

# Revegetation Fact Sheet

## Wind Erosion

In the Murray Mallee

MURRAY MALLEE



One of the main sustainability issues affecting the Mallee is the incidence of wind erosion of soil.

Many of the soils and landforms in the Mallee are naturally susceptible to wind erosion and become more so once cleared of native vegetation. The replacement of native vegetation by annual crops and pastures has also resulted in increased groundwater recharge rates.

The major factor in reducing wind erosion is maintaining groundcover using annual or perennial crops and pastures or native vegetation. Maintaining an adequate level of cover involves many factors such as crops, livestock, pastures, native vegetation, property improvements, vermin control, tillage and soil fertility into a sustainable and productive farming system.



### LAND CAPABILITY

Land capability refers to the capacity of the land to support a particular use and sustain that use in the long term. A land use is within the capability of the land if it maintains or improves the condition of the land.

All land can be divided into land capability classes according to its potential for wind erosion.

Wind erosion potential by land capability class

Land capability class	Description	Approx area (%)
I	Land with low potential for wind erosion	minimal
Ila	Land with low to moderate potential for wind erosion	39
Illa	Land with moderate potential for wind erosion	1.4
Iva	Land with moderate to high potential for wind erosion	40
Vlla	Land with very high potential for wind erosion	7

(Land capability classes Vla and Vlo are not applicable in the Murray Mallee. Matching land use to land type in the Murray Mallee, MMLAP 2000)

### The main causes of wind erosion are:

- Removal of ground cover through over cultivation, burning and grazing
- Failure to match crop type and cropping frequency to land capability
- Decline in soil fertility and organic matter
- Rabbits
- Inadequate property subdivision



### Soil management - Why?

- Preventing soil fertility decline through loss of nutrients and organic matter
- Reduction in productive capabilities such as sand drift and sand blasting of crops
- Impacts of sand drift on roads, fences and public infrastructure

'Under the Natural Resource Management Act, 1989 it is the duty of all landholders to take all reasonable steps to prevent land degradation'.

### REDUCING WIND EROSION

All options should be carefully considered and chosen to match the land type and its capability as different options or combinations may be useful on different areas.

### Maintain ground cover

- Maintaining groundcover is the key factor in the prevention of wind erosion
- Retain stubble and pasture residues
- Control grazing to maintain at least 50% groundcover
- Establish perennial plants or pastures

## Reduced tillage

Over cultivation can be the greatest destroyer of the soil structure. By reducing the number of cultivations, soil erosion and the breakdown of organic matter is also reduced

- Use sowing implements that minimise soil disturbance
- Reduce soil surface exposure time
- Use chemical spraying, grazing or slashing to reduce weed populations before cropping
- Use chemical fallow instead of long cultivated fallow
- Have a planned approach to weed and disease control
- Use minimum tillage or no till



Minimum tillage equipment

## Increase organic matter in the soil

Organic matter in the soil is important in minimising wind erosion

- Increasing water holding capacity
- Increasing nutrient cycling
- Nutrient retention
- Increasing soil aggregation

Methods to increase organic matter

- Minimise tillage
- Retain stubble and pasture residues
- Use crop rotation that includes legumes
- Grow healthy fertilised crops with good root systems



Fencing remnants

## Crop management

Planned crop rotations and good management will boost production and minimise wind erosion

- Match crop type and frequency to land capability
- Sow as early as possible
- Use rotations to control diseases that can weaken crops

## Stabilise and maintain cleared sandhills

Sandhills that are stabilised are far cheaper and easier to maintain and can be productive

- Eradicate rabbits
- Use a bulldozer to shape hill to enable sowing
- Sow with cereal rye as soon as possible after March
- Establish permanent vegetation such as perennial pastures, fodder shrubs or native vegetation
- May require fencing to control grazing
- Control grazing to maintain 70% groundcover
- Clay spread with appropriate clays



Stabilise sand dunes

## Revegetation

Establishing native perennial vegetation can improve productivity by providing shelter to crops and stock, cash crop, fodder, provide hosts for beneficial insects and pollinators, increase water use on recharge areas and can increase property appeal and working conditions

- Shelterbelts
- Alley farming
- Fodder blocks
- Woodlots, honey or amenity purposes

## Conserve remnant native vegetation

What remains of native vegetation should be retained and improved, as they are a permanent solution in protecting the soil and increase biodiversity

- Fence and exclude stock
- Have a plan for weed and vermin control to encourage natural regeneration

## Clay spreading

Clay spreading can be a useful method for stabilising and improving sandy soils with some advantages being

- Improved water holding capacity and production
  - Improved land use options
- Clay spreading is useful when
- Suitable clay is available on or near the site
  - Clay is thoroughly incorporated in the soil
  - Site must not be to steep



Clay spreading

## Property planning to improve erosion control

Good property management will lead to a sustainable and efficient farming system, reducing many wind erosion problems

- Avoid fences with sharp bends on sandy soils
- Avoid placing a fence on or across a sandhill
- Separate sandhills from heavier soils if possible
- Separate cleared land from uncleared land
- Keep laneways wide to minimise trampling
- Site laneways and gates carefully and sow with perennial pasture
- Site watering troughs to reduce trampling and grazing pressure
- Divide large paddocks to enable better pasture management and utilization

## Drought risk management

Droughts can lead to a reduction in groundcover due to grazing pressure. To minimise the impact of drought a plan must be in place

- Quickly reduce grazing pressure to maintain groundcover using temporary feedlots
- Run sheep not kept in a feedlot in small mobs in separate paddocks
- Establish a feedlot preferably on stony or clay areas or a paddock suitable for hand feeding
- Use sound land management practices, such as farming to land capability, minimum tillage or no till
- Establish a fodder block such as saltbush for supplement grazing and ground cover

## Water repellent soils

Water repellent soils lead to poor establishment and growth of crops leaving bare soil exposed to wind erosion

- Maintain adequate ground cover
- Sow in the bottom of furrows
- Use press wheels
- Sow at optimum times
- Establish perennial vegetation where severe

## Financial incentives and technical support

Contact the Murray Mallee Local Action Planning Association Inc for:

- Information about the availability of financial incentives and technical support to assist with the cost of on-ground works such as sand dune erosion control, fodder, revegetation, fencing remnants and a range of other funded options.

A copy of the *Mallee Futures Program Resource Book*, which contains additional

- contact details for further advice about establishing fodder species

ph 08 8531 2066 fax 08 8532 5300  
email [mmlap@lm.net.au](mailto:mmlap@lm.net.au)



Shelterbelt

**For more information** about soil management in the Murray Mallee please refer to the *Murray Mallee District Soil Conservation Board District Plan Mallee Sustainable Farming Inc.* [www.msfp.org.au](http://www.msfp.org.au) or the *South Australian Murray-Darling Basin Natural Resource Management Board* [www.samdbnrm.sa.gov.au](http://www.samdbnrm.sa.gov.au)

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