



AABR NEWS

Australian Association of Bush Regenerators

working with natural processes

AABR events

Ecological Burning and Flame Weeders

Artarmon Reserve, Burra Road, Artarmon

Tuesday 8th May 2018. 10am - 12:30 pm

Optional: Networking lunch afterwards

Meet At the lower car park at Artarmon Reserve. The reserve is only a 10 minute walk from Artarmon Station. Follow bush track on the eastern side of railway line (Wickham Walk) to car park.

Hosted by Willoughby City Council- Bushland Team

Bookings: via Eventbrite. Max number-40. No cost.

<https://www.eventbrite.com.au/e/ecological-burning-and-flame-weeders-tickets-44434806703>

Further information: See Page 15

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April
2018

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Getting to Know Your Grasses

Saturday 2nd June. 9:30 am for a 10 am start with a 2.30 pm finish.

Location: Werrington Lakes Reserve , Werrington. Meeting in the carpark off Burton Street.

Come along to an instructional talk and walk by Harry Rose, author of Grasses of Coastal NSW. The day will delve into the grasses of the Sydney region where you'll learn how to recognize native and invasive grasses and methods to manage them. You can even bring along flowering grasses that you'd like identified. Participants will receive a copy of Grasses of Coastal NSW will be available for purchase.

On the day you will learn how to:

- describe features of grasses that are important for recognition
- recognize a range of grasses occurring in the region
- recognize grasses posing a current and future threat to the region
- find information on the management of different species.

Cost \$55 for workshop. BYO lunch.

This is a family friendly venue. <https://www.weekendnotes.com/werrington-lakes-reserve/>.

Bookings via Eventbrite <https://www.eventbrite.com.au/e/getting-to-know-your-grasses-tickets-44693181509> . Only 20 places available.

President's Perspective

We thank AABR's newsletter editor Louise Brodie for another jam packed issue full of a mix of case studies and technical information and notices of coming events!

This quarter sees a very interesting field trip to learn about ecological burning and flame weeding in public land managed by Willoughby Council and bookings are being taken for a June grass workshop in Western Sydney (page 1). AABR is also planning a really special 2-day field trip to Big Scrub rainforest (weekend of 22-23 Sept 2018) and are calling for expressions of interest for people interested in either flying or driving to it or bussing up from Sydney, seeing other rainforest sites on the way and way back (i.e. Wingham Brush and Coffs Harbour. (See snippet on page 13 or [click here](#) to express interest in one or other trip).

For some going on the Big Scrub field trip it will be a pre-conference field trip for the Society for Ecological Restoration Australasia (SERA) "Striving for Restoration Excellence" to be

held at the University of Queensland, Brisbane, Australia 25-28 September 2018! This will be a very important conference for those wishing to present on restoration case studies or learn about how others do it!

Both the proposed field trips are likely to be subjects of regenTV videos – so if you can't attend, AABR will record the highlights for posterity and make the videos freely available on our regenTV educational platform. This is very important to provide continuing education opportunities for bush regenerators, whether or not the practitioner is accredited by AABR (see 3) or through another certification scheme. Indeed, AABR is in the process of investigating potential for regenTV being endorsed as continuing education for other organisations involved in practitioner certification schemes.

Tein McDonald.
President AABR

Ecological Management & Restoration



One of the advantages of joining AABR is that you are eligible for a very substantial discount to the Australasian journal *Ecological Management & Restoration* (\$67 rather than \$107). To access your discount you go to the [EMR website](#) and cite your AABR membership number in your application.

Congratulations Diane Harwood

Diane Harwood, co-ordinator of the Denmark Weed Action Group in WA (which is a longstanding AABR member) was named the Denmark Citizen of the Year in February.

Diane received the 2018 Citizen of the Year Award for her dedication to the conservation of the natural bushland in Denmark. She is the founding member of the Denmark Weed Action Group and had contributed to numerous bushland management plans, including the Wilson Inlet Foreshore Management Plan and participated in a number of not-for-profit community groups, committees, sub-committees and working groups including the Wilson Inlet Management Advisory Group, the Denmark Environment Centre and the Paths and Trails Advisory Committee.

In 1990, Diane and others became the Denmark Bush Regenerators which changed to the Weed Action Group. These days there is a solid core of regenerators, which included a number who have completed Level 4 Conservation and Land Management. Proof of Diane's success is seen at Pioneer Park, near the Denmark Visitors Information Centre, where the watsonia choked reserve has had bush regeneration work and now the native bushland is flourishing.



Welcome to new AABR Members

Greg Bork
Nicole Butcher
Tim Dawes
Stephen Gye
Kaitlyn Leeds
Jodie Ridley
Erin Rogers
Jacinta Saad

Congratulations on Accreditation

Robyn Cox
Andrew Davies
Greg Stille

What is AABR accreditation and how do you get it?

This is the first in a series of articles on AABR accreditation, outlining the process to get accredited and the skill set expected of a Bush Regenerator whether you're a volunteer or a professional.

A STANDARD AABR ACCREDITATION APPLICATION IS AS EASY AS 1,2,3.

Have you spent time studying a course in bushland restoration in an industry context?

Have you been putting what you learnt into practice for a minimum of five hours a week for the past two years (500hr)?

Did you have the guidance of mentor or supervisor who was skilled and helped you understand the intricacies of bushland restoration?

If you answered yes to these three questions then you could be on your way to becoming an AABR accredited bush regenerator by documenting the details of your experience and qualifications on the accreditation application form. <http://www.aabr.org.au/about-aabr/accreditation/>

One of the boxes you have to tick on the form is that you have read and understood the list of competencies that AABR considers a bush regenerator should possess, whether they are a paid professional or a passionate volunteer.

There are two pathways – standard and non-standard – depending on your qualification and your supervised bush regeneration field experience.

If you are applying for a standard application it is assumed you have these competencies. If you could not answer yes to the three questions above you can approach accreditation through a non-standard pathway, which can include phone and field assessments based on your understanding of the competencies below.

The Competencies are:

1. Be able to describe the basic ecological principles relating to bushland degradation and its restoration;
2. Be able to discuss basic plant and animal habitat issues;

3. Be able to name a majority of the indigenous and exotic plant species, at all life stages, on a familiar site, and be able to identify species not recognised by using a botanical key or another process of identification;
4. Be able to perform efficient, effective and safe removal of weeds over a range of different plant life forms;
5. Be able to discuss or demonstrate appropriate herbicide applications on a range of weeds and discuss compliance with all relevant legislation;
6. Be able to specify the principles of maximising the natural regeneration of bushland, including:
 - the strategy of working from areas of higher resilience to areas of lower resilience;
 - matching the area of primary treatment to both the site's capacity to respond and the project's follow up resources; and
 - using intervention techniques which maximise natural recovery processes;
7. Be able to discuss the need for commitment to follow up treatments and long term management;
8. Be able to indicate, on site, approximate boundaries between regeneration and planting areas;
9. Be able to discuss the basic techniques used for reconstruction, in areas where no natural regeneration is expected;
10. Be able to discuss the principle of genetic integrity in relation to planting and its importance in maintaining biodiversity;
11. Be able to describe a range of common WH&S hazards and specify ways to eliminate or minimise risks; and
12. Be able to communicate:
 - appropriate information about sites and programs; and
 - ideas, concepts and recommendations to the site supervisor.

Only financial AABR members can apply for accreditation. If your accreditation is successful a \$30 (\$15 unwaged) accreditation fee is payable each year with your membership.

For more information visit the AABR website <http://www.aabr.org.au/about-aabr/accreditation/>

AABR's 'A List' of Accredited Bush Regenerators

There are currently over 300 AABR accredited practitioners and we're keen to promote this cohort of experienced bush regenerators to raise awareness of the industry, assist people to find a mentor if they want to expand their experience and provide a point of contact for employers seeking accredited bush regenerators.

The 'A' list is being compiled through the opt-in of interested people via the online form <https://www.surveymonkey.com/r/accred-list>. The process of displaying the information in an easy accessible format is being finalized and will be located at <http://www.aabr.org.au/do/business-directory/>

The list is open to all financial members of AABR with accreditation, whether volunteer or paid. The information displayed will include name, region of operation, if you are available for work, a volunteer or willing to be a mentor. Enquiries will be directed to admin@aabr.org.au and forwarded to the member.

By growing the A-list we will be raising the profile of the bush regeneration industry throughout Australia.

Having fun with a splatter gun!

Spencer Shaw

Brush Turkey Enterprises

When asked to write a 1500-word article on the splatter gun, I thought to myself "how am I going to keep this going?" ... Splatter Guns are a handy tool, but just a tool after all. Not used daily (in our case just a few times a year). They are not for all bush regenerators tool kits, but merely a potential tool in the arsenal of some bush regenerators, a rather heavy handed, crude, flaming sword type tool! So here it goes, not a story about my most favourite tool, but one that sits in the storage cupboard for the bulk of the year and comes out for a very particular weed treatment – that of blankets of lantana – in particular those thickets that are adjacent to remnant rainforest that we can then regenerate by unleashing the migratory resilience of our rainforest pioneers that are found in the soil beneath the lantana blankets.

It's not just for dramatic effect that I refer to the lantana in this situation as a 'blanket of lantana' or that it cascades in unbroken waves down our hillsides (ok, that was a bit dramatic... but a nice image don't you think). This is literally what lantana does in the subtropics and tropics on the land that was once cleared of rainforest for livestock, but due to the slopes, slips and high rainfall, the lantana outcompetes grass and clothes the slopes of the escarpments around the Blackall Range in SE Queensland. Unlike the shrubby forms of lantana in drier country, the lantana in this moist, fertile country grows horizontally (or in this situation should I say diagonally) as much as it grows up forming dense woody thickets. The sheer physical presence and perhaps chemical germination inhibitors, suppresses and prevents the establishment and growth of native trees that would otherwise colonise the site, making it a monoculture. On the plus side for lantana, it has as mentioned above outcompeted the grass that replaced the rainforest, it has fed the soil with a mix of its stem and leaf and most importantly it has provided habitat and a food source for native fauna, in particular birds that have generously distributed the seed of rainforest pioneers into the leaf and soil beneath the lantana. Although these lantana blankets are far removed from the typical targets for bush regen methodology



Spencer Shaw - Licensed to Kill ... Lantana

of working from good to bad, with their apparent 100% weed dominance, the very healthy but latent native seed beds make them a prime target for conversion from weed to native, via the killing of the lantana. Because the lantana is present as a monoculture it reduces and, in many cases, eliminates the potential for off target damage when using blanket herbicide applications.

Techniques for removing the lantana blanket and releasing the native regeneration include a combination of mechanical e.g. brushcutters (the slopes on this site are completely inaccessible to machinery), manual e.g. hand pulling and cutting (fern hooks, loppers etc.), and finally herbicide application via spray units, backpacks and of course splatter guns (let's not rule out a herbicide free option but it does require considerable hand weeding of regrowth). Timing is also very important with works ideally undertaken during the cooler drier months, when less rainfall and the cooler temperatures reduces the physical toll on bush regenerators in what is a very physical task of both accessing and then undertaking work on these sites.

The site I describe is on a Nature Refuge on the south edge of the Blackall Range, 4.5km SE of the town of Maleny. Top edge of the site is 470m abs (above sea level) and bottom end of the site is 370m abs. Distance from the access gate to the bottom of the site is roughly 300m, giving an average of a 1 metre drop every 3 metres travelled, but much of the gully contains slopes roughly 45 degrees steep. The lantana dominated area to be treated in the gully was approximately 5000m², although the slopes added to that considerably.

The steep slopes of the project area were cleared in the early 1900's for cattle grazing and I never fail to marvel at the sheer determination and hard work of the early settlers in clearing the rainforests of the Blackall Range. Dark, damp, slippery, prickly, stinging, biting scrub was felled and burned to convert to grassland and replicate the rolling green pastures and hill country of the 'Old Country'. On these slopes, with an average annual rainfall of 2000mm and reductions in farm labour in the latter part of the 1900's (and of course a host of native and exotic vegetation ready to colonise



Some of the gentler slopes !

this land that wanted to be forest) it wasn't long before it was progressively dominated by *Ligustrum lucidum* broad leaf privet and *Lantana camara* lantana in 1970's and 1980's. The weedy dominated areas of the nature refuge on this property have been progressively regenerated for over 20 years, the primary targets being the broad leaf privet and lantana. The site has a proven record of vigorous colonisation with rainforest pioneers, progressing to secondary rainforest species within a decade or so of establishment. The early phases of regeneration consist primarily of rainforest pioneers including *Homalanthus populifolius* Bleeding Heart, *Trema tomentosa* Poison Peach, *Dendrocnide excelsa* Stinging Tree, *Melia azedarach* White Cedar and *Macaranga tanarius* Macaranga. Early growth rates are 1-2 metres per year providing quick site capture.

Any rain the day before could render the site inaccessible, due to the slippery nature of any exposed soil on slopes and this is undoubtedly one of the more difficult sites we have ever worked on, but also incredibly rewarding in the vigorous regeneration that we know will soon dominate as evidenced by previous works.

Treatment of the site was facilitated and only made possible by the landholder cutting tracks to the site itself and then on across the slopes (along contours where possible) through the dense lantana blankets that covered all sides of the gully and surrounding slopes. This, in itself, is a near super human undertaking, and I continue to be amazed at the commitment of both resources and time by some landholders. Particularly in a case like this that, when considering priorities, would not necessarily be given up as a lost cause, but perhaps overlooked in favour of easier to access sites.

The splatter guns used were NJ Phillips Manual 20ml splatter guns. We have used the gas-powered Forestry Guns but found the manual to be a lighter piece of kit on the terrain we are generally working in and the manual splatter gun shoots a similar distance, just requiring a manual trigger squeeze to deliver the herbicide. Most days on site only required 2-3 x 5Ltr packs. The gas-powered Forestry Guns could be worthwhile for a full-day of splatter gun application to reduce wear and tear on operators by manually squeezing a trigger all day. In total we used 11 x 5Ltr packs on this site (5000m²) over 3 separate hits and the mix used was the 1:9 (10%) mixture of Weedmaster 360 (see technical details).

Summary

The splatter gun was great to use on this site due to the accessibility issues and drastically reduced the total volume of liquid required to take to the treatment area between a ration of, I'd estimate at least 1:5 but perhaps up to 1:10, better to take in 11 x 5Ltr packs over 3 trips than at 50 x 10 Ltr backpack sprayers mixed at the 1:100 rate of Glyphosate 360!

This is the primary benefit of the splatter gun, reduction of the overall volume of liquid required to treat an area of lantana, and more importantly, transport around the treatment site. Timing wasn't ideal from a physical point of view during late spring and summer, but perhaps the good rainfall during the whole of the treatment period provided an easy and susceptible target in the lush dense growth of the lantana. The treatment was highly effective, with a primary kill rate between 95-100% across the site.

Footnote

For some large vertically challenging sites like this, don't make the same mistake I did on one of the runs by cleverly saving time trudging up and down the hill to top up a pack by carrying two of the 5 Lt packs at a time - one on the front and one on the back. You guessed it, basically, I had wrapped my torso in plastic and was walking up and down the slopes on a 33°C high humidity day and it made me feel a bit light headed... However, two packs are handy, as the guns can have issues at times and so its handy to have a spare, just carry them both on your back. The splatter gun requires regular service as per the manufacturers recommendations to maintain operation.



Above: – the southern slope, pre-treatment

Left: – a section of southern slope after treatment

All photos: Spencer Shaw



Technical Details:

APVMA Permit: Off Label PER11463 : Glyphosate 360 1 Ltr / Water 20 Ltr – 5ml/30cm height or growing points. Permit held by Qld DAFF and can be used by person generally in Australia.

Weedmaster 360 Label: LANTANA Use 1:9 (10%) mixture of product: water. Apply 2x2mL dose per 0.5m bush height. Ensure spray contacts all foliage.

National Lantana Management Group Fact Sheet http://weeds.ala.org.au/WoNS/lantana/docs/65_Splatter_gun4.pdf

Tools discussed: NJ Phillips 20ml Manual Splatter Gun and NJ Phillips 50ml Powermaster Forestry Splatter Gun

Treating pine wildings in the Goobarragandra Wilderness

A volunteer group describes their involvement in surveying, mapping and treating pine wildings in the Goobarragandra Wilderness area of Kosciuszko National Park between 2008 and 2018

In December 2006 our group of friends decided to do a bushwalk over several days in the Goobarragandra Wilderness Area of Kosciuszko National Park. The area is roughly bounded by Long Plain in the east, the Snowy Mountains Highway to the west and south and the Goobarragandra River to the north (see survey map). The area is dissected by the southerly flowing Yarrangobilly River and is characterised by magnificent tall eucalypt forests covering the ridge tops, open grassy valleys, open forests in the transition areas between and steep limestone gorges cut by the Yarrangobilly River and its tributaries. Access is via the Spicers Creek and Jounama Fire Trails which are public vehicle prohibited service trails for the most part.

We knew this area had escaped the 2003 catastrophic bushfire that impacted large areas of Kosciuszko National Park and as such would provide a shady option in the event of very hot weather for our annual summer walk in the Snowy Mountains. Our planned route was to head north up Starvation Creek and return via the Yarrangobilly River and the Spicers Creek fire trail.



The walkers head off 2006

Soon after leaving the Spicers Creek fire trail and heading up Starvation Creek we started to notice solitary pine trees dispersed at irregular intervals, both within the open grassy frost hollows and on and above the tree line. They ranged in size from young seedlings less than a metre in height to mature trees 10m high or taller.

Heading west from the head of the Starvation Creek valley we passed through a ridge topped by magnificent tall eucalypt forest with dense understorey and leaf and bark litter without further pine sighting. However on entering the relatively open Yarrangobilly River valley we encountered numerous pines of varying maturity. The pines were again irregularly spaced but were present in increasing numbers as we headed downstream, then south towards the Spicers Creek fire trail. Clusters of both young and mature pines became more concentrated as we

entered open areas (we presumed cleared when there was grazing in the area) adjacent to the fire trail.

Our group of bush walkers comprised people who are not only passionate about the Snowy Mountains and preserving its unique flora and fauna, but also people who are experienced and dedicated bush regenerators, bushcare trainers and environmentalists. The group decided that we would approach NPWS to see if they would support us in conducting a more thorough survey of pine density and, where practical, their removal by a yet to be determined technique. NPWS Tumut Office agreed and thus the story of the "pinebusters" began.

What we saw in 2006

Our knowledge of the extent and intensity of invasive pines in the Goobarragandra Wilderness Area in 2006 was effectively non-existent. However we were able to observe them in varying intensity in a number of environments comprising solitary pines in open grassy frost hollows, large solitary pines within the tree line, clumps of seedlings in damper soil areas with no host tree in sight and along the banks of the river and creeks. We also observed clusters of mature pines in open areas thought to have been cleared for grazing prior to the area being incorporated in the national park.

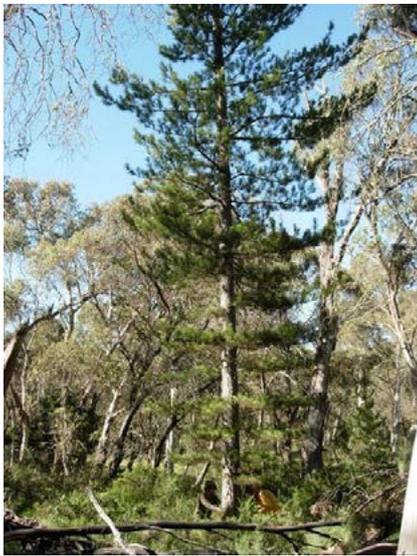


Above: Solitary pine in open grassy areas of Starvation Creek

Below: cluster of young seedlings in wetter areas

2006





Large pines above the tree line (left) and on the bank of the Yarrangobilly River (below) 2006



was also considered that there would be a risk that pine seeds would spread and invade the surrounding native forests and grasslands, which proved to be a well-founded concern as we have observed.

NPWS with State Forests began logging the plantation in the 1980s and commenced a rehabilitation program which includes revegetation with native shrubs and trees. The rehabilitation program includes soil ripping and hand planting of native seedlings as well as burning of pine debris and native seed broadcasting (source NPWS). We understand that this program is ongoing with activity being subject to funding considerations. Also ongoing will be the control of pine wildings by both NPWS and volunteers.

The experimental pine plantings included at least five species of pines (we do not have a full pine species list) including *Pinus ponderosa* (thought to comprise about 60% of the initial plantings), *Pinus laricio*, *Pinus contorta*, *Pinus radiata*, *Pinus jeffreyi* and *Pinus lambertiana*.

While identification of individual pine species in the field may be useful in our search for and treatment of pines, for example some species may be susceptible to ring-barking while others need treating with herbicide, we have now assumed that all should be treated with herbicide. We have also assumed that all species (and sub-species) have the same environmental impact, although in reality some may be more virulent in seeding than others and some species will favour certain soil and aspect conditions. However, we have noted that some species seem to be more common in some areas and some favour certain conditions. We have recorded where possible wilding density, height of trees and the number of pine needles on each pine. Further analysis of our data will be needed to see if any useful patterns emerge.

We do not question that the pine wildings, regardless of the species;

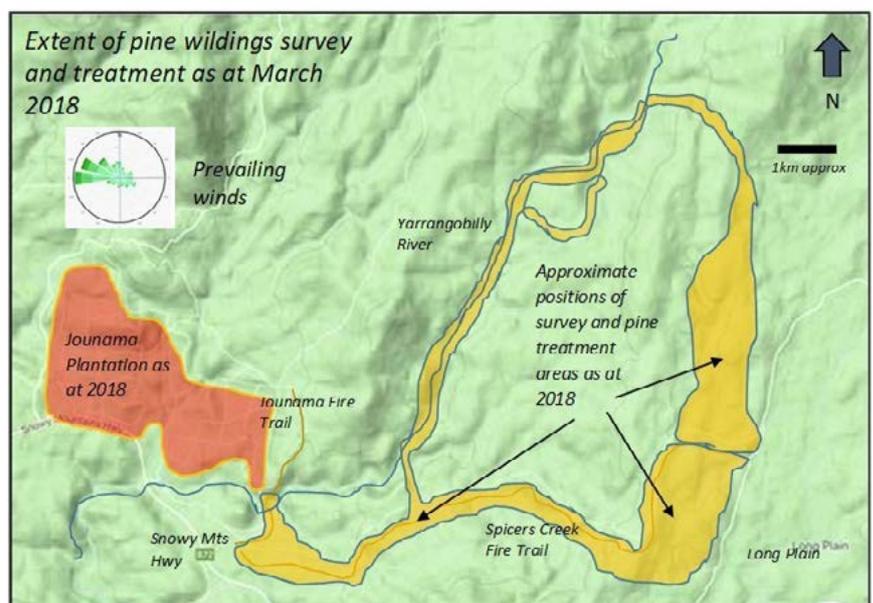
- disrupt ecological processes,
- dominate native vegetation strata,
- result in a loss of biodiversity,
- reduce reproductive and survival opportunities for native plants,
- and, if left untreated, will become potential sources for future seed dispersal by wind and probably birds.

The Jounama Pine Plantation

As we would discover, the primary source of invasive pine wildings in the Goobarragandra Wilderness Area is the Jounama Pine Plantation. This plantation lies to the west and southwest of the areas covered in our treatment area and is shown in the sketch below along with the area covered by the volunteers since 2008 (areas coloured in yellow). Also shown are the prevailing wind directions. Not all pines in these areas have been discovered and not all observed pines have been treated and no doubt more await discovery.

Land was set aside for the Jounama plantation in 1917 but planting of pines took place later, in the period 1923 to 1935. The plantation was established by the then NSW Forestry Commission as part of an experiment to determine which species of pine grew best in mountain conditions. When Kosciuszko State Park was declared in 1944 the Jounama Forest Reserve was included in the park but it was still managed by the Forestry Commission until 1967 when its management was handed to the national Parks and Wildlife Service (NPWS).

The 1982 Plan of Management for the Yarrangobilly area proposed to remove the plantation and restore the site because the plantation was considered inappropriate for the National Park and in particular the sensitive limestone environment of the Yarrangobilly area. It



Location sketch of the Jounama Pine Plantation and the area of pine survey and treatment by volunteers to date

Based on our observations it is apparent that mature pine wildings if permitted to grow to seeding age will become islands for seed dispersal providing a "leap-frog" mechanism for pines to spread. It is therefore important and desirable that these potential island seed banks be dealt with as soon as possible.

Restoration of the Jounama plantation will remove a primary seed source but there are other plantations not too far away on the western side of Blowering Dam which are a source of invasive wildings. There will be an ongoing need to manage this invasion.

The volunteers make a start in 2008



The 2008 volunteers

In January 2008 a group of 8 volunteers, most of whom had been on the 2006 bushwalk, met with a NPWS Ranger on the Spicers Creek Fire trail and planned our initial "pine busting" campaign. Our intention was to follow the route of our 2006 walk, heading up Starvation Creek and returning via Yarrangobilly River and the Spicers Creek Fire Trail. We had to carry in our backpacks camping gear, food for 5 nights and our tools. Our intention was to survey and eradicate as many pines as we were able to using light hand tools.

We carried hand saws, chisels and mallets and our standard "bush regen" tool kit. The objective was to cut down the smaller pines and ringbark the larger pines. Our advice at that time was that the pines could be killed if cut or ring-barked below the lowest branch on the main trunk. We did not carry herbicide.



Work in 2008

Left shows large pines in a spiky richia patch

The ring-barking of large pines with trunks commonly in excess of 20cm proved to be time consuming and physically demanding, particularly as some pines were protected by forests of spiky richia plants and in some cases blackberry or both.



Work in 2008 the painstaking ringbarking

Over a period of 5 days, in hot conditions, we were able to map and cut down or ring-bark approximately 550 pine trees over a period of 5 days. Although satisfied with our efforts we did not know at this stage if the methods we used had been completely effective, particularly the ringbarking.

The large pine on the left was subsequently felled by NPWS staff after our unsuccessful ringbarking. We subsequently treated some seedlings which had appeared around the dead trunk.

The first inspection in 2009

Volunteers returned to Starvation Creek in January 2009 to investigate the effectiveness of the 2008 campaign and to treat any wildings that we could see. It was satisfying to note that the pines we had cut down showed no sign of regrowth. Disappointingly however, the ring-barking appeared to be much less effective and many pines had survived with no obvious sign of distress. We also noticed that some of the trees which we had ring-barked had subsequently been cut down and we learnt later that NPWS staff and contractors had followed up our work in Starvation Creek and dispatched the trees we had unsuccessfully ring-barked by chain sawing them. There was no sign of regrowth on the cut down tree stumps although we were unsure if herbicide had been used and we did not know how much vital seed had been left around the stumps or if grazing animals had eaten off new shoots.

We have noted on occasion that isolated pines have been stripped of their bark at about the height that indicates by either horses or kangaroos, and in some cases this has killed the tree, particularly where the bark stripping has been extensive.

We were able to cut down approximately 10 pines which we had missed in 2008 and we had by then decided to abandon ring-barking as a treatment method.

Follow-up and new methods

In January 2016 the volunteers decided to do a follow-up of our 2008/09 work and we returned to the southern end of Starvation Creek and the eastern end of the Spicers Creek fire trail. We cut down 58 pines of various species. In Starvation Creek most were discovered by extending our search area further above the tree line while a smaller number appeared to be seedlings from the pines we had dealt with in 2008, or NPWS had dealt with subsequently, as they occurred in clusters around previously felled trees.



Pine cut down in 2008 showing no signs of re-sprouting or seedling growth in 2009.

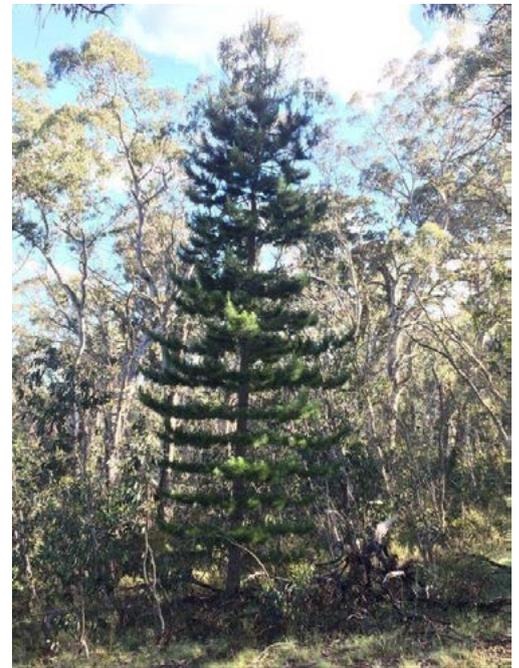


Pine seedling clusters around felled trees

It was clear that we had to remove any vital seed cones from the felled pines.

In 2008 we had dealt with a few obvious pines on our return along the Spicers Creek Fire Trail from the Yarrangobilly River but this time we had a more thorough search into the bush either side of the fire trail. We discovered numerous mature pines of varying species and as we had given up the use of ringbarking to treat the large mature trees and those we could not cut down with hand saws we commenced the drilling and glyphosate injection method.

We also decided to paint with herbicide all wildings we cut down, cutting as close to the base of the trunk as possible. Seeking



Drilled and injected pine showing browning over the top 1m.

out individual pines requires diligent observation and in some cases access is through steep and heavily wooded terrain. We therefore have decided that once we have located a pine we do not want to risk it re-sprouting given the effort in seeking it out and the chance it will be missed in the future.

The injection method and dosage

We used 50% (360g/l) glyphosate. Drill holes are angled down and across the trunk with the intention of getting as much of the mixture into the sapwood as possible and with minimum spillage. We applied the herbicide with spray bottles and "bushregen" applicator bottles.

We have found the spray bottles to be the most effective means of filling the drill holes in the quickest time, not wanting the holes to close over. Holes were topped up with herbicide after the first filling

Does the injecting of large pines work?

We had applied the drilling and injecting method to a number of large pines in January 2016. On subsequent inspection one and two years later we noticed that although the pines had browned at the crown (approximately 1m to 1.5m from the top) the pines appeared to be still vital in the lower part of the trunk. We are therefore uncertain at this stage about the efficacy of this method and we will continue to monitor the pines we have treated.



Pine wildings infestation adjacent to the Jounama Plantation being dealt with by NPWS

Venturing into new areas and improvements to our mapping techniques

Volunteers continued work in January 2017, January 2018 and March 2018 treating a combined 551 pines, mostly by cutting down and painting.

During this period we extended our search westwards towards the Jounama plantation where we discovered forests of pine wilding seedlings surrounding mature pines along the eastern boundary of the plantation. Dealing with these will be part of the restoration work being carried out by NPWS and we will concentrate our efforts in the areas where large machinery will not be able to go.

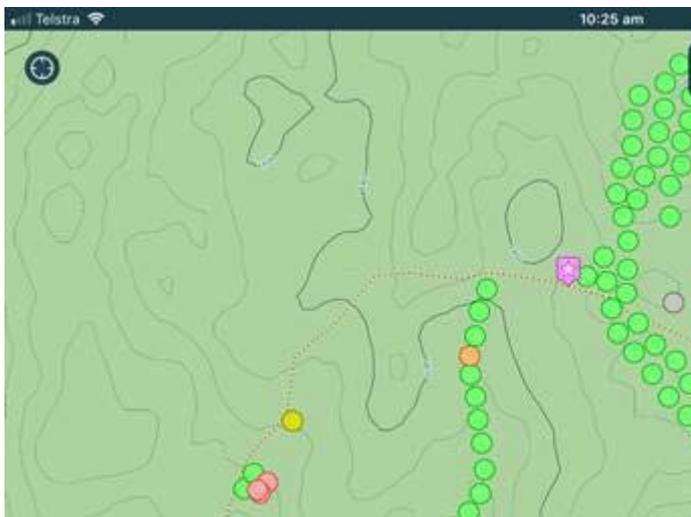
In the early stages of our work we had relied on plotting the location of treated and untreated pines on topographic maps. The process was time consuming and we had to rely on being able to estimate our positions from topographic contours and land marks.



Plotting treated pines on topographic maps

In January 2018 we were able to increase the accuracy in locating and recording of both treated and untreated pines (for future treatment) by using the "Pocket Earth" GPS based mapping app. Our intention is to be able to plot with map coordinates the location of pine wildings treated in our past and future activities which will hopefully help both NPWS and the

volunteers with future pine removal activities.



Screenshot of plots of treated and untreated pines and areas where pines are absent using Pocket Earth app

The statistics

Since 2008 the volunteers have treated a total of 1175 pine wildings, most being cut down. The total number of volunteer hours amounts to approximately 644.

The tools

Lightweight and portable tools are essential for volunteers to be able to access the pine wildings in the rugged and remote parts of Goobarragandra Wilderness Area, particularly away from the fire trail.



Light tools favoured by the pine busters

We have found hand saws to be effective in felling both small and large pines. The heaviest items are the drills but these can be carried in small day packs along with the herbicide. Hammer and chisel are also carried as backup when drill batteries are used up.

Why we do this

The Goobarragandra Wilderness Area like many parts of Kosciuszko National Park, is under threat from invasive feral animals and weeds including pine wildings. We believe it is worthwhile that volunteers continue to assist NPWS staff in their ongoing battle to deal with these threats.

We have not discussed in this article the obvious erosional impact of the numerous feral horses, pigs and rabbits on creeks and the landscape in general which we observed in 2006 and subsequently, or the presence of exotic blackberry plants which we observed in abundance in previously grazed areas and along the banks of the Yarrangobilly River. Suffice to say the NPWS staff are aware of the need to address these invasive threats to the Park but lack of funds and resources makes it a daunting task.

Work will be ongoing

Parts of the Goobarragandra Wilderness are very rugged and it will take many years of strategic searching to discover the full extent of the pine wildings infestation and many more to adequately follow up the treated areas.

Acknowledgements

We would like to acknowledge to staff of NPWS Tumut for their assistance and of course the hardy volunteers.

The Volunteers, April 2018



Left: A volunteer's camp site on the banks of the Yarrangobilly River
Right: the volunteers in 2018.

Photographs are by Nancy Pallin, Andrew Cox and Jane Gye.



NSW Biosecurity Act for Weed Management

Rod Ensbey, Invasive Species Officer
NSW Primary Industries

The *NSW Biosecurity Act* (2015) replaces the *NSW Noxious Weeds Act* (1993) and introduces changes to how weeds are managed.

The *NSW Biosecurity Act 2015* (the Act) commenced on the 1st of July 2017. The Act provides modern flexible tools and powers that allow effective, risk based management of biosecurity in NSW. It provides a streamlined statutory framework to protect the NSW environment, economy and community from the negative impacts of pest, diseases and weeds.

The broad objectives for biosecurity in NSW are to manage biosecurity risks by;

- preventing their entry into NSW
- quickly finding, containing and eradicating any new entries
- effectively minimising the impacts of those pests, diseases, weeds and contaminants that cannot be eradicated through robust management arrangements.

The *Biosecurity Act 2015* has repealed the *Noxious Weeds Act 1993*, and:

- embeds the principle of shared responsibility for biosecurity risks (including weeds) across government, community and industry
- applies equally to all land in the state, regardless of whether it is publically or privately owned
- is premised on the concept of risk, so that weed management investment and response is appropriate to the risk
- supports regional planning and management for weeds.

In keeping with its premise that biosecurity is a shared responsibility, the Act introduces the legally enforceable concept of a general biosecurity duty. All plants are regulated with a general biosecurity duty to prevent, eliminate or minimise any biosecurity risk they may pose. Any person who deals with any plant, who knows (or ought to know) of any biosecurity risk, has a duty to ensure the risk is prevented, eliminated or minimised, so far as is reasonably practicable.

Regulatory tools under the Act

The Act includes a number of regulatory tools that can be used to manage weeds in NSW. These include

- **Prohibited Matter** - these are high risk weeds that are generally not present in NSW, including Parthenium weed, Siam weed, frogbit and hawkweed;
- **Biosecurity Control Orders** - weeds that are present in low numbers and the target of an eradication program and include boneseed, tropical soda apple and Parkinsonia.
- **Biosecurity Zones** - aims at containment and specifies the measures that must be taken in a defined area to manage the weed. These weeds include bitou bush, alligator weed and water hyacinth.

- **Mandatory Measures** - requires parties to take specific actions with respect to weeds or carriers of weeds. These are defined in the regulations and include prohibition on certain dealings and include Weeds of National Significance.
- **General Biosecurity Duty.**

Implementation through Local Land Services and Local Authorities

Each of the 11 NSW Local Land Services (LLS) regions has formed Regional Weed Committees, made up of members from LLS, NSW Department of Primary Industries (DPI), Councils, NSW Farmers, NSW Office of Environment and Heritage/NSW National Parks and Wildlife Service, LandCare, conservation groups, and other agencies such as WaterNSW.

These Committees oversaw the development of **Regional Strategic Weed management Plans** (RSWMP - www.lls.nsw.gov.au/biosecurity/weed-control). The plans outline strategic actions to guide collaborative weed management, resource allocation and investment. They play an important role in articulating the shared responsibility principles and provide a list of regional priority weeds to inform stakeholders and landowners on how to discharge their general biosecurity duty. The regional priority weeds were selected based on the risk they pose to the environment, economy and/or community.

Local Control Authorities (usually Local Councils and County Councils) are responsible for enforcing the weed functions under the Act. This includes such activities as:

- the prevention, elimination, minimisation and management of the biosecurity risk posed or likely to be posed by weeds
- conducting weed inspections on public and private property and at high risk pathways and sites
- providing education, training and resources for both the public and staff in relation to weed management
- administering and ensuring compliance with any of the above regulatory tools
- responding to breaches of the Act, and
- notifying and reporting on weed activities to the Biosecurity Information System (BIS).

Information

The NSW DPI website contains the latest information on the Act, with definitions and explanations on the new terms and the implementation of the Act. The NSW WeedWise website also contains the State and regional priority weeds, descriptions, control options and their legal requirements, at www.dpi.nsw.gov.au/biosecurity/weeds. NSW

WeedWise can also be downloaded as an App for your smartphone.



For general weed inquiries and to report a weed issue contact your local Council Biosecurity/Weeds Officer.

For further information on the RSWMP and Regional Weed Committees, contact your Local Lands Services Office or visit their website; www.lls.nsw.gov.au, and follow the links to your region.

Freeze your ticks off!

Everyone visiting or living around Australia's eastern coastline should be aware of the dangers of ticks, both to themselves and their pets.

Symptoms of tick bites range from an annoying itch to severe life threatening anaphylaxis. They can inject toxins and pathogens that lead to debilitating diseases and allergies, for example, allergy to red meat and tick borne diseases.

But finding an effective way for treating ticks has been elusive.

Most people scratch or squeeze them out, which can exacerbate toxin release. Other removal methods, such as applying chemicals or burning or trying to suffocate them have also been discredited as ineffective and indeed dangerous.

So how do you safely get a tick out?

For some time, the use of agents to freeze and kill ticks, while still embedded in the skin by using sprays such as Wart-Off Freeze[®], has been suggested.

However, Peggy Douglass has come up with a tailored product to 'freeze your ticks off' – *Tick Tox*.

Peggy, who now lives in Canberra, was always interested in ticks and information about them. Having lived on the NSW south coast for many years, she spent time pulling ticks out of herself, kids and dogs. When visiting her aunt on the northern beaches in Sydney she found that even after covering herself in powerful



Quick facts

RRP for Tick Tox is \$19.95.

- One unit will kill 40 ticks (used as directed)
- Made in Australia
- No Use By date. Stops working when it runs out
- Minimal packaging.

Website: <https://ticktox.com.au/> Find your closest stockist

Contact Peggy: peggy@ticktox.com.au

Tick Tox is now distributed by Chemisell P/L: <http://www.chemisell.com.au/home.html>

Potential stockists should contact Chemisell

Useful research on freezing vs removal

In AABR Newsletter 134, the recommendations for tick removal talked about removal of ticks with tweezers. Freezing ticks off is another method which people use, but due to lack of research, health authorities shy away from officially recommending its usage. However, Dr Andy Ratchford, emergency director at Mona Vale hospital says that research on their patients showed that killing the tick by freezing when the tick was still embedded in the skin proved to be the best method.

For more on this story go to <http://www.tiara.org.au/manly-daily-article-world-first-method-to-remove-dangerous-ticks/>

insect repellent she would still come home with 20 ticks after a few minutes in the garden.

An ABC Catalyst program about ticks got Peggy thinking. Professor Sheryl Van Nunen (who first made the link between tick bites and allergy to red meat) was interviewed. Professor Van Nunen recommended freezing ticks with products designed to deal with warts or start engines. Peggy felt there must be something better as those products are meant to either burn your skin or come with oily goo to rev up a sick engine.

After identifying a gap in what was available, she put her science background to good use in developing a pocket-sized solution, 'Tick Tox'. It is a simple aerosol can the size of a small deodorant tube. It is easy to carry in backpack, easy to use and one can will deal with 40 ticks.

The process of translating a thought into a practical product was quite a ride for Peggy. "The idea was relatively simple with a few 'Must be.... An Australian made product; very effective; easy to use; pocket sized; minimal packaging. But working through the product development which included testing prototypes on ticks on cattle, the approval process, sorting out labelling and barcodes, finding an Australian manufacturer and setting up a website were challenges," she says. "Then, throw in the difficulties dealing with dangerous goods. So much to learn!"

After about three years effort, Peggy got Tick Tox to market in September 2017 and was overwhelmed by the response. Tick Tox is now stocked in chemists, first aid suppliers and rural / agricultural stores from Cairns to Eden.



Have you visited the regenTV website recently?

Fed up with watching cricket – stay in and settle down to binge watch *regenTV*

The relatively new and dynamic bush regeneration industry is now accumulating a body of knowledge hewn from decades of on-ground experiences. *RegenTV* is providing a vehicle to share this knowledge. The flurry of activity that accompanied the year 2 project report has provided some *regenTV* gems.

Throughout the second year of the three year Environmental Trust project, 17 professional videos have been produced from AABR's forums of 2016 and 2014 and field days and an index of 3rd party videos was created providing links to relevant presentations from conferences and field days. To date 39 videos have been produced with 11 planned for the final year. The videos can be viewed at <http://www.aabr.org.au/regentv/>

Educators who have been using the resources have commented that "they are relevant to industry and suited to different AQF levels, they are good case studies for students to see how CLM skills are practically applied in different environments and great for the students to reinforce what they learn in class/field."

Fact sheets and **Question & Answer** sheets have been developed that relate to the videos and the **National Restoration Standards**. Any one interested in broadening their understanding or ongoing professional development can download the learning resources. The newest resource is on **Scaling Up** which explores large-scale linkage partnership projects that provide corridors of connectivity for fauna and flora to migrate as a response to climate change and landscape fragmentation.

AABR Event late September

Trip to the Big Scrub in north east NSW.

AABR is collaborating with the Society for Ecological Restoration Australasia (SERA) and Big Scrub Landcare (BSL) on a very special field trip to northern NSW to look at the progress being made in rainforest restoration in the 'Big Scrub' landscape near Lismore.

You should have received an email asking you to register an Expression of Interest for a two-day pre-conference field trip as part of the SERA conference, *Striving for Restoration Excellence*.

Two concurrent Field Trips are being planned - with both groups joining together for the very special guided tour of Big Scrub restoration sites on the weekend of **22-23 Sept 2018**

- The first is a 2-day pre-conference field trip for the Society for Ecological Restoration (SERA) conference in Brisbane (Field trip dates - Sept 22-23), to join like-minded people for a weekend's guided field trip to key Big Scrub Rainforest sites.
- The second is a week-long bus trip from Sydney to Lismore and back (Sept 19-26), when participants will join a mini-bus on a fun-filled trip to Lismore, taking two days travelling each way (looking at key rainforest projects including Wingham Brush on the way up and Coffs Harbour on the way back). on Saturday and Sunday around some fantastic Big Scrub rainforest restoration sites.

[Click here to Register interest](#)

For further information please contact Tein at president@aabr.org.au



Planning for the final year of the project is already underway with four videos from NCC's 2015 Bushfire conference heading to the editing suite, a historical tour of Broken Hill's regeneration reserves being finalized and multiple field trips within the Big Scrub to be filmed.

What happens when the Environmental Trust funding runs out? AABR is looking to continue the project under a sponsorship model that will cover the costs of filming and producing industry relevant videos. We are also investigating aligning the learning resources with SER accreditation and broadening the reach of the videos through YouTube. If your business would like to enter into a sponsorship arrangement with AABR please let us know.

Latest Addition to regenTV

From Wasteland to Wetland... you've read the article (AABR News 135) now you can watch the mini series compiled from the field day. The four videos share the inspiring story of the Popes Glen Bushcare Group who against the odds successfully put a willow-infested silt flat on the recovery trajectory towards an EEC - Blue Mountains Peat Swamp on Sandstone. The videos in the series cover the topics of stormwater, weeds, revegetation and an overview of the project.

The stormwater that flows along the first kilometre of the urban streams requires energy and nutrient loads to be managed effectively to ensure the downstream integrity of the riparian systems can be maintained. The Bushcare Group, with the support of Council have explored and implemented a variety of highly successful soft-engineering strategies to dissipate flow and extract excessive nutrients from the site before the waters flows over Horseshoe Falls into the Blue Mountains National Park.

The Bushcare Group utilise strong monitoring regimes and the process of adaptive management to inform the treatment of Willows, Ranunculus groundcover and other weeds. By carefully observing the impact of their works they have become adept at reinforcing positive outcomes and considering the recovery trajectory of the site to ensure the best use of available resources.

The Group set up a vegetation trial to determine what plants would survive in the harsh conditions of the weed infested silt flat. Armed with a successful species list, funding was sought and thousands of plants planted. Bird surveys have informed the revegetation process with bird habitat thickets unintentionally created from weed willow debris. Building on this positive outcome the group replanted around the woody debris with ground to canopy entanglement as the habitat creating objective.

Restoring underwater forests. Ziggy Marzinelli shares the world of underwater kelp forest recovery. A 70km aquatic restoration project was designed to reinstate Sydney's *Phyllospora comosa* - Crayweed forests, a valuable recreational fishing asset as well as a key component of the kelp forest underwater ecosystem. Ziggy's project successfully reintroduced the missing ecosystem component and reinstated a self sustaining recovery trajectory for the Crayweed, which was locally lost in the 1980's due to poor water quality. This video details the experimental design and highlights the community engagement strategy that delivered positive underwater outcomes.

SERA
AUSTRALASIA



BRISBANE
September
25-28 2018

STRIVING FOR RESTORATION EXCELLENCE

University of Queensland, Brisbane, Australia

25 - 28 September 2018

The Society for Ecological Restoration Australasia (SERA) Conference 2018

STRIVING FOR RESTORATION EXCELLENCE

To be held at the University of Queensland, Brisbane, Australia 25-28 September 2018

SERA is a collaborative effort. If you are a scientist, practitioner, manager, policy maker, planner or someone who cares about our bush, seas and waterways you do not want to miss this conference.

The proposed themes for SERA 2018 are focused around four pillars:

- Principles & Practice – doing it right in restoration
- Biomes – rainforests, woodlands, grasslands, seagrasses and beyond
- Impact – making a change
- Specialist Disciplines – seed technologies, provenance, marine restoration and more

Visit the conference website for more information today! <https://www.sera2018.org/>

Call for Abstracts

Submissions for abstracts for oral and poster presentations at the SERA Brisbane 2018 conference is now open. The deadline for submissions is 1 May 2018.

The topics and guidelines for submissions can be found at <https://www.ivvy.com.au/event/AFOW89/abstracts.html>

12th Australasian Plant Conservation Conference (APCC12) 2018

11 - 15 November 2018, Canberra



APCC 12
12th Australasian Plant
Conservation Conference 2018

'Moving house - a new age for plant translocation and restoration'.

The Centre for Australian National Biodiversity Research (CANBR) at CSIRO, and the Australian Network for Plant Conservation are pleased to present the 12th Australasian Plant Conservation Conference (APCC12).

Join us for a week of exciting presentations, local field trips and a 1-day threatened plant translocation workshop!

APCC12 will bring conservation researchers and practitioners together to discuss the recent advances in species translocation across Australia. Species translocations have been an important conservation approach for more than two decades across Australia to save threatened species from extinction. With no foreseeable reduction in threats from climate change, urban and agricultural expansion and intensification, and invasive pests and diseases, translocations will be increasingly important into the future.

To coincide with the release of the third edition of the ANPC's Threatened Plant Translocation Guidelines, we will bring together a diverse range of the leading botanists, ecologists, land managers, and on-ground plant conservation workers from around Australia, from universities, government, consultancies, NRM groups and NGOs to discuss some of the latest scientific findings and practical outcomes for successful threatened plant translocations. The conference is a key event for plant conservation specialists and students to exchange ideas and make new contacts.



Australian Network for
Plant Conservation Inc.



Centre for Australian
National Biodiversity Research

Further Information on BR Event

Ecological Burning and Flame Weeders

Artarmon Reserve, Burra Road, Artarmon

Tuesday 8th May 2018. 10am- 12:30

This field trip will provide an opportunity to see and discuss a variety of burn strategies employed by Willoughby City Council's bushland team as well as gaining hands-on experience with a flame weeder.

The field trip will explore the outcomes of examples of ecological burns that have been conducted over the past 15 years at Artarmon Reserve.

The field trip will also include a hands-on flame weeder demonstration and discussion on their use including where they have been used successfully and unsuccessfully, the risk management associated with their use and a practical opportunity for hands-on.

Staff from Willoughby City Council will be hosting the tour with Bush Regeneration contractors present to share their expertise with their use of the flame weeder

This is an all weather field trip. Please dress for an outdoor experience including covered footwear, sun and/or rain protection.



More information

Ecological Burning- Reintroduction of appropriate fire regimes – One important approach by Willoughby City Council to the conservation management and restoration of the Cities bushland ecosystems.

<http://edocs.willoughby.nsw.gov.au/DocumentViewer.ashx?dsi=2251905>

AABR news # 96- Cooking with Weeds. 2007 AABR Field trip report

http://www.aabr.org.au/images/stories/resources/newsletters/AABR_News_96_Feb_2007_Low_res.pdf

Bush Regen Holiday Week at Korinderie NSW

August 6-10, 2018

Maybe this is the year you might get to this much-loved event when a dozen or so like-minded visitors join with locals to progressively remove lantana on the Korinderie Ridge property! In exchange – the Korinderie Ridge community provides delicious meals, bushland camp sites and opportunities for afternoon sightseeing or relaxing, followed by great food and campfire conversation.

The site is located near Evans Head in northern NSW and 2018 is the 15th year that the Korinderie Ridge community is hosting its 'bush regen week'. The event is part of the community's efforts to conserve the ecosystems on this 200 ha property – as lantana is a serious threat to the integrity of the extensive spotted-gum/ironbark forest of the ranges adjoining Bundjalung National Park.

The property and surrounding precinct is one of the more intact areas of Ironbark-Spotted Gum forest and associated ecosystems on the east coast. The forest is home to the Threatened brush-tailed phascogale and squirrel glider, along with hundreds of other animal and plant species. The combined effort of community members and volunteers has completed the majority of the primary work at Korinderie sites over the last 14 years, so



much of the work is now follow up – although some primary work is still needed along a couple of more remote creeks.

We usually get many returnees – but do really love to welcome people who have never been before! Anyone interested in booking or receiving further written information, please phone Tein or Graeme on 02 6682 2885 or email teinm@ozemail.com.au – and check out <http://korinderie.org.au/environment/regenad/past-years-regen-weeks/> for updated gallery of photos of past years' events.

Vale Noel Rosten

Sadly Noel Rosten, a dedicated and tireless bush regenerator and campaigner for the bush, was killed in February when a car ran off the road and hit Noel while he was in his beautiful award-winning native garden on Berowra Waters Road, Berowra (Sydney).



Noel and his wife Rae received an AABR award as Pioneer Bush Regenerators in 2016. The photo below of Noel was taken at the lunch for Pioneer Regenerators on 6 March last year.

Noel worked in at least 3 Bushcare groups around Berowra and Hornsby, but spent endless other hours growing, planting and caring for public areas, otherwise ugly carparks or behind shops, with patches of bush. He was a very active member of the Australian Plants Society and helped find plants to add to Hornsby's online herbarium. Clean up Australia Day was one of his many other active interests. He was 85.

AABR expresses deepest sympathy to Rae and the family. How grateful we are for all Noel's dedication to caring for our natural heritage.

What's happening

**Wednesday 16th and
Thursday 17th May 2018**

Conservation in Action Conference

This conference is being organised as a partnership between Central Tablelands Local Land Services, Central Tablelands Landcare and Central West Councils Environment & Waterways Alliance. It will be held in the vibrant regional city of Bathurst in the Central Tablelands of New South Wales.

The conference program boasts a full two days of presentations from leaders in their respective fields. Sessions will pull together research findings through to case studies and will demonstrate all of the policies, programs and plans in between that enable environmental practitioners to implement best management practice on the ground. Learn about the latest threatened species recovery work and research while networking with some of the leaders in managing our native flora and fauna.

WHERE: Bathurst Memorial Entertainment Centre (BMEC)

More information: <http://www.cwcewa.com.au/conservation-in-action-2018>

Friends of Grasslands

For a whole swag of interesting events, check out the FoG calendar.

Friends of Grasslands is a community group dedicated to the conservation of natural temperate grassy ecosystems in south-eastern Australia. FoG advocates, educates and advises on matters to do with the conservation of grassy ecosystems, and carries out surveys and other on-ground work. FoG is based in Canberra and holds a number of events and activities

www.fog.org.au/

**Sunday 9th to Wednesday
12th September 2018**

21st Australasian Weeds Conference

The Weed Society of New South Wales Inc., on behalf of the Council of Australasian Weed Societies Inc., will be hosting the 21st Australasian Weeds Conference in the popular Sydney beach side suburb of Manly from 9 - 12 September 2018.

The conference will bring the weed management community together to discuss new developments and share information about cutting-edge and best weed management practices.

Delegates listen and participate in presentations and field trips on a variety of topics including;

- New technologies in weed management.
- Biological, mechanical, and chemical weed control and research.
- Herbicide resistance.
- Weeds of crops and pastures.
- Environmental weeds and Weeds of National Significance.

Registrations are now open

WHERE: Novotel Sydney Manly Pacific
NSW Australia

More information: www.21awc.org.au



**Tuesday 25th - Friday 28th
September 2018**

The Society for Ecological Restoration Australasia (SERA) Conference 2018

STRIVING FOR RESTORATION EXCELLENCE

See Page 14

Registration opens 14th May 2018

WHERE: University of Queensland, Brisbane, Australia

For more details: <https://www.sera2018.org/>

**Monday 12th November -
Friday 16th November 2018**

12th Australasian Plant Conservation Conference (APCC12) 2018

The ANPC is delighted to announce that APCC12 will be hosted by the Centre for Australian National Biodiversity Research (CANBR) at CSIRO, and will be held at CSIRO Discovery at the Black Mountain Science and Innovation Park, Canberra.

See Page 14.

More details on APCC12 will be provided in the near future, so stay tuned!

ANPC members receive discounts on the conference registration fees!

<http://www.anpc.asn.au/conferences/2018>



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Committee members

Scott Meier, Ben Ford, Matthew Pearson, Agata Mitchell.

The Australian Association of Bush

Regenerators Inc (AABR) was incorporated in NSW in 1986, and has several hundred members from all over Australia. AABR is pronounced 'arbor'.

Our aim is to promote the study and practice of ecological restoration, and encourage effective management of natural areas.

All interested people and organisations are welcome to join. AABR members include bush regeneration professionals, volunteers, natural area managers, landowners, policy makers, contractors, consultants, nursery people, local, state and commonwealth government officers—and lots of people who just love the bush and want to see it conserved.

AABR also offers accreditation for experienced practitioners.

AABR News is usually published in January, April, July, and November.

Membership fees

Individuals	\$30 (unwaged \$15)
Organisations (<i>does not confer membership to individuals in the organisation</i>)	
• business (< 5 staff)	\$120
• business (5-20 staff)	\$300
• business (> 20 staff)	\$480
Government	\$60
Not for profit	\$30 (or \$0 with newsletter exchange)

Benefits of Membership:

- discount admission to all AABR events
- four newsletters per year
- increased job opportunities
- discount subscription to the journal Ecological Management & Restoration
- opportunities to network with others involved in natural area restoration
- helping AABR to be a strong and effective force to promote natural area restoration, and support the industry.

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Newsletter contributions and comments are welcome

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Opinions expressed in this newsletter are not necessarily those of AABR