

Log Erosion Barriers

What are Hazard Log Erosion Barriers?

Log erosion barriers are logs placed in a shallow trench on hill slopes to intercept water and trap sediment as an erosion control strategy. They capture and store sediment by slowing and redirecting surface runoff. They have been shown to be effective for reducing runoff, peak flow, and sediment delivery during low intensity rain events when properly installed (**Figure 1**). Log barriers can be effective for a one to two-year period while native vegetation reestablishes. The use of natural, on-site trees for this purpose reduces costs and retains nutrients required for long-term soil health and native vegetation reestablishment. Falling "hazard" trees for this purpose is a recommended approach for short-term erosion control.

Where should they be used?

Log erosion barriers can be used in areas of moderate to high burn impact where most of the native plant or ground coverage is gone and/or moderate to steep slopes are present. Log terraces are likely not needed in low fire impact areas with existing vegetation, leaf/needle ground cover, and low to moderate slope. They can be placed on slopes between 25 and 60 percent.

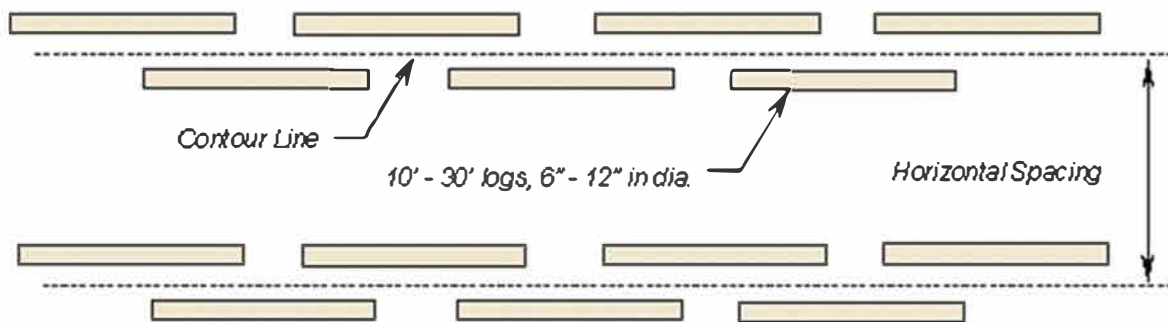


Figure 1. Log terrace placement diagram

How are they constructed?

Dead trees are felled, limbed, and placed on the contour perpendicular to the direction of the slope. Logs are placed in an alternating fashion, so the runoff no longer has a straight downslope path to follow (**Figure 1**). The water is forced to meander back and forth between logs, reducing the velocity of the runoff, and giving water time to percolate into the soil.

Logs should be 6 to 12 inches in diameter (smaller logs can be used) and 1 to 30 feet long. The logs should be bedded into the soil for the entire log length and backfilled with soil so water cannot run underneath; back-fill should be tamped down. Secure the logs from rolling by driving stakes on the downhill side. It is best to begin work at the top of the slope and work down. (It is easier to see how the water might flow by looking down on an area to better visualize the alternating spacing of the logs).

Resources

The Pure Water Partners (PWP) program is working to place log erosion barriers in select areas as part of an integrated approach to erosion management on private properties impacted by the Holiday Farm Fire. If you are interested in assistance with erosion control and riparian restoration, please sign up for a PWP site assessment by visiting www.purewaterpartners.org