

Managing pastures following floods

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Many farmers on the far North Coast will be assessing the level of damage to pastures caused by the recent flooding event.

Flooding will affect pastures in different ways depending on the length of time pasture was under water, the flow rate of the water, the amount of silt and debris, the pasture species and the soil type.

Considering the recent flooding event happened in autumn, for tropical pasture species such as Kikuyu, Setaria, Rhodes grass, Couch and Carpet grass, this is near the end of their growing season. Depending on the level of damage the pastures have suffered there is very little time for these species to recover prior to becoming dormant over winter.

The length of time pasture was under water is not the only factor to consider when assessing the degree of pasture damage. A combination of factors including soil type; speed of water flow; the water quality and water depth all contribute to varying levels of pasture damage. However, the longer the pasture is under water the greater the potential for severe pasture damage / losses.

Light free draining soils will allow a quicker pasture recovery. Heavy soils hold the water for a longer period after the flood has receded and extend the period of water logging, increasing the chance of pasture losses.

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Providing the soil has not eroded, the quicker the water moved over the farm, the better the pasture recovery. The slower the water moved (the longer it lays over pasture) the more silt and mud is likely to be deposited on the pasture and the slower the pasture recovery.

The taller the pasture when it was flooded the slower recovery is likely to be due to the taller material catching more sediment, which then falls over and smothers new emerging shoots. This material is seldom palatable to cattle.

One option is to consider slashing/mulching this material as soon as machinery can access the paddock without causing excessive disturbance. However as temperatures cool down pasture growth rates also slow, therefore a slashed/mulched paddock will still take some time to recover. It will, however, recover quicker than leaving very tall silt covered vegetation smothering new shoots.

Most of our common pasture species mentioned above will survive short-term flooding provided the days don't get too hot.

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. Of the number of aspects to consider, first is an assessment of how many of the desired plant species have survived. For some this simply involves making a visual assessment, but for others it may require a count of desired plants still alive per square metre.

Often the first step (and many have already undertaken this) is to reduce grazing pressure/remove stock. Stock will chase green material and constantly take new shoots in preference to silt covered older vegetation and cattle can cause significant damage from pugging up the ground due to their weight.

Autumn sowing

If there is a possible upside to the timing of this flood, it is that on the north coast, autumn is normally the main season for sowing pastures (both tropical and temperate species) so follow normal autumn sowing guidelines in terms of species and seeding rates. Soft, wet ground will present challenges for some in using traditional seeding equipment so consider broadcasting seed with suitable machinery, especially if there is still soft mud/silt present and no crust has formed on the surface.

Tropical pasture species planted at this time of year should be considered more of a renovation option and not likely to provide significant winter feed for this year. Treat these as an option for paddocks you feel have a low population of desirable species, and you want these available for the coming summer.

For those who feel they will require some winter feed this year, a temperate pasture species e.g. ryegrass, oats, chicory and forage brassicas, will provide the best opportunity to achieve this. Forage brassicas will provide very quick feed, and can be over-sown with ryegrass after the first grazing. With ryegrass, the larger seeded tetraploid types will produce feed faster than long season types. Long-season varieties can be slower to produce feed but may last longer into the spring (with irrigation), consider the price difference, especially beef producers who may need to plant large areas.

Planting can commence as soon as there is no water lying on the ground, and only if stock can be removed for at least six to eight weeks to allow these species to germinate & grow. Forage brassicas, ryegrass, chicory, and clover can be established by broadcasting. Oats, barley and forage triticale will provide slightly quicker feed than ryegrass but the larger seeds are less suited to broadcasting and are more susceptible to water logging. When broadcast seeding increase planting rates for most species about 20% above direct drilled rates.

Waterlogged soils affect the availability of nitrogen and phosphorus. Very wet soils can be planted with seed only in order to get it in, and then apply nitrogen and phosphorus to these pastures after the soil dries out further and young seedlings have emerged.

Anyone that had sown any early rye grass/ temperate forages prior to the flooding should consult your advisor to assess how it is looking if you are unsure, but it is likely that it will have been damaged by the floods, and therefore it will require re-planting and/or fertilising.

Any topsoil that has been picked up by moving water and carried downstream, results in the loss of nutrients. High rainfall is also likely to have leached out any nitrogen.

Areas where water has backed up and left silt deposits over young emerging seedlings will also need to be re-sown. The best option is to re sow as soon as you can get back onto the paddock; the up side is you have a perfect seed bed. Sow and fertilise on dry to wet soil, not saturated and water logged paddocks, consider a quad bike with a small spreader this will let you get on country sooner than using a tractor.

Replanting pasture can be expensive, for some they may choose to do nothing, before deciding to do nothing, consider the longer term effects, in that if you do nothing to flooded pastures you will likely find that in time, tolerant species such as couch grass will come back first (but for couch not until it warms up).

Annual grasses and broadleaf weeds will establish from self-sown seed. This may mean that the longer term carrying capacity of the paddock/s will be lower than when they had more productive pasture species dominating.

Need more information?

For further information on sowing rates and flood recovery information please visit:

North Coast Local Land Services website:

Rye grass in dairy:

http://northcoast.lls.nsw.gov.au/__data/assets/pdf_file/0017/690110/ryegrass-in-dairy.pdf

Pasture sowing guide:

http://northcoast.lls.nsw.gov.au/__data/assets/pdf_file/0003/511662/Pasture-sowing-guide-AW-2014.pdf

And the NSW DPI website:

Buying silage and hay after a flood fire or drought:

<http://www.dpi.nsw.gov.au/agriculture/pastures-and-rangelands/silage/hay/buying-after-flood-fire-drought>

Pasture options after a coastal flood [http://](http://www.dpi.nsw.gov.au/agriculture/pastures-and-rangelands/establishment-mgmt/drought,-fires-and-floods/coastal-flood)

www.dpi.nsw.gov.au/agriculture/pastures-and-rangelands/establishment-mgmt/drought,-fires-and-floods/coastal-flood

For further information contact the North Coast Local Land Services Agricultural Advisory team on 1300 795 299