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## Simple Water Bar Installation - Forest Resources Association - August 2012

Forest Resources Association

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**EZ BAR: SIMPLE WATER BAR INSTALLATION WITH SKIDDER**

Roads: BMPs

August 2012

[www.forestresources.org/members/serpub/12-R-21.html](http://www.forestresources.org/members/serpub/12-R-21.html)

**INTRODUCTION:** Water bars are commonly used to control water flow from skid trails during and after harvest operations to assure Best Management Practices for water quality and erosion control goals are met. Occasionally water bars are incorrectly constructed and installed, so that they do not function as desired. Sometimes water bars are installed as a separate operation from the harvest, which requires additional equipment, transportation, and manpower and delays installation.



*Fig. 1: Skidder installing water bar. Left, facing downslope. Right, facing upslope. Note skidder's rear tires remain on trail.*

EZ Bar is a set of principles that allows equipment often present on a harvest site to build effective waterbars efficiently. A video archived at ([http://www.youtube.com/watch?v=U4j\\_vhC3I6M](http://www.youtube.com/watch?v=U4j_vhC3I6M)) demonstrates how to construct an EZ Bar with a skidder. Maine's SFI State Implementation Committee developed the technique that evolved from years of forestry BMP training with Maine loggers and foresters. The Maine Forest Service provided resources to produce the free instructional video.



*Fig. 2: Completed water bar.*



*Fig. 3: Another completed water bar.*

**GENERAL FEATURES:** The EZ Bar technique shows that water bars can often be constructed with forestry equipment already on site. The key technique that is unique to the EZ Bar system is that half of the water bar is installed by the skidder headed down slope, and the other half is installed with the skidder headed upslope. Obviously, sites and conditions vary, and there may be cases in which different equipment or techniques are needed.

**INSTALLATION / APPLICATION:** The machine operator needs to decide which side of the EZ Bar to construct first, depending on which direction the operator wants to exit the trail. Usually the operator wants to exit towards the log yard to avoid driving over the completed waterbar; therefore, the EZ Bar should be constructed so that, when finished, the machine is on the yard side of the EZ Bar. In the demonstration video, the yard is downslope from where the EZ Bar is being constructed.

Construction is begun upslope of the inlet. Remember to begin far enough off the trail to prevent water from escaping around the end. The front of the machine and the blade can extend easily off the trail, with the rear end of the machine still on the trail.

Begin to dig the ditch, pushing the excess material downslope to build the berm. Remember not to make the ditch too deep, as the depth needs to remain consistent for the full length of the ditch, and digging may not be as easy at the other end of the EZ Bar.

Continue to repeat this step, crossing the trail until you reach a point at which operating the machine and maintaining the proper angle would place the rear end of the machine into the opposing trailside residual stand.

Then proceed with the machine to the downslope side to continue constructing the EZ Bar from the opposite direction, upslope. Don't worry if you have to run over a portion of the water bar as you cross over. You will be able to reach that portion of the water bar easily from the other side to fix anything you might have disrupted.

From the downslope side, position the machine so that it maintains the same angle of the waterbar. Dig the ditch in line with the rest of the ditch previously dug. Be careful to dig in a manner that maintains the same approximate depth and profile. The material generated by digging will be stored upslope from the water bar for the moment and until the ideal ditch profile is established. When the ditch is completed, reach over the mound of stored material with the blade and backdrag it through the ditch to place it in line with the rest of the berm downslope of the water bar. The trick here is not to refill the ditch with the material you're attempting to pull through it. To keep that from happening, make sure to apply a lot of down pressure with the blade as you are backdragging that material through the ditch. It is okay to make a couple of passes to make sure the outcome is what you want. Use blade down pressure to set the material into the berm.

Repeat this process as needed until the water bar extends adequately off of the trail and there is no opportunity for water to re-enter the trail. It is easier to accomplish that from the downslope direction, as the machine remains mostly in the trail while reaching with the blade significantly off of the trail.

**SPECIFICATIONS AND COST:** Specifications have to fit the situation; refer to your State BMP manual. This technique can result in cost savings by avoiding the need to transport additional equipment in a separate process to maintain and close out logging trails.

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