No 149
September
2021

AABR NEWS

Australian Association of Bush Regenerators

working with natural processes

AABR AGM in December Advance Notice

New AABR Video

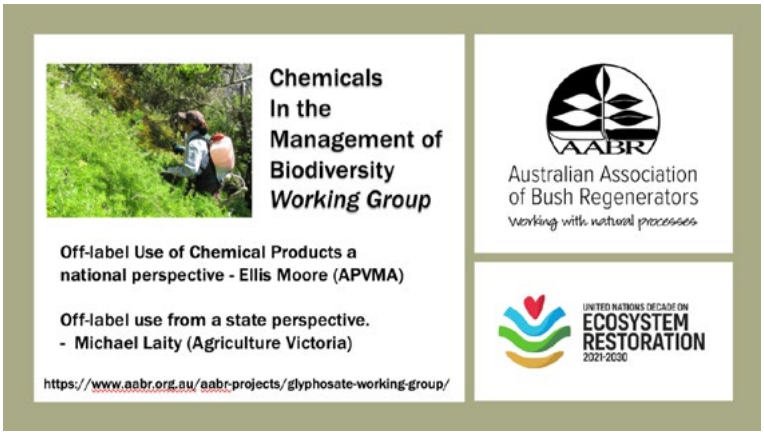
Off-label use of chemical products – a national and state perspective

Presentations delivered at 21/7/21 meeting
of the the AABR CIMB Working Group

(AABR's Chemicals In the Management of Biodiversity (CIMB) Working Group (formerly the Glyphosate Working group)

For further information on the working group and the talk see article page 10.

Access the video via the CMIB webpage **or on** youtube



President's Perspective

Getting Back Out In The Bush

Many of our Victorian, ACTorian (Actuaries???) and New South Welsh members, both paid and unpaid bush regenerators, are currently in lock down. In addition to all the social, health and economic impacts so well covered in the media, lockdowns are having impacts on the bush and bush regenerators. Project sites are going backwards, with weeds taking the advantage of the good seasons in many areas to reestablish, and in the highly casualised workforce that is professional bush regeneration, many workers are impacted by little or no work. For many members, bush regeneration plays an important part of their social life and mental wellbeing, and lockdowns are preventing people getting together with their friends, colleagues and peers. I hope that with vaccination rates getting to the point where more and more of the restrictions can be lifted, that all of you currently not able to get out in the bush can start regenerating again. AABR has recently updated its guidance on COVID safe bush regeneration and this can be found at https://www.aabr.org.au/coronavirus-statement/.

Government Priorities

The Australian Government has shown, with its responses to the COVID19 pandemic, that while it has many priorities, and in many cases has put in place highly researched, evidence based, rapid and impactful interventions, the environment is not a priority.

As of May 2021, the total Australian Government spend on economic support in response to COVID19 was $290bn. This included a number of $billion plus subsidies to certain industries such as agriculture and tourism as well as over $70bn to Jobkeeper.

The 2021 Federal Budget showed another reduction in biodiversity spending; funding has fallen by 28% since 2013 and forward estimates show that over the next 3 years, biodiversity funding will be reduced to half of what it was in 2013.

It is my opinion that the Australian Government has missed a significant opportunity to use its current willingness to generate debt to deliver funding and programs that could not only reverse environmental degradation and species decline, but would also create new regional job opportunities and reinforce and sustain the natural capital that our agricultural and tourism sectors rely on and that keep our cities provided with clean air and clean water. The government allocated $130bn to Jobkeeper and only spent $70bn (only!!). Even if 10% of that underspend was allocated to ecological and environmental restoration, all Australian industries and all Australians would benefit.

See the article on Page 14 detailing research on costs of restoration in Australia.

Much work has already been done by a consortium led by the Pew Charitable Trusts and includes AABR, but the robust arguments, supported by defensible data were not enough to sway our elected representatives to action.

Opportunities with AABR

We are currently seeking interest from members (and even interested non members!) to get involved with working groups that hope to drive better outcomes for the bush and for AABR members. No matter what your passion, there is either a currently operating group, one planned but yet to start, or an opportunity to approach the board to start a group. Currently we are seeking members in our Education and Training, Member Benefits, Chemicals in Biodiversity Management (see Page 10), and Reconstruction Guidance (see page 3) working groups. If you are keen, give me a hoy. by emailing me - president@aabr.org.au .

Peter Dixon

AABR President

Welcome to new AABR Members

Alice Bendeich
Ash Folster
Ashley Stephenson
Audrey Favret
Christine Charles
Felipe Moretto
Geoffrey Dawson
Gillian Scott
Hannah Glasson
Helen Armitage
Holly Nettle
Ian Sinclair
Jacob Carr
Julie Edwards
Matthew Preston
Michael Derrick
Myles Holloway
Nico Wayland
Phoebe Smith
Samuel Dryden
Sarah Cameron
Scott Franks
Yota Harada

Organisation
The Friends of The Schoolmasters House Inc.
Allendale Landcare Group

Business
Future Construct Services Group Pty Ltd
Great Gardens

Congratulations on Accreditation
Alaine Pollard

Have you renewed you AABR membership ?

Wow! Great work. Thanks to the large number of people who have renewed their membership so promptly.

Our membership year is from July to June. By now AABR members should have received the renewal notice, and possibly even a reminder. Of course sometimes these things go into the 'spam' box, so you might check there.

This year the $$ will be spent on the regular things which AABR does such as producing a newsletter, maintaining a website, providing a bush jobs service, an accreditation program and support services so the board, committees and working groups can grow the awareness of the bush regeneration sector, promote best practice in ecological restoration, participate in exploring industry issues, and advocate for education.

In this newsletter there are details of specific projects and working groups through which AABR can focus on particular aspects which will allow bush regeneration staff, contractors and volunteers to be experts in this field.

Formulating Guidelines for Ecological Reconstruction

Would you like to be part of this?

AABR began discussing the formulation of a reconstruction accreditation around 2014 and the idea has been on the back burner since then. It is a big undertaking, and more so given the current workload of running the restoration accreditation. Accepting that it will not be possible to design and implement such an accreditation system for some time, we all know of reconstruction projects which could have been more successful if some basic guidelines or standards were available and followed.

AABR Victoria has put its hand up to lead the Reconstruction Working Group to develop reconstruction guidance materials, given the amount of experience we have had working on severely degraded land.

The discussion within AABR so far has led to a proposal that the project needs to be carried out in stages and bite sized chunks, given the potential size of the program and the amount of resources that can be put to it. The first stage will be the formulation of a set of guidelines for the different categories of ecological reconstruction to assist the different players and improve the quality of project outcomes.

Discussions have also included the vexatious question of what is included in our definition of reconstruction. As soon as you add the word partial a Pandora's Box is opened, giving a spectrum of projects, from planting local native trees in paddocks to landscaping with indigenous plants, to complete restoration of small patches of degraded land within a larger remnant area. As usual, bringing fauna into the equation adds another level of complexity. Project objectives are obviously a critical consideration.

A primary issue that arises in any discussion about reconstruction is how decisions are made to allocate and prioritise funds and resources, and why these are often applied to planting projects rather than regenerating precious, irreplaceable remnants. While this is an important topic, the decisions involved take place at a stage before reconstruction commences so it needs to be taken as a separate issue.

Another issue at a higher level which has been raised is the amount of landscape planning, at least in the urban context, which does not take biodiversity into consideration. There is an opportunity with the raised awareness of biodiversity, for AABR to have a higher profile in influencing the planning realm. We need to be knocking on the door of the unconverted!

We are encouraging AABR members and other interested parties to join in this working group and help to frame the program, identify priorities and opportunities and to develop the guidance materials. Early projects identified include a consultation with practitioners to develop case studies and find common lessons learnt as well as reviewing existing materials and information.

If you would like to become involved with this working group, please contact Rob Scott **robscott@naturelinks.com.au** .

ESA AFFILIATE MEMBERSHIP

ECOLOGICAL SOCIETY OF AUSTRALIA
ESA

The Ecological Society of Australia (ESA) offers affiliate membership to current members of designated partner organisations of which AABR is one. Under this arrangement ESA offers full member benefits for a reduced rate of $60 per year. Access for this is through the webpage **https://www.ecolsoc.org.au/affiliate-membership/**

Affiliate membership entitlements include:

- online access to ***Ecological Management and Restoration*** via Wiley Online Library (Note the annual subscription without this offer is $110)
- online access to ***Austral Ecology*** via Wiley Online Library
- conference registration at membership rates (including day registrations), access to the practitioner symposium and field trips throughout the conference, cutting edge research presentations, workshops, and networking opportunities
- quarterly ***Bulletin*** – and option to contribute
- Weekly e-news to your inbox
- ***Hot Topics*** presenting the science behind current topical debates

For more information: www.ecolsoc.org.au/affiliate-membership

- ***Opportunities to get involved*** through nomination for the Board, Working Group, LOC membership or representation on scientific committees
- ***Research chapter networks*** to keep in contact with colleagues working in a similar field
- eligibility for the ***Ecological Impact Award***, which recognises the value of researcher and practitioner partnerships as well as eligibility for an expanding range of member only ***prizes, research grants and travel grants.***

Applicants for affiliate membership must provide a current membership number of AABR when applying through the webpage which has all the information needed and contact email https://www.ecolsoc.org.au/affiliate-membership/ .

For AABR Members use the number of your current membership paid invoice. If you need this information please contact Suzanne at accounts@aabr.org.au .

"AABR acknowledges Australian Aboriginal and Torres Strait Islander peoples as the First Nations of this continent and recognises their custodianship and continuing connection to its land, waters and community.

We pay our respects to the Elders past and present and future, for they hold the memories, traditions, culture and hopes of Indigenous peoples across the nation."

A **sample issue of** – *Ecological Management & Restoration* - EMR (Volume 22, Issue 1 2021) - is available as open access for a short while. This issue is accessible at https://onlinelibrary.wiley.com/toc/14428903/2021/22/1

The Skyline Tier Project

This project near Scamander in north east Tasmania was the winner of The Society for Ecological Restoration Australasia (SERA) award for excellence in ecological restoration (over 50 ha category).

Todd Dudley

North East Bioregional Network, Tasmania

I first became aware of how long native plant species seed could remain viable in the soil seedbank when I was working on my first bush regeneration project back in the mid 1980s on the northern beaches of Sydney. The site was being managed by the National Trust and was referred to as Dee Why Headland (but was more accurately at the end of North Curl Curl). I should briefly note here my thanks to the recently deceased Toni McKay (the National Trust Supervisor) who gave me much support and encouragement at the time. I was working for Warringah Council but was able to arrange to work with her team.

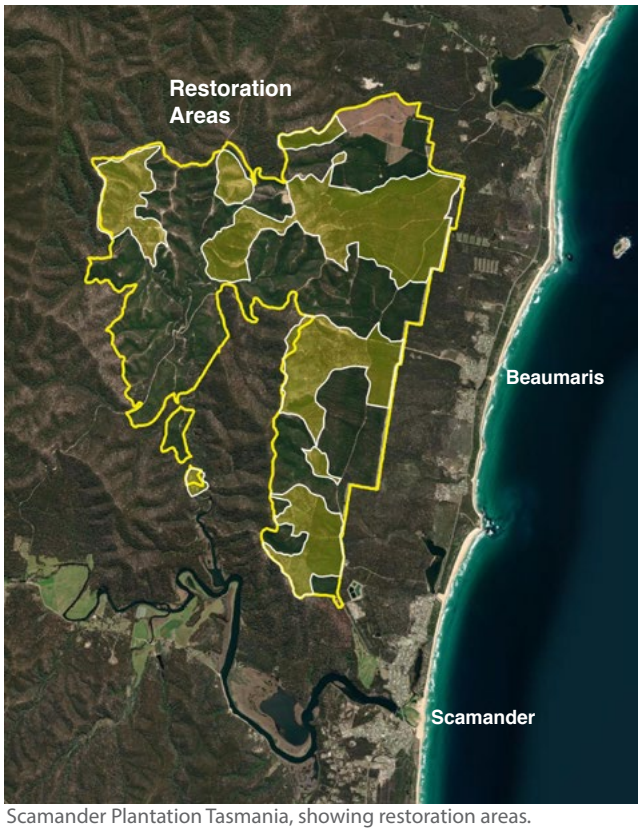
The vegetation in the reserve (growing on sandstone) was dominated by *Melaleuca nodosa* and *Leptospermum laevigatum* with little understorey diversity and had not been burnt for well over 50 years. Not long after starting work there, a wildfire, thought to have been started by local kids, swept through the reserve. Over the following year well over 100 species of native plants regenerated. I have since visited the site twice - once about six years ago where the previous dominant species had re-established themselves, and earlier this year (2021) where another (I am probably guessing) ecological burn has once again allowed understorey to regenerate.

Pink flannel flowers post fire
Photo: Tourism Australia

Earlier this year I visited the Blue Mountains west of Sydney for a Great Eastern Ranges get together and managed to see the tail end of the flowering of the rarely seen pink flannel flower (*Actinotus forsythii*). The flowers are bushfire ephemerals and their seeds only germinate after fire and subsequent sufficient rainfall, with smoke triggering the process. This is another example of the amazing longevity of native plant seedbanks being germinated by relatively hot fires.

The point of these anecdotes is that it very early on demonstrated to me the resilience of native seed banks. It also provided me with an often repeated observation that I have made since, in relation to fires in heathlands and woodlands and dry sclerophyll forests with diverse understoreys, which is that occasional relatively hot fires generally result in good understorey regeneration in such ecosystems (noting my observations are limited to Hawkesbury Sandstone country in NSW and in NE Tasmania).

Workcrew when the project was funded by a Biodiversity Fund grant through Environment Tasmania. 2013 -16



Scamander Plantation Tasmania, showing restoration areas.

The project

Having seen the results of fire was of great value when in the early 2000s I inspected a clear felled radiata pine plantation in NE Tasmania near Scamander. The site had also been partially burnt in a recent wildfire and the result was that a number of native species had germinated including the most common local eucalypt *Eucalyptus sieberi*. Armed with this observation, I approached the forest land managers (Rayonier) with a proposal to consider restoring the plantation back to native forest post harvesting, in cooperation with our group North East Bioregional Network. This was initially rejected but after 4 years of lobbying and negotiation it was agreed in 2007 that a 40 ha trial site would be established to test the feasibility of restoration. I should add at this juncture that the plantation was established in the late 1960s through to early 1970s by clearing native forest as part of a nationwide Federal Government program to establish radiata pine plantations, but never achieved quality growth.

The trial site was hand weeded (hand pulling and cut and painting pine wildlings amongst native forest regeneration) by North East Bioregional Network volunteers with excellent results. After this initial success, New Forests/Timberlands Pacific (replacing Rayonier) agreed to an increasing number of areas to be allocated for native forest restoration with around 700ha of plantation now in various stages of restoration.

The top photo on the right shows early work on the pine plantation. The area has been harvested and had an ecological burn.

The photo below shows the same area seven years later. There is regeneration of the native forest and follow-up has included some weeding and direct seeding

Above: June 2014 Before. Note growth of pines on roadside.
Photos: Dan Donadson

Above: A year later after removal of pines

The occurrence of three wildfires within the plantation area (two accidental and one by arson) between 2004 and 2010, in each instance led to the significant recruitment of the native seedbank leading to the forest company initiating a number of relatively hot ecological burns as part of the restoration strategy. These hot burns had multiple benefits including germinating the latent native seedbank in the soil, killing many of the pine wildlings that regrew post harvesting of the mature pines, and a considerable reduction in the amount of follow up weeding of the restoration sites.

Fundamentally the key activities in the forest restoration program are removal of mature pines followed by ecological burns (and direct seeding with local provenance eucalypts in some cases) and then further follow up weeding, consisting mostly of any remaining or regrowing pine wildlings. While this was the preferred methodology, not all the regeneration sites were burnt and these sites required more follow up effort than the burnt areas. In some cases, chainsaw contractors were used to cut larger pine trees where there was the odd pine in amongst a copse of native trees. A planation harvesting machine known as a feller buncher was also used to selectively cut down and windrow pines that were growing in amongst good areas of 30 plus year old native forest regrowth. As far as we know it was the first time in Tasmania that feller bunchers had been used for the purpose of native forest restoration rather than timber harvesting.

Above: The pine plantation has been harvested and burnt.

Above: The same area seven years later with the regenerating native forest

From the beginning our goal was to regenerate a reference standard ecosystem, and most of the regeneration sites worked on have a good diversity of plant species including grasses, sedges, orchids, climbers, shrubs and small and larger trees.

The factors that made such an aspiration doable included the still viable native seedbank in the soil; the site not suffering from any other disturbances apart from the one off conversion; the landscape context being surrounded by native forests in good ecological condition; lack of other invasive weeds (noting that any environmental weeds detected on site are dealt with rapidly); and the whole upper and middle catchments lying within the one site so not subject to issues such as urban or agricultural run off.

Flora and Fauna on the site

The most common forest type in the regenerating areas is *Eucalyptus sieberi* followed by some *Eucalyptus obliqua* forest. Two threatened forest communities are present - *Eucalytus globulus* and *Eucalyptus ovata* forest. Four other eucalypt species are present as sub dominants being *Eucalyptus tenuiramis, E.viminalis, E.amygdalina* and *E.brookeriana*. Smaller trees include black sheoak *Allocasuarina littoralis*, silver wattle *Acacia dealbata*, blackwood *Acacia melanoxylon*, prickly box *Bursaria spinosa,* and native cherry *Exocarpus cupressifomis*. Understorey species include a number of acacias - *Acacia terminalis, A.stricta, A.verticillata, A.myrtifolia, A.suaveolens, A.sophorae, A.mucronata, A.genistifolia, A.leprosa* var. *graveolens* sspp.; riceflowers *Pimelea linifolia, P.humilis*; common heath *Epacris impressa*; bushpeas - *Pultenaea daphnoides, P.gunnii, P.juniperina*; glandular pinkbells *Tetratheca labillardierei*; dogwoods *Pomaderris elliptica, P.apetala, P.aspera*; tea trees *Leptospermum scoparium, L.lanigerum*; guinea flowers *Hibbertia calycina, H.riparia, H.empetrifolia*; daisy bushes *Olearia lirata, O.argophylla, O.myrsinoides, O.ramulosa, O.viscosa* as well as a range of orchids, ferns, grasses and sedges.

The restored forests provide habitat for a variety of common and threatened fauna species. Some of the threatened fauna benefiting from suitable habitat being regenerated include giant velvet worm *Tasmanipatus barretti*, moist east and south facing gullies with rotting logs; swift parrot *Lathamnus discolor*, nectar from flowering *E.globulus and E.ovata*; eastern quoll *Daysurus viverrinus*, forest mosaics; spotted-tailed quoll *Daysurus maculatus maculatus*, wetter forest types such as *E.obliqua*; green and gold frog *Litoria raniformis* freshwater bodies within the restored areas; New Holland mouse *Pseudomys novae-hollandiae*, regenerating forest with heathy understorey; chaostola skipper butterfly *Antipodia chaostola* presence of significant patches of thatch saw-sedge *Gahnia radula* which provides food and breeding habitat

Other values

Some of the key landscape scale values of the project include:

- enhanced connectivity and habitat availability across the landscape.
- improved riparian and aquatic habitat, and an opportunity to restore whole catchments.
- important refugia for organisms against climate change impacts in moist south and east facing gullies and multiple habitat niches becoming more available over time.
- improvement of water quality and reduction of erosion potential.
- protection of scenic values.

Projects such as Skyline Tier can:

- encourage educational institutions to acknowledge and give greater priority to environmental education;
- change people's attitude to conservation work and accept it as a job that requires considerable expertise;
- lead to more mainstream support for conservation

including protection, better management and restoration of ecosystems;

- be of particular benefit to rural communities in terms of employment and refocusing economic priorities;
- potentially attract more conservation minded people to live in rural areas to work in the conservation field. The outdoor /practical demographic that live in rural communities are a perfect fit for restoration (unlike some economic transitions proposed e.g., Information Technology or Tourism industries). It is labour intensive and there is little likelihood of these jobs ever being made redundant due to machinery (which has occurred with other rural industries);
- result in increased awareness and understanding of ecology from people working in direct contact with nature and receiving training; and
- foster broad community support and as such can act as a unifying activity in communities polarised by the conservation vs. development debate.

The future

As with most longer term ecological restoration projects securing and maintaining reliable and adequate funding to keep the required level of restoration effort going has been very challenging. Despite this significant barrier to the success and ongoing viability of many projects, we have managed to keep a presence on the ground at Skyline Tier for all but around a total of 12 months (spread out over a few two or three month absences) since 2007.

From 2006 to 2012 the project relied primarily on volunteers and Work For The Dole and Community Work Order participants. From 2013 onwards much of the work has involved funded positions as a result of government grants and private organisation involvement including Green Army projects, Landcare and Biodiversity Fund grants and support from organisations such as Highways and Byways, although Work For the Dole programs continued to be an important contributor to on ground work getting done. Despite demonstrating the ability to achieve high quality restoration at scale, the struggle for long term reliable funding continues to be a problem and one that has been a constant source of frustration for the entire time I have been involved in doing ecological restoration/bush regeneration: some nearly 40 years now!!

Partners

The organisations that have participated in the project include EcoHealth Network, Highways and Byways, University of Tasmania (School of Rural Health and also UTAS Landcare group), Forestry Tasmania, The Wilderness Society, Timberlands Pacific/ New Forests, Environment Tasmania, Break O'Day Council, The Scamander and Beaumaris Community Development Association, NRM North, Landcare Tasmania, Greening Australia, Mersey NRM, Conservation Volunteers Australia, International Student Volunteers, St Helens District High School, St Marys District High School, St Helens Sea Scouts and many other volunteers

Additional Information

As part of the Skyline Tier project a number of reports have been produced which include information on restoration methodology, monitoring the progress of regeneration, listing flora and fauna species present, calculating carbon sequestration, identifying plantation restoration opportunities across Tasmania and identifying some of the social and economic benefits of conducting ecological restoration programs in rural and remote communities.

These reports are all available on our website www.nebn.org.au

Download the Economic Report ; Native Restoration of Scamander Pine Plantation and NEBN Plantation Restoration

Our website also includes a number of other reports which provide a broader context in which the Skyline Tier project is situated. The East Coast Corridor Conservation Report seeks to maintain and restore landscape connectivity on the east coast of Tasmania. The Land Use Plan is a conservation action plan primarily covering the Break O'Day municipality. The Break O'Day Priority Habitat Mapping Project Report identifies important habitat values and provides a recommended overlay to inform local biodiversity planning priorities including landscape connectivity. The Constable Creek - Loila Tier Reserve proposal identifies land surrounding the Skyline Tier project as being high quality dry sclerophyll forest and the Linking Landscape project prioritised public native forest for protection to improve protected area resilience and viability in the region. The East Coast Conservation Corridor Endowment Fund booklet provides the foundations of moving towards a more ecologically literate society.

All of these documents interact synergistically with the Skyline Tier project as part of a long term holistic cross tenure plan and vision for the east coast of Tasmania developed by the North East Bioregional Network over the last 20 years.

In recent years more work has been focused on evaluating the social and economic benefits of ecological restoration activities in order to demonstrate the multi-faceted benefits that well planned projects can bring to communities. To that end NEBN has become involved with the international organisation EcoHealth Network to be part of a movement linking restoration with health and wellbeing benefits https://ecohealthglobal.org/network-sites/north-east-bioregional-network/. In addition NEBN is currently partnering with the University of Tasmania in a research program entitled "Evaluating impacts of ecological restoration on human health and wellbeing: a qualitative demonstration study".

Watch the project video via the ecohealth network link.

NEBN recenty won a Tasmanian Timber Award for excellence in Environmental Management.

Photos: Todd Dudley unless otherwise indicated.

An article on the Skyline Tier will be published in the September Issue of the journal *Ecological Management & Restoration*.

Regenerating Bush *Xanthorrhoea australis,* and flowering Tasmanian Waxflower *Philotheca virgata* in the foreground and ironbark *Eucalyptus sieberi* in the background.

The North East Bioregional Network is a not for profit community based nature conservation organisation which aims to protect, maintain and restore nature on the east coast of Tasmania through a range of activities. Website https://www.nebn.org.au/

Time for Change in Bush Regen Contracting?

A Critique of the Eight Hour Day 'Onsite' for Bush Regenerators in Local Government Natural Areas Contracts SE QLD

Spencer Shaw
Brush Turkey Enterprises

Over the last 20 years in SE QLD, local councils have been the major drivers of ecological restoration through the acquisition of natural areas, the formalisation of restoration practices (SE QLD Ecological Restoration Framework) and the implementation of assisted natural regeneration works requiring the services of employed bush regenerators to undertake those services.

Primarily councils address their requirement for bush regeneration services through the tendering of contracts to be delivered by bush regeneration service contractors who in-turn employ skilled staff to deliver the services outlined in the contracts.

Until 2017 Brush Turkey Contracting was the arm of Brush Turkey Enterprises which undertook our contracting services. Brush Turkey Contracting was a primary ecological restoration contractor supplying bush regeneration services for natural areas / environmental weed management contracts for both Moreton Bay Regional Council (over 10 years) and Sunshine Coast Regional Council (over 12 years). Through our business model we adopted a range of strategies to develop high skill levels in our team and long-term staff retention, including full-time and part-time positions for regular staff; above award pay and conditions including 1 day per month professional development workshops, a 9-day fortnight for full-time positions and an additional wet day allowance of up to 6 days per year; education, training and ongoing professional development; and a focus on industry development through partnerships and networking with our clients and other ecological restoration businesses and community groups.

Our team met at our depot before travelling to site, working onsite for the day, and then returning to our depot. An 8-hour day in-total of work time, e.g., start 7am finish 3.30pm (with ½ hour unpaid time for lunch). In addition to the onground bush regeneration services, we also incorporated time at the depot for equipment maintenance, project management (e.g., database record keeping, GIS mapping of sites, ongoing flora surveys of sites, assessment of sites and their ongoing restoration), weekly team meetings and ongoing professional development. For nearly 10 years, I believe, Brush Turkey Contracting services set a high standard in ecological restoration in the region we operated in and beyond, with a high degree of client satisfaction as evidenced by an ever-growing project portfolio.

However, between 2015-2017 during the tendering processes for contracts, firstly Sunshine Coast Council and then Moreton Bay Regional Council, adopted a key-criteria in the contracts that ended our ability to deliver high quality ecological restoration services - while maintaining a fair and equitable workplace. The criteria was (and still is) an 8-hour day onsite as a primary requirement of delivery of services. To maintain our successful model (for ecological restoration and employment outcomes) our rates would have to increase on average by 25% to allow for an increase from 8 to 10 hours to allow for travel to and from many sites. Furthermore, productivity would decrease by up to 20%, as less sites would be worked on per week due to the increase in hours per day. This focus on the 8-hour day on-site seemed crazy after a decade of high-quality project delivery

On the path to the worksite Photo: Little Gecko

using our model, so we submitted conforming tenders with the 20% increase in rates (as required) and non-conforming tenders based on our previous 8-hour day ex-depot. The rest as they say is history as we were 'unsuccessful' in these contracts.

Since this time, like so many other areas of employment, casual work and subcontracting now dominate the delivery of ecological restoration services. Employees / subcontractors are only paid for the time they are onsite, with no allowance for weather conditions preventing work (it is all outdoors guys...), travel, ill health and often training and professional development are often borne at the individuals own cost.

This might be as a result of my rose-coloured glasses, but I would argue that the employment / social outcomes for those working in contracting services should be valued equally to those of staff working for local government agencies who engage them and that the natural areas contracts which focus on an 8-hour day onsite, actively reduces the quality of service and employment in bush regeneration. I don't believe (hope) that this is the intention of this requirement, but that it occurs due to an ignorance of the logistics of contract employment and service delivery.

Why 8 hours onsite is an ineffective measure of productivity (and potentially counterproductive)

In my 25 + years' experience in delivering onground work, it's often in the first 4 hours onsite that more than 80% of the day's productivity is achieved. This is due to several factors, but being fresh onsite and cooler temperatures are high on the list. Genuine risk factors are faced by bush regenerators every day in the field. Exposure to these risk factors increases with time spent onsite and as fatigue sets in, due to an imposition to be onsite for 8 hours regardless of workplace productivity.

Does your contract give you thinking time? Photo suppied by Spencer

Risk factors that relate to time spent onsite and that increase as time onsite increases include but are not limited to:

- Heat stroke or stress in the summer (compounded by the management techniques required to meet current performance indicators such as e.g. high use of herbicide application in backpacks, brushcutting – all these involve plastic harnesses or backpacks reducing the body's ability to cool itself when used in excess).
- Ticks and mosquitos with associated disease risks e.g. Lyme Disease, Ross River Fever, Tick Typhus, etc.
- Venomous snakes and plants; bacterial infections from wounds received on or offsite (compounded by humidity / exposure).
- Physical wear and tear on the body from undertaking manual operations in all weathers and topography.
- Exposure to herbicides.
- Reduced effectiveness with machinery due to fatigue.

I'm sure we could keep adding to this list...

From the perspective of bush regen contractors it's hard not to resent an arbitrary 8 hours onsite being seen as the most effective measure of productivity by project managers and council procurement departments. There is little or no opportunity for input from the contractors delivering these services. This is an opportunity lost, as contractors may just be a little closer to the health and well being of their staff or even have an idea or two about how best to deliver their services in a cost effective and ecologically sustainable manner.

It's (long past) time to recognise the highly skilled and valuable services bush regeneration contractors deliver in local government natural areas and that councils need to move away from the top-down management model and instead engage in a two-way flow of decision making that best addresses their own project delivery requirements and in turn maintains a productive, skilled and safe workplace.

Footnote

So, what is the alternative? At Brush Turkey Enterprises, we continue to operate bush regeneration contracting services as we always have, just not with the large teams of de facto council employees for the natural areas. For our bush regeneration services our day rate is now based primarily on a 7-hour day ex depot, but this can vary depending on site conditions, weather and travel. Revegetation services are based on outcomes e.g. per tree or per maintenance run costs. Our business continues to grow in real terms e.g. knowledge, diversity and quality, and our services are still highly sought. This, I believe was and is a demonstrably good model for delivering quality ecological restoration, employment, and commercial outcomes. As we grow as a family business, with the next generation moving into Brush Turkey Enterprises, these things are more important than ever.

Your input

Your comments or ideas on contracting issues are valuable - let us know: email Spencer **spencer.shaw@brushturkey.com.au** or Louise (Newsletter editor) **newsletter@aabr.org.au**

Previous articles of interest which relating to contracting:

- AABR Newsletter 129 by Frank Gasparre
- AABR Newsletter 137 by Scott Meier
- AABR Newsletter 138 by Andrew McGahey

Download the newsletters from **https://www.aabr.org.au/learn/publications-presentations/aabr-newsletters/**

Troublesome Ticks - the DSCATT Research Project

There is uncertainty about why and how ticks make people unwell in Australia yet there are now thousands of patients suffering from fatigue, arthritis, chronic pain, headaches and psychological symptoms following a tick bite. The true scale of the issue is difficult to estimate because so little is known about the illness. Collectively these illnesses are known as "**Debilitating Symptom Complexes Attributed to Ticks**" (DSCATT).

At Murdoch University in Western Australia ground-breaking research is being undertaken to find out more about ticks in Australia and the microbes in native Australian ticks. This has not been done before. It is hoped this research will discover the causes of unexplained illnesses in the future. This research ultimately aims to discover the cause (s) of DSCATT in Australia. and provide evidence to assist with the diagnosis of patients presenting with DSCATT and provide data on the spectrum of symptoms.

Can you help?

You could join the study. Go to the ***Troublesome Ticks*** website https://tickstudy.murdoch.edu.au/ to find information on how you can join the study. You can join if you have been bitten by a tick now or contact the team if you have been bitten in the past 72 hours and have not discarded the tick. Otherwise you could wait until the next tick bite!

For updated information on tick research watch ***Toxic Ticks*** on ABC Catalyst. Go to https://www.abc.net.au/catalyst/toxic-ticks/11016632.

Edition 2.2 of the *National Standards for the Practice of Ecological Restoration in Australia*

The Standards have been designed to encourage all restoration and rehabilitation projects in Australia to reach their highest potential. It uses a recovery wheel and 5 stars rating system as a simple and effective tool to evaluate and present how a restored ecosystem is performing compared to a reference community.

This new edition, was prepared by the Society for Ecological Restoration Australasia (SERA) Standards Reference Group, plus the knowledge and experience of many non-profit restoration organisations in Australia and beyond as well as elements of the International SER Standards. The changes since Edition 2.1 include clarifications to the five-star evaluation tables and restoration approaches, and reference the social benefits wheel and Restorative Continuum in the International SER Standards.

What are the Standards 2.2 ?

The standards consist of an online and downloadable document providing the underpinning principles, definitions and aspirational and procedural standards for restoring Australian terrestrial, freshwater and marine ecosystems.

The publication of this edition coincides with the resurgence of restoration for the carbon restoration economy, indigenous empowerment for 'healing country' and the UN Decade on Ecosystem Restoration.

Standards Reference Group SERA (2021) ***National Standards for the Practice of Ecological Restoration in Australia*****. Edition 2.2. Society for Ecological Restoration Australasia**. Available www.seraustralasia.org.

Off-label Use of chemical Products

The AABR working group - ***Chemicals in Management of Biodiversity*** (CIMB, formerly the Glyphosate Working group) had guest speakers from the Australian Pesticide and Veterinary Medicines Authority (APVMA) and Agriculture Victoria discussing the off-label use of Chemicals.

Pertinent information from the APVMA is detailed below and included an overview of the role of APVMA, and the process for gaining off-label Permits. Interestingly, we were told that a permit for a particular weed might already exist and others can then use the product as specified in this permit. The representative from Agriculture Victoria explained, from a state perspective, how off-label use is regulated. This led to a discussion on moves to harmonise the off-label regulations between states. Currently each state has differing requirements, which have real impacts on those wanting to use chemicals to manage species that are not specifically listed on a label.

The session was well attended, and pertinent questions were asked and answered. Many who could not attend asked if the session would be recorded and be made available.

Suzanne has put the link to the video up on the AABR website. https://www.aabr.org.au/portfolio-items/off-label-chemical-use-cimb-meeting-21-7-21/ see the list of topics covered and the when they occur in the video. *Hint*. If you open it in the youtube link, you will see timestamps that Suzanne has put in for different topics and the questions.

Given the level of interest in this topic, The CIMB group are hoping to have other guest speakers talk for 20 minutes or so, every two months. If you have any suggestions for topics or guest speakers, please drop me a line at patrick@naturelinks.com.au

Off-Label Use of Chemical Products: When and How to Obtain a Permit

Presented by Ellis Moore AABR Webinar 21 July 2021

The APVMA

The Australian Pesticides and Veterinary Medicines Authority (APVMA) is the Australian Government regulator of agricultural and veterinary (agvet) active constituents and chemical products, up to and including the point of sale

The relevant legislation is the *Agricultural and Veterinary Chemicals Code Act 1994* (The Agvet Code), with the *Agricultural and Veterinary Chemicals Code Regulations 1995* (The Regulations)which specifes matters relating to the operation of the Agvet Code.

The main route of approval is product registration and the APVMA must have regard to safety, efficacy, trade and labels. Product labels are approved as part of product registration

Permits

The Agvet Code allows the issue of a permit which works by allowing an offence against the Agvet Code.

Permits facilitate minor, emergency and research use of chemical products, often in the form of off-label uses (among other things). Off-label uses are uses of chemical products which do not comply with the product label e.g. higher rate, different use situation, different equipment, additional treatments, different timing of application.

Often off-label uses will be minor use. A minor use is defined under The Regulations as a use which would not produce sufficient economic return to register.

When and How to Obtain a Permit

A permit may be required when there is no suitable registered use, and registration would not be appropriate.

- Before applying, check the APVMA Public Chemical Registration Information System (PubCRIS) https://portal.apvma.gov.au/pubcris.
- Check current permits as one of these may cover your proposed use and be available for the general public to use. Check where and to whom the permit applies https://portal.apvma.gov.au/permits .

  For example PER9907, obtained by the NSW NPWS is for **Control of environmental and noxious weeds in areas of native vegetation, non-crop areas and open public spaces** and applies to **Persons Generally.** This covers many of the uses in bush regeneration which are off-label.
- If there is no suitable registered or permitted use, submit an application for a permit through the APVMA website. This process uses a **decision tree** which guides the user to the appropriate application type. https://portal.apvma.gov.au/rap/tree .
- Permits for off-label minor use of registered products require an item 21 application.
- Things which need to be considered for evaluation include herbicide use must qualify as a minor, emergency, or research use, and there must be reasonable grounds for the issue of a permit (and for having not sought registration of the use).
- The APVMA has statuary risk criteria and has regard to safety (to cover chemistry, human health, environment, residues and target safe); efficacy – would the use achieve the claimed effect, and whether the use would present an undue risk to trade.
- Specific information needs to be supplied as part of the application.

Visit the website and pages below for guidance:

APVMA website – Permits: https://apvma.gov.au/node/611

APVMA website – Guide for determining a minor use: https://apvma.gov.au/node/10931

APVMA website – Statutory criteria for permit applications: https://apvma.gov.au/node/649

What do the States do?

State and territory governments are responsible for controlling the use of pesticides and veterinary medicines beyond the point of retail sale. In some states, more than one agency is involved.

Once a registered chemical product is sold or supplied to an end-user, it is controlled by state and territory legislation through legislative initiatives, codes of practice manuals, or standard operating procedures.

To find out who is responsible in your state, go to the APVMA webpage – State government regulator contact list: https://apvma.gov.au/node/3190

Photos: Little Gecko Media

The Story of a Book

Flora Australiensis and *Renewal in the Desert* - my Albert Morris connection

Peter Cuneo
Australian Institute of Botanical Science
Royal Botanic Gardens and Domain Trust, Sydney

Renewal in Desert is a wonderful and inspiring story from the very early days of ecological restoration in Australia. The work of the Barrier Range Field Naturalists and Albert Morris in appreciating the value of local native plant diversity and harnessing its potential to restore the arid and degraded Broken Hill landscape in the 1920s is truly outstanding. As we heard in the movie, Albert and his wife Margaret were very keen botanists and no doubt relied heavily on a limited (by today's standards) range of reference books to identify the local flora.

A significant and authoritative reference from this time was *Flora Australiensis* written in the mid 1800s by George Bentham (who never visited Australia!) but impressively used botanical specimens to describe and characterise the Australian flora.

I am fortunate to have in my book collection, a copy of *Flora Australiensis* (seven volumes) which was owned by Albert Morris and inscribed "Albert Morris – Broken Hill 1921". This very well-thumbed set of books was passed onto me by my early career mentor and renowned native plant author Thistle Harris. Identifying plants is now a little easier in the 21st century, but I can just picture Albert and Margaret working through the botanical keys in *Flora Australiensis* for many of those Broken Hill plants in their pioneering days!

Renewal in the Desert

Watch the movie

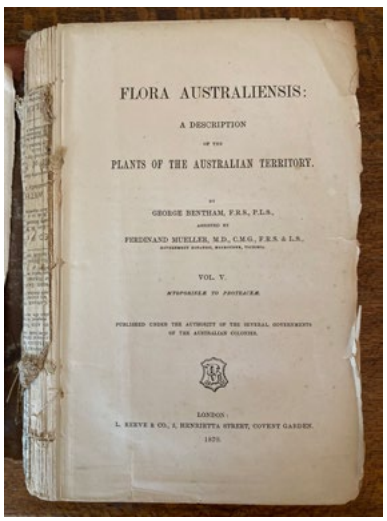
AABR hosted the on-line premiere on Friday 16th July 2021 of the mini-movie *Renewal in the Desert –The story of the Barrier Field Naturalists' Club and the Broken Hill Regeneration Reserves.*

The movie was produced for the centenary celebrations of the BFNC, and to celebrate one of the earliest bush regeneration projects on the planet.

Produced for AABR by Little Gecko Media with BFNC providing the important local input, the movie combines historical imagery and recent footage from the AABR 2017 Broken Hill Field trip.

The 17-minute mini-movie tells the story of some amazing people, looking for a solution to the outback dust storms and sanddrifts, and finding a way forward by listening to the landscape. This story is a fitting tribute to celebrate the beginning of the UN Decade on Ecosystem Restoration.

You can watch it anytime on our website or YouTube Channel


FLORA AUSTRALIENSIS:

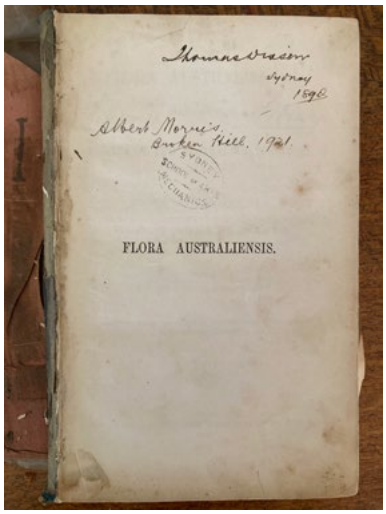
A DESCRIPTION

PLANTS OF THE AUSTRALIAN TERRITORY.

GEORGE BENTHAM, F.R.S., P.L.S.,

FERDINAND MUELLER, M.D., C.M.G., F.R.S. & L.S.,

VOL. V.


Albert Morris
Broken Hill. 1921

FLORA AUSTRALIENSIS.

Flora Australiensis - volumes formerly owned and inscribed by Albert Morris

Huge Grant for Habitat Corridor at Crowdy Bay, NSW

AABR members have participated as part of the post-fire program in the bush regeneration project in Crowdy Bay National Park on the Mid North Coast of NSW. The park is part of a long term habitat corridor restoration project linked to the village of Dunbogan and Kattang Nature Reserve. Since the arrival of AABR member Tom Clarke in the nearby town of Laurieton, the association's involvement has increased considerably as Tom actively recruits and coordinates the work of AABR members focussing in an area of littoral rainforest. Tom is also actively involved in bush regen with other groups in the corridor.

Late last year, AABR agreed to be a partner group in an application for a four-year grant from the NSW Environmental Trust. The application for $129,333 has been successful with Hastings-Macleay NPWS being the administrator and other partner groups being National Parks Association Mid North Coast Branch, Dunbogan Bushcare Group and Friends of Kattang Nature Reserve.

The grant will mainly fund woodland and littoral rainforest regeneration in the Kylie's Beach to Diamond Head area of the national park with some funding for rainforest regeneration including the planting of seedlings on the Dunbogan peninsula, and for prickly pear eradication in the nature reserve.

Long-term coordinator of the volunteer effort in the national park and of Dunbogan Bushcare group Sue Baker said, 'This is our third multi-year grant for the corridor from the Trust since 2007 and we are deeply grateful for the opportunity to build on our achievements. With previous grants funding bitou bush and other weed removal in the southern section of the park, this area is now down to manageable annual follow up. We can now focus on other areas.

Complementing the grant work in the national park is a forty-two-year-old volunteer bush regeneration program coordinated by Sue. This year volunteers contributed over 460 hours of on-ground work at the six-day annual bush regen camp. Assuming that all is well COVID-wise, the 2022 camp will be held in May. For further information phone Tom 0418 895 771.

Alison Farrell hard at work in a thicket of *Acacia saligna* (a Western Australian that managed to get across the border!) during the May camp Photo: Sue Baker

This project is funded by the NSW government through the Environmental Trust . The Environmental Trust is an independent body chaired by the NSW Minister for Energy and Environment, fundng projects that enhance the environment, including community recycling centres, environmental education and research associated.

A little goes a long way at AABR with expert members assisting bush regenerators through education, accreditation & support services to aid repairing & restoring our natural areas.

Donate to Advocate

Will you donate so we can advocate and demonstrate that bush regeneration can repair natural areas? Your support assists our working groups such as the *Chemicals in the Management of Biodiversity* to engage with government on policy, legislation and programs, and to advocate to funders to adequately resource bush regeneration across Australia.

Donate to Educate

Will you donate so we can educate, communicate, and disseminate information to build the capacity of land managers to care for our natural areas? Your support will help to produce resources like those created in response to the 2019-20 bush fires.

Donate to Facilitate

Will you donate so we can facilitate training and accreditation for bush regen practitioners to get the best outcomes when restoring our natural areas? Your support will allow AABR's Accreditation program to continue to recognise the unique skills and expertise of bush regenerators and allow AABR to engage with government and non-government training organisations to improve and expand appropriate courses in bush regeneration.

Donate to Contemplate

Will you donate so we can create videos to contemplate? You can donate here.Since 2016 AABR has been creating a library of videos under its regenTV program. These open-access, relevant and contemporary education videos aim to demonstrate best practice techniques, encourage skills development and inspire participation.

You can donate via the donation platform or directly into our account.

Donation Platform

- Advocate/Educate/Facilitate: https://hub.benojo.com/campaigns/donate-to-regenerate
- Contemplate: https://hub.benojo.com/campaigns/regentv-best-practice-ecological-restoration-case-studies

Direct Donation

Account name: Australian Association of Bush Regenerators Inc.
BSB: 012 842 ; Account number: 2227 04572; Reference Donation + Name

Release of Florabank Guidelines (version 2)

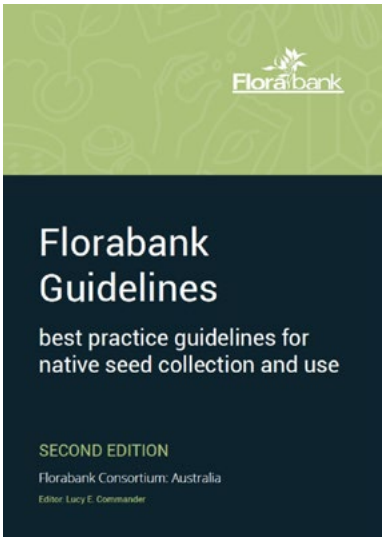
Version 2 of the *Florabank Guidelines – the best practice guidelines for native seed collection and use* is now available.

The first edition of the *Florabank Guidelines* (1999) was a set of 10 documents which consolidated existing information on seeds and practices at seedbanks across Australia. **Florabank** was originally a partnership between Greening Australia, CSIRO Forestry and Forest Products through the Australian Tree Seed Centre and the Australian National Botanic Gardens, with funding from the Bushcare program of the Natural Heritage Trust. Its aim was to support the increasing activities in plant and ecosystem restoration in Australia. The guidelines are widely used, and were the most influential guidelines for seed collectors and native nursery workers.

The guidelines have been revised to include a further 20 years of knowledge based on practical experience, expertise and research. The team of over 40 national and international collaborators were involved in updating and reviewing the content.

This revision was part of the Healthy Seeds Project funded by the NSW Environmental Trust and managed by the Australian Network for Plant Conservation (ANPC) Inc. with Dr Lucy Commander from the ANPC being the Florabank Guidelines Project Manager. The Florabank Consortium includes ANPC, Australian National Botanic Gardens, CSIRO, and Greening Australia.

The updated Guidelines are available to download for free from the Florabank website: www.florabank.org.au/guidelines



The Florabank Guidelines contain 15 modules which follow the native seed supply chain from collection, through processing to propagation and planting. To better support the whole of the seed supply chain, this update includes additional information on working with Indigenous Australians, approvals, record keeping, and tips for seed purchasers.

You will need to sign up so that you can login to read the complete guidelines.

The Florabank Modules

1. **Introduction**
2. **Working with Indigenous Australians: Seed Knowledge, Partnerships, Intellectual Property and Permissions.**

   This module acknowledges that Indigenous Australians are the first people to use seed in Australia. Traditional and contemporary seed use by Indigenous Australians is outlined. The importance of partnerships is explained, as well as intellectual property, commercial issues, and seeking permission to collect on Indigenous lands.
3. **Approvals, Principles and Standards for Seed Collection**

   Accessing and collecting wild-source seed of native flora is subject to a range of protections and controls under federal and state legislation. These controls may apply to the collection, propagation, cultivation and trading of both naturally occurring and cultivated plants and plant parts, including seed.
4. **Record Keeping**

   This module details the importance of (and reasons for) good record keeping, the concepts behind and the ways to design record keeping systems, ideas for the information that should be captured, considerations for collation and sharing, currently available technology, and publicly available resources.
5. **Seed sourcing**

   Determining where seed should be sourced is amongst the primary decisions for ecological restoration projects.
6. **Seed Collection**

   Provides an overview of how to approach seed collection and the collection methods, both manual and mechanical, that can be used and the practices that are generally considered sustainable.
7. **Seed Production**

   An introduction to the establishment and use of seed production areas (SPA) for native species.
8. **Seed Processing: Post-harvest Drying, Seed Extraction and Cleaning**
9. **Seed Drying and Storage**
10. **Seed Quality Testing**

    This guideline describes approaches to testing seed quality post-cleaning (see Module 8 – Seed Processing).
11. **Seed Germination and Dormancy**

    The initial success of ecological restoration projects utilising seeds hinges on the ability of seeds to germinate and emerge – whether they are directly sown into a restoration site (and germinate immediately or form a soil seedbank), or used to propagate seedlings that are later planted out as tubestock.
12. **Seed Enhancement Technologies**

    This guideline offers an introduction to the use of seed enhancement technologies (SETs), a group of seed pre-treatments being increasingly developed for improving the use of native seeds in restoration.
13. **Nursery Propagation of Tubestock and Restoration Planting**

    This module focuses on the effective use of seed and other plant propagules.
14. **Direct Seeding**

    This guideline is an introduction to the use of direct seeding for ecological restoration, rehabilitation, revegetation, reforestation, regeneration, or other purposes.
15. **Buying and Selling Seeds**

    In this module, we've summarised some top tips for those purchasing native seed for restoration.

On-Line publications

Planting for Pollinator Habitat Guide

Wildthings, (https://www.wildthingsaustralia.org.au/) is a not-for-profit community group working largely in Victoria on the Mornington Peninsula, West Gippsland, the Bass Coast and surrounding areas. The group focuses on conservation and improving native biodiversity through workshops, presentations and on-ground works to maintain and enhance native biodiversity.

Wildthings has developed a ***Planting for Pollinator Habitat Guide***. Sourcing information from Australia and across the globe, the group have sought to include the research and best practice methods for improving native habitat for insect pollinators. Our native insects rely on habitat, particularly plants for nectar, pollen and shelter to survive. Native plants offer our beneficial insects the best habitat to thrive, thereby improving resilience in our ecosystems and improving crop pollination.

Whilst this guide has been developed for planting pollinator habitat in the Gippsland Plain Bioregion of Victoria, the information and photos are applicable to most regions. There is a lot of background information about pollinators and their value which apply to all locations, plus case studies. The guide includes selection of plant species plus site selection and preparation.

It is available electronically at https://issuu.com/wildthingsaustralia/docs/pollinator_guideissu and can be downloaded from this site as a free printable pdf.

Published Aug 18, 2021

The guide has many wonderful photos to illustrate pollinators and plants.

Costing restoration in Australia

An early view paper from the ***Journal of Applied Ecology*** has some interesting research on costs of restoration. (Early view is an online version before inclusion in an issue).

The costs and benefits of restoring a continent's terrestrial ecosystems.
Bonnie Mappin, Adrian Ward, Lesley Hughes, James E. M. Watson, Peter Cosier, Hugh P. Possingham,
First published: 13 September 2021
https://doi.org/10.1111/1365-2664.14008

Abstract

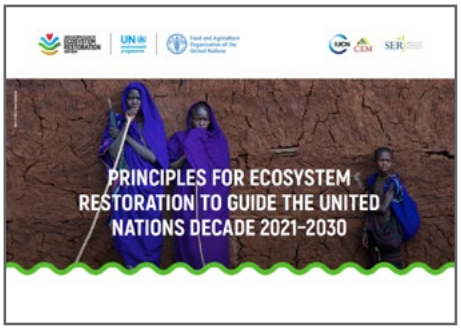
1. The rise in global commitments to restore habitat underlines its importance to halt biodiversity loss and abate climate change. To effectively plan for landscape-scale restoration efforts, decision makers need to prioritise where restoration should occur and have a method to estimate its cost.
2. Here, we describe a systematic approach to determine where cost-effective restoration actions should be located to achieve targeted levels of ecosystem coverage across Australia without compromising agricultural production.
3. We find that spending approximately AU$2 billion (0.1% of Australia's 2019 Gross Domestic Product) annually for 30 years could restore 13 million ha of degraded land without affecting intensive agriculture and urban areas. This initiative would result in almost all (99.8%) of Australia's degraded terrestrial ecosystems reaching 30% vegetation coverage, enabling a trajectory to recover critical ecological functions, abate almost one billion tonnes of carbon dioxide equivalent and produce AU$12–46 billion net present value in carbon offset revenue.
4. The carbon market revenue is estimated to cover up to 111% of the investment required for the restoration.
5. Our research shows that the recovery of degraded ecosystems in Australia is both attainable and affordable.
6. Synthesis and applications. With growing international restoration commitments, governments and environmental organisations need methods to plan and budget their commitments. Here, we present a systematic approach to determine where restoration actions should be located in Australia to achieve targeted vegetation coverage and quantify the expected costs, carbon abatement and revenue. This study is an important advance that will aid governments and environmental organisations by providing financial and spatial planning methods to progress their restoration commitments.

https://besjournals.onlinelibrary.wiley.com/doi/10.1111/1365-2664.14008

10 guiding principles for the UN Decade on Ecosystem Restoration

Download from: https://www.ser.org/page/SERDocuments

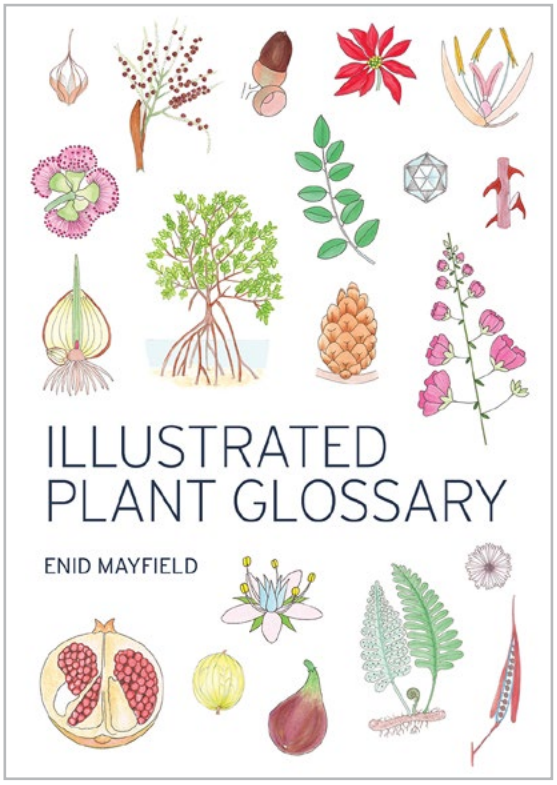
This set of principles, is intended to guide the delivery of all aspects of the UN Decade, from international policy support to restoration implementation on the ground and in the water.



Books

Illustrated Plant Glossary

Enid Mayfield

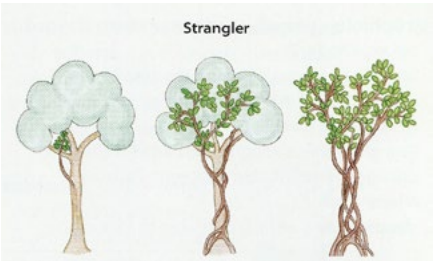


As a person who did botany and plant identification some time ago and is not a plant identification expert, I still like to check the descriptions of plant species. However, I am guilty of just passing over some botanical terms when I am unsure what they mean, or I might spend time trying to work it out by understanding some of the latin terms. This means that this book is a wonderful resource for someone like me.

The book covers more than 4000 terms across plant science topics and related fields, including plant anatomy, plant types, chemistry, flowers, fruit, genetics, habitat and ecology, and more.

The definitions of these terms are usually accompanied by wonderful clear illustrations to show what is meant. I know there are people out there who would know most of the terms, but looking at the definitions and illustrations I find myself going 'of course – now I get it'. I am now a bit clearer on what terms such as 'massula', 'commissure' and 'rhiphidium' are all about. There is even an explanation for 'messenger RNA' – although not as it relates to vaccines!

The author and illustrator, Enid Mayfield, is an Honorary Associate of the Royal Botanic Gardens in Victoria, Australia. Her illustrations, which are clear and beautiful to look at, make the book an absolute delight. Illustrations such as those to explain different leaf types and fruits are extensive, covering all the aspects of these structures.



The *Illustrated Plant Glossary* is a valuable reference for all those interested in plants and how they are described.

CSIRO Publishing September 2021 $ 69.99
ISBN: 9781486303533 Paperback | 332 pages | 297 x 210 mm
Also available as ePDF and ePUB from eRetailers

Reviewed by Louise Brodie, AABR

The 2021 National Landcare Conference Presentations

The presentations and other information is now available on line

This conference was held online in August over 2 days. Now the presentations from the more than 60 speakers, and other resources including the conference posters are available online.

These Education Resources can be used for training and development, and other capacity building activities in your community.

These will be hosted on the conference website until September 30. https://nationallandcareconference.org.au/education-resources

After this expires at the end of September 2021, please sign up or login to Landcarer.com.au (free) and then join the Conference Education Hub for longterm access to these resources. This content will continue to be hosted on Landcarer.com.au.

The resources include videos of the presentations, speaker resources and copies of the posters.

With the diversity of content, presentations provide information for people interested in sustainable land management and conservation activities on their farm or land, in an urban environment, along the coast or in their backyard.

As well as the keynote speakers and plenary sessions, the conference speakers' presentations are in four streams.

- Sustainable Agriculture
- Environment and Climate Change
- Community Partnerships in Action
- Landcare Impact

The final session was a Cultural Land Management Panel. The presentation included a video ***Fire and Water, Healing Country & People***.

This can be seen on you tube
https://www.youtube.com/watch?v=OBTZvGJXroM

What's happening

7th October and 4th November 2021

Australian Government Department of Agriculture, Water and the Environment

2021 Environmental Biosecurity Webinar Series: Knock Knock. Who's there? Drawing attention to our most unwanted visitors

There are two remaining webinars in the 2021 series of monthly webinars and discussions focussing on the recently released National Priority List of Exotic Environmental Pests, Weeds and Diseases (EEPL) and explore the list's purpose, its development and how it will help manage risks to Australia's biosecurity. Each webinar will have three guest speakers presenting in the first hour, followed by 30 minutes of facilitated discussion

- **7 October 2:00-3:30pm(AEDT) Opening the toolbox. Tools and technology for detection, control and eradication.**
- **4 November 2:00-3:30pm(AEDT) NEW WEBINAR - Indigenous perspectives of environmental biosecurity.**

To register for the webinars and for more information, visit the Eventbrite registration page

https://www.eventbrite.com.au/e/knock-knock-whos-there-drawing-attention-to-our-most-unwanted-visitors-tickets-145807563347

Celebrate and transform our rivers towards resilience and ensure our rivers are there for our future generations.

For more information please go to https://riversymposium.com

The Combined NSW & VIC Weeds Conference showcases the latest research and ideas for managing the establishment, impact and spread of weeds.

More information, go to: https://www.nswweedsconf.org.au

Sunday 25th to Thursday 29th September 2022 (new dates)

22nd Australasian Weeds Conference
A weed Odyssey: Innovation for the Future

The Weed Management Society of South Australia (WMSSA), on behalf of The Council of Australasian Weed Societies (CAWS), will be hosting the 22nd Australasian Weeds Conference (22AWC) at Adelaide Oval.

Note that abstract submissions have re-opened.

More information at http://wmssa.org.au/22awc-program/

Australian Association of Bush Regenerators

Australian Association of Bush Regenerators
Working with natural processes

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Victorian Branch
Enquiries please contact Rob at robscott@naturelinks.com.au or phone 0412 865 027

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.

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P.O. Box K61 Haymarket NSW 1240
0407 002 921
www.aabr.org.au
enquiries@aabr.org.au
ABN: 89 059 120 802 ARBN: 059 120 802

Membership fees

Individuals	$35 (unwaged $20)
Organisations *(does not confer membership to individuals in the organisation)*	
• 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.

Newsletter contributions and comments are welcome

Contact Louise Brodie newsletter@aabr.org.au 0407 068 688

Opinions expressed in this newsletter are not necessarily those of AABR