Using Barriers to Control Erosion after a Wildfire

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Article Written by:
Yvonne Barkley, University of Idaho Extension, Moscow, ID

Using barriers to control erosion after a wildfire is a common practice. Barriers are installed on hillslopes and in streams to slow water flow, increase infiltration, and trap sediment. There are several types of barriers:

- *Log barriers* are anchored on the contour of burned slopes to provide immediate protection. They are often used where erosion rates will be high. This treatment is appropriate for slopes of less than 40 percent. Failures are common where water flows under logs. Log barriers should be viewed as a short-term fix. Some structures fill in with sediment with the first storm event after a burn, while others may take one to two years to fill. To be economically feasible, you must have adequate numbers of 15 to 20 feet long logs that are 4 to 12 inches in diameter available on the site.
- *Straw wattles* may provide an alternative to contour-felled logs for breaking up slope length. The last 2 to 3 feet of the straw wattle should be turned upslope to prevent water and sediment from going around the structure and will increase storage capacity. Straw wattles can also be used in small drainages and on side slopes to catch sediment. Installed straw wattles cost about half that of contour-felled logs.
- *Sandbags* stacked 1 to 2 feet high provide an inexpensive temporary barrier. They can be positioned to divert mud and small debris flows away from buildings and roads but will not seal out water. Sandbags are a short-term fix as they deteriorate when exposed to continued wetting and drying.
- *Silt fences* are made of woven wire and fabric filter cloth and are used as a temporary barrier to catch sediment-laden runoff from swales, small ephemeral drainages or along hillslopes. They provide temporary sediment storage and cannot handle large debris flows or heavy sediment loads.
- *Straw bale check dams* are temporary sediment barriers constructed of straw bales located across small drainages. These temporary structures decrease water velocity and detain surface runoff long enough for sediment to filter out and be deposited behind dams. Straw bale check dams are temporary and will not provide protection longer than three months. They works best in drier regions, on small drainage areas that have low gradients (less than 30 percent), and in channels that are not incised. They will not protect slopes from large storm events or control debris flows in larger creeks, streams or rivers. Timing of installation depends on seasonal availability of straw bales.

For more information on using barriers to control erosion after a wildfire go to After the Burn: Assessing and Managing Your Forestland after a Wildfire – pgs. 63-65.