

**Conservation
Ecologist's Report:**
The squeaky wheel
diaries

**Update: TPAG
threatened flora
recovery programs
in South Australia**

**Declining Woodland
Bird Long-Term
Monitoring Program**

**Effects of Fire in a
Grey Box Remnant**

**Native vegetation in
the Firing line**

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

Inside this issue:

Around NCSSA	2
Conservation Ecologist's Report: The squeaky wheel diaries	3
Update of TPAG threatened flora recovery programs in South Australia	4
Declining Woodland Bird Long-Term Monitoring Program	6
Effects of Fire in a Grey Box Remnant	8
Native vegetation in the Firing line	11

Around NCSSA

We are pleased to advise that Georgina Mollison will be returning to her position at NCSSA as Conservation Ecologist, commencing in the New Year. Georgie will fill the role for one day per week, along with Anthelia Bond who will continue in the position for the remaining two days per week.

Tim Milne will return to his role as Project Manager to focus solely on the demanding job of managing our many diverse projects and project staff. Many thanks to Annie and Tim for their excellent work over the past year while Georgie was on parental leave.

We look forward to the New Year working with a great team of skilled and enthusiastic staff and committee members.

Projects and Surveys

We have been out and about this year doing small (and larger) scale surveys and projects.

NCSSA and other groups were involved in a Murray Darling Basin Refugia Survey collecting baseline biological data. This included aquatic



Setting a fyke net in Newekie Creek. Photo: K Hillyard

and terrestrial flora and fauna, at eight permanent water sites on the eastern flanks of the Northern Mount Lofty Ranges (see above photo). There will be an article about the findings in the next edition of *Xanthopus*.

Meg Robertson coordinated the Reeves Plain vegetation survey, with the participation of members. She followed this in November and December with vegetation monitoring at Mokota Conservation Park.

And, the bird monitoring program in the Mount Lofty Ranges has been coordinated once again by Tina Bentz (see p6-7 in this edition of *Xanthopus*).

NCSSA people

Management Committee

President Helen Vonow
Vice-President Katie Fels
Secretary Susan Graham
Assistant Secretary Caroline Taylor
Treasurer Richard Winkler

General committee

Nicole Lewis
Ben Taylor
Hugh Kneebone
Nerissa Haby
Andrew Crompton
Robert Lawrence
Susan Gehrig

Staff

Conservation Ecologists Tim Milne and Anthelia Bond
Administrative Manager Elizabeth Lonie
Project Manager Tim Milne
Temperate Woodland Campaigner Penny Paton
Threatened Plant Action Group Coordinator Tim Jury
MLR Woodland Bird Survey Coordinator Tina Bentz
2008 Tothills Survey Georgina Mollison
2009 Reeves Plains survey coordinator Meg Robertson
Database & Website Project Officer Lesley Parton
Other ongoing project staff: Bill New, Kerry Gilkes

Regular volunteers

Sara Boulton - *Activities sub-committee*
Max Possingham - *Membership database*
Keith Lloyd - *General office support and library*

Conservation Ecologist's Report:

The squeaky wheel diaries continue...

Here is a summary of the issues we've been working on and the progress made so far.

Bakkabakandi /Victoria Park, Adelaide

The Adelaide City Council recently began the relocation of native plants from the Victoria Park native vegetation remnant, despite our advice and strong encouragement to protect the entire remnant *in situ*.

But it's with cautious optimism that we can report a temporary reprieve has been granted. The Department for Environment and Heritage has advised Council that the nomination to list this remnant under the *Heritage Places Act 1993* is likely to be successful and therefore to postpone relocation works until the outcome of the nomination is known.



Mining in the Northern Flinders Ranges

Minister Weatherill recently released a policy document titled 'Seeking a Balance: Conservation and Resource Use in the Northern Flinders Ranges'. This document identifies mining exclusion zones to protect the Mawson Plateau, Freeling Heights and Split Rock but the majority of the Arkaroola Wilderness Sanctuary and surrounding areas will be left open for mining exploration, albeit restricted to 'low impact' mining activities in some places.

We will be making a submission to argue for comprehensive protection for Arkaroola's biodiversity, and to raise concerns over the way biological information has been interpreted and used to justify the delimitation of areas of low and high biodiversity value.

Independent review of the EPBC Act

The final report for the independent review of *The Environment Protection and Biodiversity Conservation Act 1999* was presented to the Minister for Environment, Heritage and the Arts, Hon Peter Garrett AM MP, on October 30 2009. The Minister is required to table this report in Parliament by early February 2010, so we are looking forward to finding out about the outcomes of the review and the Government's response in the near future.

Quail and waterfowl hunting season 2010

The Department for Environment and Heritage has altered the consultation process for the 2010 hunting season, and the transparency of the criteria and process for gathering information and advice has been improved since last year.

We have provided our views at two stakeholder reference group meetings, the minutes of which will be provided to the Minister for Environment and Conservation to inform the determination of season length, species and bag limits. Although some pretty good steps have been made to improve the way scientific evidence is used to inform management of waterfowl, there is more work to be done and we are providing advice and assistance to this end.

Upper South East Drains

Good rainfall in 2009 has brought much needed fresh water to the Parrakie Wetlands and the rest of the West Avenue Range watercourse. This Spring, to the relief of many, the threatened Yarra Pygmy Perch was rediscovered in Henry Creek.

An Amendment Bill was recently passed by parliament to extend the Upper South East Dryland Salinity and Flood Management Act 2002. The Act was set to expire at the end of December 2009, leaving insufficient time to construct the Bald Hill drain, but has now been extended to December 2012.

We are very disappointed that the extension to the Act was passed and that the Bald Hill drain was approved, despite the lack of evidence to show that drainage works have been effective in achieving the environmental objectives of the Act. We are also very concerned that the Government has not made sufficient commitments to meet the future maintenance requirements of the drainage system nor to provide an evidence-based, adaptive management framework under which the drains will be managed.

Anthelia Bond and Tim Milne
NCSSA Conservation Ecologists
Email: scientific@ncssa.asn.au

Update of TPAG threatened flora recovery programs in South Australia

Members of the Threatened Plant Action Group (TPAG) have been working to recover threatened flora in South Australia. Indigenous flora and their habitats in the state's agricultural regions are under increasing pressure from threatening processes, land-use impacts, and climate change. Over 22% of South Australia's indigenous flora is considered threatened at some level. Escalating threats to indigenous flora and habitats mean that recovery actions are urgently required to prevent population declines and local extinctions. To this end TPAG continue working towards the protection and recovery of threatened flora. Some recent work is summarised below.

Threatened orchid recovery in the Mt Lofty Ranges

TPAG, with the Lofty Block Threatened Orchid Recovery Project (LBOTORP), Native Orchid Society of South Australia (NOSSA), Friends of Parks Groups, private landholders, the Department for Environment and Heritage (DEH), and other government agencies have been working in partnership to recover orchid species threatened at national, state and regional scales.

Conceived by TPAG in the 1990's, the LBOTORP is a long running project that primarily aims to recover orchid species listed under the *Environment Protection and Biodiversity Conservation Act 1999* (EPBC), many of which are endemic to South Australia. Work has been undertaken to monitor and recover threatened orchid populations at multiple sites across the Adelaide and Mt Lofty Ranges region.

Working bees over the last year have contributed over 1300 volunteer hours toward abatement of weed invasion, grazing and other threats. Better rainfall experienced for 2009 has meant good flowering for many threatened orchid populations but also a good season for competing weed species. We are currently involved in the conservation management of over 100 hectares of threatened orchid habitat and have substantially improved the condition of critical habitat for several threatened orchid species.

A strong commitment to minimum-disturbance weed control has reduced competition pressure on populations of Hindmarsh Valley greenhood *Pterostylis bryophila*, Leafy greenhood *Pterostylis cucullata*, White spider-orchid *Caladenia rigida*, Robust spider-orchid *Caladenia valida* and Behr's donkey-orchid *Diuris behrii*. Several populations of these species have been observed re-colonising managed sites with reduced abundance of introduced flora, including: Boneseed *Chrysanthemoides monilifera*,

Blackberry *Rubus* spp, Gorse *Ulex europaeus*, and Bridal creeper *Asparagus asparagoides*, all serious environmental weed species of national significance (WoNS).

Over the last year surveys were undertaken to obtain data on the size and flowering of remnant subpopulations of *Caladenia valida*, *Caladenia rigida* and *Diuris behrii*. The size of monitored orchid populations appeared similar with previous years, with slight changes in numbers occurring due to variation in environmental conditions, such as rainfall or demographic factors.

The impact of herbivory and grazing on populations of threatened orchids was managed at 2 sites. Cages protecting orchids were installed or repaired for 2 species populations (see photo below).

Stock-proof fencing is currently being negotiated for a grazed habitat remnant containing Behr's donkey orchid



Volunteer repairing cages for *Diuris behrii* in grassy woodland on private grazing land. Photo: Tim Jury



Behr's donkey-orchid *Diuris behrii* Photo: Tim Jury

Diuris behrii on private land near Cherry Gardens. While several larger populations of *Diuris behrii* occur at localities such as Millbrook Reservoir and Belair National Park, the species has become depleted throughout its regional distribution mainly due to the destruction of its required grassy Woodland habitat.

The LBOTORP Officer and NOSSA have located several previously unknown populations of these threatened orchid species through surveys during the last year, particularly of *Pterostylis bryophila*; *Caladenia rigida*; and *Diuris behrii*.

Field surveys and a study have been carried out on the genus *Corybas* by orchidologist Rob Bates in 2009. This has resulted in the rediscovery of *Corybas expansus* populations at Newland Head, as well as the exciting discovery of two previously unknown taxa.

Further actions are planned for 2010 and beyond if support for on-ground work can be obtained. This project is a partnership with DEH, public and private landholders, and other organisations previously mentioned. Thanks to all participants.

We also acknowledge a recent *Envirofund* grant from the Australian Government to assist with implementation of on-ground recovery actions.

For more detailed information on the Lofty Block Orchid Recovery Project see: www.environment.sa.gov.au/biodiversity/threatened-species/lbtorp.html

About TPAG

Formed in 1993, TPAG actively works throughout the state to protect and recover threatened flora in partnership with landholders, government, and the community. We implement on-ground recovery actions, including:

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

TPAG is supported by the Australian Government's *Caring for our Country* Program, NCSSA, Regional NRM Boards, DEH, and Friends of Parks Inc.

You can get involved with some **hands-on** action to help threatened plants and vegetation communities recover.

There are regular TPAG working bees throughout the year. Most are in the morning, generally from 9.30am onwards, with training and some tools provided on the day. The program of working bees for 2010 will be published in the next edition of *Xanthopus*. Or you can contact Tim Jury if you are interested in participating.

Tim Jury
Threatened Plant Program Coordinator
(08) 7127 4166
tpag@ncssa.asn.au

XANTHOPUS

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

Copy deadline for the AUTUMN 2010 edition is **31st January 2010**.

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

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

Declining Woodland Bird

Australia has a poor record of collecting long-term biodiversity data on a regional scale. These data are essential for determining the success and failure of NRM activities. As a consequence our ability to sensibly report on changes in biodiversity in response to threats like fragmentation or climate change is compromised.

Nine years ago, Hugh Possingham (then at the University of Adelaide) and Scott Field started a bird monitoring program in the Mount Lofty Ranges (MLR). The MLR region is an outlying 'island' of isolated woodland, and adjacent plains. With over 90% of the pre-European vegetation cleared, it has lost, and is expected to lose, a significant fraction of its avifauna (Ford and Howe 1980, Possingham and Field 2000, Paton 2004, Black 2005).

Building from 38 sites in 1999 and 106 sites in 2000, over 150 survey sites have now been established in the Mount Lofty Ranges on private and public land. These cover a range of relatively intact Gum and Stringybark eucalypt woodland habitats. Sites were chosen to represent the range of major habitat types and habitat patch sizes. Each spring, surveyors have recorded birds (by sight and sound) three times at each site.

More time increases the power of the program to detect real changes of a particular size, above and beyond natural fluctuations and measurement error. Intensive studies at a small numbers of sites, or studies at two widely separated times (e.g. bird atlases) do not enable us to make credible



Male Crescent Honeyeater

Photo: Greg Dare

statements about the status of the region's birds. Now after 9 years we are starting to pick up trends in more common species like the Crescent Honeyeater or Scarlet Robin. Picking up trends in uncommon species, like the White-browed Babbler, will take longer.

This year the surveyors were impressed by the numbers of White-winged Trillers (WWTs) seen during spring surveys this year. Surveyor Rodney Atwood had a stab at an explanation for this phenomenon:

"WWTs are reasonably regular migrants to the MLR from Queensland with the



Scarlet Robin

Greg Dare, Stirling Range, W.A., 20/03/09



A pair of White-winged Trillers

Photographed by John Turner

Long-Term Monitoring Program

males arriving early September and the females arriving a couple of weeks later. They stay for some months and disappear quite suddenly at the end of summer. Some years none are reported and on other years they occur in numbers (This year being a particularly prolific one, probably something to do with wet spring after some years of dreadful drought). What route they pass getting from Qld to SA is not clear. Whether they come via the interior (like the Gerygone) or choose the coastal route is not at all clear and I don't know of anyone seriously following this. My hunch is that they come (via) the interior route and only when conditions are right."

Not all of the data is yet entered for 2009 survey. However, there are 36 records of this small insectivorous bird in the database, with noted absences from 2004, '05 & '06's survey years! Welcome back you little beauties! (For more information on WWTs go to www.birdsinbackyards.net and use the birdfinder).

Over the years this survey has received funding and support from the Australian Research Council, Department for Environment and Heritage, University of Queensland (UQ), University of Adelaide, Nature Conservation Society of South Australia, Adelaide & Mount Lofty Ranges Natural Resources Management Board.

This program also highlights a collaborative partnership between universities and NGO's; initiated by Hugh Possingham's research group (UQ) and currently managed by the Nature Conservation Society of South Australia (NCSSA).

Much of the data and associated reports and papers can be downloaded freely from <http://uq.edu.au/spatialecology/mlr-birddata-66440>

Tina Benz
MLR Woodland Bird Survey Coordinator



Male Crescent Honeyeater feeding on flowering gum

Photo: Dragos Moise

References

- Black, A (2005) President's letter: The future of our birds. *Birds SA Newsletter* 196:3-4.
- Ford, H and Howe, R (1980) The future of birds in the Mount Lofty Ranges. *South Australian Ornithologist* 28:85-89.
- Paton, DC, Rogers, DJ and Harris, W (2004) *Birdscaping the environment: restoring the woodland systems of the Mt Lofty region, South Australia*, p331-358 IN Lunney, D (2004) (2nd Ed) *Conservation of Australia's Forest Fauna* Royal Zoological Society of New South Wales, Mosman, NSW, Australia.
- Possingham, HP and Field, SA (2000) Regional bird extinctions and their implications for vegetation clearance policy. *Lifelines* 7:15-16.

Effects of Fire in a Grey Box Remnant

In January 2008 a wildfire burnt part of the remnant grey box woodland on the steep slope traversed by Old Belair Road in the Mitcham area of Adelaide. This article is a general summary of observations made at two sites in the burnt area: **A**, above Old Belair Road near the top of the north-south ridge and **B**, just above Brownhill Creek and approximately 120 metres lower than site A.

Pre-fire vegetation

Site A just east of the ridge top and including the road reserve above Old Belair Road, was a disturbed mixed grey box *Eucalyptus microcarpa* / SA blue gum *E. leucoxylon* woodland (approx 20% projected cover) with golden wattle *Acacia pycnantha* and an occasional drooping she-oak *Allocasuarina verticillata*. The native ground cover included *Lomandra densifolia*, *L. nana*, *Dianella revoluta* and a few *Austrostipa* and *Austroanthonia* spp., a patch of a *Gonocarpus* sp, a few plants of both *Convolvulus remotus* and *C. erubescens*, a single known plant of *Scaevola albida*, a patch of *Arthropodium strictum* and a *Juncus* sp. On top of the ridge this changed to an open patch of mainly *Themeda triandra* with an occasional grey box or blue gum. A feature just west of the ridge is a significant stand of drooping she-oak *Allocasuarina verticillata*. The major woody weeds (boneseed, olive, hawthorn) had been under control for at least 5 years. Current major weeds included Guildford grass, sparaxis, annual veldt grass, cape tulip and soursob.

Site B at the bottom of the slope in Brownhill Creek. This woodland is exclusively grey box with a patchy understorey of a few *Acacia pycnantha* and *A. acinacea*, *Pultenaea largiflorens* and a few *Bursaria spinosa* over some 40 species of bulbs, grasses, herbs and sedges. The area supplied wood for Mitcham village in the early days and grazing for stock until the 1950s. Olive has been progressively controlled for more than 5 years and Montpellier broom and boneseed for 10 years.

Native vegetation recovery

Site A. The fire burnt from Brownhill Creek up the slope and over the ridge. It was fought aggressively with tankers and water bombers, and controlled reasonably quickly.

As shown in Figure 1, the fire removed all ground cover foliage, and reduced the projected cover of eucalypt foliage to about 10% immediately. By 5 months post fire projected cover had dropped to 5% and was even less at 19 months post fire.

A few trees were recovering by epicormic growth along the branches by 5 months post fire, and many others had significant re-growth from the base by 19 months post fire (Fig 2). A few had died.



Figure 1: Site A, 10 days post fire (27.1.2008).
Photo: Ellen Bennett & Viv Muller



Figure 2: Site A, 19 months post fire (4.8.2009).
Photo: Ellen Bennett & Viv Muller

Five months post fire there were on average 10 *Acacia pycnantha* seedlings per m² in the monitored plot in site A, and by 19 months post fire many of these were growing well, at 10-50 cm high.

Eucalypt seedlings were not recognised until about 9 months post fire when they were approx 5 cm high. At 19 months post fire these were 10-40 cm high, and probably slightly less numerous than *A. pycnantha*. They were under attack from at least two sorts of caterpillar (Fig 3).

A couple of young *Allocasuarina* plants about 80 cm tall were also found at 19 months post fire.

In the understorey, several previously unobserved species emerged by 9 months post fire, and these were still present at 19 months post fire. They include: *Pseudognaphalium luteoalbum*, a native *Plantago* sp. (Fig 4), two native *Senecio* spp, and *Kennedia prostrata* (which was starting to flower in August 2009).



Figure 3: Site A, Caterpillars observed on young Eucalypts (4.8.2009)
a. Unknown: b. An Autumn Gum Moth larva, *Mnersampela comarcha*¹
Photo: Ellen Bennett & Viv Muller

By 9 months post fire young *Scaevola albida* plants were widespread, in contrast to the one plant observed pre-fire. Both native *Convolvulus* spp. were widespread and in some places large clumps had formed.

By 9 months burnt *Lomandra* and *Dianella* tussocks were recovering rapidly, and *Arthropodium* had returned at the same level as pre-fire. The *Gonocarpus* has not been observed again in Site A.

By 19 months *Austrostipa* had returned at about the same level as previously. Some tussocks of *Austrodanthonia* which were not completely destroyed were growing well by 9 months. In an area where plants were completely burnt, no *Austrodanthonia* has been observed yet, but it may have been obscured by the thick weed



Figure 4: *Plantago* sp., Site A (30.9.2008).
Photo: Ellen Bennett & Viv Muller

cover. *Themeda triandra* was recovering by 9 months although it did not appear to flower as much as usual in the first year.

West of the ridge in the *Allocasuarina verticillata* stand, at 19 months post-fire, some pre-existing trees had died, but others were growing new foliage.

Site B. At the bottom of the slope, the fire removed all ground cover as at the top of the ridge, but its effect on the canopy was patchy. Some of the canopy was burnt, some was crisped and a few trees were not burnt at all.

At 5 months post fire, most of the grey box were regenerating through epicormic growth along the branches and a few trunks; at 19 months more than half the canopy had releafed and all trees alive pre-fire were shooting from the base with shoots up to 1.5m. The faster recovery of the grey box at the bottom of the slope compared to those at the top suggests that the burn may have been cooler at the bottom of the slope.

In the ground layer, all species appear to have recovered except for the legumes, which are regenerating from seed.

Species regrowing well, in addition to those observed at Site A, are *Gonocarpus elatus*, *Drosera whittakeri*, *Dichondra repens*, *Wahlenbergia stricta*, *Goodenia pinnatifida*, the coarse bottle-daisy *Lagenifera huegelii*, a sun orchid *Thelymitra* sp., and the few *Bulbine bulbosa* plants. This is not unexpected as all these species retreat to rhizomes, fleshy rootstocks or bulbs in summer and so would have survived the fire in January.

The native grasses and sedges have been slower to recover and flower, but at 19 months post fire even two *Poa* spp are growing back, as are *Lepidosperma laterale* and *Carex breviculmis*.

Numerous seedlings of *Pultenaea* are regenerating where a lone plant had died, and of *Bursaria* in an unburnt area adjacent to the fire scar. *Acacia pycnantha* seedlings are numerous around the burnt mature specimens and occasional elsewhere.

Where a couple of Aleppo pines had been felled and left, the fire burnt for longer and left scars which at 19 months were still 25% bare ground. In these scars box seedlings are coming up at a density of some 20 per m². At 5 months post fire, on the edge of one of these scars we found two plants of *Lotus australis* (Fig. 5), a species which hasn't been seen at this

Effects of Fire in a Grey Box Remnant cont.



Figure 5: Site B, *Lotus australis* with *Gonocarpus elatus* in the background
Photo: Ellen Bennett & Viv Muller

site for a very long time. Despite the severe conditions of the scar—the seedlings were almost yellow for some months—they survived the summer and flowered in Spring 2009.

Weed Issues

Site A. By early April 2008 (3 months post-fire) annual weed grasses and soursob were starting to appear. By early June new broom and boneseed plants were well on their way. The broom arose from a previously dormant seedbank where mature plants had been removed in 2006 and there are large boneseed infestations nearby.

By far the most dominant understorey plant in the period from June to late in the year was Guildford grass, and this is evident in both Figure 2 and the background of Fig 4. Cape tulip was also plentiful. Oats were the most prevalent weed grass, and these plants were very large following the fire. Thistles were more prevalent than pre-fire.

The main weed management effort in the first year was the removal of flowering heads from oats and Cape tulip, with some treatment using 1% v/v of 360g/L glyphosate (*Weedmaster DUO*) around selected regenerating plants, or where there were outlying populations of these weeds.

The clearing of the new broom and boneseed seedlings was begun in 2008 and completed in 2009 before any of these plants had flowered. Woody weeds are therefore still under control.

There has been no real attempt to reduce Guildford grass apart from some brushcutting of flowering plants, but this had to be done with care, as young *Acacia* and *Eucalyptus* plants were often hidden close to the ground within the Guildford grass. In the Spring 19 months post-fire, the immediate weed issues were annual veldt grass (rather than oats), Guildford grass and Cape tulip.

Probably the best strategy at the moment (as usual in fact!) is clearance of weed growth around individual native plants, in the hope of achieving recruitment of native species into the cleared areas. Of course this requires persistent follow-up, since recruitment of weed species is also likely in such a disturbed area.

Site B. Here the weeds are not dissimilar to those at the top of the ridge but with the added complication of a 1 in 3 slope. Steep bare ground is vulnerable and weed germination offered the fastest growing ground cover, so little has been treated except the flush of broom and boneseed, and some dense stands of oats.

Post-fire a few new weeds were seen on the site, all of them from the daisy family and presumably blown in. All have been removed.

A few discrete patches of one-leaf Cape tulip and *Sparaxis bulbifera* had been weeded of flowering plants for a number of years before the fire and the patches had been in decline, but the Guildford grass had been left unchecked. In the scars left by the hotter burn, Guildford grass is very sparse, whereas the cooler burn has advantaged this bulb by removing the competition for moisture and nutrients. As a result in the second Spring after the fire, there has been a prolific germination so that in places the Guildford grass resembles a dense turf. In contrast the fire cleaned out any small *Sparaxis* bulbs (mostly very close to the surface), and weeding this spring should have effectively cleaned out several patches. The effect of the fire on the Cape tulip is harder to gauge, as that is harder to distinguish amongst the annual grasses.

Climatic Conditions

The year of the fire was Adelaide's third consecutive year of below average rainfall. The prolonged dry conditions had already had an effect on the eucalypts, which showed up to 50% dieback in the canopy. The dry conditions may also account for the death in the fire of the legumes, some of which are known to re-shoot after fire in the better-watered conditions of New England².

Autumn 2008, following the fire, was dry with no rain of significance until April and May. This undoubtedly delayed germination and slowed down regeneration. The dry autumn may also account for the slow recovery of the grasses. They need autumn rain while the ground is still warm to put on sufficient growth for a good crop of flower heads in spring. Without it they flower sparsely and some species not at all.

These observations rely in part on the data collected within three 30mx30m Bushland Condition Monitoring (BCM) quadrats³ established within the burnt area. One of these had been established in 2006, and the other two after the fire in 2008. Having this standardised tool available and established within bushland areas makes for easier evaluation and more valid comparisons of unplanned regeneration events such as this. It also helps to have expert and willing advice and assistance, such as that from Penny Paton, and also the continuing support from *Trees for Life*, particularly *Bushcare* staff Ben and Petra Wilden and Sue Bradstreet.

References

1. Identified with assistance from David Keane and from Don Herbison-Evans, personal communication 8.10.09; see also <http://www-staff.it.uts.edu.au/~don/larvae/faqs/ident.html>
2. Knox, K.J.E. and Clarke, P.J. (2004) "Effects of different fire regimes on shrubs in grassy woodlands"
Conference paper from "The Bushfire: Earth, Wind and Fire: Fusing the Elements" hosted by DEH, Adelaide.
Online, accessed 16.11.2009
<http://www.deh.sa.gov.au/fire/pdfs/bushfire-conference2004/knox.%20kirsten%20-%20effects%20of%20fire%20season%20and%20fire%20intensity.pdf>
3. Croft, S.J., Pedler, J.A. and Milne, T.I. (2005)
"Bushland Condition Monitoring Manual, Southern Mount Lofty Ranges" Nature Conservation Society of SA Inc, Adelaide.

Ellen Bennett and Viv Muller

Native vegetation in the Firing line!

There have been significant changes to the Regulations under the *Native Vegetation Act* to do with management of native vegetation to reduce the impact of fire. Whilst these changes have been made to clarify and simplify the processes required for approval, most of the changes to the laws regarding native vegetation and fire relate to the shift of decision making from the Native Vegetation Council to the Country Fire Service. This may have significant negative impacts on both biodiversity and fire risk unless appropriately implemented and monitored, as discussed below.

- Previously you could clear up to 20 metres from a dwelling but to clear trees required approval from the Native Vegetation Council and approval under significant tree legislation. Now the trees are still protected under significant tree legislation but other than that all vegetation can be cleared.
- To clear beyond 20 metres previously required approval of the Native Vegetation Council, and only up to a maximum of fifty metres. Now CFS officers (unskilled in recognition and understanding of native ecosystems) approve clearance to Australian Standards for radiant heat, which (following the standard) may be up to 87 metres from a dwelling depending on the type of vegetation and slope of the land.

Thus we run the risk of increased clearance of native vegetation which has a comparatively low fuel load to be successional replaced by introduced weeds of higher fuel load. Indeed evidence from the Victorian bushfires suggests that fire spreads more readily in modified and disturbed vegetation (Taylor, C. "Victorian February Fires - a Report on Driving Influences and Land Tenures Affected"). So, in fact, the changed regulations may have the perverse outcome of increasing our exposure to fire risk, whilst at the same time destroying our native plants and animals. There needs to be much better assessment and monitoring programs than are currently in place to gauge whether the regulation changes have been effective, so we can learn how to minimise future fire impacts whilst also protecting our precious flora and fauna.

It is also extremely disappointing that the message given to the public is that clearance of native vegetation to reduce radiant heat will dramatically increase public safety. This implies that clearance of native vegetation is the key issue to minimise bushfire impacts on life and property. Yet evidence from the Victoria fires suggests that ember attack destroyed significantly more houses than radiant heat. We need the state government to adopt a more holistic approach to planning and construction, rather than just use native vegetation as the scapegoat.

For those interested in reading more about the new changes, information sheets can now be downloaded from: <http://www.nvc.sa.gov.au/subs/nv/publications.html>

Anthelia Bond and Tim Milne
NCSSA Conservation Ecologists

GENERAL MEETINGS

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

Upcoming meetings:

General Meeting: Thursday February 4th
6pm for 6.30pm start

Macbeth Lecture Theatre, Badger Building,
University of Adelaide

Speaker: **Chris Gibson**, Urban Biodiversity Unit,
Department of Environment and Heritage

Topic: *The Million Trees Program - A glance at this program and it's
impact on the urban landscape*