



MOUNT LOFTY RANGES GRASSY WOODLAND NETWORK



m l r g w n

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Candlebark communities

Sonia Croft's recent research into the occurrence, health and conservation status of Candlebark communities highlights the restricted distribution and highly threatened status of the majestic Candlebark *Eucalyptus dalrympleana* ssp. *dalrympleana* in the Southern Lofties. A summary of Sonia's findings can be found in the summer edition of *Xanthopus*, NCSSA's Newsletter. Candlebark is believed to cover only 120-150 hectares of the Mt Lofty Ranges making it one of the most threatened plant types in South Australia by area. You may know Candlebark by its old name of *E. rubida* which is now believed to only occur in the eastern states.

This research identifies the small number of stands, the small size of most stands (80% less than 2 hectares) and the restricted range – from 10km northwest of Gumeracha to Parawa and only along the central spine of the Ranges in the higher rainfall areas. Interestingly Sonia used the Bushland Condition Monitoring (BCM) Manual techniques and a rapid assessment tool based on BCM for data collection and evaluation, showing the adaptability of BCM.

I had associated Candlebark with heathy vegetation, but Sonia's findings show that Candlebark communities seem to be transitional between a

shrubby understorey (on the mineral poor soils) and a grassy understorey (on more fertile soils), with high cover of shrubs, ferns and grasses.

In what is probably a first for the Mt Lofty Ranges (MLR), Sonia estimated that about half the area of the Candlebark stands that she surveyed was being actively managed for conservation, at least in part. She deduced that this high figure may have been due to Candlebark's acknowledged threatened status. This throws up a challenge to other researchers and environmental practitioners to come up with figures for other vegetation types in the MLR. At least this information would provide us with a baseline to measure future efforts in our management of remnant native vegetation as well as efforts to restore and increase the areas of specific vegetation communities.

AMLR NRM Board Plan out for comment

The Adelaide and Mt Lofty Ranges Natural Resources Management Board has released its draft plan for consultation until 4 February 2008. Amongst others the plan contains ambitious targets for restoration and reconstruction of ecosystems in priority areas, including woodland systems on the Fleurieu Peninsula and in the Barossa region. To view the plan or to receive a CD copy, visit the website (www.amlrnrm.sa.gov.au), email reception@adelaide.nrm.sa.gov.au or phone 8273 9100.

All the best for the holiday season – may it be restful, safe and enjoyable. I look forward to catching up with many of you in 2008.

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Brilliant Butterfly Book Out

What a great Christmas present this would make, particularly for anyone interested in butterflies and/or gardening. The Butterfly Conservation Society of SA (BCSA) has recently released a colourful and beautifully produced book on butterflies likely to be in the Adelaide and Mt Lofty Ranges region and the plants that the larvae and adults require.

Attracting Butterflies to Your Garden is available for \$29.95 from the SA Museum book shop and can be ordered by emailing Jan Forrest (BCSA) on forrestjan@adam.com.au



Common everlasting *Chrysocephalum apiculatum* – a larval food for the Australian Painted Lady

Land-clearing intensifies drought

Research by Australian scientists has shown that clearing of native vegetation has made recent Australian droughts hotter. Dr Clive McAlpine of UQ's Centre for Remote Sensing and Spatial Information Science and Mr Jozef Syktus, principal scientist in the Queensland Natural Resources and Water Department (DNRW), headed a study, which will be published later this year in *Geophysical Research Letters*.

They applied the CSIRO Mark 3 climate model, satellite data and the DNRW supercomputer, and showed that 150 years of land clearing added significantly to the warming and drying of eastern Australia.

The findings showed that:

- Eastern Australia had significant warming of between 0.4C and 2C.
- Summer rainfall in eastern Australia decreased by up to 12 per cent.

- The 2002/03 El Nino drought in south-eastern Australia was 2C hotter because of vegetation clearing.
- Protecting native vegetation was vital in reducing climate change.

The study concluded that Australian native vegetation holds more moisture that subsequently evaporates and recycles back as rainfall. It also reflects into space less shortwave solar radiation than broad-acre crops and improved pastures, and this process keeps the surface temperature cooler and aids cloud formation.

Source: EnviroInfo, 1 Nov 07 via AMLR NRM Brief Nov 07

All you ever needed to know about Weeds in Australia

The penultimate Weeds CRC Newsletter for November 2007 is available for viewing at: http://www.weeds.crc.org.au/publications/weed_wat_ch.html

The lead story is the new CRC publication listing 29,430 plant species -every introduced plant species, past and present, in Australia - with information on its weedy status here and worldwide. Included are 606 Australian ones that have naturalised (ie reproducing without human intervention) outside their native range.

Humans are by far the most effective and efficient vector of plants around the world. In the 200 years since the arrival of Europeans, over 28,000 foreign plants have been brought to Australia, most deliberately imported for forage, horticulture or as ornamentals.

To view this publication (which is not available in hard copy) visit:

<http://www.weeds.crc.org.au/publications/index.html>

In relation to the above publication the Australian Government recently announced that under new processes the following threatening process nomination would be completed by September 2009 for consideration by the Threatened Species Scientific Committee:

Loss and degradation of native plants and animal habitats by invasion of escaped garden plants

Weed Management Guide - Erica

The latest weed management guide, 'Spanish heath (*Erica lusitanica*) and other Erica species' is now available on the Weeds CRC website.

For more information:

http://www.weeds.crc.org.au/publications/weed_management_guides.html#biodiversity
http://www.weeds.crc.org.au/projects/project_4_2_3.html

Mt Bold Threat

As many of you will have heard in the media, plans by the State Government to increase the water storage in the Mt Lofty Ranges (MLR) at present centre on Mt Bold Reservoir. Environmental Impact Assessment of this option is occurring at present, but conservationists are concerned about the biodiversity ramifications of the proposed flooding up to an elevation of 280m. Mt Bold is part of an extensive area of native vegetation (by MLR standards) and rich in fauna and flora, with about 600 native plants found there. It also contains a wide variety of habitats ranging from forests, woodlands, heath to swamps and riparian vegetation.

For more information on this proposal and its impacts see Tim Jury's excellent article in the Summer edition of *Xanthopus* (www.ncssa.asn.au) or contact Penny.

BFL Assistance for Private Landholders

Do you have a patch of bushland and need help with management? Bush For Life are now able to offer assistance to private landholders in the Mt Lofty Ranges, Murray Darling Basin and Northern and Yorke districts as a result of funding from the State Strategic Reserve component of the NHT.

Support for training in bush regeneration, action plan preparation and technical advice is dependent on property size and vegetation quality. Interested landowners should send details of their property – location, size, remnant vegetation description – to The Manager, Bush For Life, 5 May Tce, Brooklyn Park, SA 5032.

Mess makes for Better Bird Habitat

by Amelia Hurren & Ann Prescott, Bush Management Advisers, AMLR

Being neat and tidy is seen as a virtue, but “cleaning up” in the bush may do more harm than good. Much of our native wildlife relies on “mess” on the ground - especially leaf litter, twigs, logs and fallen trees. In fact, a survey of bird activity observed 9 times more birds in patches of woodland with “mess” on the ground than without¹.

Some of the rarest woodland birds in the Mount Lofty Ranges, such as the Brown Treecreeper, Diamond Firetail, Restless Flycatcher and Hooded Robin all hunt for food on the ground. The key to providing habitat for woodland birds and other animals is to encourage a mix of groundcovers. A patchwork with lots of leaf litter, fallen logs, clumps of grass and herbs and some bare ground will ensure food for all.



Diamond Firetail (Photo: Lydia Paton)

A recent study of ground-foraging woodland birds found that leaf litter is far more important than expected². Leaf litter provides a smorgasbord for those birds which use their beaks to probe around for insects. Also very important are fallen logs which are vital feeding sites for woodland birds and insect-eating mammals, frogs and reptiles. Although old decaying logs are preferred habitat, logs placed on the ground as artificial shelter are quickly inhabited by a range of different animals³. Fallen logs are home to many animals and are a critical part of a healthy natural system. Removal of logs for firewood is a well recognised threat to biodiversity⁴.

Dead horizontal branches within 2m of the ground are perfect habitat for Robins and Flycatchers which use them as perches to scan for insects on the ground beneath. Also important for ground feeding

birds are patches of bare ground between clumps of grass and small shrubs. Insects are exposed in these bare patches, making them easy pickings for birds.



Woodland with fallen branches and litter (Photo: Amelia Hurren)

Does your patch of bush have ground habitat features like logs, twigs and leaf litter? If not, placing some old fence posts or other logs around will help to encourage fauna. And remember to leave dead branches for perch sites. Obviously there are areas, such as near houses or other buildings, where some “cleaning up” is needed to reduce the risk of fire. But in other areas, being messy will help woodland animals to survive.

¹ Laven N.H. & Mac Nally R. 1998. Association of birds with fallen timber in box-ironbark forest of central Victoria. *Corella* 22 (2) pp 56-60.

² Antos M.J. & Bennett A.F. 2006. Foraging ecology of ground-feeding woodland birds in temperate woodlands of southern Australia. *Emu* 106 pp 29-40.

³ Michael D.R., Lunt I.D. & Robinson W.A. 2004. Enhancing fauna habitat in grazed native grasslands and woodlands: use of artificially placed log refuges by fauna. *Wildlife Research* 31(4) pp 65-72.

⁴ A National Approach to Firewood Collection and Use in Australia. 2001. Australian and New Zealand Environment and Conservation Council.

Greening Australia's Monthly Bulletin

Greening Australia produces an emailed monthly Bulletin featuring upcoming conferences and events, new book and abstracts of research articles on revegetation and restoration.

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The latest edition features this journal abstract on management of tussock grasses in temperate woodlands.

Fire frequency regulates tussock grass composition, structure and resilience in endangered temperate woodlands

SUZANNE M. PROBER, KEVIN R. THIELE, IAN D. LUNT

Austral Ecology 32 (7), 808-824

Abstract

The importance of disturbance for regulating the structure and diversity of grassy ecosystems is widely recognized, but disturbance-mediated interactions between grassland composition and grassland resilience, and consequent implications for conservation management, are less well documented. We established replicated burning, mowing and (non-livestock) grazing regimes in two contrasting grassy woodland remnants in south-eastern Australia, and monitored the dynamics and resilience of the matrix-forming tussock grasses, *Poa sieberiana* (*Poa*) and *Themeda australis* (*Themeda*), over 12 years. Introduction of frequent burning to a *Poa*-dominated understorey in a rarely burnt woodland enhanced dominance by *Themeda*, and conversely, reduced fire frequency in a frequently burnt *Themeda* grassland substantially increased *Poa* abundance. Burning was potentially detrimental in the *Poa*-dominated woodland, but sward resilience (recovery after the 2002 burn) increased as *Themeda* increased with repeated burning. By contrast, the *Themeda* grassland was resilient to 4- and 8-yearly burning, but biennial burning led to poor resilience and high tussock mortality under drought conditions. Contrary to other mesic grasslands, cessation of burning had not caused sward collapse by 14 years post-fire despite high litter accumulation, potentially due to compensatory growth of *Poa*, lower site productivity and drought. Biennial mowing without slash removal was similar to 4-yearly burning in effects, while exclusion from kangaroo and rabbit grazing significantly increased sward biomass and contributed to increased *Poa* cover and inflorescence production. We conclude that functional complementarity associated with mixed dominants enhances resilience to variable disturbance regimes, and that below certain thresholds of abundance of each dominant, this resilience declines. Conservation management of *Themeda*-*Poa* ecosystems should thus aim to maintain an effective balance of these dominants.

Invasive Plants and Climate Change

Another Weeds CRC publication – a briefing note on invasive plants and climate change – gives some general ideas on impacts (http://www.weeds.crc.org.au/documents/bn_climate_change_2007.pdf).

