



Temporary Wetland Crossing Options

Forest Management Practices Fact Sheet Crossing Options Series #8

Introduction

Operators crossing wetlands with vehicles and other logging equipment may harm water quality, alter the water flow, and damage habitat. To protect wetlands, the best strategy is to go around them. If this isn't possible, use temporary crossing options to minimize impacts.

Where Used

Operators build wetland crossings on roads used to reach forest management areas. The surface should be flat (maximum grade 4 percent) and free of stumps and other high spots. Operators should size options to meet anticipated loads, soil strength, and installation equipment. Because skidding can cause movement and increased wear of a temporary wetland crossing option, limit the use of the options to hauling and forwarding. You can also use some of the options to help stabilize approaches to stream crossings.

Application

Most options work best with a nonwoven geotextile under them. Geotextiles prevent material from mixing with the soil below it, yet allow water to flow through. They also help distribute a load over a broad area and make an option easier to remove. A nonwoven fabric is less slippery than a woven one, reducing movement of the option during use.

On very weak soils that have a low bearing strength (e.g., muck or peat), you may need to make options longer and wider than on other soils to spread the weight over a larger area.

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



Corduroy Crossing

Options

Wood mats are made from logs or sawn hardwood. Cable together individual pieces to make a single-layer crossing.

Wood panels and *pallets* are stronger, larger versions of shipping pallets. They are reversible for easier repair.

Expanded metal grating is made from nongalvanized steel. It is light and inexpensive, and provides good traction. Build crossings by placing grating sections in the wheel path.

PVC or *HDPE pipe mats* are constructed by cabling together pipes to form mats of varying lengths. *PVC* or *HDPE plastic roads* are similar to pipe mats, except that the pipes are interconnected using PVC. Build transition mats/panels into the design to ease transition between firm soil and the mat.

Bridge decks consist of the decking of a timber bridge and are available commercially. They are best used to cross small wetlands.

Tire mats are constructed by interconnecting tire sidewalls. Modify lengths and widths to fit the soils and situation.

Pole rail crossings can be built on-site from straight hardwood poles cut from local trees. Lay them parallel to the direction of travel below each wheel. Use pole rails only with skidders that have wide, high-flotation, or dual tires.

Corduroy crossings are built from residues such as brush or slash; small, low-value logs; or mill slabs. Corduroy spreads a load over the length of the log or slab, increasing the load-bearing area.

Advantages

Operators can build some of the crossing options (corduroy, pole rail) inexpensively from on-site materials. Build other options (wood mats, wood panels and pallets, and expanded metal grating) inexpensively from purchased materials. Once constructed, operators can rapidly install most options. Because most options are reusable, operators can spread costs over many uses.

Disadvantages

Some of these options (bridge decks, tire mats) are expensive. Some are limited to certain wetland soils or conditions.

Maintenance

Maintenance needs vary. Check options for strength and wear both during and between uses. Remove and replace worn or broken pieces.

Related Fact Sheets in This Series

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); *Corduroy Crossings* (FS-7014); *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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