



Dam Safety Fact Sheet

Vegetation on Dams

STATE OF WISCONSIN • DEPARTMENT OF NATURAL RESOURCES • BUREAU OF WATERSHED MANAGEMENT

Problems with Trees and Brush near Dams

While trees and brush may be aesthetically pleasing, give off oxygen, and provide cooling shade, the growth of woody vegetation on and near dams, including the downstream toe area, can lead to serious problems. Sudden uprooting of trees by strong winds can result in the displacement of a relatively large amount of embankment material. This in turn can lower the crest of the dam, reduce the effective width of the dam, and facilitate seepage. Falling trees can also cause structural damage to concrete, steel, stone, or timber structures.

The root systems of trees can be a potential hazard by allowing seepage pathways to develop through a dam. Trees eventually die and their roots decay and rot. The root cavity leaves a void within the dam through which water can enter and flow. This can ultimately lead to failure of the dam by piping (internal erosion). Tree roots can also penetrate concrete, stone and timber structures causing cracks and leading to structural failure.

Brush and woody vegetation can also hinder the visual inspection of dam surfaces. Sinkholes, animal burrows, seeps, and other irregularities can be obscured by trees and brush. Woody vegetation can also cause excessive shade which in turn can hinder the growth of a sturdy, dense grass coverage. These affected areas are more prone to surface erosion.

Erosion Control

Grass cover is a very effective and inexpensive means 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.

Maintenance

Grass cover should be routinely cut to provide a surface that can be easily inspected. 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 trees, roots, and brush should be done under the direction of a qualified professional engineer knowledgeable in dam safety and maintenance.

For more information on dam safety either go to the [WDNR Dam Safety Program](http://dnr.wi.gov/topic/dams/) website: <http://dnr.wi.gov/topic/dams/> or write to:

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