

Ground cover

What is it?

Groundcover is any material on or near the soil surface that protects the soil against the erosion action of raindrops, surface water flow and wind. On large land areas, the most efficient ground covers are living plants as they are not carried away by runoff, and their roots also help bind the soil together.

Groundcover is vital for productive soils. Without cover to protect it, soil is vulnerable to raindrop impact, surface runoff and wind.

Plants protect the soil by providing canopy cover and contact cover. Canopy and contact cover protect the soil against raindrop impact. Contact cover slows runoff so that water infiltrates the soil and deposits any sediment around the plants. Without ground cover, up to 85% of rainfall from storms can runoff into waterways rather than soak into the soil and be available for plant growth.

When groundcover is thin, patches of bare soil connect and provide a path for runoff to build up speed and erode unprotected soil. For this reason, good ground cover is essential on steep and sloping country.

Groundcover provides a food source and habitat for soil organisms whose activities then improve soil structure and make the soil less erodible.

How much groundcover do I need?

Generally, your groundcover is adequate when you have minimal runoff and are not losing any soil. If you do have runoff and erosion, it is an indicator that you need to improve groundcover levels.

The amount of groundcover you need depends on:

- The amount of rainfall you receive
- Intensity and seasonality of the rainfall
- Soil moisture
- Slope gradient and length
- Soil characteristics

Groundcover is measured as the percentage of plant material covering the ground, including crops, stubble, pasture plants and leaf litter. In drainage lines and steep hill country where water runs with considerable force, 100% groundcover is required to prevent erosion and the formation of erosion gullies.

Areas with low percentage of ground cover are highly susceptible to erosion





100% ground cover achieved using perennial pastures in the Upper Wimmera

How much groundcover do I have?

Quadrat measurement

Place a square frame (quadrat) on the ground and estimate the percentage of groundcover within the quadrat. Do this ten times across the paddock and average the results to determine the percentage of groundcover.

How can I get more groundcover?

The best way to achieve good groundcover is to select plants well adapted to your climate, soil and farming system, so that they persist without a lot of attention. Grasses with fibrous root systems are preferable to tap-rooted plants because they are more effective at increasing soil organic matter, encouraging micro-organisms, improving soil structure and maintaining infiltration. Perennial grasses are preferred because of their greater potential to provide year round cover and production of herbage.

Retain groundcover with good pasture management

Match stock numbers to pasture availability

Pasture condition determines how many stock it can feed. There is usually higher production per head when stocking rates are low, as the animals have more feed.

There is a higher production per hectare when stocking rates are high, although this may come at the expense of soil resources, causing soil to degrade over time.

Rest pastures from grazing

Research has found that resting pastures from grazing has enormous benefits for both pasture and soil. It allows pastures to develop diversity, and encourages plant growth, reducing the likelihood of erosion. Resting also allows soils to recover from compaction so that soil structure and water infiltration improve and runoff is minimised. Resting periods will vary according to stock numbers and seasonal conditions.

Encourage plant roots

The size of a plants root system is proportionate to its size above ground. Pastures kept continuously cropped short have shallower roots systems, are less productive, more susceptible to drought and at risk of developing bare patches. Pastures that are allowed to periodically grow higher develop deeper and larger root systems. When plants are grazed the roots die back to balance the smaller above-ground size of plants. As this root material decomposes, it feeds soil organisms, which make more nutrients available to plants and in turn improve plant growth.

Perennial Pasture Systems

Perennial Pasture Systems was established mid-2007, and aims to push the boundaries of perennial pasture research in the Wimmera region, and provide information on productive pasture management to members.

