



Pasture recovery from floods

Many Australian farming businesses rely on grass to feed their animals throughout the year. Where pasture-based production is important, the rapid recovery from flooding is essential to reduce the short-term effects on pasture availability and to support the ongoing needs for seasonal pasture production.

- Pasture evaluation information
- Importance of soil health
- Growing a healthy pasture
- Sowing tips
- Choosing the right pasture

Pasture recovery from floods

Periods of flooding or excessively wet conditions can damage pastures through direct plant death caused by extended inundation or plant diseases, or from pasture damage caused by subsequent grazing and pugging of soils.

Quick assessment of pastures after flooding

| Figure 1



In these situations, it is worth doing a quick assessment of your affected pastures. The best way to do this is to walk across each flood-affected pasture as soon as the water recedes and observe the conditions in each paddock. If the pasture has been damaged, then it may be beneficial to look at the soil conditions before deciding on a pasture recovery process. A process for evaluating pastures and deciding on a recovery action plan is suggested in Figure 1.

It is worth noting that following floods, pastures can often green up and give the appearance that they are recovering, when they are actually being recolonised by weeds or species that are less-productive under grazing. Green growth should be assessed with a critical eye after floods.

Pasture recovery and soil health

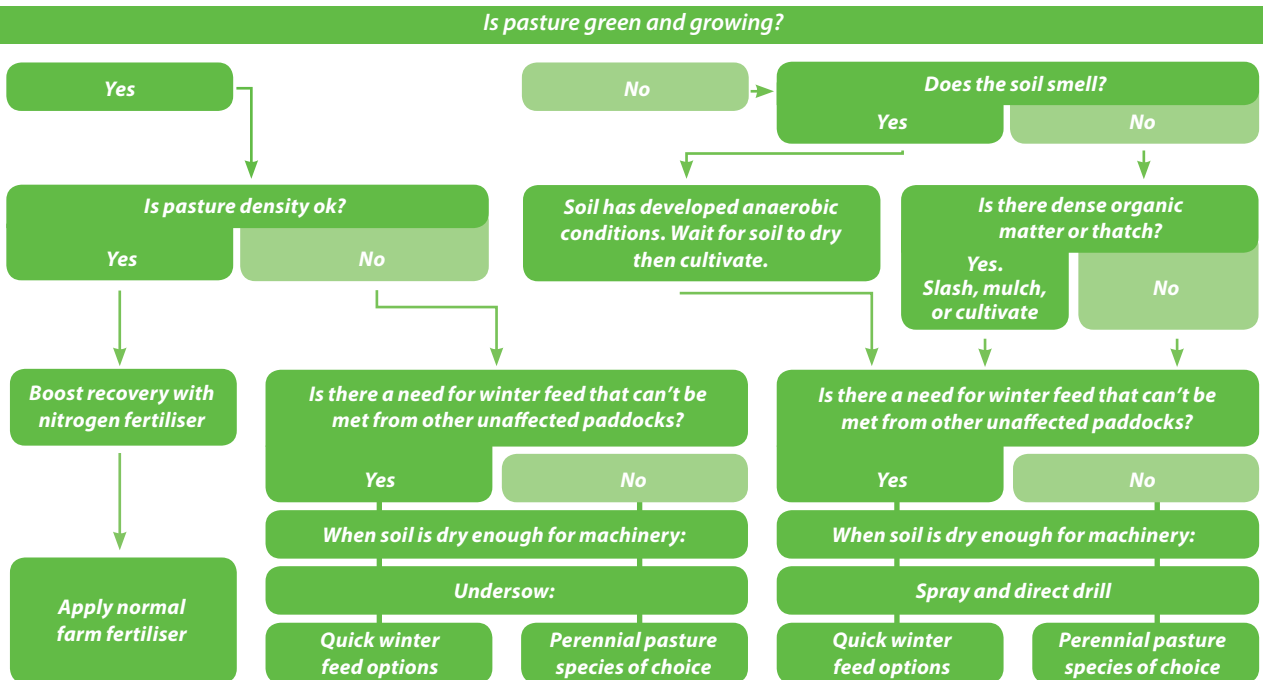
The process of recovering pastures after flooding involves looking beyond what is happening above the ground; taking into account what is happening in the soil. If your pastures have been damaged, a more in-depth analysis of your situation can be done. A process for evaluating pastures and deciding on a recovery action plan is suggested in figure 2.

A few points to keep in mind when preparing paddocks for sowing after flooding include:

- If the pasture is healthy and growing, the soil will be healthy (or will quickly recover from waterlogging).
- Sow new pastures as soon as the soil is dry enough to carry machinery so that the machinery won't damage the soil by smearing. Don't rush this process and risk damaging your soil structure.
- Does the soil smell? If it does (usually like rotten egg gas rather than like a wet soil), it could mean that toxins are present from anaerobic organisms. It is likely that seed planted in these conditions will struggle to establish. It is recommended to cultivate anaerobic soils to restore aerobic conditions.
- Is there a lot of dead organic matter? Direct drilling into a thatch of dead organic matter increases the likelihood of failure through damping off diseases, and in some conditions provides a habitat for pests of seedling pastures. Consider reducing heavy loads of dead plant matter by trying to mulch, slash or cultivate those paddocks.
- If there are flood sediments or silt on your paddocks, seek further information on whether to incorporate those into the topsoil.
- In situations where pastures have not recovered from flooding, don't miss the chance to control weeds that may have germinated before sowing with non-selective herbicides.
- It is recommended to use seed treatment as an 'insurance policy' to improve reliability of seed germination and establishment.

In-depth assessment of pastures after flooding

Figure 2



Adapted from Litherland, 2004

What to sow?

If you have a large area of damaged pastures you may be looking to sow pastures that are very fast to produce feed. There are a myriad of winter feed pasture options for planting in these situations. However, there are two areas that should be focussed on: rapid feed and flexibility. Below are three suggestions for producing quick winter feed; a suggested process for deciding which to adopt is given in figure 3.

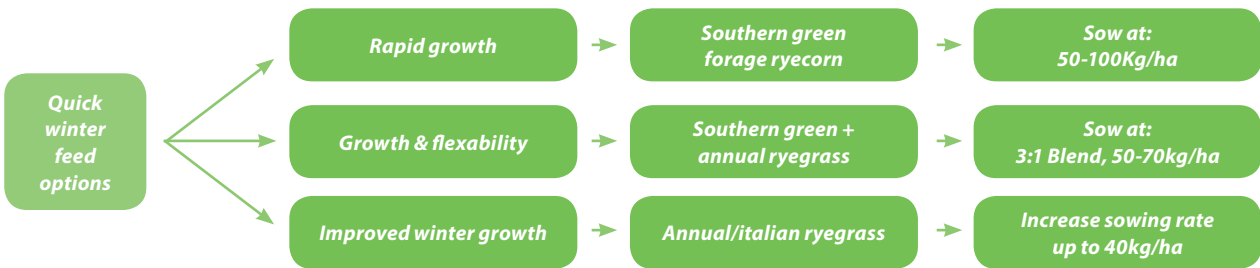
For quick winter feed with some flexibility, the plant of choice is a forage variety of ryecorn. One popular variety is PGG Wrightson Seeds Southern Green forage ryecorn which has been shown to be the fastest producer of feed from mid-late autumn sowings in multiple comparative trials. Forage oats are not as fast to produce feed, though have more flexibility in spring. Sowing rates are usually 50-100kg/ha. Forage ryecorn would usually be cut for hay/silage at stem elongation to early booting stage and a subsequent crop (e.g. summer feeds) can be planted.

Greater flexibility can be introduced to forage ryecorn by including annual or Italian ryegrass seed in a blend, which helps the recovery for grazing into spring and improves spring quality of grazing or hay/silage crops.

If you normally sow annual or Italian ryegrass pastures for winter feed, there is strong evidence that using a high sowing rate increases pasture growth during the first 3 months. Sowing rates up to 40kg/ha of annual ryegrass have consistently produced large increases in winter feed growth. These large differences only occurred in winter and compensatory tillering at the normal sowing rates negate any sowing rate effect by mid-spring.

Decision tree for quick winter feed

| Figure 3



Perennial pastures

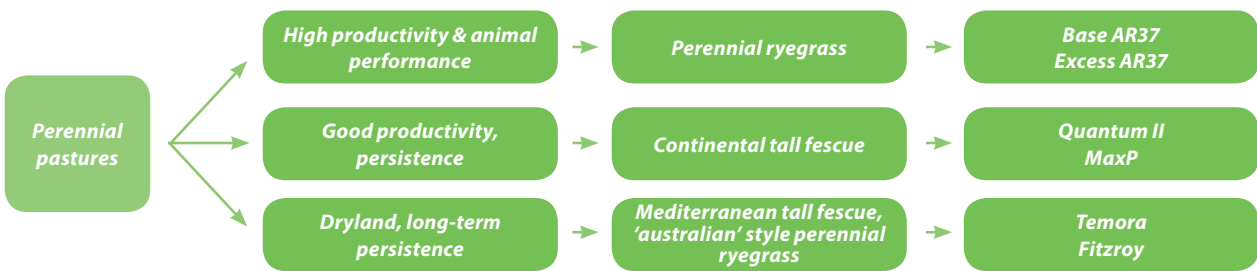
If you are in a position where you don't need to sow every paddock into quick winter feed, the establishment of some perennial pastures is recommended to shift some pasture production into spring and summer.

Selection of perennial pasture species and varieties should be based on your preference for productivity or persistence. Highly productive perennial pastures like PGG Wrightson Seeds' Base AR37 or Excess AR37 perennial ryegrass may live for 2-7 years. The more persistent tall fescue variety Quantum II Max P® could survive for 5-10 years in the right environment. More persistent pastures for dryland conditions include the Mediterranean tall fescues such as Temora and 'Australian' style of perennial ryegrass, such as the Kangaroo Valley type variety Fitzroy.

A suggested process for deciding which of these to adopt is given in Figure 4.

All of these perennial pastures can be sown with legumes including clovers and lucernes, which can help rebuild the pasture and increase animal performance following flooding.

Decision tree for perennial pastures | Figure 4



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