

Soil Management

2. Erosion-prone areas

Erosion is caused by soil exposure and/or excess water moving through and over soils. Where feasible, areas prone to erosion should be managed separately. Sometimes land retirement is the best option.

Water Erosion

Slopes greater than 10°, areas bared out by stock, heavy soils with poor drainage, drains and waterways are all susceptible to water erosion. Forms of water erosion include tunnel, sheet and gully.

The best preventative practice is to keep groundcover as close as possible to 100%, with a target of more than 1500 kg/ha total dry matter, through grazing or crop management. Fencing and revegetating, water diversion and engineering solutions options and can help to rehabilitate eroded sites.

Wind Erosion

Sandy soils and areas with low groundcover are susceptible to wind erosion. Sandy soils also have a low water-holding capacity and are prone to nutrients leaching. Building organic matter and keeping groundcover as close as possible to 100% will minimise erosion risk.

Landslips

Areas with high rainfall more than 700 mm/yr, steep slopes more than 25° and heavy soils are susceptible to landslips. Management options include maintaining deep-rooted vegetation to use water where it lands, diverting excess runoff or installing engineering options to stabilise soils.

For further information see:

www.dpi.vic.gov.au/science/ems and follow the links >Online Services >Notes Information Series >Soil & Water >**Erosion**

www.dpi.vic.gov.au/science/ems and follow the links>Environmental Monitoring Tools>**Ground Cover/Soil Erosion Monitoring Tool**



Low groundcover increases wind erosion risk.
Photo: Dept. Primary Industries

Potential Impacts: *Positive* - soils protected, reduced risk of erosion, production matches capacity

Negative - loss of topsoil, weed invasion, loss of production, nutrients in waterways, waterway turbidity

A Areas prone to water and/or wind erosion are managed separately. Groundcover is maintained at 90-100% with a minimum total dry matter (green and dead) of 1500 kg DM/ha.	B Areas prone to erosion are managed separately. Groundcover is maintained at 70-90%.	C Areas prone to erosion are managed. Groundcover is usually maintained at 70-90%.	D Some attempt is made to manage steep and/or sandy areas to prevent erosion.	E No consideration of soil management to prevent erosion.
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Your Current Rating (A-E) or N/A | Your Priority (High, Medium, Low) | Your Goal Rating (A-E) | **Action Required** YES NO | **Actions / Notes**

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3. Waterlogged soils

Waterlogged soils are areas that remain wet for more than **three days after rainfall or irrigation**. Ideally these areas should be identified on your farm map and managed separately e.g. not grazed during wet periods. It is best practice to reduce the rate of nutrients/fertiliser applied to waterlogged soils and not to apply when soil is wet as runoff can carry significant nutrient loads into waterways. Waterlogged soils are less productive because waterlogging reduces aerobic activity. Nitrous oxide, a potent greenhouse gas, is released from waterlogged soils.

These areas may be natural ephemeral (temporary) wetlands or swamps, which are vulnerable ecosystems and should be protected and managed to maintain their ecological value (see section on Water 7. Wetlands).



Rill and sheet erosion on slope.
Photo: Dept. Primary Industries

Potential Impacts: *Positive* - optimise land capability, protect environmental values, lower fertiliser costs *Negative* - pugging, compaction, damage to wetlands/ biodiversity loss, fertiliser runoff, poor plant growth

A Waterlogged soils are managed separately with lower rates of or no fertiliser applied. Little or no pugging occurring in wet areas of the farm.

B Most waterlogged soils are managed separately and reduced fertiliser rates applied.

C Most waterlogged soils are managed separately.

D Some attempt is made to minimise pugging in waterlogged soils.

E No separate management of waterlogged soils.

Your Current Rating (A-E) or N/A

Your Priority (High, Medium, Low)

Your Goal Rating (A-E)

Action Required

YES NO

Actions / Notes