



Corduroy Crossings

Forest Management Practices Fact Sheet Crossing Options Series #14

Best Management Practices (BMPs) can prevent or minimize the impact of forestry activities on rivers, lakes, streams, groundwater, wetlands, and visual quality.

Introduction

Harvesting and other forest management activities can harm wetlands. In areas with weak soils, vehicles can rut or disturb those soils, damage vegetation, and alter wetland hydrology. Properly planned and constructed crossings can protect wetlands.

One way to protect wetlands is with *corduroy crossings*. With this option, brush, slash, small logs and other woody materials (such as mill slabs) are laid across the wetland. This spreads the load weight over a larger surface.

Where Used

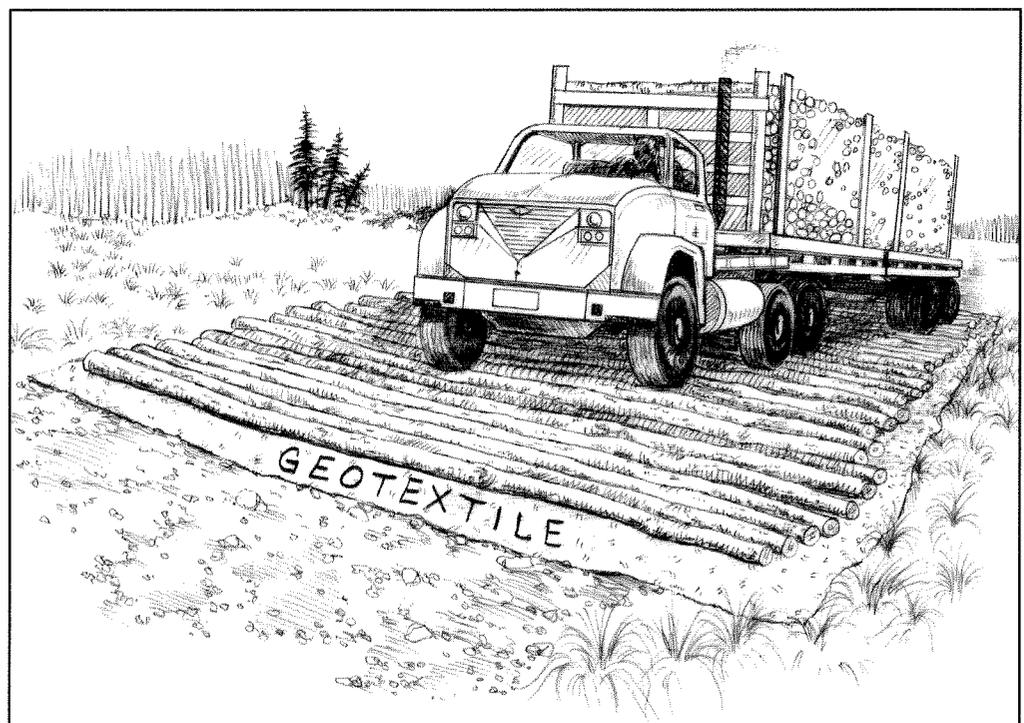
Corduroy crossings are useful on most wetland soils and wet areas on a haul road with level topography (slopes up to 4 percent). Avoid firm, high spots (e.g., stumps and large rocks) which may break the corduroy.

Application

Many materials can be used to build corduroy crossings. Logs or mill slabs may support vehicles better than brush.

When constructing a corduroy crossing:

- ▶ Smooth out high spots and fill ruts within the crossing area on a haul road. Leave the root or vegetation mat in place to add stability to the crossing.



- ▶ It is generally recommended to cover the crossing area with nonwoven geotextile.
- ▶ Lay pieces of roundwood, mill slabwood, brush, or slash onto the geotextile, perpendicular to the direction of travel. Each piece of corduroy should be as long as any weak areas (or at least as long as the equipment using the crossing) to provide maximum flotation. Layer the material for additional strength if needed.
- ▶ Size individual pieces of corduroy to meet anticipated loads, soil strength, and installation equipment. Use longer corduroy on very weak soils that have a low bearing strength (e.g., muck or peat), to spread the weight over a larger area.

Geotextile is a fabric mat that allows water to drain through it. It supports material placed on top of it and makes removal of that material easier.

Advantages

Corduroy crossings are usually low-cost. They can be made from on-site materials or from slabwood available from local sawmills. Construction is simple. You can easily adjust crossing width to accommodate various soil strengths. Generally, removal is not necessary once the crossing is no longer needed.

Disadvantages

It takes time to install the corduroy. Corduroy generally is small and needs to be hand-placed. Brush and slash do not hold vehicles afloat as well as do logs and mill slabs.

Maintenance

Corduroy requires little maintenance. You may need to add more corduroy if the existing material doesn't adequately support traffic.

Related Fact Sheets in This Series

Temporary Wetland Crossing Options (FS-7008); Wood Mats (FS-7009); Wood Panels and Pallets (FS-7010); Expanded Metal Grating (FS-7011); PVC or HDPE Pipe Mats and Plastic Roads (FS-7012); Bridge Decks, Tire Mats, and Pole Rails (FS-7013); Low-Ground-Pressure Equipment (FS-7015); and Equipment With Central Tire Inflation (FS-7016).

Cooperators

University of Minnesota Extension Service, Minnesota Department of Natural Resources, Minnesota Logger Education Program, Michigan Department of Natural Resources, Michigan State University Extension, USDA Forest Service, and Wisconsin Department of Natural Resources.



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UNIVERSITY OF MINNESOTA
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FS-7014-S
1998