



# AABR NEWS

Australian Association of Bush Regenerators NSW

**Nº 115**  
**December**  
**2012**

President's  
Perspective  
2

What AABR  
achieved in 2012  
3

Tweed-Byron  
Bush Futures  
Project  
4

Surviving the  
floods—rainforest  
remnants of the  
Manning Valley  
flood plain  
8

News from SERA  
conference  
9

NSW linear reserve  
environmental  
management  
forum  
10

Herbicide-  
resistant weeds  
12

Before and after  
-Numinbah CA  
14



Sugar gliders enjoying new nest box home at Byron Bay. Photo: A Underwood.

“ Thirty nest boxes were also installed and monitored at four separate sites where regeneration works were occurring. Monitoring in June 2011 recorded 17 sugar gliders using five separate boxes and seven long-eared bats using two separate boxes. ”

See story on page 4.

# President's Perspective

AABR's AGM was held on December 2 and passed a set of resolutions which probably represent the most major change in our organisation's short history. Over 40% of paid up members voted, and almost all supported the proposed strategy to establish a formal AABR accreditation system, opening up membership to all those who support AABR's objects.

Out of the nearly 200 members eligible to vote, 80 voted—77 to 78 of whom voted in favour of the five resolutions on notice. The number of people who sent in postal votes—65—was a very heartening level of participation in the decision-making process; and a signal that we have an active membership willing to keep their organisation alive and well.

**What the vote means to AABR.** This gives the AABR committee the green light to send the revised Constitution to the Dept of Fair Trading for registration in the New Year. Once the Constitution is approved and registered, the committee will then set up an accreditation sub-committee, which initially will be composed of the current AABR membership assessors. A promotion campaign will then be conducted to inform stakeholders of the difference between membership and accreditation and to advertise opportunities for more interested people to become members.

We expect to enact the change by about March-April 2013, depending on the time the registration process takes, particularly whether the Department advises any further changes to the constitution. Members will be informed about things as they progress—through the website, direct emails and future issues of this newsletter—but we can say that we intend to have a launch of the 'new AABR' before mid year. We are open to suggestions from people about sites for the launch. We are looking for a fantastic site that is landscape scale and involves a range of restoration approaches including assisted regeneration and reconstruction.

**Amnesty for any long overdue members.** The recent mailout of postal ballot forms to members shows that there are about 300 members on the books, but only about 200 are up to date with their dues. The imminent change will have especially important implications for you if you are one of those people behind because, if you are not paid up by the time we switch to the new accreditation system in about February/March, you will have to apply for accreditation ... jumping through AABR's

hoops all over again. But if you pay up prior to then, you will automatically become accredited in the new system.

To make it easy to renew your membership, the committee has approved an amnesty for anyone who is more than one year behind (a few are in that position as it is easy to forget to pay). This means that, however many years behind you may be, you will only have to pay \$25 to become active once again. So please—if you are one of the 100 members behind—send your \$25 to AABR using one of the simple methods outlined in the text box on this page so that you can gain your accreditation without pain and the already busy committee doesn't have to process unnecessary re-applications!

Happy Christmas and New Year to all!

Tein McDonald  
AABR President

## How to renew

### Option 1: Make an electronic funds transfer to our ANZ account:

Account name: Australian Association of Bush Regenerators (NSW) Inc.

BSB: 012266

Account Number: 954295567

You must:

- quote your name, so it appears on our statement
- email [membership@aabr.org.au](mailto:membership@aabr.org.au) your full name and the date and the amount paid.

### Option 2 – Post a cheque or money order to:

Australian Association of Bush Regenerators (NSW) Inc.

c/- Total Environment Centre, Suite 2, 89 Jones Street, Ultimo NSW 2007

You must provide your full name, and contact information with your payment.

**We look forward to hearing from you**

## AABR's Philosophic Statement—draft open for comment from all interested parties

Most of you will be aware that we have drafted a 'Philosophic statement on Ecological Restoration' to convey AABR's interpretation of the overarching discipline that includes bush regeneration approaches (this document was drafted by Tein McDonald with assistance and feedback from the 'Change' working group).

In drafting the statement, we have attempted to balance terms currently used in the industry with terms and concepts used globally.

To ensure the final draft represents the considered view of the whole organisation, the Committee is calling for all interested parties to download the document from the website [www.aabr.org.au/images/stories/whatsnew/AABRDraftPhilStatementER.pdf](http://www.aabr.org.au/images/stories/whatsnew/AABRDraftPhilStatementER.pdf) and make comments and suggestions for changes.

These—or any questions—should be emailed to [secretary@aabr.org.au](mailto:secretary@aabr.org.au) by 31 March 2013. We are aiming for the final version to be adopted by the launch of the 'New AABR'.

# What AABR achieved in 2012

(between AGMs December 2011 and December 2012)

## The AABR change process

Since last year's AGM which proposed the changes to separate accreditation from membership, open up membership to a wider ecological restoration base, and engage a project officer to help effect the changes needed, the AABR Committee, the Change Working Group (Tein, Danny, Matt, Peter, Jane) and the broader Change Committee (Nancy, Janet, Judy, Danie) have been working towards a ballot on the issue at the December 2012 AGM.

An information package including a redrafted constitution, draft philosophic statement and ballot papers were sent to all eligible members in mid-October.

To help identify future directions for AABR, a survey was designed, implemented and analyzed early in 2012 and a promotions strategy prepared by Sue Stevens of Elemental Ecology.

## Publications

Newsletters 111, 112, 113, 114.

Thanks to Virginia, and all the contributors and helpers for the continuing high standard of this publication which is, along with the website, the main 'face' of AABR.

## NSW Environmental Trust

1. Mary-Lou Lewis and Sue Brunskill were AABR's reps on the technical committee which assessed application for this year's Environmental Trust Restoration and Rehabilitation Grant of about \$4 million.

2. Janet Rannard was the AABR rep on the technical committee for the Community Bush Regeneration Large Project Stream—funding \$8 million.

## Website

Paul and Mitra continue to keep the AABR website up to date. Paul has kept the front page updated with info on events and resources as well as odds and ends of news on weeds, grants, legislation etc. Mitra manages the bushjobs and contractor advertising on the site as well as managing all technical aspects.

Some content has been added e.g. an OHS section, and various sections have been restructured and updated.

Discussions are underway for a major overhaul of the site.

## AABR awards

At the Sydney CMA Forum in March, AABR sponsored a photo competition with a \$100 book voucher. The winner was Peter Miller from Reefcare (see back cover).

The Beverley Blacklock prize (\$100) for the best Certificate III Conservation and Land Management student at Ryde TAFE went to Julian Reyes.

The Mark Foster Award (\$50) for the best Central Coast student in Cert II or III Natural Area Restoration went to Craig Scorgie.

## Submissions/applications

Application for Australian Government Grants to Voluntary Environment, Sustainability and Heritage Organisations (GVESHO) submitted – decision in 2013.

## Representation at committees/meetings

Mary-Lou Lewis gave a presentation on bush regeneration to the Ministerial Roundtable meeting on 13 June, following AABR's submission on ways to better utilise the environment budget. These meetings are held quarterly and attended by a number of invited NGOs. AABR (Mary-Lou/Jane Gye) attended in March, May, June and September.

Jane Gye has been a rep on the NCC's Bushfire Advisory Committee, and AABR is a stakeholder in the Environmental Trust funded project with NCC, NPWS, UWS and others looking at using fire as a weed management tool to improve biodiversity.

Rhonda James has served as AABR's rep on the review of the Catchment Action Plan (CAP) of the Northern Rivers CMA.

## Workshops

Van Klaphake was not available to give ID workshops this year.

## Walks and talks

Due to the work involved in the 'Change' process, only one Walk and Talk, Kurnell Saltmarsh Field Day, was held over the past 12 months—organised by Heather and Danny.

## Newsletter news

In December 2011 *AABR News* grew from 12 to 16 pages, and we maintained that this year.

In September we moved to a full bleed (edge to edge) print.

Our tick edition was circulated beyond the usual networks. Thanks particularly to Lynn Rees, we were able to respond to a surprising information gap on a serious issue. Lynn and I have nearly finished a tick protection paper based on this, with some updates—soon to appear on the website.

Thanks to Ross Macleay, *AABR News* attracted international interest among some prominent ecologists when we published his superbly written *Contrarian Ecology* in September. Apparently a paper on the subject had recently been rejected by *Nature*. There were some very positive comments, including the (tongue-in-cheek?) suggestion that the AABR Newsletter should be considered rather than *Nature* as the place to publish! Well, perhaps *Contrarian Ecology* should have gone to EMR ...

AABR News depends on those who contribute articles, provide feedback and suggestions, proof read, fold and mail. Particular thanks to: Danie Ondinea, Jane Gye, Tein McDonald, Louise Brodie, Danny Hirschfeld, Lynn Rees, Natalie Young, Carl Freeman, Mualla McMannus, Ann Mitrovic, Andy Marshall, Heather Stolle, Nerida Gill, Mick Webb, Jason Walsh, Ross Macleay, Peter Gollan, Saul Houndow, Lynne Springett, Kevin Springett, Judy Christie, Sue Stevens, Sue Bower, Matt Springall, and Louise Morin.

And thanks to Martin Smith, Lynn Rees and Kevin Springett who answered the call last edition and have offered to help with proofing and editing.

## Got some regen news? share it here!

Virginia Bear, Editor [newsletter@aabr.org.au](mailto:newsletter@aabr.org.au) 0408 468 442



# *Tweed-Byron Bush Futures Project*

## *Improving urban and peri urban bushland in Tweed and Byron Shires*

**Angus Underwood<sup>1</sup> and John Turnbull<sup>2</sup>**

Urban bushland in Tweed and Byron Shires includes high conservation value vegetation including threatened species habitat and endangered ecological communities. Unfortunately urbanisation has a significant impact on these values resulting in weed invasion, dumping of garden waste and rubbish, encroachment of exotic gardens and roaming domestic animals. The Bush Futures project was developed as a joint project between Tweed and Byron Councils to reduce the impacts of urbanisation on urban and peri-urban bushland.

Funding was received from the NSW Government's Environmental Trust Urban Sustainability Program, and the project aimed to:

- deliver extensive on ground works to address the threats to urban bushland
- raise community awareness of the values of urban bushland and the threats they face
- reinforce the role council has in managing natural areas directly under its control.

A holistic approach to improving bushland management has been incorporated to the project. This includes establishment of a steering committee made up of council staff, Landcare

<sup>1</sup>Byron Shire Council. <sup>2</sup>Tweed Shire Council.  
Corresponding author email [angus.underwood@byron.nsw.gov.au](mailto:angus.underwood@byron.nsw.gov.au)

representatives, NSW Environmental Trust and Northern Rivers Catchment Management Authority staff. The project involves innovative partnerships with Landcare and Dunecare volunteers, local indigenous groups and environmental training and employment providers to improve management of urban bushland.

The success of the project was recognised by a series of awards including a Landcare Award in the Local Government Landcare Partnership category for the Northern Rivers region, NSW and National levels. The project was also overall winner of the Local Government and Shires Association of NSW Excellence in the Environment Awards for the 2010/11 Natural Environment Protection and Enhancement: On-Ground Works category.

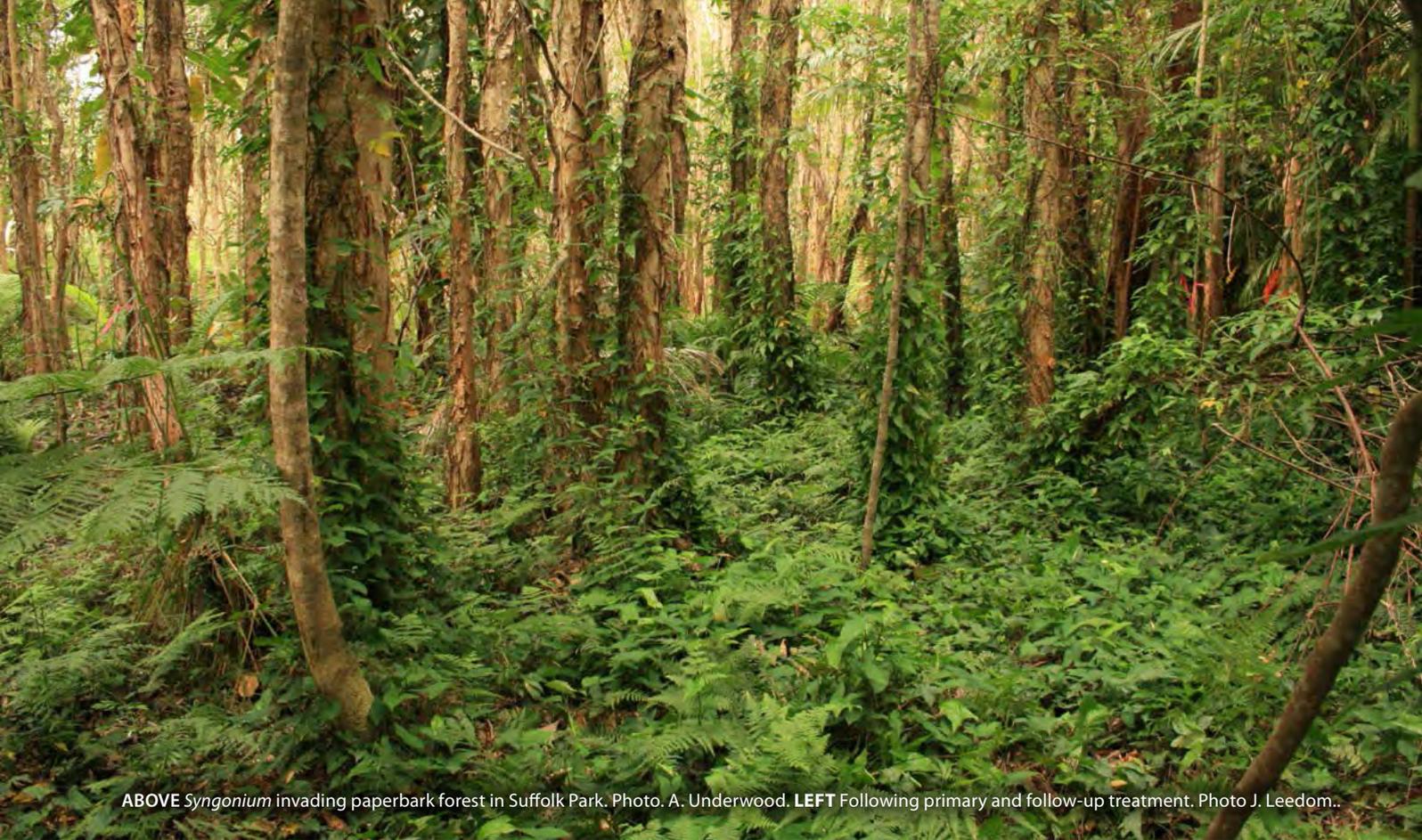
### ***Bushland audit***

A targeted and comprehensive audit (Bushland Restoration Services et al 2010) of 985 hectares of urban bushland was completed in the initial stage of the project. The audit aimed to assess the condition of public bushland, provide a framework for costing bush regeneration work and assist in prioritising on-ground works.

A rapid assessment methodology was developed to assess bushland health based five variables (vegetation structure and composition; weed severity and density; connectivity; habitat features; and other identified threats). The audit produced a GIS and Access database that provides council with a valuable tool for prioritising sites for on-ground works, monitoring and recording environmental restoration programs.

Each site was assigned a Management Intensity Class which describes the frequency of restoration work required to restore the site to a minimal maintenance level, how many years this would take to achieve and a cost per hectare.

The following table displays a summary of the results of the bushland health ratings from the audit



ABOVE *Syngonium* invading paperbark forest in Suffolk Park. Photo. A. Underwood. LEFT Following primary and follow-up treatment. Photo J. Leedom.

Bushland Health Class	area (hectares)	% area	No. of sites	% of sites	average size (hectares)
<b>A - Good</b>	505.36	51.3%	36	18.7%	14
<b>B - Moderate</b>	314.76	32%	79	40.9%	4.0
<b>C - Poor</b>	73.14	7.4%	40	20.7%	1.8
<b>D - Very Poor</b>	91.8	9.3%	38	19.7%	2.4
<b>Total</b>	985.07	100%	193	100%	5.1

## Bush regeneration program

On ground works commenced in June 2010 with an extensive bush regeneration program across 132 hectares of urban bushland. The work area has 19 different vegetation types, including five endangered ecological communities. Weeds were the biggest threat and included over 100 different species, many of which were garden escapees from adjoining properties.

Primary and follow-up weed control was carried out on all sites, with many progressing to a maintenance level by the end of the project. Monitoring demonstrated a measurable reduction in weed density, volume of rubbish and incidence of rubbish dumping, and increased regeneration of native species. In Byron, all sites were re-audited in April 2012, and the bushland health score was found to have improved at 33 out of the 35 sites.

## Nest boxes

Thirty nest boxes were also installed and monitored at four separate sites where regeneration works were occurring. Over half of these were being used by arboreal mammals after 18 months, mainly by sugar gliders *Petaurus breviceps* and long-eared bats *Nyctophilus* sp.. Monitoring in June 2011 recorded 17 sugar gliders using five separate boxes and seven long-eared bats using two separate boxes.

Cane toad muster volunteers get pre-musters training at South Golden Beach. Photo: J Leedom

## Invasive species management

Invasive species management focused on cane toads and Indian mynas, but also included management of rabbits, foxes and roosters. Indian myna traps were available to landholders and over 500 birds were trapped over 18 months. Regular cane toad musters were held and around 5000 toads were caught and euthanased. Seven toad buster groups were trained and supported and these groups regularly held their own community musters. Three toad exclusion fences were erected around water bodies at local golf courses to demonstrate their effectiveness at reducing cane toad breeding sites.





## Case study

### Restoring Dwarf Graminoid Clay Heath

Byron Bay Dwarf Graminoid Clay Heath is an endangered ecological community (*Threatened Species Conservation Act 1995*) which is only present in Byron Shire in a number of small, isolated patches. It consists of low-growing woody shrubs, grasses and grass-like plants with patches of taller shrubs and occasional larger trees.

Fire plays an essential role in the survival of clay heath vegetation, however fire has been excluded from most of these sites for several decades. The absence of fire, combined with an increase in urban runoff, is resulting in taller native woodland and forest trees (e.g. *Corymbia*, *Pittosporum*, *Acacia*, *Banksia*) encroaching on the clay heath. These larger trees develop a canopy that alters the site by reducing sunlight reaching the clay heath plants which reduces their ability to persist.

While this vegetation change is a natural process it has been increased by the extended time between fires, soil disturbance and stormwater runoff in the area. This process is occurring rapidly, for example between 1994 and 2007 the Graminoid Clay Heath in Arakwal National Park had reduced by approximately 35% (Baker, A. 2009). The continual absence of fire will ultimately result in a reduction or elimination of clay heath vegetation from the area.

An innovative approach was taken to address the threats to Clay Heath and reduce the expansion of woodland species into core areas. Planning was extensive and involved developed of a restoration plan and flora and fauna assessment which were reviewed by the Office of Environment and Heritage,.

Limited hazard reduction burns had been undertaken in 2009 but were not hot enough to kill the woodland species. In these areas, and where burning is not possible, some native trees within core areas of clay heath vegetation were removed or

poisoned. In addition, mesic species (eg *Macaranga tanarius*, *Commersonia bartramia*, *Synoum glandulosum*) colonising the site were also removed to promote the expansion of clay heath species. This was undertaken along with weed control activities as well as engagement with adjoining land holders to communicate the aims of the work.

The works during 2010 and 2011 involved weed control over 4.5 hectares and treatment of encroaching woodland to secure over 1 hectare core clay heath vegetation. Longer term work and monitoring is required to fully evaluate to effectiveness of management techniques and to further investigate the role of fire in stimulating flowering, seed release, germination and in allowing some cryptic species to complete their life cycles.



Byron Bay Dwarf Graminoid Clay Heath. Photo: A Underwood



Riparian tree planting in Mullumbimby in partnership with Brunswick Valley Landcare. Photo: P Gibney.

## Training program

Indigenous training was undertaken in partnership with Madhima Gulgan Community Association and Bushland Restoration Services. In total four Aboriginal trainees were involved in the project and trained by professional bush regenerators to undertake on-ground bush regeneration works and planning. In addition partnerships were made with a Green Corps team and the project provided work sites and support for over 20 trainees.



Byron National Green Jobs Corp trainees.

## Community engagement and the Sustainable Streets Program

The Sustainable Streets initiative aims to foster community-inspired sustainable behaviour change at a street-by-street level, and consists of regular neighbourhood gatherings and sustainability education workshops on topics. Through the Sustainable Streets initiative, Bush Futures created clear links between sustainable living and healthy bushland through

a series of workshops focusing on topics including on-site green-waste disposal, local bushland regeneration activities, responsible pet ownership, energy efficiency and how these behaviours benefit the local environment. A documentary of the Sustainable Streets program in Byron Shire is available for viewing at [www.byron.nsw.gov.au/sustainable-streets-program](http://www.byron.nsw.gov.au/sustainable-streets-program)

In addition a range of other community engagement activities were run in order to raise community awareness about the values of urban bushland and the impacts of urbanisation on these values. This included numerous environmental field days at work sites, tree planting days, talks at schools, weed identification and control workshops, and participation in regional environmental days such as Big Scrub Landcare Day, farmers markets and World Environment Day. A range of educational resources were produced, including *Nest Boxes for Wildlife*, *Flying Foxes in Urban Areas*, *Byron Bay Dwarf Graminoid Clay Heath*, *Butterflies of the North Coast*, *Cane Toad Control*, and *Bush Friendly Gardening*.

## Support for Landcare and Dunecare volunteers

Assistance and resources were provided to Landcare, Dunecare and Byron Bird Buddies to support community volunteers who undertake many hours of work restoring, protecting and enhancing the biodiversity values of the shire. This included fencing of coastal dunes and threatened shorebird nesting habitat, signage at Landcare sites and providing trees for planting.

For more information about the project go to [www.tweed.nsw.gov.au/bushfutures/default.aspx](http://www.tweed.nsw.gov.au/bushfutures/default.aspx)

### References

- Baker, A (2009) *Vegetation & Flora of Cape Byron State Recreation Area, Far North Coast of NSW*. Unpublished report to the Cape Byron Headland Reserve Trust and NSW Parks and Wildlife Service.
- Bushland Restoration Services, EnviTE, Landmark Ecological Services Pty. Ltd and AS Murray & Associates (2010) *Tweed Byron Bushland Audit*. Unpublished report to Tweed Shire Council.



# Surviving the floods

## rainforest remnants of the Manning Valley flood plain

Mangrove damage on Coocumbac Island.

**Peter Gollan, Dingo Creek Rainforest Nursery**

An update on rehabilitation progress and the effects of recent floods.

The first flood, in June 2011, was a substantial event. Although not record breaking, it was of high velocity and impact on Wingham Brush and Coocumbac Island (two of the three flood plain rainforest remnants) caused the most substantial physical damage since regeneration programs began in the early 1980s.

Prior to June 11, regeneration works at Wingham brush had almost totally eradicated all riparian deposited weeds and exotic vines, with only a few arboreal maidera vine *Anredera cordifolia* infestations left. The Brush had a sound canopy and a semi mature riverine buffer to flood waters from the Manning River.

In June this flood hit the brush with such velocity it caused the levelling of the buffer zone and the uprooting of many mature trees entangled with *Cissus antarctica* through the gully and lagoon system within the brush. A fresh deposition on weed propagules—maidera vine, balloon vine, prickly pear, nooguru burr and more—encrusted racks of fallen trees up to 1 metre deep in silt, burying regenerating saplings and seedlings.

The fallen, entangled buffer edges had to be dismantled to untangle the mess of trees and debris, and allow safe access to the rainforest gully. Chainsaws were used on the large fallen trees. The trees were ultimately pruned back to encourage regrowth, all the other vegetation debris was mulched.

Inside the buffer and rainforest verge a more sensitive approach was taken. Many saplings and seedlings were recovered and uprighted from silt and debris, vines that were wrapped around fallen trees like high tensile wires were cut, semi uprooted plants were propped up, and previously senescent under canopy recruits were freed. Throughout this process collection of weed propagules was a priority with two thirds of the brush requiring intensive treatment.

February 2012 was a lesser flood causing little damage to Wingham Brush—only a top dressing of silt which stimulated *Tradescantia* growth.

Coocumbac Island, down stream, suffered a similar fate with the entire Island under water—even the highest point was submerged by 1.2 metres.

The upstream tip of the island and along the western edge for just over a kilometre took the full brunt of the floods velocity—the exposed mangrove edge and buffer was levelled, stripped of leaves and completely flattened in several break-out points. At the flood peak one break-out point became the artery for a silage bale, which created a path of destruction through a 4 year old 3 m high planting, before coming to rest in the Islands rainforest core. The planting required urgent remedial works such as pruning and propping after the flood.

When the floods subsided, the island was caked with silt and mud making it very difficult to walk or do any maintenance on the plants for the few weeks it took for the mud to dry.

Twelve months down the track all of the propped-up plantings and under canopy plants on Wingham Brush and Coocumbac Island have recovered with strong root systems and canopy growth—propping really helps.

A 5 cm thick layer of silt covered the Island following the June flood, but follow up rains and the February 2012 flood dispersed this silt, producing a perfect seed bed for the ensuring bumper seeding of the prominent native olive, *Olea paniculata*. Early spring saw a rainforest floor and edges covered with seedlings. However three months of no rain have now almost completely desiccated these seedlings, with just a few strong ones making it through—that's a chance factor of natural regeneration.

Weed seedlings germinated in abundance where the flood water slowed down and dropped them. Patches of privet and camphor laurel appeared in the depositions in great abundance but were not spread all over the Island so controlling them was very easy.

The third flood plain rainforest of the Manning Valley, Lansdowne Reserve, is slightly down stream and located on a tributary of the Manning river, the Lansdowne river. At this rainforest reserve the floodwater tends to slow down, with tidal activity causing a different dynamic—one of inundation for prolonged periods. Some regeneration rates are slowed by this whilst weeds such as *Tradescantia albiflora* thrive.

Floods, despite damage to existing vegetation, are an integral part of the flood plain rainforest allowing new species to germinate as understory plants to help maintain the diversity of the rainforest. They create gaps in the vegetation, and in some cases change the whole structure of the forest. After 12 months and essential maintenance from the regeneration team, one would wonder if a flood had ever been there.

# The recent SERA conference

Tein McDonald

A few AABR members travelled to Perth in late November to attend the inaugural conference of the Society for Ecological Restoration (SERA)—the Australasian chapter of the international SERA.

Meeting over lunch and cuppas during the conference, we all agreed that it was a worthwhile trip. The program was full of interesting presentations from a broad range of restoration sectors including mining, government agencies, NGOs and community landholders. The organisers tell us that delegates included researchers from either academia or agencies (35%), consultants (15%) with 50% being managers and practitioners.

As usual at these conferences, there were multiple concurrent sessions on a range of themes including Forest and Woodland Restoration, Mine Restoration and Threatened Species. Many interesting case studies were presented of restoration in lots of ecosystem types including wetland, grassland, seagrass, woodland and rainforest. There were even a few natural regeneration presentations by people other than our own members!

There were lots of other sessions that interested me a great deal, and it would have been wonderful to have more eastern states people there to share in that experience—but distance and cost of travel is a real factor. Hopefully some of the papers will filter their way into publication in journals and newsletters—and more eastern states people might attend the next SERA conference in 2014, which will be in Noumea, New Caledonia (a shorter flying time than Perth).

## **AABR invited to participate in a 'partnership of NGOs'**

The conference provided a forum for two invitation-only round-table discussions involving Australian NGOs working on the ground to conserve and restore ecosystems. AABR was invited to participate, alongside representatives from 14 other NGOs.

AABR sent two delegates along to each of the workshops—Jane Gye and Jen Ford. The first workshop laid the groundwork for a 'partnership collective' of these NGOs, facilitated through SERA, to enable the groups to become more aware of each other's work and to optimise synergies. The second established a working group to progress the first project of the partnership: the development of national principles and standards to guide and evaluate restoration practice in Australia. Work on these projects will be ongoing and progress will be reported as the network becomes established.

NGOs who sent representatives included The Nature Conservancy, Bush Heritage Australia, Greening Australia, Trees for Life, The Australian Network for Plant Conservation, Australian Institute of Landscape Architects, Australian Seedbank Partnership, World Wide Fund for Nature, and the Society for Ecological Restoration Australasia. Five other groups sent statements of support, including Wetland Care Australia, Gondwana Link, Indigenous Flora and Fauna Association, the Australian Wildlife Conservancy and Trust for Nature Victoria.

## **Regen and global warming**

As any one person can only attend a fraction of the talks on offer, any review has to be grossly biased. So I'm going to be even more biased and just report back on the session 'Seed sourcing guidelines for restoration success' as it was one of the many sessions that interested me most and I think it has the most serious implications for us as bush regenerators. This is because of the vexed questions being posed today about global warming moving climate 'envelopes' polewards much more quickly than our plant species can migrate, particularly if populations are artificially fragmented by clearing (one of the keynote speakers reported that a recent World Bank-commissioned study predicted that 4°C warming is the most likely scenario, which is anticipated to place about 40% of the world's species at risk of extinction).

The session brought together some of the most eminent geneticists in the country, grappling with the question of local provenance; effectively asking 'how local is local' in the case of particular species, and indeed, whether this is the appropriate recommendation given global warming. Putting global warming aside for a moment, the general wisdom gleaned from the speakers was to (a) avoid risk of inbreeding by ensuring the distance between donor population and receiving population is not 'too local' (e.g. 10-15 kms would be reasonable but 100 m is likely to be too close, particularly if there are less than 200 individuals at the receiving site) but (b) avoid risk of outbreeding by not mixing distinct or historically isolated genetic populations. With global warming superimposed and climatic envelopes moving southward, however, very serious questions were raised about the need to include more distant genotypes that are better adapted to anticipated climate conditions, when planning revegetation projects.

What has this got to do with bush regeneration? Isn't this only a consideration when planting? Think again. If it is a problem for species with low gene flow in small planted stands, then it is a problem for small, regenerated populations too. If pollen or seed can't disperse between the patches, small populations of some of the species in your local bushland pocket may well suffer effects of inbreeding over subsequent generations whether the individuals were planted or not. The implication is that planting or direct seeding (even if in local gardens) might be needed to enhance the genetic diversity of some small populations of species in our isolated remnants—and this need will only be exacerbated with global warming if the local genotype is not well adapted to hotter, drier conditions anticipated to occur before the end of the century. Studies of genetics of east coast species would be really helpful to advance our knowledge of which species are likely to suffer from potential inbreeding depression with and without global warming; so clearly AABR needs to help practitioners and researchers get together to talk about this issue without too much delay.



# NSW linear reserve environmental management forum

Roadside near Canyonleigh NSW. Photo: V Bear.

Jane Gye

A one-day forum on environmental management issues associated with linear reserves was held in Sydney on 30 October and attended by 80 people from councils, national parks, CMAs, academia, etc.

Linear reserves cover approximately six percent of the state and not only include roadside reserves but also travelling stock routes (TSRs), rail corridors, easements for power and gas, public reserves and crown land. Often these reserves contain the only remaining remnant of the surrounding native vegetation community.

The forum was convened by the Roadside Environment Committee (REC), which is supported by the NSW Roads and Maritime Authority (RMS).

Founded in 1994, REC is currently comprised of representatives of 12 organisations involved or concerned about the management of linear reserves. See REC's website for more information: [www.rta.nsw.gov.au/environment/roadsideenvironcommittee/index.html](http://www.rta.nsw.gov.au/environment/roadsideenvironcommittee/index.html)

The forum's aims were to bring managers of such reserves together to update them on best practice management,

identify ways of managing competing interests in linear reserves, and promote REC.

Erica Adamson, General Manager Environment Branch, RMS emphasised that RMS was working towards consistency of best practice management. Two major steps made in this direction are the *Biodiversity Guidelines* produced in September 2011: [www.rta.nsw.gov.au/environment/downloads/biodiversity\\_guidelines.pdf](http://www.rta.nsw.gov.au/environment/downloads/biodiversity_guidelines.pdf) and the *Roadside Environmental Resource Kit*, developed by Hunter and Central Coast Councils—see page 11.

A variety of topics was then explored by a range of speakers.

Several interesting aspects associated with linear reserve management were raised during discussions following the presentations. Geoff Hudson of Local Government and Shires Association suggested that effort was needed to change current policy so that it values bushland and native vegetation remnants as 'assets', as is the case with the built environment..

There was wide support for another forum perhaps in two years' time.

## A short summary of some of the main presentations

### Environmental values of linear reserves

Dr Peter Spooner of Charles Sturt University describes the two main scenarios of roadside vegetation: that of providing a refuge in mainly cleared areas, and that of a barrier where roads cut through vegetated areas and hinder the movement of biota. Habitat values are affected directly by the process of road construction and maintenance, and indirectly by adjacent landuses such as agriculture. There is an interesting positive relation between wider road reserves and conservation values. Roads established in earlier times often followed indigenous pathways and were generally wider, such as travelling stock reserves (TSRs), with greater swathes of native vegetation retained. Over time these remnants have been whittled away by development and degrading impacts, but some patches still remain.

With so many competing issues around road reserves (safety, runoff, upgrades, litter, firewood, stock protection, environmental values, cyclists, horses) it would be easy to 'do nothing', but Peter suggests a number of ways forward, such as roadside surveys and management plans, signage and training, working with landholders to expand reserves, and rather than destroying areas of good habitat such as old trees with hollows when widening is required, considering relocation through areas with fewer impacts (such as cleared land).

### Great Eastern Ranges Initiative

Gary Howling of the NSW Office of Environment and Heritage gave a presentation on this mega-conservation project extending for 3,600 kilometres from the Grampians in Victoria to far north Queensland. It is sometimes called the Alps to Atherton Project, and aims to achieve continental-scale connectivity of natural areas by improving links across national parks and adjacent lands either side of the Ranges. Linear remnants are important in making these links, which will assist in the migration of species across the landscape, to maintain populations and allow adaptation as the climate changes. Partnerships and workshops are a feature of the Initiative.

[www.greasterranges.org.au](http://www.greasterranges.org.au)

### Bushfire management in NSW

Lloyd van der Wallen of the NSW Rural Fire Service gave an outline of bushfire management in NSW, explaining the need for hazard reduction burns, and defining asset protection zones, strategic fire advantage zones, land management zones and bush fire management committees.

Roadsides are often used as strategic fire advantage zones, especially in western NSW, to create a firebreak in extensive grassland areas.

The complex issues around fire and management of roadside reserves, especially in endangered communities, was highlighted in one of the workshop sessions later in the day.

### Hunter and Central Coast Regional Environmental Management Strategy (HCCREMS)

Presented by Steve Wilson of the Hunter and Central Coast Regional Environmental Management Strategy.

[www.hccrems.com.au/Home.aspx](http://www.hccrems.com.au/Home.aspx)

This strategy for improved roadside vegetation management involves 14 councils and has resulted in improved practices and greater consistency of standards across councils with resulting cumulative conservation benefits.

The strategy has produced an electronic template for preparing a Review of Environmental Factors (REF), a GIS attribute tool (that tells the user what environmental issues need to be considered at a particular place), a training manual, and 14 management guides—the first of which relates to water crossings and is free at [www.hccrems.com.au/hccrems/media/RESOURCES/Roadside/ROADSIDE-GUIDES-SAMPLE.pdf](http://www.hccrems.com.au/hccrems/media/RESOURCES/Roadside/ROADSIDE-GUIDES-SAMPLE.pdf).

The other guides are:

- *Wetlands*
- *Protected Areas*
- *Fauna*
- *Threatened Flora*
- *Vegetation Management During Road Construction*
- *Vegetation Management During Road Maintenance*
- *Re-establishing Vegetation*
- *Salinity*
- *Acid Sulfate Soils*
- *Erosion and Sediment*
- *Control - Road Construction*
- *Grazing*
- *Environmental Law.*

The complete *Roadside Environment Resource Kit* can be purchased as a CD for \$80.

### Albury's significant environmental areas

Rachel Clancy, Environmental Planner, Albury City Council has helped to devise a system of management of Albury's significant environmental areas (SEAs) based on the *Native Vegetation Management Plan for Roadsides, Waterways, and Other Council Lands in the City of Albury* (which includes land not managed by Council).

An innovative way of achieving recognition by Council employees was to develop a Standard Operating Procedure (SOP) for SEAs and incorporate it into council's OH&S requirements. By answering 'yes' to 'Are you working in a SEA?' when completing Safe Work Method Statements, gangers and supervisors are then required to complete a checklist with the assistance of council's vegetation management officer and/or environmental planner.

All outdoor staff have been trained to work in SEAs.

The success of this approach to vegetation management lies in ensuring it is supported from the top of the organisation down, not making the process too onerous, and for individuals to understand they are responsible for their actions (e.g. damage to threatened species). Support from environmental managers must be readily available to gangers when needed.

# Herbicide-resistant weeds spreading on public land

Reprinted from Rural Industries Research and Development Corporation newsletter

Once thought to be a problem restricted to Australia's farms, weeds resistant to the popular chemical herbicide glyphosate have now been found across Australia along highways, railways and around buildings.

Research led by Associate Professor Christopher Preston at the University of Adelaide, as part of the Australian Government's National Weeds and Productivity Research Program, has identified that herbicide resistance is far wider spread than first thought.

The research found that weed management practices on public lands were routinely adding to the risk of herbicide resistance developing, due largely to ignorance of the problem and alternative herbicides.

"Non-agriculture sectors where glyphosate is used exclusively for weed management have a high risk of glyphosate-resistant weeds evolving," Dr Preston said.

"These weeds will cause serious management difficulties for those sectors and pose a risk of spread to other areas. Weed management practices other than glyphosate need to be adopted to reduce this risk.

"And there is a need for accurate information on herbicide resistance risks and alternative management practices to be provided to weed managers in non-agricultural areas."

Dr Preston's research discovered 136 glyphosate resistant populations of annual ryegrass and fleabane along roadsides from Queensland to Western Australia - this was approximately 50 per cent of all populations tested during the first-ever roadside weed survey.

The potential problem for Australia's public land managers is huge - Australia has 612,000km of roads considered at risk of developing weeds with glyphosate resistance.

Weeds are one of the major threats to Australia's primary production and to the natural environment. Weeds cost Australian agriculture more than \$4 billion dollars each year, including control costs and lost production.

Under the National Weeds Program, the Australian Government provided \$12.4 million to Rural Industries Research and Development Corporation (RIRDC) to support more than 50 research projects, with the program ending on 30 June 2012.

The National Weeds Program supported 11 research projects which dealt directly with herbicide resistance issues and delivered new weed control measures to reduce the need for chemical treatments.

Dr Preston, who is also chair of the Australian Glyphosate Sustainability Working Group, said alternative practices need to be used to manage the risk of glyphosate resistant weeds on Australia's public lands.

"A worrying result was the lack of formal record keeping on herbicide efficacy. There were very few examples of formal monitoring programs in place to determine the success or failure of the spray application, which could potentially delay the detection of resistance following weed control activities," he said.

"Nearly 60 per cent of interviewees were in the poor to moderate categories regarding their level of understanding of herbicide resistance and its development, but a 92 per cent positive response was recorded from survey respondents acknowledging that additional staff from their respective organisations would benefit from herbicide resistance training on weeds.

"Management risks were particularly high for water authorities, railways, aviation areas and local government. Conversely, private contractors and consultants and transport authorities (for example, Main Roads) nominated the lowest risk strategies on average."

Dr Preston said many authorities were challenged by budgets that had not kept pace with inflation over the last decade, while high turnover of staff had resulted in a loss of "corporate knowledge" in the area of weed control.

He recommended the development of training programs for both authority managers and those at the frontline of weed management, as well as an encouragement of the rotation of a wider range of herbicides and weed control methods.

"Glyphosate is an excellent herbicide that helps keep management costs down, however there are no easy replacement options currently available," Dr Preston said.

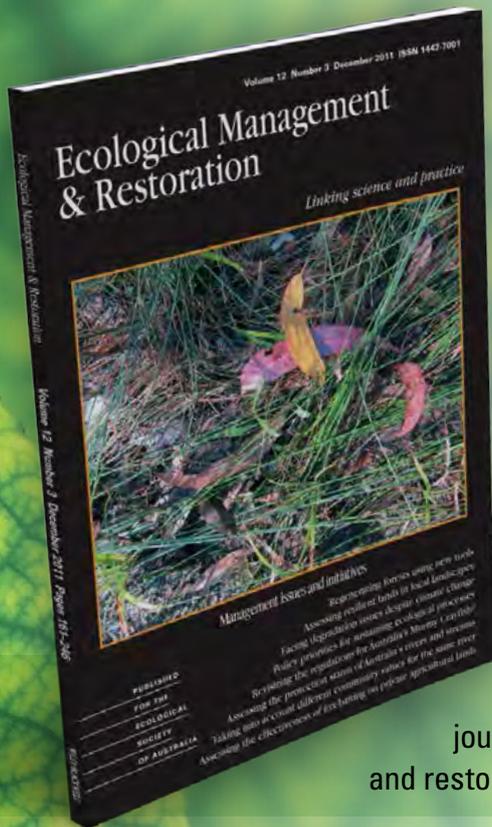
"The rapid development of glyphosate resistant weeds and species shift to glyphosate tolerant species will have a large impact on budgets and logistics."

Dr Preston said further work was required to monitor the glyphosate resistance and to develop information packages for managers of non-agricultural land, specific to their region and the types of weeds they were treating.

A fact sheet with general tips for managers of roadsides and railway lines is available at [www.glyphosateresistance.org.au](http://www.glyphosateresistance.org.au).

Source: [www.rirdc.gov.au/alerts/news/2012/10/31/herbicide-resistant-weeds-spreading-on-public-land](http://www.rirdc.gov.au/alerts/news/2012/10/31/herbicide-resistant-weeds-spreading-on-public-land)

# Ecological Management & Restoration



## New Project Summary Website

The Australasian journal *Ecological Management & Restoration* has recently launched a new website dedicated to sharing ideas and reporting on interesting ecosystems rehabilitation or restoration projects in Australia.

Project summaries are not peer reviewed manuscripts like EMR, but are checked for clarity and content by the project summaries editor. Final acceptance of projects summaries is at the discretion of the editor.

For more information visit:

[www.emrprojectsummaries.org](http://www.emrprojectsummaries.org)

*Ecological Management & Restoration* is a peer-reviewed journal dedicated to promoting improved ecosystem management and restoration within the context of ecologically sustainable utilisation.

## Access *Ecological Management and Restoration* for FREE

Set up your free 30-day trial access now by going to Wiley Online Library

### Instructions for use

To activate your free online access, please follow these simple instructions:

1. Visit [www.onlinelibrary.wiley.com/myprofile/trials](http://www.onlinelibrary.wiley.com/myprofile/trials) and login or register a new account
2. Enter the trial code: **emr2012** (case sensitive)
3. You now have 30 days free access to *Ecological Management and Restoration*



Read Online:

[www.wileyonlinelibrary.com/journal/emr](http://www.wileyonlinelibrary.com/journal/emr)





**April 2008**  
Prior to works—lantana dominated gully.



**August 2008**  
After primary treatments (3 months).

## *Before and after photos & notes—Numinbah CA*

### **Saul Hondow, Gold Coast City council**

Saul Hondow sent these monitoring photos for our competition. They show works carried out by Gold Coast City Council, Natural Areas Management Unit—Restorations Team.

Numinbah Conservation Area, is a council owned and managed reserve within the Springbrook Conservation Area. It contains highly significant plant communities including varied types of rainforest and sclerophyll forest impacted by numerous environmental weeds including lantana, glycine, groundsel bush, crofton and mistflower to name a few. Riparian areas are prone to erosion during high rainfall and the reserve has ongoing fire management considerations.

Assisted regeneration works commenced in early 2008. The site has shown remarkable resilience with the mass germination of native species.

Our three person team work one day per week. The team have covered approximately 11 hectares to date.

Several other teams including contractors work within the 600 hectare conservation area, with the aim of eventually linking work areas.

The main project objectives include:

- protect biodiversity values by expanding and enhancing the native vegetation through assisted restoration and extensive weed control
- reduce fuel loads and therefore fire intensity by controlling weeds, mainly lantana
- strengthen the structure and resilience of the vegetation to support a wide variety of fauna
- provide an opportunity for education of the broader community



**TOP: July 2009**  
Native plant germination after regular follow up weed control (14 months).

**CENTRE: June 2010**  
Native plant regeneration and gully recovery (25 months).

**BOTTOM: June 2011**  
Displaying canopy closure—minimal followup handwork required (37 months).



The series of photographs display one photo point only (taken as part of our ongoing monitoring).

No machinery has been used—the lantana shells in the photo were knocked down manually after becoming brittle over time (4 to 6 months).

This was necessary because of mass germination of both native species and weed species, in particular, glycine and horsegram (plus many annuals and grasses) which outcompete native recruitment and cover lantana shells. Access for regular followup spraying was essential.

In areas with reduced weed infestations, lantana shells are retained and allowed to breakdown without intervention. This reduces time (and cost) and provides habitat for a wide range of flora and fauna.

The dominant native recruitment includes, macaranga, bleeding heart, poison peach, white nettle, native olive, red cedar, cheese tree, yellow kamala, pepperberry, silky oak, stinging trees, various figs and a large array of groundcovers and ferns.

Early groundcover development included basket grass, native geranium and commelina, however these reduce with structural development (of the above species) and a much wider range of groundcovers and understorey species develop.



## Can you think up a brilliant site for holding the launch of the 'New AABR'?

The AABR committee is seeking ideas for where (preferably in the Sydney area) to hold a picnic to launch AABR's new constitution and draw attention to its wider membership and new accreditation systems.

Because of our broadened scope, it is logical that the site of the launch will itself be an example of a landscape in which this range of approaches is being applied (i.e. natural regeneration and revegetation).

So have a think about sites you know of where both regeneration and planting or direct seeding are being carried out to good effect. The site should have a good restoration or management plan that acknowledges the role of natural regeneration and management practices that exemplify good follow up both in the regeneration and revegetated sections, ideally with strong stakeholder support.

Email suggestions to [secretary@aabr.org.au](mailto:secretary@aabr.org.au)



**Reefcare volunteers restoring bitou-infested shorebird habitat at Long Reef, photographed by Peter Miller. AABR sponsored a category in the 2012 Sydney Metro Catchment Authority Regional Photography Competition. The 'best photo of a bushcare site that demonstrates work in progress', and this was the winning shot.**

# AABR NSW

**President**  
Tein McDonald  
[president@aabr.org.au](mailto:president@aabr.org.au)

**Vice President**  
Matt Springall

**Treasurer**  
Paul Ibbetson

**Membership Officer**  
Louise Brodie  
[membership@aabr.org.au](mailto:membership@aabr.org.au)

**Secretary**  
Jane Gye  
[secretary@aabr.org.au](mailto:secretary@aabr.org.au)

**Other committee members**  
Heather Stolle  
Elisabeth Dark  
David Wakeham  
Kate Low  
Scott Meier  
Neridah Davies

**Northeast NSW/Southeast QLD sub committee**  
Mike Delaney 02 6621 9588  
[miked@envite.org.au](mailto:miked@envite.org.au)

AABR News is the newsletter of the Australian Association of Bush Regenerators (NSW) AABR Inc. AABR NSW was established in 1986 out of concern for the continuing survival and integrity of bushland and its dependent fauna in or near bushland areas, and seeks new members and friends for promoting good work practices in natural areas. The Association's aim is to foster and encourage sound ecological practices of bushland management by qualified people.

**AABR C/O Total Environment Centre Suite 2, 89 Jones Street Ultimo NSW 2007**

**0407 002 921**

**[www.aabr.org.au](http://www.aabr.org.au)  
[enquiries@aabr.org.au](mailto:enquiries@aabr.org.au)**

**ABN: 33 053 528 029 ARBN: 059 120 802**

To keep in touch and be notified about events, subscribe to Bush Regeneration or Bushcare list servers and check out Solutions: the Bush Regeneration Bulletin Board—see website for detail.

\$20:00	p.a	AABR Newsletter Subscription	(all interested people)
\$10:00	p.a	AABR Newsletter Subscription	(email for 1 year for students of Certificate III CLM-Natural Area Restoration)
\$25:00	p.a	AABR Membership	(appropriately qualified & experienced bush regenerators)
\$50-400	p.a	AABR Contractors & Consultants List	(appropriately qualified & experienced bush regenerators)

**Newsletter contributions and comments are welcome**

Contact Virginia Bear [newsletter@aabr.org.au](mailto:newsletter@aabr.org.au) 0408 468 442

*Opinions expressed in this newsletter are not necessarily those of AABR NSW*

**Stay posted in 2013 for changes to the accreditation system**