Pasture recovery after a flood

Key points:

- Pasture species vary in their ability to survive a flood. Many pasture species that are common in our flood-prone areas can withstand inundation for a few days during autumn.
- Pasture survival after being submerged (or even waterlogged) is linked to how deep the water was and how long they were submerged for. Pasture submerged over a number of days is likely to die off and re-establishment will occur through the seed bank in the soil. In autumn, this means pastures that are re-establishing from seed will not have a lot of bulk, or ability to be heavily stocked over winter.
- Hot temperatures whilst inundated or waterlogged increases the risk and rate of pasture death.
- Heavy silt deposits over plants will reduce the rate of recovery.
- Pastures that were in good condition before flooding will likely recover well.
- Wait at least two to three weeks to see how pastures recover before jumping in to re-sow.
- Rest pastures showing good signs of recovery to allow new shoots to grow, replenish plant root reserves, and seedlings to establish.
- If large areas of pasture have been killed, concentrate stock by sacrifice areas for hand feeding. This will ensure animal requirements are met and pastures that are recovering get a chance to grow without repeated leaf removal, or damage by cattle trying to graze.

Flood damage to pastures:

Damage to pastures can range from minor sediment deposition, through to deep sedimentation of silt, sand or gravel deposits on pastures, erosion of topsoil, scalding and total loss of existing pasture.

From a pasture point of view, the faster water moved over the farm (provided it has not eroded soil, or deposited excessive silt or gravel across paddocks) the better the pasture recovery potential.

It can take two to three weeks after a flood to be able to accurately assess how many of the desired plant species have survived or are germinating from the soil seed bank.

For some, this simply involves making a visual assessment, but it may require a count of desired plants still alive per square meter for others. If there are five or more plants alive or germinating per square meter, with good care, these paddocks are likely to recover without being replanted provided they are not over stocked through winter.

It can take two to three weeks after a flood to be able to accurately assess how many of the desired plant species have survived.

NSW GOVERNMENT | Local Land Services

Pasture recovery after a flood

Pasture recovery:

Pasture species that are common in flood prone areas are grasses such as Bambatsi panic, Gatton panic, Digit grass, and Bluegrass species. These are generally resilient and will recover from flooding eventually. Rhodes grass has low to medium tolerance and recovery will depend on plant health prior to flooding and depth and length of time it is covered.

Many areas covered in native pastures will be resilient to flooding and will recover. However, we are at end of growing season and this needs to be considered as pasture quality may be impacted on if grasses have fallen over or are covered in silt.

If tropical pasture recovery is poor, it is best to leave it until growing season starts in the following Spring/ Summer and see what recovery occurs, rather than spraying out and considering re-sowing.

Pastures that were in good condition prior to flooding and that were not completely submerged are likely to recover quickly. The adult plant will provide most of the bulk, so long as they have not collapsed down under the water level and are not covered in too much silt. A healthy pasture paddock is also likely to have a high soil seed bank, which once germinated, will assist in filling in any gaps.

Pastures that were completely inundated in deep water for more than three days, and/or experience high temperatures whilst still waterlogged, will be more reliant on the soil seed bank for recovery. Taller grasses are likely to have fallen over under the water, and if heavily silt covered, they will form a 'mat' at ground level. It is unlikely that many adult plants will survive this, those that do will be very weak for several weeks. This 'mat' of decaying vegetation can often smother any germinating seedlings.

Management options

Pasture and stock management to speed recovery will vary depending on the degree of flood damage, the percentage of the property affected and individual property circumstances.

The main option for encourage pasture recovery are:

1. Resting paddocks

For pastures to recover they need to regrow leaves, and in some cases allow seedlings to establish. Often the first step is to reduce grazing pressure/remove stock. Stock will chase green material and constantly take new shoots, in preference to silt covered older vegetation. Cattle can cause significant damage bogging up the ground due to their weight.

A few things to consider:

- Moving stock to another property or agistment. There are large areas of agistment available, speak with your agent, or explore websites such as www.agistment.net.au consider all the usual aspects of agistment in making this decision, distance, cost, yards, water, health issues etc.
- Sell some stock
- Set up a sacrifice area/paddock and hand feed to allow the majority of the flood affected pasture to recover. It can become very costly to feed a breeding unit through winter. Consider your finances and determine how long to carry stock and/or when to sell.

2. Silt removal

Silt covered pastures often need additional rain fall to wash the silt off. This is because silt forms a physical barrier that prevents plants from photosynthesising to produce energy for growth. 15 to 20 mm rainfall is often sufficient.

In smaller paddocks where tall pastures have collapsed, under water and silt, a light topping with a slasher or mulcher can be of benefit (to remove the bulk of the silt covered layer). Take care not to cut too low, near the growing points, as this will add more stress to already weak pastures. The more disturbed or bare ground exposed, the greater the chance of weed invasion.

3. Control weeds

Weeds are common after floods, due to reduced competition from the pasture. Some weeds can severely compete with recovering pasture plants, and establishing seedlings, others can be toxic to livestock. If you don't know what something is seek advice. Control will depend on the weed species causing problems, it may be as simple as a crash grazing or topping, or it may require a herbicide treatment.

4. Replanting tropical grasses

Tropical pasture species should not be planted at this time of year and require several years of preparation before planting. Before committing to replanting a tropical pasture assess the population of desirable species first and consider the whole farm pasture situation.

Autumn sowing options for winter feed

Forage cereals are a good short-term feed option to fill a winter feed gap and to commence preparation of

Pasture recovery after a flood

paddocks for permanent pasture.

Waterlogged soils affect the availability of nitrogen, sulphur and phosphorus. Very wet soils can be planted with seed only, and then fertiliser applied once the soil dries out further and young seedlings have emerged. Ideally within two to four weeks after emergence.

What if I had already planted some early winter forages?

If you planted early forages prior to the flooding, consult with you advisor to assess how it is looking. It is likely that it will have been damaged by the floods and require re-planting and/or fertilising.

Topsoil picked up by moving water will take nutrients along with it.

High rainfalls leach out nitrogen, mobilising it into the water. Both processes will remove any fertilisers you had applied off the paddock you had applied it to.

Areas where water backed up and left silt deposits on top of emerging and young seedlings will need to be re-sown. The best option is to re-sow as soon as you can get back onto the paddock; the upside is you have a perfect seed bed. Sow and fertilise onto dry to wet soil, not saturated or waterlogged paddocks.

Need more information?

Contact North West Local Land Services on 1300 795 299.

Or contact:

George Truman, Land Services Officer – Mixed Farming
M: 0427 505 040
E: george.truman@lls.nsw.gov.au

Bill Manning, Land Services Officer – Cropping
M: 0428 607 731
E: william.manning@lls.nsw.gov.au