



Nº 105
May
2010

President's
Perspective

2

Follow-up on bush
regen sites

3

Red browed finches
bring unwanted gifts

4

Recovering Kurnell's
saltmarsh

5

Bush Regeneration
Holidays

7

Can saving the
Cumberland Plain
Woodland save lives?

8

Restoring Biodiversity
Industry Association
plans for 2010

11

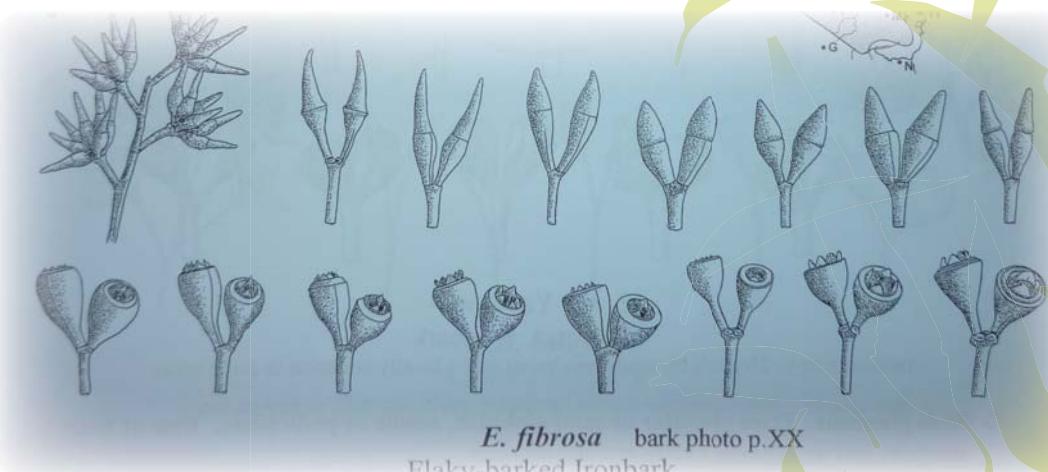
What's happening

12

AABR NEWS

Australian Association of Bush Regenerators NSW

Identifying Eucalypts in the Sydney Region



E. fibrosa bark photo p.XX
Flaky-barked Ironbark

Van Klaphake unveiled his new identification guide to 'Eucalypts of the Sydney Region' at a sold-out AABR workshop last year. This is the latest of his famous identification manuals and is the culmination of many years' work, and describes 150 species in an area from the Hunter to the Shoalhaven and from Sydney to Orange.

This July, AABR is hosting a repeat of the two day course. It will introduce the newly revised manual and involve extensive hands on work in the classroom and a field trip to nearby bushland. A copy of the manual is included in the cost of the course.

This course is for everyone—for those new to Eucalypts and for the more experienced who want to really nail it. Van is well known as an excellent teacher, with a wealth of knowledge and experience.

When July 10th & 11th

Where Cecal Hall, corner of Clarke and Lewins Street, Earlwood, Sydney

Cost \$160, \$150 for AABR members and students

RSVP Bookings essential. Please contact Paul at ibb56@yahoo.com.au



E. planchoniana



President's Perspective

Hi Folks,

I just spent a beautiful autumn day working in the world's largest Blue Gum High Forest remnant in Dalrymple Hay Nature Reserve in Northern Sydney. It's one of 2 nature reserves that the Lane Cove River Area of NSW National Parks and Wildlife Service, where I work, manages. It's a reserve that I've had a long association with from working there with contractors in the late 90s, to my time at Ku-ing-gai Council, and now in more recent years at Lane Cove National Park. It's a glorious pocket of bushland with a fascinating array of plants and birdlife, and a true bush regeneration success story going back to the early years the reserve was worked in the early 80s. Then it was a forest of privet and camphor laurels according to the early bush regen reports, but now you would hardly know that it was so degraded, albeit that it will possibly take another 20 or so years to get on top of most of the remaining weed problems the reserve still faces.

The work the other day largely involved scraping ochna and crowning Asparagus fern through an area with no other weeds save the odd small privet. Much of the ochna was reshooting after a failed trial of cutting and painting using Vigilant herbicide gel. Now can I just say how much I don't like the scrape and paint technique? Given an option of drill and inject, cut and paint, or scrape and paint, the latter is very low on my list of preferences. It's messy, uses up a great deal of herbicide and it is so easy to get lazy when doing a lot of it that the chances of it failing end up that much higher in the long run. In areas of really good bush like we were in at Dalrymple, with a great diversity of grasses, low shrubs and other ground flora there always ends up being a bit of off target kill despite the all the care taken (not much but still too much for my liking), but with ochna there just isn't the option when they're too small to drill.

Years ago I had hoped that Vigilant gel would be my salvation. It certainly has been for Ludwigia—both the peruviana and longifolia species we get here in Lane Cove. There are plants which have been scraped or drilled with glyphosate three or more times over a period of a few years that still survived, but the Vigilant sees them off first go with an easy cut and paint. It's been so successful that we're within sight of seeing Ludwigia

eradicated from the Lane Cove Valley over the next couple of years—big call I know, but I never would have believed it a few years ago. Ochna, however it's just not capitulating so easily, and with the trials at Dalrymple Hay NR and other sites we used it having obviously failed it's back to scrape and paint (sigh...) —and of course we're now dealing with all those multi stemmed beasts that we created, just to rub the salt in. Oh well, we gave it a go, and it was a very lovely day in a beautiful part of the world!

A recent Sunday saw a small group of bush regenerators enjoy a relaxing picnic by the Nepean River in Penrith. It was a great chance to catch up with other like minded folk and chat about what's going on in their bush regen worlds, as well as the opportunity to meet up with Robin Buchanan, author of the recently launched book Restoring Natural Areas. I'm inclined to think we should do more of this sort of thing—the AABR walk and talks are a good chance to meet regenerators from around different parts, as is the AGM, but perhaps just a few informal functions would be a good thing as well, or is everyone just a bit too busy. If you want to organise something please get in touch.

Recently we've expanded the discounts available to AABR members. In addition to special subscription rate for the Ecological Management and Restoration journal, AABR members can now get discounts on a range of items from AABR courses, Robin's new book, Volkswagen work vehicles and entry to Featherdale Wildlife Park. We have more information on the website and are looking for further opportunities.

As you read this it won't be too long before renewals are due and we've tried to make it easier for you to do this with electronic banking transfers. Unfortunately credit card charges are still too expensive for us to make it available as yet and in the foreseeable future. If you have any suggestions or can help with other discounts and benefits for fellow AABR members then let us know.

May your days be scrape-free!

Matt

Matt Springall
President

Welcome new members

Chris Carne
Max Osborne
Ian Partridge
Dave Rawlins
Chris Woolcock
Vanessa McTyer
Russel O'Regan

New discount for AABR Members

Featherdale Wildlife Park in Sydney is now offering AABR members a 10% discount on adult and child (not family) tickets.

Members will need to show a current (ie paid for the current financial year) membership card to get the discount.

We are continuing to negotiate with a couple more organisations

AABR News in colour?

If you are reading the print version, remember you can subscribe to a colour PDF via email. Email Louise Brodie brodie@aardvark.net.au

Or checkout past editions on the website www.aabr.org.au/index.php?option=com_content&task=view&id=117&Itemid=107. (the previous one is uploaded when the latest one is distributed).

Weeds CRC websites have finally shut down

However the CRC's weed guides will not disappear. AABR will be hosting them, along with many of the CRC's general guides. They are available on www.aabr.org.au.

A comment on frequency of follow up treatments required at bush regeneration sites

It is well accepted that 'follow up' (or 'secondary') weeding is needed at a bush regeneration site for long periods until 'maintenance level' is achieved. The following are just some of the detailed lessons learned by many dedicated operators about the process of reducing weed at bush regeneration sites.

In sites where there are high levels of weeds (particularly herbaceous species), 'maintenance level' is unlikely to be achieved without maintaining high frequency treatments for periods after each rain event. While it is true that the amount of work reduces over time, this does not mean that the frequency of treatment can reduce prior to maintenance.

There are a number of reasons for this:

1. Weeds can and do continue to germinate from an old seed bank for many years—over a range of seasons, particularly in wet years. Treating this weed prior to seeding is the most efficient way of making long term reductions in an old seed bank.
2. In the first years of a project, we often assume that our monthly (or less often) treatments are sufficient because our efforts are resulting in very visible reductions of weed at each treatment. However, this reduction may be masking the fact that some of this weed is still reproducing and still laying down fresh weed seed banks.

But as the density of individual weeds drops to substantially lower levels, it becomes more evident that further lowering will not occur if any of that weed still has the opportunity to seed before the next work session. To reduce weed levels to the minimum, the frequency of visits must be maintained (and in some seasons even increased) to ensure that seeding is prevented.

Tein McDonald recently put this comment together to assist members in northern NSW and Qld, some of whom have been surprised by the high demand for follow up on some bush regeneration sites during recent rains, after long, dry periods, when the weed seemed to have stabilised. As this is such a crucial issue, AABR is interested in developing a fact sheet on follow up and maintenance, and exploring it further in the newsletter. If anyone has a contribution to make on this theme (such as examples from different ecosystems) it would be welcome.

Some useful terms

Primary treatment is the first weeding treatment at a site, the one that removes the 'parent' generation of weed. As removal of the parent weed creates new gaps for emergence of weed stored as seed in the soil, multiple follow up treatments are required.

Secondary treatment is the generic term for the multiple 'follow-up' treatments required before weed will deplete weed sufficiently to secure the site for the natives. Natives might start to regenerate, along with weeds, immediately after primary treatment if their seed was present—although it often takes time for natives to recolonise.

Maintenance is the term used to describe the low level of follow up required to keep a site free of colonizing weed after the secondary treatments have completed and natives have regenerated.

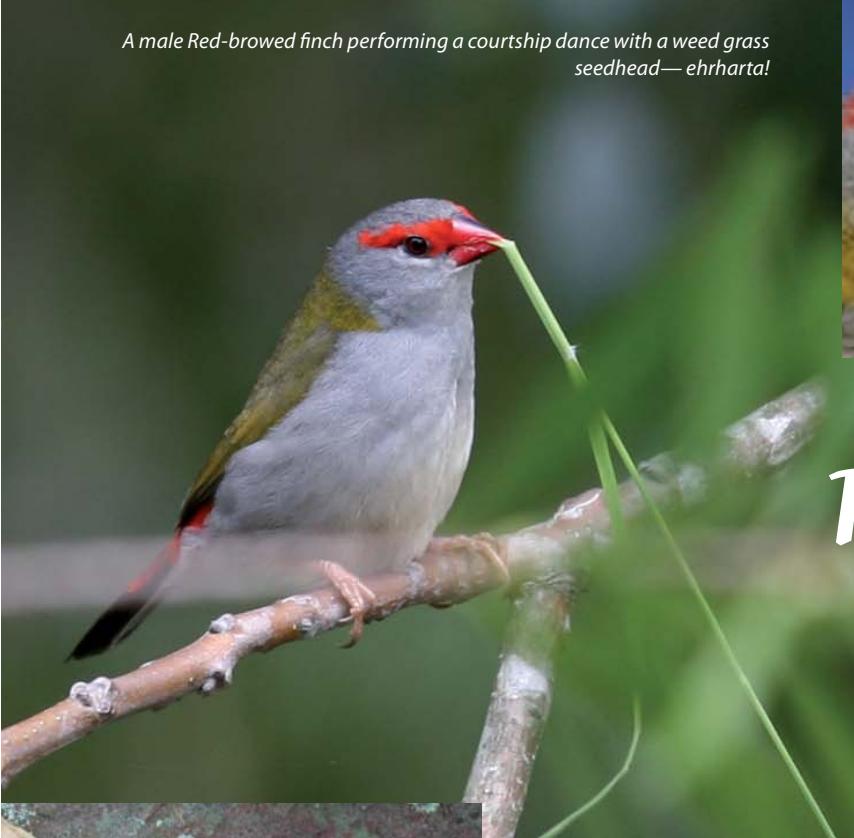
Drought can also stretch out the secondary treatment period. This is because seasons without rain do not trigger regeneration from the weed seed bank, stalling reductions in weed seed bank. Conversely, multiple treatments during above-average rainfall years can hasten the process of depleting a seed bank if treatment is timely and consistent. (This requires flexibility.)

The condition of a site during drought can be deceptive and regenerators are often surprised by very high levels of weed after drought breaking rains. This high level of weed is likely to be explained by not only the higher rainfall but the reduction in competition by natives caused by the drought itself. Such large flushes should be welcomed and taken advantage of as they provide unusual opportunities to further reduce old seed banks.

Dr Tein McDonald, Restoration consultant.

19/03/2010 (02)6682 2885

A male Red-browed finch performing a courtship dance with a weed grass seedhead—ehrharta!



the seeds stuck to this red-brow's bill look a lot like ehrharta

Red-browed finches bring unwanted gifts



This red-brow's nest appears to be made entirely of the native grass microlaena (the most readily available grass in the area)—but just the stems—no seed heads.

Red-browed finches are common around our place at Kenthurst, often nesting in the lime tree and bamboo. They are common along the east coast wherever there is a mix of grassy areas and patches of dense shrubs and trees.

Last December I noticed one in the native peach *Trema aspera*, bobbing up and down with something large in its mouth. Closer inspection revealed this to be a seed head of the weed African love grass. By the time I grabbed the camera, the finch had gone—but the seedhead was lying on the ground!

The nearest patch of African love grass is 50 metres away.

I have also seen them do this with ehrharta seeds (unfortunately these may not have been from nearly as far away as 50 metres).

The Readers Digest Complete Book of Australian Birds explains what is going on “during courtship the male red-brow holds a long grass stem at one end

while adopting a stiff upright posture and jumps up and down as he slowly approaches the female from the side. The female puts her head back and the male drops the grass stem and switches to the second part of his routine where he sings and wipes his beak. Copulation follows”.

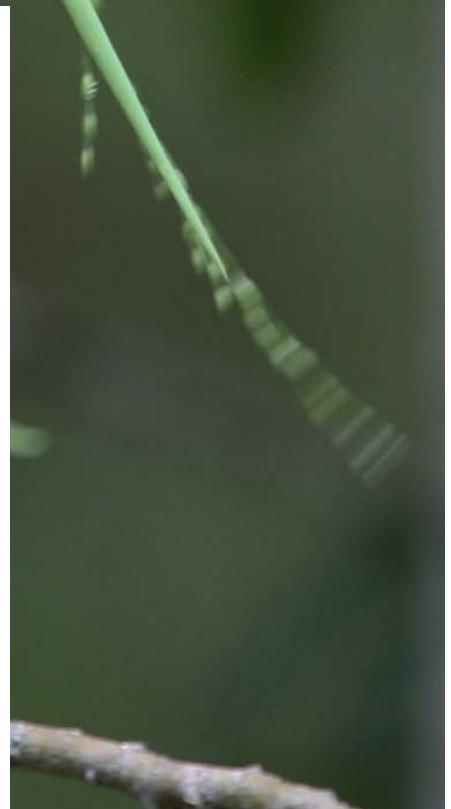
It is the only finch to use a grass stem in courtship.

They feed on a variety of ripe and half ripe grass seeds which they supplement with small herbs, berries and insects. They chew the grass seeds, so are unlikely to poop out viable seeds. But could carry seeds stuck to their bodies.

They build their nest in dense spiky vegetation less than 2 metres off the ground. It is flask shaped with a tunnel entrance, made of grass and occasionally bark or leaves.

After breeding they (like other finches) use the nest for roosting.

Virginia Bear



Recovering Kurnell's saltmarsh

A dense sward of saltmarsh has regenerated in 7 months since mowing was excluded. Photo V Bear



Bushcare volunteers building the fence to protect the saltmarsh (right of fence)
Photo: D Mellor

Dayna Mellor
Bushcare Officer
Sutherland Shire Council

The NSW government provided funding from their Environmental Trust for the rehabilitation of saltmarsh at Bonna Point, Kurnell.

There was no defined boundary between the saltmarsh and the adjacent mown parkland, and the saltmarsh was damaged by trampling from people and vehicles, mowing, and invasion by couch and buffalo grass from the park. There was also an issue with the dumping of spoil from cricket pitches.

The first priority was to erect a fence between the lawn grass and the remnant saltmarsh. Parts of the saltmarsh was dominated by *Zoysia macrantha* which had been mown for many years. The fence followed the existing line where the zoysia meets the lawn grass.

The fence was built in August 2009 by Bushcare volunteers when we held a special "Bushwackers day". This is where we invite all our volunteers to visit a site they don't usually work on. The fence was then extended, as the project continued, by council's bushland unit.

Initially the lawn grasses were weeded back from the saltmarsh species and sprayed with glyphosate. Later in the project we extended the work area and experimented with spraying sea water from Botany Bay onto the lawn grasses. It was hoped that this would eliminate the need for using herbicide and also promote the regeneration of saltmarsh species.

The lawn grasses were sprayed using a mobile pump and hose and the areas were watered just as you would water a new lawn. The buffalo and couch yellowed significantly after only 2 treatments. Unfortunately the procedure was limited by the need for a high tide to enable the water to be pumped. We had some decent rain after the 2 treatments which seemed to give the buffalo and couch a chance to come back.

I believe that the sea water may have been successful in killing the lawn grasses if applications had continued. It is a technique that we are keen to try again as we extend the saltmarsh area in the future. Next time I would try to irrigate the lawn grasses once a week for 4 to 6 weeks.



The saltmarsh (left of fence) in March 2010, with patches of sprayed buffalo grass.
The 'cushion' type plant is *Sueada australis* Photo V Bear

Greater planning would have been required prior to the project starting to enable us to work in with the tides and plan for regular applications. The saltmarsh species did not appear to be affected by the sea water application.

Eventually, the lawn grasses were sprayed with glyphosate and in the final stages of the project they were handweeded out of the Zoysia. There were few other weed species present in the work area. A small stand of *Acacia saligna* were cut and painted and *Plantago coronopus* ssp *coronopus* handweeded.

The Zoysia is now thickening up and getting taller and *Suaeda australis* is starting to regenerate in the areas where the lawn grasses were sprayed. Prior to the work commencing, an informal track ran through the middle of the saltmarsh. The track is now starting to close over.

Bush regeneration contractors, Total Earth Care have been undertaking the regeneration work including the sea water irrigation trial.

The site will be maintained by council's bush regeneration team. It is anticipated that the site will require minimal follow up as the saltmarsh was in fair condition when the project started. I will monitor the growth of the lawn grasses and arrange maintenance weeding as required. It is hoped that the Zoysia will move into the areas where the lawn grasses were and help exclude them from the saltmarsh. Some of the area is inundated by salt water during high tides, with a greater area inundated during king tides. It appears that the areas that are regularly inundated by the tides will not support the growth of the lawn grasses therefore requiring very little or no maintenance weeding. Council's spray operator will also assist by spraying the lawn grasses back from the saltmarsh where possible. At some points the level of the ground appears to be too high to allow inundation by the saltwater. Whether this is a natural feature or has been caused by the dumping of spoil we do not know, but it has lead to a naturally occurring border between the mown grass and the saltmarsh.



Zoysia, sueada and sarcocornia (purple). Patches of bare ground are a normal feature of saltmarsh. Photo V Bear

Why is saltmarsh in trouble?

Coastal Saltmarsh was listed as an endangered ecological community under the NSW Threatened Species Conservation Act in 2004. The final determination summarises the threats:

Saltmarshes are globally threatened by infilling, modified tidal flow, weed invasion, damage by domestic and feral animals, human disturbance, altered fire regimes and climate change.

Historically, substantial areas of saltmarsh have been infilled for roads and aerodromes and for residential, recreational, waste disposal, industrial and agricultural purposes. With increased recognition of the ecological value of saltmarshes, the threat of further large-scale reclamation is less, but smaller scale infilling still occurs.

Patterns of tidal flow have been restricted by artificial structures in many NSW saltmarshes, while discharge of stormwater alters salinity regimes, increases nutrient levels and facilitates the spread of Phragmites and weeds.

In recent decades there has been widespread invasion of saltmarsh in southeast Australia by mangroves. The factors driving mangrove invasion are still unclear.

A large number of weed species occur in NSW saltmarshes. In terms of change to the community structure and function, the most serious weed is *Juncus acutus*; other major weeds include *Baccharis halimifolia*, *Cortaderia selloana* and *Hydrocotyle bonariensis*. The upper saltmarsh zone may be dominated by introduced annuals or shortlived perennials, including *Parapholis incurva*, *Plantago coronopus* and *Polypogon monspeliensis*.

Damage to saltmarshes by recreational vehicles, including four wheel drives, is widespread, and deep wheel ruts persist for many years even after exclusion of vehicles. Use of BMX and mountain bikes is increasing, and even saltmarshes within conservation reserves have been seriously damaged.

Grazing and trampling by domestic stock and feral herbivores occurs at a number of sites. Stock grazing has been shown to substantially change the vegetation composition and structure, while on muddy substrates trampling can cause loss of plant cover and modify drainage patterns.

Saltmarshes have frequently been used for casual rubbish dumping and are at risk from waterborne pollution - including oil and chemical spills, both from shipping and road accidents, and catchment runoff of nutrients and agricultural chemicals.

Upper saltmarsh stands dominated by *Juncus kraussii* and *Baumea juncea* have high flammable fuel loads. While the natural incidence of fire in saltmarshes is likely to have been low, a number of saltmarshes have been burnt in recent years. The recovery of these sites is relatively slow and the long-term impacts of burning are uncertain.

Global warming and increased relative sea level are likely to pose an increasing threat to the survival of many areas of Coastal Saltmarsh

Coastal Saltmarsh occurs in a number of conservation reserves including the Ramsar listed sites at Town Point and Koorang Island Nature Reserves. Reserve status, however, does not confer protection from mangrove and weed invasion, recreational vehicles, pollution, fire or sea level rise without active management.

Bush regeneration holidays

Korinderie bush regen week

Bookings are now open for the Korinderie Ridge community's 7th bush regen volunteers' camp (Aug 2-6, 2010).

Are you interested in joining a fabulously motivated group of regenerators, helping to control Lantana at Korinderie Ridge, a dry sclerophyll bushland property adjacent to Bundjalung National Park? Great fun is had by all during this annual event, where a dozen or so visiting volunteers help the locals restore their bushland by treating Lantana for about 3 hours each morning. This year the group—or at least the more hardy of us—will be working in an area that was especially burnt last year to aid in Lantana control. (There will be easier sites for the less fit!) The hosts, a cooperative community of residents, provide delicious meals and great campsites, as well as short guided bushwalks each afternoon prior to the evening's socializing. Volunteers only need to bring a tent, sleeping gear and other personal items. (The only expense is getting to Korinderie.)

Enquiries: Tein or Graeme on 02 6682 2885.



On one of the afternoon walks, the 2009 Korinderie Regen Week participants were treated to a tour of Dirrawang (i.e. Goanna) Reserve Evans Head, guided by Korinderie resident and geologist, Chris Meagher. Enjoying the stunning views, native plants and ancient landforms were (L to R) Mary-Beth Treuen, Sue Kitchen, David Meggitt, Judith Stanley, Brian Stanley, Anne Terley and Sinead Stanley.

Arakoon State Conservation Area

Arakoon is 5km from South West Rocks, NSW. The dunal vegetation of this beautiful bay is unfortunately infested with asparagus, some lantana and environmental weeds. There is something for every regenerator, and our local bush care group really needs your help!

In return for bush regeneration, free accommodation is available at Little Bay Cottage. This beach house sleeps up to 5 cosily with 2 bedrooms (1 Queen; 1 double bunk and a pullout). It is available from August 1 to September 11.

Contact Ranger Cath Ireland P 02 6566 7589 F 026566 7593 or cath.ireland@environment.nsw.gov.au

South West Rocks Dune Care Volunteer Weeks

South West Rocks is part of the Hat Head NP. It's one of the most beautiful spots on the NSW coast, but threatened by weeds—bitou bush in particular.

SWRDC is an enthusiastic group of local and visiting volunteers and part-time contractors, supported by the NPWS and local Shire Council. Skill levels range from beginners to qualified bush regenerators.

SWRDC works to eliminate weeds and encourage regeneration of native plants and return of native animals. With expanded hours and funding we have significantly increased our work area. There are still many challenges, but our combined efforts have brought dramatic improvements in the last two years.

The visiting Volunteer Program was set up in 2007 to help boost our numbers and give people who live outside our area the opportunity to come to this special part of the coast. It has proved to be very popular, with many groups making repeat visits. From April to September, one week is set aside for volunteer groups and individuals - usually the third week of the month, to coincide with the regular monthly working day.

Accommodation is provided by the owners of Historic Arakoon house (for up to 16 people in four separate apartments) in exchange for undertaking 4-5 hours per day weed control activities within the Hat Head National Park.

Arakoon House has wide verandahs all around – perfect for an evening drink. A short walk takes you to Little Bay beach, and the South West Rocks town is 5 minutes away by car.

If you would like to participate but the dates do not suit you, it may still be possible to make a special arrangement.

Contact South West Rocks Dune Care
Ian Burnett 02 6566 5538 or Alan Hill 0419 012 640.

Lord Howe Island

Friends of Lord Howe weeding ecotours are on again in 2010.

These tours involve a week on Lord Howe Island, assisting the Lord Howe Island Board with weed control—primarily ground asparagus *Asparagus aethiopicus* and climbing asparagus *Aspararagus plumosus*.

Since 1995, there have been 58 weeding weeks and over 20,000 hours have been put into the LHI environment by volunteers. A quarterly FLHI newsletter keeps members informed of conservation and research activities on the island.

The popularity of the trips seems to be the rather unique combination of factors. The weeding is satisfying for most people, as it is a lovely natural setting with many interesting native plants. It is also possible to see an end to the weed problem on a small defined area such as an island. The afternoons are spent exploring this World Heritage Island which has many fascinating aspects—tall rainforest, prolific birdlife, volcanic geology, pristine marine life and spectacular scenery along the walking tracks. The groups stay at Pinetrees—a wonderful old guesthouse with 100 years of experience in hospitality and fine dining.

This combination, in a small group of like minded dedicated people adds up to an experience that may eagerly look forward to each year—yes there are many people who have been 5 or 6 years in a row (four people have been 10 trips). Being with like-minded folk for a week and being part of a team achieving success is indeed a memorable experience.

There are still vacancies June 12 to 19; July 10 to 17, and August 29 to Sept 5.

Cost is \$ 2158.97 which includes airfare ex Sydney or Brisbane, accommodations and all meals.

Contact Ian Hutton on 02 6563 2447 or email: ianhutton@clearmail.com.au .

Can saving the Cumberland Plain Woodland save lives?

Tim Beshara
Science Manager, Greening Australia

Heat is a killer

The Black Saturday bushfires were a disaster of a magnitude and scale that Australians rarely endure. 173 lives were lost. This tragedy was covered extensively in our media and there would be very few Australians that would not be aware of the event. What fewer Australians realise is that in the two preceding weeks of the heatwave that rolled unrelentingly across South Eastern Australia another 374 lives were lost. In that period hospital admissions skyrocketed and morgues overflowed.

Heat is a killer. Just a few extra degrees, or a slightly fewer hours of respite can make the difference between life and death. Heatwaves are by far the biggest killers of all the natural disasters. They are more devastating in terms of loss of life than cyclones, bushfires, floods or earthquakes. The elderly, infirmed and the very young have a much higher risk of dying during heatwaves.

A study of the 1995 Chicago heatwave (*Heatwave: A social autopsy of the disaster in Chicago* by Eric Klinenberg) provides the best account of the tragedy heatwave can bring. If an account is ever written into the Melbourne and Adelaide heatwave then it would be pretty similar.

"After about forty-eight hours of continuous exposure to heat, the body's defenses begin to fail. So by Friday, July 14, thousands of Chicagoans had developed severe heat-related illnesses. Paramedics couldn't keep up with emergency calls, and city hospitals were overwhelmed. Twenty-three hospitals went on bypass status, closing the doors of their emergency rooms to new patients. Some ambulance crews drove around the city for miles looking for an open bed.

Hundreds of victims never made it to a hospital. The most overcrowded place in the city was the Cook County Medical Examiners Office, where police transported hundreds of bodies for autopsies. The morgue typically receives about 17 bodies a day and has a total of 222 bays. By Saturday—just three days into the heat wave—its capacity was exceeded by hundreds, and the county had to bring in a fleet of refrigerated trucks to store the bodies. Police officers had to wait as long as three hours for a worker to receive the body."

All this is important but it hardly sounds the standard topic for an AABR newsletter. I hope that by reading through this article I will have broadened your perspectives on how some of the work we do and the causes we advocate for are not just great for biodiversity but critical for our humanity too.

The cruel geography of the Sydney Basin

We all know Western Sydney has hot summers. Those bush regenerators who, like I once did, travel to work on the

Northern Beaches and across the greater West are among those who best notice the differences in temperatures.

The most common weather pattern for Eastern Australia in summer is a blocking high that sits in the Tasman Sea. It drives warm and moist air from the ocean to the north-east against the coast and into the Sydney Basin and by around 11AM is fortified by a regular and reliable Sydney sea breeze. This sea breeze moderates the temperatures of Sydney coastal suburbs, keeping it to a usual daily maximum of about 26°C.

This is where the Sydney Basin unusual topography plays a cruel trick for Western Sydney residents. With the Woronora Plateau to the South and the Hornsby Plateau to the North it is hard for the sea breeze to penetrate inland. It does wind its way through Sydney Harbour and up the Parramatta River valley but again is blocked by a ridge line that runs through from Mt Annan to Prospect Hill.

When the sea breezes finally make it through to the Western Suburbs it is weaker, less humid and warmer. So it is not hard to understand why it's common to see temperatures of 26°C in Sydney and 41°C in Penrith on the same day.

The Cumberland Plain is a basin blocked on all sides. It has an inland climate in what normal circumstances should a coastal climate. This leaves it much more vulnerable to global climate change but even more so a local version of climate change, the urban heat island effect.

The urban heat island effect

The Urban Heat Island Effect is localised warming due to the increase in the amounts of paved and dark coloured surfaces like roads, roofs and car parks as a result of urban development. The sun's heat is absorbed not reflected and causes the surface and ambient temperatures to rise.

Anthropogenic heat production, such as the heat produced through car engines and air conditioners also contribute to the Urban Heat Island Effect. On hot summer days, cities can be several degrees hotter than their rural surrounds.

The loss of trees is another factor—trees are natural air conditioners. Trees pump water from deep in the ground that eventually evaporates from the surface of the leaves, and this process actually cools the air—just like an evaporative cooler at home, or even the old Coolgardie safe. Less trees means less cooling.

The urban heat island effect and Western Sydney

The population in Western Sydney is already approaching 2 million and nobody knows to what level it will grow in the future but a population of 4-5 million for the region is not out of the question. To support this large population is massive infrastructure—roads, buildings and car parks that comes at the cost of bushland and pasture.

Putting this level of infrastructure into a basin like the Cumberland Plain has climatological consequences. It is already apparent in our meteorological record. Over the last 40 years the temperatures out West have skyrocketed whilst those near the coast have increased only marginally. It is like Western Sydney's summer climate is becoming like Western NSW and Coastal Sydney's summer climate is becoming like the Gold Coast.

By comparing the records from Prospect Reservoir to those at Observatory Hill the changes couldn't be starker. At Prospect the number of days above thirty-five have increased 250% compared to just 22% for Observatory Hill. Even more breathtakingly the temperature for the hottest day of the year has increased by 4-6 degrees in just over 40 years.

If we continue to roll out suburbs to fill the Cumberland Plain to its edge then who knows where these temperature rises will end. The really scary thing is the urban heat island effect and global warming interacts synergistically. It's not $1^{\circ}\text{C} + 1^{\circ}\text{C} = 2^{\circ}\text{C}$; it's more like $1^{\circ}\text{C} + 1^{\circ}\text{C} = 3^{\circ}\text{C}$. A hotter world means more intense heat islands.

This adds up to hotter days, longer and more intense heatwaves and by consequences more deaths. Western Sydney's basin also traps the air pollution. More heat means more ozone production which again means more deaths, this time from respiratory failure. It is the positive feedback cycle from hell.

When I took my meteorological analysis to Professor Andy Pitman, IPCC lead author and head of the Climate Unit at UNSW, he said instantly that the temperature rises I found were driven by an urban heat island effect and that up to 4/5th of the apparent warming was from urban factors. He and I later presented to a NSW Parliamentary Committee where his comments were chilling. "In the Sydney Basin if you wanted to locate a population in the most vulnerable region possible for global warming and urban heat island and air pollution you would put them in Western Sydney".

What we can do?

Whilst this presents as a terrible scenario the bright-side is enormous as there is so much scope for intervention. The tools to addressing urban heat island effects are well-known and drawn from urban climatology 101. Cities all over the world from New York to London to Tokyo are adopting urban heat island policies and programs.

Their aims are basic:

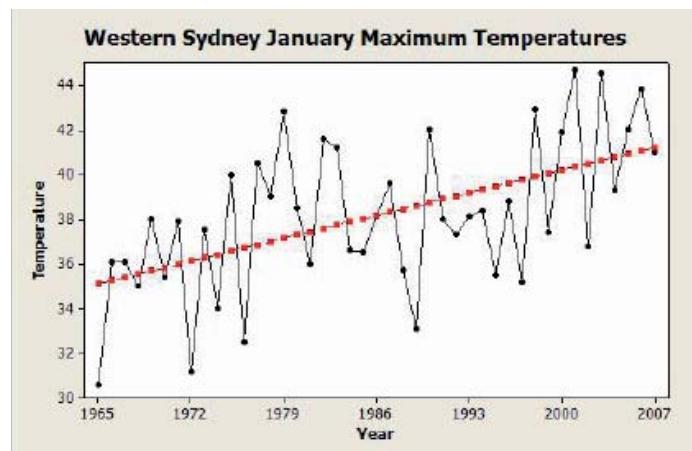
1. Increase vegetation cover
2. Reduce dark and hard surfaces
3. Increase landscape water retention (to allow the vegetation to transpire more readily).

Studies from all over the world indicate that implementing these types of policies can have a big effect in reducing local and regional temperatures.

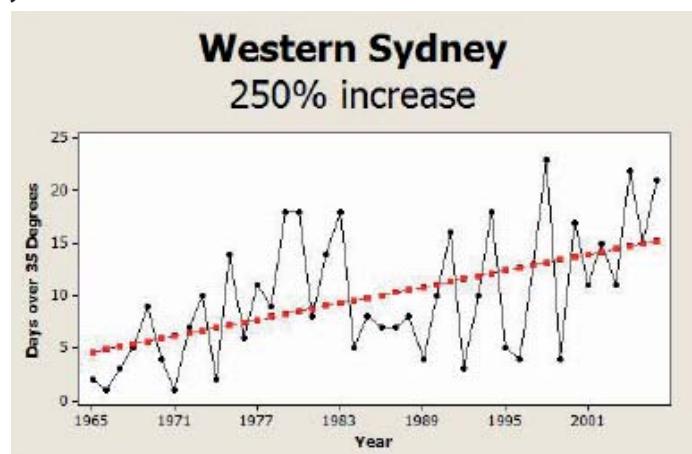
In a Western Sydney context it becomes pretty apparent what we can do. There is so much scope to plant more street trees and increase the tree cover of public open space. Even the good old-fashioned tree giveaways that were fashionable in the 70s and early 80s could be brought back to encourage more trees and shrubs in yards.

Revegetating riparian zones throughout the extensive open space network would have a massive benefit because these

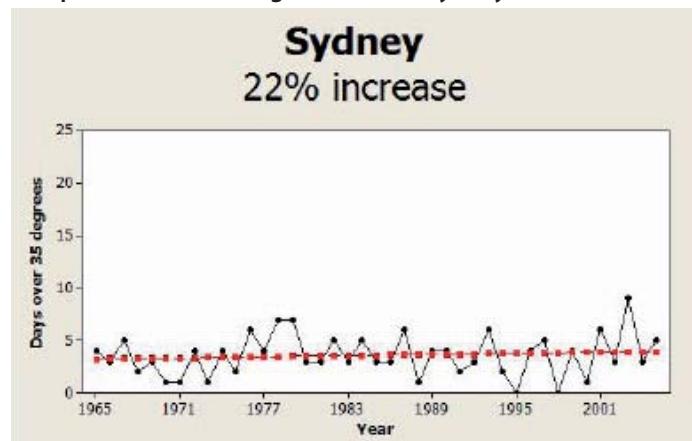
Massive increase in summer maximum temperatures—the hottest day of the year is now 4-6°C hotter than it was in the 1960s



Massive increase in the number of hot days—the number of days per year over 35°C has increased by 250% in just over 40 years



Compared to little change for Coastal Sydney



areas have higher and more consistent levels of moisture and greater cooling potential.

Water Sensitive Urban Design for new urban estates is no longer just a fashionable extra. It is critical to prevent these new suburbs from being dry and barren wastelands. Likewise the impetus for replacing those horrible concrete stormwater channels should be boosted.

The most significant response is to better protect the existing vegetation across the Cumberland Plain. Cumberland Plain

Woodland has fallen into a legal and technocratic black hole. It is exempt from protection from the Native Vegetation Act because it falls within an arbitrary metropolitan border. It, however, is rare enough to warrant protection under threatened species legislation but in this modern technocratic age of biobanking and biocertification it fails the 'viability' test (ironically for being too endangered) and it is OK to clear it.

All patches of Cumberland Plain Woodland provide a service to us because they moderate the climate and make it cooler and more liveable. Right now, Cumberland Plain Woodland is solely valued by the community because of its biodiversity values. There is not a wave of community support for better biodiversity protection. However, if the community were helped to realise the true and total value of Cumberland Plain Woodland to them then the tables could be turned.

What it means for us?

The need to address the urban heat island effect could shake up our industry in Western Sydney. It would mean expanded works in riparian management, parkland revegetation and wetland construction. It won't mean much for bush regeneration per se

but as the funding for other restoration works become more mainstream it should leave more room for the bread and butter regen work.

The biodiversity benefits of a broadly implemented urban heat island strategy would be enormous. It would mean healthier waterways, better connectivity through urban landscapes and re-established and flourishing riparian zones. A community re-evaluation of the role of vegetation in the landscape would lead to much better bushland protection.

An increasing awareness of this issue moves what we do as an industry from the niche to the mainstream. It moves us out of the Environment Minister's remit and into the remit of the Health Minister, Treasurer and Premier. Questions now need to be asked, "How many extra hospital admissions' will there be if we clear all the Cumberland Plain Woodland? How much will that cost the health system? Will these areas be liveable in 50 years time?"

These are the tough questions that our leaders and communities have to address and I think it is going to get a whole lot more traction than we have had to date.

Not yet formally qualified? Would you like to be?

Get your Certificate II in Conservation and Land Management in a flexible way that reflects your needs with less time off work.

Bushland Management Solutions in partnership with Workspace Training is now offering the **Certificate II in Conservation and Land Management**. Our offering will include:

- self guided theory
- on site work place diaries
- workplace based assessment
- flexible solutions that recognise your existing skills and experience.

The compulsory face to face sessions will be targeted and reduce the time off work required by TAFE and others.

The benefits:

- High quality training
- Less time off work
- Simple processes to recognise your existing skills as part of achieving your qualification.

Course delivery will start from August 2010.

For information or to express your interest, contact Frank Gasparre at hillsbush@bigpond.com or 0423 058 797.

For more information visit www.workspacetraining.com.au/clm



Australian Network for Plant Conservation Inc
8TH NATIONAL CONFERENCE
Planning conservation to achieving restoration
28 September to 1 October 2010, Perth WA

A conference for everyone involved in conserving Australia's unique flora and native vegetation

This conference is for practitioners, researchers, governments, community groups, non-government organisations and anyone else interested in plant conservation.

We aim to provide updates on the latest, most relevant information, and opportunities to link up with other people working to conserve our native flora.

One-day field trips during the conference, and a three-day field trip after the conference, will give you a chance to be guided by experts through one of the world's richest and most diverse floras in the international biodiversity hotspot of South-West Australia.

Conference themes

- Conservation Planning
- Seeds and Genes for Restoration
- Engaging with Industry
- The Role of Taxonomy
- Soil Health and Restoration
- Planning for Climate Change

Contact Information

If you have any queries regarding the conference, please contact our office: anpc@anpc.asn.au 02 6250 9509

Janine Holgate wins the AABR Beverley Blacklock prize

Janine Holgate was in the full time Certificate III group in the second half of 2009. It was a large group of good students, but Janine really stood out as a passionate and capable woman. Janine did not miss a single class, was helpful and engaged with all aspects of study, and really took every opportunity the course offered her. The teaching staff were unanimous in the decision that Janine was the stand out candidate for the AABR Beverley Blacklock prize. Congratulations and good luck, Janine, from all at Ryde.

Kate Low
Head Teacher Applied Environmental Management, Ryde Tafe

Beverly Blacklock of Castlecrag in Sydney, was an early adherent to the Bradley method and a notable force in keeping Castlecrag "native" through bush regeneration and by using local native plants provided by her nursery in the gardens of Castlecrag. She integrated the love of landscape, architecture, history and nature and she also had a strong sense of community values. She had a major influence on bush regeneration and her premature death in the 1980s was a sad loss to the industry. Her name is still celebrated by an annual prize, funded by AABR, for a bush regeneration student at Ryde TAFE."

Robin Buchanan

Restoring Biodiversity Industry Association Inc: plans for 2010

The Restoring Biodiversity Industry Association (RBIA) Inc was established in 2009 "to promote and develop professional standards and information sharing in the industry of natural area management." It aims to represent the broader natural area management industry including the various organisations and individuals working for government and private organisations: contractors, bush regenerators, company directors, supervisors, ecological consultants, local councils, state agencies, non government organizations, TAFE, universities and community volunteers.

The main activity of the RBIA is to convene professional forums that bring these various groups of people together to exchange information and work together.

Last year, the RBIA ran three industry forums that were well attended by a good cross section of the industry. Various issues and challenges relating to monitoring and performance measurement of restoration projects and bushland contracts were consistently raised at last year's forums. There was lots of talking but not a lot of resolution on the way forward. In 2010, the RBIA is continuing to facilitate discussion within the industry about what kind of monitoring systems and tools are appropriate and useful in different situations and different types

Florilegium is Australia's foremost plant bookstore. We stock a large range of books on plants for the amateur and the professional.



WEEDS OF THE SOUTH-EAST Richardson
Indispensable ID reference for professionals & amateurs. Far better value than Auld/Medd \$69.95

AUSTRALIAN NATIVE PLANTS - Concise Edition Wrigley & Fagg RRP \$45 from us \$25

AUSTRALIAN MAGPIE Kaplan RRP \$39.95 from us \$27.50

ECHIDNA Augee et al RRP \$39.95 from us \$19.95 AND MANY MORE ...

Centrally located
65 Derwent St, Glebe NSW 2037
Open 7 days
ph 02 9571 8222
email sales@florilegium.com.au

Please send for a list of titles on your area of interest.

We can send by post or email.

NAME.....

ADDRESS.....

EMAIL.....

AREAS OF INTEREST.....

of projects. The aim is to encourage more consistency and build capacity of people working in the industry to do monitoring and reporting that is most relevant and collects the information needed over time to prove our industry's performance to the decision makers, politicians etc.

The RBIA organised a small workshop in late April 2010 with selected representatives from local government, state agencies, CMAs, TAFE, NGOs, contractors, consultants and academics who have good knowledge of monitoring systems relating to the management and restoration of natural areas. AABR supported this workshop and sponsored ecologist Melissa Coyle to travel from the Sunshine Coast, Qld to attend.

The outcomes of the workshop and the next steps will be reported back to the natural area restoration industry, later in May and June.

Anyone can join the RBIA for \$20. This fee goes towards the administrative expenses of running these forums.

Email & enquiries: Rosanna Luca, Secretary
Phone 0419 985 175 (Mon & Tues)
Email info@restoringbiodiversity.org.au
Website: www.restoringbiodiversity.org.au

What's happening

May 8-9

World Migratory Bird Day

focuses on Globally Threatened Migratory Birds and especially on those thirty-one migratory bird species, which are classified as Critically Endangered in the IUCN Red List. These are birds, which face extinction—including Australia's orange-bellied parrot, which migrates between Victoria and Tasmania. Migratory birds rely on several different habitats; they need different locations for breeding and raising their young, and for feeding. Some of them migrate up to thousands of kilometres to find suitable areas and cross many different habitats, regardless of any political borders. Thus, saving migratory birds means saving their required habitats and that benefits other species as well.

Saturday May 15 9:00am

The 2010 Sydney Metropolitan CMA Community Forum

Environmental volunteers from across Sydney are invited to this free full day event.

Guest speaker will be Les Robinson author of the "Field Guide to the Native Plants of Sydney" and facilitator and Director of "Enabling Change".

Where Waterview Conference Centre, Bicentennial Park, Sydney.

RSVP Booking is essential for catering purposes. Contact Helen Kemp on 9895 6207 or at kemp@cma.nsw.gov.au

Friday May 21 9.00 - 12.00

Wompoo Gorge Restoration Field Day

The spectacular Wompoo Gorge is located between Nightcap and Goonengerry National Parks. A three year project is underway to restore subtropical rainforest in this area which is home to over 27 threatened species.

Large infestations of lantana have been restricting natural regeneration for over 40 years.

First, a tractor and slasher was used to mechanically control around 2ha of lantana. Bush regenerators have followed up control of weed growth. Lantana, smooth senna and other weeds are being controlled in surrounding areas that were inaccessible to the tractor and within areas of native vegetation.

Walk through undisturbed palm forest, see early regeneration in area of lantana controlled by tractor, learn about bush regen, monitoring and evaluation.

Where Meet at the end of Upper Coopers Creek Road, parking before closed gate.

Transport available from Lismore EnviTE office (pre-booking required)

Bring Sturdy footwear, long pants and shirts, hat, sunscreen and insect repellent. Light morning tea will be provided, please bring water and extra food if required.

Organiser EnviTE

RSVP Numbers are limited. Bookings essential. Tracey on 02 66219588 or traceym@envite.org.au

July 10-11

Workshop Eucalypts of the Sydney Region with Van Klapake

Where Cecal Hall, corner of Clarke and Lewins Street, Earlwood, Sydney

Cost \$160, \$150 for AABR members & students

RSVP Bookings essential. Please contact Paul at ibb56@yahoo.com.au

Organiser AABR

Sunday August 22 10:00 – 1:00

Lost Treasure Comes To Light – Bundock St Bushland, Randwick

Locked away on Defence land for 100 years, this 13 Ha area of remnant bushland near the heart of Sydney will soon be turned over to Randwick Council for management as a natural area. Be some of the first members of the public to view the large stand of nationally endangered Eastern Suburbs Banksia Scrub vegetation and the nationally endangered Sunshine Wattle. Another prominent feature is the mystical ephemeral wetland, actually a window onto the water table below. The site's history will be described and management issues discussed.

Presenter: Tina Digby (Bushland Coordinator, Randwick City Council). Tina has 18 year's experience in the natural area restoration industry and has worked for Randwick Council for 12 years.

Where Meet Randwick Community Centre, Munda St, Randwick. Enter via Bundock St, Hendy Ave, Marida St (go through the large gates) and then left into Munda St. Don't be put off by the private/construction site appearance of the road system, it is a public road!

Cost By donation.

Bring Lunch, water, closed shoes, hat, jumper, raincoat.

RSVP By Monday August 16. Danny Hirschfeld, 0412-320-295 membership@aabr.org.au

Contact on the day: Danny Hirschfeld, 0412-320-295.

September 6-12

National Landcare Week

celebrates the essential role of the Landcare movement in protecting farmland, coastal areas, rivers and bushland.

September 26-30

17th Australasian Weeds Conference

New Frontiers in New Zealand

Where Christchurch, New Zealand

Organiser The New Zealand Plant Protection Society Inc. and The Council of Australasian Weed Societies Inc. www.17awc.org

September 28 - October 1

ANPC 8th National Conference

Planning conservation to achieving restoration: A conference for everyone involved in conserving Australia's unique flora and native vegetation

Where Perth

anpc@anpc.asn.au 02 6250 9509

December 6-12

Annual Conference of the Ecological Society of Australia. 'Sustaining biodiversity —the next 50 years.'

We will take a long term perspective of ecology in Australia and engender a sense of urgency to consider how ecologists can provide solutions to those problems with which we are now familiar, and those on the horizon.

Aims to challenge and inspire ecologists.

www.esa2010.org.au/

President
Matt Springall
president@aabr.org.au

Treasurer
Paul Ibbetson

Membership Officer
Danny Hirschfeld
membership@aabr.org.au

Secretary
Heather Stolle

Committee
Wendy Kinsella
Jane Gye
Peter Dixon
Elisabeth Dark

Northeast NSW/Southeast QLD sub committee
Mike Delaney 02 6621 9588
miked@envite.org.au

Hunter sub committee
Trisha Barker 0425 346 330

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 NSW has regional committees in northeast NSW/Southeast Queensland and the Hunter, and a sister organisation in Western Australia: AABR WA.

AABR C/O Total Environment Centre PO Box A176 Sydney South NSW 1235

0407 002 921

www.aabr.org.au

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

\$10.00 p.a AABR Newsletter Subscription

\$25.00 p.a AABR Membership

\$50-400 p.a AABR Contractors & Consultants List

(all interested people)

(email for 1 year for students of Certificate III CLM-Natural Area Restoration)

(appropriately qualified & experienced bush regenerators)

(appropriately qualified & experienced bush regenerators)

Newsletter contributions and comments are welcome

Contact Virginia Bear newsletter@aabr.org.au 0408 468 442

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