



# Wood Panels and Pallets

## Forest Management Practices Fact Sheet Crossing Options Series #10

### Introduction

When operators use heavy machinery to carry out forest management activities, they may need to cross wetlands. This can damage the soils, aquatic habitat, and hydrology of a wetland. *Wood panels* and *pallets* can be assembled in the field or off-site and placed over a wetland to protect it. Operators can then move machinery over the wetland on top of these temporary surfaces.

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

### Where Used

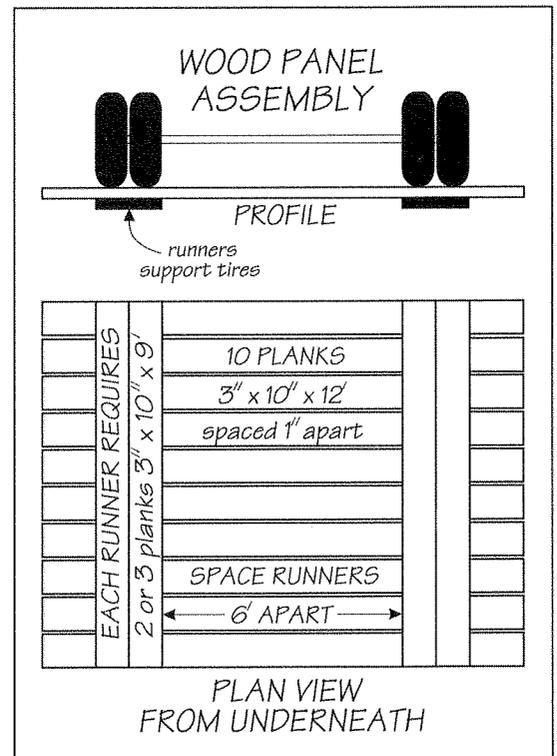
Wood panels and pallets work well on most wetland soils that are flat (less than 4 percent grade). The area should be free of large rocks and other high spots. Because skidding will move and abrade wood panels and pallets, it's best to use them in conjunction with hauling and forwarding.

### Application

Wood panels are built from dense hardwood (usually oak) lumber planking nailed together to form a two-layer crossing. Wood pallets are available commercially. They are three-layered and made from dense hardwood planks that are nailed together. In some wood pallets, top and bottom pieces are interconnected similar to a traditional pallet. In others, top and bottom pieces are separate and interlock during installation to prevent sideways movement. Install each option over a nonwoven geotextile.

When building a wood panel:

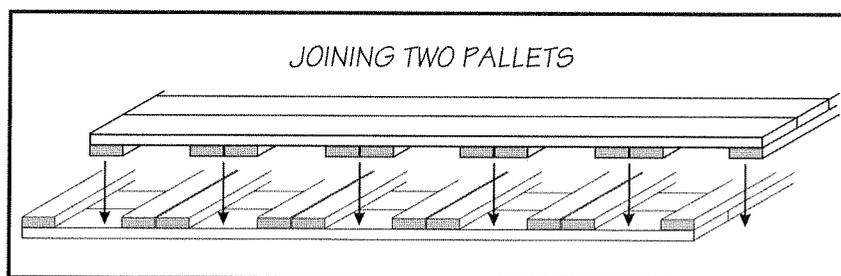
- ▶ Use 3-inch thick by 10-inch wide by 12-foot long lumber for planks. Align planks parallel to each other.
- ▶ Nail 2 or 3 boards, each measuring 3 inches x 10 inches by 9 feet, perpendicular to the planks (use ring-shank or spiral spikes). These are runners.
- ▶ Leave a 1-inch gap between the planks to allow water to run through. Use an air gun or countersunk bolts to reduce nail withdrawal during use.
- ▶ Add eye hooks and looped cables or other materials to the wood panel. This facilitates lifting and interconnection once they are installed.



When installing wood panels and pallets:

- ▶ Smooth out high spots and fill ruts. Leave roots and vegetation mats in place to add stability.
- ▶ Cover the entire crossing area with nonwoven geotextile.
- ▶ Minimize spacing between panels or pallets. Connect with quick links or other heavy-duty connectors for extra stability. (Some wood pallets are designed to interconnect during installation.)
- ▶ If additional traction is needed, use expanded metal grating or similar materials on top of the wood panels or pallets.
- ▶ Size wood panels and pallets to meet anticipated loads, soil strength, and installation equipment. You may need additional size on very weak soils with 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

Operators can build wood panels on-site. They can buy wood pallets locally. Both options are relatively inexpensive and are easy to install, maintain, and remove.

### Disadvantages

Operators can't use either option in areas with rocks or other firm high spots. You may need a forklift to install and remove pallets. Under slippery conditions, you may need to use an additional tractive surface.

### Maintenance

Inspect wood panels and pallets during and between uses, replacing broken pieces and loosened or missing nails.

### Related Fact Sheets in This Series

*Temporary Wetland Crossing Options (FS-7008); Wood Mats (FS-7009); 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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