

## VEGETATION AND EROSION CONTROL ON DAMS

### Problems From Trees And Brush On A Dam

Trees and brush on a dam's earthen embankment and along the downstream toe can hide developing structural problems and also create the potential for new problems in the future. The sudden uprooting of a tree by a strong wind can leave a big hole in the embankment where the tree's root ball was pulled out. Such a hole could lower the crest of the dam, reduce the effective width of the dam, and enhance seepage. A falling tree can damage concrete, steel, stone or timber structures, too.

The root system of a healthy, standing tree can be a potential hazard by creating seepage pathways through a dam. Trees eventually die, leaving their roots to rot. The decaying roots form a network of channels that increases seepage within the dam's embankment or foundation. This seepage can develop into serious piping that removes soil particles from the embankment or the foundation. Such internal erosion can lead to sudden failure of the dam.

Brush and woody vegetation can hinder the visual inspection of dam surfaces. Trees and brush hide sinkholes, animal burrows, seeps and other irregularities.

### Erosion Control

Grass cover is a very effective and inexpensive way to prevent the erosion of embankment surfaces. The stems and root systems of grasses tend to trap fine particles of soil, thus inhibiting the migration of these particles. A good grass cover provides an excellent means against erosion due to runoff caused by rains, and can protect the embankment during limited overtopping.

Smaller trees and brush provide too much shade that hinders the growth of sturdy, thick grass cover on the dam. Sparse grass is more prone to surface erosion than dense turf.

### Maintenance

Grass cover must be mowed periodically to permit detailed visual inspection of the dam's embankment. **Trees and brush should never be allowed to grow on or very near a dam!** Many older dams have very large trees growing on or near them. Removal of large trees and their root balls from an earthen dam should be done under the direction of a qualified professional engineer who is knowledgeable about dam safety and maintenance.



For more information contact:

Department of Environmental Protection  
Bureau of Waterways Engineering  
Division of Dam Safety  
P.O. Box 8554  
Harrisburg, PA 17105-8554  
717-787-8568

For more information, visit [www.depweb.state.pa.us](http://www.depweb.state.pa.us), keyword: Dam Safety.

# DEP's Watershed Management Program Regional Offices

## Southeast Region

2 East Main Street  
Norristown, PA 19401  
484-250-5152

**Counties:** Bucks, Chester, Delaware, Montgomery and Philadelphia

## Southwest Region

400 Waterfront Drive  
Pittsburgh, PA 15222-4745  
412-442-4149

**Counties:** Allegheny, Armstrong, Beaver, Cambria, Fayette, Greene, Indiana, Somerset, Washington and Westmoreland

## Southcentral Region

909 Elmerton Avenue  
Harrisburg, PA 17110  
717-705-4708

**Counties:** Adams, Bedford, Berks, Blair, Cumberland, Dauphin, Franklin, Fulton, Huntingdon, Juniata, Lancaster, Lebanon, Mifflin, Perry and York

## Northcentral Region

208 W. Third Street, Suite 101  
Williamsport, PA 17701  
570-327-3675

**Counties:** Bradford, Cameron, Clearfield, Centre, Clinton, Columbia, Lycoming, Montour, Northumberland, Potter, Snyder, Sullivan, Tioga and Union

## Northeast Region

2 Public Square  
Wilkes-Barre, PA 18711-0790  
570-830-3093

**Counties:** Carbon, Lackawanna, Lehigh, Luzerne, Monroe, Northampton, Pike, Schuylkill, Susquehanna, Wayne & Wyoming

## Northwest Region

230 Chestnut Street  
Meadville, PA 16335-3481  
814-332-6984

**Counties:** Butler, Clarion, Crawford, Elk, Erie, Forest, Jefferson, Lawrence, McKean, Mercer, Venango and Warren

