

Volume Four  
Number Three  
December 2002

# Conservation Science Western Australia

**The Conservation and Utilisation  
Potential of Australian Dryland**

**Acacias**

**Symposium**

**held at Dalwallinu, Western Australia  
13-14 July 2001**

**Edited by B.R.Maslin and A.S.George**

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# Foreword

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The papers published here were presented at a Symposium, *The Conservation and Utilisation Potential of Australian Dryland Acacias*, held on 13-14 July 2001 in the Western Australian wheatbelt town of Dalwallinu. The Symposium aimed to explore the potential of Australian dryland acacias and in particular their role in helping solve some of the serious environmental and landscape problems currently confronting many rural communities and ecosystems, both within Australia and abroad. In southern Australia the most significant of these relate to land degradation and increasing salinity, caused primarily by clearing native vegetation for agriculture. Acacias have great potential to play in reversing this cycle of land deterioration.

The Symposium brought together scientists, land managers, other professionals, farmers and members of the community to explore a wide range of issues and possibilities involving acacias. This is the first time that such a broad-based evaluation has been made of this large group of plants. The Symposium covered a wide range of subjects including:

- role of genetics and systematics in understanding and using *Acacia* species effectively;
- evolution and conservation biology of *acacias*;
- use of *Acacia* species in salinity control, landscape amelioration and nature conservation;
- potential of *Acacia* species as a human food, as hosts for cultivating Sandalwood and as a source of gums and tannins;
- potential of *Acacia* species in tourism and horticulture;
- traditional use of *Acacia* species by indigenous Australians; and
- electronic dissemination of information.

*Acacia* (Wattle) is an important genus within Australia. Not only is it our largest group of vascular plants (around 1000 species currently recognised), but it is also the national floral emblem and was among the first plants collected from the continent (from the west coast of Western Australia in the late 17th century). Acacias dominate 60 to 70 per cent of the country and are

particularly common in arid and semi-arid areas. The largest concentration of species occurs in the wheatbelt region of Western Australia, with Dalwallinu located near the centre of this great diversity.

Acacias are highly diverse in their form, biology and ecology, they occur over a wide range of soil types and climates. They are fast growing, are able to enrich soil by fixing atmospheric nitrogen and are easy establish and manage in cultivation. Australian acacias have been used abroad in many commercial, social and environmental programs, yet within Australia their enormous potential has not been realised. It is issue was an important focus of the Symposium.

It was very appropriate that the Symposium was held in Dalwallinu, not only because the genus *Acacia* is so diverse in the region but also because this community is currently attempting to develop tourism opportunities based on *Acacia* species. As a direct consequence of the Symposium, the Dalwallinu Shire is leading an initiative to establish an Environmental Interpretive Centre in the town.

The *Dalwallinu Acacia Symposium* was organised jointly by the Shire of Dalwallinu, Dalwallinu District Tourism (Inc.), Heartlands Tourism (Inc.) and the Department of Conservation and Land Management. In addition to the above agencies, financial support was provided by BankWest, the Wheatbelt Development Commission, Boekeman Toyota, the Office of the Minister for Agriculture, Forestry and Fisheries, and Advanced Visual Design. The businesses and people of the Shire of Dalwallinu are gratefully acknowledged and thanked for their support of the Symposium.

Keiran McNamara  
ACTING EXECUTIVE DIRECTOR  
Department of Conservation and Land Management  
December 2002

# Comments by session convenors

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## Session 1: Systematics and Conservation

STEPHEN D. HOPPER

Chief Executive Officer, Botanic Gardens and Parks Authority

Systematic research in *Acacia* is critical for sound utilisation and conservation. The job is far from complete. There are important practical and economic reasons for supporting the proposed submission to retain the name *Acacia* for the largest group in the genus as it currently stands—the 900 or so named Australian species.

Molecular systematics has revealed unexpected levels of genetic variation in both rare and common wattles. This finding has an important practical implication: the principle of using local seed wherever possible to maximise genetic and biodiversity conservation.

There are many rare and endangered species of *Acacia* whose biology and ecology have scarcely been investigated. Some are old, relictual species with no close relatives; others are recently evolved and have close sister species. Much more research on their biology is required to ensure their conservation. Also, one must not lose sight of the need to conserve genetic variation in common species. In the meantime, the most important conservation action is to care for and value every remnant of native vegetation. These are biological jewels—literally, the source of seeds for the future.

### ***Praise for the prickly***

Choosing the right local wattles when revegetating an area can help to create habitat for wildlife and control pest insects. Real biodiversity benefits can be generated with a little extra effort and sound local knowledge.

## Session 2: Commercial and other applications

REX EDMONDSON

Convenor and Chair, Soil and Land Conservation Council of Western Australia

There has been encouraging progress in research as applied to the screening of *Acacia* and its role in the fight against land degradation, in particular dryland salinity. It is clear that acacias have an important role in the development of sustainable farming systems. Gains can be made both in agricultural systems and as a source of food for humans.

It is time to place this evidence before primary producers, in particular, and the wider community in general. Neither group relates readily to scientific papers, but there is now sufficient evidence to warrant setting up demonstrations at strategic sites in the agricultural regions promoting the advantages of acacias.

What better site than the Dalwallinu Shire, with its large number of native wattles? It is important to let farmers see the potential and methods of establishment, as they respond to this kind of presentation.

The *Dalwallinu Environmental Interpretative Centre* proposed for establishment in Dalwallinu would complement the Shire's strong focus on tourism. It could focus on scientific information and how it interfaces with the community.

The issue of protecting road verge vegetation was raised with passion, and it is clear that the many attempts to educate authorities on this need have not been effective in all cases. Over many years there have been reports and recommendations on the value of road verge vegetation—in many cases the last remnants of some species are found in these sites. The Department of Conservation and Land Management supports a Road Verge Conservation group. I suggest that this Symposium does likewise.

## Session 3: Seed for human food

STEPHEN MIDGLEY

CSIRO Forestry and Forest Products, Canberra

Strong links and strategic alliances must be maintained between growers, marketers and government to ensure that emerging business and management systems remain coherent. Successful marketing depends on quality, pricing and consistency of supply.

The Symposium has shown that there is a great wealth and diversity of information on *Acacia* conservation and utilisation both in Australia and overseas. Successful use of this information will benefit future use of *Acacias*. There is a pressing need to collect, collate and disseminate available information, associated with a need to conserve, assemble and acknowledge traditional, indigenous knowledge.

There is a need to develop appropriate agronomic techniques to underpin broadscale *Acacia* planting, particularly how it will relate to established agriculture. Harvesting technology (do we modify the plant or the machinery?), understanding root architecture, spacing and competition with other crops are some issues highlighted for further research.

Wider commercial development of acacia seed as human food will require further work on nutritional (and anti-nutritional) profiles, toxicology and food safety, use for starch, gums, resin etc.

Those using and promoting acacias will have to be mindful of the potential of acacias to become weeds. Some characteristics that contribute to the success of acacias present a potential for weediness.