

President's Message

The Gardens were closed to the public during the April-May Covid 19 lock down but individual volunteer members of the committee were able to check on the plant nursery watering system and recent plantings. Our gardener Damian, as an outdoor worker, was able to continue working and used the time to keep a watchful eye on endangered species in the collection and newly planted trees and shrubs. He also spent many hours controlling invasive grasses and working at restoring the lawns which suffered badly during the hot, dry, fiery summer months.

Workdays recommenced in June observing Covid-19 restrictions. Since the return to work efforts were concentrated initially on general weeding and tidying up across the site. More recently the focus has moved to the new Banks-Solander Garden (see page 3) and Sensory Garden where some planting has been done of colourful flowering plants. Weeding in the Hoop Pine Forest has been very impressive and topping up the gravel on the path in the Wilson Park Garden has been ongoing and should be completed next week.

Some initial weeding has been done west of the gully, an area which will receive more attention once the new high level single span foot bridge has been built. Lismore Council steel fabricators and bridge building team will construct the bridge, and the volunteer building team will install the decking. This project has been partially funded by a generous donation but it will still require the use of FLRBG accumulated funds to complete the job. The FLRBG

committee will review available funds when the amenities block construction has been completed.

The building of amenities block at the Visitor's Centre is well under way thanks to a grant of \$25,000 from the NSW Government from its Community Building Partnerships programme. The concrete has been poured and the building constructed by the contractor BT Sheds. Plumbing and electrical works will commence shortly and the fitout will be done by the volunteer building team. There will be two toilets, one ambulant and one wheelchair accessible. There will also be a baby change table, much requested by visitors!

The construction of the walkway over a boggy area in Room 5 has been completed and seats have been installed. Work is now happening on landscaping the area and completing the plan of a looped path through this interesting section of the Gardens with its huge fallen log, beautiful fern garden and special collection of rainforest plants.

The Covid19 lockdown finished just in time for us to hold a small farewell function for long time member, past President and Curator of the FLRBG, Pat Offord. Pat has returned to Sydney to be closer to her family. We will miss her but, as I commented at



The labyrinth at the top of the Hoop Pine Forest looking great in spite of the drought, heatwave, fires and Covid19

her farewell, she is only an email or phone call away if we need her advice.

An Open Day is planned for Sunday 30 August... complying with Covid 19 regulations. The Encounters Walk will be officially opened that morning and plant identification wheels will be launched. They can be examined at the Nursery. There will also be guided walks, morning tea and plant sales at the Nursery. See later in newsletter for more details. All the members of the committee will be on hand to answer questions as will many of the volunteers, so we are hoping for a beautiful, fine, warm spring morning!!

Hazel Bridgett
president@friendslrbg.com.au

Species profile

Rhodomyrtus psidoides

Family MYRTACEAE

from Peter Gould

Native Guava

Description:

Native Guava is a large shrub to small tree growing to a maximum 12m tall with a trunk diameter up to 25cm. Leaves are simple, opposite, lanceolate to narrow elliptic or oblong elliptic and from 7 to 10cm long. Margins are entire. There are numerous oil dots and the leaves are quite aromatic when crushed, giving of a sweet fruity smell. The bark is brown and scaly. The fruit is an ovoid to globose, fleshy green to yellow berry containing numerous seeds.



Note the prominent contrasting mid leaf vein of mature leaves..

Distribution

Native Guava grows in, and on the margins of, Subtropical and Littoral Rainforests from near Gosford in NSW north to Tinana Creek south of Maryborough in Queensland.



Healthy new growth

Conservation status:



Typical form of a plant that has survived the effects of Myrtle Rust and grown back as a root sucker.

Once common, Native Guava is now in severe decline across its range and has been listed as **Critically Endangered** in New South Wales the result of the impact of Myrtle Rust. It mostly survives as small root suckers around dead adults and there is virtually no fruit or seed production.

In 2014/15 a study of 18 sites, found all plants were infected and, overall, 57% of trees surveyed were dead. By 2019 100% of the plants at several of same sites had died. In 2010 it was listed as "Widespread, least risk" status. By 2019 it had been listed as Critically Endangered in NSW.

The fruit is a yellow-brown capsule 1.5 to 1.8 cm in diameter, with 3 to 5 valves which open to reveal black seeds, each covered in an orange to red aril.

References:

- Floyd, A.G. 1990, *Australian Rainforests in New South Wales, Vol 2*, Surrey Beatty & Sons, Sydney NSW.
- Floyd, A.G. 2008, *Rainforest trees of mainland south-eastern Australia*, Terania Rainforest Publishing, Lismore, NSW.
- Harden, G.J. (ed) 1993, *Flora of New South Wales, Vol 2*, New South Wales University Press, Kensington, NSW.
- Harden, G., McDonald, B. and Williams, J. 2006, *Rainforest trees and shrubs: a field guide to their identification*, Gwen Harden Publishing, Nambucca Heads, NSW.
- <http://plantnet.rbg Syd.nsw.gov.au/>
- <http://www.environment.gov.au/bio-diversity/invasive-species/diseases-fungi-and-parasites/myrtle-rust>

Myrtle Rust

Myrtle Rust is caused by an exotic, pathogenic fungus *Austropuccinia psidii* from South America. It only attacks plants in the family MYRTACEAE. It thrives in moister habitats only (inland areas are mostly unaffected). 'Host' plant species vary in their susceptibility. The pathogen spreads easily via airborne spores and has a rapid life cycle enabling it to grow in 10-12 days from a single spore to 1,000s. It attacks mainly new growth – highly susceptible plants cannot renew foliage – there is a loss of growth and reduced (or complete lack of) flowering and fruiting. Multiple 'strains' are known, having different host preferences.

See article from Mt Annan Botanic Garden about their work re Native Guava and Myrtle Rust on pages 6-7

Opening of Encounters Walk planned for 30 August

After securing a grant from the Maritime Museums of Australia last year, as part of their Encounters programme, the Education team has been developing a garden to commemorate plants first seen and studied by botanists Joseph Banks and Daniel Solander in 1770. They visited the Australian east coast with James Cook on the Endeavour and collected specimens and made drawings of hundreds of the stunning and unique plants they saw.

The original Encounters plan involved the sailing of a replica 'Endeavour' around Australia and passing Byron Bay in May this year. The opening of our new garden was to happen at that time. However, Covid19 put an end to these plans but we have adapted accordingly

Our recently retired Curator, Pat Offord, researched the Banks and Solander records and selected from their listing plants which were indigenous to an area within 200kms of Lismore. These have been planted to form an educational walk which culminates in a small open-air education area which will enable guides to easily explain the significance of the garden and discuss how botanists identify plants.

The Wednesday work group of keen volunteers has put a huge amount of work into clearing, planting, watering, weeding and building pathways and

seating to help make this project a reality.

Despite a fire in August last year at the neighbouring waste facility, which closed the Gardens for over a month, a prolonged drought and a scorching summer with bushfires around for many weeks, the new Garden is taking shape and is beginning to look seriously established.

Working with Bundjalung elders, Delta Kay, Thelma James and Mick Roberts, the Arakwal Corporation and Lee Middleton from National Parks NSW, the team has also created a series of flora identification wheels. These will be able to be used in the Arakwal National Park in Byron Bay and other native rainforest areas, as well as through our newly created garden in Lismore. The flora wheels give botanical information and details about Aboriginal plant uses. They feature the beautiful artwork of Ros Little and were designed by Annette Deal from Ginger Blue Graphics.



Some of Encounters Team meeting at Byron Bay



Entrance to the Encounters Walk

The launch of the flora wheels will take place at our Open Day from 10 am on Sunday 30 August. And our new Banks Garden will be officially opened that morning.

See Page 4 For further information about our Open Day.

Tracey Whitby – Education and Publicity

Plants featured in new garden include

- Callistemon viminalis*
- Banksia integrifolia*
- Banksia serrata*
- Hoya australis*
- Commelina cyanea*
- Melaleuca citrina,*
- Geranium solanderi*
- Hibbertia scandens*
- Eustrephus latifolius*
- Viola Banksii*
- Dianella caerulea*
- Solarum aviculare*



First planting in Encounters Walk September 2019

Presentation to Pat Offord on her retirement May 2020



Pat having unveiled sign in her honour
On 28 May, just fitting in between the date Covid 19 lockdown rules were relaxed and the date of Pat's departure, we had a small group farewell for Pat Offord at the Gardens. This was the occasion of her retirement from her role as Curator and from long term active involvement with the Gardens. She was presented with a booklet of memories of her time at the Gardens and she unveiled a sign honouring her for her involvement in the establishment of the gardens generally and but in particular of the Rare and Threatened Species Garden.

Marie Matthews spoke to Pat on behalf of the FLRBG Volunteers:

Open Day Sunday 30 August

- 9.00 am Gates Open ... Covid19 restrictions mean registration with name and contact details at the Gate
- 9.30 am through morning Coffee, tea and drinks, brunch stall by Clunes Primary School near the EEC - also book and card sales
- 10.00 am Opening of the Encounters Walk and launch of the Flora Identification Wheel
- 10.45 am Guided Walk of Hoop Pine Forest
- 11.45 pm Guided Walk of Useful Plants Garden
- RSVP by Friday 28 August Email: publicity@friendslrbg.com.au... Leave name, phone number and your preference re guided walk.
- BOOKING ESSENTIAL** for walks..... and preferable for attendance.
- Please wear sturdy shoes and a hat for walks.

Native Rainforest Plant Stall at the nursery

Self-guided walks any time – brochures available

NOTE: FLRBG DOES NOT NOT HAVE CARD FACILITIES – PLEASE TRY TO PAY WITH GOLD COINS OR NOTES OF EXACT AMOUNT FOR ALL TRANSACTIONS

“Pat, On behalf of the Committee I would like to thank you for all that you have done at the Gardens over the last 25 plus years. On your watch we have gone from a wasteland to a beautiful Rainforest Botanic Garden and often - particularly in the early days - with very little in the way of funds.

I think the amazing part of your tenure in various roles – President, Secretary, Treasurer, Works Organiser and Curator and much more - has been your persistent ongoing enthusiasm and energy. Even at times when you were not feeling 100% physically you still maintained an intense interest in what was happening. I remember you ringing from hospital on more than one occasion to get me to chase up something that needed attention.

You have been seriously involved in developing all the main areas in the Gardens from that first planting at the main gate in 2002 when you did the buying and advertising, the planting of the rooms in the main rainforest area, the Wilson Park Species garden and the three specialty Gardens. You really pushed all those projects along, you had the

the ability to picture how plans would turn out and the persistence to encourage their completion. One Sunday work morning I remember vividly was when we were putting the path in Wilson Park Garden. You arrived with lots of hoses and you got us to spread them out along the length of the garden. I wasn't sure about this system but it worked!! And the current path is along the route we marked with the hoses. Another vivid memory I have is the enthusiasm in the whole FLRBG Committee when you organised that coloured plan from Armsign for the development of the Sensory Garden - late in 2013. It really got us moving on that project.

You saw it as a vital role of the Gardens to build up a pool of genetic plant material of local rainforest trees... you wanted as many of the



trees as possible that grew in the original Big Scrub. You had a special interest in those that are rare or threatened which led to the establishment of the Uncommon Plants Garden. You made up a Wish List of trees and set about finding almost all of them. And now we have a unique Garden with a collection of species not found together anywhere else in the World

So Pat thank you so much for all you have done, and being. On behalf of the Friends I wish you much joy and excitement in your new life adventure.

This booklet is a collection of memories of your life at the Gardens. I hope you will enjoy browsing through it.”

Marie Matthews - 28 May 2020

Volunteers... *the lifeblood of our world*

In 2002 I started work at the Daniel Solander Library at the Royal Botanic Gardens Sydney. The library was in a serious mess and many collections were badly neglected. Volunteers became the lifeblood of our operations making the seemingly impossible not only possible but rather wonderful.

Volunteers were a really important feature of the RBG Sydney. They ran a plant nursey, sold plants to the public, organised an annual botanical art exhibition, a craft exhibition, organised public lecture series and a New Years Eve fireworks party within the Gardens. They raised money for many projects in the Gardens and improved its public profile.

My first experience as a volunteer didn't feel like volunteering. I had done bush regeneration and arboriculture courses at Randwick TAFE, which led to six biodiversity camps across NSW with the National Parks Association. I put up my hand for the botany team.

For seven months in 2000 and 2002 I worked as a volunteer in East Timor. We worked to get a university library up and running with whatever we could scrounge from a shattered Dili and raise from donors. I continued doing what I could back in Australia to get support and donations for the project.

So we started inviting volunteers to work in the Library. Two small teams rescued and documented precious historic photos and glass slides, botanical illustrations and artworks. They unearthed a treasure trove and rescued many from dire circumstances and complete obscurity. And we had other volunteers who tackled operational areas of the library. Many were retirees, some were library students, some unemployed library people who enjoyed the challenge and the library and the chance to improve their CVs. Volunteers established the Florilegium Society, inviting selected botanical artists to produce works for the library's collection, for exhibition

and publication. We felt so privileged to work with such an amazing band of generous people.

Moving to Lismore I became involved with WIRES, doing hotline shifts and handling the food and supplies for rescuers and carers. I was constantly blown away by their dedication and the immense workload that consumed so much of their lives.

And now I am one of a great team of volunteers who have created and grown the Lismore Rainforest Botanic Gardens from an ex-quarry and degraded land next to the Lismore Waste Facility. What they have achieved in such a short space of time is truly phenomenal. The oldest volunteer is 96. Most are retirees. There are volunteers who grow plants from seeds and cuttings and sell plants to the public, volunteers who weed, plant, maintain plants, document and plan developments. There are volunteers who run guided tours, run education classes, produce newsletters, write press articles, write funding submissions, handle finances and liaise with Lismore Council and other botanic gardens. There are volunteers who build sheds, bench seats, the nursery, bridges, paths and rescue creek banks from flood damage. And much more.

The LRBG was closed down during the waste facility fire, the smokey air from the bushfires and then the Covid lockdown played havoc with Gardens operations so volunteers are working hard to catch up what was lost during that time.

Volunteers really are the lifeblood of so much in our world, in our region. Think of the CFA and the SES. But we can't all be that brave or physically fit. People volunteer for many different reasons. So if you have the time and inclination, do consider pitching in at the LRBG. You won't regret it.

Judy Blood, FLRBG Curator

New Amenities Block



Hazel proudly showing off the new amenities block building



Floor plan of amenities block adjacent to Visitors Centre prepared by Ben De Nardi

For almost three years now we have been trying to get a new amenities block built adjacent to our Visitors Centre. Thanks to a huge amount of work by Hazel Bridgett plans were drawn up, development application was submitted and approved, grant was obtained to help cover costs, quotes were organised and now the basic structure has been erected. Plumbing and electrical will be happening soon and then our own volunteer building team will complete the lining and fitting out.



Grahame at work on repairing break in drain pipe near Useful Plants Garden

Conserving Myrtle Rust-affected rainforest species at the Australian PlantBank

ronica Viler and Cathy Offord

In this article, we talk about some of the work that we are doing at the Australian PlantBank to help conserve rainforest species, particularly those



Rhodomyrtus Psidioides fruit

that are under threat of extinction. The Australian PlantBank has a seedbank and tissue culture laboratory located within the Australian Botanic Gardens Mount Annan in south-west Sydney.

With roughly a quarter of plant species facing extinction worldwide, our plant germplasm collections provide an insurance policy using seedbanking, tissue culture and cryostorage for native species, primarily from New South Wales. In particular, Australian rainforest plants are under threat from habitat fragmentation, weeds, disease, fire and climate change.

This program focusses on assessing the storage potential of seeds from Australian rainforest species, storing those seeds suitable for seedbanking and looking for alternative conservation measures for those that are not.

The 'Rainforest Seed Conservation Project' aims to increase the global

capacity to conserve rainforest plants by investigating the storability of seeds of Australian species and developing methods for preserving those not suitable for seedbanking.

Conserving species affected by Myrtle Rust - the case of the Native Guava

The need for conservation of many species is urgent. While conservation in the wild is always the best action, in some cases the threats are so dire that ex situ (away from the site) conservation is required.

In 2010, an exotic plant pathogen *Austropuccinia psidii*, commonly referred to as Myrtle rust, was detected in Australia for the first time on the NSW Central Coast. Over the past ten years, Myrtle Rust's impact on many native Myrtaceae species has been significant, with 382

known to be susceptible (R.O. Makinson pers. comm.). Just one of these is the Native Guava, *Rhodomyrtus psidioides* (G. Don) Benth.

It was once common from Broken Bay on the NSW coast, North to the Queensland border and up to 120kms inland. In February 2019, it was listed as Critically Endangered in NSW. The disease affects all plant parts - leaves, stems, flowers and fruits. Damage occurs to new foliage and subsequent failure to replace older leaves progressively weakens the plant, ultimately causing death.

Rhodomyrtus psidioides readily suckers however new growth is often rapidly overwhelmed by Myrtle Rust. Flowers and fruits are similarly affected and seldom manage to produce any viable seed, therefore *R. psidioides* struggles to reproduce either asexually or sexually in the wild

and suffered serious decline as a result.



Collecting specimens at Wamberal

We have been collecting material of *R. psidioides* and other Myrtle Rust susceptible species since 2010, ramping up our efforts in recent years due to the serious impact of the disease. In the wild plants are frequently covered in Myrtle rust or have deteriorated to the point where taking cutting material is no longer feasible.



Staff member with young plants

Only very small numbers of viable seed have been collected from the wild in most cases plants are no longer fruiting. Cuttings from grown plants have been established in the

gardens and are now a source of good quality seed that we are using in our seed research program. Further wild sourced cutting collections are being added, but managing Myrtle Rust susceptible collections is especially challenging. It requires quarantine and treatment of incoming plant material, diligent monitoring, appropriate cultural methods and sound hygiene practices to maintain healthy potted and in ground collections. We are experimenting and learning how to manage these plants in the garden and will be sharing our experiences with other gardens.



Seedlings in shade house

The challenges and future for working with threatened species

The challenge for those working with threatened species is to find innovative ways to maximise outcomes with the material and resources available.

The Native Guava is one of only around 600 species facing extinction in NSW alone and one of many that we are working with others to conserve. Much more is to be done to protect them. The role of gardens is important in this protection.

Although not substituting for loss of plants in the wild, growing in gardens can help understand the species biology, providing material for research and highlighting the plight of such species to the public.

Footnote: the Lismore Rainforest Botanic Garden has very generously provided seeds and cuttings of rainforest species to our research program over many years, for which we are extremely grateful.

**Veronica Viler and Cathy Offord,
Australian PlantBank, Australian
Botanic Garden Mount Annan**

New species

Yesterday Nan and I walked into the rainforest gorge which will disappear under 40m of water if The Channon/Dunoon dam, being contemplated by Rous County Council, is built. At the foot of a Yellow Carabeen (with Rocky Creek beyond) we found the small shrub Acalypha species 'Big Scrub'. This shrub is so recently discovered and so limited in distribution that it has yet to be formally named.

Hugh Nicholson Facebook
12 August 2020

Finding a Curator

Serendipity is a wonderful thing. In late February, as the fire disasters started receding and Covid seemed far away, the ground-breaking Australian Rainforest Seeds was being launched at the Eltham Hotel. After seven years in Lismore I felt the need to be amongst plant people again and to celebrate the publication of such an important work.

An enthusiastic crowd of 400 people found places to sit and stand wherever possible. At half-time people went to find food and drink so I decided to find a real chair to sit on for a while. A woman a couple of seats away, turned to me and introduced herself as Pat. My reaction surprised her 'You don't happen to be Pat Offord?' It was. I said I had wanted to meet her ever since I had moved to Lismore. I knew her daughter Cathy from working for 10 years at the Royal Botanic Gardens in Sydney (RBG) and had read the Lismore Rainforest Botanic Gardens (LRBG) newsletters for years. Pat said Cathy was somewhere in the crowd. And added that she was moving to Sydney very soon.



New FLRBG Curator

Afterwards when we were catching up, Cathy turned to Pat and suggested me as a good candidate to take on her role as plant curator at the LRBG. After weeks of hesitation, thinking there would be so many local rainforest experts as likely candidates, the Lismore App profiled Pat and said they were still looking for a plant curator for the Gardens. So I got in touch. That is how a librarian from sandstone country came to step into the daunting shoes of Pat Offord.

Judy Blood, FLRBG Curator

Northern Star Monday 17 December 1951

Bushfires raging throughout the North Coast yesterday burned out thousands of acres of forest, bush and grass lands, and threatened 50 homes. A fire at Tuntable Falls has burned about five square miles of heavily timbered forest. Fanned by strong wind, the fire is approaching the Goonenbar State Forest on a three to four mile front. This fire covers a large area and is being fought by gangs of men on two sides.

About 60 men, including mill hands from the local sawmill, Forestry Commission rangers, and volunteers under the direction of Police Sergeant A. W. Buchanan of Lismore, are fighting the blaze. The men cut a wide break between the fire and the State Forest and were patrolling the break late last night.

Interim Report fire damage re rainforest from Mt Nardi Fire



Cordyline petiolaris shooting from base of plant after the fire

Initial commentary and ICON mapping after the wild fires in 2019/20 summer indicated that vast devastation had occurred across World Heritage Areas in Richmond River Area (RRA). Newspapers, television and community experts reported that rainforest was burning and predicted the likelihood of catastrophic biodiversity loss.

RRA needed to map all the edges of the fire ground in detail to understand fire extent and its impact on vegetation communities. Questions on the effect of the fires on fauna species also arose and we needed to work out how best to assess the damage?

Liz Tasker, principal fire ecologist from Science Division NSW Office of Environment and Heritage, spent a week in RRA with the staff helping to develop an action plan. A meeting was set up with other departments, Save our Species (SOS) and Area staff in late January 2020 to plot a way forward post fire.

We looked at what flora and fauna monitoring had been completed pre fire and what could be replicated post fire to understand the impacts. Detailed mapping and monitoring would be required. Observing the effects of fire on rainforest species and boundaries was a key focus.

Initially the Terania basin, Mt Nardi and the Nightcap Range fire edge was walked and mapped and a consistent pattern emerged. Where Blackbutt, Flooded Gum, Bloodwood, Turpentine and Brush Box had

dropped out and been replaced by rainforest species, the fire had stopped within 30m. The rainforest acted as containment and held back the fire with no suppression from fire agencies. The rainforest areas of Nightcap and Whian Whian were mostly unburnt, even small isolated pockets surrounded by eucalypts. The fire had, however, penetrated the lower catchment, burning with varying intensities. How would the plants respond? SOS are well underway with monitoring these species and collecting baseline data, so time will tell.



Dampiera sylvesteris in flower after the fires

The main damage to rainforest plants was in the Eucalypt-Rainforest overlap where buildup of leaf litter on the forest floor, which included a large load of eucalypt leaves, had accumulated since the last big fire in 1968, and they had fuelled a very hot fire. Once the fire moved into true rainforest it lost intensity and damage was limited.

Some species did not tolerate the fire well and have not so far come back. However, with the majority of trees there is obvious recovery with some growing from lignums under the ground at base of tree, and some coppicing. Some trees are flourishing where the canopy had opened or thinned enabling them access to light and their first chance to make a growth spurt since the last big fires.

Grave concern was held for the many threatened plant species, most notably the Nightcap Oak that only occurs along one creek system in Nightcap/Whian Whian reserves. However, NPWS crews worked successfully to prevent fire spreading to upper the catchment area.

In spite of dire predictions, very little serious burning of main rainforest areas has been found although there were the exceptions of several hot spots where the fire burned intensely.

There are weed problems in some areas with birds bringing in Camphor Laurel, Devils' Figs fruit and other weedy plants. But overall, although there is a long way to go, the rainforest appears to be recovering better than we could have hoped.

From interview with and article by Matthew Wiseman July 2020 Team Leader Rangers North Coast Branch NSW National Parks & Wildlife Service.

Oz Plants & Hiroshima

A wattle, or perhaps a new plant emerging from one of its surviving seeds, is acclaimed as the first plant to resume flowering in Hiroshima's atom bomb-ravaged zone. Wattles have ever since been revered in Japan as symbols of hope. And a Eucalypt – a Yellow Box (*E. melliodora*) was one of the first trees within the main blast zone to show signs of life after the 1945 nuclear explosion, when it had been forecast that no plants would grow there for many years.

Source Canberra Times

Photos Wanted

Good quality, high definition photos in landscape format of plants that grow in our Gardens are needed for FLRBG 2021 Gardens Calendar

Contact Tracey
publicity@friendslrbg.com.au

Australian National Botanic Gardens: *Drought, fire, smoke, hail: Summer 2019-20*



Rainforest Gully at ANBG before heat and hail damage

Since my last communication in the newsletter at the end of 2019, the world has of course turned upside down with the thought of returning to normal whimsical at the very least. Nevertheless, life continues and we, like the plants, continue to (try to) adapt.

From early December till early February Canberra was blanketed in smoke from fires on three different sides which on several days ensured we were the worst city in the world's most polluted air quality index. This all came as, like the majority of the east coast, we suffered through our driest spell since the Millenium drought. Authorities advised us that inflows into Lake Burley Griffin were

so low we needed to prepare for the cessation of our rights to pump the water which provides our irrigation supply.

We also had our highest ever recorded temperature, 44 degrees on 4 January and on the 20th the city centre was smashed by a freak storm that unleashed 15 minutes of larger than golf ball sized hail and caused the gardens to be closed for five days. Damage to infrastructure, particularly in our nursery and glasshouses, is still being repaired.

Like the rest of the garden and the immediate surrounding bushland reserve, the rainforest gully resembled a fire ravaged landscape

without the charring. Almost all the canopy was stripped by the hail and, for the first time in the 20 years I have worked here, light penetrated fully to ground level. Many mature plants, particularly those growing in open areas of the gardens, suffered extensive stem and bark damage, the consequences of which will not be fully evident till the new growing season. The prognosis was grim.

Fortunately, we received 75mm on 10 February and a further 225mm over the next 10 weeks. The cooler, moist atmosphere, saturated soil and the release of nutrients from the tons of leaf litter lying over the garden beds saw a massive burst of foliage growth and out of season flowering.

All our plants grown from material sourced from your garden (whose progress I have written about in previous newsletters) had the safety of the mature tree canopy to shield them from the worst of the hail and so far the winter has been exceptionally mild with good rain. These factors have been critical in their survival as the ground layer is not as effectively shielded from the frosty air despite the new growth. We cross fingers that the weather gods continue to be kind to us over the next months and most importantly that the current pandemic is brought under control.

Toby Golsen, Dept Sustainability and Environment, ANBG



From Hugh Nicholson

Facebook Post

“This usually small and slender native vine, *Calystegia marginata* is living up to its common name of Forest Bindweed in this fire-affected forest in the Border Ranges. The fire appears to have wiped out any competition and *Calystegia* is now rampant and completely dominates this site. It is hard to see how the forest will recover from such a smothering.”

More about Native Bees in your Garden

Diana Sharpe

Sighting native bees in the wild can be quite challenging so establishing a bee friendly garden using native plants is a rewarding experience. There are a great variety of native bees and sighting them in your own garden is very exciting. Some of those to be seen in this area include the Teddy Bear, Blue Banded, Solitary, Carpenter and Emerald Homalictus as well as the stingless native bees.



Blue Banded Bee – Public Domain image

Melaleucas, Grevilleas and Westringia will provide a good supply of honey and pollen throughout the year. However, a Macadamia orchard, without added plant species, will only yield for a short two week period. Leaf cutter bees will also require soft leaves with which to line their nests and burrowing bees will appreciate some undisturbed ground. Bee attracting plants are best placed in clumps or layers, and ideally at

least four species should be planted to flower at any one time.

As they are designed to kill insects it goes without saying that spraying with pesticides should be avoided. Herbicides and fungicides can also damage bees.

Some plants are strongly preferred by native bees, including Native Peas and Daisies, Eucalyptus, Banksia, Acacia and Bursaria, *Abelia grandiflora*, which flowers in summer, and *Leptospermums*. *Hibbertia scandens*, *Senna clavigera* and *S. acclinis* are also favourites of all the bee varieties which gather pollen by “buzzing” flowers, when they wrap their bodies around the bloom and buzz by vibrating their muscles to release the pollen.

It is important to provide a variety of flower shapes, from shallow open to tubular blooms, to cater for the diversity of native bees, which range in size from 2mm to 24 mm and have both short and long tongues. It should also be noted that stingless bees require a source of resin, which can be provided by turpentine trees, hoop pines and lemon scented gums... which alas, are too large for most home gardens. However, the resin is produced by many other plants as a plant healing substance.

It is often desirable to complement the “feast or famine” flowering times of the native plants by planting a

range of the many exotics which also provide important forage and foliage. Blue banded bees go crazy for Salvias, Lavenders and Buddelias, and both they and Carpenter bees love *Solanum rantonetti*, which is a dense, fast growing shrub with abundant purple flowers. Leaf cutter bees also use the Buddelia for nesting material. Citrus trees are very popular when in flower.

Another addition to your bee garden could be a Bee Hotel for solitary bees.



Not a bee but a beautiful stick insect on a car windscreen at the Gardens



New Walkway in Room 5 after recent heavy rain



and Michael, Don and John installing seats in Banks Garden

News from the Nursery

From our perch upon the hill we are a happy little group busily growing from seed and potting up new seedlings into tubes.

I'm lucky enough to have Geoff Walker in my car on our trip to the Gardens as he has such in depth knowledge about the establishment of the Gardens, and is willing to share his interesting stories.

We have a friendly chat with the staff on the weigh bridge at the Waste Facility before winding our way through assorted wrecked cars, and even a boat, past the dog pound and up the hill to our nursery.

Considering that our small team works only 3-4 hours a week we are pleased with the amount we achieve.

Morning tea often takes the form of an informal meeting. Currently we're trialling plant labels and markers that will survive the effects of frequent watering with chlorinated water. Jan has come up with the idea of cutting up and writing on old x-rays with metallic pens. We have high hopes.

We are also trialling a new seed – raising mix. The commercial mix we were using had quite large bits of bark in it which interfered with the germination of the smaller seeds. So now we are sieving potting mix and mixing with fine sieved coco peat.

We are also trialling Wednesday morning instead of Tuesday for working. Hopefully this will give us better communication with the Wednesday Friends. We need feedback about what is needed in the Gardens as well as at times providing suggestions as to what may work in a given spot.

We also plant up with an eye to future markets which means we need to know what people want and are likely to buy.

At lunch time we pile into the car, down the hill, negotiating car wrecks, and up the hill by a back route to Goonellabah. What a lovely respite from a stressful World.

Jenny Wilson- Nursery Volunteer

Early days at Nursery

After our early days as an Information Booth at the Car Boot Market, the then Works Organiser, Rose Hand, suggested setting up a Gardens Nursery in the small shade house behind her home. The Friends paid part of her water rates, and our Nursery opened up. We drew upon the knowledge of this generous horticulturist and our morning teas on her upstairs verandah were like carefree staff meetings as she taught us the basics of propagation.

The team, all volunteers, worked at her Keen Street residence for several years and principally staffed the plant sales in and around Lismore. It was the first income for the Friends. Rose even supplied our initial seeds and tended these sprouting seedlings as if they were her own. We owe much to her leadership.

In 2015??? a new shadehouse was erected by the Friends at Rose's place. It was roomy and beautiful. We loved it. The idea was that eventually it would be dismantled and moved to the main Gardens site.

When the Friends decided to make that move in 2017?? they held a workshop to design and locate the nursery. Various sites were considered - inside the entrance from Wyrallah Road, near the weigh bridge, in Car Park 2 and both the LCC Car and Dog Pounds. Some were unsuitable or unavailable but eventually the current location was decided upon just off the western



Jenny Wilson at work at Nursery



Geoff with his Nursery cutlery! Knives, forks and chopsticks – very handy for pricking out tiny rainforest seedlings.

end of Rainforest Walk, high above the LCC Recycling Shed. The contractor then moved our nursery building from Keen Street and the volunteers commenced potting outdoors at the new site.

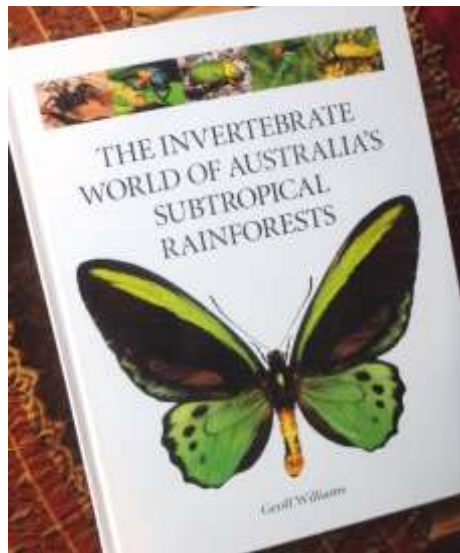
Town water was connected (thank you Florence and Neil), a hard metal gravel road laid down and a potting shed designed. Thanks to Andrew and Jenni, our generous benefactors, and the carpentry team led by Will Evans, the potting shed was constructed and recently extended to provide more work space undercover. Now we could enjoy outdoor summer shade or sunny indoor work spaces in winter. Don built stout work benches and Jan de Nardi, a professional botanist, became the Supervisor of this burgeoning nursery. Rod Falconer set up the recording of all germinations and, for our summer comfort, Epona Winter and Will set up a solar-powered fan.

The new Curator, Judy Blood, now works with Jan in leading the team. We total six which is the perfect number as it avoids over-crowding of the benches. Neil Walker is in charge of Native Orchids and Ferns and spends many unrecorded voluntary hours with his favourite plants. Jenny Wilson has the knack of layering and her skill is evident with *Austromyrtus dulcis* (Midyim Berry). Jill Levingston, Epona and Geoff bring up the rear with multitasking.

FLRBG Nursery Volunteer Geoff Walker

The Invertebrate World of Australia's Subtropical Rainforests

New book by Geoff Williams is being published in September 2020. It runs to 385 pages with over 300 photographs.



This book is a comprehensive review of Australia's Gondwanan rainforest invertebrate fauna, covering its taxonomy, distribution, biogeography, fossil history, plant community and insect-plant relationships.

**Further information from
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Dr Jo Green Ecologist and Botanist, from Wangai re post fire planting on previously farmed land adjacent to rainforest. "... the (recent) fires were a big wake up call. Now we have to prepare for the future. I see a solution as removing flammable exotic plants and replanting such areas where natural regeneration is not likely to occur with fire-resistant rainforest species. Some of the tree species we are planting include **Lilli Pilli, Pink Euodia, Tamarind, Firewheel, and Flame Trees, with Dianella, Lomandra, Native Ginger and Cordyline** in the understory."

Adapted from article by Kelvin Davies July 2020 <https://www.rainforest4.org/>

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CONTACT US

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FLRBG AGM



Saturday 17 October
at Environment Education Centre
at the Gardens
9.30am - ALL WELCOME
you must be paid up member to vote

FLRBG Membership

Renewals now Due

Full membership \$15

Family \$25

Concessional \$8

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Susan at work in Hoop Pine Forest



John and Ros at work re-gravelling path in Wilson Park Species Garden



Early morning at the Gardens

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