

Latest insights into pasture dieback.

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What is pasture dieback?

An unknown condition causing dead or 'sick' pastures



What are the symptoms of pasture dieback?

Yellowing / reddening of the leaves.

- Typically older leaves first
- Starting at the tips and progressing towards stem

‘Sick’ or dead plants.

- Single plants
- Patches of plants
- Parts or whole paddocks

Other plants establishing, especially weeds, legumes.

Symptoms ‘more’ evident at the start of the growing/wet season.

Not to be confused with dry weather, pasture rundown





Buffel grass Dawson
valley

What grass species are affected?

Sown pastures:

- Buffel (cv. American, Gayndah)
- Creeping Bluegrass (cv. Bisset)
- Sabi grass (cv. Nixon)
- Digitaria sp. (Pangola, Strickland fingergrass)
- Signal and Para grass (but not Humidicola)
- Paspalum sp.
- Setaria (cv. Kazungula). Reports Purple pigeon not affected
- Rhodes grass (range of cultivars)
- Panics (Green/Gatton/Guinea/Bambatsi)
- Floren Bluegrass
- Kikuyu

What do we re-sow affected areas with....???

What grass species are affected?

Native pastures:

- Black speargrass
- Forest bluegrass
- Golden Beard grass
- Some examples of Giant rats tail



Affected black spear foreground; creeping blue in background

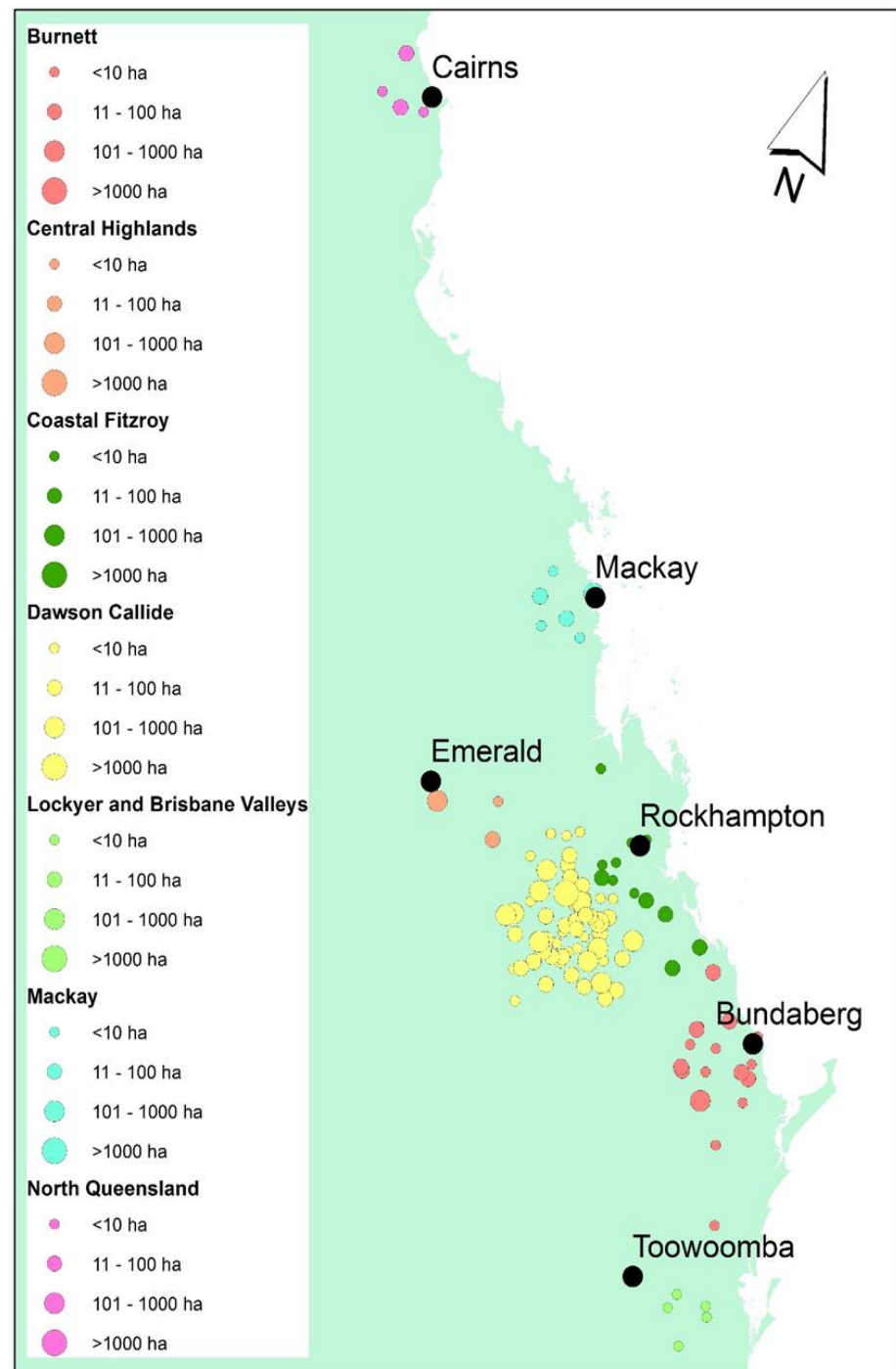
Where is dieback in QLD?

Locations span from southern to northern QLD

Area continually increasing

Probably about 200,000+ha affected now

AgForce estimate 4.4million ha potential!



Impact of pasture dieback

Reduction in pasture growth, or no feed at all

Plants become unpalatable – avoidance by stock

A range of broadleaf plants can take hold, including weeds and legumes

Low ground cover, increased potential for erosion



Observations...

Grass is affected on 'better' country eg brigalow scrub.

No reason for where dieback is in the landscape; although some indication it moves down hill.

Where grass is (kept) shorter, less/no dieback.

Where a paddock was burnt before the onset of dieback, less/no dieback.

More dieback in pasture under fence lines.

Dieback has stopped at fence lines.

Inconsistencies of visual symptoms in species: panics affected / unaffected elsewhere; Rhodes similar.

Broadleaf plants (weeds, legumes) unaffected.

Observations...cont...

Where pastures are re-establishing, generally the new seedlings succumb to the condition, 'eventually'.

Where a paddock is burnt with dieback, re-growth is being affected.

Dieback is still apparent in the paddocks where the initial observations occurred, some 20yrs ago

Seasonal variations might trigger symptoms eg wetter and more humid conditions seem to predispose???

What is industry doing?

Meat and livestock Australia (MLA) have funded a range of research activities (late 2017 – late 2018):

- Diagnostics – cause(s)
- Extent – where is it
- What to do about it – glasshouse and field trials
- Communication to industry – updates

<https://www.mla.com.au/research-and-development/Grazing-pasture-management/pasture-dieback/>

Mealy bug is the leading potential causal agent (MLA, Dec 2018).

What do these mealy bugs look like?

- Small, white, fluffy appearance
- Can be on the leaves, stems, crowns, and deep in the soil around the roots



Pictures courtesy M. Miles DAF

What is industry doing?

QUT have produced a technical note:
Mealybugs and pasture dieback

<https://www.mla.com.au/globalassets/mla-corporate/research-and-development/program-areas/grazing-and-pasture-management/pasture-mealybugs-technical-note.pdf>

Important points from this technical note:

- *Experiments have not yet confirmed mealybugs causing dieback (November 2018)*
- *Insecticide application is not recommended – no registered insecticides*
- *Replanting with non-susceptible forages could be an option*
- *Longer term management most likely achieved through introduction or re-establishment of natural enemies*

What is the government doing?

DAF are undertaking a range of activities:

- Supporting graziers with diagnosis, impacts, options
- Supporting MLA with research activities
- Supporting AgForce with industry engagement
- Undertaking diagnostics of affected samples
- Undertaking a research trial to determine cause(s) and successful management options
- Developing a smart phone APP for stakeholders to report dieback
- Mapping the extent of dieback in QLD

What can be done to restore pastures?

While mealybug is the leading potential causal agent, there's still no definitive confirmation of the cause(s) of dieback

Currently no registered insecticides for mealy bug control in pastures in QLD

Significant concern about unconfirmed reports of graziers spraying for mealy bugs

More research is needed to confirm diagnosis, and management options

Sowing of forages or legumes could be a way forward – use this as an opportunity to improve paddocks

Where to from here?

- DAF will continue to undertake research studies both in the lab and field
- DAF will be appointing a new officer to assist with dieback activities
- We still want to hear about your experiences with dieback – existing or new
- We would like to get a better handle on where dieback is....the dieback APP will be available soon for anyone to record locations of dieback
- MLA are looking for funding to continue research

Conclusion

- This is a complex issue
 - past and current studies haven't identified cause(s)
 - we still don't know what to do about it
- Research (lab and field trials) need to continue to identify successful management solutions
- The condition is not going away – the area impacted is increasing
- DAF will continue to invest resources to diagnose causes and investigate management options

Thank you



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