

TPAG Update:

Recovering threatened
flora in South Australia's
fragmented agricultural
regions

NCSSA Spring Survey:

Tothill Ranges
September 27 -
October 6 2008

**Conservation Biology
Grant Report:**

Willows (*Salix* spp.) and
their impact on aquatic
i n v e r t e b r a t e
communities

Another Subdivision
at the End of the
Runway

Around NCSSA

New Office Launch

On Wednesday 30th April we launched our new office at 260 Franklin Street Adelaide with nibbles, drinks, and some fine company.

The President, Helen Vonow, welcomed everyone and gave a brief overview of the history of the Society. She noted the interests and activities of the organisation as outlined in the first Annual Report of the Society and published in 1963 ~ land utilization; investigations into reserves (particularly to make recommendations on the establishment of new reserves and the state of existing reserves); conservation outside of reserves; legislation; education; the export of native fauna. Many of these are common themes that inform the current work of our Society.

Our Vice President Katie Fels gave an outline of our current projects and activities and introduced staff members.

The office was officially launched by Mark Parnell, the Member of Parliament for the Greens in the Legislative Council. As a member and a long time friend of the Society he reminded us of some of our shared history in the previous premises at 120 Wakefield Street.

The event was very well attended, and included Hon Gail Gago MLC, Minister for Environment and Conservation, NRM Board members, government agency representatives, representatives from many other conservation organisations and members and volunteers of our organization.

Thank you to all those who attended and celebrated with us and, as extracted from Katie's speech on the night....

"we will continue to work in collaboration with the environmental community in South Australia to deliver the information needed to make informed management decisions at all levels. Our biggest challenge to come will be continuing to provide innovative, community driven outcomes for biodiversity in a funding environment which increasingly marginalises non-government organisations. But despite this and other obstacles, NCS with its vibrant and enthusiastic staff, committee, steering groups, membership and vocal supporters, will continue to forge ahead, developing new partnerships with NRM Boards, and environmental organisations, and agencies to ensure that our good work can continue."

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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NCSSA people

Management Committee

President Helen Vonow
Vice-President Katie Fels
Secretary Nicole Lewis
Assistant Secretary Sue Graham
Treasurer Richard Winkler

General committee

Misch Benito, Zoe Drechsler, Ben Taylor, Caroline Taylor, Mark McFarlane (co-opted)

Staff

Scientific Officer Georgie Mollison (nee 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 Manual Trainer Janet Pedler
MLR Woodland Bird Survey Coordinator Tina Bentz
2007 South East Survey Kerry Gilkes and Georgie Mollison
Database & Website Project Officer Lesley Parton
Plotless Density Counts Project Officer Craig Gillespie

Grey Box *Eucalyptus microcarpa* Woodland nominated as a TEC

In March of this year I was fortunate to represent the Nature Conservation Society SA at a Commonwealth Government Technical Workshop in Wagga NSW, along with three other SA representatives, and experts from Victoria and NSW.

We were gathered to consider a nomination for listing Grey Box woodland as a **Threatened Ecological Community** (TEC) under the *Environment Protection and Biodiversity Conservation Act 1999* (EPBC). Too many acronyms!!

There are 38 TECs in Australia, with three in SA (Fleurieu Peninsula Swamps, Peppermint Box Grassy Woodland and Iron-grass Natural Temperate Grassland).

The aims of the two days were to:

- Clearly define the ecological community in terms of structure, composition and other key diagnostic features
- Determine the distribution of the ecological community in terms of its national extent
- Develop condition classes for the ecological community that will help distinguish between patches of good and poor quality

Considerable work had been carried out in NSW to define the community in relation to vegetation, landforms, soils, decline in extent, threats and conservation status, but less detail was available for the other three states where Grey Box occurs – Victoria, SA and Queensland.

The workshop came up with some definitions and conditions classes, with the next step being to field test these in different parts of the range of Grey Box. We spent a delightful afternoon in Grey Box woodland south of Wagga mainly in *Travelling Stock Route Reserves*, one of which is illustrated.

In South Australia Grey Box occurs in three areas – the southern Flinders Ranges in and around Mt Brown Conservation Park, the foothills of the Mt Lofty Ranges (MLR) and in the Upper South East near Bordertown. While exact figures are not available, the extent of these areas is much reduced from pre-European times, with up to 180 ha mapped in the Flinders Ranges, less than 500 ha in the South East and less than 1800 ha in the MLR. These figures are tiny compared to NSW, where the estimate is of about 236,000 ha remaining, with only a tiny fraction of this being within protected areas.



Grey box woodland, The Rock TSR Photo: Penny Paton

The next steps after field testing are data analysis and mapping (with appropriate input from expert, stakeholder and public comment), the assessment of the nomination against six criteria by the Commonwealth Department (Environment, Water, Heritage and the Arts) and then the Threatened Species Scientific Committee provides a recommendation on listing and “conservation advice” to the Minister.

Grey Box Community Group in the Mitcham Hills

At the local scale a community group has formed in the Mitcham Hills to raise awareness about the piecemeal destruction of Grey Box trees and the vegetation community and to try and turn this situation around. A very well-attended public meeting at Eden Hills on Sunday 1 June heard from several speakers about the biodiversity and other benefits of Grey Box trees and their community. The group has organised a petition to lobby the state government to amend the Significant Tree legislation so that trees of a lesser girth are offered equal protection. This acknowledges that grey box trees that do not meet the 2 metre girth qualification are still valuable and worthy of protection.

Go to the website if you are interested in this issue, wanting more information about the group or wishing to join – it is free (www.grey-box-community.webs.com or greyboxcommunity@live.com).

Penny Paton,
NCSSA Temperate Woodlands Project Officer

Eds. Note: Congratulations to Penny and David Paton. They were both awarded the Member of the Order of Australia (AM) in the Queens Birthday Honours 2008.

David's citation: "For service to conservation and the environment through research into the ecology and behaviour of Australian birds, to the management and restoration of the natural environment, and to education."

Penny's citation: "For service to conservation and the environment through the management of natural resources and ecosystems, and as a contributor to environmental and ornithological research projects."

get a grip

HANDS ON ACTIVITIES FOR MEMBERS

Bookings open NOW:

Training Workshops in NCSSA Bushland Condition Monitoring

At Douglas Scrub, near Willunga - In partnership with AMLR NRM Board

Dates: Thurs 17th July 2008, 10.00 - 4.00pm; & Friday 18th July 2008, 9.00-4.00pm

At Milang - In partnership with Bureau of Rural Science, Community Stream Sampling & Salinity Mapping Project & Murray Darling Basin SA NRM Board

Dates: Thurs 24th July 2008 10.00 - 4.30pm & Friday 25th July 2008, 9.00-4.00pm

Also: in August in the Murray Darling Basin area, around Strathalbyn & Mannum - there will be workshops on *Get to Know your Local Vegetation & Plant ID* plus *Reptile & Birds* - dates & venues to be finalized.

To Express Interest, Further Details, Enquiries or Bookings Contact:

Janet Pedler or Caroline Mussared, 260 Franklin St, Adelaide SA 5000

Ph 08 7127 4630 or Ph 08 7127 4503 / Email: training@ncssa.asn.au cc. workshops@ncssa.asn.au

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 & sturdy footwear. Everyone welcome. Working bees over the next few months on the following dates:

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 14 & October 11

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.

Pine Point Weekends of June 21 & 22, August 23 & 24, October 25 & 26

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

Finniss Saturday July 19

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 6

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 13

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.

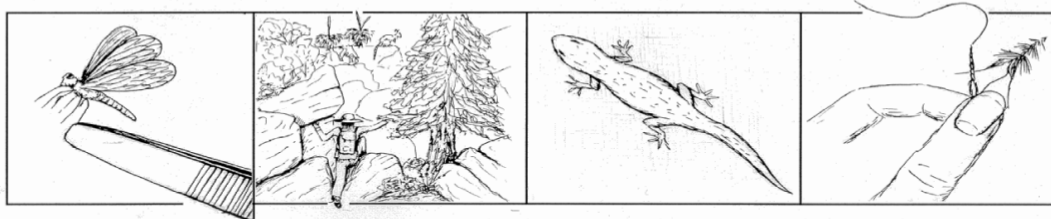
Yorke Peninsula Friday August 22

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.

Grange Golf Course Tuesday September 23

Grass weed control and population monitoring for Sandhill greenhood (*Pterostylis arenicola*)

**Dates are subject to change due to weather and seasonal factors
so for information please contact Tim Jury on 08 7127 4166 or tpag@ncssa.asn.au**



TPAG Update:

Recovering threatened flora in South Australia's fragmented agricultural regions

Introduction

Members of the Threatened Plant Action Group (TPAG) have been working hard to recover threatened flora in the fragmented agricultural regions of South Australia. Declining plant species and their habitat remnants in the heavily cleared regions of the state are under increasing pressure from threatening processes, climate change and impacts of land-use. Some 22% of South Australia's indigenous flora is considered threatened at some level.

Escalating threats to rare or declining species and remaining habitat fragments mean that recovery and management actions are urgently required to prevent further degradation and local extinctions. To this end TPAG members continue working toward the protection and recovery of the states threatened plant species and habitats. An update of recent work in the region is summarised below.

Threatened wetlands at Scott Creek

We have been working to restore headwater wetlands at Scott Creek in the Southern Mount Lofty Ranges. These threatened wetland communities have mostly been wiped out in the region, or remain only in a highly degraded state, due to livestock grazing, water diversion and weed invasion. Sections of swampy creekline, previously dominated by Willow, Blackberry, Broom and Erica, are being returned to regenerating native vegetation. This provides critical habitat for many threatened plant species including the Mount Lofty speedwell (*Derwentia derwentiana* ssp. *homalodonta*), Swamp greenhood (*Pterostylis falcata*) and Swamp pratia (*Pratia puberula*). Strategic on-ground work is gradually returning weed-choked creek swamps back to native wetland communities of indigenous shrubs, sedges, ferns and rushes. This project is a partnership of the Friends of Scott Creek Conservation Park, TPAG and private landholders. Work is being funded through an *Envirofund* grant from the Australian Government.

Threatened wattles around Lake Alexandrina

Near Finnis the Murray Darling Threatened Flora Officer, TPAG and private landholders continue to improve and expand habitat for the Fat-leaved wattle (*Acacia pinguifolia*). Working bees held at Brimarvi Road since the 1990's have reduced the cover and impact of Bridal creeper, Bridal veil, Soursob and introduced grasses, and enabled regeneration of native understorey habitat for this nationally Endangered wattle. A recent grant has enabled an adjoining landholder to fence off and revegetate a habitat 'buffer', thereby increasing the area of available habitat and increasing population numbers for this species.

Further to the east, between Murray Bridge and Langhorne Creek, surveys are being undertaken to determine population size and trends for the nationally Vulnerable Neat wattle (*Acacia rheticocarpa*). Active searches have found many previously unknown populations along roadsides and in grazed remnants on private land. Negotiations are underway to increase habitat protection for this wattle species. This work is being aided by private landholders and the Murray Darling Basin Threatened Flora Recovery team.

Halbury Greenhood in the Mid-north

At the Halbury Parklands the local Friends group, Native Orchid Society of South Australia, Lofty Block Threatened Orchid Recovery Project and TPAG have been enhancing the protection and condition of critical habitat for the nationally Endangered Halbury greenhood (*Pterostylis* 'Halbury'). The parklands comprise an important remnant of Box woodlands which contain the only known population of Halbury greenhood. At a joint working bee in late March the project team erected rabbit-proof fencing around critical habitat for the orchid as well as removing many kilograms of rubbish and controlling invasion by Boxthorn, Prickly pear and other pest plant species. Active rehabilitation and protection of Halbury greenhood habitat will go a long way toward ensuring the long-term viability of this species population. Other remaining patches of Box woodland in the district are being degraded by livestock grazing and unsympathetic land management practices. Project work by the project partners is supported by NHT funding.



Volunteers fencing critical habitat for Halbury greenhood at the Halbury Parklands during March 2008 Photo: Tim Jury

About TPAG

Formed in 1993, TPAG has been actively working throughout the state over the past 15 years, undertaking conservation measures to protect and recover threatened plant species and communities. TPAG works in partnership with landholders, government agencies and other community groups to implement on-ground recovery actions, including:

- habitat protection & restoration;
- abatement of pest threats;
- site action planning & management;
- population surveys & monitoring; and
- informing & assisting landholders.

TPAG receives funding for program coordination through the AMLR Natural Resources Management Board and is supported by NCSSA, DEH, and Friends of Parks Inc. To get involved please contact :

Tim Jury, Program Coordinator
(08) 7127 4166 or at tpag@ncssa.asn.au

NCSSA 2008 Spring Survey – Tothill Ranges

Saturday 27th September to Monday the 6th of October

For the annual Spring Survey this year we will survey the Tothill Ranges, a little known area of the Mid North of South Australia, containing significant remnant vegetation.

WHERE

The low, rugged range (to 650m) runs more than 30km north-south, lying south of Burra and east of Marrabel, west of Robertstown. Much of the steep, rocky slopes and parts of the foot of the range (ca 17km) are still clad in native vegetation. Although the ranges have been used for grazing since European settlement much of the vegetation in the best condition has gradually gained full conservation protection under private ownership during the last 15 years.

The size and position of this remnant (ca 1,000ha), an island of habitat sitting in "a sea" of cleared land ensures the conservation of this area is paramount in the protection of biodiversity of this region; it has been recognised in the *Biodiversity Plan for the Northern Agricultural Districts of SA* as a "Threatened Habitat Area". There are no other comparable, protected areas of vegetation in the Mid North. The nearest significant protected areas with understorey are the Red Stringybark reserve, Spring Gully Conservation Park 400 ha (ca 35 km to the NW in higher rainfall) and the Hopkins Creek Conservation Park, only 9km to the NE of the top of the Tothills but in a much lower rainfall area.



Tothill Ranges, March 2007

Photo: Janet Pedler

Whilst some survey work has been undertaken previously in parts of the range, e.g. by landholders, expert field-naturalists, South Australian Ornithological Association (*Birds SA*), Herpetological Society of SA and Department for Environment & Heritage, this survey will provide the first comprehensive overview of the biological assets of this unique range.

WHO

This survey is being conducted by your Society in collaboration with, and hosted by, *Bushland Conservation Pty Ltd* which owns a large proportion of the Tothill Ranges. The company which was incorporated in 1975 solely for the purpose of protecting and preserving land in its natural state (then False Cape Conservation Pty Ltd) has 50 shareholders, many of whom are foundation members of NCSSA and/or current members. It has major holdings on the Dudley Peninsula, Kangaroo Island (1364 ha) and another holding (122 ha) at Rockleigh, in the Eastern Mt Lofty Ranges.

Bushland Conservation Pty Ltd began buying land in the Tothill Ranges in 1990 and has holdings (ca 468 ha) that extend from the southern boundary for 6 km north to the Webb Gap Rd with a further block, Niblet Gap being ca 4 km further north. All of the land is covered by Heritage Agreements. Through such activities, the Company won the *National Landcare Award* in 1997 for Nature Conservation.



Niblet Gap section of Tothill Ranges Photo: Janet Pedler

This survey is being supported by funding from the *Northern & Yorke Natural Resource Management Board*. One its key aims is to encourage sharing of information with other local landholders and the wider community. To this end NCSSA and Bushland Conservation Co. will host a community day during the survey that showcases the survey and its methods and helps participants understand the nature of the natural systems present in the region and how to protect them.

HOW

We will be conducting flora and fauna surveys, using standard Biological Survey of SA techniques, at 16 sites in privately owned land being managed for conservation. This will include setting pitfall traps and Elliott Traps for mammals, reptiles, frogs and invertebrates, observing bird species present, and identifying and compiling an inventory of the plant species present at each site. Vegetation condition will also be assessed using the NCSSA Bushland Condition Monitoring method.

NCSSA will be inviting other natural history organizations to join in the survey, such as Field Naturalist Society of SA, Mammal Club, SA Herpetology Group, Birds SA, Friends of Spring Gully, and the Biological Society. Their skilled support and participation are vital to the success of this survey. It is also hoped that it will be a catalyst to enlist the participation of new volunteers and provide an opportunity for them to learn new skills under expert supervision and go on to become further involved in other conservation groups and/or projects.

We are therefore inviting experienced volunteers to assist with the survey and depending on the level of technical expertise available we can offer other less experienced volunteers a chance to learn while they perform some of the more physical tasks under supervision.



Tothill Ranges, Section 352.

Photo: Janet Pedler

Registration is Essential!

Basic bush camping will be available on site, but participants will need to be entirely self sufficient and comfortable with the idea of being under direction and creating the least impact possible while guests on this private conservation land.

For further details and to register interest in attending the survey

Contact Georgie Mollison at the NCSSA Office on: Ph (08) 7127 4633 or email survey@ncssa.asn.au

To help our organisation of this survey please provide the following details:

Name

Contact Phone No.

Postal address

Email (if you have one)

Areas of interest & one sentence summary of previous experience.

XANTHOPUS

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

Copy deadline for the SPRING edition is **8th August 2008**.

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

Editorial Team for this issue: Helen Vonow and Elizabeth Lonie.

NCSSA CONSERVATION BIOLOGY GRANT 2007 REPORT:

Willows (*Salix* spp.) and their impact on aquatic invertebrate communities**ABSTRACT:**

The Nature Conservation Society of SA has provided support for my PhD project entitled "Effect of willows (*Salix* spp.) on aquatic invertebrate communities in two freshwater streams in Adelaide Hills, SA". The main objective of this study is to investigate patterns of diversity and community structure of aquatic invertebrates before and after willow removal, and after subsequent revegetation. A pilot survey which consisted of two different 'treatments' (willows present and willows removed) has been conducted at Sixth Creek. Initial results suggest distinctive differences in the species composition between the treatments. The introduced hydrobiid snail (Gastropoda: *Potamopyrgus antipodarum*) is dominant in willows, whereas stonefly nymphs (Plecoptera: *Dinotoperla evansi*) are abundant where the willows were removed. I plan to continue sampling every three months on a seasonal basis for one year in order to understand the impact of willows and their removal and how this might generate different diversity patterns within invertebrate communities. This study is clearly important to help decide whether to remove, control or leave willows.

INTRODUCTION:

Exotic willows (*Salix* spp.) were widely introduced to temperate areas of Australia mainly for erosion protection of stream banks and channel markers for river boats. They have become naturalized and invaded thousands of kilometers of watercourses. Their role as invasive taxa is widely debated but many of the views expressed remain largely untested. Willows are presumed to be responsible for a decline in native biodiversity and are considered a Weed of National Significance (WON). Theoretically, the invasion of willows can reduce primary and secondary production and aquatic invertebrate densities. Published research reveals that willows do not provide the same habitat and food supplies for aquatic invertebrates as native vegetation, but as they are an important food source for many native fishes, amphibians, reptiles, birds, etc, a reduction in their numbers may affect the density and diversity of these higher order consumers.

The spread of willows has caused vigorous debate among policy makers and the public as to whether willows should be left, controlled, or removed. Millions of dollars are spent annually in chemical and mechanical control. However, little is known about the impact that removal of willows or subsequent revegetation has on aquatic invertebrates. Therefore, this study aims to identify a reliable measure of the health of these aquatic ecosystems by using invertebrates as bioindicators within original vegetation, with willows present and removed, and subsequent revegetation.

METHODS:

The study sites to be used are Sixth Creek and Deep Creek in the Adelaide Hills, with four 'treatments' for each stream:

- (1) original vegetation – 50% of the canopy comprises mainly *Eucalyptus viminalis*, *E. obliqua*, *Acacia retinoides*, *A. melanoxylon* and 50% various shrubs and herbs many of which are introduced weeds (periwinkle, soursob, blackberries and bamboo).
- (2) willows present – c.60% of the riparian areas dominated by willows and 40% covered by herbs and shrubs.
- (3) willows removed – banks more or less bare.
- (4) revegetation – either willows removed 2004 and revegetated with *Juncus* (rush), *Carex* (tussock sedge) and *Rorippa* (watercress) or willows removed 1997 and revegetated with *A. melanoxylon*, *A. retinoides* and *E. viminalis*.



Section of original vegetation on Sixth Creek. Photo: Wahi Afzan Azmi



Section of Sixth Creek showing revegetation. Photo: Wahi Afzan Azmi



Willow leaf fall in Sixth Creek. Photo: Wahi Afzan Azmi

Within each treatment, three different habitats (riffles, edges and pools), each replicated three times, will be surveyed for aquatic invertebrates using the standard AUSRIVAS (Australian River Assessment System) methodology, measuring a range of physical (e.g. hydrological characteristics, dominant riparian and aquatic vegetation) and chemical parameters (e.g. dissolved oxygen, pH, water temperature, conductivity, turbidity, salinity, and total dissolved solids). The invertebrates will be initially sorted into functional feeding groups and then identified as far as possible. These data will be analysed using various biological indices (e.g. Diversity Index, Richness Index, Evenness Index) and multivariate statistics to provide measures of the diversity and richness of aquatic invertebrate communities and allow comparisons of the biota.

PRELIMINARY RESULTS OF PILOT SURVEY, SIXTH CREEK:

Aquatic invertebrates richness and abundance:

In the pilot survey, I found differences in species composition and abundance between sites and habitats at Sixth Creek. 30 families from 14 orders were collected from sites where willows are present or removed. Slightly lower numbers of aquatic invertebrates (1525 individuals) were found under willows than where willows have been removed (1605 individuals). Introduced NZ hydrobiid snails (*Potamopyrgus antipodarum*) were most abundant under willows (986 individuals) and the most dominant taxon overall (1488 individuals).

Other commonly collected taxa included stoneflies (*Dinotoperla evansi*), caddisflies (*Lingora aurata*), mayflies (*Tasmanocoenis tillyardi*) and blackflies (*Simulium* spp.).



Hydrobiid snail, *Potamopyrgus antipodarum*. Length = 40 mm.

There is a richer and more diverse fauna where willows have been removed (c.37 species) compared with willows present (c.25 species). The lower numbers under willows may be due to more sedimentation and/or lowering of food production through shading effects. In contrast, where willows have been removed, there is a sparse, open canopy which permits higher primary productivity and favours more diverse growth of littoral macrophytes, shrubs and grasses as habitats.



Stonefly nymph, *Dinotoperla evansi*. Length = 74 mm.

Habitat preference

In terms of habitat preference, there were no obvious differences in total abundance of invertebrates among riffles, edges and pools where willows have been removed. However, under willows higher densities were found in shaded edges and pools (1139 individuals) than in the open riffle habitat (386 individuals). I found that browsers (gastropods and bivalves) and shredders (stoneflies) were most abundant under willows, but filterers and predators (eg. caddisflies, mayflies, stoneflies and dragonflies) were higher where willows were removed.

Also, some invertebrates, e.g. pea shells (*Sphaeriidae* spp.), seem to occur only in slow moving water in edges and pool habitats under willows. Interestingly, more blackflies (*Simulium* spp.), midge larvae (*Chironomidae*), water bugs (*Enithares bergrothi*) and mayflies (*T. tillyardi*) occur in the same habitats under willows.

Where the willows have been removed, higher densities of stoneflies (*D. evansi*), caddisflies (*L. aurata*) and blackflies (*Simulium* spp.) were observed in riffles. There is also a greater diversity of caddisflies (c. five species) where willows have been removed, one of which may be a new record for the Adelaide Hills.

Willows (*Salix* spp.) and their impact on aquatic invertebrate communities cont.

Based on these preliminary outcomes, I plan to further investigate habitat preferences of selected taxa.

Physico-chemical parameters

Generally, physico-chemical parameters recorded were similar at both sites, but this is based on just one sampling period. Seasonal differences are expected and native vegetation allows more sunlight penetration, willow leaves fall enmasse in autumn, and water under willows is probably more turbid, has high conductivity and organic matter as the fibrous root mats trap silt and reduce water velocity.

CONCLUSIONS:

The observations are at a preliminary stage, but after one full year of sampling, I expect more questions to arise. For example, what environmental factors (biotic and abiotic factors) influence the invertebrate assemblages? Do these assemblages change with time after revegetation?

Do willows have any habitat value? Is it better to leave, remove, or control the willows?

This study will provide information for willow management programs via the use of aquatic invertebrates as bioindicators.

ACKNOWLEDGEMENTS:

I thank my supervisor Dr John Jennings, Chris Madden for assistance during field work and species identification, Peter Goonan (Environment Protection Authority) for valuable advice, Katrina Warner (Sixth Creek Catchment Group) for helping me with sites and field work, Government of Malaysia for my scholarship and the Nature Conservation Society of SA Inc. for providing the Conservation Biology Grant.

Wahi Afzan Azmi

The University of Adelaide

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NCSSA Conservation Biology Grant 2008

The NCSSA 2008 Conservation Biology Grant was announced and awarded at the 8th May meeting of the Society, in conjunction with the Biology Society of SA (BSSA). Two previous recipients spoke on the outcome or progress of their projects ~ Wahi Afzan Azmi'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.

2008 Conservation Biology Grant recipients are:

Melissa Schlein, Flinders University "Pollination biology and ecology of saltmarsh communities in S.A. (with a focus on the impacts of introduced plants, *Limonium* spp.)"

Udani Sirisena, University of Adelaide "Systematic studies on *Thysanotus* R.Br. (Fringe Lilies)"

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 guanophilic arthropod ecology and conservation in bat caves), interactions between ecosystem components (eg mistletoes in Pink Gum Woodlands; and the importance of hypogaeal 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).

**This Grant is supported by donations to your Society
please consider contributing to this worthwhile cause ...rather than to the tax man!**

Another Subdivision at the End of the Runway

It astonishes me that in this enlightened age that we can still be making fundamental errors with town planning.

The Rural Council of Murray Bridge (RCMB) has developed a 'grand plan' to infill all the open space between the South Eastern Freeway, the Murray River, Rocky Gully Creek and White Hill to accommodate the expected increase in population of the rapidly growing city from around 18,000 to 30,000 within the next fifteen years or so. The plan also includes significant expansion of retail and other services. Plans are well advanced for the building a high density 'lifestyle retirement village' of 150 residences, directly adjacent to an industrial zone. Murray Bridge is already one of the leading retirement centres in South Australia, so another retirement village does seem to make sense.

It makes sense **until** you realize that part of the plan will reduce the size of a patch of high quality scrub from 2.5 hectares to just one hectare on the site of the proposed development.

In 2000 Michael Hyde surveyed this scrub and declared,

"...this is mallee shrubland on dune sand and is the best remnant of such vegetation on the western Murray plain north of Ferris McDonald Conservation Park. It has an intact understorey, a rare example due to the easily disturbed sandy soils. Weed invasion is only moderate, again unusual in sand. Because the patch is within the town, rabbit and sheep grazing pressure has been relatively insignificant. This remnant is an extremely valuable asset and should be declared a Floral Reserve and actively managed for conservation as soon as possible."

In 2005 RCMB quietly revoked the reserve status of this land. Soon after a contract for the sale of the land to a developer was signed. At that time concerned community members had the scrub re-surveyed by *Greening Australia*, which simply reiterated the value of the scrubland. This second report stated, "The patch is significant in regards to a regional context, as it is an important stepping stone and haven for native fauna in the region moving to other larger patches of scrub."

The recommendations of these two independent reports to protect this precious feature have now been largely ignored. The proposal is shortly to be considered by Planning SA and the hope is that they will demand that the proposed development be altered to retain the entire 2.5 hectares. Even so, intensive residential development this close to scrub would not bode well for its continued health. A less intensive development would be preferred.



Ridge fruited mallee overstorey with intact understorey. Photo: Steve Coombe

In a time when there is a push for the retention and re-establishment of urban biodiversity in Adelaide it seems incongruous that just on the other side of the Mount Lofty Ranges high quality vegetation is destined for destruction.

Steve Coombe
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Steve Coombe is the Project Officer for the Eastern Hills and Murray Plains Catchment Group, one of eleven community run Local Action Planning Groups in the SA Murray-Darling Basin.

Eds. Note:

This remnant in Murray Bridge has 90 indigenous plant species recorded, including the mallee wattle (*Acacia montana*) which is rated as Rare in SA. At 2.5 ha it would provide habitat for numerous native species particularly birds.

This specific example is an illustration of the ongoing, incremental degradation of native vegetation that is occurring throughout the state, particularly in urban and semi-urban settings.

Sound planning for long-term biodiversity outcomes needs to consider impacts on native ecosystems and allow for buffering from the impacts of urban threats.

GENERAL MEETINGS

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

5:30pm for a 6pm start

Upcoming meetings:

General Meeting: Thursday July 3rd, 6pm

Benham Lecture Theatre, University of Adelaide

A Panel discussion on “Desalination in South Australia”

Speakers will include:

Milind Kumar (Project Director, Adelaide Desalination Project) and Tara Hage (Environment Management Group) of SA Water “The Adelaide Desalination Project and environmental considerations”

Jackie Dupavillon, Southern Seas Ecology Laboratories, University of Adelaide
“Impacts of desalination on the giant Australian cuttlefish (*Sepia apama*)”

Dr Jochen Kaempf, School of Chemistry, Physics and Earth Sciences “Potential risks of brine accumulation associated with low flushing of gulfs”

Annual General Meeting: Thursday 4th September

**PLEASE NOTE : OUR NEW OFFICE ADDRESS IS
260 Franklin St, Adelaide SA 5000**

Phone: (08) 7127 4630