

**Scientific Officers
Report:**
South Australia's
disappearing native
vegetation

Habitat Restoration
Conference
– a Personal View

**Conservation Biology
Grant Report:**
Murder of the Superb
Fairy-wren: Video
monitoring of nest
predation events in the
Superb Fairy-wren
2006

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

Subsequent to a call in the last edition of *Xanthopus* for Committee volunteers we have been fortunate that two more of our members have offered to devote time and energy towards helping to manage our organization.

Our newly co-opted Committee members are Ben Taylor who is an environmental consultant, and Mervyn Chappell who has recently retired from a career in business, and is currently undertaking graduate Environmental Studies.

NCSSA Constitution: It has become clear that our constitution has some flaws and is rather out of date. We would like to gather a group to review it. If you have some energy and time and a legalistic mind to contribute toward a constitutional review give us a ring on 08 8223 6301.



Our musical sponsor

Last year the Society was contacted by a talented local musician by the name of Kane Slater. He offered to donate a percentage of the proceeds from his debut album "*Small Drops Make Rivers Flood*" to support the work of the Society.

Kane uses instruments such as the lapsteel guitar, didgeridoo, harmonica and the stomp box to create his original musical style. Playing all these instruments simultaneously gives his music a full band sound which is both unusual and entertaining. Kane performs all original songs that express feelings about the environment, compassion for the indigenous people and life's journey, mixed with an array of instrumentals.

Kane has been busy over the past year producing his CD. He has previously performed at many local South Australian festivals like Wilderloo – Cummins Under Canvas, Fishy Fringe Festival, Port Lincoln's Tunarama Festival and Tsunami Benefit Concert 2005.

Kane has released his CD and we are asking all of our members to support this original musician by purchasing a copy of his CD from his website www.kaneslater.com or from the Society office at 120 Wakefield Street.

We would like to thank Kane for his generous offer of support for our Society and our work. We look forward to Kane's first Adelaide performance.

NCSSA people

Management Committee

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

General committee

Annie Bond, Mervyn Chappell, Spencer Burgstad, Michelle Denny, Zoe Dreschler, Ben Taylor, Caroline Wilson

Staff

Scientific Officer Georgie Green
Administrative Manager Elizabeth Lonie
Project Manager Tim Milne
Temperate Woodland Campaigner Penny Paton
Eastern Flanks Grassy Ecosystems Officer Bill New
Threatened Plant Action Group Coordinator Tim Jury
Bushland Condition Monitoring Project Officer Sonia Croft
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

HANDS ON ACTIVITIES FOR MEMBERS

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.

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. Working bees over the next few months will occur on the following dates:

Coming Up:

Millbrook Reservoir Every Tuesday

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*.

Belair National Park Saturday June 16

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

Pine Point Weekend of June 23 & 24

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

Finniss Saturday July 21

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

Hindmarsh Falls 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.

Hope Valley Wednesday August 15

Come and help restore habitat for the small scurf-pea (*Cullen parvum*) in beautiful Blue gum and Southern Cypress woodland at Hope Valley Reservoir. Site access is by landholder permission only so get in touch before the day.

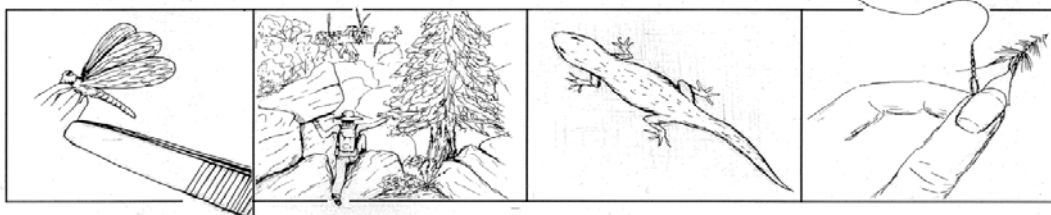
Yorke Peninsula Friday August 24

Survey and monitoring work will be carried out, with weeds such as Bridal Creeper and Boxthorn tackled. You will assist several native species including Jumping Jack wattle and Silver daisy-bush. Contact the TPAG Coordinator for transport over there.

Pine Point Weekend of August 25 & 26

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

**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**



Habitat Restoration Conference

While in bed thinking about this article, the words of The Uglies' song popped into my head and became inextricably bound up with it. The story is of a comfortably off man who reads about world issues but does nothing and regrets this when it is too late. I suspect that there are many who fall into this category and the juggernaut of climate change will intensify these feelings.

I was lucky to attend most of a Habitat Restoration conference held at the Waite on 12/13th April 2007. Themes for presentations ranged from the big-picture issues of fragmentation and ecosystem 'meltdown' to the minutiae of genetic fitness and inter-relatedness of seed sources – taking local provenance to another level of sophistication. Climate change was brought up but there was no shared view of the way forward in terms of adapting to the certain changes that will occur this century – at least 2^o rise in temperature (averaged worldwide and more likely hotter), sea level increases, more variable rainfall patterns, higher evaporation and increased weather extremes.

Four ecologists with very different experiences presented their big-picture views about the necessity for habitat restoration or reconstruction and familiar themes arose:

- the need for adequate research and data on what we have now, and reasons for species and ecosystem decline
- the importance of maintaining and building on existing areas
- being clear about goals and defining them exactly leading to clear monitoring outcomes
- that no one size fits all, i.e. for fauna the scale is determined by the scale at which the target species operates
- for fauna we need to think about the whole life-cycle of the animal
- corridors are a dirty word

To pick up this last point, corridor planting was touted as the saviour of particular animal species by some twenty years ago and, being a relatively easy concept to understand and to implement, has been enthusiastically taken up in temperate areas. However as several scientists pointed out, just planting corridors doesn't make animals use them, indeed the needy species are likely never to find them. Peter Cale painted a very clear picture of the importance of **connectivity** in the landscape through reconstructing habitat to build on existing areas to enhance the ability of birds to move from one patch to



Lizard on a limb ~ a metaphor for our position with regard to species survival.
Photo : Lydia Paton, of *Amphibolurus norrisi* at Ngarkat CP, Feb 2006

another. For example, if we improve the habitat value of a remnant by removing weeds or controlling feral predators, a species may improve its reproductive success. This in turn increases the number of offspring available to migrate from that remnant and move to other patches in the landscape – and so for that species, these patches experience a greater flow of individuals and are thus more connected.

A number of practitioners with real-life examples of revegetation / habitat reconstruction with very different motives gave

– a Personal View

presentations on day two. These presentations, in the main, dealt with actions taken on individual sites to restore habitat. The general model that was used for reconstructing habitat was to use available resources to recreate the vegetation community that was thought to be once present on that site. A key issue that was also raised as part of the practitioner presentations was the need to allow time for natural processes to occur (eg regeneration) once degrading pressures on a site had been removed, rather than immediate intervention through direct seeding or tubestock planting.



Tubestock - Habitat for the Future?

Photo : Lydia Paton

It became obvious that the theory is ahead of the practice. This is not a reflection on the presenters or their projects, but rather a lesson in the real-life obstacles that face on-ground projects. To name but a few:

- access to suitable land on an adequate scale
- resources – e.g. people, money, equipment
- weather conditions
- grazing animals
- seed/tubestock sources

One of the take-home messages was that, while there are many obstacles, there are also factors that present opportunities over the next few years (e.g. carbon-trading), and that we don't have the luxury of time on our side. As with the issue of climate change and carbon emissions, we have a narrow window of opportunity to prevent large-scale extinctions of native plants and animals and habitat restoration/reconstruction is the most important tool in our armoury.



Burnt Ngarkat CP, Feb 2006 ~ the large burnt area shows how susceptible even large areas of habitat are (260 000 ha) and fire is predicted to become more frequent and more severe under climate change scenario.
Photo: Lydia Paton

Let us not be like the man in the song:

*Yes it seems as though fortune has smiled
upon me
But now it's too late, I'm beginning to see
I spent my life searching,
But no peace I find
And it's left me with no time to wake up
my mind
And the days break,
And the nights fall and drift into time.*

Penny Paton
NCSSA Temperate
Woodland Campaigner

Scientific Officer's Report:

Why is remnant native vegetation so important?

Habitat fragmentation is a major threat to many indigenous plant species throughout Australia. Understanding its biological effects is crucial to the effective management of remnant plant populations for conservation. In addition, maintenance of remnant vegetation within agricultural and urban landscapes is critical for its contribution to production through the provision of essential ecosystem services.

Whether in an urban or rural setting, much of South Australia's valuable remnant native vegetation is disappearing at a frenetic rate. These areas are an important biological asset as they provide the community with a tangible link to South Australia's natural heritage, while also providing essential habitat and seed stocks for future revegetation.

As Penny Paton points out in her article (page 4 of this edition) we now have a very small window of opportunity to prevent large scale extinctions of our precious native plants and animals.

The community and Government now need to focus on protecting what we have left as this is a much more effective method of conservation than the recreation of habitats.

Case study – Penfield Gardens South Australia

I would like to draw on one particular example of illegal vegetation clearance within Playford City Council area. This example epitomises the current lack of State Government legislation to protect remnant native vegetation and the blatant disregard shown by some members of the public for these important biological assets.

The property in question, located on Taylors Road in Penfield Gardens contained a 1.2 hectare area of remnant vegetation that is well known by field naturalists and botanists throughout South Australia as the "Peachey Forest" or "Peachey Belt". Named after Peter Peachey, an early surveyor, the belt was described as an area of heavily wooded country, two to three miles wide, which stretched across the Gawler Plains to the foothills.



Taylors Road, Penfield Gardens ~ before clearance

This particular area is also mentioned in Kraehenbuehl (1996) as being part of an important remnant stand of native indigenous tree species. Species that once occurred in the belt include the Quandong *Santalum acuminatum*, Mallee Box *Eucalyptus porosa*, Native Apricot *Pittosporum angustifolium*, Native Myrtle *Myoporum montanum* and the Weeping Emu Bush *Eremophila longifolia*.

The property contained a number of remnant individuals of native species that are classed as "Significant Trees" under the *Development Act 1993* and *Development Regulations 1993*. These controls

South Australia's disappearing native vegetation

enable councils to require a development application for the removal of, or damage to, any significant tree in the Adelaide metropolitan area and townships in the Adelaide Hills Council.

This small area of vegetation was the last remnant of this extensive woodland that once extended across the Northern Adelaide Plains prior to European settlement. It represented one of the last genetic links to the natural history of the Northern Adelaide Plains. It is a travesty that this type of clearance can occur without significant legislative penalties.



Taylor's Poad, Penfield Gardens ~ after clearance

Weakening of SA's native vegetation legislation

South Australia is currently experiencing a systematic weakening of its native vegetation legislation through constant amendments to the *Native Vegetation Act 1991*.

What may surprise many is that the vegetation cleared in this case is not covered by the Native

Vegetation Act. In fact, the Act covers the whole of South Australia *except* parts of metropolitan Adelaide. Since the area in question is not inside the area of the Act's jurisdiction, the Native Vegetation Council are unable to prosecute for illegal clearance under the Act.

While the council will almost certainly pursue the case due to the removal of significant trees from the property, it seems ludicrous that such an important piece of remnant bushland is exempt from protection under the current South Australian Native Vegetation Act.

What can you do?

Inform - NCSSA of any areas of significant remnant vegetation that are not already protected. We may be able to lobby for protection and record the species diversity of the site.

Alert - any friends, colleagues and NCSSA of areas of vegetation that you believe to be threatened by development or other human influences.

Participate - in the protection of native vegetation by joining one of the many organisations (such as TPAG) that undertake on ground environmental work.

Be Proactive - Find out about the Native Vegetation Act and keep up to date with the amendments. Do not be afraid to voice your concerns in the form of letters to the Government and local media.

For more information about this or any other issues please do not hesitate to contact me by phone on (08) 82231693 or by email at georgina.green@ncssa.asn.au

Georgina Green
NCSSA Scientific Officer

XANTHOPUS

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

Copy deadline for the SPRING edition is **13th August 2007**.

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

Editorial Team for this issue: 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.

NCSSA CONSERVATION BIOLOGY GRANT 2006 REPORT:

Murder of the Superb Fairy-wren: Video monitoring of nest predation events in the Superb Fairy-wren 2006

Abstract:

Through support from the Nature Conservation Society of SA, I conducted a study of nest predation using video cameras at active nests of the Superb Fairy-wren in South Australia recording the fates of six nests over a three-month period.

Four of the nests were depredated, and three predators were filmed with the cameras. Two nests were taken by rodents (one native and one introduced) that consumed the birds' eggs, and one nest was taken by a Grey Currawong that consumed the nestlings. Nest predation by the two rodents lasted for several hours, and at both nests the rodents consumed all eggs while they remained in the nest. In contrast, the Currawong removed the two nestlings within 30 minutes, taking each nestling from the nest in succession.

I conclude that rodents seem to be an important nest predator, especially when nest placement is low in the vegetation or on the ground. Native birds may also be significant nest predators, and also pose a risk to defending parent birds. To more fully understand patterns of nest predation and predator identity in the Superb Fairy-wren, more nests will be monitored over the next breeding season (2007).

Introduction:

Nest predation is one of the principle causes of reproductive failure in birds, and represents about 60-80% of nest loss in the Superb Fairy-wren.

Different predators will use different cues (visual or olfactory) to find the nest. For this reason, birds are predicted to use different strategies to defend their nest (e.g. concealment, active nest defence). Introduced predators pose an elevated risk to native Australian bird populations as there has been insufficient time for the birds to evolve adaptive responses to these new selection pressures.

However, little is known about the identity of the nest predators in South Australia. Consequently, to clearly identify the costs of nest site attributes (such as nest concealment) and risk to defending parents and nestlings in relation to predator type, we need to clearly identify nest predators. Researchers often identify nest predators based on patterns of nest destruction but inter-specific similarities among predator patterns, intra-specific variations, unexpected predator and multi-predator visits can yield inconclusive or misleading results.

In this study, I used infrared video equipment for continuous observation and indisputable evidence of predator identity.

Methods:

The focal species is the Superb Fairy-wren (*Malurus cyaneus*), a small insectivorous passerine that lives in south-eastern Australia. The breeding season occurs between August and January, with one to three broods per year (clutch size varied from two to four eggs). Superb Fairy-wrens are sedentary, territorial, and cooperative breeders. Females typically build a domed nest that is well-hidden in dense vegetation.



Male Superb Fairy-wren.

Photo: Diane Colombelli-Negrel

I monitored 41 active nests in 2005 and 2006, and placed cameras at six nests in 2006 to quantify predation events.

The video cameras were wireless and small (about 8 cm in height), so it was straight forward to conceal them in the vegetation surrounding the nest site. The cameras contained inbuilt infrared diodes for recording at night, and recorded and simultaneously transmitted to a battery-powered 4-channel Digital Video Recorder (DVR) that was located within 10 m from the camera. Every 24 hours, the battery powering the DVR was changed and the hard drive (250GB) was swapped to download the images.

I continued recording at a nest site until the nestlings fledged or the nest was depredated. This enabled us to determine the identity of predators that visited the nest site, as well as providing detailed information about patterns of parental care across the nesting phase.

Results:

Nesting behaviour and predation events were continuously recorded at six active nests that were monitored between October and December 2007.

Four nests were observed at Newland Head Conservation Park, and two at Scott Creek Conservation Park.

Four of the six nests were depredated, and we have video footage of three nest predators.

Nest predation at two nests was by rodents, which occurred during the egg phase. One nest was depredated by an introduced rodent, the house mouse (*Mus musculus*). The second nest was depredated by a native rodent, the bush rat (*Rattus fuscipes*). Both rodent predation events occurred in the evening (just before dawn) and lasted at least two hours. The rodents stayed in the nest, where they consumed the eggs, until the nest was empty. At both nests, the rodents returned to the nest early the next morning and checked the nest contents. In both cases of rodent predation, the parent birds tried to defend the nest by flying over the rodents and alarm calling.

The last nest was predated during the nestling phase by a Grey Currawong (*Strepera versicolor*). This predation event took place early in the morning (just after sunset), and the Currawong removed all nestlings from the nest within 30 minutes. The Currawong returned to the nest to remove one nestling at a time. The parents did not



Superb Fairy-wren nest at Scott Creek Conservation Park.
Photo: Diane Colombelli-Negrel

attempt to defend the nest (Currawongs are known predators of adult Superb Fairy-wrens, which was observed in the field). Interestingly, the female returned to the nest after the first nestling was taken and brooded the remaining one nestling before the Currawong returned.

Conclusion and Future Research:

Video monitoring of nests revealed three different predators at the nests of Superb Fairy-wrens: two predators were native, and one was introduced.

This finding raises two issues:

First, *are native predators more common than introduced predators at Superb Fairy-wren nests?*

Clearly, our data set is too small to provide a reliable estimate of the proportion of native versus introduced predators at nests of endemic birds. We will continue this study across the next breeding season (August to December 2007). Using video monitoring, we will identify predator type, and also parental nest defence strategies under different conditions (such as nest height, nest concealment).

Second, *are birds and rodents the main predators of wren nests?*

BirdLab students have examined this question using artificial nests baited with plasticine eggs. The nests were placed between 2-5 m in trees; the results showed that about 80% of eggs had triangular marks, suggesting bird predation.



Grey Currawong

Photo: Margot Oorebeek

Murder of the Superb Fairy-wren cont.

I conducted the same experiment with artificial nests and plasticine eggs in Superb Fairy-wren habitat, and placed the artificial nests between 10 cm to 1.5 m (the range for nest height for wrens). I found that most nests had tooth marks, suggesting rodent predation.

This is one of the first studies in South Australia to show that rodents must be considered an important nest predator for low or ground nesting species.

The data that I am collecting will also provide us with important information on patterns of parental care and nest defence in Superb Fairy-wrens.

If predator density and nest predation influence the cost of parental care, this could influence other life history traits in the birds.

According to life-history theory, there is a significant negative core relationship between reproductive effort and adult survival: birds that invest heavily in parental care

(such as nest defence) have shorter lives. So, by influencing reproductive effort, nest predation can also indirectly affect adult survival.

Recently, it has been shown that cooperative breeding is most frequent amongst species with high adult survival and low fecundity.

Therefore, studies of nest predation provide an interesting paradigm for examining both the evolution of life-history traits and the evolution of cooperative breeding systems in birds.

Diane Colombelli-Negrel

Ph.D. Candidate

Flinders University

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NCSSA Conservation Biology Grant 2007

The NCSSA 2007 Conservation Biology Grant was announced and awarded at the 3rd May meeting of the Society. Both recipients spoke briefly on their project. Two previous recipients spoke on the outcome or progress of their projects ~ Diane Colombelli-Negrel's report is in this issue of *Xanthopus*, p 8-10.

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; Urban bat populations).

2007 Conservation Biology Grant recipients are:

Jennifer Munro from the University of Adelaide for her project on 'Flinders Ranges Scorpion *Urodacus elongates*', \$1000, and

Wahi Afzan Azmi from the University of Adelaide for her project on 'Effect of the removal of exotic willows on the invertebrate communities in the River Murray, SA', \$1000

Our next Conservation Biology Grant round will commence in February, 2008.

Adelaide and Mount Lofty Ranges Regional Recovery Pilot

Threatened species recovery - a new planning approach

Traditionally, the planning and management of threatened species recovery has been based on a single-species approach. This approach (and more recently multi-species recovery for plants) has seen a number of successful programs implemented for threatened species in the State. However, it has long been recognised that there is a limit to the rate at which recovery plans can be developed (for an increasing number of threatened species), and that alternative approaches need to be explored to better integrate recovery planning and management actions.

The Department for Environment and Heritage (DEH) has recently commenced the preparation of an integrated recovery plan for threatened flora and fauna species and ecological communities of the Adelaide and Mount Lofty Ranges (AMLR) region. DEH is delivering this project on behalf of the federal government through the AMLR Natural Resources Management (NRM) Board. This is one of several pilot projects being undertaken in Australia to test the feasibility of this integrated regional recovery and threat abatement plan approach.

Why are species at risk in the Adelaide and Mount Lofty Ranges?

The Adelaide and Mount Lofty Ranges is a complex and biologically diverse region. Despite significant land clearance and habitat fragmentation across much of the landscape, the region supports a number of areas of remnant native vegetation (covering approximately 91,000 ha) and many native plant and animal species. However, the threats are considerable - many species have become extinct or are at continued risk of decline because the vegetation remnants are fragmented and isolated, affecting their ability to sustain species in the long term. Other threats include incremental loss of vegetation, invasion of pest plants and animals, inappropriate fire regimes and disease. Many threatened species are at risk of becoming either locally extinct or extinct across their whole range.

Scope of the Recovery Plan

The plan will include (as a minimum) all species and ecological communities listed as threatened under the *Commonwealth Environment Protection and Biodiversity Conservation Act 1999* (excluding marine and coastal species). The plan will also include many species listed under the *National Parks and Wildlife Act 1972*.

The project area crosses regional boundaries, incorporating the



AMLR NRM Board area and the western flank of the SA Murray Darling Basin NRM Board area. There are a number of species covered by the plan with distributions that cross administrative boundaries, therefore information within the plan may also have relevance to adjoining regions.

Development of the plan will involve compiling, checking, and building on existing threatened species information, particularly from existing recovery plans.

Outcomes

Anticipated outcomes of the Regional Recovery Pilot are:

- A recovery plan that aims to meet the requirements for adoption under the *Commonwealth Environment Protection and Biodiversity Conservation Act 1999*;
- Improvements in the quality, efficiency and effectiveness of regional management of threatened species including on-ground threat abatement;
- Increased capacity of the AMLR NRM Board and surrounding NRM boards to incorporate threatened species recovery and threat abatement actions into regional NRM plans and investment strategies;
- Improved information sources on threatened species and communities in AMLR.

What do you need?

The project will also involve the development of an information tool to assist the retrieval of information about threatened species/ecological communities occurring in the AMLR region. The project team would like your feedback to help determine what form of 'tool' you would find most useful and easiest to access. For example, combining all available information for AMLR threatened species, perhaps accessible through a map-based website, may be beneficial for planners, managers and students. Your feedback is appreciated.

Contact

To learn more, and to join the e-mail list for project updates, contact **Julia Bignall** on (08) 8336 0906 or email bignall.julia@saugov.sa.gov.au

or go to the website:

www.environment.sa.gov.au/biodiversity/regional_recovery_pilot.html

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 July 5th
Stuart Peevor, SA Water :
The National Water Initiative**

Annual General Meeting: Thursday Sept 6th