AABR

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AABR NEWS

Australian Association of Bush Regenerators

working with natural processes

AABR RegenTV Bush Regeneration Videos
First Aid for Burned Bushland (FABB)

The last of AABR's series of six videos

Get good at telling the difference between natives and weeds, even at early stages

A key to successful post-fire bush regeneration is knowing which plants are weeds and which are natives - particularly as seedlings. But it can seem overwhelming.

Do you pull it and risk removing a native, or do you leave it and risk letting a weed grow?

It's almost always better to miss a few weeds than to mistakenly destroy regenerating natives, particularly those that play important roles in the plant community, or rare or threatened species.

It helps to tell yourself 'If in doubt don't pull it out - but do find out', because if it is a problematic weed you'll want the chance to prioritise it. Even familiar plants might look quite different at seedling stage.

So how do you find out? In this video, we share a few ideas that might help.

The video can be found on AABR's regenTV https://www.aabr.org.au/portfolio-items/get-good-at-telling-the-difference-between-natives-and-weeds-even-at-early-stages or at youtube https://youtu.be/JubVG2oixpU

Thanks to the many people who have assisted in the development and production of this video and our sponsor: Regen Australia.

To see all the FABB videos go to
https://www.youtube.com/playlist?list=PLEruDwuDGw6WxckZ0rouJeRE3Z7-1ZSQZ

Thanks to South East Local Land Services for sponsoring this series.

AABR Walks and Talks

See page 3 to find out how you can help us program walks and talks.

President's Perspective

This is the United Nations Decade on Ecosystem Restoration (https://www.decadeonrestoration.org/). AABR is one of the oldest and most respected ecological management and restoration organisations in Australia, and I am looking forward to AABR and its members playing a key role in driving a restoration agenda in Australia during this decade. We recently became one of the original signatories to the Darwin Agreement, forming a consortium of 14 member organisations (hopefully more organisations to come) which will collaborate during the decade with an agenda of education and awareness, influencing policy makers, science and working with industry.

We want to create opportunities for AABR members to provide ideas on how AABR can contribute and also to get involved in any AABR led or involved initiatives. We will be working on developing a platform for member engagement over the next few months (hopefully through an online forum on the website).

To my mind, one obvious area for early engagement is for AABR to develop some national policies on a range of issues relating to good environmental management and restoration, and to communicate these to public land managers.

As an example, I am sure that many of you have been frustrated over the years at poor land management and weed management by public authorities. In many cases, investment in these is insufficient or inefficient, and sometimes nonexistent.

AABR could potentially develop policies on such things as roadside environmental management (both state government and local council managed), calling for best practice management of roadside vegetation and consistent and persistent management of weeds. We want to see coordination between adjoining public land managers so that investment is not wasted through such things as bush regeneration on one side of a creek and not the other. We would push for long term funding of grant projects and prioritisation of strategic projects, rather than one off, short term grants which are not or cannot be maintained; and setting standards in environmental grants so that funds are not channeled into low quality practices at the expense of assisted natural regeneration.

Having these policies will allow AABR, AABR members and the general public to advocate a consistent, defensible message regarding specific issues.

On another matter, the AABR Executive recently had a planning day, to map out some of our priorities for the year. Some of the top priorities are:

- Registering as a charity with the Australian Charities and Not for Profit Commission;
- Applying for grants to implement AABR programs and projects (we have already applied for a Landcare Bushfire grant to produce more videos for *regenTV*);
- Developing a Procedures Manual (exciting, eh!), so that we can get consistency across State and Territory Branches and the national organisation;
- Forming a Member Benefits working group;
- Restarting our Walks and Talks program (COVID willing!), including exploring the idea of short lunchtime Zoom seminars; and
- Forming a Communications and Marketing working group, which among other activities will look at how the Board and Branches can better engage with members.

Peter Dixon

AABR President

Welcome to new AABR Members

David Blewett
Jody Boxall
Jason Byrne
Tina Clemens
Cristopher Cochrane
Geogina Coster
Tiarna Coughlin
George Cremasco
Michelle Dang
Paul Devine
Jeff Dickinson
Sonja Elwood
Nathan Garnett
Kristian Guppy
Ian Hawkins
Oliver Jenkins
Daniel La Rosa
Adam Muyt
Peter Nicholson
Angus Parker
Samantha Patch
Streenyvasen Pillai
Joel Seipel
Grant Stewart
Emily Strautins
Kate Watson
Jennah West
Kate Young

Agency
Fraser Coast Regional Council

Business
Aus Eco Solutions
Native Grace Pty Ltd

Congratulations on Accreditation
Sally Alldis
Louise Reincastle
Tom Walmsley

It's membership renewal time

AABR membership aligns with the financial year and renewal notices will be hiding in your inboxes, hopefully not too far down the to-do list.

This year there has been a $5 increase in the membership and accreditation fees, so each is now $35 annually and $20 unwaged. There hasn't been a fee increase for over a decade and we hope that you understand the need to revise the fee to continue to be able to service AABR's needs.

Your membership fee works very hard for you; 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 weave their magic and grow the awareness of the bush regeneration sector, promote best practice in ecological restoration, participate in exploring industry issues, and advocate for education.

This year there is the option to establish a Direct Debit, so your ongoing support is seamless, along with multiple year renewals that provide a discount if a 5 year renewal is undertaken.

Applying for Accreditation?

Are you a trained bush regenerator who is at team member level, still working under supervision, but who has sufficient experience, knowledge and skills to undertake effective bush regeneration work without constant direct observation? The AABR Accreditation Subcommittee oversees the accreditation process.

If you've also accrued over 500 hours of field work over at least two years (under an AABR-recognised supervisor) and have Conservation & Land Management Cert3 - now Conservation and Ecosystem Management CEM - then you are likely eligible for gaining Accreditation via the standard pathway. A non-standard pathway is available for applicants with 'equivalent' training or experience. AABR Accreditation may be the feather in your cap to acknowledge your skills and experience in bush regeneration.

There has been a recent change in the application process. When applying for Accreditation the $35 fee will be requested upon application, along with membership. This will allow for a more streamlined application. If the applicant is unsuccessful the accreditation fee can either be refunded or rolled over to the next year's membership.

For accreditation enquiries email accreditation@aabr.org.au
For more information about accreditation visit
https://www.aabr.org.au/about-aabr/accreditation/

NAIDOC WEEK 2021

HEAL COUNTRY!
4-11 JULY 2021

NAIDOC Week 2021 is from Sunday 4 July to Sunday 11 July.

This year the theme is Heal Country and calls for all of us to continue to seek greater protections for our lands, our waters, our sacred sites and our cultural heritage from exploitation, desecration, and destruction.

"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."

Walks & Talks are back!

Do you have a project you'd like to share, or a conversation you would like to have on a timely topic?

The AABR Events team would love to hear about it. We'll get in touch and have a chat about your suggestion. If it's an exploratory site visit, we can help plan and promote it. If it's a titillating topic we can approach an expert and host an online conversation.

AABR's focus is on-ground outcomes and how best to achieve them. As the UN Decade on Ecosystem Restoration dawns, we want to celebrate and encapsulate the lessons learned and highlight the hope for the future.

We are very interested in visiting sites that have already undertaken a decade of restoration so we can showcase the process and document what can be achieved by dedicated and informed practitioners. This is an opportunity to celebrate your achievements not only by hosting a visit, but you'll also receive a write up in the newsletter.

Under COVID considerations there may be less walking and more talking but we're keen to reimagine the way we are sharing restoration stories and best practice tips and techniques with our members.

Get in touch with Suzanne education@aabr.org.au

Landcare Award for Deb Holloman

AABR committee member Deb Holloman received the Individual Landcarer Regional Award at the recent Greater Sydney Landcare Regional Landcare and Bushcare Forum at Cockatoo Island, Sydney on 21 May 2021. Deb's contribution to landcare was summarised at the award presentation.

Deb has been involved in bushcare on the NSW Central Coast (just north of Sydney) in many different roles for more that 25 years. Deb first got involved in bushcare when she formed a local landcare group in 1995.

Bush regeneration quickly became a consuming passion for Deb, and she left school teaching at the end of 2000. She started teaching bush regen at TAFE and also worked with the Central Coast Environment Network, establishing a further four landcare groups on the Central Coast.

From 2003-2018 Deb was employed by the NSW National Parks and Wildlife Service in the Gosford area as the Bush Regeneration and Volunteer Coordinator. During this time, she created an additional seven bushcare groups working in nature reserves and national parks, and increased active volunteer numbers from approx. 15 to 120. She was also successful in securing $1.6 million in funding for professional bush regeneration contractors to support the work of her volunteer groups.

Since leaving NPWS Deb has continued to be a major force in bushcare on the Central Coast. She supervises weekly sessions of the Bouddi Bushcare group, volunteers on the Putty Beach bushcare site and has run post-fire bush regeneration workshops for the Australian Association of Bush Regenerators. She continues to be a source of all knowledge regarding bush regeneration on the Central Coast and is a mentor to many.

The 'Darwin Agreement' – a collaboration between Australasian environmental organisations to support the UN Decade on Ecosystem Restoration

UNITED NATIONS DECADE ON ECOSYSTEM RESTORATION 2021-2030

AABR is one of fourteen prominent Australasian environmental restoration organisations forming a consortium to support the recommendations of the UN Decade on Ecosystem Restoration.

The consortium agreement, referred to as the 'Darwin Agreement', was initiated at the SERA2021 Darwin conference where eight restoration organisations spoke on what the UN Decade means for their ongoing work in restoration in Australia.

The UN Decade on Ecosystem Restoration is a rallying call for the protection and revival of ecosystems all around the world, for the benefit of people and nature. It aims to halt the degradation of ecosystems and restore them to achieve global goals. The decade runs from 2021 through 2030 and is led by the United Nations Environment Programme and the Food and Agriculture Organization of the United Nations.

Against a backdrop of environmental crises, the Australasian Consortium urges concerted support of the UN Decade on Ecosystem Restoration by all sectors of society, to retain ecosystems, reduce our impacts upon them and to repair ecosystems to optimise potential for humanity to revive the natural world that supports us all.

Each of the Consortium members has a long track record of working for environmental conservation including ecosystem restoration, and commits to promoting the goals of the UN Decade on Ecosystem Restoration, with particular focus on:

- reinforcing and clarifying our common purpose to help conserve and restore Australasian ecosystems
- promoting public awareness of the UN Decade as a focal opportunity for integrated restorative action by all sectors of society
- promoting best practice ecosystem restoration, and
- supporting a united voice around the UN Decade.

Peter Dixon, AABR President says "The recent drought, fires, floods and extreme weather events have brought the topics of climate change and human impacts on the natural environment firmly into the mainstream - both the media and the community's consciousness. We have the opportunity right now where we have much of the knowledge of what is needed to restore Australia's ecosystems and make them more resilient. We have many of the structures in place to be able to deliver that restoration, through NGOs and community movements such as Landcare. We have the groundswell of people, companies and organisations that want to assist. To achieve the potential of the UN Decade however, we need the governments of Australia to come on board to meaningfully support this initiative through adequate and sustained funding, managing threats on their own lands and improving their legislation and regulation through an evidence-based review".

Member organisations:

- Australian Association of Bush Regenerators
- Australian Coastal Restoration Network
- Australian Network for Plant Conservation
- Australian Seed Bank Partnership
- Bush Heritage Australia
- Gondwana Link
- Great Eastern Ranges Initiative
- Greening Australia
- Invasive Species Council
- Landcare Australia Ltd
- National Landcare Network
- Restore Australia
- Society for Ecological Restoration Australasia
- World Wide Fund for Nature (WWF) Australia

For more information :

- **Peter Dixon AABR President**. Tel: 0478 741 111 E: president@aabr.org.au
- **Dr Tein McDonald, Convenor of the SERA UN Decade consortium.** Tel: 0458 565 654. E: tein.mcdonald@seraustralasia.com

2021 SERA awards for Excellence in Ecological Restoration

On May 13th 2021, the Society for Ecological Restoration Australasia announced the winners of the SERA awards for Excellence in Ecological Restoration Practice for projects from around Australasia. The awards were presented at the SERA2021 conference in Darwin, Australia.

The awards acknowledge projects that have made a significant, enduring or internationally recognised contribution to the science and/or practice of ecological restoration through achieving high standards of practice at a site, or the development of innovative new approaches, methods and/or strategies for involving the public in restoration efforts.

Out of a wide field, a total of 12 outstanding restoration projects were shortlisted for recognition. These include a range of projects conducted in agricultural lands, conservation reserves, wetlands and riparian and marine areas.

Winners of the SERA award for ecological restoration excellence

Under 50 ha category - Wet Tropics Management Authority for the Mt Hypipamee Rainforest Restoration program, Queensland.

Over 50 ha category – North East Bioregional Network for Skyline Tier project, Tasmania

Koonamore student award - Aaron Eger (University of NSW) for his work on the Kelp Forest Alliance.

The Albert Morris Award is a collaboration between SERA, the Australian Association of Bush Regenerators, and the Barrier Field Naturalists' Club. The award celebrates well-established ecological restoration projects or programs that have outstanding ecological and social outcomes. The award was established in honour of pioneer botanist Albert Morris, who designed arguably the earliest intentional restoration project. The project, carried out in the mid-1930s in Broken Hill NSW, harnessed natural regeneration as the main means of recovery.

The winner of this award was the Marra Creek Waterponding Community for their Waterponding program in Nyngan NSW.

Waterponding the Marra Creek

by the Marra Creek Waterponding Community at Nyngan NSW

Ray Thompson accepted the Albert Morris 2021Award on behalf of the Marra Creek Waterponding Community. Ray, who is now an independent consultant, began working on this project in 1984 with the landholders of the Marra Creek waterponding district, as an officer with the NSW Soil Conservation Service - latterly the Central West Local Land Services.

During the second half of the 19th Century native pastures in the rangeland areas in western NSW were overgrazed. The stripping of vegetation led to the wind erosion of sandy topsoil during inevitable dry periods. In the 1960s, moderate or severely bare or 'scalded' lands where duplex soils had lost 30 cm of topsoil (sandy loam), covered tens of thousands of square kilometres. This left a relatively impermeable clay subsoil which prevents water penetration and makes it difficult for plants to colonise.

The waterponding technique is the result of many decades of experimentation by soil conservationists. Many different scald reclamation techniques have been used over the years by graziers and researchers. None of the techniques proved to be successful and many failed within the first one to three years. It was in these circumstances that waterponding, pioneered by the Soil Conservation Service of NSW at Nyngan from the early 1960s, was born.

Waterponding is a reclamation technique involving the construction of horseshoe-shaped banks designed to hold water. It allows the retention of up to ten centimetres of water after rain which leaches the soluble salts from the scalded surface. The ten cm depth is critical. Any deeper and you will kill your native grasses. This improves the remaining soil structure - when the water sits on the scald, the shrink/swell action of the clay busts the crust open, then seed and water can penetrate via the cracks. Consequently, niches are formed for the germination of this seed and recovery of a range of (typically around 15 out of a total of about 30) locally native chenopod (saltbush) grassland species on the sites.

The Marra Creek Waterponding Demonstration Program (1984 -1988) was initiated by 18 landholders in the Nyngan district to refine and demonstrate technologies that had shown great promise for application at a larger scale. While the initial funded program provided approx. fifty hectares of waterponds to each landholder, subsequent waterponding has been paid for by landholders through loans. By April 30th, 2021, 84,000 waterponds had been constructed in the Marra Creek area, totalling recovery of 42,000 ha of scalds. Where 18 landholders started in the program, over 175 landholders have now taken up the technology, representing pretty well all the landholders with scalds on duplex soils in the district.

The program has allowed re-joining the linkage to other ecosystems in the landscape. It results in recovery from nil ground cover to 90% in five average years with the establishment of native local grasses and bushes, and increased soil organic carbon sequestration by six tons/hectare. The waterponding is designed to ameliorate climate change in the rangelands, harnessing the water coming off the scalds and holding the water on the scalded duplex soils.

Starting as a struggling rehabilitation technique in 1984, it has now become a biodiverse environmental technique that has been a win/win for the landholder and the environment, not only in Australia but other countries of the world. Over a three year period in Marra Creek, we trained 71 Individuals from 28 different African countries to do the waterpond rehabilitation technique back in their village in their own country.

Waterponding was used during 2019 by the West Kimberley LCDC Rangelands NRM in Western Australia with waterponding construction funded through the National Landcare Program. This work resulted in an average of 40% vegetation cover (native grasses) regenerating on prior scalds. In NSW the natural regeneration of native species is supplemented with seeding of the banks during construction with beneficial native species such as Mitchell grass and old man saltbush. Seeding was not applied in the West Kimberley case due to cost and scarcity of permissible native seed in WA.

Videos and further information on waterpond construction are available.

- See AABR's video on the YouTube regenTV platform https://www.youtube.com/channel/UCW_MdI_KK6co4WXfQdgGSRA

  Creating waterponds to tackle the drought clay pans on the landscape. Ray Thompson, Central West LLS https://www.youtube.com/watch?v=GnJJ-fb32Pk&t=27s
- Read more about the project in the ERM project summaries. Published as part of the journal *Ecological Management & Restoration*

  https://site.emrprojectsummaries.org/2019/10/21/waterponding-the-marra-creek-nsw-rangelands-update-of-emr-feature/
- See also the West Kimberley Land Conservation District Committee production of the full length YouTube video *'Building waterponds with a road grader'* (21:19; published 27 April 2020 by FutureBeef futurebeef.com.au) https://www.youtube.com/watch?v=tYDafEu-Cqo

Ten golden rules for reforestation

A group of scientists has proposed 10 golden rules for tree-planting for reforestation to optimise carbon sequestration, biodiversity recovery and livelihood benefits. The fourteen scientists are from countries in Europe, Africa, Asia and South America, and include Kingsley Dixon from Australia. The paper is published in the journal GlobalChange Biology**.**

Tree planting is a brilliant solution to tackle climate change and protect biodiversity. But the wrong tree in the wrong place can do more harm than good, say experts at the Royal Botanic Gardens (RBG), Kew. "Planting the right trees in the right place must be a top priority for all nations as we face a crucial decade for ensuring the future of our planet." said Dr Paul Smith, a researcher at Botanic Gardens Conservation International in Kew.

A raft of ambitious tree-planting projects are underway around the world to replace the forests being lost, such as a project in the UK aiming to plant 30,000 hectares (300 sq km) of new forest a year. The African Great Green Wall project aims to plant a 5,000-mile (8,048 km) forest wall to fight the climate crisis. However, planting trees is highly complex, with no universal easy solution.

The 10 golden rules are in line with the *International Principles and Standards for the Practice of Ecological Restoration*. The term 'reforestation' is used in a general sense to refer to the creation of restored native forests by tree planting or **natural regeneration,** where forest formerly occurred naturally but has been lost recently.

The 10 golden rules

1. **Protect existing forests first**
   Keeping forests in their original state is always preferable; undamaged old forests soak up carbon better and are more resilient to fire, storm and droughts. "Whenever there's a choice, we stress that halting deforestation and protecting remaining forests must be a priority." said Prof Alexandre Antonelli, director of science at RGB Kew.
2. **Put local people at the heart of tree-planting projects**
   Studies show that getting local communities on board is key to the success of tree-planting projects. It is often local people who have most to gain from looking after the forest in the future.
3. **Maximise biodiversity recovery to meet multiple goals**
   Reforestation should be about several goals, including guarding against climate change, improving conservation and providing economic and cultural benefits.
4. **Select the right area for reforestation**
   Plant trees in areas that were historically forested but have become degraded, rather than using other natural habitats such as grasslands or wetlands.
5. **Use natural forest regrowth wherever possible**
   Letting trees grow back naturally can be cheaper and more efficient than planting trees.
6. **Select the right tree species that can maximise biodiversity**
   Where tree planting is needed, picking the right trees is crucial. Scientists advise a mixture of tree species naturally found in the local area, including some rare species and trees of economic importance, but avoiding trees that might become invasive.
7. **Make sure the trees are resilient to adapt to a changing climate**
   Use tree seeds that are suitable for the local climate and how that might change in the future.
8. **Plan ahead**
   Plan how to source seeds or trees, working with local people.
9. **Learn by doing**
   Combine scientific knowledge with local knowledge. Ideally, small-scale trials should take place before planting large numbers of trees.
10. **Make it pay**
    The sustainability of tree re-planting rests on providing a source of income for all stakeholders, including the poorest.

Read the full article:

Di Sacco A, Hardwick K A, Blakesley D et al. Ten golden rules for reforestation to optimize carbon sequestration, biodiversity recovery and livelihood benefits. Glob Change Biol. 2021;27:1328–1348. https://doi.org/10.1111/gcb.15498

The International Principles and Standards for the Practice of Ecological Restoration are found at https://www.ser.org/page/SERStandards/International-Standards-for-the-Practice-of-Ecological-Restoration.htm

Above. An example of a problematic tree-planting in the 1980's in the highly degraded but previously mega-diverse lowlands of eastern Madagascar. Thousands of hectares were planted with the Australian *Grevillea banksii* and other non-native species. The initial intention was to provide communities with a source of firewood, and this met with some success. But unintended negative consequences included displacement of croplands and exclusion of native biodiversity by the introduced species, which showed potential to become significantly invasive (Kull et al., 2019; Credit: AA)

Africa's Great Green Wall

A recent article by Rachel Cernansky in ScienceMag.org highlights the need to learn from past mistakes.

The Great Green Wall, launched in 2007, aims to restore a corridor stretching some 8000 kilometres across Africa by 2030. The project has struggled to make headway, but in January 2021, received a funding boost.

This was welcomed by environmental restoration and community specialists. However, recent research by experts has shown that many forestry projects around the world have failed because they didn't adequately address fundamental social and ecological issues. Project leaders often did not ask communities what kinds of trees they wanted, planted species in places where they didn't belong and did little to help the saplings survive. This lack of community input is a leading cause of failure.

There are some promising models such as farmer-managed natural regeneration (FMNR) in Sahel, the semi-arid region south of the Sahara, and PATSPO, for Provision of Adequate Tree Seed Portfolio in Ethiopia.

Read the full article: doi:10.1126/science.abh0329

The control of Bitou Bush and the recovery of native vegetation and native wildlife

David Lindenmayer and Chris MacGregor

Threatened Species Recovery Hub, Fenner School of Environment and Society, The Australian National University, Canberra, ACT, 2601

Bitou bush is one of Australia's worst environmental weeds and a significant problem in Booderee National Park, in the Jervis Bay Territory (on the south coast of New South Wales). Bitou bush was used to help stabilise extensive sand dune areas following clearing and grazing – before the Jervis Bay area was set aside as a National Park and co-managed through a partnership between the Wreck Bay Aboriginal Community and Parks Australia.

Bitou bush did indeed help stabilise sand dunes, but it also became a serious invasive plant in Booderee National Park (and many other parts of coastal eastern Australia). Control of bitou bush is now a key component of the Plan of Management for Booderee National Park and considerable resources are dedicated to limiting the extent of this noxious plant – a weed which alters microclimates, changes leaf litter environments and has marked negative impacts of habitat suitability for a wide range of animals.

A major park-wide monitoring program was established in late 2002 in Booderee National Park through a collaborative partnership between The Australian National University, Parks Australia and the Wreck Bay Community. The monitoring program continues to this day and is an excellent example of a highly productive science-manager partnership. The program includes monitoring long-term changes in plant and animal populations as well as the response of biodiversity to weed control, fire management and feral animal control (especially the red fox). Part of the monitoring program also includes quantifying the effectiveness of bitou bush control efforts as well as the impacts of the weed treatment methods on native animals.

The control program for bitou bush typically entails a series of treatments commencing with spraying followed by burning and then respraying to kill seedlings triggered by fire. Our monitoring has shown that spray–burn–spray is the most ecologically effective sequence of treatments in controlling bitou bush. However, some variations of this approach can actually make the problem worse (such as only burning without spraying – which triggers germinant swarms from soil-stored seed). The spray–burn–spray protocol is also the most cost-effective form of bitou bush control.

Above: A monitoring site heavily infested by bitou bush.

Below: A monitoring site immediately after spraying and burning treatments to control bitou bush (photos by Chris MacGregor).

Landcare Webinar Series

The Landcare Webinar Series through Landcare Australia brings people interested in sustainable land management and conservation activities together. It showcases the rich diversity of knowledge, passion and expertise within the landcare community.

Hosted by a facilitator, webinar speakers present content ideas to inspire people and provide tools that people can apply with their groups in their local community to manage the environmental issue in their patch, and support community resilience.

For more information go to https://landcareaustralia.org.au/national-landcare-conference-webinar/

You can also access past webinars including a talk by AABR committee member Tein McDonald.

References

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Lindenmayer, D.B., Wood, J., MacGregor, C., Hobbs, R.J. and Catford, J.A. (2017). Non-target impacts of weed control on birds, mammals, and reptiles. *Ecosphere*, 8(5), e01804. https://doi.org/10.1002/ecs2.1804

Supporting recovery of fire-affected bushland in Victoria

Actions taken by East Gippsland and northern Victorian organisations and landholders to manage threats on public and private land post-fire.

This webinar was held May 26th, 2021 and hosted by AABR in partnership with Trust for Nature Victoria which is a private land conservation trust. Funded by the Foundation for National Parks and Wildlife.

Summaries of the talks are below.
The webinar can be viewed at https://www.aabr.org.au/supporting-the-recovery-of-fire-affected-bushland-in-victoria/

Deirdre Griepsma: Working for the greater good – managing threats for biodiversity recovery after the 2020 fires

Deirdre is the Regional Biodiversity Recovery Programme Coordinator with Parks Victoria. She is coordinating the delivery of Parks Victoria's Bushfire Biodiversity Response and Recovery Program post the 2019/20 bushfires in Eastern Victoria.

This presentation provides a snapshot of the threat management work that Parks Victoria and the Department of Environment, Land, Water and Planning (DELWP) are doing. This involves working with a range of partners and stakeholders to develop solid relationships and will continue as we transition from immediate reactive threat management to a restoration focus across the fire impacted landscape in Eastern Victoria.

A number of high value vegetation communities in East Gippsland were impacted by the Summer 2019/20 bushfires. 425,094 ha of National Parks and Conservation Reserves were impacted by fire, with 285,462 ha of those impacted by high severity fire. Twenty five National Parks and Reserves and 36 other Reserves have between 90 -100% of land burnt. Five EPBC (*Environment Protection and Biodiversity Conservation Act 1999*) and eight FFG listed communities were impacted by fire – (the Victorian *Flora and Fauna Guarantee Act 1988* - the FFG Act)

The report, *Victoria's bushfire emergency: Biodiversity response and recovery*, assessed the fire extent as of April 20th, 2020. This program identified themes and focus areas.

Work has been funded and carried out under the *Bushfire Biodiversity Response and Recovery BBRR Theme 4 - Intensified Management of Sustained Threats.* The primary focus is to protect Ecological Vegetation Classes (EVCs) and critical weight range mammals.

The Key actions:

- Aerial shooting and on-ground shooting of introduced pest animals on public land. Target species are deer, feral cattle, goats, foxes, feral cats (ground only). To date more than 4,300 deer have been removed from high-biodiversity value areas using ground and aerial shooting.
- Targeted ground control of introduced pest animals. Feral pig baiting and trapping – 16,900 ha, Fox baiting – 33,600 ha
- Two exclusion fences were constructed to protect high biodiversity values from large herbivores (deer and feral horses).
- Targeted weed control. Contractors are carrying out weed control to protect critical flora communities and sensitive flora. There are five communities listed under the national *Environment Protection and Biodiversity Conservation* (EPBC) Act 1999 within the fire boundary.

Monitoring and Evaluation

Monitoring and evaluation is being carried out by surveillance and long-term monitoring cameras for deer and pigs, plus aerial impact assessments to assist with forward planning and monitoring and establish baseline data for large herbivore activity.

A deer monitoring program is being established and long term approach with the Victorian Deer Control Strategy, (2020).

Useful links

- https://www.parks.vic.gov.au/get-into-nature/conservation-and-science/biodiversity-protection/bushfire-recovery
- https://www.wildlife.vic.gov.au/home/biodiversity-bushfire-response-and-recovery
- http://www.environment.gov.au/biodiversity/bushfire-recovery

Brett Mills: Deer control on protected private land

Brett is a Senior Conservation Officer with Trust for Nature, working with private landholders who have a permanent covenant with TFN. Brett's expertise is in herbivore and feral animal control, and he is presently responsible for the bushfire recovery deer control program on protected private land

Forty three properties with covenants were affected by the fires in our north and east during the 2019/20 fires. Our goal is to look after our landholders and the regeneration of the bush they protect, and we also work with adjoining landholders and linking properties to maximise the outcome.

Sambar deer are the target species and understanding their behaviour and ecology is critical for the effectiveness of control programs for private land. This is known as profiling. One source of information is from game cameras and can help with estimating deer numbers and the resident population's social dynamics.

Why Sambar deer? The long term survival of plants and the process of recruitment is complex. i.e. rainfall events, weather, other browsers, weeds, etc. Sambar deer are primarily browsers and can directly impact young plant recruitment and also kill mature plants. Removal of sambar makes a critical difference.

We are working in burnt and unburnt areas. The initial deer control program works on protecting young plants directly after fire in both settings. The medium and long term control phases assist surviving and regenerated adolescent plants into maturity. Unburnt areas can become a refuge for all flora and fauna post fire. However these refuges can lose adult plants as well as young plants through over browsing following fire - Sambar remove everything green within their reach.

Deer population assessments are taken at each site which forms the basis of operation plans for the efficient and effective removal operation. On ground evidence is cross checked with camera information to build a picture of the deer population and their behaviour.

This information goes towards a works program for removal and logistics including project authorisations, sourcing specialist contractors, working around restricted areas and times available for deer control. Facilitation goes hand in hand to help coordinate all partners to run a successful program.

A monitoring program has been established by TFN across all covenanted fire affected properties to track how the recovery process is going through vegetation condition monitoring and surveillance of new threats.

Post removal deer population assessments have shown an absence of deer from all properties. Ongoing work will be required. Post fire vegetation recruitment is steady and strong with good diversity.

Paul Harvey: Post-fire Challenges and Opportunities on Private Land

Paul is Senior Conservation Officer for Trust for Nature.

Weed control on a number of private properties in the east of East Gippsland has been undertaken prior to and after the fires, and this example of three properties shows the work being done.

On one property at Gypsy Point north of Mallacoota we met with the owners to engage with them with a view to covenanting in the future. The area had good native vegetation and we began a program of weed control to work on arum lily *Zantedeschia aethiopica* in swampy area. After work had been done, the fire came through. Lots of red-ink weed *Phytolacca octandra* appeared – there had been no sign of the plant before, and no fire history in the area. The entire creek had a carpet of this for 100s of metres. Due to a limited budget the decision was made not to invest in this. We could not spray without damaging the natives.

A nearby property, north of Mallacoota, was another opportunity to engage with landholders to talk about covenanting and to fence stock out of a gully of warm temperate rainforest. This was prior to the fires. Work is being done in the area badly impacted by the fire. The challenge is not with the immediate impact, but later when weeds were mixed in with regenerating natives. So the challenge was how not to destroy native plants especially rare ones whilst dealing with post-fire weeds. With more growth it became more difficult to target the weeds. Work is targeting threatening weeds – mostly blackberry *Rubus fruticosus*, red-ink weed and a bit of bridal creeper *Asparagus asparagoides*. The initial weed response was not so bad but with the regular summer rain and coming into summer, weed growth went nuts.

Another property heavily impacted was a small covenanted block close to where fire ripped through rainforest near Martins Creek. The property had a lot of blackberries as it had an absent landowner who never visited. Heavy blackberry came from a roadside stack and the eastern part of property was inaccessible. Fire provided the opportunity to carry out post fire spraying and control of weed species as the fire allowed access to the site.

Andrew Briggs: Recovery of riparian areas – the challenges and long term approach needed

Andrew is Senior Project Officer with North East CMA.

The Catchment Management Authority area covers everything that flows into the Murray River North of the Divide and East of Wangaratta. Fire came through on New Year's Eve 2019 and particularly impacted waterways. Hardest hit were the Cudgewa, Nariel, and Thowgla Creeks, with over 50% high canopy scorched or burnt, and only 2% of the Nariel and Thowgla valleys unburnt or lightly burnt.

Waterways can look okay post-fire but then it rains. We got consistent rain and one large event. Flash flooding in the high catchments is not uncommon but these were events of 10-20 ml rainfall rather than larger amounts which it normally takes to get the waterways flowing. These flood events, of only modest height, created a huge impact due to the speed of run-off from burnt areas, producing subsequent debris, gravel and sediment in run-off and large erosion events. These peaks all but wiped out native fish and trout in most reaches of these waterways.

There was significant investment from the Victorian State Government for a Fire Recovery Program, targeting waterway recovery, public asset protection, long term recovery, and improvement of riparian and aquatic ecosystems. Also within that program was a chance to do something different.

We worked closely with landholders and other stakeholders to negotiate outcomes for recovery of farm/asset function, and also importantly to maximise the rate of recovery of the waterways and the ecosystems they support. Working with the landholders can be difficult as repairing waterways in a different way was not the priority of landholders affected by fire.

Targeted consultancies were engaged for some specific technical input (e.g. Cudgewa Fishway and Nariel Geomorphology). Works typically include installation of fencing, revegetation and structural interventions, either for managing instabilities, instream habitat or frequently both.

We are undertaking detailed monitoring of fish populations. There is some evidence of Murray cod trying to get back up the creek. There is pressure to restock fish, but this needs to be done right. A priority is to stack the odds in the natural recovery processes.

Above: An example of a landslide resulting from a rain event post-fire that destroyed habitat in the Cudgewa Creek with thousands of tonnes of rubble.

Tom Crook–Where are the Owls and what about the Rainforest? Partnerships for biodiversity in post-fire East Gippsland

Tom is the program delivery manager with the East Gippsland Conservation Management Network (EGCMN) and is a forest ecologist and educator. The EGCMN is a community run group which works to improve conservation and management.

EGCMN runs projects that look after and connect people with our unique natural environment and its threatened conservation values. Two of these relate to post fire responses and are described in brief below with detailed information given in the webinar presentation (see link on Page 8).

Owls from the ashes

Owls and the forest-based ecosystems they depend on are badly affected by fires. This is due to loss of critical habitat such as hollow bearing trees where owls nest and breed, as well as the effects on prey and foraging habitat.

We wanted to understand where owls are after the fires compared to where they were before, and we identified sites to record their presence. The project involves mapping and recording presence via the playback method - listen and record response, plus spotlighting transects.

We are also looking at the use of artificial habitats which were put in place in 2017 for Masked Owls and how effective they have been and how they are working now.

Rainforest sites of significance

East Gippsland has most of the rainforest in Victoria. Much was affected by the bushfires. They are supershady areas due to heavy canopy and are biodiversity hotspots. They are naturally fire retardant but will burn under extreme conditions.

We focussed on an area called Fairy Dell - 1400 ha with good natural values and alot of community interest. It was subject to high intensity fire on Jan 31st. The community was concerned about the recovery of this area, so we are monitoring its progress. Despite the threats caused by the presence of Sambar deer, areas are showing quite good recovery. However, while recovery of individual rainforest plants is rapid, the recovery of ecosystem structure will take a long time.

Above: a stand of rainforest in East Gippsland which was not burnt. This area is the largest area of rainforest in Victoria.

John and Robyn Hermans: An East Gippsland Covenantor's perspective

The Hermans are Private Land Covenantors with Trust for Nature.

The talk and photos are on the webinar recording and provide a perspective of their observations and details the preparation before and the response after the fire - both the botanical response and what has been done.

Andrew Murray: The post-fire survival of Victoria's Long-footed Potoroos in Far East Gippsland

Andrew is Operations Manager with the DELWP Southern Ark Project, managing the project for the last 15 years. He has worked on wildlife management in Far East Gippsland for over 30 years.

The Long-footed Potoroo (LFP) is an endangered 2 kg marsupial in the potoroo ("rat-kangaroo") family, confined to forests in Eastern and North Eastern Victoria. Its food is almost entirely "truffles" and they play an important role in fungi dispersal. The main threat is introduced predators, specifically foxes.

The Southern Ark Project has carried out effective, ongoing fox control across 1 million hectares. There are over 3,500 permanent bait stations with baits replaced nine or more times per year. This has been in operation for over 15 years with foxes now down to very low numbers.

2016/2017 Southern Ark camera-trapping survey covered 720 sites with LFP at 205 of these.

The 2019/2020 camera-trapping survey commenced in late 2019. The first 240 sites surveyed found potoroos at 83 sites. The cameras were moved to a second set of 240 sites in early December. The fires swept through East Gippsland late Dec 2019 to late Feb 2020. Over 120 cameras were lost during the fires.

Fires burnt 70% of the footprint of Southern Ark Project. Some cameras were found, and the SD cards had some photos showing evidence of animals including LFPs, surviving after fires. There was also some evidence of truffles being dug up.

Of the 83 sites that had detected LFPs in late 2019, 75 had been burnt and 8 remained unburnt.

In April-May 2020, it was found that 47 had LFPs present post-fire with LFPs detected at all the eight unburnt sites. Camera surveys were carried out at another 166 sites with LFPs detected at 94 sites. Across the 249 sites LFPs were detected at 141 sites (57% of sites surveyed). They were detected post-fire across the entire known distribution of the species in Far East Gippsland.

Conclusion

Long-footed Potoroos survived in areas that had been impacted by fire and continue to be distributed across an area of approximately 400,000 hectares. Ongoing fox control at a landscape scale was likely to have been beneficial both before and after the fires. Follow-up camera-trapping surveys in 2021 will provide more data on the current distribution of Long-footed Potoroos in Far East Gippsland

Identifying sedges and rushes that consistently fail to flower

Peter Ardill
Accredited practitioner AABR

The ability to produce distinctive reproductive features, in the form of flowers and fruits, can be inoperative in indigenous plants growing in degraded environmental repair sites. This in turn may impede the accurate identification of these plants, and disrupt on-site environmental repair procedure and efficacy.

Introduction

This article outlines a successful experiment that induced flowering in potted samples of an unidentified sedge growing in a degraded Blue Mountains riparian and wetland environmental repair site. The sedge had never been known to flower on the site.

By replicating the experiment or aspects of it, repair practitioners may achieve success in inducing flowering and fruit production by unidentified sedges and rushes located on their site. These two plant features can significantly assist with the successful botanical keying of an unidentified plant species. The experiment did not attempt to isolate the precise factors that inhibited flowering by the repair site sedges, or that induced flowering in the potted samples.

The repair site

The repair site, Banksia Park Bushcare site, is located to the south of Katoomba township, close to the spectacular southern escarpment of an expansive plateau. The site extends over one-third of a hectare. The unidentified sedge is a prominent vegetation feature.

The site constitutes the upper riparian zone of Banksia Streamlet. This stream plunges over the steep and virtually inaccessible escarpment, transporting a steady flow of water to the ecologically sensitive Blue Mountains National Park and Greater Blue Mountains World Heritage Area of the Jamison Valley.

The environmental repair project being undertaken on the site commenced in 2010. The project is managed by an experienced Blue Mountains City Council (BMCC) Bushcare Officer, and the enthusiastic and skilled members of the Banksia Park Bushcare Group, a member group of the extensive BMCC volunteer bushcare network.

Method and outcomes

The experiment was inspired by the knowledge that many indigenous plant species flower or shed their seed when disturbed in some way, such as by fire or limb breakage. The original intention was to disturb potted samples of the sedge, in the hope that this might promote flowering. One anticipated technique was to apply fire to potted sedge samples, but this proved to be unnecessary.

During the dry, hot summer of late 2019, three samples of the sedge were dug up and potted, along with swamp soil, in 25 cm wide x 22 cm deep rigid plastic pots. No other filling mix was added.

The three pots were stored in two rigid, plastic recycling crates, measuring approximately 39 cm width x 60 cm length x 25 cm depth. The drainage holes of the crates were plugged, and the crates were kept full of water at all times: primarily rainwater, with some chlorinated tap water added infrequently. The three pots and their sedges were fully immersed in water throughout the entire period of the experiment.

The crates and pots were always located in a sheltered position, well protected from the prevailing westerly winds of the Blue Mountains. The position was almost fully shaded in the winter months of 2020, gradating to longer and then full daily periods of sunlight and warmth in the ensuing spring and summer months.

By April 2020 all of the potted sedge samples were exhibiting new green stems. All of the potted sedge samples were displaying flowering spikes, with numerous white flowers, by September 2020, some nine months after potting (Fig 1). Clusters, known as spikelets, of matured flowers were present on the spikes of all three potted samples by November 2020. Seeds, in the form of smooth nuts, were visible by January 2021. In contrast, the sedges at the Banksia Park repair site had not flowered.

Discussion and conclusion

Of course, it is interesting to speculate about why the potted, sample sedges flowered, in contrast to the non-flowering specimens located in the repair site. Professor Kingsley Dixon of Curtin University has demonstrated that smoke plays a role in the germination of the seed of many Australian flora species. The 2019-20 summer months in the Blue Mountains were extremely smokey, due to the bushfires raging nearby. Could the smoke factor have stimulated the flowering of the potted sedges and influenced the experiment's outcomes? However, the sedges located in the Banksia Park repair site were also exposed to heavy smoke, but did not flower.

Fig 1: Success! Potted sample sedge. White flowers centre right.
Photo: P Ardill 2020

The ample amounts of water that the potted, sample sedges were stored in may have stimulated flowering. Positioned in peat soils but on a disturbed and degraded site, it is quite possible that the Banksia Park sedges are regularly water deprived: a quite deeply incised and eroded stream channel may be steadily draining the swamp. It will be interesting to observe if the repair site sedges flower in spring 2021, as the peat soils there are now quite saturated.

The disturbance caused by the act of digging the sample sedges and potting them may have induced their flowering spree. Also, it is not improbable that a weed species located on the repair site was impeding the flowering of the sedges, by means of an allelopathic mechanism. Possibly a combination of the above factors, the digging, the smoke, the ample water and the sheltered position, brought on the flowering of the potted samples.

The big question: was the sedge a weed or an indigenous species? The positioning of the main and secondary spikelets, and the presence of the smooth nuts, were plant features that contributed significantly to the firm identification of the sedge. A valued, independent botanical opinion confirmed that the sedge is *Baumea rubiginosa*, a common indigenous sedge of the Blue Mountains. Good to know!

Acknowledgements: Many thanks to the Banksia Park Bushcare team. Dr Ian Baird kindly shared his Blue Mountains field observations of *Baumea rubiginosa*.

Reference text: Van Klaphake (2004) *Key to the Commoner Species of Sedges and Rushes of Sydney and the Blue Mountains* Fourth Edition (Van Klaphake: Byabarra)

Bushfire Recovery Grants available from the Ecological Society of Australia

Closing MIDNIGHT 30 JULY

In response to the 2019/20 bushfires the Ecological Society of Australia (ESA) established the Ecosystem Recovery Fund, to support ongoing restoration and recovery works. ESA is now rolling out the final offer of these funds.

- Grants are not limited to Landcare groups (as the online information seems to say) but groups must be incorporated and undertaking bushfire-related ecosystem recovery work.
- Grants are not limited to those areas affected by the black summer fires and can be used for anything from monitoring the response of native species to tree planting projects.

Applications for up to $1000 are now open **until midnight, 30 July** and must be made through an incorporated group.

For more information and to apply online go to https://www.ecolsoc.org.au/.../bushfire-recovery-grants

Ecological Management & Restoration Journal

Subscription discount for AABR members

AABR is just finalising an agreement with the Ecological Society of Australia (ESA) to provide a number of benefits to AABR Members.

The ESA will offer a heavily discounted 'Affiliate Membership' of ESA itself to any individual paid up members of AABR. In purchasing this (currently $58) Affiliate Membership, the ESA member would gain the benefits available to any ESA member including

- complementary electronic access to both of ESA's journals - *Ecological Management & Restoration* and *Austral Ecology*.
- discounted conference registration
- weekly e-news and quarterly bulletin
- eligibility for a suite of awards & grant programs

This price works out to be around a 50% discount to the EMR journal if members were to subscribe in the normal way.

Information on how to access this offer will be sent to you in an AABR enews shortly.

Ecological Management & Restoration ESA

BARRIER FIELD NATURALISTS' CLUB

CENTENARY EXHIBITION

ALBERT KERSTEN MINING AND MINERALS MUSEUM
CORNER OF BROMIDE & CRYSTAL STREETS BROKEN HILL

4 JUNE 2021 – 28 AUGUST 2021

Step back a hundred years and become acquainted with one of the oldest clubs in Broken Hill.

At a time when arid land conservation was little understood, much less practiced, the Barrier Field Naturalists' Club advocated for the protection of the fragile environment of Far West NSW.

Using archival photographs, paintings and original texts, this Centenary Exhibition reflects on how a small number of committed people can effect positive change.

The Barrier Field Naturalists' Club acknowledges and respects the Wilyakali and Barkindji people on whose Country we live.

FOUNDATION BROKEN HILL BROKEN HILL CITY COUNCIL

Image: Crinum flaccidum (Darling Lily), EE Gostolow, 1939

Post fire regeneration in NSW – where are we now – 12 months on

Notes from the webinar held on Tuesday, April 13th, 2021
The recorded webinar is now available online at https://youtu.be/t-Xj5I54FlU

Background to AABRs post - fire work:

After the fires of Summer 2019-2020, by March 2020 AABR was encouraging agencies and landholders to assist natural recovery. There was a major response by people who wanted to help and AABR had about 200 volunteers registered for this. With the arrival of COVID and the restrictions placed on activities, the planned program was unable to be undertaken. However, a handful of NSW site coordinators managed to navigate the COVID constraints and deliver on-ground outcomes.

The four speakers at the webinar were able to tell us the results of work over the 12 months from March 2020 to March 2021. Below are summaries of their talks. Some of the ongoing work has been detailed in AABR Newsletters 144 to 147 https://www.aabr.org.au/learn/publications-presentations/aabr-newsletters

Tom Clarke: Crowdy head littoral rainforest-prioritising actions post fire

Crowdy Bay National Park is south of Port Macquarie on the mid-coast of NSW. Our first task was to determine the priorities for action after a spot fire had burnt some of the park. The initial photos of the area from the northern end of Kylies Beach to Indian Head, which is an area of littoral rainforest, indicated that almost all had been burnt. The local National Parks Association bush regeneration group have worked on site for about 20 years.

It was some time after the fires before we could get access to the site. I met with Sue Baker (who coordinates the local NPA bush regeneration group) to discuss the approach. The littoral rainforest burnt by the spot fire on the beach was considered the priority. First look showed some bare ground and that the canopy had been affected. It was a while before work could start due to COVID. It appeared the canopy would be from woody exotic plants. Canopy is important for rainforest regeneration, so it was decided that woody weeds would be left where they were not in direct competition with natives and progressively removed as resources allowed. During the several visits to date the group has removed selected woody weeds. A priority for removal was also the vines such as morning glory and cape ivy, which were appearing. The rest of 2020 was humid with plenty of rain and everything growing like mad.

Starting work 2020. The burnt canopy can be clearly seen. Photo: Tom Clarke

The regeneration showed a new canopy of *Trema tomentosa* var. *aspera* appearing together with other native species, showing the area to be very resilient. It is surrounded by good bush with no really bad impacts such as run off. Good rains resulted in a dense regeneration of grasses, providing a sort of canopy over bare ground. After six months, the regeneration growth was chest high so now the team is not as selective with removal of woody weeds. There is good attendance by the local NPA. The group have also been working on other sites but have been thwarted a bit this year (2021) with flooding. In May there was the annual bush regeneration camp held by the NPA. These camps have been going a long time.

Deb Holloman: Wollombi Valley – What help have post fire landholders most wanted

Deb has 20 years bush regen experience, and is a retired Bushcare coordinator with National Parks

After the fires, in March 2020 we started community meetings at Laguna for Upper Yango Creek, Wollombi and Upper Hunter Landcare groups, and Australian Wildlife Conservancy. We arranged workshops for the three landcare groups which were in areas severely affected by the fires. Then COVID arrived and restrictions meant that the onsite workshops were unable to be carried out. Zoom sessions were used for two workshops for Upper Yango Creek and Wollombi with a total of 32 attendees. These were presented by AABR and supported by Hunter Region Landcare Network.

The format was based on a previous post-fire workshops for participants with limited experience in bush regeneration. Subjects included bush regeneration principles; fire impacts on fauna; bush regeneration tools and techniques; Work Health and Safety; resources and references and plant identification/specific control methods. Explaining planting vs regeneration to those not familiar with bush regeneration was needed. In this case as there were no plants available for planting and no seed collected, regeneration was the only option.

Topics of most interest to landholders were:

- What herbicide to use and at what concentration - although many landholders were wary of using herbicide.
- Where to purchase tools.
- Plant identification - which was greatly needed. Participants sent in photos prior to the workshop and the plants were identified - natives, weeds and newly regenerating seedlings. Participants were happy that many they thought were weeds were not. It was necessary to emphasise 'If in doubt don't take it out", and also the importance of vines which come back vigorously after fire. Many participants thought all vines were not good, and we had to get the message across that some vines were really important.

Outcomes and follow-up:

- WhatsApp group established for further plant identification and follow-up - 36 participants.
- Two large grant applications for Upper Yango – supported by AABR and Upper Hunter Landcare – vegetation surveys, bush regeneratiom and fire management.
- Fauna surveys conducted on affected properties with Australian Wildlife Conservancy – these found quite a lot of fauna and are continuing.
- Site visits by Hunter Local Land Services and Soil Con – workshops on erosion control, bush regen and planting.

Gerard Proust: Yatte Yattah – Nature Reserve - follow up needs over time since fire

Gerard is working as a contractor for NPWS post-fire since May 2020 and brings three decades of experience to the job.

Yatte Yattah Nature Reserve is north of Milton (3 hours south of Sydney) and was 19 ha when work first started 25 years ago. Now 36 ha, it is a small remnant surrounded by farmland - but this did not save it from wildfires. The Nature Reserve (NR) is the most southern limit of subtropical rainforest (STRF) (5 hectares) and dry rainforest (DRF) (14 hectares) and has red gum and mixed gum and turpentine forests (17 hectares) which are poorly conserved in the area. There are 34 tree species in the STRF and there are19 native flora species at their southern limit.

Site assessment in April 2020 after the fires showed that fire had opened up large sections of reserve which had previously been inaccessible due to vine thickets. Some 75% or 27 hectares of the reserve had been burnt - 50% of STRF, 60% DRF and virtually all of the eucalypt forest. The unburnt areas were three hectares below the waterfall and along the riparian zone and eastern gullies.

Work commenced in May 2020 with funding from NPWS which initially allowed for 50 person days [100 person days by the end of June 2021]. The assessment prioritised STFR then DRF and if time then red gum forest. Work was comprehensive weeding in core areas. At this time, we recorded >120 native species and 20 exotics; the priorities were tobacco bush and madeira vine (this has expanded in the last couple of months). We put in a 20m x 20m plot for monitoring to see what was happening.

May to July 2020: Hand weeding of lots of tobacco bush where there were lots of natives underneath. In over 43 days we weeded 9 ha of STRF and DRF. There were 1,000 tobacco bush every 50 m^2 taking 15 minutes. So an easy 1.5 million manually removed.

Oct 2020 to March 2021: Work continued with the tobacco bush which was now larger and less in number, so we used the cut and paint. In the 50 sq m there were originally 1000 plants. This number had now halved, but instead of 15 minutess, the same area now took 60 minutes to cut and paint as the tobacco was now up to 2-3 metres high.

Left May 2020 >80% weed cover of tobacco bush. Photo: Gerard Proust

Right: Dec 2020. <1% weed cover >90% native cover after seconday weeding.

Recovery: After weed removal there was an amazing array of native seedlings. During May to Sept 2020, we counted 50 native species and 13 exotics germinating (mostly tobacco bush - 80% of the biomass). It seemed that the longer we left primary weeding the fewer species were seen. The plot data showed that originally there were 30 native species, with 650 native plants every 50 m^2. The same plot six months later had <10 native species and only 50 native plants in same 50 m^2. So, after six months growth we got half the number of tobacco plants, work took twice as long, and one-third of the number of native plants.

Problems included having to wear masks due to irritant hairs affecting breathing and the eyes, plus needing to be careful when weeding amid regenerating *Dendrocnide* giant stinging tree .

Response of fauna has been amazing. In May 2020 there was no bird song. Jan 2021 had 28 bird species – including lyrebirds, cat birds and bower birds, and flying foxes have recently returned.

Techniques used: Initial work was hand weeding across the site. With time there were so many natives and the weeds were getting big, so we changed to cut and paint. Although the cut weeds would not reshoot, we had to find places to dispose of the weeds so we would not destroy natives coming up.

We trialled spraying, but decided it was not warranted in the area treated. Adjacent to the 20 x 20 plot we tried different techniques. With overspraying most natives underneath did not survive and there was a different suite of weeds after the overspray. We felt it was not justified, but need to go back and also look at short and long term consequences.

In May we started a major program of mapping and suppressing the Madeira vine infestations that have gone botanically ballistic. We are manually removing parts, scrape and painting the multitude of stems with Vigilant ® and bioactive, and also spraying where possible. This and all the other works are on-going and we await the new financial year, hoping for the much awaited restoration funding to filter down! Hope springs eternal.

Scottsdale – Tein McDonald: the importance of plant recognition and follow up

Tein McDonald (AABR) and Phil Palmer (Bush Heritage Australia) at Bush Heritage's Scottsdale Reserve Bredbo, NSW

AABR has had post-fire experience from working with Lane Cove National Park, Sydney in 1994, when AABR assisted Friends of LCNP to set up 18-19 post-fire regen groups.

After the 2019-20 fires, AABR asked around for a site which could benefit from assistance and was able to work with Bush Heritage (BHA) at Scottsdale, near Bredbo NSW. The property has grassy woodland sites in varying condition as some is degraded farmland. Many of these burned on February 2nd, 2020.

The site called Rutidosis Ridge had been dominated by African love grass (ALG) prior to being aerially sprayed with the selective herbicide flupropanate about three years prior to the wildfire. This allowed for selectivity for ALG and serrated tussock. After fire burnt the ALG, many natives were found regenerating and looking at the site in March 2020 we could see many native species, mostly forbs and grasses, in amongst ALG burnt stubbs. So, it was decided to treat the ALG and all weeds by spot-spraying.

Fire had removed the ALG thatch, cued the germination of natives and flushed out weed. BHA agreed to take advantage of that opportunity with support from AABR.

During winter the site was rested and good rains produced good growth. BHA was now supporting with money, and the volunteers made a major contribution.

A camp was held on Nov 15th, 2020, with volunteers spraying with knapsack sprayers, which was essential due to the size of the site. Major skills required were a high level ability to identify natives and weeds. If particular volunteers did not have these skills, they worked under strict supervision as there was a need to avoid off target damage. The volunteers were fortunate to include people with good experience and a commitment to follow-up work.

There were 30 weed species, but ~60 natives including grasses and threatened species such as *Rutidosis leptorrhynchoides* button wrinklewort and *Swainsona sericea* silky swainson-pea.

The site condition will improve over time. Ongoing treatment is needed and ALG is still present. This assumes successful aerial spraying with flupropanate this winter and we can continue to mop up weeds over the next couple of years.

Books

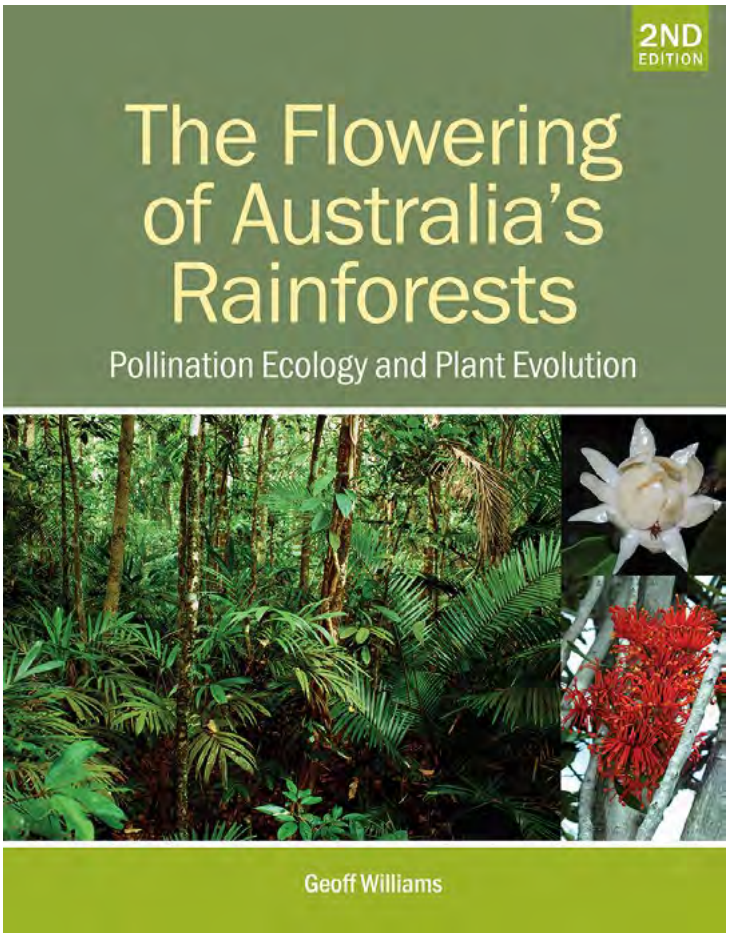
The Flowering of Australia's Rainforests Pollination Ecology and Plant Evolution

Geoff Williams Second Edition

This is the sort of the book that may stretch the knowledge frontiers of your average bush regenerator (myself very much included) who may notice the flowers in the bush and the animals that interact with them, but not necessarily understand the science of pollination ecology taking place in such interactions. If you wish to brush up on the science of pollination ecology in Australian rainforests, then this is the book for you. With a RRP of $140.00 (although it is advertised on eBay for just over $120.00), it is somewhat of an investment, but well worthwhile. As noted above, this is the second edition of this book (the first being published in 2010) and is considerably bigger in its text, images and coverage of climate change, fragmentation, and invasive species.

As said in the Preface of this book "the essential purpose of the work is to project some of the specialist knowledge that is available on the pollination ecology of Australian rainforest ecosystems into a more popular and accessible arena", which for me it does achieve to a large degree, balancing academia with a readable narrative, although the Glossary is a welcome addition to this second addition. Those having a deeper interest in learning more about our rainforest flora and their ecology will be rewarded by this publication, with lots of lovely tangents and some poetic section titles such as "The dawning of vascular plants, and those that are dead", "Attraction of the comely shape: orchid flowers and barren illusion", "Apomixis and coppicing: life without sex" and "Flowering plants that mimic death". With regards this last one, I'd heard about the rotten flesh scents that the South East Asian Rafflesia have evolved to attract flies as pollinators, but didn't realize our ancient *Austrobaileya scandens,* an understorey vine from north Queensland produces a scent from its flowers reminiscent of rotting fish (how appetising) which attracts flies to pollinate them.

In summing up, this text gives an overview of the pollination ecology of Australia's rainforests in a world rainforest context; provides an introductory review of plant evolution and plant-pollinator relationships; covers pollination syndromes and the role and function of pollinator groups; discusses the pollination ecology of threatened subtropical rainforests, including impacts from climate change, fragmentation, fire and invasive species.



Although this book is not a restoration ecology-based text, is it worth a read? - definitely, will it make you a better rainforest bush regenerator – quite likely. Texts such as this, that improve our understanding of the ecosystems in which we work and the processes taking place in them, provide the insight and knowledge to further our ecological restoration outcomes.

Spencer Shaw, Brush Turkey Enterprises, June 2021

Hardback, May 2021, RRP: $140.00
288 pages, CSIRO Publishing
ISBN: 9781486314270
Also available as ePDF and ePUB from eRetailers

Crowdy Bay Bush Regen Dates

Work continues at Crowdy Bay (see article page 13).

A working-bee is planned for Friday 13th August 2021. Arborists are treating dangerous trees at the Indian Head area. Once completed we will be able to tackle some of that wild tobacco that now is surely way over our heads. More details soon.

A mini-camp is planned for September, with a three day effort at Kylie's Beach on 1st, 2nd and 3rd September. This will mostly be centred on the littoral rainforest and the ground adjacent to the camp. If you would like to take part, please let me know. Free entry and camping over the period is available, but I need the registration number of your vehicle. Come for all three days or just for one; you will be welcomed.

Contact: Thomas Clarke thomas.clarke7@bigpond.com

EMR Project Summaries

Have you visited the webpage EMR Project Summaries. These are published as part of the journal *Ecological Management & Restoration*. Two of the projects which AABR has been close to as part of the post-fire bush regeneration are recent additions.

Post-fire assisted regeneration at Rutidosis Ridge, Scottsdale Reserve, BredboNSW
https://site.emrprojectsummaries.org/2021/05/02/post-fire-assisted-regeneration-at-scottsdale-reserve-bredbo-nsw/

Crowdy Bay National Park, NSW – Assisted regeneration of a littoral rainforest patch post 2019-20 summer wildfire
https://site.emrprojectsummaries.org/2021/04/05/crowdy-bay-national-park-nsw-assisted-regeneration-of-a-littoral-rainforest-patch-post-2019-20-summer-wildfire/

What's happening

Wednesday 4th to Friday 6th August 2021

National Landcare Conference

Conference Location: International Convention Centre, Darling Harbour in Sydney, NSW.

The 2021 National Landcare Conference and 2021 National Landcare Awards is a hybrid event.

There is a waiting list to attend in person.

Online registration is FREE

All sessions will be live streamed and recorded, and as an online delegate, you will have the opportunity to access the posters and abstracts plus chat online to other Landcarers.

Tickets are available for the nine field trips held on Wednesday 4 August to a variety of locations across the Greater Sydney region.

Tickets are available for the National Landcare Awards Gala Dinner on Thursday 5th August.

Information; visit the website to register and find out about the speakers. https://nationallandcareconference.org.au/

15th April through to November

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

The series of seven monthly webinars and discussions s focussing on the recently released National Priority List of Exotic Environmental Pests, Weeds and Diseases (EEPL) and explores 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

To register for the webinar series 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)

Monday 23rd to Thursday 26th August

NSW Weeds Conference
A weed Odyssey: Discovery through Recovery

Albury Entertainment Centre

Information; visit the website https://www.nswweedsconf.org.au/

Sunday 10th to Wednesday 13th October 2021

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 are now open.

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

Australian Association of Bush Regenerators

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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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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