MOUNT LOFTY RANGES GRASSY WOODLAND NETWORK

m l r g w n **NEWSLETTER 9** **September 2007** n c s s a

Contents **Page**

Workshop participants busy identifying native plants on the hills above Port Elliot (Photo: P. Paton)

Workshop Review

A small group attended the habitat restoration workshop near Port Elliot on 18th September. Participants had been supplied with notes on the original vegetation of the area and on theories of habitat restoration, particularly with relevance to the Mt Lofty Ranges. On the day we had a walk over part of the property and identified more native plants as well as getting a feel for the different areas and their soils and aspect. After lunch we drove to several sites nearby that had been identified from aerial photography or personal knowledge to assess their suitability for reference sites – again more native plants were added to our list for the area. At the end of the day we provided advice on rabbit control, areas to start restoration, trialing different techniques (eg direct seeding/tubestock planting/natural regeneration) and seed sources.

Thanks to the owners for hosting the day and to participants for their valuable input – everyone had their own insights and expertise to add to the day. I hope to run a follow-up workshop on this property next year to start putting some ideas into practice.

Native Grasses for Thirsty Landscapes

The 5th National Native Grasses Conference will be held at Mudgee, NSW, from 7-10 October 2007. Registration is $495 (or $330 for primary producers). For more information phone the Conference Organiser, Christine McRae, on (02) 6373 7628 or email cmcrae@hwy.com.au. A 2 day Friends of Grasslands field trip follows the conference, exploring the grassy ecosystems around Mudgee and Wellington, 11 & 12 Oct.

Not connected to the worldwide web?

If you do not have access to the web, and I know there are some out there who don't, and you would like any information that is not available to you, please contact Penny and she will access it and post to you or find an alternative non-web based source.

Penny Paton Nature Conservation Society of South Australia

Temperate Woodlands Campaigner

Ph: 8344 8891; 47 Gilbert St, Gilberton 5081

pennypaton@adam.com.au

Time to Look our for Tussock Weeds

By Jacqui Best

The stipoid grass weeds, Chilean Needle Grass (CNG) (*Nassella neesiana*) and Texas Needle Grass (TNG) (*Nassella leucotricha*), are perennial tussock grasses which represent a serious threat to pasture and biodiversity in Australia. Due to their potential impact, both CNG and TNG are proclaimed plants under the Natural Resources Management Act 2004. CNG is also one of twenty Weeds of National Significance (WoNS) and is regarded as potentially the worst environmental weed of temperate native grasslands in Australia.

CNG and TNG are indigenous to America and were first observed in Australia at an outer Melbourne suburb in 1934 (Penhall *et. al.,* 2000). These weeds are now well established over large areas of New South Wales, the Australian Capital Territory and Victoria. However, in South Australia infestations are mostly limited to the Onkaparinga Catchment and Wirrina, therefore containment of needle grass to these areas is a high priority for SA. Small, isolated outbreaks have been recorded at the Adelaide Parklands, Belair National Park, Randell Park, Modbury, Lucindale and Jamestown, and these are being closely supervised (See Stephens *et. al.*, 2007).

CNG and TNG are difficult to distinguish from each other as well as from other Australian Spear Grasses (*Austrostipa spp.*). Reliable identification involves examining the seed. Hence, the best time to identify CNG and TNG in SA is mid to late spring while flowering and setting seeds. Adult plants are long-lived and very hardy. Leaves are 1–5 mm wide, flat and strongly ribbed on their upper surface, with leaf edges that are rough to touch. Seeds mainly germinate in autumn and spring, but germination can occur at other times of the year given adequate moisture and suitable temperature. Needle grass seedlings grow quite slowly but have a very high survival rate and can produce flowers in their first season.

In a heavy infestation, needle grasses can produce more than 20,000 seeds per square metre. In addition to normal flower seeds, both CNG and TNG produce hidden cleistogene seeds in the nodes and bases of the flowering stems. Cleistogene seeds are self-fertilised and enable the plant to reproduce despite grazing, slashing or fire.

In native grassland communities CNG and TNG have the ability to invade native vegetation and aggressively out-compete and replace native grasses and wildflowers. In agricultural regions needle grasses can reduce summer pasture productivity by up to 50%, downgrade produce and cause injury to livestock with their long, sharp seeds. The sharp seeds are also well-suited to dispersal through attachment to clothes, machinery, livestock and kangaroos. For more information check out the Stipoid Weed Working Group's webpage at www.amlrnrm.sa.gov.au under AMLRNRM Boards programs or the WoNS site at www.weeds.org.au.

Most of the areas infested with needle grasses are considered recreational lands where the greatest threat is to local biodiversity and the risk of further dispersal is high. Be on the lookout for these grasses throughout the coming months and report any suspicious plants to:

Jacqui Best
Sustainable Landscapes Officer
Adelaide & Mt Lofty Ranges Natural Resources Management Board
PO Box 781 Willunga SA 5172
Ph: 8556 4500 Fax: 8556 4499 Mobile: 0439 501 786
email: jacqui.best@adelaide.nrm.sa.gov.au

Penhall, L., James, R. and Faithful, I. (2000) *Texas needle-grass*. Information notes. Department of Primary Industries, Victoria.

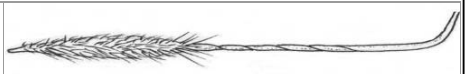
Stephens, E., Lawrie, S. L. and Best, J. (2007) *Protecting biodiversity assets by implementing control programs for significant pests and diseases: Asparagus and Stipoid Weeds.* 2006 Report for AWWG, Southern Hills Region, SGWWG and AMLRNRM Board.

Chilean Needle Grass - flowering panicle

Texas Needle Grass - tussock

Chilean Needle Grass
- drooping flowerheads up to 40 cms long
- narrow neck; swollen corona
- awn 60 - 90mm long, bent twice

Texas Needle Grass
- drooping flowerheads up to 25 cms long
- narrow neck; swollen corona, with long hairs
- awn 35 - 60 mm long, twisted and bent



Native Spear Grass
- no corona, but can have ring of hairs
- hairs all over seed

Drawings by K. Firth.

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. This eBulletin is distributed 12 times per year, at the end of each month.

Subscribe/unsubscribe to this eBulletin: Email exchange@greeningaustralia.org.au with 'subscribe' or 'unsubscribe' in the subject line.

The two abstracts below on woodland birds and questions to ask before attempting habitat restoration were from the July edition.

The relative importance of landscape properties for woodland birds in agricultural environments

James Q Radford, Andrew F Bennett
Journal of Applied Ecology, Volume 44, Number 4, pages 737–747.

Abstract

1. Studies of landscape change are seldom conducted at scales commensurate with the processes they purport to investigate. Landscape change is a landscape-level process, yet most studies focus on patches. Even when landscape context is considered, inference remains at the patch-level. The unit of investigation must be extended beyond individual patches to whole mosaics in order to advance understanding of faunal responses to landscape change.
2. In this study, we aggregated data from multiple sites per landscape such that both the response and explanatory variables characterized 'whole' landscapes, allowing for landscape-level inference about factors influencing species' incidence.
3. We used hierarchical partitioning and Bayesian variable selection methods to develop species-specific models that examined the influence of four categories of landscape properties – habitat extent, habitat configuration, landscape composition and geographical location – on the incidence of 58 species of woodland-dependent birds in 24 agricultural landscapes (each 100 km^2) in south-eastern Australia.
4. There was strong evidence for a positive effect of habitat extent for 27 species. Thirty species were related to at least one of the four landscape composition variables, and geographical location was important for 19 species. Habitat configuration was influential for 13 species and where important, the impacts of fragmentation *per se* were detrimental.
5. Variation among species in the influential landscape variables indicates that different species respond to different sets of cues in land mosaics. Thus, although all species were grouped *a priori* as 'woodland-dependent', expectations based on general ecological characteristics may prove unreliable.
6. *Synthesis and applications*. These results underscore the value of moving beyond the fragmentation paradigm focused on the spatial pattern of habitat vs. non-habitat, to a greater appreciation of the composition and heterogeneity of land mosaics. Landscape-level inference will enable improved conservation outcomes by recognizing the influence of landscape properties on biota and devising strategies at this scale to complement patch-based management. We provide strong empirical evidence that biodiversity management in agricultural landscapes must focus on habitat extent. Complementary management of other landscape attributes, such as habitat aggregation and intensity of agricultural land-use, will also enhance the value of agricultural landscapes for woodland birds.

Habitat Restoration—Do We Know What We're Doing?

James R. Miller, Richard J. Hobbs
Restoration Ecology, Volume 15, Number 3, Pages 382-390/ September 2007

Abstract

The term "habitat restoration" appears frequently in conservation and landscape management documents but is often poorly articulated. There is a need to move to a clearer and more systematic approach to habitat restoration that considers appropriate goals linked to target species or suites of species, as well as the ecological, financial, and social constraints on what is possible. Recommendations for particular courses of action need to be prioritized so that restoration activities can achieve the best result possible within these constraints. There is unlikely to be a generic set of

recommendations that is applicable everywhere because actions need to be matched to the particulars of site and situation. However, there is a generic set of questions that can be asked, which can help guide the process of deciding which restoration actions are most important and contribute most to the reestablishment of desirable habitat characteristics within a given project area.

The September edition of Exchange included this item on a frequently asked question – how to make your garden more bird friendly.

NEWS – Birds in Backyards Program, Birds Australia

Australia's largest bird conservation group, Birds Australia, have recently released a set of Best Practice Guidelines for creating and sustaining bird habitat across urban landscapes. These guidelines and accompanying scientific report have been produced to provide a range of audiences (amongst them the housing industry as well as local council officers - such as urban planners, landscape architects, street tree planners, open space managers and bushland managers, as well as home gardeners) with a series of instructions on how to create and sustain good bird habitat in urban areas. The recommendations are based on scientific research and not anecdotal evidence as some previous publications have been. The guidelines are available from the Birds Australia website.

Two new TECs for SA

Two of South Australia's most threatened habitats were recently listed as **Critically Endangered** by the Australian Government (AG) under the *EPBC Act 1999*. They are Peppermint Box Grassy Woodland and Iron-grass Natural Temperate Grassland and both occur in the Mt Lofty Ranges. Peppermint Box (*Eucalyptus odorata*) woodland ranges from the southern Flinders Ranges to Victor Harbor while the iron-grass community extends from Peterborough to Murray Bridge. Both have suffered a decline in extent of >95% and a corresponding decline in integrity as well as ongoing threats.

For property owners, any change in land use, including intensification, which impacts on these two communities will need to be assessed by the AG through the EPBC referral process. On a more positive note, owners will also be eligible for grants from Envirofund and the TSN Community Grants to restore and rehabilitate these areas. Policy Statement 3.7 gives more information (www.environment.gov.au/epbc/publications/peppermint-box-iron-grass-policy.html.)

***Eucalyptus odorata* woodland, Manoora (Photo: P. Paton)**

Managing Weeds for Biodiversity

Thanks to Rita Reitano of the Weeds CRC for information on two new publications on managing weeds for biodiversity:
African boxthorn (*Lycium ferocissimum*) and Coolatai grass (*Hyparrhenia hirta*); the first of eight in this new series.

Three key areas are emphasised:
1. know the weed and its biology
2. know the range of methods for removing it
3. know the site including the condition of the native vegetation.

More information:
http://www.weeds.crc.org.au/publications/weed_man_guides.html#biodiversity
http://www.weeds.crc.org.au/projects/project_4_2_3.html
While at the CRC website check out the other areas like WoNS (Weeds of National Significance) and best practice management guides.

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).
A few of the projections are:
- All invasive plants will shift southwards
- Lowland species will move to higher elevations
- Increased CO_2 will benefit C3 plants (natives and weeds)
- Increased extremes (eg long dry periods interspersed with very wet years) will worsen weed invasion because established vegetation will be weakened, leaving areas for invasion
- Plant species with efficient seed transport mechanisms will spread rapidly into new areas
- Until rainfall patterns are clear it is difficult to predict where plants will move