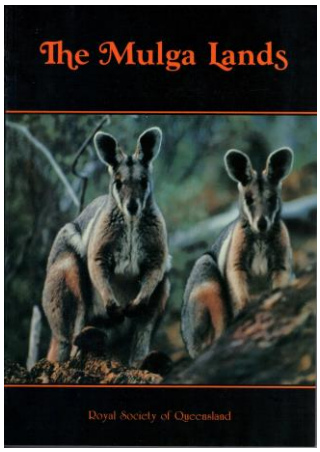

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KEY INITIATIVES BY THE ROYAL SOCIETY OF QUEENSLAND IN THE CONSERVATION AND MANAGEMENT OF THE STATE'S RANGELANDS

We are indebted to Sir James Ramsay, Governor of Queensland and Patron of the Royal Society of Queensland (RSQ) for his historical remarks in opening The Brigalow Belt of Australia Symposium in 1984 (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. 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 another 15 years before the selection of 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. It was calculated that only a half of one percent of the original six million hectares of brigalow was reserved with many types not protected (Sattler and 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 by 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 ground water flow systems could occur in the Queensland part of the Murray-Darling Basin due to the accumulated level 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, e.g., production, salinity, water yield, carbon, soil health and biodiversity. This is a legacy issue: who takes responsibility for further research and repair?

In 1986, the RSQ held a symposium on the Mulga Lands (Sattler 1986) partially in response to extensive degradation. A paper by Beale, Orr and Mills (1984) reported that over 30% of the south-west arid zone was susceptible to degradation of soils and vegetation and nearly 10% was permanently affected; refer photos 1&2. It also was suggested that the rate of degradation had accelerated in response to droughts over the past 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 Symposium's conclusions are just as relevant today for all the rangelands; refer 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 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 actual implementation of this park system, based on such techniques, was the first to be achieved worldwide for a large bioregion. The significance of this was not lost as His Royal Highness Prince Phillip, travelled to Idalia NP to open it and Thrushton NP as the first Mulga Lands National Park.

In 1986, my Presidential Address argued that a similar systematic approach to selecting parks should be taken state wide (Sattler 1986). One of the constraints was the lack of a comprehensive data base of 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 and 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.

In 1989, the incoming government's premier environmental policy was to double the national park estate based on securing representativeness. The decision was taken to focus on the rangelands as there existed an effective conservation constituency to speak for coastal and rain forest areas. Few parks occurred west of the Divide and these historically, were focussed on the scenic or worthless lands. From 1990 to 2000, state-wide representativeness increased from 32% to 69% (photos 3&4). However, significant gaps in Queensland's rangeland park system remain.

To build resilience for biodiversity from climate change will require a range of conservation actions including: establish a fully representative park system across all bioregions; protect refugia on private and public lands; and embed protected areas into sustainably managed landscapes.

In addition to their biodiversity value, the economic potential of these parks for tourism is now important. Such tourism is growing as more grey nomads in particular, often time-rich and interested in country, tour Australia. Conservation and tourism interests can contribute to rangelands policy by garnering societal support for sustainable management and the repair of natural capital.

The use of parks as benchmark areas can help in assessing condition and trend across a wide range of landscapes and in building mutual respect of the various management objectives of all stakeholders. Defining private and public duty of care will be a key step in more closely identifying responsibilities for sustainable management, in addressing repair of natural capital, in assessing public good beyond sustainability issues and, in advocating for financial support from government.

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

Conclusion

1. To achieve sustainability and repair natural capital, a public and private partnership and an alliance of all stakeholders is required. The task is bigger than any one sector.
2. The tasks involved will require a co-ordinated vision enhancing pastoral, nature conservation, tourism and other interests.
3. Defining an appropriate private and public duty of care could provide a framework for sustainable management and for advocating financial assistance. This could inform an approach to legacy issues surrounding degradation and any additional measures to protect the public good.
4. Research into maximising multiple outcomes as part of restoration and sustainable management is required.
5. Secure funding is vital for long term research and for extension, and to provide continuity for staff.

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

1. Loss of top soil, nutrients and native grass species
2. Erosion to hard pan
3. Welford National Park
4. Large pelican rookery, Currawinya National Park

Attachment 1: **Mulga Lands Symposium 1986 - Conclusions**

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:

- Protection of the natural resource to achieve sustained us be the paramount consideration of government and industry – land stewardship.
- A land use planning framework be developed for balanced and sustained use of the Mulga Lands.
- Greater effort be made to facilitate extension of management research information to landholders to assist in management.
- Nature conservation, the establishment of National Parks and the promotion of tourism be planned as legitimate uses within the Mulga Lands.
- 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.
- Land administration, including property size, tenure review, and lease conditions should reflect land care and stewardship as its basis.
- 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.
- Drought relief subsidies do not encourage sympathetic land management and should be reviewed so as to provide an incentive for good management.
- Land zoning and clearing guidelines be established to protect marginal and fragile lands.
- 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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