



# farmtalk



This article contains information most relevant to the less than 350 mm rainfall mallee farming region

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## Estimating Groundcover for Erosion Control on Low Rainfall Grazed Land

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### The issue

Wind and water erosion cause significant negative environmental impacts and losses in productivity and profitability for graziers.

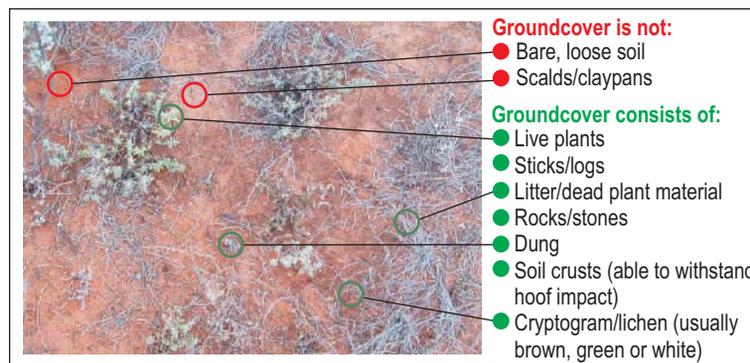
The most effective way of controlling erosion is by maintaining and improving **groundcover**.

This *farmtalk* describes how to assess the **erosion risk** of a grazing paddock by measuring **groundcover** using **step pointing**.

### What we know

Groundcover is any material that covers the soil such as, live plant material (e.g. grass butts), dead plant material (litter, leaves, branches and logs), rocks, cryptogams (lichens, algae and fungi) and dung (Figure 1).

Figure 1: Groundcover – what it looks like.



It is easier if you use a counter (shearer's counter) to record the number of steps, while keeping a tally of the number of groundcover hits in your notebook.

### What to do

The best place to collect information on groundcover percentages is in a vegetation type **representative** of the paddock and at a point located **between 1km and 1.5km from a waterpoint**.

This will be close enough to register high grazing pressure, but sufficiently distant to avoid the heavily grazed and extremely disturbed zone around the waterpoint.

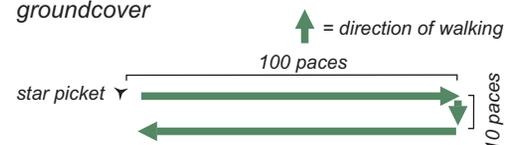
1. Mark the site with a steel fence post.
2. Place a pencil or pen mark on the tip of a boot.
3. Walk out 100 paces (50 observations) noting, in your

notebook, each time what is under the mark on your boot (i.e. cover or bare ground).

4. To avoid bias avoid looking down until your foot is still.
5. In bush country (e.g. bluebush), include bushes in counts
6. Once you have done this, turn around,

move ten paces away from the line you have just walked and walk back 100 paces repeating the process (see Figure 2)

Figure 2: Layout of area to be measured for groundcover



7. Count up the total number of observations. There should be 100 observations.

Paddocks with a minimum groundcover of 40% not only display significantly reduced erosion but are also "rain ready" that is, the vegetation is able to respond better to rain from increased water infiltration, reduced run-off and evaporation.

### How to measure groundcover

#### What you need

- notebook,
- pen or pencil,
- counter, and
- steel fence post.

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8. Also record in your notebook the date, paddock name, vegetation type and direction walked from steel post.
9. If you have more time, doing more steps, e.g. 200 or 400, increases the accuracy of this method.

### Example Calculations

% groundcover =  $\frac{\text{No. of times groundcover is recorded}}{\text{No. of observations}} \times 100$

If you counted groundcover 72 times during your 100 counts, then,

$$\% \text{ groundcover} = \frac{72}{100} \times 100 = 72\%$$

### Calculating average groundcover for a paddock

Groundcover in different parts of a paddock will vary depending on distance to water, vegetation type and previous management practices. To gain a better understanding of the **average groundcover** for the entire paddock, several sites need to be established.

A suggestion is to repeat steps 1-6 at three sites for each main vegetation type in the paddock (e.g. Belah-Rosewood, Bluebush, Grassland, Mallee, etc). These sites should also be located at different distances from water (for total paddock assessment some sites may have to be farther than the recommended 1 to 1.5km from a watering point) and in areas with different previous management (e.g. woody weed control area, decommissioned waterpoints, etc). See the example paddock in Figure 3.

A site located 5km or more from a waterpoint can be used to track the changes driven by climate rather than by grazing.

Start to measure groundcover at critical times of the year at your sites. For example (i) when stock go in

a paddock, (ii) when stock come out of a paddock, (iii) in March/April, and (iv) September/October.

When groundcover is getting near to 40%, management options might include: removal of stock, switching off the nearest waterpoint, rabbit control, kangaroo harvesting, removal of feral goats or a mix of the above.

### Where to next

Aside from recording the paddock name, date and percentage groundcover in your notebook each time you make an assessment you may find it useful to make a few other simple recordings;

1. Mark either end of your step-point path with a steel peg and record the position of the site with a Global Positioning System (GPS).
2. Take a photo of the step-point path from the peg at the northernmost end.
3. Draw a sketch of the paddock including its main features and location of assessment sites similar to Figure 3.
4. The percentage cover of plant types (ie. weeds vs non-weeds) can also be determined by adding in one or more extra categories when recording observations.

These extras would be particularly useful where a property scale and long term monitoring system were to be developed.

### Further reading

*farmtalk* #26 Estimating Groundcover and Soil Aggregation for Wind Erosion Control on Cropping Land

*farmtalk* #22 Mallee Farming: Productive, Profitable & Sustainable!

*farmtalk* #1 Wind Erosion Control

*Glove Box Guide to Tactical Grazing Management*  
NSW DPI 1800 028 374

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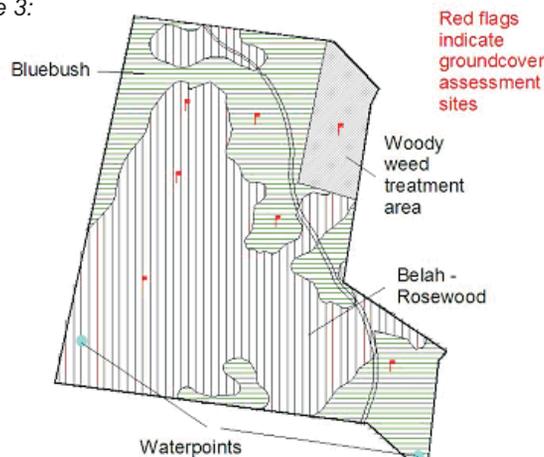
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**For further general information please contact MSF on 03 5021 9100**

Figure 3:



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