Wood Mats

Forest Management Practices Fact Sheet
Crossing Options Series #9

Introduction

Loggers sometimes need to cross wetlands with vehicles and other heavy equipment. This can damage wetland soils, aquatic habitat, and hydrology. Temporary crossings can minimize these impacts.

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

Wood mats provide surfaces that protect wetlands during hauling or forwarding operations. They are made from sawn hardwoods or round logs that are cabled together and placed on top of nonwoven geotextile.

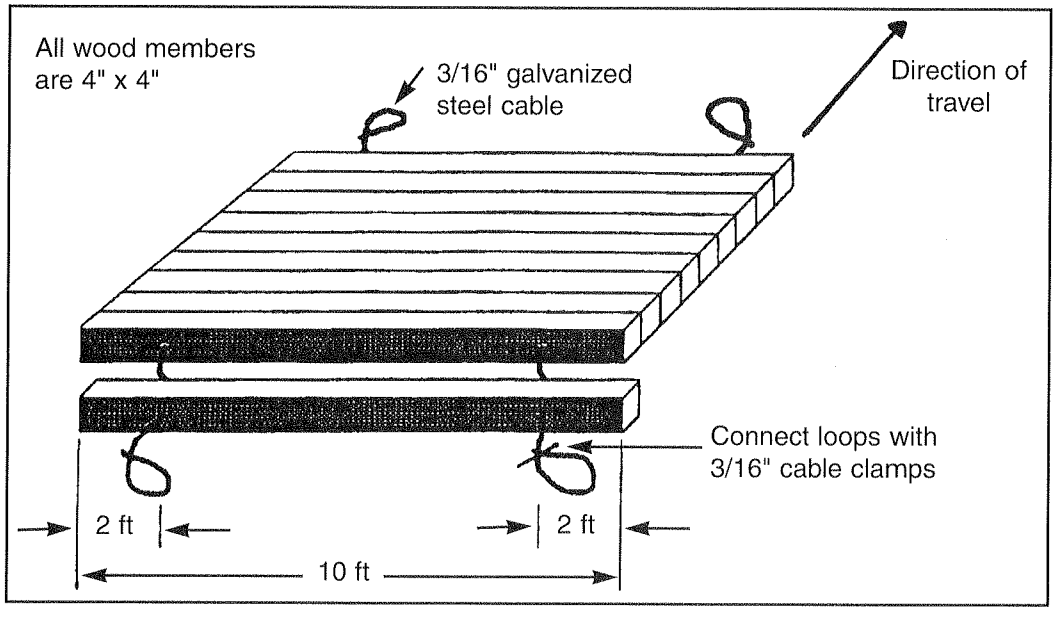
Where Used

Use wood mats on wetland soils or existing road beds. The surface should be flat (maximum grade 4 percent) and free of high spots (e.g., stumps and large rocks). Because skidding will move and abrade the mat, this option is best limited to hauling and forwarding. Mats can help stabilize approaches to stream crossings.

Application

Wood mats consist of cants, sawn dense hardwoods (usually oak), or round logs cabled together. When building and installing a wood mat:

- Use cants or logs at least 10 feet long, 4 inches by 4 inches. Use longer cants or logs for weak soils. Cants can be purchased at sawmills or lumber supply stores.
- Drill 1/4-inch holes through each cant or log about 1 to 2 feet from each end. String the cants or logs close together with a 3/16-inch galvanized steel cable.



- Make loops at the end of each cable for ease of transport. Secure loops with 3/16-inch cable clamps. Tuck loops under the mats during installation and use so that they don't get caught by vehicles.
- If needed for stability or to reduce movement, connect mats using quick links or other heavy-duty connectors.

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.

- Install mats on top of nonwoven geotextile that covers the crossing area. On a haul road, smooth out high spots and fill ruts to protect the geotextile fabric and the mats. Do not disturb the root mat of any vegetation because it provides additional support.
- Use the size of wood mat needed to meet anticipated loads, soil strength, and installation equipment. Use larger mats on very weak soils with low bearing strength (e.g., muck or peat) to spread the weight over a larger area.
- If vehicles need more traction, use expanded metal grating on top of the mats.

Advantages

Wood mats can be built on site or locally using readily available materials. They are easy to install, remove, and repair.

Disadvantages

Wood mats can't be used in areas with rocks or other firm high spots. The surface may not have adequate traction under wet conditions unless an additional tractive surface is applied.

Maintenance

Inspect wood mats during and between uses to make sure no sections are broken. Repair broken pieces by disconnecting the cable clamps and sliding off and replacing broken sections.

Related Fact Sheets in This Series

Temporary Wetland Crossing Options (FS-7008); *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

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