



Fords

Forest Management Practices Fact Sheet Crossing Options Series #2

Introduction

Timber harvesting and hauling equipment can damage water quality and habitat when crossing streams. Fords can cost-effectively minimize environmental impact.

Fords are stream crossings in which vehicles enter and drive across the stream. They may be suitable for low levels of traffic when the water flow is low. The streambed must be able to support the weight of traffic. Local authorities may let operators remove weak soils and replace them with a woven geotextile covered with stable fill materials such as gravel. In some states, operators need a permit to build a ford crossing.

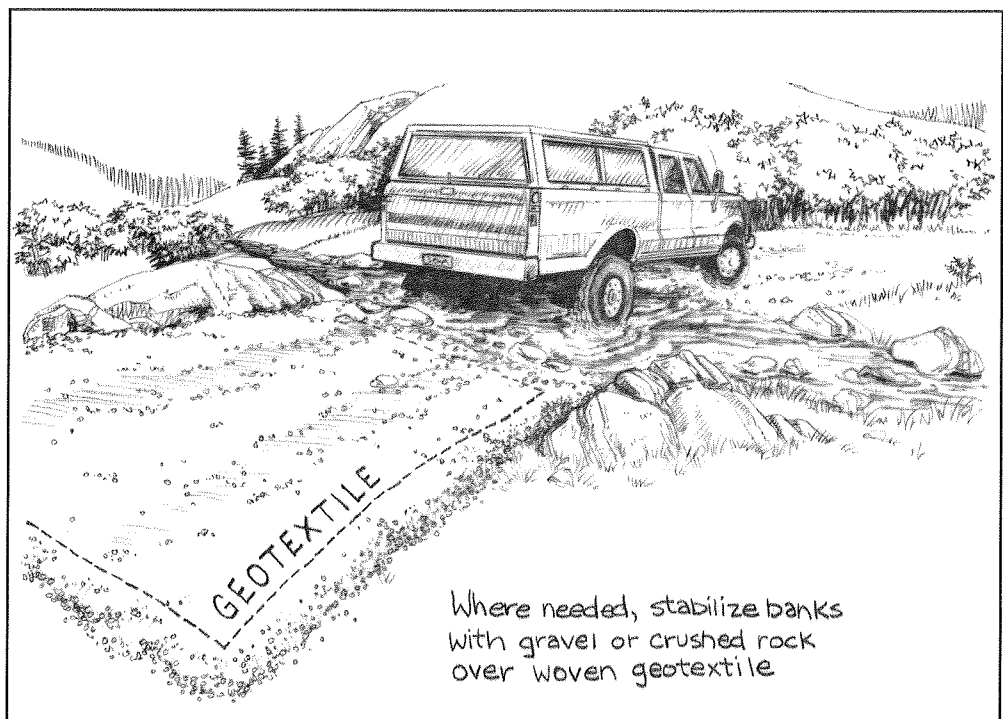
Where Used

Fords are used in streams with low flow. The streambed should contain rock or coarse gravel capable of supporting equipment.

Place the ford where the stream is straight. Choose an area where the banks are less than 4 feet high with a natural, gentle slope. The finished graded slope from road to stream level should not exceed 5:1 (horizontal to vertical).

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

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.



Application

Do not build or use a ford during fish spawning, incubation, or migration. Check with the appropriate regulatory agency in your state to see if fords are acceptable and if permits are required.

When building a ford:

- ▶ Maintain the natural level of the streambed to let fish pass over the crossing.
- ▶ Keep vehicles constructing and using the ford in good condition to minimize water pollution.
- ▶ Obtain permission to replace weak soils. Use rock or coarse gravel and place on top of geotextile to strengthen and stabilize the streambed.
- ▶ Where necessary, stabilize banks and approaches by placing at least 12 inches of clean material such as gravel or crushed rock over a woven geotextile. Use temporary options such as wood mats, wood panels or pallets, and expanded metal grating to stabilize approaches.
- ▶ Install lead-off ditches or water bars on roads approaching streams to divert water into vegetation away from the stream.
- ▶ Reseed bank cuts right away to keep them from eroding into the stream.
- ▶ Remove any temporary surfacing materials used on the approaches when the ford is no longer being used.

Advantages

Fords require little maintenance. Operators can install them relatively quickly in most cases.

Disadvantages

Operators can't use fords in many streams because of local regulations. They also may not meet site criteria. They can only be used during low flow. Vehicles can stir up sediment or cause soil to enter the stream while using fords. Operators can't build or use fords while fish are spawning, incubating, or migrating.

Maintenance

Very little maintenance is required.

Related Fact Sheets in This Series

Temporary Stream Crossing Options (FS-7001); *Culverts* (FS-7003); *Ice Bridges* (FS-7004); *Timber Bridges* (FS-7005); *Railroad Car, Steel, and Prestressed Concrete Bridges* (FS-7006); and *PVC or HDPE Pipe Bundle Crossings* (FS-7007).

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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FS-7002-S
1998