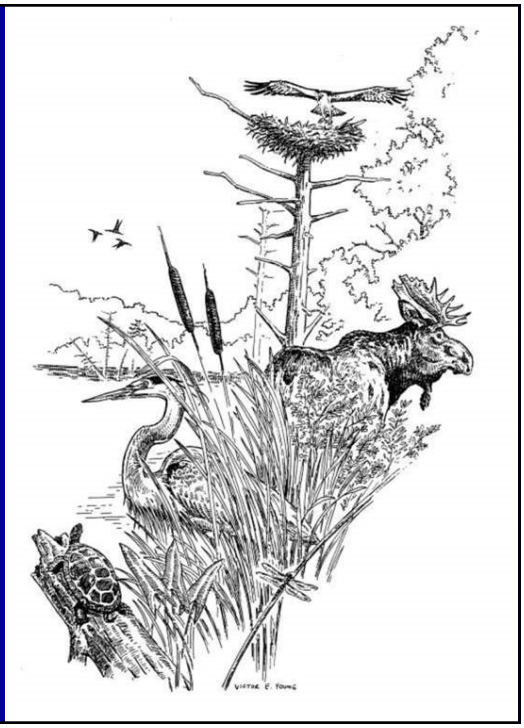


- Water bars
- Remove temporary stream-crossing structures
- Seed and/or mulch embankments or trailbed as needed
- Monitor and maintain

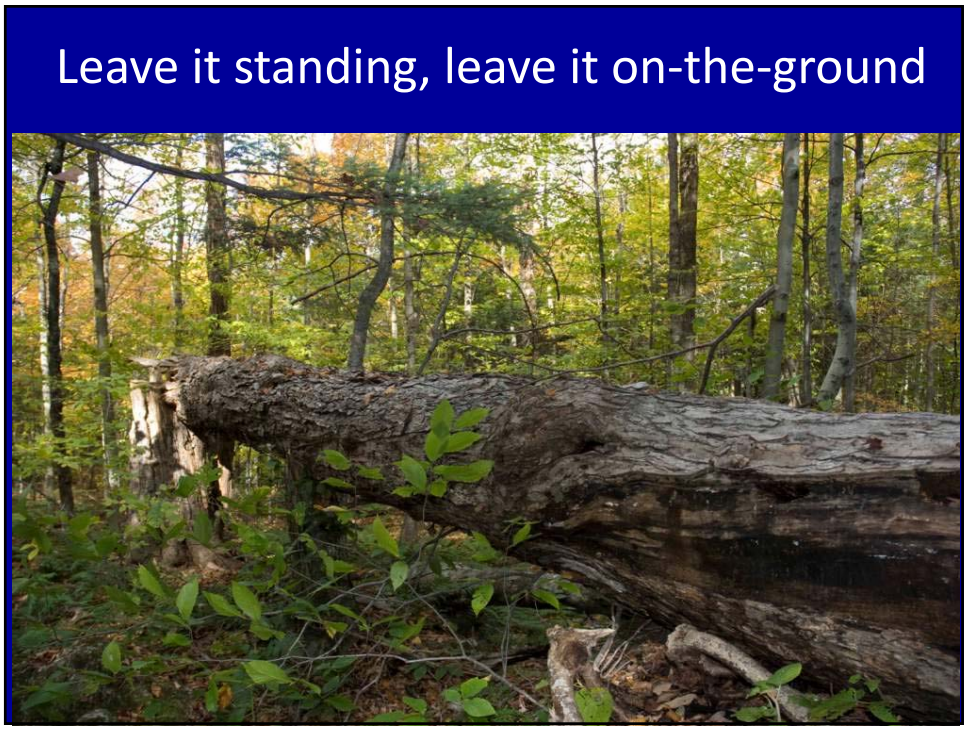
What do you think of this? How to prevent and/or fix?



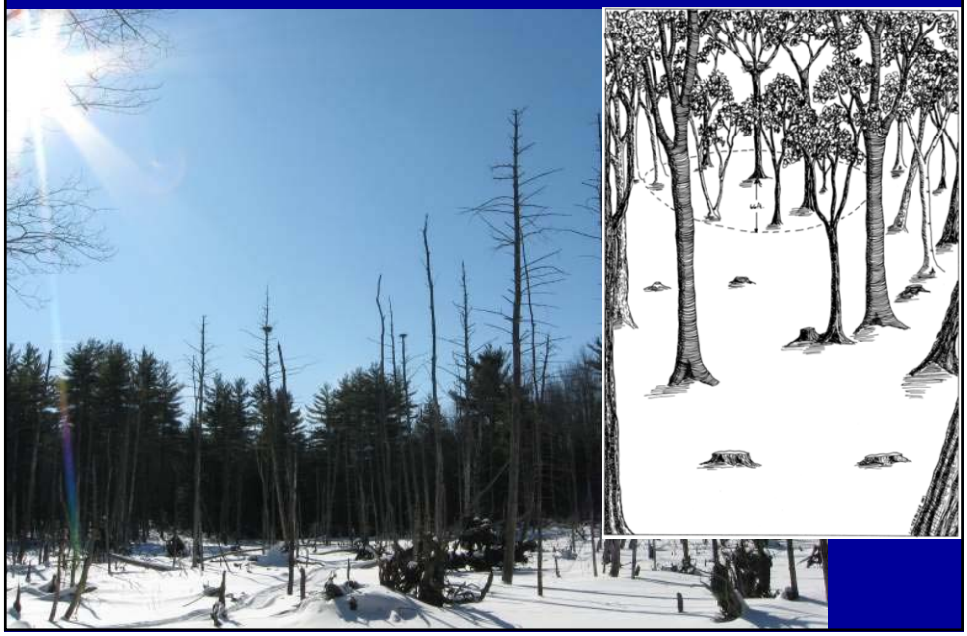
There is more to managing around water and wetlands than maintaining water quality!

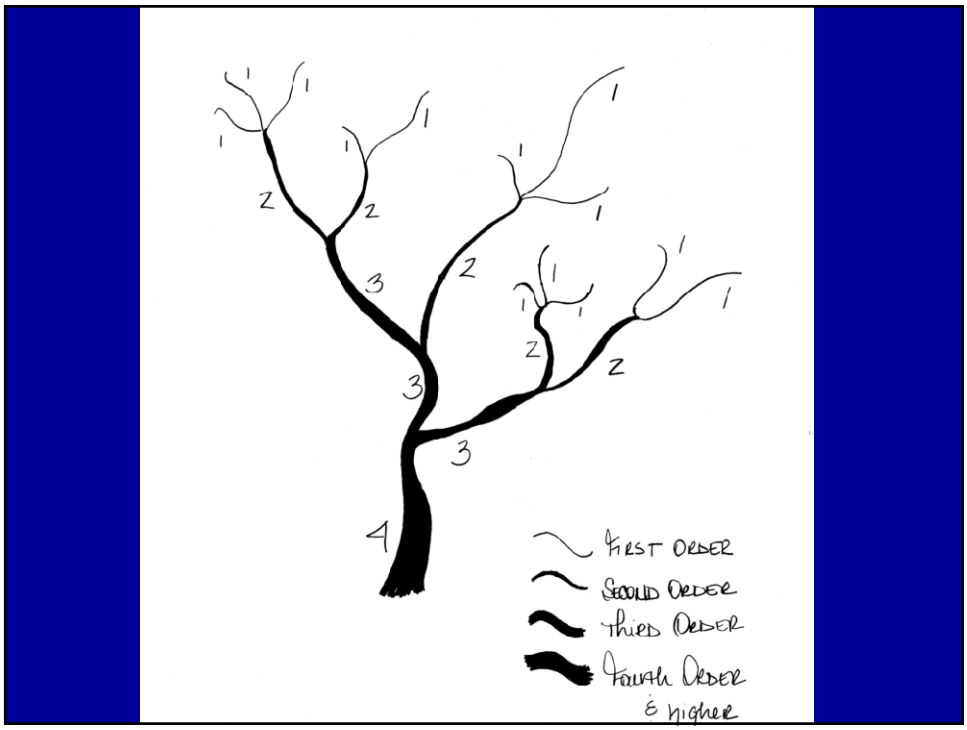


Leave it standing, leave it on-the-ground



Nests




1
2
3
4
First Order
Second Order
Third Order
Fourth Order
& higher

Riparian Areas

3rd Order Stream

1st or 2nd Order Stream

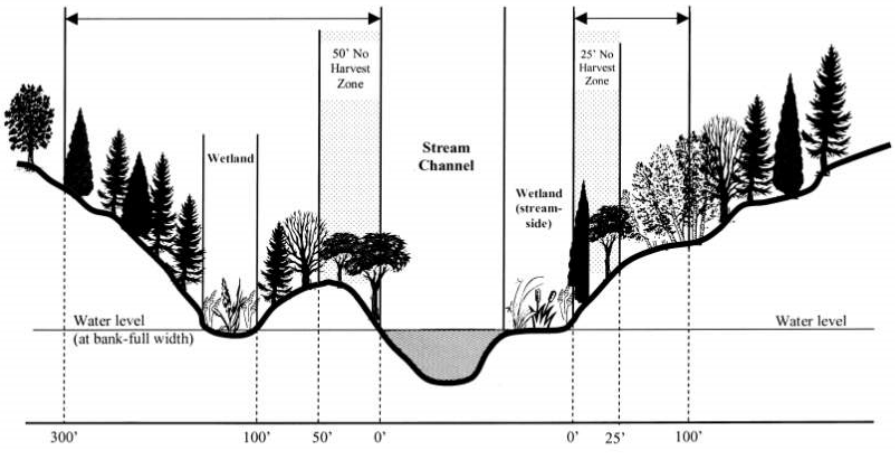
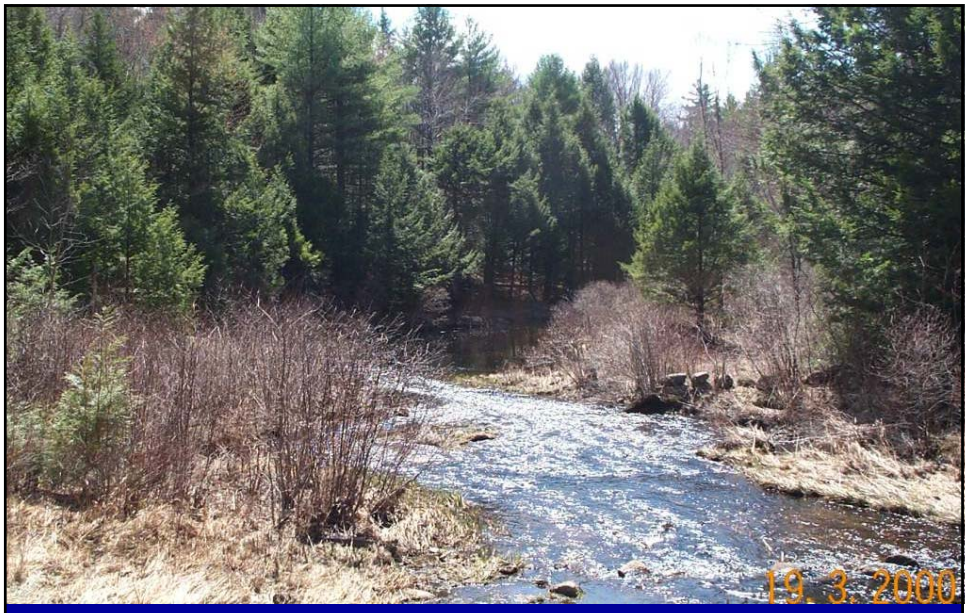


Table 1. Guidelines for Riparian Management Zones

	Legally Required Riparian Management Zone (feet)	Recommended Riparian Management Zone (feet)	Recommended No Harvest Zone (feet)
Intermittent streams	none	75	None
1st and 2nd order streams	50	100	25
3rd order streams	50	300	50
4th order and larger streams	150	300	25
Pond <10 acres	50	100	None
Lake or Great Pond (>10 acres)	150	300	25



- Leave windfirm tree, well-distributed. Leave other vegetation, existing groundcover.
- Keep trees along banks to stabilize shorelines.

Choose a regeneration system most likely to maintain riparian functions and values and rapidly regenerate the site with the desired trees.

Avoid leaving isolated riparian management zones with long distances of abrupt edge.

- Riparian forests next to heavy cuts, agricultural, or urban land uses may be subject to increased edge effects (e.g., invasives, nest predation) and risk of blowdown.
- Practices that minimize these risks include limiting harvest within the riparian management zone, increasing the width of the zone, or feathering the edges of a heavy cut.