



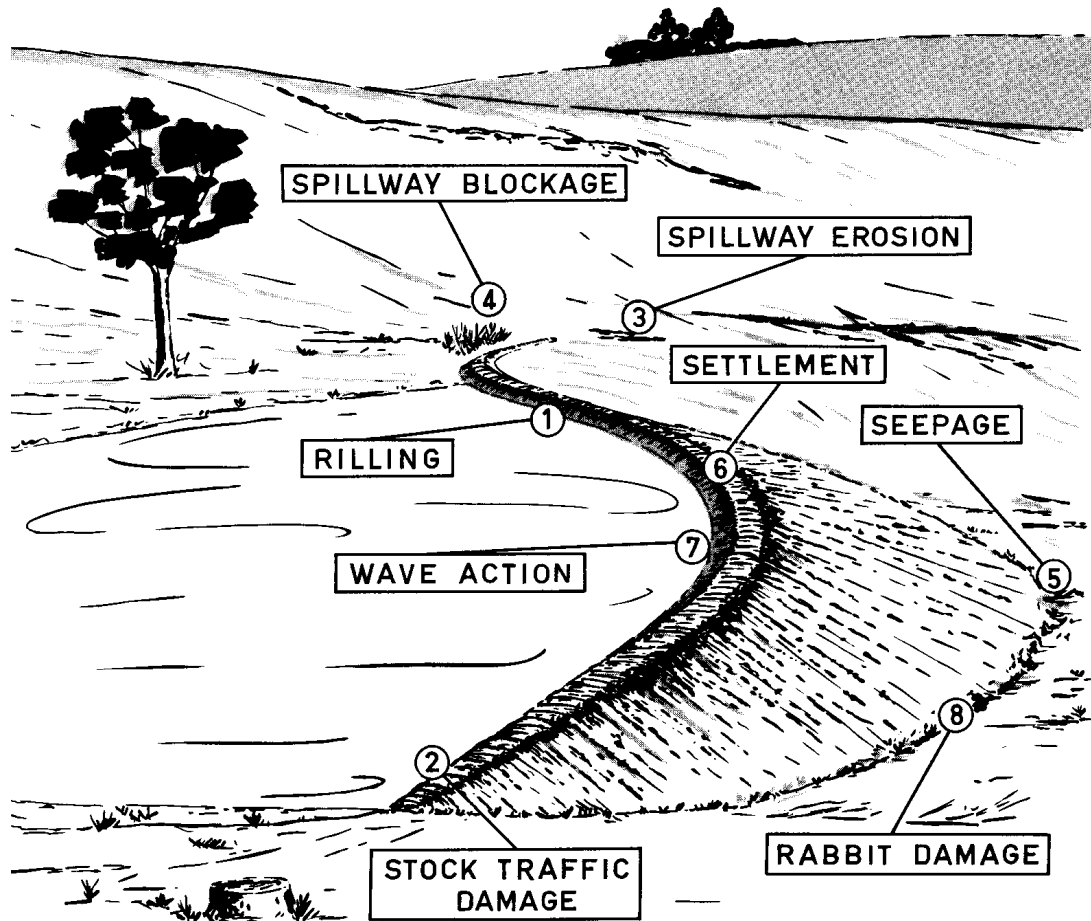
How to maintain your farm dam

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The dams on your property require regular inspection and maintenance to keep them in good order. If you neglect these points, extensive repair work may be required.

The following points are provided to help you in dam maintenance:

Bank

Vegetative cover

A layer of topsoil over the bank (to a depth of 150mm minimum) is essential to keep a contiguous vegetative cover. Only low growing plants should be planted and allowed to remain on the bank. Larger plants are undesirable as they may drive roots into the core of the dam wall and both dry it out and open up potential routes for seepage.

Add topsoil to poorly covered or damaged areas. Seed or sod as appropriate.

Stock traffic damage

The bank is a relatively harsh environment for plant growth. Grazing stock will readily remove plant cover by grazing and trafficking. Further, they are likely to cause structural damage as they follow preferred routes.

Fencing-out of the dam (along with a reticulation system) should be considered. If this is not an option, short lengths of fence could be used to deflect stock.

Rilling

Pack pasture sods complete with soil into any rills.

Settlement

Even well compacted dams will settle a little. Poorly compacted dams could settle over 10% of bank height.

Check the amount of freeboard as the dam fills. Top-up where necessary (or alternatively lower spillway inlet). Cracking through the bank may indicate uneven settlement.

Slumping

Cracks along the length of the wall may point to future slumping. Primary cause is a combination of poor compaction, excessive seepage and excessive steepness of bank.

Seek professional advice.

Seepage

Wet spots in wall or at the toe of the bank indicate that water is moving through the bank. Check the upstream face. Encourage the pasture cover right to the water level. Dig-out and repack soil spots on the upstream face which may be inlet sites for a seepage into the bank.

Tunnelling

Seepage lines in tunnel prone materials will readily turn into tunnels or 'pipes'. As an interim measure these may be plugged with carefully compacted soil. Some people have used a bentonite:sand mix as the plug in a ratio as 1:2. Tunnels indicate that the bank integrity is poor and professional advice is desirable.

Rabbit damage

Remove rabbits.

Dig out burrows and repack with clay based material.

Maintain effective rabbit control.

Spillway

Vegetative cover

The spillway has to be capable of safely carrying flood flows of water from the full supply level of the dam back to the drainage line. A good vegetative cover along the spillway is essential for this. It needs to be actively growing, robust and relatively uniform.

Fertilize, reseed and trim as appropriate.

Do not let it become 'clumpy' or 'weedy'

Blockages

Keep the spillway clear of debris, tall grass etc.

Rilling

These will rapidly extend if they are allowed to start in the spillway. Repair immediately.

Trickle flows

If small flows consistently travel down the spillway in the winter or spring months the vegetative cover on the spillway will be modified. Vegetative loss and soil erosion may well then occur when flood flows occur.

Consider the installation of a trickle flow pipe to intercept such flows and divert them down a PVC pipe. For further information see Landcare Note LC0090: *Trickle flow pipes for farm dams*.

Water body

Wave action

Lay stone or establish runner grasses on the sides of the storage where damage is occurring. Consider strategic location of trees and shrubs to intercept some of the energy of prevailing winds.

Turbidity

Induced by erosion in the catchment or dispersive materials in the excavation.

Control sediment moving into the dam. Control stock access which may be resuspending materials.

If clarified water is needed for domestic purposes, consider pumping water to a tank and flocculating the suspended material there. For further information see Landcare Note LC0067: *Dealing with turbid waters*.

Growth of algae

The accumulation of nutrients in farm dams can result in excessive algal growth in the summer and autumn months. It is not easy to cure the problem once it occurs. Best to deal with the causes as outlined in Landcare Note LC0079: *Minimizing algal growth in farm dams*.

Maintenance of a minimum level

It is not advisable to allow any earth dam to dry out. The integrity of the wall can be compromised and failure may well result at the next fill.

Catchment

Erosion

Erosion in the catchment can readily fill the dam with sediment rather than water. Control it.

Nutrients

Nutrients from areas intensively used by stock or from excessive fertilization (especially if near to a drainage line directly feeding the dam) can facilitate algal growth in dam.

Manage nutrient movement and use in the catchment. See Landcare Note LC0079: *Minimizing algal growth in farm dams*

Inflow filter zone

Small quantities of sediment and nutrients in catchment flows can be intercepted and utilized by a heavily vegetated filter zone immediately upstream of the dam.

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