

**Scientific Officer's
Report:**

Mining Madness:
What kind of
precedent is being set
for the future of
Australian mining?

Annual Report

**True blue or risky
business?** Threats
posed by Tasmanian
blue gum plantations to
biodiversity

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

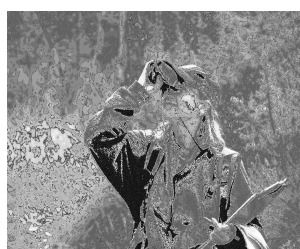
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Around NCSSA

Mt Lofty Ranges Bird Survey

The Mount Lofty Ranges Declining Woodland Bird Survey is a long-term monitoring program that has been running since 1998. It aims to assess the evidence for declines in woodland birds through repeated surveys of 164 sites throughout the Mount Lofty Ranges.



Surveyor working at Mt. Bold

Each site is surveyed during three 20-minute visits between September and December – the repetition is necessary to estimate the observation error rates, which is crucial to determining statistically whether birds are declining.

Tina Bentz is coordinating this year's survey. She is working with a full line-up of 12 avid birders who have volunteered to be 2006 surveyors. They have already completed over three-quarters of the surveys (381 out of 492) at 30th October.

Annual Survey

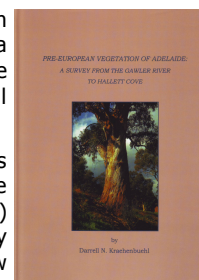
Our annual biological survey is underway. Melissa Batt has taken on this year's coordinating role as we revisit and survey sites that Darrell Kraehenbuehl documented in our publication of 10 years ago ~ *Pre-European Vegetation of Adelaide: A survey from the Gawler River to Hallett Cove*.

This is an opportunity for volunteers to assist with assessing what changes have occurred in the

intervening years and collect accurate baseline data so that we can reflect back to the current time to assess if change has occurred.

If you are interested in participating contact Melissa on phone 8223 6301 or email survey@ncssa.asn.au.

The original publication is still available from the office for \$27.50 (plus postage) and a report on this survey will be available in the new year.



New projects

NCSSA has recently been successful in obtaining funding for two projects which continue our work in supporting the protection and promotion of South Australia's biodiversity. The Australian Government *Envirofund* have advised of their support to:

- continue Penny Paton's great work with the Grassy Woodlands Network...see page 3 for a report on Penny's project
- reintegrate threatened habitat fragments at Muloowurtie on Yorke Peninsula

We are also awaiting the results of our recent applications for funding from the Native Vegetation Fund Grants Scheme.

NCSSA people

Management Committee

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

General committee

Spencer Burgstad, Michelle Denny,
Zoe Dreschler, Allan McIlwee,
Caroline Wilson,

Staff

Scientific Officer Georgie Green
Administrative Manager Elizabeth Lonie
Project Manager Tim Milne
Temperate Woodland Campaigner Penny Paton
Mokota Project Officer Meg Robertson
Eastern Flanks Grassy Ecosystems Officer Bill New
Threatened Plant Action Group Coordinator Tim Jury
Biodiversity Extension Officer Sue Graham
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

NCSSA MLR Grassy Woodland Network lives on!!

Good news on the funding front – an *Envirofund* application by NCSSA to continue the MLR Grassy Woodland Network and to deliver some on-ground outcomes in the Waite Conservation Reserve and Sturt Gorge Recreation Park was successful. So after a period without funding and a reduced schedule of workshops, we are full-steam ahead again. Look out for the Christmas edition of the Newsletter.

Recently I attended a ceremony at the Wine Centre where SA Water recognized the contributions made by volunteers in biodiversity conservation on their lands.

Over the past ten years many thousands of volunteer hours have been spent, predominantly in weed control activities, but also in compiling bird records and conducting biological surveys.

I represented our Society in relation to the work that myself and others have carried out at Happy Valley Reservoir Reserve. We are now entering our sixth year there and have carried out weed control over about 60 hectares at 7 priority sites, with boneseed, olive, African daisy, bridal creeper and monadenia being the main targets. *Bush For Life* is an important partner in this work, as two of the priority sites are BFL sites.

Recently SA Water was presented with a 5 year plan for the Reserve, which by 2011 would see primary weed control and maintenance of these gain over 75 hectares of grey box woodland, SA blue gum woodland and a small patch of *Banksia marginata* woodland.

In addition several types of monitoring are occurring – photopoint monitoring; Bushland Condition Monitoring at two sites; colour-banding Brown Treecreepers at one site; and annual eucalypt flowering phenology surveys of grey box and SA blue gum. A spin-off of this work was finding an outbreak of bridal veil in both pines and native vegetation in the south-west of the Reserve; control has occurred for several years. Searches for other infestations have resulted in the location of two small patches which have been removed.

If you'd like to join the Network, please phone Penny on 08 8344 8891 or email her on paton@chariot.net.au. There is no charge and you will receive 3 newsletters per year as well as workshop opportunities.



Monique Blason of SA Water addressing volunteers and others at the Volunteer Ceremony held at the Wine Centre

Photo: David Loveder



**MOUNT LOFTY RANGES
GRASSY WOODLAND NETWORK**

**Penny Paton
NCSSA Temperate Woodlands Campaigner**

get a grip

Coming Up:

HANDS ON ACTIVITIES FOR MEMBERS

End of Year Celebration

Our annual end of year celebration will
be held at 5.30pm on
Friday 1st December 2006
at Botanic Park, opposite
the Conservatory Gate.

ALL WELCOME!

(Please bring along a chair or rug)



Common Brush tail possum surveys

At the end of January early February next year, the Department of Environment and Heritage will be conducting surveys to look for the Common Brush tail possum as they are now considered rare in the Northern and Yorke Region. As yet no dates have been set but people who are interested can **contact Julie Schofield** on 88413403 or by email on julie.schofield@saugov.sa.gov.au

Pygmy Bluetongue Lizard monitoring

Staff from the Department for Environment and Heritage are on the look out for the elusive Pygmy Bluetongue Lizard. Once thought to be extinct, the Pygmy Bluetongue Lizard was rediscovered 14 years ago. Being found at only 22 sites, all on private land in the Mid North of South Australia, the lizards are now rated as a "Critically Endangered" species. DEH Threatened Fauna Ecologist, Julie Schofield, is looking for volunteers to help with population monitoring and area of occupancy projects near Burra, Jamestown, and Peterborough. Volunteers are welcome for entire trips, a whole day, or for the area of occupancy project, even a half day.

Population monitoring project: 10-13 February and 16-20 February 2007. This project aims to assess the population dynamics of the lizard populations at nine sites. Volunteers are needed to help with searches for spider holes and lizards within one-hectare quadrats. Area of occupancy project: 11-12 November and 2-3 December 2006, and 20-21 January 2007. The project aims to document the spatial extent of the lizard populations at known sites. Volunteers are needed to help with searches for spider holes and lizards across the area of these sites.

For more information about volunteering on these projects, please contact Julie Schofield on 8841-3403 or schofield.julie@saugov.sa.gov.au. For more information about the Pygmy Bluetongue Lizard, visit http://www.environment.sa.gov.au/biodiversity/bcp/pdfs/pygmy_bluetongue_info_sheet.pdf

Volunteer Opportunity: Greening Australia, Aquatic Plant Rescue Team

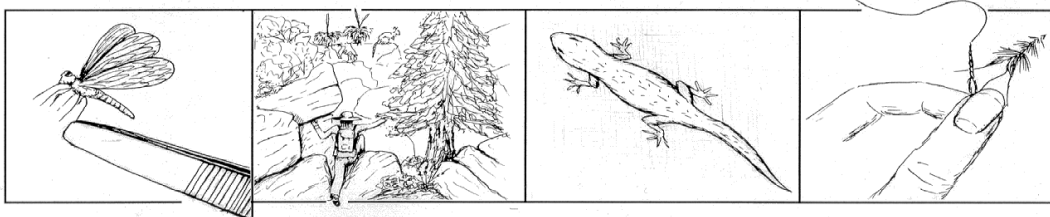
Volunteers wanted to assist with native flora recovery. Field based activities to be undertaken on Wednesdays will include species recovery, plant and seed collection and Thursdays will be spent in the Greening Australia nursery undertaking plant division, tubing and propagation. No experience needed. 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

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'. You can also click on the link below the picture but as changes are made to the Museum site with different events taking place the link to Butterfly Watch may not always be there. 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 next year.



Scientific Officer's Report:

Mining Madness:

What kind of precedent is being set for the future of Australian mining?

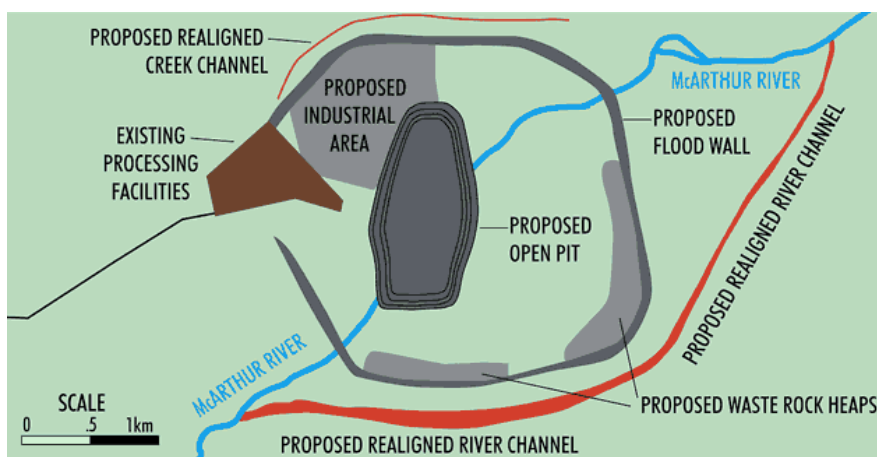
The McArthur River, Northern Territory

Environmental groups around Australia have been appalled by the approval of the McArthur Mine expansion proposal which involves the re-routing of one of Australia's largest tropical rivers. The plan proposed by Swiss mining giant *Xstrata* involves turning the company's current mining operations, 900 km South-East of Darwin, into a large scale open cut pit. This will completely destroy 5.5 kilometres of river bed and all of the associated local habitats.

Background

The McArthur zinc and lead mine has been operating in the Borroloola region of the Northern Territory since early 1995. In February 2003 *Xstrata* announced their plans to expand the mine into an open-cut operation; a plan which the company believe will reduce production costs and increase access to available mineral reserves. This scheme involves re-routeing a 5.5 kilometre section of the McArthur River, including around 2.5 kilometres of Barney and Surprise Creeks which will also have to be re-routed around the pit.

To further complicate the proposal the mine is situated on a natural flood plain. In wet years flooding can create a channel up to 15 kilometres wide. To stop floodwaters inundating the mine site, associated tailings dams and other infrastructure a 35 metre bund wall or a series of levees will need to be built around the pit.



This means that the mine will also have a much larger footprint than the current operation and will further exacerbate current water management and waste disposal problems. The open cut pit covering the current location of the McArthur River bed will be 220 metres deep, 1500 metres long and 800 metres wide, covering an area of around 80 hectares. A 50 metre high waste rock heap of an estimated 180 million tonnes will be created.

Environmental Concerns

Conservation groups from all over Australia are seriously concerned about the expansion. There are a diverse array of environmental impacts that could be caused by the re-routing of the river, including the total destruction of up to 10 kilometres of riparian vegetation, the effects on groundwater, possible pollution, restriction of ecologically important flooding events and the effects on the wildlife of the region.

Another serious concern is the presence of four threatened species that reside in and around the mine site. These are:

- The Freshwater sawfish *Pristis microdon*, which is listed as Vulnerable in Australia under the EPBC Act, Vulnerable in the Northern Territory under the Territory Parks and Wildlife Conservation Act, and Critically Endangered in the IUCN Red List 2006.
- The Red Goshawk *Erythrotriorchis radiatus*, which is listed as Vulnerable in Australia under the EPBC Act, and Vulnerable in the Northern Territory under the Territory Parks and Wildlife Conservation Act; 41.
- The Northern Quoll *Dasyurus hallucatus*, listed as Endangered in Australia under the EPBC Act, and Vulnerable in the Northern Territory under the Territory Parks and Wildlife Conservation Act.
- The Australian Bustard *Ardeotis australis*, listed as Vulnerable in the Northern Territory under the Territory Parks and Wildlife Conservation Act.

The Wetlands around Borroloola and on the lower McArthur River are also recognised as being of national importance. In describing the wetland systems, Chatto (2001) noted that they included the widest and largest area of inter-tidal mudflats in the southwest of the Gulf and substantial areas of mangrove swamp. This makes the area the most important coastal flat habitat for shorebirds in the southwest of the Gulf of Carpentaria.

Interestingly, the NT Environment Protection Authority had already rejected this same proposal earlier this year due to the findings of an independent geomorphological report produced by tropical river expert Professor Wayne Erskine. This report raised significant doubts that the diversion channel and associated infrastructure would not pose a serious environmental threat to the McArthur River and the surrounding areas in times of routine flood.

Scientific Officer's Report cont. :

It is a terrifying precedent that approval has been granted to the expansion of the McArthur mine despite independent expert opinion that there will be serious environmental impacts. The Northern Territory and Federal Governments have shown their total disregard for this expert opinion and the beliefs of local stakeholders. They have also demonstrated ignorance of the intricate relationships that sustain our natural environments and the species that rely on them for survival.

What does this mean for South Australia?

Although this development is not in our "backyard" South Australians should be very concerned about the precedent set by this development. Expert scientific opinion about the calamitous effect of such developments on species and ecosystems is being ignored in the rush to secure export income. Already our State is experiencing softening of environmental legislation which will undoubtedly benefit the mining sector. For example, the Significant Environmental Benefit clauses recently introduced to the Native Vegetation Act will allow for clearance of native vegetation if a significant environmental benefit can be demonstrated. If a significant environmental benefit can not be demonstrated, an option exists to pay money into the Native Vegetation Fund. This paves the way for cashed up mining companies to irreparably decimate habitats and ecosystems with mining activities for a token monetary contribution.

This issue raises many poignant questions about the future of Australia's unique and beautiful remote areas. These areas often provide the last remnants of intact ecosystems, and there is no shortage of scientific evidence that proves that many of these regions are biologically and culturally significant. The challenge lies with convincing the current government of the values of remote areas, as many politicians look at these areas as having low public profiles and more importantly holding very low numbers of voters. It is therefore extremely important that the general public and conservation groups throughout Australia unite to support rural areas on these types of precedent setting decisions. With mining now becoming one of the main means of export income for Australia we all need to help to maintain the balance between a sustainable, diverse environment and the pressures of economic ambition.



More information about the McArthur River Mine proposal can be found on the following websites:

The Environment Centre N.T. Website.

http://www.ecnt.org/html/cur_mining_mcarthur.html

The McArthur River Mine website.

<http://www.mcarthurriver.com.au/>

Please visit these websites and take the time to lodge an online submission through the Environment Centre N.T. website above.

References

- Chatto R. (2001) the Distribution and Status of Colonial Breeding Seabirds in the Northern Territory. *Technical Report 70*. Parks and Wildlife Commission of the Northern Territory.
- Ersine W. D. (2006). *Recommended Improvements in Design of the McArthur River and Barney Creek Diversion Channels for the McArthur River Mine Open Cut Project*. University of Newcastle.

Pictures courtesy of the Environment Centre, Northern Territory

Georgie Green
NCSSA Scientific Officer

XANTHOPUS

The views presented in this newsletter are not necessarily those of the NCSSA
This edition and previous are also available on our website : <http://www.ncssa.asn.au/>

Copy deadline for the Autumn edition is **30th January 2007**.

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

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

Annual Report 2005 - 2006

The Nature Conservation Society of South Australia Inc. (NCSSA) is a not-for-profit voluntary conservation organisation. It works to understand and protect habitat, flora and fauna, particularly of South Australia. We lobby for protection and strategic expansion of the state's reserve system, educate the community about environmental matters, and undertake scientific research and surveys.

The Nature Conservation Society has a history of over forty years as a leader in advocacy for the environment and as a respected source of scientific information and informed comment on the biodiversity of South Australia.

2005—2006 Highlights:

We provided a significant educational contribution to the community with NCSSA staff delivering six workshops to community groups on various flora and fauna topics; seventeen workshops specifically on the Bushland Condition Monitoring methodology; and five workshops as part of the Grassy Woodland Network. We also provided five *Walks with Nature* ~ to 80-100 members of public at each event.

We once again ran the extremely popular Native Grass Identification Workshop in cooperation with the *Native Grass Resources Group* and *Trees for Life*.

This year the NCSSA Conservation Biology Grant again provided funding towards three student projects, assisting with additional field research. This program also benefits the Society, providing general meeting speakers and articles about the completed research to be published in *Xanthopus* for 2006/07.

The updated, second edition of *Stop Bushland Weeds* was launched in February 2006. The book has been eagerly awaited and sales have been strong.

Continued success in securing funding and winning competitive grants for NCSSA's core areas of research, education on-ground work in the challenging environment of NRM reform.

Ongoing input into government policy and legislation with constructive and expert comment provided on many proposals and plans.

The commitment and vision of the hard-working staff, volunteers, and committee members.

Summary

Nature Conservation Society of South Australia grows from strength to strength, and has continued in 2005 – 2006 to make an contribution to biodiversity conservation in this state.

Helen Vonow

President

Nature Conservation Society of SA

August 2006



A. NATURE CONSERVATION HIGHLIGHTS

Nature Conservation advocacy

The work of the NCSSA Scientific Officer augments the work of the NCSSA Committee in our biodiversity advocacy role. The Scientific Officer has the essential role of the longer-term follow-up advocacy, education, and input into submissions and legislative reviews based on the work of the more specific grant projects and Committee expertise. This may involve writing reports and making submissions on environmental issues, or briefing the Committee, with further action taken by one of its members. The position provides an important point of contact for the general public, community groups, non-government organisations (NGOs) and government officers.

Major initiatives for the Scientific Officer and the Committee in the past year have been in the areas of Threats to biodiversity; On Park biodiversity conservation; Integrated Natural Resource Management; and Community education.

Threats to biodiversity

A major part of the work of the Scientific Officer and the Society are the never-ending issues of vegetation clearance and destruction of habitat ~ via development and changes to land use (e.g. in cemeteries, extension to the electrical substation at Cherry Gardens, Hanson Bay development, exploration proposals for the Coongie Lakes area).

We provided input to Amendments to Native Vegetation Regulations and comments two very significant policy documents ~ the draft *Guidelines for a Native Vegetation Significant Environmental Benefit Policy for the Clearance of Scattered Paddock Trees* and the draft *No Species Loss – a Biodiversity strategy for SA*.

Nicole, our immediate past Scientific Officer played a significant role in the Native Vegetation Action Group (CCSA) and continues as its chair.

Invasive species are ongoing threats and we continue to advocate on the

appropriate management of feral Koalas and against the stocking of trout in waterways in the Mount Lofty Ranges.

On Park biodiversity conservation

Our society responds specifically to plans and proposals put forward by government conservation agencies ~ including the *Review of the Reserves Classification system*, which advocated a significant change. We also commented on a draft *Cycling Policy* for reserves.

Integrated Natural Resource Management

We made comments on the draft *State NRM Plan* and participated in the planning days for the *State Strategic Plan*.

The marine has been of greater focus in recent years with the evolving development of Marine Protected Areas ~ this year we contributed to a Marine Conservation Consensus Statement and commented on the draft *Estuaries Policy & Action Plan*.



Scientific endeavours and good quality information

Biodiversity Survey

Our Spring Survey in 2005 was a biological survey in Mount Bold Reservoir Reserve.

The Mount Bold Reservoir Reserve consists of 5544ha which is managed for water quality and generally has no public access. It was therefore very interesting for members to gain access to the site. More than half of the reserve consists of remnant vegetation in moderate to excellent condition. As such it is considered to be a significant area of remnant vegetation within the southern Mount Lofty Ranges. Sites were selected within the survey area with the aim of representing the major landforms and plant associations, including both the dominant and the less common vegetation types.

The report is now available from Nature Conservation Society of SA.

View over Mount Bold
Reservoir Reserve

Biodiversity Extension Program

It has been another exciting and busy year for the Biodiversity Extension / Bushland Condition Monitoring Team (Tim Milne, Janet Pedler, Sonia Croft and Sue Graham).

Seventeen two day Bushland Condition Monitoring workshops have been held, at which 175 people have been trained. NCSSA has been directly responsible for the establishment of 62 new Bushland Condition Monitoring (BCM) sites in the Mount Lofty Ranges, and ten in the Murray Darling Basin. The Adelaide and Mount Lofty Ranges Natural Resource Management Board, through the Coastal facilitator for the region, supported the development of the *Coastal Vegetation Communities of the Southern Mount Lofty Ranges* published in March 2006. This is an additional volume for the BCM Manual of the Southern Mount Lofty Ranges to assist land owners and managers to monitor the condition of the vegetation communities along their coastlines.

NCSSA has also collaborated in a number of projects with federal and state agencies. The BCM method was chosen as a component of the site assessment for the federal government funded "Bush Bids" program, which focussed on protecting habitats along the eastern flanks of the Mount Lofty Ranges.

We developed vegetation benchmarks, and conducted training sessions with site evaluators for this project. A collaborative project to examine the viability of mapping vegetation condition within a region was conducted with the Department for Environment and Heritage, and a subsequent report was published. At the current time, a draft database has been developed in partnership with the Department for Water, Land and Biodiversity Conservation for storing and analysing BCM data. The BCM Team also developed a rapid assessment module, based upon the BCM scoring criteria, to allow evaluation of sites in that region in order to prioritise funding for biodiversity on-ground works.

Whilst not as prevalent as in recent years, the NCSSA has continued to provide technical advice through workshops and presentations to community groups on flora and fauna.

Grassy Ecosystems Extension

Bill New began as our Mount Lofty Ranges Eastern Flanks Grassy Ecosystems Extension Officer in April.

Bill's role is to provide technical support and advice to landholders and natural resource managers on the recognition and management of grassy ecosystems in the region. He has conducted many site visits and provided technical advice; established monitoring sites to track change of management activities on sites; and continued with the development of the Species Information Sheets established by Jo Spencer.

He is organising a number of field days promoting grassy ecosystem habitats and is working towards a focal grassy ecosystem management area involving the Monarto Equestrian Centre and surrounding properties.

Mount Lofty Ranges Woodland Bird Survey

In 2005 NCSSA took over management of this project. The surveys are part of an effort to gather long-term data on trends in woodland bird populations in the Mt Lofty Ranges. Tina Bentz coordinated, managed the database and entered the data for the 2005 Survey. It is hoped that the survey, as an annual event, will continue into the future.

A total of 492 surveys were completed

for 164 sites ~ each surveyed 3 times from September 2005 to January 2006. The database was updated with the help of Brian Knill. Max Possingham helped with data-checking and updating.

Publications and Community Education

The second edition of *Stop Bushland Weeds* was launched by the Hon. John Hill, Minister for Environment and Heritage at Morialta Conservation Park on 23rd February 2006. The second updated edition now contains 53 weed plates and has a new look. Line drawings were prepared by artists Ian Grant and Andrew Craigie. Design by Janet Stone of Icarus Design. Many people showed their commitment to conservation by contributing their expertise, time and energy to assisting this book production.

In addition NCSSA retails popular book titles *Pre European Vegetation of Adelaide* and *20 Walks with Nature in the Mt Lofty Ranges*. While these are our most sought-after publications we have steady sales of many of our project and survey reports. We also sell the important reference the *Bushland Condition Monitoring Manual*.

We published four editions of our newsletter *Xanthopus* and upgraded the NCSSA website www.ncssa.asn.au in which activities and *Walks with Nature* were advertised to the wider public.

Working with the community for on-ground outcomes

Temperate Woodlands

Penny Paton has continued to work with SA Water and Forestry SA on significant grassy woodland sites in the Mt Lofty Ranges; these partnerships are now five years old and much has been achieved in this time. Threat abatement activities have occurred at six of the nine priority sites identified at Happy Valley Reservoir in 2001 involving about 60 hectares of mainly grey box *Eucalyptus microcarpa* woodland.

On-ground work continues in grassy woodland sites owned by Forestry SA following the Vegetation Management Plans developed in 2003. At nine sites, most of them Native Forest Reserves (NFR), these plans document botanical attributes as well as prioritise weed control actions. Weed control actions range from minimum disturbance weeding over small areas to spraying of gorse and ring-barking of pines.

A new initiative in 2006 was to help set up a Friends of Cromer Conservation Park in partnership with Department for Environment and Heritage and the Upper Torrens Land Management Program.

The MLR Grassy Woodland Network has continued into its second year with a series of very successful workshops and additional newsletters).

Threatened Plant Action Group

During the year TPAG continued with recovery and habitat management work for around 60 threatened plant species and eight threatened ecological communities throughout South Australia's fragmented agricultural regions. Over 2000 hours of work by volunteers was contributed toward protecting and improving the ecological condition of critical habitat for threatened plants.

Implemented recovery actions have included: Abatement of weed and feral herbivore threats; plant population monitoring; vegetation surveys; tube-stock revegetation; fencing; stakeholder and landholder liaison; and ongoing public education. Effective working partnerships and links with environmental agencies and other community groups continue to develop and 2 grants were obtained to assist with undertaking on-ground work. Field days and working bees continue to be highly productive with some excellent returns gained from efforts made to repair and rehabilitate habitat remnants.

TPAG's work continues to make a real and tangible difference in improving habitat condition and in-situ conservation for South Australia's threatened plant species and communities. We look forward to continuing our work this year

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B. OPERATIONAL HIGHLIGHTS

Membership and Volunteers

NCSSA has a current membership of just over 300 members and we welcomed 35 new members during the year.

The Society depends on a strong volunteer base with approximately 80 individual volunteers contributing about 8000 hours of time to conservation of biodiversity in this State. This includes those who assist around the office and with projects, annual survey assistants, leaders and organisers of members' walks and activities, the dedicated management Committee, and steering committees to manage each of our funded projects and major activities.

The NCSSA is one of few voluntary organisations in the state with strong biodiversity credentials and great depth in understanding biodiversity issues both scientifically and in appropriate on-ground actions to achieve conservation outcomes. Most NCSSA committee members have at least one degree in the biological sciences and many have extensive field experience.

Committee members for 2005 – 2006 were Helen Vonow - President, Misch Benito - Vice President, Katie Fels - Secretary, Richard Winkler - Treasurer, Peter Tucker - Assistant Secretary, and committee members David Moyle, Allen McIlwee, Michelle Denny, Caroline Wilson, Richard Davies and Spencer Burgstad. Rick Davies resigned from the committee during the year due to relocating to the Northern Territory.

Administration and staff

At the Conservation Centre, 120 Wakefield Street, Adelaide, the Society and the Conservation Council of SA jointly own the land and building in the proportion of 30:70.

The society is well served by and appreciates the excellent work and commitment of its staff and project officers, who are all part-timers. This is possible due to our continued success in achieving competitive grants for a wide range of NCSSA programs and projects. The staff for 2005 – 2006 comprised:

Our Administrative Manager Elizabeth Lonie who looks after the office, manages our human resources and handles our finances using the MYOB accounting package. This position is partially funded by a Federal Government Grants to Voluntary Environment and Heritage Organisations (DEH Canberra) grant.

Nicole Lewis served as part-time Scientific Officer for ten months. Georgina Green has recently been appointed to fill this position. The NCSSA acknowledges the support of the South Australian Government through the State Government Community Service Agreement Grants for funding this position (DEH SA, AMLR NRM).

The 2005 – 2006 Biodiversity Extension Team comprised Tim Milne, Sue Graham, Sonia Croft and Janet Pedler. 120

The Biodiversity Extension Team undertook a number of projects including: Coastal Version of *Bushland Condition Monitoring Manual for Mt Lofty Ranges* (MLR&GA NRM), NYAD Field Guide to Bushland Monitoring (NYAD NRM), biodiversity advice and monitoring in the

Mount Lofty Ranges (AMLR NRM), Field Assessment Pilot in Mount Lofty Ranges (DEH SA), Vegetation Condition Benchmarks – Hotspots project (DEH Canberra), biodiversity workshops and monitoring in the Murray Darling Basin (MDB NRM), and produced riparian descriptions for Bushland Condition Monitoring (GW LAP).

The NCSSA 2005 Spring survey was coordinated and reported by Leanne Pound (Ecological and Biodiversity Services). (SAW, AMLR NRM).

Tim Jury was the Threatened Plant Action Group program coordinator [MLRGA NRM] and Threatened Species Network on-ground works coordinator [TSN]

Bill New was appointed to the role of Eastern Flanks Grassy Ecosystems Officer in April 2006. [MDB NRM, MLRGA NRM]

Penny Paton has continued convening the MLR Grassy Woodland Network, as Temperate Grassy Woodland Campaigner (DEH SA, WCF).

Tina Bentz undertook the Mount Lofty Ranges woodland Birds Survey (AMLR NRM).

Meg Robertson completed *Stop Bushland Weeds* (AGE, APCC, NCSSA, TFL) and undertook vegetation monitoring for the Mokota Conservation Park [DEH SA, WCF].

Thanks to funding bodies:

Adelaide & Mount Lofty Ranges Natural Resource Management Group [AMLR NRM]
Animal and Plant Control Commission [APCC]
Australian Government Envirofund [AGE]
Dept of Environment & Heritage (Canberra) [DEH Canberra]
Dept for Environment & Heritage (SA) Wildlife Conservation Fund [WCF]
Dept for Environment & Heritage (SA) [DEH SA]
Goolwa – Wellington Local Action Planning Group [GW LAP]
Mount Lofty Ranges and Greater Adelaide Natural Resource Management Group [MLR&GA NRM]
Murray Darling Basin Natural Resource Management Group [MDB NRM]
Northern & Yorke Agricultural Districts Natural Resource Management Group [NYAD NRM]
SA Water [SAW]
Trees for Life [TFL]
WWF Australia, Threatened Species Network Community Grants [TSN]

AUDITED FINANCIAL STATEMENTS AS OF JUNE 2006

Nature Conservation Society of SA

120 Wakefield Street
ADELAIDE SA 5000

Balance Sheet [Last Year Analysis]

June 2006

	This Year	Last Year
Current Assets		
Operating Accounts and Cash		
NCSSA BankSA ...840	\$24,083	\$36,433
Bio Ext BankSA...540	\$0	\$45
Petty Cash Society	\$200	\$200
Total Operating Accounts and Cash	\$24,283	\$36,679
Investments		
Adelaide Bank T9	\$0	\$83,490
Adelaide Bank T10	\$139,705	\$131,263
BankSA Portfolio	\$8,091	\$12,753
Commonwealth Cash Man Tr	\$101,128	\$44,433
Commonwealth Comm Invest	\$117,460	\$111,401
CommInvest Term Deposit 5071	\$0	\$30,000
Investment Portfolio	\$64,503	\$0
Total Investments	\$430,886	\$413,340
Accounts Receivable	\$40,496	\$22,031
Book stock on hand	\$32,813	\$26,088
Total Current Assets	\$528,478	\$498,138
Other Assets		
Loans to associated groups	\$65,990	\$80,000
Total Other Assets	\$65,990	\$80,000
Fixed Assets		
Land (NCSSA 30% share)	\$82,500	\$82,500
Building (NCSSA 30% share)	\$18,750	\$18,750
Acc'd Dep'n - Building	(\$2,776)	(\$2,308)
Furniture, Fittings & Equip	\$34,596	\$45,208
Acc'd Dep'n - Furn & Equip	(\$26,157)	(\$35,036)
Total	\$701,381	\$687,252
Liabilities		
Current Liabilities		
Credit Cards		
Visa	\$1,564	\$90
Total Credit Cards	\$1,564	\$90
Accounts Payable	\$6,418	\$9,385
Payroll Liabilities		
Annual Leave Liability	\$14,190	\$15,038
Long Service Leave Liability	\$15,817	\$11,099
PAYG Tax Liability	\$4,012	\$4,612
Superannuation Liability	\$0	(\$136)
Workcover Liability	\$43	(\$79)
OHS Liability	\$1	\$0
Total Payroll Liabilities	\$34,063	\$30,534
GST Liabilities		
GST collected from sales	\$14,752	\$18,784
Less GST paid on purchases	(\$3,070)	(\$4,082)
Total GST Liabilities	\$11,682	\$14,703
Grants & Projects in advance	\$127,200	\$138,421
Payments in arrears		
Total Current Liabilities	\$180,926	\$193,133
Long-Term Liabilities		
Suspense Account	\$0	\$0
Total Long-Term Liabilities	\$0	\$0
Total Liabilities	\$180,926	\$193,133
Net Assets	\$520,454	\$494,120
Accmtd. funds-Rtnd earnings		
Acc Funds-Opening Bal	\$494,120	\$470,840
Current Year Surplus/(Deficit)	\$26,335	\$23,280
Total Accmtd. funds-Rtnd earnings	\$520,454	\$494,120

Please note that the Financial Statements produced here are a précis of the complete documents tabled at the Annual General Meeting. Full copies are available from the NCSSA Office.

NOTES TO AND FORMING PART OF THE ACCOUNTS FOR THE YEAR ENDED 30TH JUNE 2006

NOTE 2: RELATED PARTY DISCLOSURES

(a) The following persons were members of the Committee of NCSSA during the financial year:-
 Michelle Denry
 Helen Voronov (President)
 Michelle Benito (Vice-President)
 Spencer Bugstad
 Richard Winkler (Treasurer)
 Katie Fels (Secretary)
 Peter Tucker (Assistant Secretary)
 Rick Davies (past year)
 Co-opted: David Moyle

(b) No member of the Committee, or a related entity, received any benefit or entered into any contract with the incorporated body, other than reimbursements paid to members for disbursements incurred in the normal course of business.

NOTE 3: GRANTS AND PROJECTS IN ADVANCE

As at 30th June 2006 the NCSSA is liable to fulfil projects listed below as follows;

Externally funded projects

Project	Funding body	Balance in advance/(overruns)
Community processes in native temperate grasslands following destocking	DEH (SA), WCF	(1225)
Coastal Version of Bushland Condition Monitoring Manual, Mount Lofty Ranges	MLR&GA NRM	943
Field Assessment for Bushland Condition Pilot in Mount Lofty Ranges	DEH (SA)	41
Biodiversity advice and monitoring in the Mount Lofty Ranges	AMLR NRM	(12188)
NYAD Field Guide to Bushland Monitoring	NYAD NRM	5374
Biodiversity workshops and monitoring in the Munay Darling Basin	DEH (SA)	9939
Threatened Plant Action Group Program Coordinator	DEH (SA)	4235
Mt. Bold Biological survey	SA Water	4137
Total external project liabilities		\$11256

Internal projects commitments

internal projects commitments	
NCSSA Conservation Biology Grant	2062
Eastern Planks Grassy Ecosystems Project	11198
Biodiversity Extension Program	88075
Monitoring Manual Training	8838
Network Grassy Woodlands Project	(139)
Bequest Fund	3297
Invertebrate component of biodiversity survey of native grasslands at Mokota CP	1115
KI native fish survey	1500

Key: Funding bodies

DBH, WCF – Department of Environment & Heritage (SA), Wildlife Conservation Fund
 MLR&GA NRM – Mount Lofty Ranges and Greater Adelaide Natural Resource Management
 AMLR NRM – Adelaide & Mount Lofty Ranges Natural Resource Management
 NYAD NRM – Northern and Yorke Agricultural Districts Natural Resource Management

NOTE 1: STATEMENT OF ACCOUNTING POLICIES

General

In the opinion of the Committee, "NCSSA" is not a reporting entity as defined by Australian Accounting Standards. Therefore the Financial Statements are Special Purpose Financial Reports that have been prepared solely to comply with the provisions of the Associations Incorporation Act 1985 and the Constitution and Rules of the Association.

The financial report has been prepared in accordance with the requirements of the following Accounting Standards:

AASB 118 – Revenue

AASB 139 – Financial Instruments: Recognition and Measurement

No other Accounting Standards, Urgent Issues Group Consensus Views or other authoritative pronouncements of the Australian Accounting Standards Board have been applied.

Specific

(a) Income Recognition – Membership and donations

Membership income and donations are only recognised when received and no allowance has been made for amounts in arrears or in advance.

(b) Grants & Contracts

Grant and contract income is spread over the period to which it relates.

(c) Non-current Assets

The carrying amounts of furniture & fittings and the Society's portion of ownership of its office building are reviewed annually and depreciated to reflect the writing off of these assets over their estimated useful life. \$14672 of scrapped or redundant furniture and equipment was fully depreciated and written off the Balance Sheet.

The Conservation Council of South Australia (CCSA) and the NCSSA own the land and buildings at 120 Wakefield Street, Adelaide in the ratio 70:30 (CCSA:NCSSA).

Land and building at committee valuation 100% (CCSA & NCSSA) - \$337500

Land at committee valuation 30% NCSSA - \$82500

Building at committee valuation 30% NCSSA - \$18750

Land and building at committee valuation 30% NCSSA - \$101250

Less Accumulated depreciation of building @ 2.5% per annum - \$2776

Thus final valuation of land and building asset as at 30th June 2006 = \$98,474

(d) Employee Entitlements

A liability for long service and recreation leave is recognised, and is estimated as the present value of expected future payments to be made in respect of services provided by employees up to balance date.

(e) Stock

Represents valuation of Society publications. Current stock is, for recent publications, valued at the total of costs incurred in printing, \$1404 of slow-moving book stock (older project reports and publications) has been written off this year in order to more accurately reflect the real value of these assets.

(f) Loans to associated groups

In June 2005 the Society loaned \$80000 to the Conservation Council of South Australia to assist with their operational activities. The loan is based on a principal and interest repayment over a period of five years, at a variable rate based on the Commonwealth 90 day deposit, and is secured by first mortgage over the 120 Wakefield Street, Adelaide property. As at 30th June 2006, \$14010 had been repaid, leaving a balance of \$65990.

True blue or risky business?

Threats posed by Tasmanian blue gum plantations to biodiversity

Introduction

Tasmanian blue gums (*Eucalyptus globulus* ssp. *globulus*) are increasingly being planted for commercial forestry on public and private land in the higher rainfall regions of South Australia. While actively promoted by primary industry agencies and the private sector, Tasmanian blue gums are well known to many field botanists and conservationists as an invasive tree species capable of spreading from plantings into native vegetation (Robertson 2006, Muyt 2001). Consequently, serious social and scientific apprehension exists over the current trend to increase the area of plantations due to the deleterious impacts they are likely to pose to indigenous biodiversity through risks of weed invasion, threats to ecosystem processes such as alterations to groundwater hydrology, and by competing for land needed to restore and reconstruct natural ecosystems.

This article highlights some impacts of Tasmanian blue gums on natural ecosystems and associated threats to biodiversity as a result of increased plantations, with the aim of prompting a more informed and rigorous debate on whether increased plantations are likely to constitute ecologically sustainable or risky business.

Environmental weed risk

Preliminary risk assessments undertaken for Tasmanian blue gums are problematic. While the species is purported to pose only a 'moderate' environmental weed threat, the same assessment estimates that 19% of the Adelaide and Mount Lofty Ranges region is potentially at risk from invasion (Virtue & Melland 2003). Actual invasiveness in higher rainfall districts could well be much higher as this species is commonly known to spread from plantings (Muyt 2001, Robertson 2006, Bates

& Croft 2006) and has already established infestations in the southern Mount Lofty Ranges, on Kangaroo Island and the South-East of South Australia (Virtue & Melland 2003).

Before embarking on larger scale plantations it would be germane to assess and learn from the dynamics and behaviour of smaller plantings established 20-30 years ago as test cases of likely future invasiveness. Table 1 indicates sites in the Mount Lofty Ranges where plantings are recruiting seedlings and resulting in subsequent invasion of adjoining bushland.



Tasmanian blue gum seedling invading bushland
Photo: Tim Jury

Even basic field observations enable easy anticipation of a very real threat of more extensive invasion throughout disturbed areas in higher rainfall districts. Along roadsides and watercourses the coupling of elevated soil moisture and nutrients with recurrent disturbance provides ideal conditions for invasion. It is likely that increasing fragmentation and degradation of remnant vegetation in urbanising and agricultural regions will also act as an assisting precursor for invasion (see Hobbs 1991).

We may be able to learn from the experience of other similar bioclimatic regions where Tasmanian blue gums have become a serious weed. Wild infestations now occur in New Zealand and South Africa (Lowe 1999), and in California they are considered one of that states most serious weed problems (Potts et al. 2004).

This invasiveness of Tasmanian blue gums seems to have been overlooked by forestry proponents. Environmental weed experts such as Muyt (2001) explicitly recommend avoiding planting of Tasmanian blue and other non-local gums in and around indigenous vegetation. An additional concern is that unlike introduced pines, Tasmanian blue gums may for some landholders be less distinguishable from indigenous Eucalypts, a factor likely to constrain effective control and thereby assist invasion.

There also remains longer term potential for hybridisation of Tasmanian blue gums with closely related indigenous eucalypts in the Viminalis sub-group such as Manna gum (*Eucalyptus viminalis* ssp. *viminalis*), a rare species which is already threatened at an ecosystem level for South Australia (SA DEH 2003).

Table 1: Some sites invaded by Tasmanian blue gum in the southern Mount Lofty Ranges

	Location	Land parcel	Infestation structure*		
			adults	saplings	seedlings
1	Harford Reserve/Cleland	SA Planning reserve	+	+	+
2	Snellings Road	Hahndorf	+	+	+
3	Engelbrook Reserve	National Trust Reserve	?	?	?
4	Deanery Hill	DECS Reserve	+	+	+
5	Longwood	Council Roadsides	+		+
6	Mount Bold	SA Water Reserve	+	+	+
7	Bradbury	Private land	+		+
8	Cherry Gardens	SA Water land	+		+

(* Denotes presence of life cycle stages, Geographic coordinates for invaded locations available from the author)

True blue or risky business? cont.

Impacts on wetland ecosystems

Tasmanian blue gum plantations pose direct, indirect, pulse and cumulative impacts on natural ecosystems. Impacts on wetland ecosystems and species through use and root tapping of sub-surface water have been documented, particularly for non-saline groundwater and shallow, more transmissive aquifers (see Benyon *et al.* 2006). Indeed, being such prolific water users has seen Tasmanian blue gums deliberately planted in South Africa to dry up swamps for mosquito control in an effort to reduce the incidence of Malaria (Potts *et al.* 2004). Further, a plantation in India caused total cessation of water flow in a village stream (Shiva & Bandyopadhyay 1987).

Tasmanian blue gums have high water requirements, naturally occurring in parts of Tasmania with rainfall ranging from 600–1800 mm year⁻¹ (Elliot & Jones 1986). Evidence shows that Tasmanian blue gum plantations in south-eastern Australia can have an average annual transpiration rate of 1090 mm year⁻¹ and utilise both surface runoff and groundwater, the latter particularly where annual rainfall does not match transpiration rate (Benyon *et al.* 2006). Given average precipitation in South Australia's higher rainfall regions is generally less than 800 mm year⁻¹, most plantations will have the capacity to effect both run off and groundwater levels.

As environmental flows are crucial in sustaining the viability and ecological functioning of wetlands and groundwater-dependent ecosystems, any reductions to required background surface and subsurface flow rates will threaten their structural integrity and compositional diversity. Establishing plantations upstream or adjacent to wetlands is simply inviting trouble.

Impediment to habitat protection & reconstruction

Blue Gum plantations provide minimal habitat for indigenous biota. Native species diversity within Tasmanian blue gum monocultures is far lower than native vegetation communities. Adolphson (1999) found the diversity and abundance of invertebrate assemblages (soil & litter fauna) was significantly reduced as was decomposition and nutrient cycling processes under Tasmanian blue gum plantations compared with adjacent native forests. Monocultures are also known to be far more susceptible to pests than more complex natural ecosystems and there remains some potential for Tasmanian blue gums to harbour and spread insect pests such as Longicorn beetles (*Phoracantha* sp.) (Hands *per comm.* 2006). There also remains appreciable risk for plantations to increase fire hazards subject to intended uses and length of harvest rotations, particularly for sawlog production (McCaw *et al.* 2002).

Tasmanian blue gum plantations are unlikely to be a compatible adjoining land use for native vegetation remnants. Regrettably, exotic plantations are often established next to remnants, perhaps believing this is good land use planning. Subsequent

spread of plantation trees into these remnants significantly compromises the efficacy of conservation efforts by landholders and volunteers to protect and improve the condition of native vegetation fragments.

Preparation of sites for Blue Gum plantations can compromise integrity of remaining habitat. For example, large plantations are currently proposed for public land with remnant and regenerating native vegetation on the Fleurieu Peninsula (ABL Pty Ltd 2006). Recent site preparation for plantations near Victor Harbor involved blanket spraying of native sedges, grasses and mosses without native vegetation clearance approval. This destruction was seemingly done without required statutory authorisation and as a development is likely to be non-compliant by negating state environmental legislation and circumventing due planning processes.

Chronically low remnancy of native vegetation in many agricultural regions will mean that broadscale habitat reconstruction will be required to prevent loss of indigenous biodiversity. Through their sheer area demand ~10,000 hectares of 'Blue gum estate' apparently intended for the southern Mount Lofty Ranges (MF& PI 2003) ~ plantations will compete for land needed to regenerate, restore and reinstate native vegetation with opportunities for enlarging and reintegrating habitat remnants likely to be hindered.

While some future land use conflicts are probably inevitable, it needs to be recognised that any destruction and conversion of land with remnant or regenerating native vegetation to plantations, especially on public tenures, will compromise future conservation efforts and is unlikely to be supported by an increasingly environmentally aware public.

Conflict with conservation policy & planning

Mass expansion of Tasmanian blue gum plantations is likely to conflict with numerous national, state, regional and local conservation policies and plans including strategies on water resources, biodiversity conservation and environmental pest management.

The 10,000 hectare 'Blue gum estate' proposed for the Southern Mount Lofty Ranges roughly equates to the combined size of the sub-region's two largest remnant vegetation complexes. Paradoxically it is claimed that it was actual concern over impacts on the quality of water resources that partly drove the push towards increasing plantations on the southern Fleurieu in preference to the MLR Watershed, as most of the former is not currently used for water-harvesting (MF& PI 2003). A rather ill-considered proposition given that the Fleurieu contains critical habitat for nationally threatened swamps whose viability is likely to be reliant on the quality and quantity of sustaining environmental flows not undergoing further deterioration.



Tasmanian blue gum sapling invading Harford Reserve bushland
Photo: Tim Jury

True blue or risky business? cont.

Clearly the water requirements of threatened wetland ecosystems were overlooked in attempts to allay more commercially motivated political pressure. Several current plantation proposals appear destined to trigger the Commonwealth EPBC Act.

Within the planning and policy maze, the impacts of mass plantations seem to conflict with key planning documents such as OMAR (Govt. SA 2006) which states: "Protection of water quality and quantity is one of the highest priorities for the region and attention must be given to the cumulative impact on these resources of land uses and management, particularly in the Mount Lofty Ranges Watershed and Lake Alexandrina areas". Clearly, a veritable gulf exists here between the planning rhetoric and the reality of unfolding developments.

In addition to compromising objectives of state and regional biodiversity plans, sprawling plantations will clash with local community conservation efforts. By increasing a known pest the expansion of plantations could also negate environmental weed management strategies that seek to prevent the proliferation of existing weed threats. This will bewilder community groups expected to shoulder most of the hard graft in controlling environmental weeds and who will no doubt be expected to help in dealing with any subsequent control requirements.

Conclusions

Investments in regional conservation planning will be compromised if actual land use remains a largely unmitigated 'business-as-usual' approach that disregards the impacts of developments, like plantations, on remaining biodiversity. With increasing reliance on ecological risk assessments as the scientific basis for screening species introductions or proliferations there is an urgent need for more applied and in-situ assessments rather than cursory literature review and dubious modelling. We need to remember that like the many 'Cane toad' examples of the past, today's investment mistakes can readily become tomorrow's unfunded environmental problems. Of course a far more prudent approach would be to presume introduced species as guilty until proven otherwise (see Bond 2005).

In the case of Tasmanian blue gums, ample evidence already exists that plantations will impose further compounding environmental impacts on already threatened natural ecosystems in fragmented high-rainfall regions. The potential for impact on riparian and wetland communities and disturbed native vegetation remains high. With summer approaching and the countryside already looking parched there has never been a more critical time to get serious about protecting water resources and dependent biota.

At this stage we still have the opportunity to reassess the situation and make more informed and sustainable land use



Regenerating Fleurieu Swamp on Hindmarsh Tiers currently under threat from Tasmanian blue gum plantation proposals. Photo: Tim Jury

decisions. But the question remains, are Tasmanian Blue gum a true blue asset or a real threat to biodiversity? Indeed from the available field and anecdotal evidence it appears that initial risk assessments are either inadequate or not as reliable as first thought. Whether Tasmanian blue gum plantations are an ecologically sustainable land use remains to be seen. But until proponents can reliably demonstrate the innocuity of plantations on biodiversity, regional planning really needs to err on the side of caution. Only time will tell if we possess the required gumption to strike prudent land use decisions, but there can be little doubt that we'll regret the consequences if we get it wrong.

References

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- Acknowledgements;** Robert Bates, Peter Watton and Allan Exner for information on invaded sites, and to Tim Milne, Alys Stevens, Helen Vonow and Mel Kovac for editing.

Tim Jury, NCSSA

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:

NCSSA End of year gathering

Friday 1st December 2006 at 5.30pm
Botanic Park

Thursday Feb 1st - Tim Milne, NCSSA
“Reptiles of the southern Mt Lofty Ranges”