

Fact sheet

SOUTH EAST LOCAL LAND SERVICES

Types of erosion control structures

Avoiding erosion issues on your property can often be as simple as maintaining groundcover and keeping livestock out of sensitive areas such as drainage lines and waterways. However, sometimes the only way to effectively manage erosion is through installing erosion control structures. Examples include jute mesh, hay bales, coir logs, diversion banks, dams, flumes, rock ramps and log weirs.

This fact sheet outlines some common erosion control structures and when they may be used.

Minor erosion control structures

Minor erosion is usually in small catchments, is not on steep land, and has erosion points of 50cm or less. It can often be managed by installing biodegradable natural structures that temporarily slow water flow, trap sediment and allow vegetation to grow. [These short videos](#) outline how to manage minor erosion.

Jute mesh

Jute mesh is a 100% biodegradable matting used to stabilise banks, slopes and large areas of bare soil. It minimises sediment loss while enabling vegetation to grow through it. Installing jute mesh is simple, requiring a mallet, pins, seed and/or tubestock.



Fig 1: Jute mesh installed with hay bales to divert water away from an active erosion point.

Hay bales

Hay or straw bales are a simple and affordable way to temporarily reduce sediment from entering waterways. They are typically installed using timber stakes to trap and filter sediment. Note that they may pose weed risks, so monitor these sites overtime.

Coir logs

Coir logs are made of coconut fibre and are a versatile alternative as they can be bent and maintain their structural integrity for a considerable time. Coir logs are simple to install using star pickets or wooden stakes. Vegetation can also be readily established by planting directly into and/or behind, the coir log.



Fig 2: Coir logs installed to slow water and trap sediment.

Major erosion control structures

When erosion is severe (e.g. active gully head erosion over 50cm deep) it can often require earthworks and the installation of rock, timber or concrete structures; some are outlined below:

Diversion banks

A diversion bank is a compacted ridge of soil built along a contour to divert water away from an actively eroding area to a safe disposal area. For gullies on

small catchments, a diversion bank may be all that is required. In larger catchments, diversion banks may be needed to divert water to another structure e.g. flume or gully control structure (dam).

Gully Control Structures (dams)

Building a dam above or within an actively eroding gully head is a common method used to stop erosion and trap sediment. They are typically built with a trickle pipe in the dam wall to ensure that water is released slowly over time, protecting the main spillway from erosion. Spillways need to be designed very carefully to ensure overflows are diverted to a safe disposal area and active erosion is managed.

Rock ramps

Rock ramps are gully stabilisation structures that provide a stable disposal site for run-off water within a gully. The ramps are built with rock of various sizes to ensure there are no voids in the structure and to meet the calculated catchment runoff. A cut-off trench is an important feature of rock ramps that ensures there is no undermining of the ramp by water flow, with geofabric extending under the rock.



Fig 3: Rock ramp guides flow safely to centre of gully.

Flumes

Flumes are structures (built of concrete or rock) allowing water to be conveyed to a lower level over a short distance. They are designed to dissipate the

erosive energy generated by dropping the water in this way. All flumes are engineering structures and should be designed by engineers to cater for at least a 1 in 50-year storm event.



Fig 4: Concrete flume with long stilling pond.

V-notch log weirs

V-notch log weirs are used to stabilise creek and gully floor headcuts with a drop of 30-40cm. Constructed from hardwood logs, structures can vary in size and include a cut-off trench in the structure to prevent undermining. The 'V' points upstream to ensure the water is directed towards the centre of the creek. Rocks placed downstream provide scour protection.



Fig 5: V-notch weir with rock, hay bales and jute mesh

More information

[South East LLS - Gully Erosion Assessment and Control Guide](#)