

Low-Ground-Pressure Equipment

Forest Management Practices Fact Sheet Crossing Options Series #15

Introduction

Timber harvest traffic can compact and rut wet areas. Ruts can collect water, disrupt underground water movement, and harm plants.

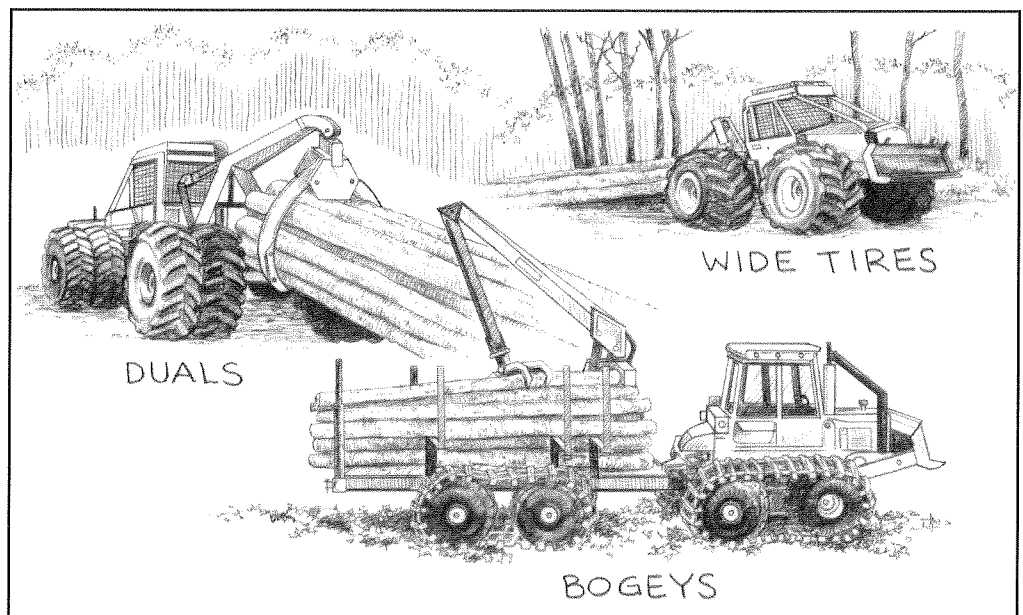
Best Management Practices (BMPs) can prevent or minimize the impact of forestry activities on rivers, lakes, streams, groundwater, wetlands, and visual quality.

Wide tires, duals, tire tracks, bogeys, or tracked machinery can help reduce damage to wet areas during forest management operations. They spread a machine's weight over a larger area. They also increase traction, reducing wheel slippage.

Wide or high-flotation tires are 34 to 72 inches wide. Dual tires are made up of four regular-width tires on an axle. They may be used on the front axle, back axle, or both axles. Tire tracks are wrapped around existing tires to make them wider. A bogey system connects rubber tires on adjacent drive axles with a track. Tracked machinery travels on steel or rubber tracks instead of tires. Lightweight equipment reduces ground pressure by reducing the weight of the machinery.

Where Used

Low-ground-pressure equipment works well for felling, skidding, and forwarding on most wetland or upland soils.



Application

All options are available from commercial vendors. When using low-ground-pressure equipment:

- ▶ Mount tire or track options according to manufacturers specifications. Extra-heavy-duty drive trains and axles may be required for some options.
- ▶ For additional support, retain existing vegetation (root or slash) mats. Place slash in front of machinery as it drives across sensitive areas.

Advantages

These options reduce the need for building temporary crossings. They also can extend the harvest season on sensitive sites. The options can operate on wetter areas with less impact.

Disadvantages

All of the options can be more expensive than conventional equipment. Operators may need special permits to move wide-tired vehicles on public roads. Vehicles may need special adaptations such as heavy-duty axles and heavy-duty transmissions. Skidding or forwarding larger loads because of the increased traction and flotation may negate any environmental benefits.

Maintenance

Tracked machinery equipped with wide tires, duals, tire tracks, or bogeys may need more maintenance than conventional machinery.

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); Corduroy Crossings (FS-7014); 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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