



**AN ONLINE INDEPENDENT NATIONAL PROJECT
CONSERVATION THROUGH CULTIVATION**

Contact: E. saveourflora@gmail.com W. saveourflora.weebly.com

**Project launched on
14th November 2013**

Maria Hitchcock OAM
Founder, Bulletin Editor

Membership

Individuals: 230

Groups: 22

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 on our website. (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.



Grevillea scortechinii ssp sarmentosa Image: Hitchcock

**Is your garden a
native plants
sanctuary?**

**All you have to do
is grow one or
more threatened
species.**

In this issue:

| | |
|----------------------------------------------|--------|
| Maria writes | 2 |
| Gold Coast Park | 3 |
| Collecting Pencil Pine seed | 4/5 |
| Bush Heritage TED talks | 6 |
| Native Seed survey report | 7 |
| Nodding Geebung | 8 |
| ANPC News | 9 - 10 |
| <i>Eremophila viscida</i> | 11 |
| Botany Bay | 12/13 |
| <i>Grevillea scortechinii ssp sarmentosa</i> | 14 |
| Threatened species red hot list | 15/16 |
| Seed and cuttings exchange | 17/18 |

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>

Save our Flora

Maria writes:

What a start to the year! First the bushfires which kept us glued to our screens as we watched the devastation unfold before our eyes. Who will forget the sight of a roomful of laundry baskets filled with injured koalas. Then we had that amazing concert to thank all the emergency services, RFS, etc. That was one of the last times we actually saw a crowd crammed up together, enjoying themselves, being stupid as only humans can and thoroughly noisy!

After that! Silence! The silence of lockdown, of roads without cars, skies without planes, oceans without cruiseships! (Well, maybe we could do without the latter). The silence of closed museums, galleries, schools, restaurants, pubs and clubs! The silence of shut down beaches, playgrounds, parks and churches. Cancelled holidays and events. Covid19 had struck with a vengeance!

The images will stay with us forever - millions lining up at Centrelink offices because the website had crashed, the daily briefings by health officers (just how many deputy chief medical officers are there?) - the daily roll call of cases and deaths - the hunt for toiletpaper - the quandary of saving lives versus livelihoods and the economy. Home schooling.

There has been only one news story - bushfires, floods, drought all pushed aside. The disaster unfolding in the USA under Trump leaves us scratching our heads. America is such an enigma. We watched in amazement as Boris Johnson boasted about shaking hands with Covid19 victims then succumbed to the disease and could have so easily died. We joined the global audience watching Italians singing from their balconies, Brits clapping in thanks and poor Indians trudging hundreds of kms back to their villages, not to mention idiotic YouTube videos.

The last thing that anyone wanted to think about was climate change and threatened flora. I run an online mail order native plants nursery as a hobby retirement business. Like most online businesses, sales went through the roof in March and started to taper off in April. As I propagate almost everything I sell, I'm now left with a small supply coming into winter. That's not such a bad thing. It has however meant a delayed bulletin.

My husband and I are in our 70s so we made the decision to self-isolate as much as possible. We are actually enjoying this time to get lots of things done without the distractions of meetings and continual trips into town. We are fortunate in that our town has only had 4 cases and no current ones.

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
or on a memory stick**

**Send me a blank memory stick plus a
stamped addressed envelope - 2 stamps**

That might change once people start moving into regional areas. Our hospital has been upgraded but still only has a limited capacity to deal with this horrible disease.

While all this has overwhelmed us I have to admit we've had the best planting season ever with mild temperatures and regular falls of rain. This has resulted in my planting out most of my backlog and filling the terrible gaps left from the drought.

We don't know how this will end and are hoping for a successful vaccine which will keep us safe and allow the virus to die out.

In the meantime the country is taking tentative steps towards some normality which has to include social distancing. Will we ever shake hands and hug again? Will the practice of cheek kissing die out? Will wearing gloves become the norm again as it was hundreds of years ago? Will airline passengers have to wear masks forever? Will we value the environment more than our possessions? Do you have a story to tell? Please share it with us.

Stay safe!

Maria

200-hectare park mooted for Gold Coast

Landscape Australia News 10 Mar 2020

Gold Coast council has revealed early plans for a 200-hectare park that it says will be the most important public space in the city. The Greenheart project will create a park roughly similar in size to Sydney's Centennial Parklands that can hold more than 25,000 people at any given time.

A draft preliminary masterplan imagines a park with a variety of informal leisure areas, rejuvenated wetlands and a large-scale formal sports precinct. A "green heart interpretive centre" and a prominent central "green avenue" also figure in the draft.

The site identified in the draft preliminary masterplan stretches from Robina to Carrara, and would need to be regenerated and transformed to meet the stated goals of the project. The council said that this would involve "the largest urban biodiversity reforestation project in Australia," creative a "unique urban forest, wetlands and waterways, which will be a mecca for native wildlife."

More details will be available once the plans have been presented to the council at its first meeting following an election on 28 March. The creation of the Robina City Parklands, currently underway, would form the first stage of the Greenheart project.

How has your life changed under Covid19?

Have you checked the status of any threatened flora after the fires?

Have you volunteered with a recovery group?

Please share your story with us for the next eBulletin.

Add a photo or two

Deadline Tues. 30 June



In the middle of coronavirus, two botanists went on a race against time to witness Tasmania's pencil pines seed

By Anabel Dean ABC News 11 May 2020
Contributed by Victoria Tanner
The IUCN Red List of Threatened Species 2013

James Wood is looking for a tree. He's surrounded by trees on The Overland Track — gnarled myrtle beech, spindly snow gum — but he's looking for one tree in particular.

Time is short. Steely clouds are tearing at the dolerite peaks of Tasmania's Cradle Mountain-Lake St Clair National Park, portents of rain, but there is another reason for haste.

A pencil pine can live a thousand years but the ancient tree bears its seed cones only sporadically. This rare event, known as "masting", last took place in 2015. Now, in the midst of a global pandemic, it's happened again.

The seed-bearing won't last long — "If you're not there at the right time you miss it," Wood laments — and nobody knows when it will next occur.

So, he's on a mission: to collect and store genetically diverse seed from the conifers most at risk from climate change in the Tasmanian Wilderness World Heritage Area.

Wood is not a survival expert. He's a botanist from Kew Gardens in London, who now works in the seed bank at the Royal Tasmanian Botanic Gardens in Hobart. He's also never been on the Overland Track. His navigator is Justin Dyer, a seasoned guide with the Tasmanian Walking Company, a local operator of guided hikes along Tassie's top trails. It takes two days for Wood and Dyer to get where they want to be, near Pelion Plains. There's a primeval specimen shaped a little like Marge Simpson's hairdo, with green scale-like leaves and tightly cross-hatched cones in the higher branches.

The woody capsules are ripe and ready to release seeds. "If there's a severe fire," says Wood, "the iconic pencil pine will be one of those likely lost — along with the King Billy pine. So there's a critical

need to take action now if we are to keep these plants in our landscape."



Atrotaxis cupressoides seed
Image: The Gymnosperm Database

An expected gift as the COVID-19 crisis hits

The coronavirus has unexpectedly given Wood and Dyer one of life's superlative gifts.

Between October and May, the Overland Track usually attracts intrepid recreationists from around the world, with up to 60 hikers a day undertaking the 65 kilometre six-day trek from Cradle Mountain to Mt Ossa (Tasmania's highest peak) ending at Lake St Clair, Australia's deepest natural lake. But, for now, the scientist and the outdoorsman have it all to themselves. When COVID-19 forced the closure of all national parks they were grateful to discover complete solitude on one of Australia's most exhilarating alpine walks.

"It was eerily quiet out there," says Wood on his return to civilization at the end of a five-day odyssey in a landscape carved with glacial valleys, ancient forests, moorlands and meadows.

"One day we came across a platypus snuffling about in a small tarn beside the track, totally oblivious to human contact. It was very sweet." Another day, through sheets of torrential rain, the pair walked into a dense field of pandani.

"It's an insane plant," says Wood. "A type of heather that looks more like a weirdly tropical, grassy kind of palm with a single head of long leaves. It's peculiarly out of place in this cold environment."

The pair had to squeeze through a "belt" of them as they ascended Mount Oakleigh. "It was really misty and they were standing in shrouds like big cloth wipers in a car wash station," says Wood. "I looked back at this beautiful dark silhouette on the horizon. It was a single pandani with its leaves arching downwards to the earth against a grey-purple sky. It was just gorgeous."

New species are still being uncovered every year

The final night spent in a private hut was something of a relief for Wood. He'd been menaced by a knee injury but the cabin was warm and Dyer was an artisan with lamb ragout. The guide had brought his sourdough starter from home to make bread and there was a good store of red wine. Isolation in nature is not entirely unfamiliar to Wood.

"I occasionally worked on Christmas day at Wakehurst Gardens in the United Kingdom," he says. "I'd have the entire estate to myself and it would be oddly quiet. Not another living soul all day."

When the English seed collector moved to Tasmania in 2005, he'd been interested in botany since his mid-teens, but was still astonished by the difference in the landscape. "I'd worked in Mexico and Africa, but then I came out to Australia for the first time, and it felt as if I got off the plane onto a totally different planet. Nothing looked familiar."

He decided then that if the opportunity to work down under ever came up, he'd take it. Tasmania's floral diversity is much lower than on the mainland but new species are still being unearthed every year.

"This season I was out surveying and I discovered a plant that was only known from another collection that was made 30 years ago and we don't even know what it is," says Wood. "Discoveries like that are pretty rare in Europe but are much more common out here. The opportunities to actually learn about new things is huge ... It's immensely rewarding and very exciting to be in this sort of environment."



Athrotaxis cupressoides Image: Wikipedia

A quest for conservation

Still, as Tasmania's habitat changes, many alpine species may become extinct, says Wood — some have already been lost and may not be able to re-establish themselves naturally. "The increasing aridity and likelihood of fire in these areas is very worrying," he says.

Most stands of pencil pine are clonal — that is, from one individual. This means seed collectors must capture genetic variation over a large area to ensure biological diversity.

The two men, who met as strangers, covered 300 hectares of land, picking two handfuls of cones from 46 stands of trees, eventually filling a cloth bag with 8,000 viable seeds. "It's not a bad-sized haul as an insurance policy for the future," says Wood.

The collection will be stored in the Tasmanian Seed Conservation Centre and the UK's Millennium Seed Bank. One day, the seeds may be reintroduced back into the landscape to flourish again which, for Wood, is a comforting thought.

"It will be nice if we can leave those who come after us with more than just a glimpse of what the world was in the beginning," he says.

Bush Heritage TED Talks

Details

Time: 1pm EST, 11am WST (will finish at 1:30pmEST)

Platform: ZOOM online presentation

RSVP

If you'd like to attend the talks followed by Q&A's, please respond to volunteer@bushheritage.org.au and I will provide you with the login details and instructions on how to download this platform if you haven't used it previously.

Following is the full schedule of presentations and I will send weekly invitations so that you can join these Friday lunchtime sessions if you are available and interested.

Talk Schedule

| Date | Name | Topic |
|---------|-------------------|-------------------------------------------------------------------|
| 22 May | Dr Richard Thomas | York Gum Mortality on Charles Darwin Reserve - WA |
| 29 May | Paul Bateman | Caretaking on Goonderoo - QLD |
| 5 June | Dr Catherine Ross | Reintroducing Digging Animals to Restore Ecosystem Function - NSW |
| 12 June | Shane Jackson | Cat Detection Dogs and Feral Animal Control - QLD |
| 19 June | Joss Haiblen | Macropod Monitoring Team at Scottsdale - ACT |
| 26 June | Andrea Tschirner | Plight of the Purplewood - SA |
| 3 July | Chris Taylor | An Old Croaks Guide to Frogwatch - ACT |
| 10 July | Andrea Tschirner | Bush Cooking - SA |
| 17 July | Paul Bateman | Pit Fall Trapping on Bon Bon - SA |
| 24 July | TBA | |
| 31 July | TBA | |

Michelle Stook

National Volunteer Coordinator

Ph: 0427 818 014

Eml: michelle.stook@bushheritage.org.au

Postal: PO Box 693, Paddington QLD 4064

[The ANPC's submission to the independent review of the Environment Protection and Biodiversity Conservation Act 1999](#)

The second independent review of the EPBC Act commenced on 29 October 2019. The review will be led by Professor Graeme Samuel AC, supported by a panel of experts. A report will be presented to the Minister for the Environment within 12 months of commencement of the review.

[Download the ANPC's submission here \[PDF link\]](#)

[Download your free copy of the ANPC's Australian Native Seed Survey Report](#)

Our unique native plant ecosystems are critical habitat for native animals and essential in mitigating the impacts of climate change and extreme weather events. High quality seed from a range of native species is the foundation for restoring many of our threatened plants and natural landscapes, particularly those unable to regenerate after the catastrophic bushfires of the past summer, or that are otherwise especially vulnerable.

The people who collect, purchase and use this seed are a critical part of an industry which faces many challenges, including dwindling seed supplies, continued loss and fragmentation of native vegetation, declining expertise and training, low levels of funding and the increasingly severe impacts of climate change (to name but a few).

The Australian Native Seed Survey Report details the full results of a national survey capturing the behaviours and views of a wide range of sector participants

[Read more and download the Report here.](#)

[Call for articles on plants and fire for Australasian Plant Conservation](#)

Do you have a post-fire plant conservation story you'd like to share? Perhaps there is an issue you'd like to raise in response to the recent bushfires? Now is the time! We are calling for articles for the winter issue of our bulletin, Australasian Plant Conservation (APC). Short articles and/or post-fire articles with a pictorial focus are also welcome, as well as those on other plant conservation related themes. Articles could describe plant and ecological communities' responses to fire (e.g. fire-triggered seed germination, re-sprouting, structural and floristic community changes) or, where applicable, the impact of multiple fires and differing fire intensities, frequencies or seasons.

Available Propagators

The following people have indicated a willingness to work with projects that require good propagation skills. If you would like to be added to this list please let Maria know.

Maria Hitchcock Armidale NSW

Life member NSW - APS

Over 40 years propagating experience.

Cool Natives Online Nursery

<https://coolnativesnursery.com>

Col Jackson

Over 20 years propagating experience

Member of the Latrobe Valley APS Victoria

coljackson57@hotmail.com

Spencer Shaw

We operate two nurseries,
Brush Turkey Enterprises Wholesale

www.brushturkey.com.au and

Forest Heart Eco-Nursery

www.forestheart.com.au

and specialise in SE QLD native plants, particularly rainforest.

spencer.shaw@brushturkey.com.au

0428 130 769

Helen Howard

grevillea.hh@gmail.com

I have grafted Eucalypts, Grevilleas, Eremophilas and Brachychitons. My teacher was Merv Hodge. If any BG has a project I could help out with let me know.

**Deadline for the Winter edition is 1 May 2020;
Spring edition is 1 August.**

[Click here for more information](#)

Saving our Species

Nodding Geebung

Persoonia nutans Endangered

Contributed by Ralph Cartwright

Published by

Greater Sydney Landcare Network

xuela.sledge@greatersydneylandcare.org

This species is endemic to NSW and is restricted to the Cumberland Plain in western Sydney and listed as an 'endangered' species under New South Wales and Commonwealth environmental legislation, due to its low occurrence and continued decline in numbers.

The Nodding Geebung (*Persoonia nutans*) is an erect, spreading shrub that grows up to two metres tall. It has moderately hairy young branches and is characterised by reddish stems, flat and linear leaves, and pretty, pendant yellow flowers on 12 mm long stalks.

Flowers and seeds

Peak flowering occurs from December to January, with sporadic flowering throughout the year. The fruit is fleshy with one or two seeds enclosed in a hard, woody stone. The fruit is shed within one year of flowering, between October and December. Seeds are likely dispersed after consumption by large birds like currawongs, and mammals like rodents, possums, macropods. Germination is promoted by fire but may also be triggered by physical disturbance. In the event of a fire, all existing plants are killed, and regeneration is dependent upon recruitment from a soil stored seed bank.

How can you help Nodding Geebung?

The Nodding Geebung has known threats to its viability. If this species is not managed effectively, it could become extinct. A targeted strategy for managing the targeted species has been developed by Department of Planning, Industry and Environment's (DPIE) Saving our Species (SoS) program. The SoS strategy has identified critical actions and habitat areas that are vital in assisting in the recovery of Nodding Geebung, based on an



Persoonia nutans Image: [wikipedia.org](https://en.wikipedia.org/wiki/Persoonia_nutans)

accurate understanding of its distribution, condition and threats.

For a easy to download fact sheet on the Nodding Geebung, please click [here](#).

For further information about the Nodding Geebung, please contact Ahamad Sherieff, Threatened Species Officer, Biodiversity and Conservation Division | Department of Planning, Industry and Environment

T 02 9585 6910 | M 0425 254 865 |

E ahamad.sherieff@environment.nsw.gov.au

Persoonia nutans R.Br. (Nodding Geebung) Recovery Plan



Australian Network for Plant Conservation (ANPC) News

[Provisional list of plants requiring urgent management intervention - Dept of Agriculture, Water and the Environment](#)

The Wildlife and Threatened Species Bushfire Recovery Expert Panel, on 23 April 2020, released a list of 471 plant species identified as the highest priorities for urgent management intervention to support recovery from the 2019-20 bushfires. The plants span a variety of vegetation types and include rainforest trees and shrubs like Monga Waratah (*Telopea mongaensis*) and plants from subalpine vegetation, such as the Critically Endangered Bredbo Gentiana (*Gentiana bredboensis*).

Some species were considered threatened before the fires, and the fires have now likely increased their risk of extinction. Many other fire-affected plant species were considered secure before the fires but have now been burnt across much of their range and may lack an ability to recover without support. Some species, like the Forrester's Bottlebrush (*Callistemon forresterae*), Betka Bottlebrush (*Callistemon kenmorrisonii*), and Grey Deua Pomaderris (*Pomaderris gilmourii* var. *cana*) are at imminent risk of extinction because all of their known or modelled range has been burnt and they are exposed to other stressors such as drought, high fire frequency or severity, or disease.

[Read more and download report and supporting information.](#)

[New website to link citizen scientists into Bushfire Recovery - CSIRO, powered by Atlas of Living Australia](#)

CSIRO has launched the Citizen Science Bushfire Project Finder website to enable members of the public to contribute to projects ranging from air quality, to identifying

and confirming animal and plant sightings while maintaining safe social distancing practices. People can also get involved online by identifying animals in camera images. The Project Finder also features a geographic filter enabling users to identify available projects in their area.

[Find out more](#)

[Help track Environmental Recovery from the Bushfires - Atlas of Living Australia](#)

Citizen scientists can contribute to understanding how the natural environment recovers from the devastating 2019-2020 bushfires by uploading your observations to the Atlas of Living Australia. Please check fire-affected areas have been declared safe by the land manager before you enter.

[Find our more here.](#)

[National parks mapping to aid forest recovery from bushfires in NSW - Canberra Times, 2 March 2020](#)

The NSW government is conducting a major investigation into the damage that bushfires caused to national parks in the Hunter and elsewhere across the state. About a million hectares burnt in national parks in and around the Hunter Region.

Google Earth mapping, compiled by the government and University of NSW, has revealed the extent of bushfire damage to the canopy in national parks. The mapping shows the damage caused by mega-fires in Wollemi and Yengo national parks. These fires sent huge amounts of smoke across the Hunter in December and January during westerly winds.

The notorious Wollemi fire, known as the Gospers Mountain blaze, set a record for being the biggest forest fire in Australian history. [Read more.](#)

ANPC News (cont.)**Mount Canobolas rises from the ashes with some new finds** - NSW DPIE, 13 March 2020

Mt Canobolas Leek Orchid Image: ABC

Two years of work following a devastating fire have seen Mount Canobolas State Conservation Area emerge with 79 new species recorded, including two new plants that exist nowhere else in the world. National Parks and Wildlife Service Ranger Steve Woodhall said the results captured over several surveys were largely thanks to the efforts of local NPWS staff and volunteers of the Orange Field Naturalist and Conservation Society. “More than 70% of Mount Canobolas State Conservation Area was affected by an intense bushfire in February 2018. “While this fire impacted the community and the park heavily, 2 years later we have emerged with new knowledge about what exists in this unique ecosystem. Most exciting has been the identification of two new ground orchid species, the pink spider orchid and the Canobolas leek orchid. The Canobolas leek orchid hasn’t been seen since the last major fire back in 1982 – at that time it remained an undescribed species. [Read more.](#)

Farming and conservation groups call for \$4b post-pandemic jobs boost - SMH, 3 April 2020

A coalition of more than 80 landcare, environmental, farming and conservation groups has written to state and federal governments proposing the creation of 24,000 jobs in land rehabilitation as part of a post-pandemic stimulus package. Under the proposal, landscapes and infrastructure damaged by the recent drought and bushfires would be rehabilitated in part by people who had lost jobs as a result of the coronavirus. The jobs package would cost \$4 billion over four years, according to the proposal that has been endorsed by groups including the National Farmers Federation, the NSW Farmers Federation and the Nature Conservation Council, or about 1000 full-time jobs for each \$100 million spent.

[Read more.](#)

Fears for wildlife recovery after bushfires as coronavirus crisis stymies scientists’ fieldwork - The Guardian, 5 April 2020

Scientists are being forced to shut down or scale back fieldwork to assess the impact of last summer’s devastating bushfires on threatened species amid the coronavirus crisis, prompting concerns it could affect wildlife recovery. Several universities have shut down fieldwork to comply with restrictions on travel and physical contact and government agencies working on the recovery have had to scale back some of their operations. Urgent work such as feral-animal baiting has been able to continue in many fire-hit regions, and departments have adjusted their working methods to use local contractors rather than fly their own teams into locations such as Kangaroo Island, where there have been calls for a ban on non-essential travel.

[Read more.](#)

ANPC News (cont.)**Impacts of the coronavirus pandemic on biodiversity conservation - Biological Conservation, 8 April 2020**

The COVID-19 pandemic is impacting all parts of human society. Like everyone else, conservation biologists are concerned first with how the pandemic will affect their families, friends, and people around the world.

But we also have a duty to think about how it will impact the world's biodiversity and our ability to protect it, as well as how it might affect the training and careers of conservation researchers and practitioners.

As editors of *Biological Conservation*, we have heard first-hand from colleagues, authors, and reviewers around the world about the problems they are facing, and their concerns for their students, their staff, and their research projects.

[Read more.](#)

Wollemi Pine citizen science survey growing global - The Royal Botanic Garden Sydney, 14 April 2020

Hundreds of people around the world are helping Wollemi Pine researchers understand more about Australia's ancient pine by completing the I Spy A Wollemi Pine citizen science survey. Since it was discovered in 1994 growing deep in a canyon in the Blue Mountains, the curious conifer has become available to many parts of the world. Wollemi Pines can now be found growing in parks, gardens and backyards across the globe.

The I Spy A Wollemi Pine citizen science survey was launched in December 2019 by Dr Cathy Offord based at the Australian Botanic Garden Mount Annan and Dr Heidi

Zimmer from the NSW Department of Energy, Environment and Science. Dr Offord and Dr Zimmer are trying to identify the hottest, coldest, wettest and driest places where Wollemi Pines can grow to gain important insights into the environmental tolerances of this special tree.

[Read more.](#)

Eremophila viscida - Talking Plants April 20

Eremophila viscida Image: Wikipedia

A plant can be rare and under threat of extinction, but also require disturbance to grow. That is, fencing off its habitat and leaving it alone will only exacerbate the problem. The Varnish Bush, an emubush called *Eremophila viscida*, from sandy loam country between Latham and Pindar in Western Australia, is one such species. Despite being found over a relatively wide area in the midwest and wheatbelt of Western Australia and being a 'disturbance opportunist', the Varnish Bush is listed as Critically Endangered in that State.

It was first noticed by scientists 100 years ago, then found in various locations over a 290 km strip. Even though we now know of 16 separate populations, there are only just over 800 mature plants in nature.

[Read more.](#)

UNSW Newsroom

Buried under colonial concrete, Botany Bay has even been robbed of its botany

27 APR 2020 REBECCA HAMILTON,
JOSEPHINE GILLESPIE, SHANE INGREY

The HMS Endeavour's week-long stay on the shores of Kamay in 1770 yielded so many botanical specimens unknown to western science, Captain James Cook called the area Botany Bay. During this visit, the ship's natural history expert Joseph Banks spoke favourably of the landscape, saying it resembled the "moorlands of England" with "knee-high brushes of plants stretching over gentle and treeless hills as far as the eye could see".

Since then, Kamay has become an icon of Australia's convict history and emblematic of the dispossession of Indigenous people from country. However, memories of the pre-British flora have largely been lost. Ongoing research drawing on ecological data, and Indigenous and European histories, reveals what this environment once looked like. It shows many of the assumptions about the historical landscape we hold today may actually be wrong. The site better reflects 20th-century European exploitation of the landscape than it does early or pre-British Botany Bay.

From swamps to suburbs

Today, the northern shore of Kamay acts as Australia's gateway to the world. It hosts Australia's busiest international airport and one of Australia's largest container ports, major arterial roads and a rapidly growing residential population.

From the early 19th century, urban development gradually overprinted a vast network of groundwater-fed swamplands, whose catchment extended north from Kamay to what is now the southern boundary of Sydney's CBD. These swamps have largely disappeared under the suburbs, or have been corralled into golf course ponds or narrow wetlands alongside Southern Cross Drive - a sight familiar to anyone who has driven between Sydney city and its airport.

Viewed by British colonial authorities as both an unhealthy nuisance and a critical resource, the ever-shrinking wetlands played a crucial role in the water supply and industrial development of early Sydney, before becoming polluted and a disease-causing miasma.

A misremembered past

"Natural" remnants of the former swamplands are today considered to have high conservation value under both state and federal environmental and heritage protection legislation. But attempting to protect ecosystems that reflect a version of the past has a major constraint. Long-term information about their past species composition and structure can be fragmented, misremembered, or absent.

This is especially problematic in the case of the Kamay swamplands, which, like many urban ecosystems, have been fragmented, hydrologically altered, and polluted. Yet not all is lost. We studied pollen released from flowering plants and conifers, which can accumulate and preserve in sediment layers through time. Looking at this preserved pollen lets us develop a timeline of vegetation change over hundreds to thousands of years.

Lachlan swamp

One wetland remnant, called Lachlan Swamp, occurs at the springhead of the swamplands in Centennial Parklands. Boardwalks and signs at the site encourage visitors to imagine the swamps and the paperbark forest (*Melaleuca quinquenervia*) surrounding them as a relic of pre-British Sydney. We used the pollen technique at Lachlan Swamp to determine whether the contemporary ecosystem reflects the pre-European landscape being protected. And our results reveal that, at the time of British occupation, the swampland was surrounded by an open, Ericaceae-dominated heath.

Casuarina and *Leptospermum* species were the dominant swamp trees, not the swamp paperbark. This plant community was present at the site for at least the previous 2,000 years, and was only replaced by the contemporary paperbark forest between the 1890s and 1970s.

Cultural knowledge

Ongoing work from the La Perouse Aboriginal Community led research team drawing on Indigenous knowledge and European history suggests this open heathland vegetation grew consistently across the Lachlan and Botany Swamps during and prior to European colonisation of Sydney. Continuous cultural knowledge about the environment, held by local Dharawal people, can provide a rich picture of Kamay's botany and how it was used – well before the arrival of the HMS Endeavour. For instance, the Garrara or grass tree (*Xanthorrhoea*), which is depicted in many early colonial paintings, is a multi-use plant used to construct fishing spears – a tradition upheld today within the La Perouse Aboriginal community.

Similarly, other food and medicinal plants have been long been used by this community.

This includes Five Corners (Ericaceae), Native Sarsaparilla (*Smilax*), Lomandra (*Lomandra*) and multi-use heath and swamp plants such as the coastal wattle (*Acacia longifolia*), swamp oak (*Casuarina glauca*) and coastal tea tree (*Leptospermum laevigatum*). The plant species described and utilised by the local people correlates with the pre-European vegetation reconstructed from the Lachlan Swamp pollen record, and with what is described in early British records.

Not all is lost Our common understanding of the Kamay landscape, as recognised in the protected swamp remnant in Centennial Park, is based on a misremembering of the past. If our future goals are to conserve beautiful, unique ecosystems that have escaped European exploitation and mismanagement – such as the version of Botany Bay described by Banks – it's crucial to start including and listening to long-term environmental histories to complement our scientific research. We must protect a resilient, ecosystem-rich landscape informed by accumulated Indigenous knowledge, passed down over many generations. Though Sydney's environmental past may be misremembered, it's not lost entirely. Its legacy is subtly coded into the remnant landscapes of pre-British occupation, and preserved in the continuous knowledge systems of the land's first peoples. With care, it can be read and used to support resilient and authentic urban ecosystems.

Read more: [*Black skies and raging seas: how the First Fleet got a first taste of Australia's unforgiving climate*](#)

Read more: [*The Memory Code: how oral cultures memorise so much information*](#)

Read more: [*The Dreamtime, science and narratives of Indigenous Australia*](#)

Hunting for *Grevillea scortechinii* ssp. *sarmentosa*

Backwater Grevillea - Vulnerable

The fires started in the Backwater area in late Spring. This forested area is well-named and relatively unknown. The fires wiped out whole swathes of country and when I visited in late February it had barely started to regenerate and was a landscape of blackened trunks, bare earth and exposed rocks with a bit of regrowth starting to happen.

Many years ago I became aware of this species along the side of the road and here and there in paddocks. There's very little of it left now largely due to council grading the sandy road and adjoining embankments so I was keen to see if any regeneration had taken place after the fires.

A hunt like this could be like looking for a needle in a haystack but I'd had a tip off from an SoF member who called in during the summer. We walked over the area for about 10 minutes when my husband Don found it. There appeared to be a large number of small seedlings poking through the regenerated grass and others regrowing from what appeared to be burnt lignotubers.

G. scortechinii ssp. *sarmentosa* is a low spreading shrub which can grow up to 1.5m in ideal conditions but is generally less than 1m in height. A single plant can form a dense mat up to 2.5m across. Leaves are stiff and leathery with sharply toothed edges and the toothbrush type flowers are deep purple (almost black) and green. It is somewhat unreliable in cultivation and may need to be propagated through a few generations.

The species is restricted to granite country on the New England Tablelands (including granitic outcrops, slabs and slopes), in scattered populations from Baldersleigh, Backwater and Warra National Park in the Guyra district and Mann River Nature Reserve east of Glen Innes. It flowers in the warmer months from spring to autumn.

It grows in association with *Eucalyptus radiata* subsp. *sejuncta*, *E. dalrympleana* subsp. *heptantha*, *E. pauciflora*, *E. caliginosa*, *E. nova-anglica*, *E. campanulata*, *E. acaciiformis*, *Petrophile canescens*,

Leptospermum polygalifolium, *Bursaria spinosa*, *Hakea dactyloides*, *Persoonia cornifolia*, *Banksia integrifolia*, *Melicbrus procumbens*, *Lomandra longifolia*, *Lomatia sialifolia*, *Poa sieberiana*, *Pteridium esculentum*, *Oxylobium*, *Hibbertia*, *Themeda* and *Calochilus* species.

Ref: <https://www.environment.nsw.gov.au/threatenedSpeciesApp/profile.aspx?id=10379>



Grevillea scortechinii ssp. *sarmentosa* Image: Hitchcock



Regeneration at Backwater NSW Image: Hitchcock

Threatened Species Recovery Hub

Plants Red Hot List: Australia's 100 most endangered plants

| Flagship group | Candidate species (decl.) | No. | Red Hot species |
|------------------------------------------------------|---------------------------|-----|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 1. Ground orchids with small, fragmented populations | 233 (94) | 15 | WA: <i>Caladenia busselliana</i> ; TAS: <i>C. anthracina</i> , <i>Prasophyllum tunbridgense</i> ; SA: <i>Eriochilus paludosus</i> , <i>P. laxum</i> , <i>Prasophyllum murfetii</i> , <i>Pterostylis psammophila</i> , <i>Spiranthes elytra</i> , <i>Thelymitra cyanapicata</i> ; VIC: <i>Caladenia pumila</i> , <i>Prasophyllum correctum</i> ; NSW: <i>Calochilus pulchellus</i> , <i>Corunastylis insignis</i> , <i>Diuris byronensis</i> ; QLD: <i>Cooktownia robertsii</i> |
| 2. South-west WA remnants | 189 (115) | 16 | <i>Acacia volubilis</i> , <i>Austrostipa jacobiana</i> , <i>Banksia cuneata</i> , <i>B. fuscobracteata</i> , <i>B. ionthocarpa</i> , <i>Darwinia whicherensis</i> , <i>Daviesia bursarioides</i> , <i>D. cunderdin</i> , <i>Eremophila pinnatifida</i> , <i>E. subangustifolia</i> , <i>Grevillea calliantha</i> , <i>G. involucrata</i> , <i>G. sp. Gillingarra</i> , <i>Ptilotus pyramidatus</i> , <i>Synaphea stenoloba</i> , <i>S. sp. Pinjarra Plain</i> |
| 3. South East Australia remnants (SA) (Vic) | 93 (49) | 10 | <i>Bossiaea peninsularis</i> , <i>Caladenia macroclavia</i> , <i>Eriochilus paludosus</i> , <i>Hibbertia tenuis</i> , <i>P. laxum</i> , <i>Prasophyllum murfetii</i> , <i>Pterostylis psammophila</i> , <i>Spiranthes elata</i> , <i>Spyridium furculentum</i> , <i>Thelymitra cyanapicata</i> |
| 4. Fertile grasslands and open grassy woodlands | 99 (50) | 9 | VIC: <i>Ballantinia antipoda</i> , <i>Caladenia pumila</i> , <i>Geranium sp. 1</i> (' <i>carolinianum</i> '), <i>Euphrasia scabra</i> , <i>Prasophyllum correctum</i> , <i>Senecio behrianus</i> ; TAS: <i>Caladenia anthracina</i> , <i>Prasophyllum tunbridgense</i> (TAS); QLD: <i>Solanum orgadophilum</i> |
| 5. Highly urbanised and growth areas | 109 (79) | 21 | Sydney: <i>Banksia vincentia</i> , <i>Calochilus pulchellus</i> , <i>Corunastylis insignis</i> , <i>Eucalyptus sp. Cattai</i> , <i>Grevillea caleyi</i> , <i>Hibbertia spanantha</i> , <i>Persoonia hirsuta</i> , <i>Prostanthera marifolia</i> ; South East QLD: <i>Brachychiton sp. Ormeau</i> , <i>Croton mamillatus</i> , <i>Gossia gonoclada</i> , <i>Grevillea hodgei</i> , <i>Zieria exsul</i> ; Perth: <i>Austrostipa jacobiana</i> , <i>Caladenia busselliana</i> , <i>Grevillea sp. Gillingarra</i> , <i>Ptilotus pyramidatus</i> , <i>Synaphea sp. Pinjarra</i> ; Melbourne: <i>Caladenia pumila</i> , <i>Geranium sp. 1</i> ; Darwin: <i>Typhonium taylori</i> |
| 6. Phytophthora (dieback fungus) | 40 (31) | 12 | WA: <i>Andersonia axilliflora</i> , <i>Banksia montana</i> , <i>Darwinia collina</i> , <i>Daviesia glossosema</i> , <i>Isopogon uncinatus</i> , <i>Lambertia fairallii</i> , <i>Leucopogon gnaphalioides</i> , <i>Persoonia micrantha</i> ; NSW: <i>Banksia vincentia</i> , <i>Hibbertia circinata</i> ; VIC: <i>Spyridium furculentum</i> , <i>Sphaerolobium acanthos</i> |
| 7. Myrtle rust - east coast | 10 (10) | 4 | South East QLD: <i>Gossia gonoclada</i> , <i>Lenwebbia sp.</i> (Main Range), <i>Lenwebbia sp.</i> (Blackall Range); QLD/NSW: <i>Rhodomyrtys psidioides</i> |

| Flagship group | No. | | |
|------------------------------------------------------------------------------|----------|----|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 8. South east Qld Bioregion incl. northern NSW | 116 (55) | 16 | Rainforest: <i>Antrophyum austroqueenlandicum</i> , <i>Diospyros mabacea</i> , <i>Elaeocarpus sedentarius</i> , <i>Lenwebbia</i> sp. (Main Range), <i>Gossia gonoclada</i> , <i>Graptophyllum reticulatum</i> , <i>Lenwebbia</i> sp. (Blackall Range), <i>Myrsine richmondensis</i> , <i>Ochrosia moorei</i> , <i>Selaginealla andrewsii</i> ; Dry scrubs: <i>Alectryon ramiflorus</i> , <i>Brachychiton</i> sp. Ormeau, <i>Croton mamillatus</i> ; Coastal heath: <i>Diuris byronensis</i> , <i>Zieria exsul</i> ; Montane: <i>Grevillea hodgei</i> |
| 9. Brigalow Belt | 44 (15) | 2 | <i>Decaspermum struckoiligum</i> , <i>Solanum dissectum</i> |
| 10. Wetlands in modified environments | 52 (27) | 4 | NSW: <i>Gentiana bredboensis</i> ; VIC/NSW: <i>Ballantinia antipoda</i> , <i>Senecio behriannus</i> ; WA: <i>Ptilotus pyramidatus</i> ; |
| 11. Desert springs Qld | 11 (4) | 1 | <i>Eryngium fontanum</i> |
| 12. Islands | 42 (10) | 5 | Norfolk: <i>Elatostema montanum</i> , <i>Wikstroemia australis</i> ; Lord Howe: <i>Lepidorrhachis mooreana</i> ; Macquarie: <i>Azorella macquariensis</i> ; Tiwi: <i>Typhonium mirabile</i> |
| 13. Weedy grasses Northern Australia | 18 (5) | 4 | QLD: <i>Ptilotus brachyanthus</i> , <i>Solanum dissectum</i> , <i>Solanum orgadophilum</i> ; SA: <i>Swainsona dictyocarpa</i> |
| 14. Wet Tropics/Cape York forests | 59 (7) | 2 | <i>Cooktownia robertsii</i> , <i>Phlegmariurus dalhousieanus</i> |
| 15. Mountain top endemics | 153 (31) | 10 | NSW: <i>Hibbertia circinata</i> ; <i>Pimelea bracteata</i> , <i>P. cremnophila</i> , <i>P. venosa</i> , <i>Prostanthera gilesii</i> , <i>Pultenaea</i> sp. Genowlan Point; QLD: <i>Grevillea hodgei</i> ; VIC: <i>Kelleria bogongensis</i> , <i>Sphaerolobium acanthos</i> ; TAS: <i>Tetradthea gunnii</i> |
| 16. Herbivore grazing and tramping | 222 (99) | 9 | NSW/SA: <i>Acacia carneorum</i> ; QLD/NSW: <i>Diospyros mabacea</i> ; NSW: <i>Myrsine richmondensis</i> <i>Gentiana bredboensis</i> , <i>Pimelea cremnophila</i> , <i>P. venosa</i> ; VIC: <i>Sphaerolobium acanthos</i> ; SA: <i>Prasophyllum murfetii</i> ; TAS: <i>Phebalium daviesii</i> , |
| 17. Inappropriate fire/ disturbance regimes (undocumented impact on species) | 133 (53) | 19 | WA: <i>Acacia pharangites</i> , <i>A. volubilis</i> , <i>Banksia cuneata</i> , <i>B. ionthocarpa</i> , <i>Grevillea calliantha</i> , <i>G. involucrata</i> , <i>Marianthus paralius</i> ; QLD: <i>Cooktownia robertsii</i> , <i>Decaspermum struckoiligum</i> , <i>Solanum orgadophilum</i> , <i>Zieria exsul</i> ; NSW: <i>Diuris byronensis</i> , <i>Eucalyptus</i> sp. <i>Cattai</i> , <i>Grevillea caleyi</i> , <i>Hibbertia spanantha</i> , <i>Myrsine richmondensis</i> , <i>Persoonia hirsuta</i> ; TAS: <i>Tetradthea gunnii</i> Norfolk Island: <i>Elatostema montanum</i> |
| 18. Mining and mining expansion | 39 (19) | 3 | QLD: <i>Eryngium fontanum</i> , <i>Solanum orgadophilum</i> ; NT: <i>Typhonium taylori</i> |
| 19. Climate Change | 100 (31) | 5 | VIC: <i>Ballantinia antipoda</i> , <i>Kelleria bogongensis</i> ; WA: <i>Commersonia erythrogyna</i> ; Lord Howe Island: <i>Lepidorrhachis mooreana</i> ; TAS: <i>Eucalyptus morrisbyi</i> |
| 20 Arid shrubs | 6 (6) | 1 | <i>Acacia carneorum</i> (NSW/SA) |
| 21 Enigmatic/cryptic species | 41 (9) | 4 | VIC: <i>Euphrasia scabra</i> ; WA: <i>Marianthus paralius</i> ; QLD: <i>Ptilotus brachyanthus</i> ; NSW: <i>Pomaderris delicata</i> |

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, *C. calycina*, *C. baeuerlenii*,
Callistemon pungens, *Zieria adenodonta*, *Z.*
prostrata, *Z. floydii*, *Boronia keysii*

I also sell some endangered species through my online nursery <https://coolnativesnursery.com>

Arthur Baker

55 Moran ST Gatton Qld 4343

Gardenia psidiodes
Grevillea quadricauda
Phaius tancarvilleae
Phaius australis
Kunzea flavescens
Kunzea graniticola
Lilaeopsis brisbanica
Choricarpia subargentea
Spathoglottis pauliniae
Spath plicata
Murdannia graminea
Thysanthus tuberosus

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 (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.

Verna Aslin

20-22 Bega St Cobargo NSW 2550

Asterolasia beckersii and *Grevillea iaspicula*

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)

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 Echuca Moama Vic
 APS Melton Bacchus Marsh Vic
 APS Sutherland NSW
 NPQ Ipswich Qld
 NPQ Sunshine Coast and
 Hinterland Qld

Botanic Gardens and Reserves

Burrendong Arboretum Wellington
 Crommelin Native Arboretum
 NSW
 Hunter Regional BG NSW
 Lindum Park Flora and Fauna
 Res Tamworth Regional BG NSW
 Swan Reserve Garden Vic

Nurseries

Bilby Blooms Binnaway NSW
 Cool Natives Armidale NSW
 Mole Station Tenterfield NSW
 Forest Heart Eco-Nursery SE
 Qld

Seed Suppliers

Victorian Native Seeds

Study Groups

Acacia SG
 Correa SG
 Epacris SG
 Garden Design SG
 Grevillea SG
 Hakea SG

Landscapers

Brush & Bush Tamworth NSW