

Updates on:

- The Mount Lofty Ranges Declining Woodland Bird Survey
- T P A G p l a n t recovery programs in the AMLR
- Revisiting South Para

Conservation Biology Grant Report:
Difficulties associated with urban bat research

Different shades of Green: Corridors are starting to link remnant vegetation in the Limestone Coast

NCSSA major concerns include

- Native vegetation, threatened species and habitats
- Protecting all forms of life (biodiversity) on land and in the oceans
- Park dedication, management and legislation
- Education about biodiversity to all sections of the community
- Cooperation with other conservation groups

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Around NCSSA

Recent Committee changes

Departures South:

Committee member Allan McIlwee has taken up a temporary contract position in Mount Gambier. We look forward to seeing Allen back again sometime later in the year.

Our Assistant Secretary, Peter Tucker has recently taken up a new position based at Naracoorte and so has resigned from our committee. Peter has been a Committee member for 5 years and Assistant Secretary for the past 2 years. He has been a great asset to the organisation over this period, and his valuable input will be missed. We wish Peter all the best in his new role.

This leaves us with two vacancies on the Management Committee, at an interesting time for the Society, so...**WE NEED YOU.**

If you have some energy and time to devote towards helping to manage our energetic and effective organisation, give us a ring on 08 8223 6301 or have a look at our website ~ www.ncssa.asn.au, under Getting Involved, Join the Committee for further details.

2006 Annual Survey

Last year's annual biological survey is all but completed. November and December were busy months for our Survey Coordinator,

Melissa Batt, with completion of on-ground surveys of the remaining twelve sites (out of sixteen) with the assistance of NCSSA staff and committee members, volunteers and land managers. Mel and our Sonia Croft also carried out eleven Bushland Condition Monitoring quadrats on seven of the sites during December and January. Some of the sites warranted two BCMs as they identified a number of significant vegetation associations and variations in vegetation health.

Mel is now collating all the data that has been collected over the past few months and is in the process of writing the report detailing her findings of the current status of the sixteen remnant sites that were selected for the 2006 survey.

Watch this space for further information on findings and publication of the report.



NCSSA people

Management Committee

President Helen Vonow
Vice-President Misch Benito
Secretary Katie Fels
Assistant Secretary vacant
Treasurer Richard Winkler

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Bushland Condition Monitoring Manual Trainer Janet Pedler
MLR Woodland Bird Survey Coordinator Tina Bentz
2006 Survey Coordinator Melissa Batt
Database & Website Project Officer Lesley Parton

Update on the Mount Lofty Ranges Declining Woodland Bird Survey

The Mount Lofty Ranges Declining Woodland Bird Survey is a long-term monitoring program, running since 1999, when it was initiated by Professor Hugh Possingham's research group. It aims to assess the evidence for a decline in woodland bird species through repeated surveys of 164 sites throughout the Mount Lofty Ranges (from Kaiserstuhl Sanctuary in the north to Deep Creek Conservation Park in the south). Much of the data and associated reports and papers can be downloaded freely from <http://www.ecology.uq.edu.au/index.html?page=44639>.

Key achievements and outcomes to date include:

- Occasional "snapshot" surveys may be sufficient to keep track of more secure, stable populations, whereas those that fluctuate widely must be monitored annually. This study represents one of few long-term regional scale studies of a group of species in Australia that achieves this goal.
- Each 2 ha site is surveyed during three 20-minute visits between September and December. This repetition is necessary to estimate the observation error rates, which is crucial to determining statistically whether birds are declining.
- Avid bird watchers have volunteered to be surveyors, which increases reliability of species identification. They have completed 492 surveys each year the survey has been run through the NCSSA. Their contribution is greatly appreciated.
- Liaisons with property owners, including councils, DEH, SA Water, ForestrySA, Friends of Parks groups and private landholders, have included yearly updates, bird lists and letters to seek permission for site access.
- Max Possingham has provided countless volunteer hours organising and checking the database. The database has been updated further to facilitate data entry and report generation for over 8 years of survey data. Ultimately this will yield a compelling, statistically robust set of population trajectories for a majority of species in the region.
- Innovation in research and synthesis, data analyses and scientific publications are carried out under the supervision of Professor Hugh Possingham at the University of Queensland (<http://www.uq.edu.au/spatialecology/>).
- The results of this study provide an invaluable tool for forming management decisions and increasing public awareness of, and support for, this and other biodiversity conservation issues in the MLR.
- The data collected is being used to improve our understanding of habitat preferences in MLR bird species. This includes not just site-level preferences, like habitat type and structure, but also landscape-level preferences like patch size and shape. Habitat modelling is being conducted under the supervision of Dr Mark Lethbridge at Flinders University. This information will be used to guide habitat restoration by regional bodies, non-government organisations and governments.
- This study provides a tool to monitor and evaluate the performance of activities intended to maintain or restore biodiversity. The data can be used as a benchmark for the success of habitat restoration and rehabilitation. Furthermore it can be used as "before" data in before-after control-impact experiments on the success of actions like fencing, revegetation, feral control or weed removal.
- Dissemination of project outcomes has included: *Xanthopus* articles; BirdsSA updates including presentations and SAOA newsletter articles; as well as published scientific articles in scientific journals such as *Landscape Ecology*, *Journal of Wildlife Management*, *Austral Ecology*, *Conservation Biology* and *Ecological Applications*.



Surveyor working at Mt. Bold.

Photo Craig Gillespie

Special thanks to the funding and participating organisations: Australian Research Council, Department of Environment and Heritage, University of Queensland, University of Adelaide, Nature Conservation Society of South Australia, Adelaide & Mount Lofty Ranges Natural Resource Management Board.

Tina Bentz, Bird Survey Coordinator

get a grip
Coming Up:

HANDS ON ACTIVITIES FOR MEMBERS

BUTTERFLY WATCH

'Butterfly Watch' is now on-line. Go the South Australian Museum website www.samuseum.sa.gov.au then click on 'Media' and 'online exhibitions'. The site seeks information from the general public on: What nectar plants are the adults feeding on? and Where are the butterflies?

Butterfly Conservation SA hope that 'Butterfly Watch' will raise awareness in the general public on butterflies and their needs. Information gathered will be used by a group of students at Flinders University who are working on several butterfly projects related to this site. Butterfly Watch is the first step in Butterfly Conservation SA's proposed campaign to 'Bring the Butterflies Back to Adelaide' to be launched in 2007.

Biology Society of South Australia talk: Thursday March 8th with Welcome BBQ at University of Adelaide 5.30pm.

Volunteer Opportunity: Greening Australia, Aquatic Plant Rescue Team

Volunteers wanted to assist with native flora recovery. Field based activities to be undertaken on Wednesdays will include species recovery, plant and seed collection and Thursdays will be spent in the Greening Australia nursery undertaking plant division, tubing and propagation.

No experience needed. Excellent opportunity to gain hands-on experience and skills in conservation and land management. Anticipated length of Job (duration): 4 weeks.

To register your interest contact: Allys Richardson, Volunteer Coordinator, no. 83720179

Free! Feral Olive Control Field Day at Inglewood 3rd March 2007

9am - 11.30am, presented by the Adelaide and Mt Lofty Ranges NRM Board's Land Management Program in partnership with the Northern Foothills Land Management Project.

Topics to be discussed include: compliance, removal and control options, small or large scale control options, on site discussions and demonstrations and good control verses bad control.

Presenters: Ann Prescott, Bush Management Advisor, Dept. Environment and Heritage;
Matthew Cottle, Adelaide and Mt Lofty Ranges NRM Board; Tony Patterson, Proprietor, Better Bushland's;
Brett Miller, Project Officer - Northern Foothills Land Management Project

Registration Essential, for further details, and to register, phone Claire Stephenson on 8568 1714, Mob 0408 000 842, or email claire.stephenson@adelaide.nrm.sa.gov.au

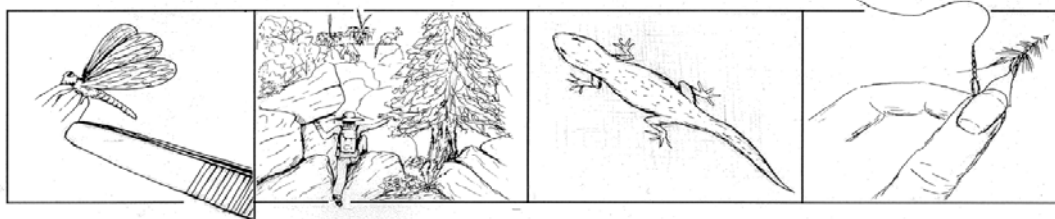
Mallee Fire & Biodiversity Project from 12 - 27 March 2007

Volunteer field assistants required (min 1 week) to assist PhD students to clear pitfall traps of small mammals and reptiles in the Mallee including: Gluepot Reserve, SA; Billiatt Conservation Park, SA; Murray Sunset National Park, Vic; Petro & Lethero Station NSW in isolated, remote areas.

This project is investigating the response of birds, mammals, reptiles, invertebrates and vascular plants, to different fire regimes in the Mallee region across VIC, SA & NSW, and is being jointly run by Assoc Prof Dr Mike Clarke (La Trobe University) and Assoc Prof Dr Andrew Bennett (Deakin University), with a group of 7 PhD students undertaking the research.

All food, accommodation (research quarters/ caravan park cabins/bush camping) and travel will be covered.

Need to be keen in the natural world, fit and active, heat tolerant, and able to walk several kms in the bush daily. Although beneficial, experience in animal ID or handling is not necessary. Contact: Dr Kate Callister, email: K.Callister@latrobe.edu.au Ph: 03 9479 1876



Scientific Officer's Report:

SA to Undermine Federal Environment Legislation to Build Wellington Weir:

The Rann Government has sunk to a new low by seeking an exemption from the Environment Protection and Biodiversity Conservation Act to build the controversial Wellington Weir. This application has the potential to set a terrible precedent for environment protection throughout Australia and there is no doubt that the political and environmental ramifications of this type of "side stepping" will be felt for years to come.

The proposed weir has angered local residents, community groups, environment groups, scientists, councils and farmers who are all concerned that this development will devastate the internationally listed Ramsar wetlands of the Lower Lakes and Coorong. The Weir is planned to stretch 2.6 km across Lake Alexandrina at Pomanda Island, putting the development directly within the area listed as being of international importance in 1985.

This is a glaring example of this Government's lack of environmental priorities and eagerness to ignore environmental legislation if it doesn't suit their political agenda. This is not a long term solution to South Australia's water problems; this is an ill-conceived, panicked reaction from a Government that has now realised that it should have dealt with our society's exploitation of the River Murray and her resources years ago.

We would like to thank those members who attended the "no weir" rally on the 18th of February. It was a strong turn out of over 500 people in sweltering 40 degree heat, proving how strongly many South Australian's feel about the protection of our states wetlands and environment.

Road to nowhere to 'dump' on nature: Road redevelopment could destroy threatened species habitat.

Late last year I was contacted by a group of residents in the Murray Bridge Council area. They were extremely concerned about the proposed redevelopment of the Ferries McDonald Road which runs straight through the middle of the Ferries McDonald Conservation Park, situated south west of Murray Bridge. According to the Council this road has been chosen as part of the State Strategic Plan as a freight "linkage" to improve freight connectivity between Langhorne Creek and the Barossa Valley. To allow semi-trailers to travel along the road the council have proposed an upgrade including widening, flattening and sealing the road. To complicate matters even further, the adjacent Alexandrina Council also has plans to use this road as an access linkage to a proposed composting dump to be situated to the south of the Conservation Park.

The Society is extremely concerned as Ferries McDonald Conservation Park, and its vicinity, is home to a variety of ecologically significant species and is recognised as providing critical habitat for the EPBC listed Mallee Fowl, Neat wattle (*Acacia rheticarpa*) and the endangered Streaked hopbush (*Dodonaea tepperi*).

The proposed changes have major environmental and conservation implications for the area ~ these types of road works will require the clearance of roadside vegetation to widen and flatten the road, and to provide "turnarounds" for vehicles.

Apart from this obvious destruction of habitat due to vegetation clearance there are also concerns regarding the increased heavy vehicle traffic utilising Ferries McDonald Road. This traffic is likely to endanger a range of animal species including the Mallee Fowl,

Southern Hairy-nosed Wombat and the Short-beaked Echidna, to name a few. These animals and many others will not stand a chance against semi-trailers travelling at the proposed road speed of 100 km per hour through the centre of the Park.

There is also the added potential for increased weed infestations in the Park due to the road works and an increase in disturbance and of course the loss of the areas natural ambiance due to the thundering of the passing heavy traffic. Keep an eye on our website for updates on this proposal over the next few months.

Government amends the Future of SA's Native Veg...

This year the Society has found itself battling worrying amendments to the *Native Vegetation Act 1991*. These amendments will further erode the minimal legislative protection provided to the states remnant native vegetation. This year's amendments include a variety of changes including the introduction of cross-regional significant environmental benefits (SEB's), credit for SEB's and the demise of the protection of vegetation in cemeteries.

What is a SEB?

There is currently no legal definition of an SEB. While there are an assortment of varying descriptions and calculations, the term is completely open to interpretation making it a reckless environmental concept.

The concept of allowing cross-regional SEB's is fundamentally flawed. In essence this amendment will allow for the clearance of native vegetation in one area of South Australia to be offset by a SEB in a totally different region. For example a mining company could clear in the arid zone of SA and provide an offset in the Mount Lofty Ranges. This arrangement is obviously beneficial for the commercial sector as any SEB's situated in an area with a high population density will allow many companies to raise their environmental public profile.

What is clearance?

"Clearance" includes any activity that may cause substantial damage to native plants. It includes not just cutting down and removing plants, but also burning, poisoning, slashing of understorey, removal of branches, drainage and *reclamation* of wetlands and may include stock grazing.

The concept of an SEB credit system is also extremely concerning. This system will allow for a landholder or commercial entity to provide an SEB that is larger than the calculated size for the amount native vegetation that has been cleared. Any part of the SEB that is deemed to be above the amount specified by the Native Vegetation Council can then be used as credit for future clearances. This is an extremely problematic concept that will further complicate the already inconsistent and convoluted world of SEB's.

The last major amendment is to reclassify cemeteries as infrastructure which will effectively exempt cemetery reserves from the protection of the Native Vegetation Act. Many regional cemeteries make up a small but integral part of South Australia's pre-European vegetation history and in many cases are the only examples of these types of vegetation communities in a cleared landscape. This amendment will put the unique, and in many cases threatened species of these areas at risk of local extinction.

For more information about any of these issues please do not hesitate to contact me on (08) 8223 1693 or at georgina.green@ncssa.asn.au

Georgina Green

Upcoming activities of the Threatened Plant Action Group (TPAG)

Come and be involved in some **hands-on** action to help threatened plants and vegetation communities recover with the Threatened Plant Action Group. Training and some tools are provided on the day. Most working bees are in the morning, generally from 9.30 am onwards, with training and some tools provided on the day. Please dress sun-smart, wear a hat and sturdy footwear. Everyone welcome. Upcoming working bees over the next few months will occur on the following dates.

Millbrook Reservoir Every Tuesday (except fire ban days)

Come help with the management and restoration of grassy Red gum - Blue gum Woodlands that are habitat for threatened orchids and herbs like *Caladenia rigida*, *Glycine latrobeana* and *Diuris behrii*.

Tarlee Friday March 2 & 9 and Friday May 25

Help recover threatened Temperate grasslands and Spalding blown-grass (*Lachnagrostis limitanea*) at sites north of Adelaide. Activities include, weeding, slashing, planting and site management.

Hindmarsh Falls Monday April 2 and Wednesday August 8

Join in surveys and weed management to restore habitat for the vulnerable Hindmarsh Correa (*Correa calycina*) and threatened upland swamps at Hindmarsh Falls.

Clare Wednesday 4 April

Want to save a rare beauty? The White Beauty Spider-orchid (*Caladenia argocalla*) is under threat from invasion by Topped Lavender and your participation can help make a real difference. Remember to bring your secateurs!

Belair Saturday April 14, Saturday May 12 and Saturday June 9

Pitch in by joining efforts to protect and restore habitat for the Leafy Greenhood orchid (*Pterostylis cucullata*) at Belair National Park. Share in the action by doing a morning's work amongst beautiful Manna Gum woodland in the southern Mount Lofty Ranges.

Pine Point Weekends of April 21 & 22 & June 23 & 24

Join in the planting and weeding on these weekend trips to restore habitat for *Acacia rheticarpa*.

Mount Bold Wednesday May 2

Survey and monitoring work will be carried out and weeds such as Broom and Radiata pine tackled to assist the survival of several endangered woodland plants including Native caraway and violets.

Mount Lofty /Cleland Friday June 8

Come work in perched swamps to help manage threats and monitor endangered plant species and communities.

Kulpara Friday June 22

There is a lot of work to do to help Limestone phebalium (*Phebalium glandulosum* ssp. *glandulosum*) with weeding of Bridal Creeper, Horehound and Boxthorn. Bird surveys will also be conducted.

Hindmarsh Reservoir Monday July 2

Work with the Native Orchid Society of SA and Lofty Block Threatened Orchid project on monitoring of *Pterostylis bryophila*. Weeding of Bridal Creeper and *Watsonia* will be carried out to assist with habitat rehabilitation.

Finniss Saturday July 21

In order to help restore the habitat of *Acacia pinguifolia* and *A. rheticarpa*, site monitoring and threat abatement of *Asparagus* weeds will be continued.

Dates are subject to change due to weather and seasonal factors so for information please contact Tim Jury on 08 8232 4088 or tpag@ncssa.asn.au

XANTHOPUS

The views presented in this newsletter are not necessarily those of the NCSSA

Copy deadline for the Winter edition is **16th May** 2007.

Contributions in a variety of formats will be considered, but electronic submissions are preferred.

Editorial Team for this issue: Misch Benito, Mel Kovac, Nicole Lewis and Helen Vonow.

Please let us know if you would prefer to have your *Xanthopus* emailed in preference to a hard-copy
~ we are considering this as an environmentally friendly option.

TPAG plant recovery programs in the AMLR: Sustaining threatened flora in a biodiversity 'hot-spot'

Introduction

Members of the Threatened Plant Action Group (TPAG) have been working hard to recover threatened flora in the Mount Lofty Ranges (MLR). The southern MLR form part of a National biodiversity 'hot-spot' as a region with high biodiversity values that are under increasing pressure from threatening processes and land-use impacts. The MLR possesses the second highest plant diversity and third highest endemism of South Australia's botanical regions but has the unenviable record of possessing the most plant extinctions with over 100 known species lost since European settlement. The region currently contains 28 nationally threatened plant species and eight state-rated plant communities.

Escalating threats to remaining habitat fragments mean that ongoing recovery and management actions are urgently required to prevent further degradation, local extinctions and species loss. To this end TPAG members continue working toward the protection and recovery of threatened plant habitats. An update of work at some sites is summarised below.

Grassy woodlands at Millbrook Reservoir

The 'Tuesday group' continue to drive the restoration of grassy Blue gum - Red gum woodlands at Millbrook Reservoir. These woodland types occur on more fertile soils and consequently have been almost obliterated in the region. At Millbrook, large areas previously dominated by Gorse have been returned to an open grassy woodland community that provides habitat for nationally threatened plants such as White Spider-orchid (*Caladenia rigida*), Clover Glycine (*Glycine latrobeana*) as well as the state rare Behr's Cowslip orchid (*Diuris behrii*). Recent on-ground work has returned a weed-choked creek line back to a native riparian community with locally indigenous shrubs, sedges and rushes. In an adjoining area grassy wetland meadows are being rehabilitated. These wetlands characterised the Chain of Ponds district prior to European settlement. Ten years of restoration work was celebrated in 2005 and more recently members of the 'Tuesday group' were recognised for their contributions at the SA Water Volunteer awards last October.

Leafy greenhood at Belair National Park

This long running project involving the Lofty Block Threatened Orchid Recovery Program, Native Orchid Society of SA and Friends of Belair continues to strategically restore areas of grassy Manna gum woodland and Stringybark forest that contain habitat for the Leafy Greenhood (*Pterostylis cucullata*). Successive productive working bees have driven back hectares of dense woody weed invasion ~ to reinstate habitat structure

and composition for this nationally threatened orchid species. Further sub-populations have been located through surveys and the project has been publicised through the local media. A new site action plan has recently been prepared to coordinate on-ground work for Leafy Greenhood sites throughout the park.

Heathy woodlands around Encounter Bay

At Newland Hill near Victor Harbor, TPAG members have successfully negotiated fencing to protect habitat for the nationally vulnerable shrub, Butterfly Spyridium (*Spyridium coactilifolium*) and the rare local endemic, Fringed Pseudanthus (*Pseudanthus micranthus*) from trail bike damage on private land. At another Butterfly Spyridium site, at a recent working bee volunteers and SA Water staff removed a deluge of competing boneseed, and members rediscovered Cleland's beard-heath (*Leucopogon delandii*) - a state rare species thought to be extinct in the region. Habitat remnants around Encounter Bay are under increasing pressure from urbanisation, road works, grazing and plantation forestry. Project work here is supported by SA Water and a private landholder.



Protecting habitat: Butterfly Spyridium fenced off from trail bike damage Photo T.Jury

About TPAG

Formed in 1993, TPAG has been actively working in the region over the past 13 years undertaking conservation measures to protect and recover threatened plant species and communities. TPAG works in partnership with government agencies and other community groups to implement on-ground

recovery actions, including:

- habitat protection & restoration;
- threat abatement;
- site action planning & management;
- liaising with & advising landholders; and
- population surveys & monitoring.

TPAG receives funding for program coordination through the Adelaide and Mount Lofty Ranges Natural Resources Management Board and is supported by NCSSA, the Department for Environment and Heritage, and Friends of Parks Inc. Projects are ongoing at many sites throughout the region so please contact Us to get involved.

Tim Jury
Program Coordinator
8232 4088
or tpag@ncssa.asn.au

NCSSA CONSERVATION BIOLOGY GRANT 2006 REPORT:

Difficulties associated with urban bat research

The honours project titled "diet and activity of Adelaide City's urban insectivorous bat populations and habitat management for conservation" received financial support in 2006 from the NCSSA Conservation Biology Grant. Rather than providing a project summary for Xanthopus, I have focused instead on a particular aspect of interest that resulted from conducting this research; specifically the difficulties associated with managing urban wildlife projects, a topic that recently received some interest at the Australasian Wildlife Management Society (AWMS) conference in Auckland, New Zealand (December 2006).

This project was conducted in Adelaide where the city council has objectives for encouraging ecological sustainability and native biodiversity to its parklands. Small insectivorous bats (Microchiroptera) are among the species known to use urban environments and I aimed to address a basic need for information about the ecology of Australia's city bats. The project had a broad scope including diet, bat and insect activity patterns, habitat partitioning, roosting resources, and radio-tracking potential of city bats. Almost immediately the difficulties associated with managing such a project became apparent. Microchiropteran bats are survey-intensive; they require large traps for in-flight captures and electrical equipment (bat detectors) to monitor echolocation noise. Furthermore their nocturnal existence requires surveying efforts to occur at night. These factors presented particular problems to monitor successfully monitor bats in a city, including the safety of researchers, safety of equipment, and restricted areas access.

Prior to collecting pilot data I sought police advice regarding working at night in the City's parklands. From their experiences and records several parkland areas were deemed as inappropriate for inclusion as study sites (those considered highly dangerous). Yet, in order to design a project that accurately assessed bat activity I needed to survey in medium-risk areas. To trap bats at night in the parklands, including at a silt pond near the West Terrace Cemetery, I organised and worked with large volunteer groups. Fortunately, organisations such as Conservation Volunteers Australia were project collaborators with the capacity to organise large groups of people for nightly trapping or sampling sessions. Indeed, an advantage to working in urban environments is that people are readily available to volunteer for short periods of time because they are not required to have the same level

of commitment to that associated with remote field sampling. Another way to avoid unwanted confrontations in city parks was to work in areas with restricted access, which also assisted with safety of equipment.

Similar to personal safety was the concern associated with theft and vandalism of equipment. The Anabat II® bat detectors systems used in this study retail between \$1,800 and \$2,200 (Titley Electronics, Ballina, NSW). I wanted to position detectors at different parkland sites and leave them to record for consecutive days; therefore, secure locations in different parkland microhabitats were essential. As such I surveyed potential areas and established semi-permanent monitoring sites based on their suitability to the objectives. Again project collaborators, such as the Adelaide Zoo or the Adelaide City Council, were important for gaining access to appropriate areas. Detectors were then positioned on top of structures (buildings, hedges) and in locked or restricted access areas. Sites included beneath a walkway at the Adelaide Zoo, on top of a hedge in the West Terrace Cemetery, on the roof of the Wilderness School's sports shed in North Adelaide, on the roof of the Rymill Park café, and in the restricted maintenance area of the Torrens Weir (see Fig. 1). Using those sites I recorded bat echolocation call sequences with detectors on 228 nights from November 2005 to October 2006.

Cognisant of the risks associated with working in urban parks, the adaptations to the methods resulted in limitations to collecting quality capture and roosting data. The majority of bat trapping nights were conducted in the Adelaide Zoo, where despite a considerable capture effort with harp traps and mist nets, I was only able to catch 7 bats. These trapping results only reflect the bat activity in the zoo, a sub-optimal trapping area, where it was necessary to work for safety. I also experienced numerous difficulties while attempting to locate roosts in the parklands. Firstly, surveys at dusk or dawn to search for bats emerging or returning to roosts were difficult because of personal safety; bats were reportedly roosting in the south parklands, in the same area I was advised not to visit at night by the police. Secondly, I had limited access to likely roost areas; for example, a 24-m mechanic elevation platform with licensed driver was required to reach several bat boxes as well as tree holes in which bats were previously observed. Thirdly,



Fig. 1 Study sites and position of bat detectors in Adelaide City parklands. Sites included the cemetery (a), the detector was placed on a hedge (b); the zoo (c), detector placed underneath a public walkway overlooking a shallow water pond (d); Rymill Park (e) detector placed on the roof of Rymill Café (f); Wilderness School (g) detector positioned on the roof of a sports shed (h); and the Torrens River weir (i) detector placed in restricted access area on the weir structure (j).
Photos: Annette Scanlon

the time lag between receiving reports of roosting bats and organising the appropriate permissions, access, equipment and people, meant that bats had apparently vacated these roosts by the time the surveys occurred.

Limitations were an obvious component of this study; however, I was able to use alternative methods to sample both bats and insects in several city environments. In particular, I found guano traps and insect sticky traps useful. Guano traps consist of a cheap plastic sheet laid on the ground beneath a bat foraging area. As bats forage they produce scats that collect on the sheets, providing a non-invasive sample technique. Scats can then be analysed in the laboratory for diet composition or used as an index of bat presence or activity. The risk of theft is negligible because the cost of the plastic sheets is so low. Hand-made insect sticky traps consisted of cardboard, string, and a sticky surface (insect trap coating, bulk purchased) worth approximately \$2 each. These traps were attached to surfaces and objects to sample insect activity in an area, for example I attached sticky traps to artificial lights to look at the difference in insect activity among light types. Again the cost of the traps was negligible against risk of theft.

This study observing insectivorous bats in the Adelaide City parklands highlights some of the difficulties associated with working in urban parks at night. Key difficulties were safety of researchers and safety of equipment. In order to satisfy safety concerns, I worked with large volunteer groups and used project collaborators to gain access to restricted areas. I experienced several limitations to collecting quality trapping and roost data because it was necessary to trap in sub-optimal areas and required a complexity of approvals, permissions, and equipment to inspect potential roosting sites.

Difficulties associated with urban bat research cont.

However, I successfully used acoustic detectors in the parklands, and found that guano sheets and sticky traps provide alternate methods with negligible risk suited to urban bat work. These findings are important for understanding how to approach urban wildlife research so that we can monitor successfully in these environments and work with local managers to promote native biodiversity in urban habitats.

Acknowledgements

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Annette Scanlon

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NCSSA Conservation Biology Grant 2007

Attention research students, applications are now open for the Society's 2006 Conservation Biology Grant. The grant aims to assist honours and post-graduate level student research into aspects of conservation biology. Funds are available for research aimed at: improving understanding of the conservation status of species or ecological communities; providing recommendations for improvement of some aspect of biodiversity conservation; understanding the ecology of species or communities; and understanding threats to biodiversity and management of those threats.

The Conservation Biology Grants aim to extend the excellent work undertaken by research students on aspects of the biodiversity of South Australia. Previous grants have contributed to research into diverse topics including studies of the ecology of single species and assemblages (eg. systematics and phylogeography of stone geckos; and guanophillic arthropod ecology and conservation in bat caves), interactions between ecosystem components (eg mistletoes in Pink Gum Woodlands; and the importance of hypogeal fungi in the diet of bettongs) and the effects of human interactions with biodiversity in South Australia (eg. ecotourism as a means of encouraging ecological recovery and conservation).

The application process is simple and asks for only a brief outline of the research to be undertaken. Guidelines and application forms are available on the NCSSA web site: www.ncssa.asn.au

The closing date for applications for the 2007 Conservation Biology Grant is **5th April 2007**.

2006 Conservation Biology Grant recipients were:

Annette Scanlon	Diet and Activity of Urban Insectivorous Bat populations and management of their habitat for conservation in the City of Adelaide, South Australia [see report in this issue of <i>Xanthopus</i> , p 8-10.]
Jackie Watts	Comparing biodiversity monitoring methodologies
Diane Colombelli-Negrel	Video monitoring of nest predation events in the Superb Fairy-wrens

Revisiting South Para: Monitoring Changes in Vegetation, Bird Diversity & Bushland Condition

The NCSSA's spring survey in 2000 was conducted in conjunction with the South Para Biodiversity Project (SPBP). The survey's aims were to document the flora and fauna at 13 project sites within the region, and to establish a monitoring system to detect changes in biodiversity over time at these project sites. With assistance from the SPBP, the NCSSA revisited four of these sites in the spring and summer of 2006. Two sites were in areas of remnant vegetation, one was in a site regenerating after clearance by grazing, and one site was revegetated.

The 2006 winter/spring period was the driest on record in Adelaide (Bureau of Meteorology 2007), which resulted in many spring ephemerals (e.g. lilies, orchids and herbs) not being detected along the 2006 transects. Vegetation monitoring established in 2000 recorded species richness and diversity. The 2006 revisit showed that overall plant species richness and diversity had declined at all sites. Continued monitoring will help to clarify what is long-term change in response to management efforts and what is short-term variation ("noise") caused by environmental factors, such as extreme weather conditions and fires. These data demonstrate the need for continual long term monitoring as the decline is most likely due to seasonal variation because of the exceptionally dry year rather than change brought about by long term management.

Bird monitoring showed an increase in species richness and diversity at three of the four sites. Overall species richness in the four sites in 2000 was 41 and this increased to 48 species in 2006. The most dramatic change in species richness was from six to 26 in a revegetation site. However, this change must be interpreted with caution as changes in bird usage may not be indicative of changes in patch occupancy – for example, revegetation sites, may provide food resources but not nesting/roosting hollows.

Twenty one regionally declining bird species were recorded across the 2000 and 2006 surveys for the four sites (see Paton *et al.* 2004). More declining bird species were present in 2006 than in 2000 (19 *cf.* 15). These data provide some evidence that on-ground works, such as weeding, fencing and revegetation, may be contributing to increases in bird species diversity and richness in SPBP managed sites across the region.

In addition to the repeat monitoring of plants and birds, Bushland Condition Monitoring (BCM) (as per Croft *et al.* 2005) was established at the four original sites and at eleven additional site. Using the method of Croft *et al.* 2005, key environmental indicators of bushland health were identified, assessed and scored to provide a measure of bushland condition. These indicators are:

- Plant Species Diversity
- Weed Abundance & Threat
- Structural Diversity
- Tree Habitat Features
- Regeneration
- Tree & Shrub Health
- Feral Animals
- Total Grazing Pressure, and
- Fauna Species Diversity.



C. Bailey & D. Moise conducting BCM

Photo: Tina Bentz

A total of 269 plant species (including weed species) were recorded during 2006 BCM site assessments; of these, 24 were of conservation concern. A high degree of variability was noted between sites in many of the indicators. Most notable were tree health/dieback, tree hollow score, and fallen trees and logs which ranged in score from very poor through to excellent. Grazing pressure was noted as an adverse impact at a number of sites and may require management

intervention to prevent long term degradation. Continued monitoring of these 15 sites will assist in gauging the success of habitat restoration and rehabilitation activities at the South Para Biodiversity Project sites.

General recommendations include: remonitoring all sites in another 5-10 years; having private landowners and SPBP staff trained in BCM methods; establishing more BCM sites throughout the South Para Region, and increasing the number of bird monitoring sites to increase statistical robustness. For a full report see Bentz *et al.* (*in prep*).

References:

- Bentz *et al.* (*in prep*). Revisiting South Para: Monitoring Changes in Vegetation, Bird Diversity & Bushland Condition. A Nature Conservation Society of South Australia Publication.
- Bickerton, H., Field, S. and O'Connor, P. (2000). A Biological Survey and Monitoring in the South Para Region. A Nature Conservation Society of South Australia Publication. 74pp.
- Bureau of Meteorology (2007). Adelaide Monthly Climate Summary - SA Regional Office. Australian Commonwealth Government, Bureau of Meteorology. Webpage (visited February 2007). http://www.bom.gov.au/announcements/media_releases/sa/20061201.
- Croft, S.J., Pedler, J.A. and Milne, T.I. (2005). Bushland Condition Monitoring Manual: Southern Mount Lofty Ranges. A Nature Conservation Society of South Australia Publication.
- Paton, D.C., Rogers, D.J. and Harris, W. (2004). Birdscaping the environment: restoring the woodland systems of the Mt Lofty region, South Australia. pp. 331-358 in the *Conservation of Australia's Forest Fauna* (second edition) Daniel Lunney (Ed.). Royal Zoological Society of New South Wales, Mossman, NSW Australia.

Tina Bentz & Tim Milne

Sale of the Conservation Centre

Precis

As many of you are aware, there was a substantial purchase offer made upon the Conservation Centre at 120 Wakefield Street, and the building is now under contract to be sold.

All members were sent an information package and invitation to a Special General Meeting ~ held on the 30th of January 2007 ~ at which decisions had to be made by our Society with regard to NCSSA's share of the building. There was an excellent turnout for the meeting, in excess of 50 members, and lively and informed discussion and debate regarding the sale of the building. The eventual decision was for NCSSA to withdraw the caveat which secured 30% of the building. As such the building will now be sold for \$1.5 million, of which 30% of the after sale proceeds will be paid to NCSSA. Motions were also passed to authorise the NCSSA Committee to begin negotiations regarding future financial arrangements with other organisations and to also investigate the option of securing independent premises.

Background

The following is a summary of the information provided to members in the information package and at the Special General Meeting, followed by the motions carried at that meeting:

The Conservation Council of SA holds the Title for 120 Wakefield Street, but the NCSSA has a caveat attached to the Title which secures 30% of the property. On the 20th of November 2006 a developer, Simon Chappel, representing 'Wakefield Street Joint Venture' expressed an interest in purchasing the Conservation Centre. A contract was negotiated between CCSA and the developer for \$1.5 million. This contract also allowed for an additional payment of \$100 000 if the developer was shortlisted for a Department of Transport, Energy and Infrastructure tender and another \$500 000 if the developer was successful in the bid. This contract was conditional upon approval from both the memberships of CCSA and NCSSA prior to the 31st of January 2007. Settlement of the contract to be 30 days after approval was obtained from both memberships, with a one year lease from the date of settlement granted to both CCSA and NCSSA for the sum of one dollar.

At a Committee meeting on the 4th December 2006, the NCSSA committee agreed on the following:

- There is no set opinion at this time regarding sale or otherwise of the building, but we need a "home" which is equal or superior to current facility
- Good information is required to make a decision - membership can not make a decision with current information available
- NCSSA have neither the staff, volunteer or financial resources to adequately gather this information prior to date at which decision is required
- Short timelines are a general concern and are inhibitory to entering into an optimal process

With the aim of gathering sufficient information to enable the memberships of both CCSA and NCSSA to achieve an informed decision, CCSA employed Jeff Minear to manage the process of employing appropriately qualified consultants and collating the information they generated. At the request of CCSA and NCSSA, Simon Chappel paid a non-refundable amount of \$20 000 towards the cost of this study. This information was summarised in the information package sent out to members on the 19th of January 2007. Below is some of the key information from this package:

Current Value and Condition of 120 Wakefield Street

The Conservation Centre, which encompasses 500 square metres of useable floor space, is valued at \$800,000 (Mason Gray Strange Building Valuation Report 29/12/2006). A Building Structural Report indicated that the major structural items of the building were well designed, solidly built and were generally in good condition. However, in the front section of the building, it appeared that there are series of suspended ceilings in poor condition due to poor original construction, but some relatively simple repairs could be affected to rectify this problem. A Building Services Report, which is an assessment of the mechanical, electrical, hydraulic and fire protection services, was undertaken, which indicated that the engineering services generally comply with current codes (with exception of the emergency lighting). However, the majority of services are approximately 25 years old and in poor condition. Complete upgrade costs would be \$206,000 plus associated builders works and professional fees, but immediate priority items were \$12 000.

A membership survey ~ written and undertaken by O'Connor NRM ~ had over 150 respondents from both staff and members of CCSA and NCSSA. Survey participants were in almost unanimous agreement that:

- the current building is in a good location
- current facilities are easy to access during work hours
- benefits of the location are related to the central position in the city, ease of access including by public transport and proximity to business and government offices
- the availability and accessibility of resources (including meeting rooms, photocopying, library and staff) to members and member organisations is highly valued by members
- the accessibility of resources is complemented by the open and friendly working atmosphere in the current building, and any new locations would need to ensure that access to resources is maintained.
- an increase in the amount of space and number of spaces available for meetings was a priority suggestion for improving functionality.

Members had mixed feelings about how well the appearance of the current building reflects the image of the CCSA and NCSSA and the most common suggestion for improvements to the current building were around upgrading the external appearance and the 'professional' appeal of the building and operations within.

Building options that were investigated

A. Purchase an existing building jointly with CCSA

Colliers International Consulting Services (SA), investigated the potential cost of a new building based upon the following assumptions:

- that available floor space be increased from existing 500 sq m to 600 sq m
- that the new accommodation would be of a higher standard than that of the current Conservation Centre
- that the building would be located within the outer ring of the square mile of Adelaide

Overall costs would approach \$2 million, and possibly be as much as \$2.5 million depending on the location, design and presentation of the particular building. For CCSA and NCSSA this represents a cumulative shortfall of \$500 000 to \$1 million from the proceeds of sale of current building at \$1.5 M.

B. Purchase an existing building solely for NCSSA.

For NCSSA to purchase premises of 150 sq m, with similar assumptions to those above, it is estimated that total costs would be \$500 000 - \$700 000 (Mij Looker PRP Tenancy Solutions pers. comm.). There are few suitable properties on the market at present (Colliers), and stand alone buildings, of the size required,

are in particularly short supply (Mij Looker *pers. comm.*). For NCSSA this would represent a shortfall of \$50 000 - \$250 000.

C. Lease an existing building (jointly or solely).

Colliers estimate that to lease alternative accommodation would be \$150 - \$200 per sq. m per year, with the additional cost of fit-out, relocation and managing equating to \$500 - \$1000 per sq. m. From this, the estimated minimum joint costs for NCSSA and CCSA to move and lease 600 sq. m would in the first year be \$390 000, and in subsequent years \$90 000. For NCSSA to move and lease 150 sq. m would be \$97 500 year 1 and \$22 500 for subsequent years. However, the strong feedback provided through the membership survey indicated that the preferred option was building ownership.

D. Refurbish existing building

To upgrade 'to a standard expected in a modern office environment' is \$206,000 plus associated builders works and professional fees. The potential existed for expanding upstairs by 100 sq. m. No information was available on costs and benefits of upgrade and expansion, although professional advice was that if undertaken, "there is not a great risk of over-capitalisation"

CCSA decision regarding sale of 120 Wakefield Street

At its meeting on 24th of January 2007, the Conservation Council of SA passed the following motions:

"That CCSA sell 120 Wakefield Street, Adelaide, to *116 Wakefield St Pty Ltd* and *Wakefield St Investments Pty Ltd* as per the extant contract of 24 January 2007, for a minimum of \$1.5M, and invest the funds in ethical way until the CCSA Council approves the purchase or construction of a new building, with all capital proceeds from the sale being applied to this end, and using only the interest received to cover the costs of accommodation."

"That CCSA, in consultation with NCSSA, establishes a Building Committee to advise on the investment of the capital proceeds of the sale of the building, and on building/accommodation options, should NCSSA agree to lift the caveat."

Additional to this, a communication to CCSA Council from CCSA Executive Committee was circulated on the 24/1/07. The following is an excerpt from this Communication.

"...in December 2006, subsequent to the signing off of the Financial Report, it had been brought to their attention that CCSA is currently facing a previously unknown tax liability (incurred over the last five years) totalling approximately \$40,000. (The exact amount owed is being negotiated with SA Revenue). The CCSA's Annual Financial Report for the year ended 30 June 2006 includes a General Reserve of \$40,000. The net effect of this situation will see CCSA with no current reserves.

It is clear to the CCSA Executive Committee, that without a major intervention (such as an additional loan, major windfall, or an org restructure) the organisation will not be able to afford to;

- undertake the required maintenance and OH&S requirements [on the current building], and
- service the loan to NCSSA, and
- continue to operate at it's (sic) current capacity..."

This communication, indicating the impercunious position of CCSA, and the motions that were passed by CCSA, were thus taken into account at the NCSSA Special General Meeting on the 30th of January 2007. The NCSSA committee and membership were faced with a difficult decision: all available evidence indicated that finding a "home to go to" that would, from the membership's viewpoint, be equal or superior to the current facility in the current property market would be financially and temporally challenging. However, CCSA had already made a decision to sell the building. Legal advice received by NCSSA

indicated there was a possibility of a forced sale should NCSSA not agree to lift the caveat which in turn could lead to having to accept a lower sale price and elevated costs to NCSSA.

Motions carried at NCSSA Special General Meeting

The motion that was put and carried was as follows:

PREAMBLE: This Society is reluctant to agree to the sale of the building at 120 Wakefield Street Adelaide and to accede to the request of the Conservation Council of South Australia to withdraw the caveat for the following reasons:

- a) Whilst it is acknowledged that the offer is considerably above the building valuation, there is likely to be a significant deficit (to be funded from elsewhere) which needs to cover the total costs to relocate to premises that are superior to the existing building.
 - b) The time frame for the decision is short as is the period within which the Society needs to buy, refit and relocate to another set of premises;
 - c) The proposal about sale was not within the strategic planning agenda of the Society but was initiated by an outside request from a developer; and
 - d) A membership survey has indicated that the current building has many desirable qualities and has indicated a preference for the Society to occupy a stand alone building which may not be able to be acquired within the timeframe available under the leaseback arrangement,
- NONETHELESS the members of the Society recognise that there are circumstances which have arisen and information of which the Society has become aware that makes the decision to sell one which in the circumstances is at this time in the interests of the Society.

MOTION

"That this Society agrees to the sale of the Conservation Centre, 120 Wakefield Street Adelaide upon the terms of the disclosed contract and agrees to the request from the Conservation Council of South Australia to withdraw its caveat at settlement of the sale of the Conservation Centre 120 Wakefield Street Adelaide in accordance with the terms of the contract provided by the Conservation Council and to the sublease as set out in the request, and further directs the Committee to seek reimbursement from the Conservation Council of South Australia at settlement for costs incurred including staff time spent in connection with the negotiations for the sale."

This motion was **CARRIED 28 votes For, 22 votes Against, 3 Abstentions.**

Two other motions were put and carried as follows:

"That the Society authorises the Committee to undertake negotiations with Conservation Council of South Australia and possibly other organisations of a similar nature to explore subsequent financial relationships with Conservation Council and other possible organisations with regard to future premises without binding the Society to necessarily be involved with any particular organisation."

CARRIED by large majority

"That the Society authorises the Committee to investigate finding its own independent premises in addition to undertaking negotiations with other parties."

CARRIED by large majority

Where are we now?

The settlement of the property at 120 Wakefield Street will take place on 2nd March, 2007. At that point, the NCSSA will withdraw its caveat, and 30% of the proceeds (less fees) from the building sale will be transferred to NCSSA. The Contract terms included the option to our Society (and CCSA) of leasing back the premises from the purchaser for up to one year, for a nominal rent. As such, we have up to one year to find alternative accommodation. The NCSSA Committee is convening an NCSSA accommodation sub-committee for this purpose.

We will keep our members informed of any further developments, and look forward to the new era for the Nature Conservation Society of SA.

Helen Vonow, President

Different shades of Green:

Is there a need for corridors?

On first impression, the landscape of the lower Limestone Coast region of South Australia seems dominated by Radiata Pine and Blue Gum plantations. However, nestled in amongst the plantations there is a significant amount of remnant native vegetation.

These areas offer habitat for a range of native wildlife, some of which are considered nationally endangered. Some animals can travel between remnants patches of native forest, passing easily through plantations and grazing land. Those animals that can not, risk local extinction through the impacts of wildfire, inbreeding or predation from cats and foxes. For these reasons, the fragmentation of native vegetation is considered to be a key threat to the South East's biodiversity.

ForestrySA plants the initial seed...

Funding by the South East NRM Board has enabled the development of a strategic corridors project in the lower Limestone Coast. A Project Officer employed by PIRSA Forestry has undertaken modelling to determine priority linkage locations for species such as the Southern Brown Bandicoot.

ForestrySA has been a major part of the corridors program, with Project Officer support to implement their South East Biodiversity Corridor Strategy. ForestrySA manages around 13,500 hectares of native vegetation for conservation, and over 70 hectares of productive plantation land is being put aside for the development of corridors. Many of the priority linkages that the regional modelling highlighted are now underway on ForestrySA land. The Strategy is available online at www.forestry.sa.gov.au

How will these corridors work?

Biodiversity corridors can reduce threats associated with fragmentation by linking native vegetation patches across the landscape. As ForestrySA plantations are harvested, strategic strips of land are being direct seeded with local understorey species and a canopy is established from hand-planting indigenous trees.

In this way, animal species within native vegetation remnants are offered a safer path for finding further food and shelter. The use of a corridor may also make all the difference for an animal trying to find a mate – an outcome that will see the survival of it's species into the future.



Sugar Glider

Photo: courtesy ForestrySA

Each corridor is designed to create specific resources for target species. Elements such as a diverse and thick understorey for predator protection, a linked tree canopy, hollows and nestboxes, logs, rocks and leaf litter are incorporated in certain corridors to cater for species such as the southern brown bandicoot, sugar gliders, crested shrike-tits, painted button quails and splendid ochre butterflies.

Seed collection, hand planting and on-going monitoring of flora and fauna has provided opportunities for community involvement both as individuals and groups such as schools, environmental interest groups and ForestrySA's Friends of the Forests volunteers.

Other owners of land identified in the project's modelling are currently being approached to set aside land, with support to undertake fauna surveys, prepare a site and select species for revegetating their own biodiversity corridor.

Challenges for the project

There have been a number of challenges both on-ground and in the planning stages of corridor development. Revegetation efforts have endured the usual concerns of uninvited guests such as cows, a whole host of grasshoppers and of course weeds, weeds and weeds.

Although a toolkit of support incentives for landholders exists, it is of course a big ask to put aside productive areas for corridors on private land that will benefit the wider region. Despite this, there is a ground swell of interest, with a number of private forest companies now becoming involved.

Corridors are starting to link remnant vegetation in the Limestone Coast

Another obvious challenge is ensuring the protection of the patches of vegetation which the corridor will link. On ForestrySA land, Native Forest Reserves are afforded the same protection as National Parks and are regularly patrolled by wardens to educate forest users and enforce legislation.

However, on other lands where a priority linkage has been identified, developing a corridor may not be worthwhile if the core habitat either side is degraded or under threat from grazing. The Department for Environment and Heritage is a partner in the corridors project and where this scenario arises, the Bush Management Advisor provides landholders with options for protection of core areas in perpetuity.

Whilst protection of roadside vegetation is



One of the corridors that links Windy Hill Native Forest Reserve and Gower Conservation Park

Photo: courtesy FoestrySA

sometimes a challenge, an even more difficult issue is the reinstatement of this vegetation. Perhaps a liability issue due to wayward vehicles, it is difficult to garner support for a corridor that crosses a road, or a linkage where the only option is to share our transport corridors.

How do we know they are successful?

Monitoring and evaluation of the effectiveness of corridors is also another huge challenge. How do we really know these corridors are a useful link for the target species? There are many ways we can determine what species are present in a corridor, but how do we know an individual has moved from one location to the other? And if so, did it survive and exchange genetic material in the new location? A search for the ideal monitoring method within resource constraints continues...



Woolwash NFR in the foreground and Honan NFR in the background, with corridor to go in along the track between the two. Photo: Bob Green

PIRSA Forestry, along with DEH and ForestrySA, have begun a program of bird monitoring to look at changes in diversity in the corridor compared to the adjacent land-use. This should provide some excellent long-term data. In addition, The University Of Adelaide will be undertaking genetic studies that will give us some clues about connectivity in the region and the relative isolation of existing meta-populations. Stay tuned for updates as these monitoring projects roll out.

For more information, please contact Biodiversity Corridors Project Officer, Sharn Lucas on (08) 8724 2813.

Sharn Lucas

**Biodiversity Corridors Project Officer
ForestrySA**

GENERAL MEETINGS

will be held on the first Thursday
of every second month at the

Conservation Centre Meeting Rooms
120 Wakefield Street
Adelaide

7:00 pm (front door open at 6:45pm)

Upcoming meetings:

General Meeting: Thursday March 1st

- Tim Milne, NCSSA “Reptiles of the southern
Mount Lofty Ranges”

General Meeting: Thursday May 3rd

- Conservation Biology Grant recipients,
reporting on their research projects