Managing the spread of Indian bluegrass in the grazing lands of eastern Queensland

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Introduction

- Indian bluegrass (*Bothriochloa pertusa*) is a tropical, stoloniferous, drought-susceptible perennial grass that has naturalised in Australia.
- *B. pertusa* is spreading in eastern Queensland (Fig. 1) replacing more preferred long-lived native and exotic tussock grasses (Fig. 2).
- An area of 9.6 million hectares, representing ~32% of the total area that makes up the Burdekin, Fitzroy, and Burnett-Mary catchments in Queensland, has been identified as being at risk of *B. pertusa* dominance (Spiegel 2023).

This poster examines the factors responsible for *B. pertusa* expansion and identifies different practical management options for beef producers.

Methods

Information from multiple sources was collected and synthesised: review of the literature, producer knowledge and expert opinion.

Allied projects to the larger project (B.ERM.1105; Spiegel 2023) investigated different seed ecology and grazing ecology aspects of *B. pertusa*.

A synthesis of information was used to identify a range of management options.

Figure 2. *B. pertusa* spread in native pastures: intact native Black speargrass (*Heteropogon contortus*) pasture on the right of the fence line, *B. pertusa* incursion on the left side. Photo taken by N Spiegel in Gayndah in north Burnett on May 22, 2019.

Results

Ecological traits: *B. pertusa* can spread with or without grazing, it has high seed production and rapid growth rates.

Expert opinion:

- Bare ground or gaps in pasture provide suitable establishment sites for *B. pertusa.*
- Pasture rundown, pasture dieback and patch grazing are contributing factors to the spread of *B. pertusa* in sown pastures.
- High sources of seed (e.g. in road reserves and along power lines) and ease of seed movement are other contributing factors.

Findings from allied projects

- A combination of climate and management factors are driving the spread of *B. pertusa*, such as heavy stocking rate combined with high rainfall variability.
- *B. pertusa* lacks a hard seed coat and this may explain its reduced tolerance to heat when compared to native grass Black speargrass (*Heteropogon contortus*).
- The longevity of *B. pertusa* seed was estimated as *long-term* persistent (3+years).

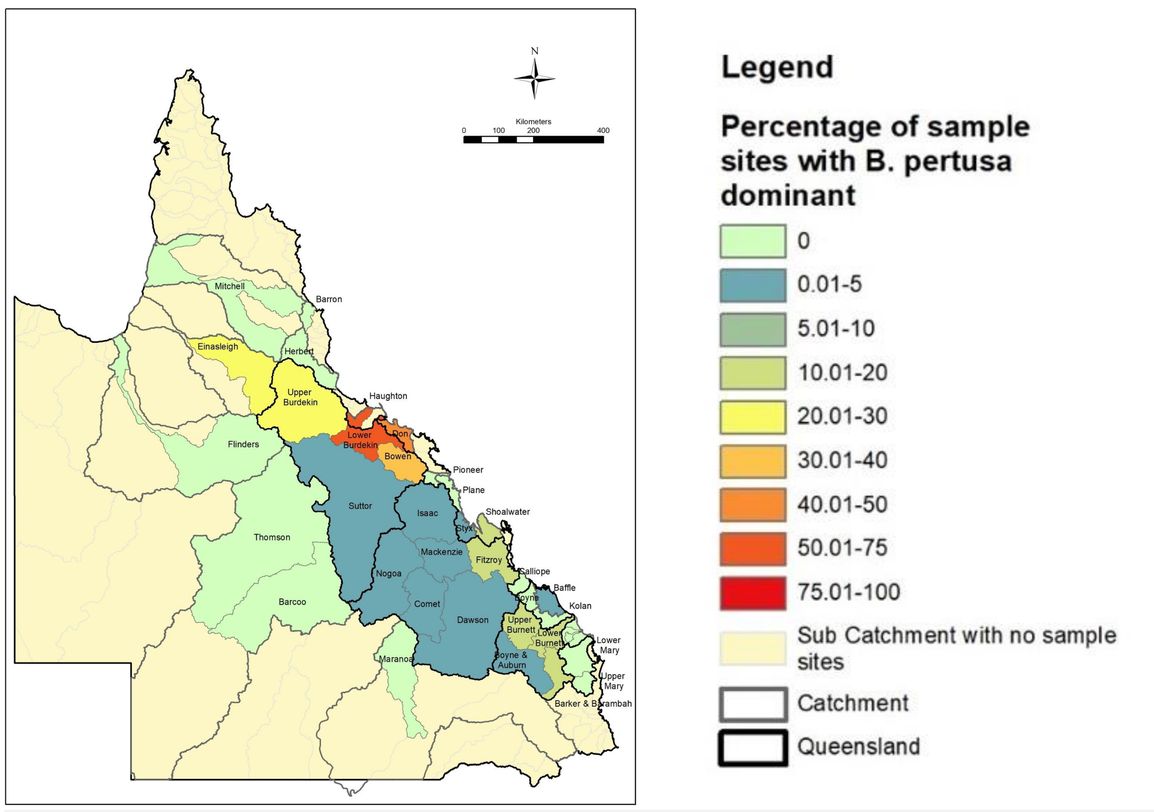

Figure 1. The level of dominance of *B. pertusa* in grazing lands in eastern Queensland is shown according to sub-catchment, based on data spanning 2004-08, 2011 and 2020-22 for the Burdekin and Fitzroy catchments and 2021-22 for the Burnett-Mary catchment (Spiegel 2023).

Management options (see Table 1)

Table 1. Indian bluegrass management options for three catchments in eastern Queensland based on producer and expert opinion.

Burdekin (north QLD)

- Reduce stocking rates and spell pasture
- Fence to land types where possible to manage grazing pressure
- Test fire as a tool for managing *B. pertusa* where there is still a good level of native pastures; mosaic burning paddocks; combination of fire and seeding

Fitzroy (central QLD)

- Don't graze *B. pertusa* as heavy and manage for what you want: spelling and rotational grazing to keep preferred grasses competitive
- Less stock time in paddocks where there is *B. pertusa*
- Stock to carrying capacity + spell/rest pasture
- Ploughing and incorporating more legumes into Buffel or sowing legume forage crops like Dolichos lablab (*Lablab purpureus*)

Burnett-Mary (south QLD)

- "None. First time to discuss the issue". Instead, ideas for future research were considered:
- Ripping through *B. pertusa* patches with a plough and sowing competitive but more desirable grasses such as Rhodes (*Chloris Gayana*) and Forest bluegrass (*Bothriochloa bladhii*)
- Test impact of fire and following management

Call to action

- Minimise overgrazing: Reduce stocking rates, Rest pasture, Remain vigilant.
- Future research: (i) Test fire to control *B. pertusa* in pastures, and (ii) Investigate new ways to manage grazing pressure.

References

Spiegel, N. (2023). Indian couch invasion: scope, production impacts, and management options. Final Report, Project B.ERM.1105, Meat & Livestock Australia Limited, North Sydney NSW.

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