

Save our Flora

AN ONLINE INDEPENDENT NATIONAL PROJECT

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Project launched on 14th November 2013

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Bulletin Editor

Membership

Individuals: 174

Groups: 21

International 3

Membership is free.

Please encourage others to join.

Quarterly Bulletins are sent by email only. Feel free to pass them on.

New members will receive the latest e-Bulletin only. Earlier Bulletins can be accessed online. (See box)

This is an informal interactive sharing group. We welcome your emails, articles and offers of seed and cuttings at any time.

Your privacy is respected and assured with this group. You may unsubscribe at any time.



Boronia deanii

Image: ANBG

**You can now access all
our previous E-Bulletins
online**

[http://
coolnatives.com.au/](http://coolnatives.com.au/)

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Unsure if you have any rare or endangered plants? Check them out on the EPBC list

<http://www.environment.gov.au/cgi-bin/sprat/public/publicthreatenedlist.pl?wanted=flora>

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Maria writes:

Can it be June already? It's amazing how quickly time flies when you are busy. Here in New England we've had a fairly normal (whatever that means) Autumn with dry sunny days and a great display of autumn colour in our deciduous trees. Winter has now approached with regular frosty mornings and generally clear skies. I look forward to the cooler months because that's when I get stuck into the garden, pruning and regenerating areas which are overgrown or not doing too well. Plants with dead branches are cut back or pulled out. You can't be precious with a native garden. My motto is 'every dead plant is a new opportunity'. Fortunately I have plenty of replacement plants grown from seed or cuttings collected in the gardens of friends.

Some of these are rare plants which have been in cultivation for many years. Others are being trialled from collections made for research purposes. It's quite satisfying to assist in this way. At the moment I have a number of *Phebalium* species (some still undescribed) and several new *Prostantheras* collected for the UNE Herbarium. Plants propagated from the wild are unpredictable and I believe that we need to build in resilience by successive propagation. This is what has happened over hundreds of years with our exotic species. Australian plants are still very much in the pioneering stage.

By now you will have guessed that I am a Rutaceae nut (I hold the National *Correa* Collection). In this bulletin I have written about two endangered *Boronias*. *Boronias* have a bad press with gardeners due to the commercialisation of *Boronia megastigma* which has a reputation of being a drop-dead plant. What a shame! Yet there are so many really hardy and long-lived *Boronias* which are unknown or rarely available in the trade.

Thank you to the members who send me newsletters from other groups and contributions for this bulletin. It makes the job so much easier and is a pleasure to put together. Not only that but it makes for very interesting reading as well.

My big news is that I have decided to stand for Armidale Regional Council elections which will be held in September this year. I've never run a political campaign before so the prospect is quite daunting. As chair of the Regional Ratepayers Association for three years I have become immersed in Local Government so being a councillor is a logical next step. Wish me luck! I'll need it.

Maria Hitchcock

Native Plant Propagators

Are you an expert native plant propagator?

Would you be interested in propagating for ex-situ plantings of rare and threatened flora?

I am compiling a register of propagators with contact details to send to Botanic Gardens.

Save our Flora PowerPoint Presentation

Ready to go!

30 slides approx 30 mins. talk

If you are interested in obtaining this presentation please email me

I can send it in an email (4.3MB) or as a CD

Send me a C5 stamped addressed envelope Attach 2 stamps

Do you have a contact at a local school?

Why not ask them to join

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as a group member

More and more schools are establishing

Endangered Species Gardens

featuring rare plants from

their local environment.

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Boronia deanei Deane's Boronia

Vulnerable

B. deanei is endemic to the central and southern highlands of New South Wales. There are two subspecies:

var deanei - leaf tips obtuse

var acutifolia - leaf tips acute

B. deanei var deanei Maiden & Betche is restricted to the Blue Mountains where it found in swampy areas and woodland. There are large unknown populations in existence in the swamps between Clarence and Wolgan, Blue Mountains.

B. deanei var acutifolia Duretto grows south of Sydney to near the Victorian border in two disjunct areas centred on Fitzroy Falls and Nalbaugh National Park (Fig. 15) where it is found in wet heath on sandstone.

Description:

Erect shrub growing up to 1.5 m high in ideal conditions but often smaller. This shrub has slightly angled smooth branchlets which have a scattering of tiny warts. The aromatic simple thick leaves are sessile and crowded on the branchlets and may be linear to obovate. They range in size from 4–12 mm long and 0.5–2 mm wide, with an acute to obtuse tip. The upper surface is smooth while the lower surface is prominently glandular-warty.

Flowers are arranged in 1–3-flowered sprays at the ends of the branches with 1–3 mm long flower stalks. Petals are 4–5 mm long, overlapping at the edges and white to bright pink. Seed capsules fall off when mature. Staminal filaments are glabrous. In cooler climates flowering begins in October but may be earlier in warmer areas.

Cultivation:

This species is unusual in that it tolerates poor drainage unlike most other Boronias. Cuttings taken from October to January strike reasonably easily. The floriferous nature of this species makes it an excellent garden specimen resembling the exotic diosma. *B. deanei* has been grown



Boronia deanei Image: ANBG

successfully as a potted plant. With the right management such as tip pruning, fertilising and regular watering in summer this species can be maintained for many years. Older plants may suffer from scale attack and the resultant sooty mould. The aromatic leaves tend to deter other insect and leaf chewing pests. It seems to be reliable and adaptable as a garden specimen.

There is no adopted or made Recovery Plan for this species.

Refs:

<http://plantnet.rbgsyd.nsw.gov.au/cgi-bin/NSWfl.pl?page=nswfl&lvl=sp&name=Boronia-deanei>

<https://www.anbg.gov.au/gnp/gnp9/boronia-deanei.html>

https://www.rbg.vic.gov.au/documents/Muelleria_17_p19-135_Duretto_Notes_on_Boronia.pdf

Is anyone growing this species?

Please let us know if you are.

***Boronia granitica* Maiden & Betche**

(Granite Boronia) Endangered

Excerpts from 'Recovery Plan for *Boronia granitica* Granite Boronia' NSW National Parks and Wildlife Service (July 2002)

Distribution: Known from less than ten disjunct areas of granitic outcrop vegetation on the north-western side of the New England Tablelands from near Armidale in New South Wales (NSW) to the Stanthorpe district in southern Queensland. More recently the species has been collected approx. 50 kilometres south of Howell at Parlour Mountain near Armidale (Hunter and Bruhl 1997). The Torrington area may represent a stronghold for *B. granitica* in NSW as several relatively large populations occur in suitable habitat over a range of approximately 40 kilometres from near Emmaville to Silent Grove.

Description: This species is a medium-sized shrub with divided leaves and bright pink flowers. It was first described in 1905 from Maiden and Boorman's type collection from Howell, southeast of Inverell in NSW. *B. granitica* flowers from July to December and sets seed annually. It is believed to have a life of 15 years. Beetles may play a role in pollination and ants may disperse seeds.

Habitat: *B. granitica* grows either amongst boulders in the skeletal soils found within narrow rock crevices and fissures, or in adjacent areas on granite scree and shallow soils (Quinn et al. 1995, Clarke et al. 1998). The outcropping areas where the species has been recorded lie in the mid elevation range of 700 metres AHD at Severn River to 1200 metres at Parlour Mountain. It occurs within the relatively low rainfall regions of the tablelands and slopes with average annual precipitation varying with altitude from 700 millimetres at Severn River to 850 millimetres at Parlour Mountain. It occurs in heathland, shrubland and adjacent heathy woodland and open forest. Associated vegetation includes *Prostanthera staurophylla*, *Kunzea bracteolata*, *Calytrix tetragona*, *Kunzea obovata*, *Leptospermum novae-angliae*, *Eucalyptus prava*, *Callitris endlicheri* and *Homoranthus prolixus*.

Threats: Populations of *B. granitica* may have declined since European settlement of the area as a result of grazing by stock and feral goats, inappropriate fire regimes, mineral exploration, mining, quarrying and bushrock collection. Widespread land clearance and disturbance may have also impacted on the distribution of the

species. Feral goats are now abundant in the Howell area and pose an increasing threat to the vegetation community (Hunter and Clarke 1998). A drastic reduction of the *B. granitica* population to critically low numbers has occurred at Parlour Mountain where two of the three plants that persist at the site have been eaten by goats (Hunter and Bruhl 1997).



Boronia granitica Image: [GraniteNet](#)

Recovery Plan: The establishment of Kings Plains NP and Severn River NR and their additions, as examples of intact land systems on the predominantly agricultural north-western slopes, have made a significant contribution to the conservation of the species on public land. Given the estimated size of *B. granitica* populations in the Severn River, Kings Plains, Torrington and Howell areas and the reservation status of the first two areas there appears no absolute constraints to the long term viability of the species. Options to reduce the likelihood of population decline include feral animal control and careful fire management.

Recovery plan prepared by John Westaway under contract to the Threatened Species Unit, NPWS Northern Directorate. Assistance was provided by John Martindale, Monica Collins and Shane Ruming, all of the Threatened Species Unit, NPWS Northern Directorate.

Climate Change Leaves Mark on Tasmania's Pristine World Heritage Area

Dr Tony Press

published in *EcoVoice* February 10, 2017

reprinted in
March 2017

A year after fires burned in Tasmania's Wilderness World Heritage Area (TWWHA) the scorched area remains a disturbing reminder that climate change is happening here and now, the Australian Firefighters Climate Alliance says.

New photographs and video footage, from an aerial survey of the Lake Mackenzie area released, show few signs of recovery in the burnt area that included ancient ecosystems of pencil and King Billy pines and large cushion plants that had lived for more than 1000 years. More than 19,000 hectares of TWWHA was burnt after lightning strikes started a series of blazes last January. "What's striking is that 12 months on you can see that much of the fire-damaged area will not grow back.

That's consistent with what the experts have been telling us, but it's still shocking to see for a firefighter like me to see as I'm used to observing burnt bush regenerate," Alliance spokesman Jim Casey said. "This truly is a breathtaking part of Australia that's as beautiful as the tourism campaigns would have you believe – and losing even one part of that is a tragedy."

Hobart's Dan Broun, a wilderness photographer and avid bushwalker, was one of the first on the scene to document the damage following the fire. He has returned the region several times since.

"These areas are globally unique and very beautiful on many levels. I went up with a respected colleague one year ago on behalf of many who love that area to document what was happening to a place many of us have such a close attachment to," Mr Broun said. "What we've found is the damage to significant plant species is absolute in many areas. With a warming

climate and poor land management we are surely witnessing an era of intense crisis for alpine Tasmania."

Mr Casey said the fires that ripped through Tasmania's wilderness this time last year were operating under a changed climate. "The fingerprints of climate change are all over this. It's not something that's far off, it's happening here and now," Mr Casey said. "Megafires, like the one we saw in Tasmania last year, are becoming the new normal. They are large, hard to predict and that makes our job as firefighters more difficult and dangerous."

A Tasmanian Government-commissioned report prepared in the wake of last year's fires found the risks of bushfire to the TWWHA will increase in coming years under the influence of climate change. "The cost of not addressing the root cause of worsening bushfires is high, and growing ever higher," Mr Casey said. "The climate is becoming more volatile and it is not only creating the precursor weather conditions for the fires but is also supercharging the storms that often ignite them."

New research shows time between megafires or "fire storms" is shrinking. Tasmania has experienced two megafires in the past five years. The 2013 Dunalley bushfires destroyed hundreds of properties inflicting insurance costs of just shy of \$89 million.

The Tasmanian Fire Service estimate the bushfires cost \$52.6 million to fight.

Dr Press' report may be seen at:

<http://www.ecovoice.com.au/climate-change-leaves-mark-on-tasmanias-pristine-world-heritage-area/>

Image: Dan Broun

View below of a burnt section of the TWWHA.



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Keeping biosecurity in hand

Want your farm biosecurity plan on hand when you're on the go? The new [FarmBiosecurity app](#) is an easy way of keeping all your farm biosecurity information in one place and on hand wherever you are. The app is based on an action planner where you can create a to-do list which can be shared with others, printed or emailed straight from the app.

Available for both [Apple](#) and [Android](#) devices, the FarmBiosecurity app is a free tool that allows producers to create their own personalised biosecurity plan. The app also has the emergency pest and disease hotline numbers so there's no need to search for that phone number when you find something unusual.

Plant pest of the month: Hornets

Plant Biosecurity News March 2017

NSW Dept of Primary Industries

[Hornets](#) are not present in Australia but they have been intercepted at border quarantine facilities. There are five hornet species that are a biosecurity interest in Australia: the Asian hornet, European hornet, oriental hornet, lesser banded hornet, and the Asian giant hornet. True hornets (*Vespa* species) are closely related to the European wasp and paper nest wasps that are established in Australia.

Hornets have paper nests like wasps but the nests are larger and more enclosed than wasp nests. Hornets prey on other insects including honey bees and social wasps. The Asian hornet and the Asian giant hornet will attack honey bee guards and rob the hive of the brood in order to feed their own larvae. Hornet stings are more painful to humans than wasp stings. Unlike honey bees or wasps, hornets can sting

repeatedly and do not die after stinging because their stingers are not barbed and are not pulled out of their bodies.

If you suspect a hornet call the **Exotic Plant Pest Hotline 1800 084 881** or email biosecurity@dpi.nsw.gov.au

More information about hornets
http://www.dpi.nsw.gov.au/_data/assets/pdf_file/0008/585818/exotic-pest-alert-hornets.pdf

Flora of Australia Pdfs available

10 volumes can be downloaded from the Flora of Australia website

<http://www.environment.gov.au/science/abrs/publications/flora-of-australia>

The volumes are listed with links so that they can be downloaded. Of particular interest to members would be the three volumes of Proteaceae.

Propagating difficult seed

If you are having problems propagating some seed varieties, soak them overnight in warm water then sow. The Pine Rivers Branch of the Australian Plants Society seems to have had a fair bit of success using this method.

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Flaming Wollies

The Botanic Gardener Issue 42 July 2015

It has always been assumed that the Wollemi pine would be very susceptible to being damaged by fires if they were to get to the populations in Wollemi National Park. However there is also some evidence from the site that fire has affected trees there in the past. Heidi Zimmer, as part of her PhD studies at the University of Melbourne, looked at the response of the pine, as well as several other rainforest trees, to fire in controlled experiments.

The three species *Wollemia nobilis*, *Doryphora sassafras*, *Syzygium smithii* resprouted after the experimental burns, predominantly from buds on the stem that were below the soil surface. Higher fire temperatures resulted in reduced overall plant height and resprouting from buds lower on the stem. It would seem that the Wollemi Pine is more resilient to bushfire than first thought.

More information:

Fuel flammability and fire responses of juvenile canopy species in a temperate rainforest ecosystem – Heidi C. Zimmer, Tony D. Auld, Lesley Hughes, Catherine A. Offord and Patrick J. Baker.

International Journal of Wildland Fire.

<http://dx.doi.org/10.1071/WF14054>

There is also a video of some of Heidi's work at <http://visions.unimelb.edu.au/episode/wonderful-wollemisaustralias-phenix-trees>



Waterfall Way

Image: Eden Wyatt

Property of the Season – coming soon

Gaangan, Dorrigo, 127 ha

Gaangan near Dorrigo in northern NSW will be available for sale very soon.

Perched high on the Great Dividing Range near the New England National Park and protecting rare Antarctic Beech trees (*Nothofagus moorei*), Gaangan is an easy-to-manage property of just over 125ha. Access along the picturesque Waterfall Way from Coffs Harbour will have you there in 2 hours. There is a small building envelope on the western boundary which (STCA) has the potential to provide a new owner with an opportunity to create a homestead for the entire family.

*This property has not been listed yet so for more information please contact **Adam Dawson** on 0448 801 391 or email adam@nct.org.au*
Image by Eden e picturesque Waterfall Way

Nature Conservation Trust of NSW

Newsletter Contributed by Victoria Tan

Biodiversity Conservation Legislation

What's happening with the changes to the biodiversity laws and the Nature Conservation Trust?

We appreciate that many landowners with a [NCT Trust Agreement](#) are anxious to learn what specific impacts the new legislation will have on their agreements.

Key points:

- The Office of Environment & Heritage (OEH) is coordinating the transition that will transform the Nature Conservation Trust (NCT) into the Biodiversity Conservation Trust (BCT).
- OEH have appointed a Director of Private Land Conservation who is responsible for leading the transition to the new BCT.
- Applications for the Board of the BCT closed on the 10th March.
- At the same time the NCT have been invited by OEH to contribute to a series of workshops to assist in the development of the new BCT organisation. The first of those was held on the 23rd March.
- All NCT staff and management have been advised that they will be made compulsorily redundant as of the 30th June 2017 (or later if the BCT does not commence on the 1st July). All staff have been offered the option of a 6 month, temporary employment contract with the BCT. The Board are supporting all staff through this uncertain period and providing staff with relevant further recruitment training and support.

'Feral Future' or the 'New Wild'? Confessions and confusion from the front line

by Julie Mills

I've read both books –by Australia's Tim Lowe and Britain's Fred Pearce. So I thought I was across the problem of non-indigenous plants taking root (literally) in the landscape. But now we have purchased our very own 40 acres of paradise and realised that in the last decades, ferals have invaded by stealth. Asparagus fern, bridal creeper and Norfolk Island Hibiscus occupy a disproportionate part of the forest floor. So now it is personal. And how to solve the problem is a dilemma.

Before I drench the area in chemicals or solve the problem with a chainsaw I have been researching the best way to tackle the problem. That is of course if it is a problem. Fred Pearce is not so sure about that.

Asparagus fern is my first enemy to attack. But how? If I had the manpower of the volunteer forces who assist on Lord Howe Island I would use Peterlevers – a clever gizmo that manually removes the crown which is how the fern anchors itself and spreads. But I don't. I am told that the herbicide Brushoff will only kill that which it touches. But it will take several seasons of application. This makes me nervous. Roughly 10 acres of our property is infested with asparagus fern. Interestingly it does not grow under the casuarina...but being honest, nothing seems to grow under casuarina. Perhaps I should harvest lots of casuarina debris and carpet the 10 acres with that? Smothering the fern in black plastic for 6 months has had no effect- that experiment failed.

Then there is the ensuing issue of bare soil. A space left vacant by uprooted invasives will be filled by...well we all know the answer to that. I would need to be planting furiously as I (and an army of 50) peterlever. At least death by Brushoff is slow and should allow other indigenous plants to



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grow – if in fact Brushoff does what it promises. My guess is that applying casuarina needles is not going to enhance biodiversity judging by the existing casuarina forest floor.

There is my dilemma. When I seek guidance from professionals on several fabulous Facebook discussion groups, I come away just as unsure. There are no conclusive answers, though the comments and responses are fascinating and animated.

Any help out there?????

Does anyone know of a way to control Asparagus Weed? Please let us know and we will publish it in the next Bulletin.

The website below has useful information including different herbicides, rates of application and how to treat infestations.

<http://weeds.dpi.nsw.gov.au/Weeds/Details/279>

ANPC News - May 2017

[Myrtle rust plant scourge spreads to New Zealand - Feral Herald, 17 May 2017](#)

New Zealanders have received a rude shock with the discovery of the plant-killing fungal disease Myrtle rust on the north island. It's the first time the rust has been detected on the country's mainland and the Kiwis are showing Australia a thing or two about how to mount a biosecurity response. [Read more.](#)

[Vacancies on the new NSW Biodiversity Conservation Advisory Panel](#)

The NSW Government is now inviting applications for membership on the new NSW Biodiversity Conservation Advisory Panel, established under the Biodiversity Conservation Act 2016. The Panel will provide independent expert advice to the Minister for the Environment on management of biodiversity conservation in NSW and to the Chief Executive of the NSW Office of Environment and Heritage on any proposed declaration of an area of outstanding biodiversity value. Please share this opportunity with anyone who you think may be interested and qualified to apply. Applications close on 18 June 2017. [Click here for more information.](#)

[Threatened Species Commissioner meets *Banksia vincentia* at the ANBG - Facebook video, 26 May 2017G](#)

Banksia vincentia is one of the world's rarest plants and is making a comeback thanks to Australia's Threatened Species Strategy. [Watch the video.](#)



Australian Network for Plant Conservation <http://www.anpc.asn.au>

Volunteer opportunity now available!

Are you or someone you know looking for volunteer work in the Canberra region while studying, searching for a job or during retirement? A volunteer position at the ANPC's National Office is now available one day a week on **Thursdays from 10am to 2pm**. The office is based in the Crosbie Morrison Building at the [Australian National Botanic Gardens](#). Volunteers receive a free annual parking permit for the Gardens and free ANPC membership! Specific Duties: office administration; marketing and promotion; website updating and maintenance; membership – assisting new and existing members, updating database etc; editing and production of [Australasian Plant Conservation](#); and helping to organise conferences and workshops. What the position offers: an opportunity to increase skills, confidence and employment prospects; valuable experience working for a national non-profit organisation; experience in using various computer software packages; administration and organisation skills; scientific writing and publishing skills; and exposure to Australian plant conservation issues and projects. [Click here for more information and to download the position description](#).

Albert Morris Ecological Restoration Field Trip and Award - Broken Hill, 22-24 August 2017

Many interested people from all over Australia are converging on Broken Hill in early Spring to celebrate the 80th anniversary of one of the world's earliest restoration projects: the Broken Hill Regeneration Reserves. This will mark the inauguration of the Albert Morris Ecological Restoration Award. The ANPC is proud to be co-hosting this event with the [Australian Association](#)

[of Bush Regenerators](#), [Greening Australia](#) and the [Society for Ecological Restoration Australasia](#).

We need an estimate of how many are coming before we can open bookings - so if you think you may be coming please complete [this survey](#) asap. (The first page of the survey outlines the program and practicalities.)

[Read more here](#), [watch this video about the upcoming event](#) and read the special Broken Hill issue of [AABR News](#). [Click here](#) if you are interested in sponsoring this event.

Threatened Species Recovery Plan open for comment

The draft National Recovery Plan for the *Littoral Rainforests and Coastal Vine Thickets of Eastern Australia* threatened ecological community is open for comment until **26 May 2017** and available [here](#).

Victoria's biodiversity plan released

The Victorian Government recently released **Protecting Victoria's Environment – Biodiversity 2037**, Victoria's plan to stop the decline of native plants and animals and improve the natural environment so it is healthy, valued and actively cared for. Coupled with reviews of the *Flora and Fauna Guarantee Act 1988* (FFG Act) and native vegetation clearing regulations, the Plan will ensure that Victoria has a modern and effective approach to protecting and managing Victoria's biodiversity. [Read more and download the plan here](#).

[Draft Threat abatement plan for disease in natural ecosystems caused by *Phytophthora cinnamomi* \(2017\)](#)

The Department of the Environment and Energy invites interested groups and individuals to comment on this draft plan which addresses the key threatening process '*Dieback caused by the root-rot fungus *Phytophthora cinnamomi**' listed under the *Environment Protection and Biodiversity Conservation Act (1999)*. It describes the research, management and other actions to reduce the impacts of *Phytophthora* dieback on threatened species. The public comment period will close on **24 July 2017**. The draft Threat abatement plan and instructions on how to complete a submission are [available here](#).

[Biodiversity Across the Borders Conference 2017 - Ballarat VIC, 9 June 2017](#)

With the theme **Restoration Challenges for the 21st Century**, this conference aims to communicate new ecological research to natural resource managers, the research community and those with an interest in better environmental management. The all-day conference will be held at the Mt. Helen campus of the Federation University Australia. An exciting and eminent group of speakers will be presenting at this conference.

[Click here for more information and to register.](#)

This year's focus will be on:

- Restoration outcomes – evidence-based examples from case studies (e.g. plants, animals, terrestrial, aquatic)
- Working with the community in restoration projects – what works, what are we learning?
- Biodiversity offsets – achieving the best outcomes, lessons learned for restoration and conservation, future issues
- Looking to the future - landscape transformations and the priority for restoration

Traveling Stock Reserves - a Conservation Jewel wilderness.org.au May 10, 2017

More than 150 years ago the NSW Government created Travelling Stock Routes, reserving them as Crown Land to ensure that graziers across the state could get their stock to market. Today they no longer play this role, but are still used by graziers for feed during times of drought and for moving stock from one paddock or property to the next. Now called Travelling Stock Reserves (TSRs), these often forgotten gems have been a truly wonderful way of preserving bush in the heavily cleared wheat and sheep belt of western NSW. There are over 6,500 TSRs covering more than 2,000,000 hectares of the state. There are also very important connections to the extensive TSRs in Queensland. About 8 in 10 TSRs in NSW contain vegetation communities of high or very high conservation status. The TSR network also provides a unique opportunity for large-scale, connectivity-based conservation.

TSRs also provide connections for many Aboriginal Australians to traditional travel lines as well as many heritage sites. For more detailed information on TSRs it is worth looking at a wonderful publication from the National Parks Association.

nature.org.au/media/172026/6-the-tsr-network-heritage-habitat-andlivelihood-2011.pdf

The NSW Government is looking for your views on the future management of TSRs in NSW. This is your opportunity to advocate for the continued protection of these reserves. They need to be protected, managed by a single authority and provided with the resources required to ensure they remain one of our key conservation assets in NSW.

Please read through the consultation paper and have your say about the future of the TSR network in NSW. To assist in responding to the discussion points raised in the consultation paper, the government has created an online mapping tool to allow you to investigate TSRs in your local area. The mapping tool is available through the following link: [TSR Web Spatial Tool](#). Complete an online submission, email your submission to tsr.feedback@lfs.nsw.gov.au or post a hard copy response to Local LandServices, State Operations, PO Box 2105, Dubbo, NSW, 2830. Submissions close 5pm Thursday, 22 June 2017.

Where the old things are: Australia's ancient trees

With permission
Chris Brack and Matthew Brookhouse

published in Australian Geographic
http://www.australiangeographic.com.au/topics/science-environment/2017/04/australias-oldest-trees?adbsc=social_20170523_72529217&adbid=10154617704208339&adbpl=fb&adbpr=100614418338

Australia is home to some of the oldest trees in the world. But how do they live so long?

THEY SAY THAT TREES live for thousands of years. Like many things that “they” say, there is a germ of truth in the saying (even though it is mostly false). The vast majority of trees that burst forth from seeds dropped on the Australian continent die before reaching maturity, and in fact most die within a few years of germination. But depending on how you define a tree, a very select few trees can live for an astoundingly long time.

What are the oldest trees?

If we define a “tree” as a single stemmed woody plant at least 2m tall, which is what most people would **identify as a tree**, then the oldest in Australia could be a **Huon Pine** (*Lagarostrobos franklinii*) in Tasmania, the oldest stem of which is up to 2000 years old.

However, the Huon Pine is also a clonal life form – the above-ground stems share a common root stock. If that common root stock is considered to be the base of multi-trunked tree, then that tree could be as old as 11,000 years.

But if you accept a clonal life form as a tree, even that ancient Huon age pales into insignificance against the 43,000-year-old **king's holly** (*Lomatia tasmanica*), also found in Tasmania.

Once you accept that a common, genetically identical stock can define a tree, then the absolute “winner” for oldest tree (or the oldest clonal material belonging to a tree) must go to the Wollemi Pine (*Wollemia nobilis*).

It may be **more than 60 million years old**.

The Wollemi pine clones itself, forming exact genetic copies. It was thought to be extinct until a tiny remnant population was discovered in Wollemi National Park in 1994. The trunk of the oldest above-ground component, known as the **Bill Tree**, is about 400-450 years old. But the pine sprouts multiple trunks, so the Bill Tree's roots may be more than 1000 years old. There is also substantial evidence that the tree has been cloning itself and its unique genes ever since it disappeared from the fossil record more than 60 million years ago.

How do you date a tree?

If no humans were around to record the planting or germination of a tree, how can its age be determined? The trees themselves can help tell us their age, but not just by looking at their size. Big trees are not necessarily old trees - they might just be very healthy or fast-growing individuals. A much more reliable way to determine age of a tree is through their wood and the science of **dendrochronology** (tree-ring dating).

Many trees lay down different types of cell wall material in response to seasonal patterns of light, temperature or moisture. Where the cell walls laid down at the beginning of the growth season look different to those laid down at the end of the season, rings of annual growth can be seen in cross-sections of the tree. This map of growth patterns can also be cross-dated or correlated with major events like multi-year droughts or volcanic eruptions that spewed material into the atmosphere to be incorporated into the wood of the tree. But the cell walls are more than just calendars.

Why so old?

Individual tree stems can live for so long because of the structure of the wood and the tree's defence mechanisms. The woody cell walls are very strong and resist breakage. In fact, scientists have recently discovered that these walls contain a structure – **nanocrystalline cellulose** – that is currently the strongest known substance for its weight. Wood can, however, be broken down by insects and fungi. Even though there is little nutrition or energy in wood, there is some – and there are plenty of organisms that will try and use it.

But trees are not defenceless, and can fight back with physical barriers or even chemical warfare. When one tree is attacked by these destructive forces, individuals may even **signal to other trees** to be aware and prepare their own defences to fight off death and decay. So why don't all trees live for centuries or millennia, and why do so many die before even reaching maturity?

The death of trees

So why don't all trees live for centuries or millennia, and why do so many die before even reaching maturity? Seedlings and young trees may die because they have germinated in an area where there's not enough water, nutrients or light to keep them alive as adults. Young trees also haven't had much time to develop barriers or defences against other organisms and may be browsed or eaten to death.

Some trees simply fall prey to accidents: wind storms, fires or droughts. This is just as well, because there is a vast number of plants and animals – including humans – which rely on the wood and other components of these dead trees for their food and shelter. But increasingly we may see trees dying because the environment is changing around them and they may not be able to cope. This is not just **due to climate change**; urban development and agricultural expansion, pollution and even too much fertiliser acting as a poison – **even our most remote environments are subject to these changes**.

But that doesn't necessarily mean we will have no more very old trees. The Wollemi Pine's genes have already survived over millions of years, multiple ice ages and warming periods and even the fall of the dinosaurs and rise of humans. And now, people have deliberately spread Wollemi Pine trees all around the world so they are living in a wide range of countries and climates, meaning that the risk of them all dying out is substantially reduced. Maybe we can **do the same for other trees**, ensuring that trees will outlive us all.

Cris Brack is an Assoc. Professor Forest measurement & management at **Australian National University**

Matthew Brookhouse is a Research fellow at **Australian National University**.

RARE PLANTS NOT SEEN IN DECADES REDISCOVERED IN BOMBALA

canberratimes.com.au May 19, 2017

Georgina Connery

Four rare plant types, not seen in more than a decade, have been uncovered in Bombala by a team retracing the steps of an early botanist. The team comprised four plant scientists from the Office of Environment and Heritage, The National Parks and Wildlife Service, the Australian National Botanic Gardens and the Australian National Herbarium.

The two-day field trip followed in the steps of prominent botanists, Baron von Mueller, who explored the (area and) discovered several Australian species from 1852 onward. After seven hours of difficult trekking through rocky gorges and dense undergrowth, the team returned with samples of Genoa River Correa, which was first discovered by Mueller in 1860, as well as the rare species Deane's Boronia, Pomaderris Cotoneaster and Nalbaugh Nematolepis.

OEH Senior Threatened Species Officer, Dr Keith McDougall, said the Genoa River Correa had not been seen since 1999 and the Nalbaugh Nematolepis was last seen in the 1980s. "We were lucky to find the Correa because there was not very much of it there," he said. Fog made accessing the remote area by helicopter impossible and Dr McDougall said despite considering turning back, these finds made him glad they stuck it out. "We stayed overnight at the same cattle station in Nungatta where Mueller visited more than 150 years ago and looked out over the same landscape," Dr McDougall said.

Australian National Botanic Gardens' Joe McAuliffe said prior to the exhibition neither live cuttings nor seed had been collected for the four rare species. "Cuttings were taken from the plants and will be grown at the Australian National Botanic Gardens in Canberra, establishing a living collection and essentially insurance against extinction," Mr McAuliffe said. The ACT and NSW teams cooperative expedition delivered great results and was made possible through the \$100 million NSW Saving our Species program. A return expedition is planned in spring this year to establish monitoring programs for the long-term protection of all four species.



National Parks and Wildlife Service Dean Ansell with the Genoa River Correa - one of four rare plants rediscovered in an expedition near B o m b a l a .

Photo : Office of Environment and Heritage
Canberra Times May 19, 2017



Genoa River Correa found by Dave Albrecht of the Australian National Herbarium. Photo: Dave Albrecht
Canberra Times May 19, 2017

Ed. The Dean's Boronia mentioned in this article is *B. deanei* subsp. *acutifolia*. See article on p. 3.

Save our Flora

Seed and Cuttings Exchange

Please send all requests directly to the person making the offer or the group email saveourflora@gmail.com

Please follow the correct protocols for requests of seed or cuttings. These are detailed on the next page. Please note that some species are in very short supply and cutting material may be limited.

Maria Hitchcock

16 Hitchcock Lane Armidale NSW 2350

Correa eburnea

Correa calycina

Callistemon pungens

Grevillea wilkinsonii

Zieria adenodonta

Zieria prostrata

Zieria floydii

I also sell some species through my online nursery

coolnatives.com.au

Arthur Baker

55 Moran ST Gatton Qld 4343

Gardenia psidiodes

Grevillea quadricauda

Grevillea glossadenia

Eucryphia wilkiei

Graptophyllum ilicifolium

Xanthostemon formosus

Phaius tancarvilleae

Plectranthus nitidus

Zieria prostrata

Grevillea mollis?

Eremophila nivea

Dodonaea rupicola

Xanthostemon arenaris

X verticulatus/seeds or cuttings

Kunzea flavescens

K granitica

Callistemon pearsonii

Callistemon flavovirens{seeds}

Melaleuca irbyana

Lilaeopsis brisbanica {Water plant}

Hernandia bivalis

Spathoglottis pauliniae {Tropical ground orchid}

Rhododendron Lachiae

Charles Farrugia (email saveourflora@gmail.com)

Eremophila denticulata ssp trisulcata

Eremophila denticulata ssp denticulata

Eremophila nivea (blue form)

Eremophila nivea (white form) - limited.

Eremophila vernicosa – extremely limited

Russell Dahms (email saveourflora@gmail.com)

Boronia clavata

Denise & Graeme Krake

752 Warrigal Range Rd. Brogo NSW 2550

Seed of

Hakea dohertyi

Hakea ochroptera

Hakea longiflora

Grevillea maccutcheonii

Geoff & Gwynne Clarke

Grevillea humifusa - cuttings

Angophora robur - seed

Dodonaea crucifolia - cuttings or seed

This was named a couple of years ago by Ian Telford who came down from Armidale to look over our block. Many people were calling it *Dodonaea hirsuta*, but it is not very hairy and has no hairs at all on the fruits. It also grows in a nearby flora reserve. If people would like to try this I can make it available when the material is ready. I have grown it successfully from cuttings, but it does not live long after planting out. It also produces seed and I can collect that after the next flowering (spring fruits). It grows happily around the block, popping up from seed here and there, produces plenty of seed, but it is not long lived even when self sown. Fruits are showy reds.

Bob O'Neill

7 Hillsmeade Drive, Narre Warren South, Vic. 3805

I want to increase our range of Lechenaultias and *Correa pulchellas*. Can anyone help us out? Both of these groups of plants are doing well for us at Narre Warren South, Vic. I would be delighted to offer cuttings from our range to interested people. Some plants may be available to people who are able to come to our home address.

Paul Kennedy (Leader ANPSA Hakea SG) (email

saveourflora@gmail.com)

I have seed of *Hakea dohertyi* and a large plant of *Hakea ochroptera* from which cutting material could be taken. I also have a plant of *Callistemon megalongensis* which has not flowered yet, but cutting material would be available in autumn. The seed originally came from the Melaleuca Study Group seed bank many years ago.

Do you have any EPBC plants growing in your garden with sufficient foliage to share cuttings with our members? Let me know and I'll print it here. It would be easier if we can add your address so that members can contact you directly. Please make sure you follow the protocols on the back page. (Ed)

Save our Flora

Requesting and sending seed by post

Please follow these simple steps.

Make a request

1. Send your request by email first. It will be forwarded to the grower so you can request seed and ask for the address.
2. Send your request enclosing a self-addressed envelope with two 60c stamps attached. Post the envelope.

Send seed

1. When you receive an envelope with a seed request, package up the required seed which includes the name, provenance (if known) and date of collection. Add any tips on germinating the seed and post.

Receiving seed

1. Seed should be stored in paper (small manilla seed packets are best but any cheap envelopes will do) and kept in a cool dark place. Some people use those small paper lolly bags and staple them at the top. Add mothballs if you like. This will prevent insect attack. I save moisture absorbers from medicine bottles and add them to my seed drawer to ensure the seeds do not rot.

Seed life varies according to species. Acacias will last for many years while Flannel Flower needs to be really fresh. Old seed may not germinate and needs to be thrown out. Test some of your seed periodically. It's worth asking seed suppliers for the age of certain species of seed before purchasing.

Requesting and sending cuttings by post

Please follow these simple steps.

Make a request

1. Send your request by email first. It will be forwarded to the grower so you can request cuttings and ask for the address.
2. Purchase an Express Post small satchel for \$10.55. it will hold up to 500 gms.
3. Self address your satchel and place it in an envelope with your cuttings request. Add a label/s with the name of the species and sender. Pencil is best for writing on labels.
4. Post the envelope.

Send cuttings

1. When you receive an envelope with a satchel inside, cut about 6 stems of the requested species. The best time to do this is early morning. Store cuttings in the crisper part of the fridge until they are ready to be posted.
2. Wrap the cuttings in damp newspaper and place them in a cliplok plastic bag. Make sure you label each parcel with the names of the species and sender. Squeeze air out of the bag and fasten top.
3. Put the bag in the satchel and post.

Receiving cuttings

1. As soon as you receive your cuttings put the unopened plastic bag in the crisper part of the fridge until you are ready to prepare them.

Group Members

ANPSA Groups

APS Melton Bacchus Marsh Vic
 SGAP Ipswich Qld
 SGAP Sunshine Coast and
 Hinterland Qld
 APS Echuca Moama Vic
 Crommelin Native Arboretum NSW
 Swan Reserve Garden Vic

Botanic Gardens and Reserves

Hunter Regional BG NSW
 Tamworth Regional BG NSW
 Lindum Park Flora and Fauna Res.
 Burrendong Arboretum Wellington

Nurseries

Bilby Blooms Binnaway NSW
 Cool Natives Armidale NSW
 Mole Station Tenterfield NSW

Seed Suppliers

Victorian Native Seeds

Study Groups

Acacia SG
 Correa SG
 Epacris SG
 Garden Design SG
 Grevillea SG
 Hakea SG
 Waratah & Flannel Flower SG