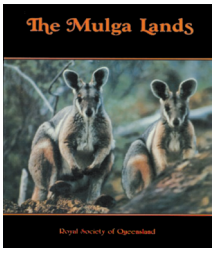
Some Key Initiatives in the Conservation and Management of Queensland's Rangelands

Paul S. Sattler OAM
paulsattler@bigpond.com

Keywords: rangelands, conservation, national parks, duty of care



As we review the future of Queensland's rangelands, it is useful to highlight some key initiatives that have shaped their conservation and management, particularly those by The Royal Society of Queensland (RSQ). Indeed, we are indebted to Sir James Ramsay, Governor of Queensland and RSQ Patron, for his historical remarks in opening The Brigalow Belt of Australia Symposium in 1982 (Ramsay, 1984).

One hundred years earlier, in 1884 when the RSQ was formed, the Society's first President, A. C. Gregory (the explorer and Surveyor General), in a debate on the Land Bill of 1884, argued against the opening up of the brigalow country. His arguments held sway and the Legislative Council reported: "It is doubtful whether an extensive destruction of the Acacia forest may not decrease the already deficient rainfall in the interior …" It was not for another 15 years that the selection of brigalow scrub areas was allowed (a thankless opportunity: to develop brigalow blocks with an axe).

The brigalow symposium was organised by the RSQ (Bailey, 1984) partially in response to the extensive clearing of brigalow (*Acacia harpophylla*). It was calculated that only a half of one per cent of the original six million hectares of brigalow was reserved, with many types not protected (Sattler & Webster, 1984). The requirement by the Lands Department for properties to leave 10% uncleared also had been long overlooked.

Graziers in the mid-1960s were active in establishing western branches of the Wildlife Preservation Society of Queensland in response to the extent of clearing. Southwood National Park, one of the few brigalow parks, was established in 1970 as a result of agitation by a local landholder who said at the time: "I wish we could keep some of this country just the way it was when I came here, so that my children can see it …" (Webb, 1984).

Sir James, in opening the symposium, offered his insight that "not all the problems associated with clearing large tracts of brigalow have been solved and not all of the side effects have yet to be properly studied". How prescient of the explorer and the Governor, a century apart. Whilst not knowing the pathways leading to climate change or of other impacts from extensive clearing such as salinity, they both recognised the potential for significant environmental impacts.

Modelling by the CSIRO Division of Land and Water, commissioned 16 years ago by the Murray-Darling Basin Commission, demonstrated that a 10-fold increase in salinity in some groundwater flow systems could occur in the Queensland part of the Murray-Darling Basin due to the extent of clearing. Importantly, it was shown that there

was only a narrow window available to take action to keep salt down in the soil profile (Dawes et al., 2003). This work also demonstrated the need for research into restoration to plan for multiple objectives or co-benefits, e.g. production, salinity, water yield, carbon capture, soil health and biodiversity. This is a legacy issue: who takes responsibility for further research and repair?

In 1985, the RSQ held a symposium on The Mulga Lands (Sattler, 1986), partially in response to the extensive degradation occurring. A paper to this symposium by Beale, Orr & Mills (1984) reported that over 30% of the south-west arid zone of the Mulga Lands was susceptible to degradation of soils and vegetation, and that nearly 10% was permanently affected (refer photos 1 and 2). It also was suggested that the rate of degradation had accelerated in response to droughts over the previous 20–30 years. At this time a substantial body of work into sustainable management was carried out by the Charleville Pastoral Laboratory which enjoyed funding continuity for long-term research and extension programs. The Mulga Lands Symposium conclusions are just as relevant today for all of Queensland's rangelands (see Attachment 1).

It was also highlighted that no national parks existed across the extensive Mulga Lands Bioregion. A park system plan for the whole bioregion (Purdie, 1986) was presented based on the use of emerging computer techniques that identified the most efficient way to capture the diversity of regional ecosystems in the least area (Bolton, 1986). Australia is now a leader in the conservation science of developing quantitative tools in designing representative park systems. In the early 1990s, the implementation of a large part of the Mulga Lands park system, based on such techniques, was the first to be achieved worldwide for a large bioregion. The significance of this was not lost when His Royal Highness Prince Phillip travelled to Idalia National Park to open it and Thrushton National Park as the first Mulga Lands national parks.

In 1986, the Presidential Address to the RSQ argued that a similar systematic approach to park selection should be taken state-wide (Sattler, 1986). One of the constraints was the lack of a comprehensive database of the state's regional ecosystems and the mapping of their distribution. In 1989, work commenced to delineate the regional ecosystems of each bioregion and to assess their conservation and reservation status. This work concluded 10 years later (Sattler & Williams, 1999), whilst the mapping of regional ecosystems across all bioregions was achieved by the Queensland Herbarium in 2017 after 28 years of sustained effort. This has been the leading ecosystem mapping program in Australia across such a large state.

In 1989, the incoming government's premier environmental policy was to double the national park estate based on securing representativeness of ecosystem diversity and other values. The decision was taken to focus on the rangelands as there already existed an effective conservation constituency to speak for coastal and rainforest areas. Few parks occurred west of the Divide, and these historically were focused on the 'scenic or worthless (from a pastoral viewpoint) lands'. From 1990 to 2000, state-wide representativeness of the park system increased from 32% to 69% (photos 3 and 4). This analysis of representativeness does not necessarily mean adequate representation for the protection of regional ecosystems and species. Significant gaps in Queensland's rangeland national park system remain across the Brigalow Belt, Mulga Lands, Channel Country, Desert Uplands, Einasleigh Uplands and Mitchell Grass Downs Bioregions.

To build protection and resilience for biodiversity, especially from climate change, will require a range of conservation actions including:

(a) the development of a fully representative park system across all bioregions;
(b) the protection of rare and threatened species and ecosystems, refugia and corridors on private and public lands; and

(c) the embedding of protected areas into planning and managing sustainable landscapes.

The protection of arid and semi-arid wetlands is a key issue, especially to protect endemic species and the habitat of wide-ranging migratory avifauna.

In addition to their biodiversity value, the economic potential of these parks for tourism is now important for regional communities. Such tourism is growing as more 'grey nomads' (retired travellers) in particular, often time-rich and interested in country, tour Australia. The development of rangeland policy must involve all stakeholders, including conservation and tourism interests, to garner sufficient societal support to provide incentives for ecologically sustainable management and the repair of natural capital.

Loss of top soil, nutrients and native grass species.

Erosion to hard pan.

Welford National Park.

Large pelican rookery, Currawinya National Park (Photo: DEHP).

Defining both a private and public duty of care will be a key component:

(a) to more closely identify responsibilities for sustainable management;
(b) in defining public good issues beyond the requirements for sustainable management; and
(c) in advocating for financial support.

The use of parks as benchmark areas could help in assessing condition and trend across a wide range of landscapes and in building mutual respect of various management objectives by all stakeholders.

Conclusion

To achieve ecological sustainability and the repair of natural capital will require an alliance of all stakeholders. The task is bigger than any one sector and requires a coordinated vision of sustainable pastoral use, nature conservation, tourism and other interests. Defining an appropriate private and public duty of care could provide a framework for sustainable management and for advocating financial assistance. This would also inform approaches to tackling legacy issues surrounding degradation and the implementation of measures to protect ecosystem services and the public good.

Research into maximising multiple outcomes as part of restoration and the development of models for sustainable management is required. Secure funding is vital for long-term research and extension, and to provide continuity for staff. Research into reducing the salinity threat in the Brigalow Belt and restoration of degraded lands in the Mulga Lands are specific examples.

Despite significant advances in the early 1990s, major gaps exist in the implementation of a representative national park system across Queensland's rangeland bioregions. With increasing threats, especially from climate change, the implementation of a range of biodiversity conservation measures is required.

The RSQ as an independent scholarly body has made a significant contribution in the management of Queensland's rangelands through informing policy development and disseminating research findings.

Attachment 1: Mulga Lands Symposium Conclusions 1986

The Mulga Lands cover 20% of Australia and this symposium highlighted that it is one of the most fragile of the semi-arid and arid parts of Australia where substantial impacts from overgrazing by domestic animals and rabbits have occurred. It was discussed that this region must be managed within its capability and that other uses of mining, tourism and national parks could make substantial contributions to inland communities.

Specifically it was concluded that:

1. Protection of the natural resource to achieve sustained use be the paramount consideration of government and industry – land stewardship.
2. A land use planning framework be developed for balanced and sustained use of the Mulga Lands.
3. Greater effort be made to facilitate extension of management research information to landholders to assist in management.
4. Nature conservation, the establishment of National Parks and the promotion of tourism be planned as legitimate uses within the Mulga Lands.
5. Federal Government financial incentives were essential to achieve objectives of the National Conservation Strategy. Incentives should encourage sustained land use and implementation of nature conservation strategies.
6. Land administration, including property size, tenure review, and lease conditions should reflect land care and stewardship as its basis.

7. Rural stock routes represent an important land resource for multiple land use including nature conservation and recreation. Policies should be developed for their long-term retention and protection.
8. Drought relief subsidies do not encourage sympathetic land management and should be reviewed so as to provide an incentive for good management.
9. Land zoning and clearing guidelines be established to protect marginal and fragile lands.
10. Land care and stewardship become part of school curricula, the basis of extension services, and rangeland management be introduced into university and college courses.

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Author Profile

Paul has played a key role in the development of a representative national park system for Queensland's rangelands. He co-edited the identification of the state's regional ecosystems as a basis for conservation and natural resource planning and coordinated the Terrestrial Biodiversity Assessment of Australia. Paul is now a beekeeper.

Julia Creek dunnart (*Sminthopsis douglasi*), an endangered small mammal species recorded on Moorrinya National Park after its gazettal and the removal of stock grazing (Photo: DEHP after G. Mifsud).