

# Woodland Wanderings

Newsletter of the Grassy Box Woodland Conservation Management Network

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## COMMUNITIES IN LANDSCAPES - Working Together to Integrate Conservation & Production across Box-Gum Grassy Woodlands

*Toni McLeish editor*

<http://cil.landcarens.w.gov.au>



The Communities in Landscapes (CiL) project team including the Grassy Box Woodland Conservation Management Network (GBW CMN) have hit the ground running in the Central West, Lachlan and Murrumbidgee Catchments. Welcome rain in many areas has muddied our path (any excuse for not always staying on track) and put a smile on all our faces, while providing relief for BGGW species and their managers.

CiL project details are outlined in this issue of Woodlands Wanderings including:

**Landcare NSW** has employed 3 Community Woodland Officers (CWOs) to support you locally.

**University of Sydney** Participatory Appraisals (PA) are completed, where we learnt from farmers and from each other. This has led to the current measurement exercise, of innovative management practices.

**Greening Australia Florabank** is busy collating a list of seed suppliers, propagators & people interested in the production of restoration material, wanting to participate in training.

**CSIRO** are looking for Box-Gum Grassy Woodland sites for management research.

**The Department of Industry and Investment** has employed a Woodland Officer to provide native pasture identification and production, and property planning support.

**STIPA's** Graham Hand is keen to start some grazing management training.

**The Department of Environment Climate Change & Water** has begun frog surveys & is looking for groups and individuals interested in threatened plants. As well working on a cross property plan, a demonstration property and offering advice on covenanting.

**GBW CMN** coordinator as well as being part of the CiL

project management team, has provided extension packages for distribution, which will be added to over the next 18 months, including a Woodland History DVD, and a look at natural succession in BGGW. Please note [www.gbwcmmn.net.au](http://www.gbwcmmn.net.au) has been updated.

The CiL team is offering a range of trainings, workshops and field days to meet your needs, as either requested during past surveys or in the PA process (for details see the back page). A computer based "BGGW Adaptive Management Monitoring Tool" is also available for trialing on your home computers, and we will be supporting interested managers in forming local BGGW management support groups across the project area.

These are exciting times for network members in the 3 target catchments, so make the most of it and get involved. Contact your CWOs and with them, create your own opportunities.

For the Southern Tablelands Grassy Ecosystem CMN members, you are now on this mailing list and if you live in the 3 target catchments, then you can participate in the CiL activities.

For those members living out of these catchments that are prepared to travel and would like to be on an event email list please contact your nearest CWO. You will not be forgotten and where possible you will be included.



## Landcare NSW Inc

*Executive Officer Marion Benjamin*

The opportunity to work closely with the GBW Conservation Management Network began in mid 2008. We teamed up to stage an NRM Networking Partnerships conference in Queanbeyan. This was a great opportunity to get members from both organisations together. We were interested in exploring the sort of partnerships our community networks could forge to develop and fund new projects. Because of who we were, the ground rules were straightforward. To bring about change in the way we do things across our landscapes, there is one port of call – the grassroots community. So the best way to work was to establish a team including agencies, government departments and research institutions who would work alongside our community networks. These experts can provide the latest in science and technical expertise, but it is the community networks which provide the sharing and support to enable land managers to embark on change as they are able.

We think that it is pretty significant that Communities in Landscapes has at its foundations in two important community infrastructures – the CMN and Landcare networks. The communities we value are social as well as ecological. That is why our Community Woodland Officers (CWO) are so important. They are on the ground and in the community. The title of our project emphasizes the interdependent nature of communities in the Box-Gum Grassy Woodlands (BGGW) landscape. The endangered ecological community exists across landscapes traversed many times over by our need to produce, to profit and to connect. One of the first things our Community Woodlands Officers have been doing is a community mapping exercise. We are interested in mapping the social connections across the woodlands to look at community strengths to educate and inspire all of

us to more carefully balance conservation alongside our other enterprises.

Landcare NSW Inc is the new state body representing community Landcare. We were formed in November 2007 in response to a community call for an independent voice for the community Landcare movement. One of our primary roles is to advocate for community input into policy and planning around environmental issues. Over the last 20 years Landcare has blossomed and, at times faded, as we, like many community organisations are affected by the ebb and flow of government interest and funding. But Landcare has survived and in many ways is going through a significant period of reinvigoration.

Landcare NSW is responsible for the management of the Communities in Landscapes project. We are responsible for employing the project staff and ensuring the smooth running and reporting on the project. We have built into the project two devolved funding programs, one for community groups and one for groups of connecting land managers. This means there are small project funds available for groups to run their own projects in support of BGGW.. To be able to directly respond to what you want to do on the ground, when you are inspired to change, is important.

The links between Landcare networks and CMNs are many. This opportunity to collaborate and learn from each other is a real privilege and a great opportunity to make a significant difference to the level of support to the community to encourage effective grassroots management of our very special BGGW.

## Kimberley Beattie -Murrumbidgee Catchment CWO

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I grew up in Narrandera NSW, an hour away from Wagga Wagga, and have recently bought a house there. I've been interested in the environment and 'green living' since I was a small child. This eventually led to my studying Environmental Science and later Environmental Interpretation at university.

I have long been passionate about working with my local and regional community to achieve positive, environmental change. I firmly believe that the management choices of the people on the land are the driving force behind ecological and productive sustainability. I welcome CiL – and my role as CWO - as an opportunity to work with not only my local community, but communities across the Murrumbidgee catchment, to achieve the sorts of positive outcomes I have always dreamed of.



## Maryanne Smith - Central West Catchment

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I have spent the majority of my life in the Central West of NSW. I currently live on a farming enterprise with my husband and three young girls and I am currently studying a degree in Environmental Science through CSU Wagga.

Completion of a Diploma in Conservation Land Management has provided me the opportunity to teach environmental studies at Western Institute of Tafe, working with various individuals, community groups, Aboriginal land councils, Greencorps and schools.

I developed a strong interest in land management whilst travelling the east coast of Australia, experiencing vast landscapes and natural communities. My family holidays are spent camping and experiencing nature, with many bushwalking adventures, spotlighting moments, in total captivation of its beauty.



The wonderful opportunity to work with Mick Harvey, a guru in the identification of Australian native plants, only enhanced my enthusiastic passion for the environment and its future management. I find that every aspect of the environment is interesting – there is always something new to learn or experience. Working with people from all walks of life only encourages this passion to help protect its future.

My role as a Community Woodlands Officer for the Central West region of New South Wales will provide opportunities to work together on the conservation of BGGW, strengthen community interaction and enhance our understanding of the environment, while encouraging the younger generation to be involved. By achieving these goals, a prosperous and sustainable future will develop for both community and the environment.

## Megan Harris - Lachlan Catchment

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I have spent most of my life in Temora NSW, moving to Canberra after school to study Bachelor of Resource and Environmental Science (ecology). I returned to the Riverina, working as a forester for CO2 Australia, traveling and working in the central and western regions of the Lachlan, Central West and Murrumbidgee catchments, as well as central-west Victoria. At the same time I completed a Master degree of Sustainable Agriculture.

My interest in land management has evolved over time as a result of living in a rural environment, my studies and my work. During early high school my parents moved us out of town onto a 40 acre lot, covered with grey box woodland which we got to share with superb parrots, babbler, lace monitors, wallabies and a whole raft of other species. This developed my passion for native animal species, and the habitat they rely on.

As a Community Woodland Officer (CWO) I will provide a link for community groups and landholders to knowledgeable people. I will utilise project resources to aid in community-level bottom-up projects that conserve our woodlands, particularly our Box-Gum Grassy Woodlands.



## Communities in Landscapes - Participatory Appraisals

*Peter Ampt, University of Sydney*

The three participatory appraisals conducted by the CiL team were a great success. Through them we had direct contact with 84 farmers across three catchments. Interviews were conducted in kitchens and out in the field. Each one lasted between 1 and 3 hours and after each day the team got together to share experiences. The best part was the richness of the stories that we heard and the enthusiasm with which they were told. We were all blown away by the diversity of people and their situations, and we were inspired by their courage, imagination, intelligence, resilience and passion for improving their own land and the surrounding landscape.

We were also heartened to learn that the direction we have chosen for the project makes sense, and the approach we are taking is strongly supported: the value of community networks, the importance of farmer-to-farmer contact, the need for consistent information and coordination, to name a few. We have also had the opportunity to thrash out, as a team, the range of approaches that we all bring to the project, and to discover there is a place for them all.

A key insight shared by the team was that many people had made a mental shift towards managing and improving land (rather than a primary focus on production), that they had adopted a form of rotational grazing to try to achieve that, and that these same people were the most optimistic about the future. They had seen the land respond to changes in management, had taken steps to minimise the impacts of uncertain climate and market conditions, and were reportedly reaping the benefits personally and financially. The team recognised that these changes were innovations that were apparently able to integrate conservation with viable and sustainable farm businesses. The team are embarking on a benchmark study to try to understand these innovations and to begin to objectively assess their impacts.

We were also fascinated by some apparent differences between the three locations in which the interviews took place. Around Wellington, there seemed to be a much

greater acceptance and adoption of rotational grazing, pasture cropping and no-kill cropping techniques cropping – people who had initially been sceptical were making the shift. These techniques seemed to be becoming the norm rather than the exception. Those land managers that hadn't adopted the techniques had possibly hardened their attitude against them. Around Wagga Wagga there were some strong and apparently successful adopters, but little spread, while around Young, the trend was in between the other two places. There are many possible explanations for these differences, and the team is keen to continue to work with landholders in all three catchments to explore this question further. It was very clear that local community networks – informal, social, Landcare and others - were critically important and had a big impact on people's level of optimism and enthusiasm.

We are all looking forward to the next stages of the CiL project, and feel better informed and able to work together as a team and with the communities to make a difference.



**Biodiversity Officer for Wagga Wagga City Council David Reid (left) & Peter Ampt (right) chat with Tarcutta farmer Peter McCallum about the importance of landscapes in finding a way to save BGGWs.**

# Experiences in Participatory Appraisals - Farmers, Frogs and Free Range Meat

*Sarah Doornbos University of Sydney*

David Walker (Chair of Landcare NSW Inc) and I are sipping tea, while on the radio we intermittently hear truckies hurling abuse and Suzanne trying to get through to her husband, John. We're here to interview John and Suzanne about their management practices, their farm and their community, as part of the Communities in Landscapes project (CiL).

We're a bit early though and John is at a field day about dipping sheep, and getting hold of someone out in the country is never a straightforward job. When planning this trip out to Wellington, NSW, I ignorantly gave out my mobile number to the landholders we'd be interviewing. As it turned out, I was out of reception before we even turned in for our first coffee break out of Sydney.

While we're waiting for John, 4 year old Josh is chatting away about the new truck which we then go and admire in the backyard. The toddler-sized green John Deere is skinning driven around our legs several times before we're headed back inside upon the sound of the twins waking up. They calm down once they're in their rocking chairs, overlooking a miniature farm laid out in front of them. John rocks up soon enough and we pick his brains for the next couple of hours about his and Suzanne's personal and property history, the future, the local community, their sources of information and environmental management.

We're out here with a team of ten people from the CiL project who are interviewing 30 landholders in pairs of two interviewers over the course of three days. The information gathered through these interviews will be used to guide and inform the project, which is aimed at integrating production and conservation across Box-Gum Grassy Woodlands.

David and I visit six landholders during this trip, varying from highly production-focused traditional farmers, to landholders who have embraced new approaches to farm management to integrate biodiversity conservation and

other environmental benefits with commercial production. It is an enriching experience and we're overwhelmed by the hospitality, openness and cooperation we receive from every landholder we visit. I feel privileged that these people take time out of their busy schedules, in between managing the farm, running a household and attending field days, to sit down and talk to "the Dutch girl from Sydney".

After a long day in the field, David and I feel a cold beer is in order so we drive back to the hotel to debrief with the rest of the team. We're staying at the old Wellington hospital - where coincidentally David was born - and find the team in animated discussion and a Green Tree Frog chomping away on a juvenile Brown Snake. An appropriate finish to a day full of surprises, stark contrasts and many highlights. Not only has this trip resulted in a wealth of information and strengthened relationships within the team and with the landholder community, my next barbeque will now feature some of the most tender and tasty beef and lamb delivered right to my door in Sydney!



**Sarah is a Biologist from the Netherlands who moved to Sydney two years ago. She is currently working as a Project Officer for the Communities in Landscapes project at the University of Sydney.**

# Greening Australia Florabank

*Dr Penny Atkinson*



Greening Australia's Florabank is a national program which aims to improve the availability of good quality seed for biological diverse restoration projects around Australia. Florabank is proud to be a partner in the new Communities in Landscapes project supported by Landcare NSW through funding from the Australian Government's Caring for our Country.

Florabank's contribution to the Communities in Landscapes project will focus on native seed for Box-Gum Grassy Woodland (BGGW) restoration. Native seed is important to enable restoration work to be carried out in BGGW and without a good supply of healthy seed from the right species, from the right places, the success of the restoration projects in the area to be restored will be reduced. When seed (or tubestock grown from seed) from the right places and the right range of species is not available, there is pressure to substitute seed or tubestock from the wrong species or sub-species. This can cause biodiversity problems, including failure of plantings or the introduction of weedy native species.

To improve the success of restoring BGGW, good information is needed on how to best collect seed, propagate and re-establish key (or missing) BGGW species. There is a need for planning to determine how enough seed for the right species will be appropriately sourced to restore BGGW sites, while avoiding over-collecting from plants in precious remnant sites.

Local nurseries and professional and volunteer seed collectors will need training in best-practice seed collection and management. To meet these needs, Florabank will provide:

- . Information on key BGGW species through the addition of 40 BGGW species to the Florabank Species Navigator during 2010. Everyone across the range of BGGW will be able to access information on BGGW species on the Florabank website. For more information about Species Navigator, see:  
[www.florabank.org.au/default.asp?V\\_DOC\\_ID=924](http://www.florabank.org.au/default.asp?V_DOC_ID=924)

- . Seed supply planning will be conducted in the project focus areas to improve the availability of appropriately collected native seed and tubestock for a range of BGGW species. What species are required, where will the seed come from, and who will provide it in the quantities

required for planned restoration work? This strategic planning will facilitate better restoration of BGGW communities in the project focus areas.

- . Florabank Training for local seed collectors and community groups in BGGW project focus areas (Central West, Lachlan and Murrumbidgee Catchments). People in the project focus areas will be able to apply for Florabank native seed collector training. Two levels of Florabank training will be available in 2010 and 2011:

- o Community training – 1-day, entry-level training for people who are interested in finding out more about species in BGGW, and how to collect seed to help restore them

- o Professional Development training – 4-day accredited training for people who are experienced at collecting native seed and/or identifying and working with native species. This course will particularly suit people who work at nurseries, seed businesses, restoration, CMA staff, TAFE teachers, etc.

For more information and information resources:  
Visit the Florabank website [www.florabank.org.au](http://www.florabank.org.au)  
Visit the Greening Australia website:  
[www.greeningaustralia.org.au](http://www.greeningaustralia.org.au)

If you live in the Communities in Landscapes project focus areas, and are interested in applying for Florabank community or professional development training, contact your local Community Woodland Officer:

- . Maryanne Smith (Central West):  
[msmith@landcarens.org.au](mailto:msmith@landcarens.org.au) 0457 953 779

- . Megan Harris (Lachlan):  
[mharris@landcarens.org.au](mailto:mharris@landcarens.org.au) 0457 953 778

- . Kimberley Beattie (Murrumbidgee):  
[kbeattie@landcarens.org.au](mailto:kbeattie@landcarens.org.au) 0457 953 777

We're also interested in hearing from people in those CMA regions who currently collect seed or supply tubestock for restoration and are interested in being involved in seed supply planning.



# Grassy Woodlands - A Viable Resource that Provides Economic & Environmental Benefits

*Tony Cox - NSW Department of Industry & Investment*

With more than 55,000 hectares of high public value environmental assets on private land being targeted for conservation and production outcomes, Industry & Investment (I&I) NSW are a crucial partner of the Communities in Landscapes (CiL) team.

These grassy woodlands were a valuable resource which could provide economic and environmental benefits to the whole community and many of these areas had been used for productive agriculture for long periods of time. Our goal is to highlight the importance of Box-Gum Grassy Woodlands (BGGW) and enable local farming communities to better manage for biodiversity and production.

We will be working to ensure that our programs incorporate the messages that are coming out of the CiL project, focusing on the maintenance or even improvement of production from appropriate parts of the landscape, while also preserving or improving biodiversity values. We will be using tools such as Landscan, Landscan Farm plan, Paddock Plants and other programs to help landholders identify the plants they have on their properties, particularly those specific to BGGW. We will also be working extensively with landholders to assist them to assess their properties, so that they can determine those areas that can sustain continued agricultural production without degradation and those areas where sustainability or regeneration is the priority. Many of these areas are difficult to maintain, as they are often prone to overgrazing, degradation and erosion.

We will also be enthusiastic participants in on-ground activities to provide an agricultural management view point. We are very interested in the interaction between biodiversity and production and believe that the two are not mutually exclusive, but may in fact be synergistic.

Many of these sites contain a diversity of plant species and a range of native mammals, birds, reptiles, frogs and insects, many of which are beneficial to production. Our aim is to incorporate management of these areas into landholder farm plans, such that they become an integral part of the landscape. They have a strong role to play in integrated pest, weed and disease management. Initially we will identify exactly what species exist in various locations, their production values and management that

will ensure their survival.

Native winter- and summer-active perennial grasses found in the woodlands are already recognised by graziers for their ability to survive in local conditions. Many are also good quality stock feed at strategic times of the year and provide opportunistic grazing resources. Quality is often moderate to good when these species are kept short and leafy, but management for persistence is critical, as is avoiding grazing when awned seeds are present. A range of native species that occur in BGGW that are beneficial for production include wallaby grasses (*Austrodanthonia* spp.), Redgrass (*Bothriochloa macra*), legumes such as native soyas (*Glycine* spp.) and tick trefoils (*Desmodium* spp.) or shrubs such as wattles, (*Acacia* spp.). Many of the forbs are also likely to be palatable as they are often grazed out of areas where stocking pressure is high. Little research on their contribution has been done to date. This project may enable I&I to better ascertain the value of forbs to the diet of grazing livestock. The key to using these native species is being able to identify them and to know their good and bad characteristics. Part of this project will be to give landholders opportunities locally to identify plants, which is the starting point of using and managing them.

Let your CWO know if you would like them to organise a plant identification day for a group in your local area or contact:

**Tony Cox, Orange Agricultural Institute,**  
**0263 913 800 or 0427259691**  
**[tony.cox@industry.nsw.gov.au](mailto:tony.cox@industry.nsw.gov.au) .**



## Climate Resilient Restoration & Management of Grassy Ecosystems: a new restoration project

Elizabeth Lindsay and Suzanne Prober

As a part of the Communities in Landscapes project led by NSW Landcare and funded under Caring for Our Country, we are commencing an exciting new project that aims to help landholders improve restoration and revegetation outcomes under climate change.

When revegetating or restoring woodlands, it is becoming increasingly important to ensure that native plants can establish and persist in a drying environment. Opportunities to address this include use of species that are resilient to drought, improving seeding and planting technologies, and optimizing ecosystem functioning with regard to capture and use of limited rainfall. This project will focus on the latter, aiming to understand and restore changes to soil functioning in degraded and depleted pastures that are a common starting point for revegetation.

The project centres on two main components: baseline monitoring and restoration trials. Baseline monitoring will measure the soil's physical and biological properties, such as microbial activity and water infiltration, comparing these in various types of degraded pastures with those in high quality, reference woodlands. This data will allow us to identify possible constraints to restoration of native vegetation.

The restoration trials aim to investigate active interventions that could help restore soil processes and re-establish plant diversity in degraded parts of the agricultural landscape that are managed for conservation.

Some of the questions we hope to answer include:

- . Are soil processes associated with soil organic carbon, microbial activity, water infiltration and compaction compromised in degraded pastures that may be good candidates for revegetation?
- . Can treatments such as biochar addition or seeding with Redgrass (*Bothriochloa macra*) improve soil function?
- . If so, do improvements in soil properties lead to increases in plant establishment?
- . Could alterations in soil properties impinge on resilience of woodland communities to climate change and extreme climatic events such as drought?

We are looking for two different sets of sites to carry out these projects: sites to include in our baseline survey (these would be visited several times), and sites for trialling restoration techniques (these would be visited more frequently and we would pay for a contractor to fence them off from livestock grazing). The sites need not be very large (0.5 to 1 ha for the restoration experiment and <0.25 ha for survey work), and don't need to have any trees.

We are looking in particular for areas of degraded native pasture dominated by *Aristida ramosa* (Purple Wiregrass) or *Austrostipa scabra* (Corkscrew-grass) (see photos); preferably with low weed cover and no recent fertiliser use. We are particularly interested in sites within 5 km of the following locations within the Lachlan, Murrumbidgee, and Central West catchments:

Barmedman, Brooks Hill (Bungendore), Bookham, between Boorowa and Rugby, Bigga, Coolamon, Crookwell, Canowindra, Frogmore, Gundaroo, Hall (ACT), Koorawatha, Monteagle, Murrumbateman, Michelago, Murringo, Muttama, Morongla Creek, Stockinbingal, Toogong or Woodstock.

**Purple Wiregrass(a) and Cork-screw grass (b and c) commonly occur on soil low in nitrogen and carbon.**



(a) E. Lindsay



(b) & (c) J. Miles & M. Campbell  
<http://www.thebegavalley.org.au>

**If you think you have suitable areas on your property for this study and are interested in participating please contact Jacqui Stol: (02) 6242 1625; mobile 0419 608 616 email: [Jacqui.Stol@csiro.au](mailto:Jacqui.Stol@csiro.au)**

# The Community Benefits of Conservation Recognised - Australian Government BGGW Stewardship Program

*Graham Hodge*

To date the Australian Government, through its Caring for our Country Environmental Stewardship Program, has run five tender rounds targeting Box-Gum Grassy Woodland. The latest of these rounds was run in the Lachlan, Murrumbidgee and Central West CMA regions in New South Wales. So far the Australian Government has contracted 149 land managers to manage over 15,900 hectares of BGGW.

Land managers in the Central West, Namoi and Border Rivers Gwydir CMA regions who have eligible patches of Box Gum Grassy Woodland on their properties will be able to participate in the Environmental Stewardship Program through a tender **currently being rolled out for 2010-11. Contact the CW Catchment Management Authority**



**Grazing For Production and Conservation in BGGW**  
Photo by Ian and Tessa Ponder Dripstone - Central West NSW

## Australian National University - Long Term Monitoring of BGGW Stewardship Sites

*Geoff Kay ph: 0457 770 517.*

The Australian Government has implemented a Box-Gum Grassy Woodland (BGGW) Stewardship Project which aims to protect and enhance this threatened ecological community on freehold land. The project spans properties across New South Wales and southern Queensland, and represents the single largest woodland study ever conducted in Australia.

As part of this project, the Australian National University will be conducting long-term wildlife monitoring for the duration of the project to assess the effectiveness of these Stewardship agreements on maintaining and improving biodiversity within the BGGW ecosystem. While the Catchment Management Authorities will also be working alongside landholders to conduct some vegetation surveys, the ANU team will be working independently to undertake additional comprehensive vegetation (April), reptile (September) and bird (November) surveys. These surveys will take place over a 200m transect within the Stewardship area and, where possible, an identical 'control' site outside of the Stewardship site. Surveys will be conducted every second year.

As of January 2010, the team has commenced setup of its BGGW Stewardship Project survey sites and is very excited to be working with you over the years. Over the next two months the ANU team will be in touch with every landholder across the entire project area, if we haven't already been so, and all landowners within the Lachlan Catchment will be contacted by their local CMA officer. We anticipate having completed site setup by March, then returning for a second sweep of vegetation surveys to be finished by April.

### 'Sustainable Farms'

Fenner School of Environment and Society, ANU, and Kiri-ganai Research Pty Ltd.

*Kate Sherren, Joern Fischer, Helena Clayton, Jacki Schirmer, Stephen Dovers & Richard Price*

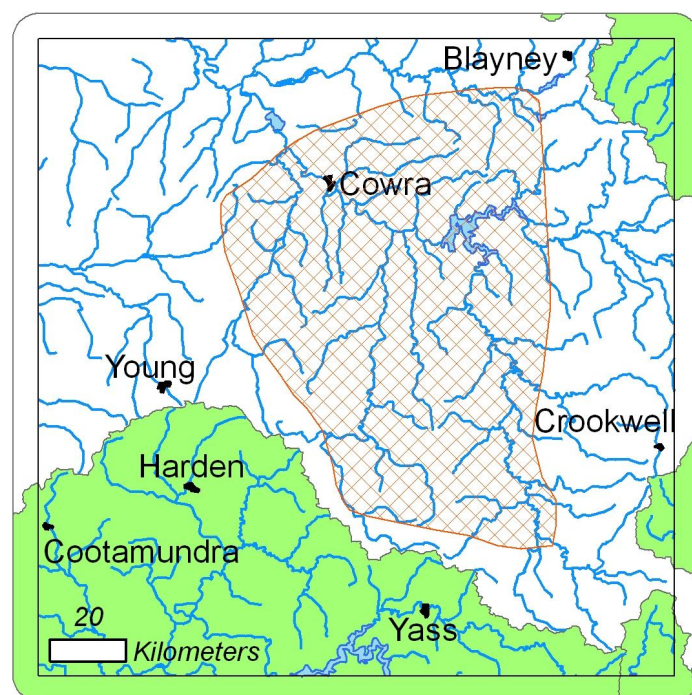
#### Introduction

South-eastern Australia's temperate grazing lands coincide with an internationally recognised threatened ecoregion. In much of the region, between 80 and 90% of tree cover has been cleared. Although clearing has largely stopped, tree cover continues to decline, because many existing trees are dying of old age, and few young trees are regenerating. Trees are important for many reasons: they provide habitat for wildlife and shade for livestock, they assist with water infiltration into the soil, and they are iconic parts of the Australian landscape. Given the importance of maintaining tree cover, how serious is the threat of tree regeneration failure, and what can be done about it?

In mid-2007, with the support of the Australian Research Council, Joern Fischer began a study to assess the scale of paddock tree decline in Australian grazing landscapes, and to evaluate a range of grazing regimes and other management practices to determine those which best enable seedling recruitment and biodiversity. He knew, however, that landholders need to balance more than simply biodiversity concerns in their production decisions. With Fenner School colleagues, he developed a bid for additional funds from the DEWHA CERF program to add social, economic and policy facets to the research. We began the social research in February 2008 and the economic and policy work in September of the same year.

We are studying a 1,000,000 hectare area in the Upper Lachlan catchment of New South Wales. We chose thirty-three farms in that area as research cases to sample a wide range of stocking densities and stock rotation regimes. Our research team combines expertise in ecology, economics and farm finance, policy analysis, spatial science, and social and participatory research methods. Field ecology was used to correlate grazing management histories given by landholders with tree regeneration likelihood and biodiversity. Photo-elicitation (a technique in Sociology that uses photography to gather data) was used to explore how landholders view trees and other elements of their working landscapes, and how their values affect their farm management decisions. We interviewed landholders, whose practices were conducive to seedling recruitment about the tradeoffs they

experience in their management practices. Finally, we used surveys, stakeholder workshops [1], census data and spatial analysis to correlate and extrapolate findings from our cases to the larger Sheep-Wheat belt of Australia. Our project will continue until September 2010.



**Study Area**

#### Early Findings

Paddock trees are declining in the region. Australia's temperate grazing region is facing a tree regeneration crisis. Today, regional tree cover in the study area is 17.5% (including public reserves). Large patches of trees (> 5 ha) are largely confined to the upper slopes [2], but scattered paddock trees are common throughout the region and account for approximately one third of the remnant tree cover on farms. Three quarters of our study area has sparse tree cover (density < 30%), including approximately three million paddock trees.

What is the future of these trees? Our analysis shows that many trees are old, especially where past clearing has been extensive. Typical paddock trees are often over 140 years old, and in many locations, no young trees have regenerated for decades. This age profile of trees, with many old trees and virtually no young trees. Is not natural: in long-ungrazed locations, we found that young

trees were in fact the most common age group. This result has serious implications: under existing management practices, millions of hectares of land, currently supporting tens of millions of trees, will be treeless within decades from now.

### **Landholders values related to trees may be contrary to practice.**

Landholders value scattered trees. During photo-elicitation, landholders captured photographs of features on their own properties that they felt to be 'significant'. Preliminary analysis of the resulting photos show there is a mismatch between the current landscape trajectory and the value held for scattered trees. All participants captured woody vegetation, and it was captured twice as often as any other feature. Within this, the sparsest structures were the most popular—an important finding for the project. This message was strengthened by a spatial analysis of photo 'footprints', also known as viewsheds. Photo 'footprints' captured a larger proportion of woody vegetation than farms overall hold (e.g. a median of 2.2 times more for paddock trees). The Sustainable Farms project included several questions in the 2008 Lachlan Catchment Landholder Survey coordinated by the Bureau of Rural Sciences. Most of those surveyed (>75%) recognise the value of native vegetation in their landscapes for habitat, aesthetics, and stock protection, and more generally for soil stability, groundwater control, and overall ecosystem health.

Compared to other types of trees on farms, isolated paddock trees are less likely to be actively managed and landholders are less likely to believe they have the abovementioned range of environmental benefits. Our regional landholder survey also demonstrated that fewer than ten per cent of landholders in the Lachlan catchment who have scattered trees on their property fence them off from livestock, compared with 21 to 23% of those who have small or large patches, and 40% of those who have strips of trees. Additionally, only about a quarter (27%) of survey respondents with scattered paddock trees have encouraged their regeneration, lower than that percentage with denser arrangements of trees they actively regenerated (41 to 51%).

### **It may be possible to reverse the trend while continuing production**

Management practices exist that can reverse the tree regeneration crisis [3]. For example, we found that trees are more likely to regenerate in areas with low soil fertility. We also found that trees are more likely to

regenerate under high-intensity rotational grazing than under conventional, continuous grazing. Hence, the more widespread application of high-intensity rotational grazing, combined with greatly reduced fertiliser use could significantly enhance tree regeneration throughout the region.

There are a few tangible management options for maintaining paddock trees. In some areas, natural regeneration is unlikely in the short term, for example because there are few parent trees, or because soil nutrient levels are high. In such areas, scattered trees can be planted with re-usable tree guards that protect individual trees from livestock – some pioneering farmers are doing this already. Another option is to temporarily exclude livestock from a paddock prior to re-seeding it and resting it for several years – an approach successfully used by Greening Australia in Canberra. See:

[www.greeningaustralia.org.au/community/capital-region](http://www.greeningaustralia.org.au/community/capital-region)



**Grazier and 'Sustainable Farms' research participant Mike Chambers uses his disposable camera to capture significant features of his property.**

Ultimately, maintaining tree cover over vast areas cannot be done without nature's help. Hence, farm ecosystems must become self-sustaining, allowing for natural tree regeneration while also providing an income to farmers. Our findings suggest that self-perpetuating farm ecosystems can be created by applying high-intensity rotational grazing with long rest periods, and by phasing out fertiliser use. Even where these practices are adopted, changes in tree regeneration will not occur overnight. But unless significant changes in management are introduced now, old trees will continue to disappear, and opportunities for natural regeneration will continue to be lost. This would have many negative consequences – for wildlife, livestock, and landscape aesthetics.

The future of Australia's paddock trees depends on urgent and widespread management action. While mature trees still exist, they provide sources of seeds for new regeneration throughout the landscape. They thereby offer a window of opportunity to reverse the tree regeneration crisis. These paddock trees must be retained as long as possible.



**Participants at the second 'Sustainable Farms' stakeholder workshop, Cowra, June 2009.**

Photo by Richard Price.

### What next?

The transition to integrating production and conservation may be constrained. Several landholders have participated in 'case study' research interviews about the economics of integrating production and conservation. Case landholders who are integrating regeneration goals into their grazing systems have experienced long-term economic viability and reduced income risk [4]. This makes the transition to the high-rotation, low-fertiliser grazing systems that support tree regeneration complex. There are prohibitive upfront costs. There is currently also limited capacity to have 'sustainable grazing' practices adequately valued in the market.

Despite an increasingly rich narrative, important gaps remain in our quest to find balanced solutions. Next we need to explore the impacts of a range of possible restoration scenarios on landscape and fiscal futures, including vegetation, biodiversity, aesthetics, and both farm-scale and industry-scale outcomes. We will also further investigate the degree to which findings derived from our cases apply to the larger sheep-wheat belt, through surveys and additional census analyses. Finally, in collaboration with landholders and relevant agencies, we will investigate the particular policy instruments that can be employed to encourage the agricultural practices deemed most likely to result in landscape-wide tree regeneration.

### Further Reading

This piece draws on the following publications to date from 'Sustainable Farms'. Several others are currently in review. Our website will be kept current with new resources about our findings as they arise:

<http://fennerschool.anu.edu.au/research/sustfarms>

1. Sherren, K., et al., Leverage points for reversing paddock tree loss in Upper Lachlan grazing landscapes – a workshop report. *Ecological Management and Restoration*, 2008. 9(3): p. 237-240.
2. Fischer, J., et al., Towards landscape-wide conservation outcomes in Australia's temperate grazing region. *Frontiers in Ecology and the Environment*, in press.
3. Fischer, J., et al., Reversing a tree regeneration crisis in an endangered ecoregion. *Proceedings of the National Academy of Sciences*, 2009. 106(25): p. 10386-10391.
4. Fischer, J., K. Sherren, and H. Clayton, Working in tandem with natural variability: new paradigms for livestock grazing in Australia. Inquiry into the role of government in assisting Australian farmers to adapt to the impacts of climate change 2009, Online: <http://www.aph.gov.au/house/committee/pir/australianfarmers/subs/sub004.pdf>: House of Representatives

### **A panorama of Dairy Park, a property involved in 'Sustainable Farms'.**

Photos by Grant and Liz Molloy, digitally merged into a panorama by Jerome Pink.



# The Grass Routes - Heritage ~ Habitat ~ Livelihood

*Adam Blakester*

There is a growing network working for the creation of a unique Australia-wide network of bush corridors. These 'grass routes' are essential to protecting our heritage and native habitats, as well as providing areas for sustainable livelihoods. To achieve this vision requires a groundswell of action from all Australians – citizens, organisations, businesses, scientists, drovers, politicians and more – to collaborate and contribute towards the conservation, regeneration and sustainability of our unique bush corridors. It requires a new network to form and build a common ground for the shared and sustainable use of these habitats.

Please consider joining in. You can buy (and sell!) Kangaroo Grass Seed Packs, promote Showpiece Stretches of existing bush corridors or make a tax deductible donation. You may have other brilliant ideas about how we can achieve this vision and we would welcome hearing from you.

The Grass Routes work is being led by a network of partners and is auspiced by the NSW National Parks Association in close collaboration with the NSW and QLD Travelling Stock Route (TSR) Coalitions. In fact the original idea for The Grass Routes grew from a desire to increase the level of public awareness and support for the retention and sustained management of the TSR network. During this work it became clear that there was both a need to protect the unique TSR network and an opportunity to link and extend it right across Australia.

The Grass Routes is about supporting the choice for all Australians to retain, extend and sustain our native habitats, and so create a globally unique network and resource of connected bush corridors for habitat, heritage and livelihoods. This vision is far from fancy. There are significant sections of TSR and other landscape already being used in this shared and integrated way – some of which are being funded and resourced by private citizens and local community groups. Plus there are three large scale efforts being The Great Eastern Ranges, Gondwana Link and the Trans-Australia Eco Link. We believe that a connected Australia-wide network of bush corridors is a critically essential piece in the long term sustainability of Australia – culturally, socially, financially and environmentally.

We have chosen Kangaroo Grass as our mascot for the need to regenerate seriously depleted native habitats across Australia. Proceeds from these Seed Packs are being invested equally towards:

- Work on local bush corridors;
- Building support, partnerships and shared resources like our website; and,
- Reinvesting into future awareness and fund-raising initiatives.

**For more information  
about The Grass Routes,  
to buy or sell Seed Packs,  
help us with a Showpiece  
Stretch of corridor, or get  
involved in some other  
way contact:  
Adam Blakester  
adam@paradigmplay.net  
m 0419 808 900  
t 02 6775 2501**

**THE GRASS ROUTES**  
Heritage - Habitat - Livelihood

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Inside are details on how to grow your beautiful Kangaroo Grasses – our mascot for the need to regenerate seriously depleted native habitats across Australia.

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**FOR ALL OF AUSTRALIA**  
Australia's Unique, Continuous Bush Corridors

Contains: Kangaroo Grass Seed, Sticker and Information Booklet

### Scarlet Robin (*Petroica boodang*) - a newly-listed vulnerable species

*Rainer Rehwinkel, Senior Threatened Species Officer, South Branch, Queanbeyan.*

The Scarlet Robin has recently been listed as a vulnerable species under NSW Threatened Species legislation. Most people are familiar with this beautiful little bird, and like I was, will be quite alarmed and shocked to realise that it is now regarded to be vulnerable species. The following information is an edited version of the information that has been assembled for the NSW Threatened Species Profiles on:

<http://www.threatenedspecies.environment.nsw.gov.au/tsprofile/index.aspx>

The Scarlet Robin is a quiet and unobtrusive species which is often quite tame and easily approached. It is a small Australian robin, one of four “red-breasted” robins. Reaching 13 cm in length, the males have a black head and upperparts, with a large white forehead patch, white wing markings and white tail-edges. The male Scarlet Robin has a bright scarlet-red chest and a white belly. Females are brown, darker above, and have a dull reddish breast and whitish throat. The whitish mark on the female’s forehead is smaller than the male’s. The female Scarlet Robin also has a white marked wing and tail. The main call of this species is a soft, warbling trill.

The Scarlet Robin is found from SE Queensland to SE South Australia and also in SW Western Australia. In NSW, it occurs from the coast to the inland slopes. After breeding, some Scarlet Robins disperse to the lower valleys and plains of the tablelands and slopes. Some may appear as far west as the eastern edges of the inland plains in autumn and winter.

The Scarlet Robin lives in dry eucalypt forest and woodland with an understorey that is usually open and grassy and with few scattered shrubs. This species lives in both mature and regrowth vegetation. It occasionally occurs in mallee or wet forest communities, or in wetlands and tea-tree swamps. This species breeds in the ridges, hills and foothills of the western slopes, the Great Dividing Range and eastern coastal regions; it is occasionally found up to 1000 metres in altitude.

The Scarlet Robin is primarily a resident in forests and woodlands, but some adults and young birds disperse to more open habitats after breeding. In autumn and winter many birds move to open grassy woodlands, and grasslands, or grazed paddocks with scattered trees.

Scarlet Robin habitat usually contains abundant logs and fallen timber: these are important components of its habitat. The birds forage from low perches, fence-posts or on the ground, from where they pounce on small insects and other invertebrates which are taken from the ground, or off tree trunks and logs. They sometimes forage in the shrub or canopy layer.

Pairs defend a breeding territory. They mainly breed between the months of July and January. They may raise two or three broods in each season. The nest is an open cup made of plant fibres and cobwebs and is built in the fork of tree, usually more than 2 metres above the ground. Nests are often found in a dead branch in a live tree, or in a dead tree or shrub. Eggs are pale greenish-, buff- or brownish-white and are spotted with brown. Clutch sizes range from one to four.

Birds usually occur singly or in pairs, or occasionally in small family parties. Pairs stay together year-round. In autumn and winter, the Scarlet Robin often joins mixed flocks of other small insectivorous birds which forage through dry forests and woodlands.



**Scarlet Robin (*Petroica boodang*)**

Photo by John Harrison, CC-BY-SA 3.0

The threats identified for the Scarlet Robin include the following:

- . historical habitat clearing and degradation;
- . habitat modification due to overgrazing;
- . reduction of size of remnant patches;

- . reduction in the structural complexity of habitat, including reductions in canopy cover, shrub cover, ground cover, logs, fallen branches and leaf litter;
  - . reduction of the native ground cover in favour of exotic grasses;
  - . loss of nest sites, food sources and foraging sites, such as standing dead timber, logs and coarse woody debris from depletion by grazing, firewood collection and 'tidying up' of rough pasture;
  - . predation by over-abundant populations of Pied Currawong (*Strepera graculina*) which are supported by planted exotic berry-producing shrubs; this pressure, is in addition to that from other native and exotic predators, may be a potentially severe threat to the breeding success of Scarlet Robin populations;
  - . predation by feral cats (*Felis catus*);
  - . robbing of nests and predation of fledglings by rats; and
  - . isolation of patches of habitat, particularly where these patches are smaller than 30 ha, and in landscapes where clearing has been heavy or where remnants are surrounded by cropping or stock grazing.
- Habitat for this species may become unsuitable if dense regeneration occurs after bushfires or other disturbances.

What can you do to reduce the threats to this species? While many of the threats that operate on this and other species of woodland birds are global (e.g. climate change) or regional and historical (e.g. widespread former clearing), there are things that land managers and planners can do to reduce some of the threats that still operate on the Scarlet Robin. The following are suggested strategies that could be tried:

- . Retain existing forest, woodland and remnant grassland vegetation, including paddock trees;
- . Retain fallen timber on the ground in open forest and woodland areas;
- . Enhance potential habitat through regeneration, by reducing the intensity and duration of grazing;
- . Fence remnants to protect them from long-term, intense grazing;
- . Increase the size of existing remnants, by planting trees and establishing buffer zones of un-modified, uncultivated pasture around woodland remnants;
- . Keep domestic cats indoors at night; desex domestic cats; assess the appropriateness of cat ownership in new subdivisions adjacent to Scarlet Robin habitat; and
- . Avoid the use of exotic berry-producing shrubs in landscape and garden plantings in areas adjacent to Scarlet Robin habitats.

In addition to the Scarlet Robin, the Flame Robin (*Petroica phoenicea*) and Varied Sittella (*Daphoenositta*

*chrysoptera*) were also recently listed as vulnerable. This adds to the list of other woodland birds that have been listed over the previous few years. Continuing efforts by members of Conservation Management Networks to appreciate, manage and protect their woodland and grassland remnants will go a long way to arrest some of the immediate threats facing the Scarlet Robin and its unique woodland relatives.

References and further reading include the following:

- . Higgins, P.J. & Peter, J.M. (Eds) 2002. Handbook of Australian, New Zealand & Antarctic Birds vol. 6 Pardalotes to Shrike-thrushes. Oxford University Press, Melbourne
- . Pizzey, G. & Knight, F. (2003) The Field Guide to the Birds of Australia 7th Edition. Menkhorst, P. (ed). HarperCollins.
- . Scarlet Robin *Petroica boodang* (Lesson 1838) - vulnerable species listing, NSW Scientific Committee - final determination at:  
<http://www.environment.nsw.gov.au/determinations/scarletrobinFD.htm>



**White Box Woodland providing habitat for Scarlet Robins - including different aged trees, logs and litter on the ground!**

Photo by Susan Jackson

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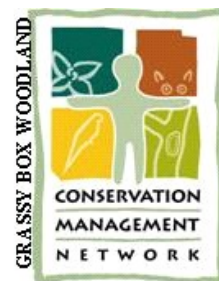
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Environment,  
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& Water



This Woodland Wanderings newsletter was edited by Toni McLeish (GBW CMN) and Rainer Rehwinkel (DECCW) and was produced with funding from the Australian Government Caring For Our Country program. The views expressed in this publication do not necessarily represent those of either the Department of Environment and Climate Change & Water or the Department Environment Water Heritage and the Arts. While every effort has been made to ensure that the information in this newsletter is accurate at the time of printing, neither the DECCW nor DEWHA can accept responsibility for any errors or omissions.

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### Article deadlines for Woodland Wanderings:

Spring 2010 August 31st Autumn 2011 February 28th

Spring 2011 July 31st

Union Offset Printers are accredited FSC/PEFC print suppliers

## Check List

### For details on:

BGGW Stewardship ( Multiple Ecological Communities Project)	<a href="http://www.cw.cma.nsw.gov.au/">http://www.cw.cma.nsw.gov.au/</a>
BGGW Stewardship Wildlife Monitoring	ph Geoff 0457 770 517
Grass Routes	ph Adam (02) 6775 2501
Native seed for restoration	visit <a href="http://www.florabank.org.au">www.florabank.org.au</a>
Sustainable Farms	visit <a href="http://fennergchool.anu.edu.au/research/sustfarms">http://fennergchool.anu.edu.au/research/sustfarms</a>
Scarlet Robin	visit <a href="http://www.threatenedspecies.environment.nsw.gov.au">www.threatenedspecies.environment.nsw.gov.au</a>
CSIRO BGGW management research	ph Jacqui (02) 6242 1625

### To be involved in:

#### Training:

- Identify & protect Aboriginal cultural values
- Identification, management & propagation of targeted threatened flora species
- Adaptive management & monitoring

#### Workshops:

- Identification, management & propagation of targeted threatened flora species
- Seed collection, supply & production
- Landscan Farm Planning
- Frog awareness

#### Field days:

- Paddock Plant Field Days
- Threatened species habitat
- Woodland succession
- Conservation agreements
- Best management practice

**Spring site surveys for landcare and CMN members** (if you haven't had one before)

**Forming a BGGW manager support group**

**Trialling the computer-based monitoring Biodiversity Incentive Tool**

**Applying for a BGGW small community project grant**

### Contact your CWO in:

Central West	Maryanne	0457953779
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