

WELCOME TO THE WILDSIDE

Wednesday June 23, 2010

Greetings from the Editor

G'day all and welcome to this issue of 'Welcome to the Wildside'. This newsletter is produced by David Lindenmayer's research team at the Australian National University. It is our aim to ensure that all our research partners, such as yourselves, are up to date with our work.

Over the last six months, our focus has been on setting up and collecting vegetation measure for two new major studies, the monitoring of the Federal Government's Box Gum Stewardship project and the extension of the Murray Study across the river into North East and Goulbourn Broken CMAs in Victoria. We have also recently set up our Woodlands Nest-box study which will see us monitor nest boxes around Junee, Gundagai and along the Hume Highway. We are also

currently setting up sites around Holbrook in partnership with the Slopes to Summit (S2S) initiative.

Congratulations to Damian for completing his Phd and on his new book *Reptiles of the NSW Murray Catchment* and good luck to Rebecca with birth of her and Josh's second baby, due the start of July.

Over the next six month the team will taking on its biggest field season ever. Surveying birds and reptiles from Queensland border region to Melbourne, plus more. We would like again to thank all our partners (landowners, CMA staff and others) for their support.

Mason Crane

Spreading the Word

Communication is something the team sees as being very important, this year we have again produced numerous scientific papers and other publications. If you are interested in viewing these, visit David Lindenmayer's home page for a comprehensive list of papers or contact Damian, Mason or Rebecca. Below are the abstracts of our most recent woodland related papers.

The importance of temperate woodland in travelling stock reserves for vertebrate biodiversity conservation.
**Lindenmayer et al. (2010),
Ecological Management and Restoration**

Travelling stock reserves have well recognised and important commercial, cultural and other values in the pastoral and agricultural regions of Australia, but their conservation values remain poorly known. In general, many areas of woodlands within travelling stock reserves have not been subjected to the same high levels of degradation pres-

sure as similar temperate woodlands on private land. In this study, we compared several measures of vertebrate biota in 217 permanent field sites located in travelling stock reserves and woodland remnants located almost exclusively on private land in the Murray Riverina and South West Slopes bioregions in southern New South Wales. We found that in comparison with temperate woodland remnants on private land, temperate woodland in travelling stock reserves tended to support more species of birds, more species of declining birds, and a greater abundance of arboreal marsupials. Temperate woodland in travelling stock reserves was more likely to be occupied by particular individual species of birds of conservation concern. However, such tenure differences were not consistent between bioregions. For example, the Rufous Whistler (*Pachycephala rufiventris*) and the Red-capped Robin (*Petroica goodenovii*) (see picture) were significantly more likely to occupy temperate woodland in travelling stock reserves than temperate woodland on private land in the Murray Riverina but such effects were not apparent in the South

West Slopes. Similarly, while the Grey-crowned Babbler (*Pomatostomus temporalis*) was significantly more likely to occupy temperate woodland in travelling stock reserve sites in the South West Slopes, we found the opposite effect in Murray Riverina. We demonstrated that travelling stock reserves have important conservation values for some taxa and individual species. Because of the paucity of large ecological reserves in the Murray Riverina and South West Slopes bioregions, temperate woodlands located in travelling stock reserves should be considered as an important resource that contributes to a portfolio of vegetation assets in formerly woodland-dominated, but now extensively cleared, agricultural landscapes.



The use of den trees by the squirrel glider (*Petaurus norfolcensis*) in temperate Australian woodlands. Crane and Lindenmayer (2010), Australian Journal of Zoology



Effective conservation relies on understanding the biology of particular species and how they use key resources. For many arboreal mammals, tree hollows are a key den sites. We examined the use of tree hollows by the squirrel glider (*Petaurus norfolcensis*) in south-eastern Australia. Over a five month study individual squirrel gliders used multiple hollow trees (average = 7) as den sites. Den sites were often adjacent to areas where nocturnal activities took place. The average distance between den sites used by individual gliders on successive days was 218 m. Dens were often shared by an adult pair and a juvenile. Den trees were disproportionately used, with gliders showing preference for 1-2 primary den trees often located on steep slopes. Our findings have implications for the number and spatial arrangement of den trees needed to promote the conservation of populations of the squirrel glider, particularly where land is used for agriculture and livestock grazing.

What makes an effective restoration planting for woodland birds? Lindenmayer et al. (2010), Biological Conservation

Large-scale vegetation clearing accompanying agricultural development has been a major driver of biodiversity loss. Efforts to reverse this problem have often included revegetation, but the value of revegetated areas for biodiversity is poorly known. We addressed aspects of this knowledge gap using a case study in south-eastern Australia.

We quantified relationships between bird species richness and the probability of detection for eight individual bird species and: (i) the context of a planting, i.e. the types of the vegetation cover in the neighborhood of a planting, (ii) the configuration of a planting, i.e. the location and geometry of a planting, and, (iii) the content of planting, i.e. the vegetation features of a planting. The presence and nature of the effects of these explanatory variables varied with each of our response variables. A combination of context, configuration and content variables were needed to explain the variability in species richness and the presence of individual species. Context effects were highly significant, particularly the amount of planted and remnant native vegetation surrounding plantings. We speculate that when the area surrounding a planting was potentially suitable, recognition of planting “patch” boundaries disappeared and, correspondingly, configuration effects such as planting size were limited. Our results suggest that maximizing the value of planted areas for bird biota requires consideration not only of the features of the vegetation within a planting, but also where a planting is placed.



Managing rock outcrops to improve biodiversity conservation in Australian agricultural landscapes. Michael et al. (2010), Ecological Restoration and Management.

Summary Rocky outcrops are prominent geological features in agricultural landscapes worldwide. Reptiles are a major component of these habitats and some species are restricted to, and more

abundant on, rocky outcrops than in remnant vegetation. Rock outcrops are



Pink-tail Worm-lizard

important to reptiles because they provide resources that are often limited in the surrounding landscape (e.g. microgradients in climatic conditions, basking- and retreat-sites). However, there is a knowledge gap in the literature addressing the conservation value of small, rocky outcrops. Management may be necessary to reverse habitat degradation in these systems. We identify four key areas of management that need to be addressed to improve outcrop habitat values and enhance biodiversity conservation in agricultural landscapes. Specific actions involve: (i) protecting outcrops from processes that cause damage to rock microhabitat, (ii) monitoring and managing changes in vegetation structure to maintain thermally suitable environments, (iii) applying integrated pest animal control and (iv) improving matrix management to enhance inselberg function and landscape connectivity. Further research is required to evaluate the efficacy of different management regimes on outcrop biota. We hope this paper will provide the stimulus for land managers to incorporate rocky outcrops in future biodiversity conservation programmes.

Others

*The social elite: Habitat heterogeneity, complexity and quality in granite inselbergs influence patterns of aggregation in *Egernia striolata* (Lygosominae: Scincidae).* Michael et al. (2010), *Austral Ecology*.

Microhabitat relationships among five lizard species associated with granite outcrops in fragmented agricultural

landscapes of south-eastern Australia. Michael et al. (2010), *Austral Ecology*.

A Big Operation

Over the last six months the research team has been joined by new research officer Geoff Kay, from Murrumbidgee. He has been given the enormous task of setting up and coordinating the monitoring program for the Federal Government's "Grassy Box Environmental Stewardship Project". The project area extends from Stanthorpe in Queensland, through western slopes of NSW to almost Victoria. The project includes over 200 monitoring sites, on over 100 rural properties.



Meanwhile Damian Michael has been setting up a similar monitoring study for North East CMA (Vic), Goulbourn Broken CMA (Vic) and Murray CMA (NSW). This has extended woodland studies as far south as Merton and Euroa.

Through April to June the team has been clocking up the kilometers setting up sites. This involved carrying out initial vegetation surveys and distributing over 2000 railway sleepers and roofing tiles and 1000 sheets of corrugated iron, to be used for reptile surveys.



Junee nestbox study

Through February the team hang over 100 nestboxes of various designs in remnant woodlands and plantings affected by the Junee fire in 2000. The project is the brain child of the Junee Landcare Network. The boxes were built by the Junee Mens Shed and the Junee Correctional Centre.

Interestingly some of the boxes have been built with a separate compartment for microbats, making the boxes multipurpose.



We also specifically set up a number of squirrel glider nestboxes in area where a dead glider was found. Hopefully this will confirm if the gliders are still in the area, and if so help them cope with the loss of any den sites burnt during the fire.

Our team at the ANU will be monitoring the boxes over the coming years and will examine what are the characteristics of the boxes and locations where the boxes are hung, that make them more likely to be used by certain species.

While we expect to start checking the boxes in August, we have noticed some being used already (less than a month after it was hung).



A mother and young brushtail possums, making use of a nestbox.

Birds after the Black Saturday Victorian fires

The ANU team has been working in the Victorian forests around Marysville, Healesville and Powtown for over 20 years. While most of the work has concentrated on possums, gliders and small mammals, the last five years have seen the focus put on birds as well.

With advent of the devastating Black Saturday fires our research in these forests has become even more critical. This has made for busy times for our two research officers, Lachie McBurnie and David Blair, who are based in Healesville.

In December last year we conducted our first bird surveys since the fires. The same 80 sites in which we had surveyed over the past 3 years.

While the sites that were burnt are slowly recovering, the bird populations have changed dramatically. Birds that require dense undergrowth and thick canopies were absent from most of these sites, depending on the severity of the burn. Most of these species were now found in the moist gullies that had escaped the high intensity blaze. However remaining dead shrubs and fallen branches on these site often provide sufficient habitat for species such as scrubwrens and thornbills.



While some species had been disadvantaged by the burn, others, such as

flame robins (see picture) took advantage of the new open areas to forage. These burnt areas also attracted new species that had never been recorded in the study before, species such as red-capped robins and white-browed woodswallows.

Another unusual find was good numbers of scarlet honeyeaters (only in unburnt sites). This was our first records for this species and is probably not related to the fires as they were widespread in Melbourne and other parts of Vic as well.

It will be interesting to see how the birds respond over the next few years.

A interesting find

During our recent work in northern NSW we made an interesting find beside the road near Tentifield, a road kill Tiger Quoll!. This species was once wide spread through all our study areas, however today is now rare indeed.



Planned field surveys

June: Murray Bird Survey

July: S2S Vegetation & Bird Surveys

August: Junee and RTA nestbox surveys; Murray Reptile Surveys

September: Stewardship Study Reptile Surveys

October: Murray Bird Surveys; Murray Spotlight Surveys (NE and Goulbourn Broken CMAs only)

November: Stewardship Study Bird-Surveys

About the Traps

Throughout much of our study areas, this winter it is shaping up as a good flowering season for Eucalypts. We are already seeing good numbers of honeyeaters, including purple-crowned

lorikeets in NE Vic and Southern NSW. So keep an eye out for regent honeyeaters and swift parrots.

Staff Profile

Normally our staff profile section would focus on only one of our staff members, but given all our new partners involved in the Woodland Stewardship study and in the North East and Goulbourn Broken CMA studies. We thought we would give you an introduction to our main field staff.

While all staff have their own main studies they are responsible for, we all come together to carry out major surveys eg. Bird counts.



Chris MacGregor
Location: Vincentia NSW.
Main Project: Jervis Bay Research



Damian Michael
Location: Albury NSW
Main Project: Murray and NE Vic. Research



David Blair
Location: Healesville, Vic
Main Project: Central Highlands Research



David Lindenmayer
Location: Canberra, ACT
Main Project: Group leader, overseeing all research



Geoff Kay
Location: Murrumbateman, NSW
Main Project: Box - Gum Stewardship



Lachie McBurnie
Location: Mt Everlin Vic
Main Project: Central Highlands Research



Mason Crane
Location: Gundagai, NSW
Main Project: Southwest Slopes Research



Sachiko Ellicott
Location: Gundagai, NSW
Main Project: Southwest Slopes Research



Rebecca Montague-Drake
Location: Gundagai, NSW
Main Project: Southwest Slopes Research

David Trengove (no picture)
Location: Cowra, NSW
Main Project: Lachlan CMA employee assisting us with Box-Gum Stewardship

Further information

For any further information or general inquiries, please phone us, drop us an email or call in and see us.

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Thanks to:

