



Fact Sheet: Managing Erosion for Multiple Benefits

What is erosion?

Erosion is a dynamic and natural process as water naturally moves and meanders across our landscapes. However, the rate of erosion has increased with human activities such as land clearing, stock grazing, agriculture and urban development.

Erosion on your property is a 'lose lose' situation - valuable soil is lost from your paddocks decreasing farm productivity and is released into waterways affecting wildlife and stock health. It also smothers habitat and reduces in-stream native biodiversity, water quality and overall waterway health.

Managing erosion can often be a daunting task, and it's hard to know where to start! This guide is designed to assist landholders in identifying and managing erosion in their paddocks and waterways.

Contact us

The Molonglo Conservation Group is a not-for-profit coordinator of Landcare and Park Care groups in the Molonglo and Queanbeyan River Catchments. Contact the Molonglo Conservation Group Program Manager for more information.

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Why is it a problem?

The removal of ground cover through human and stock activity allows our fragile surface soil to erode. This exposes unstable subsoils which are vulnerable to erosion by rain and flowing water. This transformation can happen quickly, particularly where there is limited vegetation stabilising beds and banks.

Left untreated, erosion can create gullies which are incised channels that get deeper over time. These gullies reduce the amount of productive land available, limiting access to paddocks, and making stock management and mustering difficult. When it rains, gullies become a chute through which soil and sediment are transported into waterways. Gullies will usually form in the lower parts of your property or in areas where water becomes concentrated, particularly where soils are sodic and dispersive.

When there is insufficient riparian vegetation, stream banks are exposed to eroding, making the water muddy and turbid. This is exacerbated if stock are trampling up and down the streambank causing damage by their hard hooves. Overall these erosive impacts lead to poor water quality downstream as well as on-farm which can affect rural and urban water supply and recreational use.

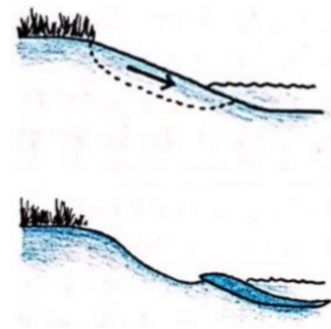
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Types of erosion

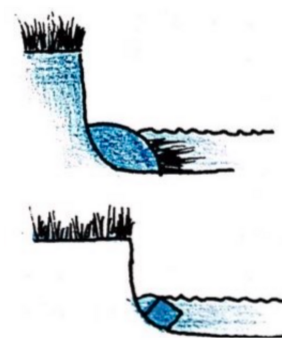
1. *Sub-aerial erosion*

This involves any process that loosens the soil of the stream bank. Trampling by stock, rain impact, frost and wind acting on bare stream banks can loosen the surface and make it vulnerable to being washed away as water levels rise.



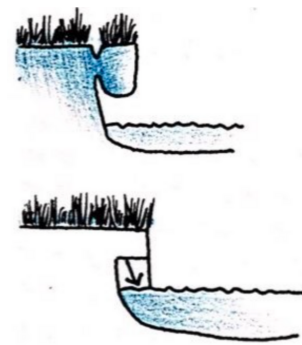
2. *Scour*

This occurs when the water moving through the channel exceeds the strength of the bank's soil. This often happens at the water's edge where suspended particles in the water scrape soil off the bank, and at the outside of river bends where flow is fastest.



3. *Slumping*

Slumping is where large blocks of bank collapse as a result of undercutting or structural weakness of water saturated soils. This is a common process in gully erosion, but can be helped with the reinforcing nature and moisture reduction of plant roots.



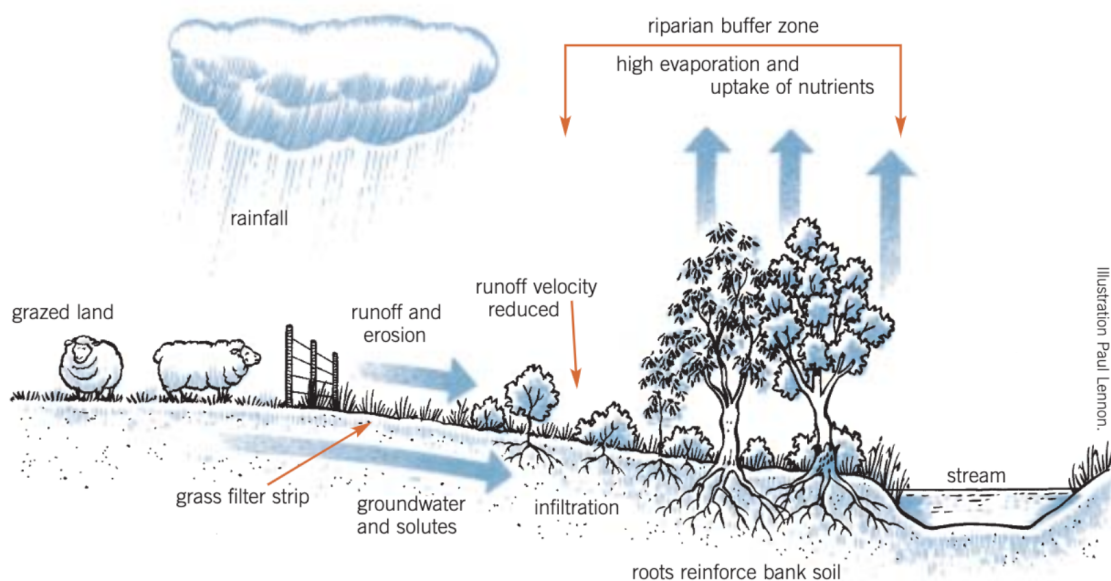
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Managing erosion

A good starting place is to walk around your property, inspecting gullies, looking for areas of bare soil or active erosion. If you have areas with less than 50% ground cover follow the steps below:

Maintain or plant ground cover vegetation

Maintaining and improving vegetation around waterways has a number of benefits. Established root systems reinforce soil stability, holding it together and preventing erosion. Vegetation also improves the drainage of stream bank soils. Saturated soils are often the first to collapse, while well-drained soils reduce this risk. Vegetation reduces the impacts of fast-flowing waters which can cause continuous erosion. Grasses and dense shrubs are very good at subduing fast flows when planted on the bank or in the channel. Trees should be planted 3-5m back from the channel so they don't shade out critical ground cover growing on the banks. The diagram below shows the role of vegetation in ensuring stream bank stability.



Control stock access through fencing

Uncontrolled stock access to waterways is the single biggest cause of riparian degradation. Stock eat and trample understorey vegetation, leaving patches of bare, unstable ground susceptible to erosion. Fencing can exclude stock in conjunction with an off-stream water source such as a trough. Stock access points can also provide a hard surface that does not erode when the cattle walk into the waterway to drink. Riparian paddocks improve grazing management and animal health by providing stock with clean water. They make mustering easier, avoiding losses from bogging due to unstable or entrenching soils.

Seek expert advice on managing active erosion

In cases where gully and streambank erosion is extensive, 'soft engineering' approaches can help - using hay bales, coir logs and wood to disperse water so that it flows out and around the erosion trouble spot. Where erosion is more severe, rock armouring, flumes and other 'hard engineering' techniques may be required - this is the time to get in touch with the Molonglo Conservation Group so they can provide advice on who to call, and advise of any incentives available to help cover the costs.

Helpful resources

- Rivers of Carbon [Stock and Waterways Guide](#)
- Molonglo Conservation Group (www.molonglo.org.au)