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Benefits and costs of buffel grass: Understanding perceptions can contribute to policy development

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The issue

Buffel grass (*Cenchrus ciliaris*) is a valuable introduced species for pastoral production but its invasion into arid and semi-arid rangelands represents a key threatening process for conservation values.

Due to the apparent polarity of views on benefits and costs of buffel grass, there has been no progress toward a policy to support its sustainable use and management.

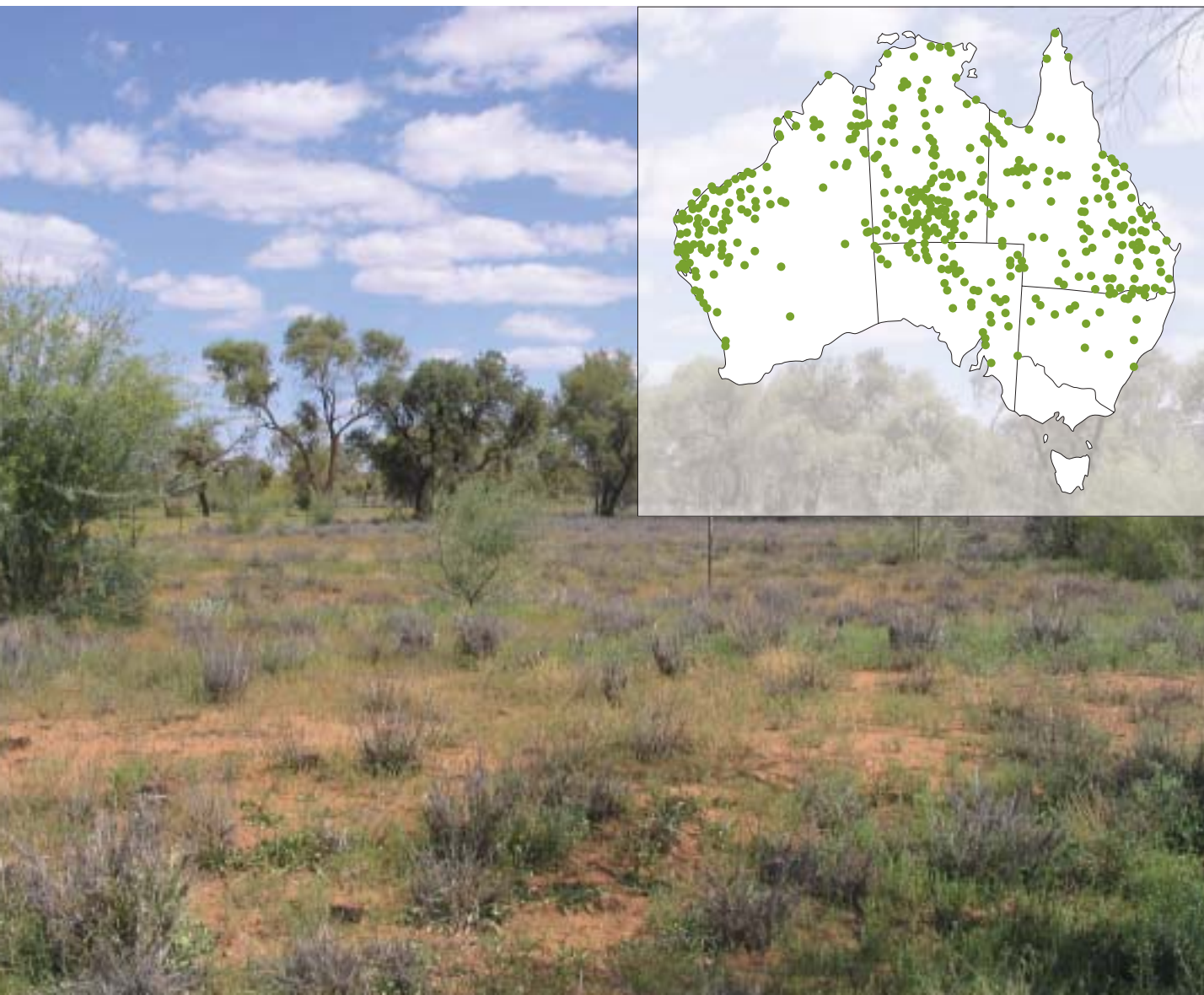
Ways forward

Perceptions of the benefits and costs are not as polarised as is popularly believed. Stakeholders can often agree on the benefits and costs to each others' interests and, where they do not, they can acknowledge the validity of the others' perceptions. This provides us with opportunities to build on areas of agreement and advance options which support the development of a national strategy.

Present approaches to management of contentious introduced species are either to take no action, so that individual proponents continue to seek the benefits of the species while opponents bear the negative consequences, or to seek the declaration of the species as a weed in order to deal with its negative consequences and prohibit cultivation. Declaration enables funding for weed management but not for beneficial uses. Declaration is also a state responsibility, so that inconsistencies across jurisdictional boundaries are possible.

We propose an alternative approach to the management of buffel grass which is strategic and non-confrontational, realistic and national in scope. The first step is to engage in extensive dialogue amongst stakeholders to ensure that their diverse needs and preferences are understood and acknowledged.

Map: Distribution of buffel grass (shown by ●), data from Meg Robertson and Weeds CRC 2008. **Background photo:** Buffel grass helps to maintain soil stability during drought and recovers quickly after rain in central Australia. Photo Margaret Friedel.



Need for stakeholder engagement

At the regional and local scale, the management objectives, strategies and tools for managing buffel grass are relatively uncontroversial on environmental lands or on pastoral lands where environmental values are low. Nevertheless there will be a need for stakeholders to negotiate to identify acceptable and achievable outcomes, and this will help develop trust and effective processes. The contentious issues are those relating to management objectives for pastoral land of high environmental value, rather than the particular local strategies and tools for achieving them. Actions that could improve environmental values, but also impinge on management of pastoral land, would currently not achieve much support or might be actively opposed by landholders. Consequently, there is a need for non-confrontational ways of negotiating acceptable changes in buffel grass management, beginning with those issues that are likely to be most easily resolved.

Recommendation 1: Manage change by involving landholders in an open dialogue about the costs and benefits of buffel grass and in the setting of agreed goals.

Pathways for disseminating information amongst pastoralists about buffel grass and its management include both formal and informal networks. These networks will be an important means of two-way communication enabling pastoralists to engage effectively and contribute to goal-setting.

Recommendation 2: Understand and use landholders' formal and informal networks to enhance information exchange.

Government-based natural resource managers often view community involvement in the design of resource protection strategies as cumbersome, time consuming and difficult. In addition, community participants often have limited knowledge of the context in which they have to operate, of their role in the process and of the role of organisations, and this can complicate the interactions. Nevertheless real progress is unlikely without involvement of all parties.

Recommendation 3: Recognise and accept the transaction costs of community engagement so that the economic and social benefits of buffel grass can be maximised and the environmental costs minimised.

Delivering a strategy

Rangeland regions vary in their biophysical, economic and social potential to support buffel grass. For example climates and soils differ, and buffel grass may be entrenched in the landscape or a recent arrival; the use of fire or grazing as tools is locally specific. For both environmental and pastoral lands, the management objectives and the exact way in which any management strategies and tools are used are strongly influenced by local environmental, economic and social conditions. There is no single formula for management.

Recommendation 4: Ensure objectives, strategies and tools for management of buffel grass are tailored to local and regional contexts.

Buffel grass is arguably the most important introduced pasture grass in the rangelands, providing great economic benefit to pastoral communities. It is tolerant of drought, fire and heavy grazing and aids the control of soil erosion. Photo Paul Jones.



Buffel grass has been long-established in some areas but not others. Where it has a minimal presence, pastoralists have a lower dependency on it and are more likely to find alternative management strategies acceptable. This provides an opportunity to consider the balance of production and conservation needs and what alternative strategies could meet those needs.

Recommendation 5: In situations where buffel grass is yet to colonise large areas, such as southern pastoral lands or various deserts, initiate early community discussion about the benefits and costs of buffel grass and its management.

In areas of high environmental value where buffel grass is well established, it is not realistic to expect every asset to be protected, due to limitations of money and personnel. On pastoral lands there are potentially competing objectives for the same piece of land. It is important therefore to know where and how efforts should be focussed to protect high value environmental assets. Where are the valued assets that can be most feasibly protected at a sufficiently large scale and what is the appropriate response when areas are relatively free of buffel grass, as compared with areas where buffel grass is well established?

Recommendation 6: Develop processes for identifying and prioritising areas of high biodiversity value where management of buffel grass is required.

Buffel grass is regarded as a threat to conservation because of its direct effects on biodiversity and because its rapid accumulation of fuel generates more intense and frequent fires than native grasses do. Photo Dave Albrecht.

Ways of supporting the delivery of environmental outcomes at a catchment or landscape scale should be considered, for example through offering incentives for better management of areas of high environmental value on pastoral properties, and avenues for resourcing this should be made available. Interventions which focus on delivery should be designed to encourage protection of neighbouring reserves or downstream areas of high environmental value, through, for example, the establishment of buffer zones or through grazing buffel grass pastures prior to seed set.

Recommendation 7: Develop ways of encouraging land managers to deliver environmental outcomes at landscape scale through management of buffel grass.

Policy, regulatory and management options should be canvassed with stakeholders in order to establish and make operational best-practice guidelines. Any attempt to develop policies for managing buffel grass will need to recognise the critical importance of the grass to many pastoral enterprises and consider the likelihood that outcomes can be achieved. A standardised weed risk assessment framework could assist with transparency of process but it must be balanced by comprehensive assessment of benefits. Hence an essential step is to set up jurisdictional advisory groups. Cross-jurisdictional bodies will also be required to ensure consistency nationally.

Recommendation 8: Develop policy recommendations for governments through establishment of representative advisory groups at state and cross jurisdictional levels.





Buffel grass dominates nutrient rich frontages of creeks and rivers in central Australia, excluding native species. Photo Margaret Friedel.

The development of a national strategy for management of a plant species that is both economically important and weedy is novel — there are few precedents to follow and it is essential that we learn from our experiences.

Recommendation 9: In developing policy, include the ability to monitor and evaluate outcomes and make adaptive change.

What additional knowledge is required to make progress?

Recommendation 7 proposes encouraging land managers to deliver environmental outcomes but it is not yet clear that there is a good connection between particular management actions and the desired landscape scale outcomes. Better documentation and development of management options will help managers and policy makers make informed choices. Actions should include recording experience, experimentation and adaptive

management to determine how to e.g. “manage for dominance of buffel grass” or “manage for suppression of buffel grass”. Understanding the influence on potential options of regional differences in environmental, economic and social characteristics will be a necessary component of this activity.

Better quantification of the link between production, buffel grass dominance and conservation is required. For example, what are the potential grazing strategies for environmental reserves and are there conservation benefits in managing high production/high environmental value pastoral land for dominance of buffel grass? Existing analyses of economic benefits and costs should be refined to value a wider suite of benefits and costs (not simply of production) using case study regions to clarify regional differences.

Recommendation 10: Improve understanding of management options and benefits/costs by documenting existing experience and developing new research; keep regional differences in focus.

In conclusion

There is sufficient common ground amongst stakeholders to make progress towards a national strategy for the management of buffel grass. The impediments to progress may not be as great as has been perceived.

A national strategy, supported by state and regional jurisdictions, would enable a systematic approach to management of buffel grass. It would enable the reduction of negative effects without seriously constraining its production benefits. Such a strategy would need to be relevant to local and to regional scales, taking account of the large environmental, social and economic differences amongst regions, the diversity of available buffel grass varieties and the potential for varieties to adapt to local conditions through hybridisation. The strategy would provide a framework for the management of buffel grass, the prioritisation of research and of resources for on-ground management efforts, and provide a mechanism for continued engagement and interaction amongst sectors.

Recommendation 11: Develop a national strategy for the sustainable management of buffel grass for production and conservation, relevant to regional scales.

This paper is based on the report "Quantifying costs and benefits of buffel grass" by Margaret Friedel, Nadine Marshall, Rieks D. van Klinken and Tony Grice.



The full report is available from lwa.gov.au/weeds
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