



Using Logging Debris or Logs to Build Water Bars

Forest Management Practices Fact Sheet Managing Water Series #4

Introduction

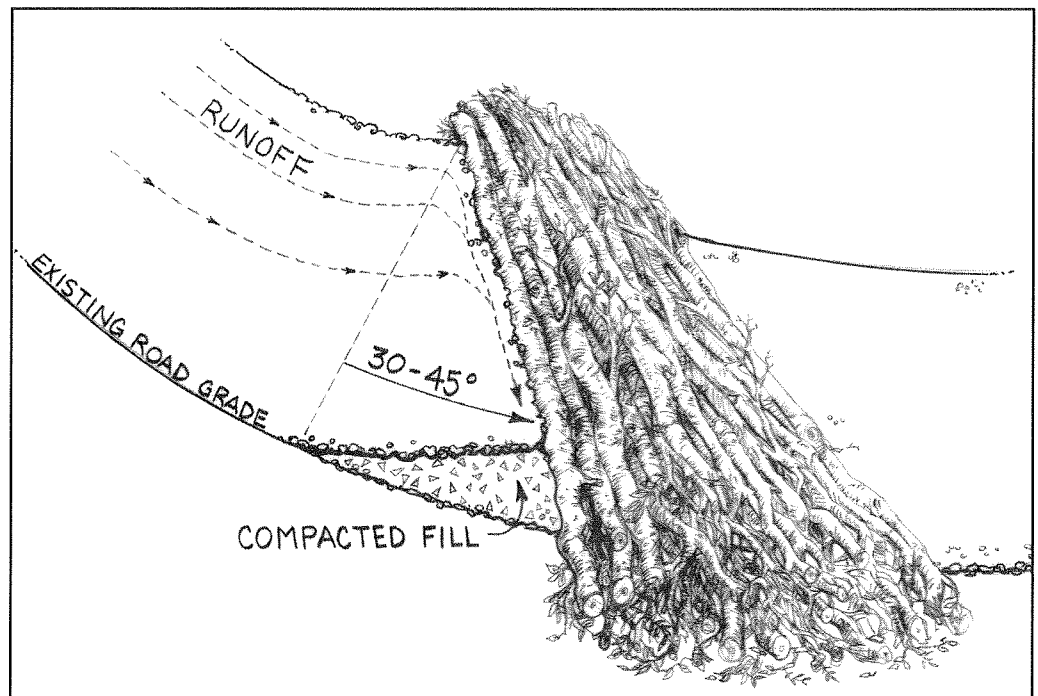
Water moving over forest roads and skid trails can cause erosion. Sediment deposited in streams, rivers, and lakes can hurt fish and other aquatic organisms. Nutrients and chemicals attached to soil can pollute water.

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

Logs or logging debris (slash) consisting of branches, broken tops, and brush can be used to create temporary water bars. Operators build *logging debris water bars* across traffic surfaces to divert water into vegetated areas. This reduces erosion and helps maintain the road. Water bars made from logging debris are not as effective as those made from soil, since water can filter through. Still, they can be used in many applications. They work best in low traffic areas with low slopes.

Where Used

Log and slash water bars are best placed where use of more substantial water diversion options is limited, for example, on roads and trails with limited traffic or slope, or when forest operations are shut down for a short time. They also can be used when soil is frozen or when shallow, rocky soils make it difficult to build earth-berm water bars.



Slash water bar

Application

When building a slash water bar:

- ▶ Place the log or slash at a 30- to 45-degree angle to the road or skid trail. For slash, build a mat at least 3 feet wide.
- ▶ Make sure water bars are high enough to prevent water from running over them.
- ▶ Pack slash down using a truck, dozer, or other heavy vehicle. Keep slash in continuous contact with the soil across the road. Fill gaps with soil or more slash. Water should not be able to run through the slash.
- ▶ Bind logs together or stake them down to help hold them in place when traffic passes over them.
- ▶ Remove berms or other obstructions from the lower end of the water bar to allow water to move off the road. Water should flow into a stable vegetated area, away from open water.
- ▶ Space log and slash water bars at least as close as you would earthen water bars. See your state's water quality BMP guidelines for spacing information.

Advantages

Log and slash water bars can be easily made from material at the site. They can be used on frozen soils or rocky areas. If used properly, they can reduce overall costs for maintaining the road.

Disadvantages

Constructing logging slash water bars takes time and resources. The water bars need to be maintained. You may need to fill ruts to divert water with slash water bars. Logging slash water bars are less effective than other water diversion devices. They require caution when blading during road or trail maintenance.

Maintenance

Check and rebuild water bars periodically to ensure that there are no gaps.

Related Fact Sheets in This Series

Project Planning: Locating Roads, Landings, Skid Trails, and Crossings (FS-6970); Managing Water on Roads, Skid Trails, and Landings (FS-6971); Earth-Berm Water Bars (FS-6972); Conveyor Belt Water Bars (FS-6974); Broad-Based Dips (FS-6975); Open-Top Culverts (FS-6976); Shaping Roads and Trails (FS-6977); Roadside and Diversion Ditches (FS-6978); Cross-Drainage Culverts (FS-6979); Project Closure (FS-6980); Making and Using Measurement Tools—Basal Area (FS-6981); and Making and Using Measurement Tools—Slope (FS-6982).

Cooperators

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