

Fronds

Friends of the Australian National Botanic Gardens
Number 101 August 2022





Friends of the Australian National Botanic Gardens

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The deadline for articles is mid-February for the April issue, mid-June for the August issue and mid-October for the December issue.

Email material to the *Fronds* Committee at the above email address or place in the Friends letterbox, located inside the Gardens Visitor Centre, between 9.30 am and 4.30 pm, Monday to Sunday. Editorial messages: telephone (02) 6250 9548.

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Cover: Bejeweled Qualup Bell, *Pimelea physodes*, by Steven Playford. From the 2021 Photographic Group exhibition.

Otto Ruzicka's enduring influence

You may have noticed the restoration work earlier this year on the small shelter and seat, surrounded by Banksias near the top of the rainforest. It is sited at the top of the bitumen road that leads up the northern side of the rainforest, to your right across the Gardens' beds.

Craig Cosgrove, the Gardens' Living Collections and Assets Manager, told *Fronde* that it is known as the Otto Ruzicka shelter and it has been there since at least 1971. Restoration of the shelter was completed in February 2022.

This intriguing structure is the work of Otakar (Otto) Ruzicka (1920–96), who was born in Czechoslovakia and after studying garden design in Bavaria, arrived in South Australia in 1949.

By 1952, he was employed by Lindsay Pryor in the Parks and Gardens Section of the Department of the Interior, Canberra. His early work was in the development of school grounds, parks and local shopping centres.

Ruzicka specialised in water features. His major works included ponds in the lower section of the Gardens and a native plant garden, known as the Bettina Gorton Garden, at the Prime Minister's Lodge, which gained national attention.

Client tastes meant that his creations sometimes included non-native gardens. The rhododendron grove known as the Hasluck Garden at Government House is a fine example of a garden enhancing a national institution.

Ruzicka also designed courtyards at the Australian National University and gardens for several embassies such as those for Sweden and Germany.

His achievements were a major influence on furthering Canberra's development as a garden city.



The Otto Ruzicka shelter in 1971

C. Green @ANBG, 1971



Restored Otto Ruzicka Shelter, section 37, south of the Burbidge Amphitheatre

Cathy Robertson

In 1997, the ACT Government gazetted Ruzicka Street in the suburb of Taylor, ACT, to recognise Otto Ruzicka's contribution to town planning and the landscaping of public spaces.

The major work on the shelter includes: replacement of the metal roof sheeting; repair and replacement of the roof edging; patching and repainting of the

timber soffit lining; restoration and repainting of the steel column and metal door; power wash of the existing brickwork enclosure; and patching and repainting of the timber seating surrounds.

It is once more ready to welcome visitors to rest and enjoy the view.

Cathy Robertson

Botanic Gardens at the heart of the Commonwealth Estate

Jody Swirepik, Director of National Parks

In my relatively new role as Director of National Parks, it is a privilege and a pleasure that the Australian National Botanic Gardens are included within the scope of my responsibilities. I have grown up loving plants and nature and visiting somewhere like the ANBG has always been something to look forward to and enjoy.

I am not a stranger to the world of botany and plants, having had the opportunity to love them for work and in my non-work life. Botany and science (and gardening) run in my family.

My uncle, Tony Rodd, is a palm expert, my grandfather, Norman Rodd was a chemist and in retirement helped establish the Mount Tomah Botanic Gardens, and my sister studied horticulture! I have a postgraduate degree in science majoring in aquatic botany, and married someone with like training, so it seems only fitting that our children also love nature and see the beauty of science.

My previous professional experience has involved over 25 years in the water sector in both the Murray-Darling Basin Commission and more recently as Commonwealth Environmental Water Holder, with three years in between at the Clean Energy Regulator. You may be surprised that all these jobs had something to do with plants, vegetation communities and forest ecology – think carbon farming and savanna burning for the Clean Energy Regulator.

The floodplain forests in the lower Murray-Darling Basin of southeast Australia are highly productive and play a key role in supporting regional biodiversity and productivity. The floodplains of these lowland rivers are immense – check out the Barmah Millewa Forest from space.

These floodplains support massive



Satellite view of Barmah Millewa River Redgum (*Eucalyptus camaldulensis*) Forest on the NSW/Victorian border. The forested area is the darker colour and is approximately 60,000 hectares

River Red Gum forests (*Eucalyptus camaldulensis*), a species that relies on regular flooding from the river to stay healthy.

As the Commonwealth Environmental Water holder, my staff and I worked with states, river operators and landholders to work out how to provide higher flows at critical times in the rivers of the Basin so that water could reach the floodplains and maintain the health and biodiversity of these forests.

Part of my work in the Murray-Darling Basin involved partnering with first nations people to learn how to manage water to restore habitats and reinstate and protect cultural values of rivers and floodplains. The purchase, almost a decade ago, of a clutch of properties and their water entitlements in the lower Murrumbidgee catchment was at the time one of the biggest land and water investment by a government in Australia.

The floodplain habitat at this site, now referred to as Gayini Nimmie Caira (Gayini means water in the language of the Nari Nari people), has been restored with an investment in water

management infrastructure. The land is now managed by the Nari Nari Tribal Council to maintain both the ecological and cultural values, allowing families to work on and manage country in a partnership with state and commonwealth water holders.

Another important case study in innovation is the Nature Conservancy's investment in Juabung and Boyong stations on the Murrumbidgee River in the southern Riverina, NSW. More information about the purchase of these properties and their management for conservation in an environmentally friendly way can be found at natureaustralia.org.au

I am excited about the whole new set of ecosystems and stunning landscapes that I get to work on as part of the Commonwealth Estate of Parks and Gardens. The focus on plant conservation that both the ANBG and Booderee Botanic Gardens bring to Parks Australia is both wonderful and of national importance. I'm keen to ensure that the ANBG's role as a leader in this area is recognised, valued and supported to go from strength to strength.

Top: Flooded River Red Gums
(*E. camaldulensis*) in Millewa Forest near
Mathoura, NSW

Middle: *Hibiscus brennanii*, Kakadu Hibiscus.
EPBC legal status: Vulnerable. A shrub with only
one population in west Arnhem Land in Kakadu
National Park

Bottom: Director of Biodiversity Conservation
and Knowledge, Anthony Whalen and Director
of National Parks, Jody Swirepik, visiting the
large Thorny Devil at the Red Centre Garden,
ANBG



Hilton Taylor

The research in the National Seed Bank
on seed science, and on propagation of
important threatened and endangered
species in the nursery and glasshouses
are vital insurance for declining
populations in the wild, particularly
after the recent natural disasters.

Our positioning within the same
agency gives a unique capacity to share
expertise between, and provide support
to, our parks including Uluru, Kakadu
and Christmas and Norfolk Islands,
which are strongholds for many rare and
protected species.

Of equal importance is the ANBG's role
as a national attraction showcasing the
diversity and beauty of Australia's flora
to inspire and connect Australians to
this rich natural heritage.

The passion and ongoing
accomplishments of staff of ANBG and
all of Parks Australia are a testament to
the broad range of skills and experience
I've seen across Parks Australia. I come
into this role already confident that our
parks and gardens are in good hands.



Dept of Climate Change, Energy, the Environment and Water



ANBG

The ANBG Nursery's increasing role in plant conservation

Zoe Knapp, Conservation Manager, ANBG

The ANBG is increasingly involved in collaborative plant science and conservation, including through the collection and management of scientifically documented plant collections, associated scientific and horticultural expertise, and our ability to apply these skills to translocation or restoration activities.

The ANBG features over 4,000 plant species representing one-third of Australia's known native plants, with over 78,000 plants growing onsite. The ANBG's living collection, held in the Gardens' Nursery and National Seed Bank, currently represents more than a quarter of all threatened flora listed under the *Environment Protection and Biodiversity Conservation Act 1999* (EPBC Act). As such, the ANBG also harbours a wealth of horticultural expertise for propagating and cultivating native species, including many that are rare, threatened and/or challenging to grow. The ANBG Nursery is now involved in many cross-sector collaborative projects contributing to plant conservation.

Here, we share some case studies demonstrating the valuable contribution of horticulture to collaborative plant conservation projects.



Carol with nursery plants

Ex situ 'insurance' populations support conservation in the wild

Tuggeranong Lignum (*Muehlenbeckia tuggeranong*) is probably the ACT's rarest plant species, with only a handful of extant plants remaining along the Murrumbidgee River Corridor in southern ACT.

Interestingly, it was first described in 1997 by Dave Mallinson (then ANBG horticulturalist, with Bob Makinson) who found the species while he was on a weekend fishing trip (Murray Fagg, personal communication). Since then, the ANBG has worked closely with the ACT Government to undertake conservation management actions, including translocations and establishment of an ex situ 'insurance' population in the Nursery.

Tuggeranong Lignum is dioecious, meaning that a plant has either male or female flowers, but not both. This can limit breeding options, particularly when there are few remaining individuals. This species has not been observed to produce viable seed or seedlings in the wild. Recent genetic research undertaken by Dr Linda Broadhurst at the Centre for Australian National Biodiversity Research shows that the ANBG Nursery collection includes several genotypes that may no longer exist in the wild, including the last remaining female plants. The Nursery has used these research findings to guide management of the ex situ collection, maintaining duplicates of genetically distinct individuals.

Excitingly, in December 2021, Nursery horticulturalists discovered the cultivated plants had produced fruits, and seed biologists at the National Seed Bank confirmed these contained viable seed. A single seedling was germinated



Seed (top) and fruits (above) of Tuggeranong Lignum (*Muehlenbeckia tuggeranong*).

All images in this article provided by ANBG.



Tuggeranong Lignum plant in the Nursery

in the Nursery, and the National Seed Bank has also successfully germinated seeds.

Future work will aim to investigate the species breeding strategy, including self-compatibility and pollination mechanisms, and potentially create a seed production area for further research seed collection. Our results to date are encouraging for future conservation of this species in the wild.

Specialised horticultural techniques

As any garden enthusiast will know, propagating plants is not always straightforward and there are myriad factors that influence success. The ANBG is Australia's most diverse collection of native plants and we are fortunate to have expert horticulturalists on staff with specialised propagation skills and experience. Given these skills, the nursery team has been involved for many years in a collaborative effort to protect threatened species of the geologically unique Mt Imlay region on the NSW south coast.

Mt Imlay National Park, managed by the NSW National Parks and Wildlife Service, supports several endemic rare and threatened plant species, including the Mt Imlay Mallee (*Eucalyptus imlayensis*), which is listed as Endangered under the EPBC Act and is a top 100 priority species in the Australian Government's *Threatened Species Strategy 2021–31*. Restricted to the summit of Mt Imlay, the entire population was burnt in the 2019–20 fires. Fewer than 50 plants remain, which are resprouting from lignotubers. This small population is at risk of extinction from stochastic events such as fire or disease.

The ANBG works closely with the NSW Department of Planning and Environment's Saving Our Species program, which has identified recovery actions required for the long-term conservation of this species in the wild. One of the actions, securing a genetically representative ex situ population of the Mt Imlay Mallee, is the focus of experienced ANBG horticulturalists. With little seed available in seed banks, and resprouting plants unlikely to produce seeds for many years, trial grafting techniques will be investigated.

Grafting is useful for species that are difficult to propagate using standard cutting techniques and has been used successfully in a range of eucalypt species. Factors that influence grafting success include compatibility of different rootstock, environmental conditions, and various horticultural treatments.

This project will contribute to the long-term recovery of Mt Imlay Mallee and will also provide an opportunity to undertake field surveys and plant material collection of other threatened species in the Mt Imlay region, including *Hibbertia circinata* and *Boronia imlayensis*.

These species were both impacted by the 2019–20 bushfires and subsequent *Phytophthora* die-back. ANBG Nursery horticulturalists have developed successful propagation and cultivation methods for *H. circinata*, but *B. imlayensis* has proved more challenging.

The ANBG is working with NSW Department of Planning and Environment and Booderee Botanic Gardens to share knowledge and establish genetically representative ex situ plant collections at the two botanic gardens.



Left: Carol and Kathryn with *Hibbertia circinata* and *Boronia imlayensis* grown at Booderee Botanic Gardens
Below: Pete grafting in the ANBG Nursery



The ANBG Nursery's increasing role in plant conservation (cont.)

The ANBG Seed Production Area

If you've walked toward the tropical glasshouses, you may have also seen our conservation garden, a fenced area that contains plants in upright concrete pipe sections. This is the ANBG's Seed Production Area (SPA), which holds threatened species specifically for the purpose of seed production. This alleviates pressure on wild populations, provides easy access and also enables research and observations on the species.

One of the species held in the SPA is the Small Purple-pea, *Swainsona recta*, which is listed as Endangered under the EPBC Act. Small Purple-pea is a slender, erect perennial forb in the family Fabaceae. Once considered widespread across south-eastern Australia, there are now fewer than 10,000 plants across 26 sites in NSW and the ACT.

The Nursery and the National Seed Bank (NSB) are working with state government partners to undertake several translocations to augment existing populations.

In 2016, plants from several ACT populations were propagated and planted in the SPA in a scientific design intended to maximise genetic diversity of resulting seeds.

Each year, horticulturalists have bagged and collected seed from these plants, which is then passed to the NSB for cleaning, checking and storage. These seeds have since been used to propagate plants for translocations, which will be undertaken over the coming years. Interestingly, seeds collected from the SPA appear to have much higher germination rates than seed collected from wild plants.



Bagged seed pods



Bagging *Swainsona recta* seed pods



Swainsona recta seed production area

Bushfire recovery

In 2020, Australia's southeastern sub-alpine regions were severely impacted by bushfires. Three states were impacted, including several national parks, and much of the high-country flora was scorched. The partnership project *Survive and Thrive: Fire Recovery and Climate Change Resilience for Threatened Plants in Sub-alpine South-eastern Australia* was established by the National Parks Conservation Trust to help conserve some of the bushfire-affected species.

The ANBG Nursery and National Seed Bank are working closely with project partners to conserve five target species: *Leptospermum namadgiense*; *Almaleea capitata*; *Viola improcera*; *Olearia* sp. *Rhizomatica* (I.R.Telford 11549) and ; *Leionema lamprophyllum* subsp. *obovatum*.

The broader project will target 12 species in total. These species had all or most of their populations burnt by fire, are understood to be rare, and are likely to meet multiple criteria for threatened species listing. The ANBG will contribute through building knowledge of the species ecology, propagation, and cultivation requirements (both seed and vegetative). The National Seed Bank will collect and store seed from all target species found and investigate aspects of their seed biology, including dormancy and germination cues.

Good progress has been made so far including:

- Over summer 2021–22, 35 collecting trips to 20 locations were undertaken involving 13 ANBG staff and volunteer seed collectors.

- 24 collections were made of seed and cuttings, and two new populations of *Viola improcera* were recorded.
- All five target species and some additional species from the broader list of 12 are now in propagation in the nursery and seed biology research is underway.
- A second field season is planned for 2022–23.

Results of this project will increase our knowledge of data-deficient species and inform future recovery efforts.

Other project partners include the World Wide Fund for Nature-Australia, the Australian Alps National Parks Cooperative Management Program, Australian Alps First Peoples, ACT Government Environment and Sustainable Development, the NSW Government Department of Planning and Environment, ActewAGL, the National Parks Association ACT and philanthropic donor.

Other collaborative conservation projects

ANBG horticulturalists have contributed to many research and conservation projects over the years. Our work is contributing to safeguarding and conservation of plant species across Australia, including tropical mountaintop species from northern Queensland, threatened alpine species, Myrtle Rust and *Phytophthora*-sensitive species, and many local ACT and NSW plant species.

As one of the six terrestrial Commonwealth Reserves managed by the Director of National Parks, the ANBG also has an important role in supporting conservation in other parks. Some of these plants, including the Christmas Island Dales Waterfall Fern, will be on display in the new Ian Potter National Conservatory when it opens in early 2023.

About the author

Dr Zoe Knapp is the Conservation Manager at the ANBG, overseeing nursery horticulture and data management to support our living plant collections and collaborative conservation projects. She has a background in plant ecology, academia, environmental consulting and public policy.



Field collection at Long Plain, Kosciuszko



Interpretive sign in the Namadgi Section (rockery), ANBG



Bek sorting fresh material for cuttings

Friendly Chatter

Botanic Art Groups

Our annual exhibition in April was an outstanding success with over 70 per cent of paintings being sold and over \$5,300 being raised for the Friends. Cornelia Büchen-Osmond's beautiful painting, *Hakea scoparia* was purchased for the Gardens' collection by the Friends. The exhibition's success was very much a team effort involving not just exhibiting artists but a large number of members who volunteered at the sales desk and others who gave up a day's work to assist with hanging. Thank you to all those who made the exhibition a success and to all the Friends who came to visit.

Publication of the book, *More Than Just a Pretty Plant*, was funded by the Friends in 2019. It features a collection of members' botanical art and an explanation of each plant's uses. This book has continued to sell, with many people returning to buy a copy for friends overseas. The sales have been particularly gratifying. To date the profits amount to over \$3,500. There are now only a handful of copies left, which can be purchased from the Botanical Bookshop.

Regular monthly meetings of the Botanical Art Groups are being held again at the Gardens and we have been able to offer several workshops for members wishing to enrich their skills. Chris Meadham held a beginners workshop and Leonie Norton a workshop on glazing with watercolours. We welcome new members, so come and join us. See the Friends' website for details.

The Botanic Art Groups' email address is botanicart@friendsanbg.org.au for more information.

Kate Ramsey

Growing Friends

That long awaited announcement has finally come. Are you the kind of person who, as winter draws to an end, starts thinking about your spring garden planting? If so, then the Growing Friends 'Getting ready for spring' sale is perfect for you (see page 19). This will be the first public plant sale that the group has run in over two years, and will be held on 27 August. There will be many plants perfect for Canberra's climate and ready to plant in early spring. Further details, including links to a full list and description of the plants for sale, will be available on the Friends' website by mid-August. As always, all the plants for sale will have been propagated from plants in the Gardens and many are not available from commercial outlets.

Growing Friends would also like to announce that future cutting sessions in preparation for public plant sales will include plants more adapted to drier conditions which will eventually follow the current long wet weather cycle. These will include the iconic genus *Banksia*, the hero in the Gardens' Banksia Garden.

Talk to one of the Growing Friends for more information on the plants, or email growingfriends@friendsanbg.org.au

Donna Growcock

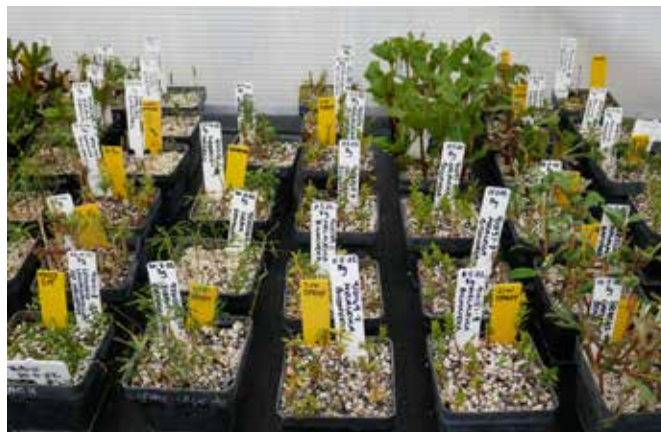
Plant Science Group

After a hiatus of two years the Plant Science Group has remerged, with two very interesting talks so far this year. In April, Dr Zoe Knapp (ANBG Conservation Manager) gave an overview of the collaborative, conservation work being undertaken in the Nursery. In May Dr Damien Wrigley (National Co-ordinator, Australian Seed Bank Partnership) brought us up to date with the guidelines for germplasm conservation and their application.

In June, two visits to the Gardens' Nursery were arranged as a follow-up to Dr Knapp's talk. There, we were shown examples of work being undertaken to ensure the survival of threatened species, such as *Swainsona recta*, *Muehlenbeckia tuggeranong*, *Eucalyptus recurva* and *Lomatia tasmanica*, for which only a small number of plants are known to exist in the wild. We were also introduced to the *Survive and Thrive Program*, a project to locate, collect seed and cuttings from, and propagate rare plants of the Australian Alps that were thought to have been lost in recent summer bushfires.

If you wish to receive information about the activities of the group, please email plantscience@friendsanbg.org.au

Lesley Harland



Some of the rare and endangered plants being propagated in the greenhouses of ANBG

Photographic Group

Our recent meetings have continued to fascinate and inform. We heard from Tom North about how the Seed Bank uses photography as part of its seed preservation processes, and how local professional photographer Hilary Wardhaugh curated images for #everydayclimatecrisis: a Visual Petition to the Australian Parliament. In June we enjoyed a presentation by our own award-winning bird photographer, Graham Gall. In July we photographed at Tidbinbilla, and on 26 August the ANBG's General Manager Peter Byron will be presenting.

'Illuminate' is the theme of our eleventh annual photography exhibition to be held in November. The theme plays on the two meanings of the word Illuminate: "to supply with light" and to "enlighten spiritually or intellectually". We rely on light to take our photographs and expect that people viewing them will find that they stimulate understanding, curiosity, appreciation, awe or gratitude for our natural world.

The Photographic Group welcomes Friends who wish to join or attend our meetings. We welcome anyone with an interest in photography no matter what stage of the journey or type of camera. For information, please contact us on photo@friendsanbg.org.au

Steven Playford



Friends Neil (above) and Samantha (below) have joined the Volunteer Guides



Nature Journaling

The Nature Journaling group meets on the first Monday of the month, between 10.30 am and 12.30 pm at a designated spot in the Gardens. We travel light with our journal, art materials and a portable stool. It is a friendly group of like-minded people who enjoy being outside and sharing their knowledge and delight of the bush. If you would like to join us, please contact lespage26@gmail.com

Lesley Page



Pete, from the ANBG Nursery, showed members of the Plant Science Group some of the endangered plants being propagated by horticulture staff and explained the methods used

Volunteer Guides

From the recent training program, organised by Megan Donaldson and Natalie Aked from ANBG, and Jane Cottee of volunteer guides, 23 new guides are now building their repertoire of stories about plants at the Gardens and qualifying as fully-fledged guides.

The training received very positive feedback, citing the collegiate environment, expertise, and encouragement from the ANBG staff and volunteer guides who contributed.

Interesting, enthusiastic, entertaining and well-informed: these are qualities I observed as I accompanied new guides on walks over recent months. They come from a range of backgrounds, including teaching, medicine, arts, science and public service, but share their fascination with Australian plants and environments, and keenness to communicate this interest to visitors.

This article can't represent all individuals, but as a start, introduces two (we hope to introduce others in future editions).

After long experience in community tree plantings, Neil has launched into volunteer work in the ANBG nursery as well as guiding. The Wollemi pine (*Wollemia nobilis*), with its fascinating story, from an ancient past to the 1994 discovery and recent rescue from fire, is one of his favourite plants.

Samantha loves the rainforest gully, with its uphill progression from cool temperate Tasmanian to sub-tropical and tropical plantings. As a Torres Strait Islander and Aboriginal Queenslander, Sam feels particularly connected to the rainforest: not just the iconic species, such as the Bunya Pine (*Araucaria bidwillii*), but also the less conspicuous smaller plants.

We welcome all the new guides to our team.

Lesley King

Gardens Shorts

Report from Executive Director

We continue to have high visitor numbers this winter, which reflects the importance to our visitors of connecting with plants and nature and of outdoor spaces. Unfortunately, we have not been immune to the impacts and pressures put on staff this winter due to COVID and flu illness in the community. Many of our staff are not on-site due to illness themselves or within the family. I am impressed and commend our staff and volunteers for their positive attitudes and effort to keep our activities running and cover for fellow work team members during this period.

It has been a pleasure to see the newly planted areas in the recently redeveloped visitor spaces in front of Pollen café and the Ellis Rowan Building. The more I look at the northern part of the Friends Lawn the better I appreciate all the changes there and those trees look really great now. It will be encouraging to watch the development of the smaller shrubs and understorey species as they begin to attract the birds into this garden. For those coming into the Gardens, you will see that construction is progressing well on the Ian Potter National Conservatory set to open in early 2023. Tenders are now out for construction of the new National Seed Bank and Northern Horticulture precinct.

Congratulations to our Visitor Experience team with the support of all Gardens staff for another successful MEGAfauna daytime and afterDARK winter event in July. MEGAfauna has been popular with both locals and interstate visitors and provides a different activity and interest for our visitors during winter, especially being able to see connections of many of our plants with these ancient animals. Also, a big welcome to our new intake of Volunteer Guides, who have undergone extensive training and induction – just the beginning of their Gardens volunteer careers!

Minister Plibersek visits Gardens

We were thrilled to welcome a special visitor, the Hon Tanya Plibersek MP, Minister for the Environment and Water, to the ANBG in June.

Minister Plibersek visited the construction site of the Ian Potter National Conservatory, the staff at the National Seed Bank, our new Friends Lawn and Banksia Garden, and our tropical glasshouses.

She also met with several staff members to hear more about their roles in Australian plant conservation.

It was wonderful to show the Minister the progress on the National Conservatory which is scheduled to open in early 2023. We also showed off plans and artist impressions of the new \$7.7 million Horticulture Centre, and \$7.2 million state-of-the-art Seed Bank which will begin construction in October.

The Minister was interested in how Banksia species from across Australia are grown in Canberra, in part through grafting onto eastern Australian root stocks.

She also expressed an interest in orchids and was delighted by our significant glasshouse orchid and unique tropical plant collection to enable delivery on our many targeted seed conservation projects.

Judy West



Minister Plibersek learned about the National Seed Bank from seed scientist Amy Buckner
All images in Gardens Shorts from ANBG

Calling in the weeding experts

Twenty-six Boer goats were back in the Gardens in autumn to eat problem weeds including Blackberries, Ivy, Pittosporum and Honeysuckle that had got out of control with the rain and ideal growing conditions of the past two years.

The goats were fenced in at carefully chosen sites towards the top of the Gardens to ensure no risk of losing any important plants from the collection.

The goats did a great job clearing out the problem weeds in tricky hard-to-reach areas, giving us much better access to manage these weeds into the future. They sought out and favoured some of the weedy plants we specifically wanted to remove, without the use of herbicides, and without eating native plants.

Our horticulturists can now prune, tidy, and remove any resulting regrowth, and monitor the sites much more safely.



Executive Director, Judy West, makes friends with the weeding goats

Banksia Garden featured on Gardening Australia

Costa Georgiadis and the team from Gardening Australia did a special feature earlier this year showcasing the progress of the Banksia Garden since its opening in 2020.

Janine Baines, a Gardens' horticulturist involved in developing and caring for the Banksia Garden, delved into all aspects of the garden display for the show.

Costa was intrigued to learn about the planning behind the design and thematic layout, diversity of Banksia species and horticulture techniques for difficult-to-grow species.

The Banksia Garden was established to celebrate the 50th anniversary of the opening of the Gardens to the public.

Latest in mowing technology - the 'robo-mower'

Visitors are loving the new Friends Lawn at the Gardens. The redeveloped lawn and café precinct was funded through a donation from the Friends of the Gardens.



Horticulturist Janine stars alongside Costa and the Banksia Garden in a Gardening Australia feature

The new Friends Lawn is being kept neat and tidy thanks to a new robotic mower purchased specifically for the space. The mower is the latest in lawn mowing technology and is fully programmable via a smartphone app.

Operating in much the same way as a robot vacuum or mop, it trims in randomised patterns, uses sensors to avoid obstacles, and stays within boundaries set by underground guidewires buried beneath the perimeter of the lawn.

Mowing after midnight, the mower is programmed to mow only when irrigation is off. The mowing schedule is currently two nights per week and will increase during peak growing season in summer, with seasonal adjustments.

While scattered twigs and branches are not major obstacles, staff are performing regular checks at the end of each day to ensure the lawn is clear for mowing.



The Gardens welcomes our new volunteer guides. After a month of intensive practice and training including plant theory, practical lessons, behind-the-scenes tours and equipment training, these enthusiastic new volunteers are ready (and eager!) to give tours and share the stories of the Gardens' plants and animals. The Gardens' Volunteer Guides program has been running since 1992 and is one of the 11 volunteer programs on offer at the Gardens.



A new robotic lawn mower for the Friends Lawn

Friends Briefs

Tricia Morton

1951–2022

On 1 July we lost a 'ray of sunshine' from our Gardens.

Tricia Morton grew up in England. Together with her geologist husband, Richard Arculus, she left England in 1973, bound for the USA where Richard undertook post-doctorate studies in Washington. This was followed with time in Houston, Texas, in 1975.

Richard was offered a position at the ANU in 1977. In Australia, Tricia discovered the delights of having a garden and her keen interest in plants took off. With the arrival of children, Tricia became involved in the Montessori system of education, being a foundation member of the two schools and secretary of their committee.

The family returned to the USA in 1983, to Ann Arbor, Michigan, for a period of six years, where Tricia worked as the Camp Secretary. In 1989, it was back to Australia, this time to the University of New England in Armidale. There, Tricia gained a post-graduate teaching qualification, and on returning to Canberra in 1994, earned a reputation as a much-loved teacher across various primary schools.

Tricia applied for Volunteer Guide training at the ANBG in 2008, where she participated fully in every facet of Guiding, from rostered walks, Flora driving and booked walks, to planning themed walks, being part of the Banksia working group and taking on the role of roster secretary for many years.

Tricia was a member of the Friends Council for several years, convening the



Social Events and Activities Committee, and being closely involved with Breakfast with the Birds and Wake up with the Birds. She also coordinated Friends support for aspects of ANBG activities such as Summer Sounds and Luminous Botanicus, and last year's Symbiosis, the Australia Dance Party's performance in the Gardens, where she provided plant knowledge to the organisers.

Tricia was a tireless organiser and a selfless contributor, offering her assistance wherever required. Everything she undertook, she did with gusto and perfection. She completed tasks quickly and efficiently, with her great sense of humour and a wonderful smile that could light up the room. The Rangers always knew that there would be 'smooth sailing' if Tricia was involved!

In 2021 Tricia was, very deservedly, made a Life Member of the Friends of the ANBG. Her enthusiasm, cheerfulness, humour and 'can-do' energy will be very sadly missed by all at the Gardens.

Trish Munro

2022 Annual General Meeting returns to the Gardens

The 34th AGM of the Friends of the ANBG will be held on Thursday 20 October 2022 at 3.00 pm in the Gardens' Theatre, followed by light refreshments in the Dickson Room.

On the agenda will be changes to the Constitution and elections for President, Secretary, Treasurer and four Ordinary Members. If a current member of Council nominates for and is elected to another vacant position, there will be an additional vacancy for an ordinary member.

A notice will be issued on the Friends' website and in the e-newsletter nearer the date, along with papers and how to nominate. If you have any questions please email info@friendsanbg.org.au or secretary@friendsanbg.org

Citizen Science Award winner

Congratulations to Dr Rosemary Purdie, who has been awarded the ACT Government Citizen Science Award as part of the ACT Landcare Awards. The photo below is from her article published in the April 2022 issue of *FronDS*, showing Rosemary collecting a leaf sample of *Kennedia retrofracta* (Coral Pea).



Image: Murray Fagg

Change to Friends Benefits

At its meeting in July, Council decided to remove some inconsistencies in the benefits that members of the ANBG Friends receive.

While all members receive access to *FronDs*, e-newsletter and special activities and events, other benefits differ.

Individual memberships receive one membership card (including discounts), one parking permit and one vote at general meetings.

Household memberships receive two votes, two parking permits and up to four membership cards. Despite paying the same fees as Households, Group memberships receive two votes, three parking permits and three membership cards.

To better align benefits across all membership categories, Household and Group memberships will now receive two membership cards and two parking permits along with their existing entitlement to two votes at meetings. Individual memberships will not be affected.

This change only relates to new or renewed memberships taken out from 30 October 2022. Those with ongoing membership will retain their existing benefits until membership is renewed.

FronDs Team interchange

Our wonderful and designing Pam Rooney has decided to retire from *FronDs*. Pam has been our graphic designer for six years, and has produced 18 issues of *FronDs* with us.

Thank you Pam for your expertise, your patience with your fellow team members, and all the many hours you have put into producing *FronDs*. Thank you too, for the beautiful photos you have shared, many of which have graced the cover.

A new member of the Friends, Sharon Abrahams, has agreed to join the *FronDs* team and take on the graphic design role. Welcome to the team, Sharon. We look forward to a long association.



Pam Rooney's photographs often appeared on the cover of *FronDs*

Friends Benefits

As a Friend you are entitled to:

- Three issues of *FronDs* a year
- Three hour free parking pass

Discounts at:

- Botanical Bookshop (most items)
- Pollen
- Jindii Eco Spa
- Cool Country Natives, Pialligo
- Australian Choice, Canberra Centre

You also receive:

- Advance details of lectures
- Advance bookings for some events
- Discounts on some events
- ANBG library membership – borrow books, serials, videos and DVDs, and use computers and interactive CDs
- Special rates for functions at ANBG

You can join:

- Botanical Art Groups
- Growing Friends
- Photographic Group
- Plant Science Group
- Nature Journaling Group
- Assist with ANBG research projects
- Become a guide

And you can relax with tea/coffee and interesting reading material in the Friends Lounge in the Ellis Rowan Building, open 9.30 am to 4.30 pm.



Always welcomes Friends...

...with a 10% discount on purchases over \$10 (including gift vouchers)

on presentation of their current membership card.

No discounts given on redemption of gift vouchers or sale table items.

For more information please visit the Botanical Bookshop Facebook page, Instagram or website

botanicalbookshop.com.au

Friends Briefs (cont.)

Gardens' Friends get together

The Friends of the ANBG is a member organisation of the Australian Association of Friends of Botanic Gardens (AAFBG). This body holds a conference every two years, giving members a chance to meet and to learn more about the wonderful variety of botanic gardens around Australia.

Five of our Friends of ANBG members attended the 2022 conference in May, held at the Eurobodalla Regional Botanic Gardens (ERBG), Batemans Bay. The theme of the conference was *Thriving Together – Resilience and Renewal in a Changing World*. And the host garden gave us a real example of this.

Michael Anlezark, Manager of the ERBG, was the first main speaker, and he shared with us the story of the terrible results of the fires that burned through that area of the coast in early 2020. With photos showing before and after the fire, Michael demonstrated how completely the fire burnt not only the collection of plants, but also all their equipment, bridges, seats, path edging, interpretive signs, and even the pvc pipes to taps, leaving little fountains of water in their place. Amazingly though, the buildings survived. These had been designed and built to modern fire safety standards, and this, plus the deliberate safety zone all around the buildings, saved them from destruction.

We were all delighted to witness the recovery of the bushland and the plantings in the ERBG, due to the hard work and long hours of paid staff and volunteers, and of course, all the rain!

Keynote speaker was Professor Tim Entwistle, Director and Chief Executive, Royal Botanic Gardens, Victoria. He spoke of the effect of climate change on botanic gardens: "Gardens are always places for regeneration and renewal – they are a long-term commitment."



Lesley Vincent

Delegates to the AAFBG Conference at Eurobodalla Regional Botanic Gardens, with a sea of wattle flowering in the foreground, a community art installation to celebrate recovery after the fires

He told us about the development of a Climatic Risk Assessment tool which is being used to plan for the replacement of old trees at the RBGV, taking into account what the climate might be like when trees planted now are mature in say, 50 to 100 years' time.

Other speakers at the conference told us about some wonderful community programs and partnerships, and there were skill-building workshops on useful topics for Friends groups.

We also heard briefly from a number of botanic gardens' Friends groups on achievements or projects in their gardens: delegates from Canberra took the opportunity to talk about the practical and financial support by Friends for the ANBG for more than 30 years, and showed a video on the making of the ANBG Banksia Garden, whose construction was supported by a significant donation from the Friends. To view the video, go to youtube.com/watch?v=OdOYXJH2tkU

At the Association's AGM, held on the Sunday morning of the conference, ANBG Friends Vice President Linda Beveridge nominated as a member of the Committee, and was later appointed

as President of the Association. Congratulations Linda!

On the Monday, we visited a private property, Horse Island, in Tuross Lakes, near Bodalla, which has been transformed from cow grazing paddocks into a wonderful native parkland garden. We were shown around the beautifully landscaped gardens which have retained many of the old eucalypts. Along with water features and water views, the island also has stands of Banksia, an extensive collection of grevilleas, a group of Gynea Lilies in flower (with the longest stalks I have seen), Grass Trees, and even Waratahs in flower. Further information about this island garden is available in *Horse Island: A garden of grandeur*, *Landscape Australia*, 25 July 2017

landscapeaustralia.com/articles/horse-island-a-garden-of-grandeur

Our thanks to our hosts at ERBG for a well organised and interesting conference in a lovely venue, with delicious food provided by local small businesses. Thank you too, to Christina Kennedy for inviting us to share her wonderful secret garden.

Barbara Podger

Far from home?

Roger Farrow

In mid-April 2022, I started monitoring a colony of cockroaches that were feeding on the central leaves of the Gymea Lily rosettes in the Gardens. These lilies had been planted along the edge of the rainforest gully and were raised in the Garden's nursery.

During a visit on 19 May, I saw a single female katydid resting on the central leaf roll as I gently separated the leaves of one of the Gymeas. I recognised it as a spine-headed katydid in the tribe Agraecini that are normally restricted to the coast of New South Wales and parts of tropical Queensland. I showed two photos to my colleagues, David Rentz (author of the CSIRO guide to the Australian Katydids) and You Ning Su (Research Projects Officer at the National Insect Collection, CSIRO) who confirmed it as a species of *Austrosalomona*.

Most of the species in this genus have not been described but have been allocated a number. One of them, a single male collected at Evans head, northern NSW, by David Rentz in 1979 and allocated species number 9, appeared to be the closest counterpart to the female I photographed.

The origin of this female is unknown. Is it part of a cryptic breeding population in the rainforest gully that was established some time ago, possibly when plant material was brought into the Gardens from the coast? Alternatively, is it a one-off recent arrival?

The frayed wingtips suggest that it is quite old. Whatever its origins, it is a highly significant discovery for the Gardens and confirms their importance as a habitat for a range of insect species, both rare and common.

About the author

Roger Farrow is the author of *Insects of South Eastern Australia: An ecological and behavioural guide*. CSIRO Publishing, 2016. Roger is currently the convenor of the Friends' Plant Science Group.



Roger Farrow



Roger Farrow

Female spiny-headed katydid, *Austrosalomona* sp. 9, on the central leaf roll of a Gymea Lily, ANBG, showing the long antennae and typical posture, characteristic of katydids



Roger Farrow

Close-up of the same living female showing the distinctive white palps beneath the head and the frayed wing tips. The ovipositor at the rear of the abdomen indicates that it is a female

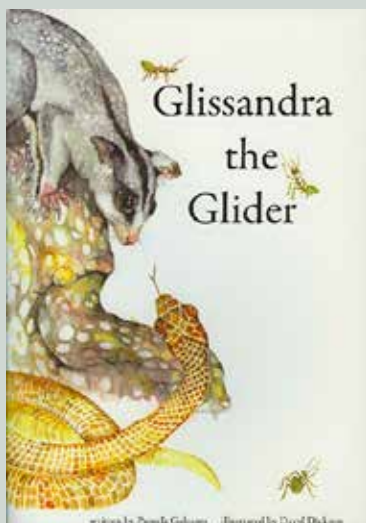


You Ning Su, CSIRO

The single pinned male from the CSIRO collection showing the same white palps

Clump of Gymeas, along the edge of the Gardens' rainforest gully, where the katydid is

Botanical Bookshop book reviews



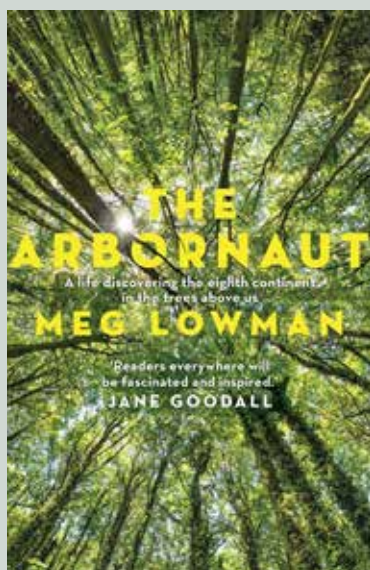
Glissandra the Glider

2008, written by Pamela Galeano, illustrated by Daryl Dickson
Soft cover, 32 pages, colour illustrations, \$20.00

This exquisitely illustrated book is about Glissandra, a young Mahogany Glider who hasn't quite yet learnt the art of gliding on her own, and needs some lessons, and fast!

Glissandra loves going out gliding on her mother's back, she enjoys the fabulous smells and the special sounds of the bush at night. However, one night they narrowly miss being caught by a hungry Rufous Owl, and Glissandra finds herself separated from Mum. Determined to find her way home, Glissandra sets off, meeting some hungry forest creatures along the way including Python (luckily, he was already full!), Brown Tree Snake, Kookaburra and Goanna. Glissandra makes friends with Sookie, a young Sugar Glider and in doing so is introduced to another Mahogany Glider, Mal, who kindly teaches her how to glide. Will she make it back home to Mum in the Moreton Bay Ash tree?

A beautifully written, beautifully illustrated educational story that will delight all ages. One of our favourites!



The Arbornaut: A life discovering the eighth continent in the trees above us

2021, Meg Lowman

Paperback, 350 pages, colour photographs, \$33.00

In this book, Meg Lowman, one of the world's first tree top scientists, takes us on a fabulous journey (often high up in the canopy of magnificent forest trees!) describing her many years of involvement in a wide range of scientific study, conservation projects and education programs. Meg has spent much of her time studying trees around the world, and she invented one of the first treetop walkways. Her work has taken her on plenty of adventures...from climbing solo hundreds of feet into Australia's rainforest trees, to measuring tree growth in north-eastern United States, from searching the redwoods of the Pacific coast, to studying leaf-eaters in Scotland's Highlands. She has also worked in Malaysia, India, and Ethiopia on incredible conservation projects. Meg's positive message throughout the book offers us hope, and she recommends action plans to help protect forests across the world and shows we can still make an immediate and lasting impact against climate change.

Written in an easy-to-read style, this book takes us around the world, to the tops of trees, into scientific worlds, and gives inspiration and hope. A glossary provides useful definitions, and the colour photographs in the centre of the book show some impressive photos of the author at the top of some very, very, tall trees, a photo of the rather exciting dirigible that was used to hold up to 18 scientists to provide access to treetops during sampling work, and a close-up photo of a canopy dwelling water bear (or tardigrade).

The text is clear and uncomplicated, and Meg excels in communicating her message to scientists and non-scientists alike. A captivating blend of memoir and fieldwork, this book is both enjoyable and important. As Meg says in her final chapter: "Let's teach every kid about the forests that keep them alive. Shall we start by climbing a tree?"

What's on at the Gardens

August to December 2022

Details of events are correct at the time of printing. For changes and updates, please check the Friends' website friendsanbg.org.au or the ANBG website anbg.gov.au

Free Guided Walks

11.00 am for one hour, daily

Enhance your visit to the Gardens by taking a free guided walk with a volunteer guide. Tours are available for up to ten people.

Book a Private Tour Costs apply

Tour the Gardens with your own tailored guided walk or Flora Explorer bus tour to suit your special interests, or purchase as a gift. Tours can be booked for up to 12 people. Conditions apply. For more information contact bookedwalks@friendsanbg.org.au or floragroups@anbg.gov.au

Removing woody weeds from Black Mountain and/or ANBG

Saturday 6 August, 3 September and 1 October 9.00 am – 12 pm

**Saturday 5 November and 3 December
8.30 – 11.30 am**

Check the Friends' website for the meeting place for each weeding work party.

Please email your name and phone number to friendsofblackmountain@gmail.com or phone Linda 0437 298 711 or Libby 02 6296 1936 so there is enough delicious morning tea.

Colour in Winter

**8 – 14 August
11.00 am – 12.00 pm
Free**

Escape the winter blues and join this free guided walk around the Gardens to see some of the beautiful coloured leaves, berries, seeds and flowers and discover what contributes to their colour. Meet at the clock near the café bridge.

Growing Friends Get Ready for Spring sale

**Saturday 27 August
8.30 – 11.00 am, unless sold out
Banksia Centre carpark**

Growing Friends are delighted to be resuming 'traditional' plant sales with a Get Ready for Spring Plant Sale. It will be conducted in a COVID-safe manner and sales will be cashless/card only. Our 100mm pots are \$6 and 175mm pots are \$10.

The plants, all Australian natives, have been propagated from cuttings or seeds sourced from the Gardens. There are approximately 1100 plants and 118 species at the time of writing. So, a very wide range to suit Canberra gardeners from novice to connoisseur will be available for purchase.

Looking for trees? There are larger trees such as *Podocarpus elatus*, Brown Pine, both male and female forms, with its edible plum-like fruits developing on the female plant after fertilising. Also, medium sized trees such as *Ficus coronata*, the Sandpaper Fig, whose leaves resemble sandpaper, or *Backhousia myrtifolia*. Also, the variably sized but mostly smaller *Podocarpus lawrencei*. Mountain Plum Pine, both male and female forms.

If you have a shady, well composted spot consider the shrub *Austromyrtus tenuifolia* with its edible berries. Or for a sunny or partly shaded spot in well drained soil consider the beautiful prostrate *Persoonia chamaepitys*. We have lots of a favourite groundcover, *Chrysocephalum apiculatum*, Common Everlasting or Yellow Buttons.

So, a wide range of plants is available including several callistemons, correas, leptospermum and the ACT floral emblem, *Wahlenbergia gloriosa* – great in a damp spot or a self-watering pot.



A wide range of Australian native plants will be available at the Growing Friends Get Ready for Spring sale

A Celebration of Wattles

**29 August – 4 September
11.00 am – 12.00 pm
Free**

Join a free guided tour to celebrate Wattle Day. See a wide range of wattles in full flower and hear interesting stories about their historical, cultural and scientific significance.

Meet at the clock near the café bridge.

What's on (cont.)

Bushland Nature Walk

Sunday 18 September
9.30 am – 11.00 am
OR

Wednesday 21 September
9.30 am – 11.30 am

Cost \$5

Choose your preferred time for a Bushland Nature Walk that meanders through the Bushland Precinct of the ANBG, part of the local Black Mountain environment. The walk takes you through open forest and features displays of spring flowers and expansive views to Canberra City and Parliament House. It culminates at a viewing platform offering spectacular views across Lake Burley Griffin. Return is via the same path, a total distance of 3.2 km.

Easy to medium with some uneven ground, a few stairs and short steep sections. There are several places to rest along the way. BYO water, hat, sunblock, and stout shoes.

Meet at the Visitor Centre, ANBG.

NOTE: This is a special event for Friends members only. Places are limited, so please book via the link on the Friends' website. Email enquiries to memberswalks@friendsanbg.org.au or contact Linda on 0437 298 711.

Focus on Flowers

3 – 9 October
11.00 am – 12.00 pm
Free

Discover many of the species in flower this spring on a free guided walk.

Meet at the clock near the café bridge.

Australian Native Plant Society Spring Plant Sale

Saturday 15 October
8.30 am
ANBG Southern Car Park
Costs apply

Browse Canberra's best range of Australian native plants, including many local species.

Annual General Meeting Friends of ANBG

Thursday 20 October
3.00 pm
Gardens' Theatrette

All members are invited to the 34th AGM of the Friends of the ANBG. The meeting will be followed by light refreshments in the Dickson Room.

Illuminate

11th Annual Photography Exhibition

24 November – 11 December
9:30 am – 4:30 pm
Visitor Centre
Free

The exhibition will highlight the different moods and inhabitants of the Gardens, as seen through the eyes and cameras of a diverse group of Friends photographers. It will illuminate aspects of the Gardens that visitors may not otherwise be aware of.

Birds have featured in previous exhibitions and the fascination continues. But there is much more. The many intriguing flowers, often small, are showcased in great clarity. Less obvious reptiles and insects come to the fore alongside trees, shrubs and fungi, all of which contribute to the rich tapestry of the ANBG.

Frozen moments of time give everyone the opportunity to witness some of the rare events that take place in the Gardens.

A thoughtful photo can reveal things that we ordinarily overlook, like the rich colours and textures of wet bark or the tiny insects that are so vital to the Gardens. We invite you to look at the Gardens through different eyes.

A great Christmas gift opportunity! In addition to the framed prints, you can purchase unframed prints, cards, tote bags, etc.



Exhibitions

Visitor Centre Gallery

Open Daily 9.30 am – 4.30 pm

FREE

3 – 28 August

Gardens Near and Far

An exhibition by artist Ruth Dodd, depicting flora and landscapes inspired from visits to public, private and overseas gardens and from the artist's local region of Yass, NSW.

1 September – 2 October

Fired Earth: Inspired by Nature

A ceramic exhibition exploring the connection between earth and the Australian flora by Claybodies, an independent collective of Canberra-based artists.

26 October – 20 November

Dirk Lejeune Timber Mosaics

A sculptural feast of three-dimensional decorative wood mosaics by Dirk Lejeune. Inspired by his fascination with the Australian bush, his artworks consist of timber, bark and crosscuts of branches.

24 November – 11 December

Illuminate: Friends Photographic Group Exhibition

An exhibition of photographs of flora and fauna taken within the Gardens by the Friends of the Australian National Botanic Gardens Photographic Group.

14 December 2022 – 22 January 2023

Marvellous Trees

Botanical artist Morgyn Phillips depicts the story-scarred trunks and limbs of trees in their habitats, their communities, specific to a time and place, rather than the traditional focus on the individual plant.

Flowers, Fruit and Foliage

Self-guided walks

Free

The Flowers, Fruit and Foliage brochure is your self-guided tour to what's flowering in the Gardens. Armed with the guide, you can take a tour anytime the Gardens are open, walking at your own pace, stopping to appreciate the plants and taking your time to compose the perfect shot.

Knowledgeable and dedicated Friends



Rosalind and Benjamin Walcott write and illustrate a new guide every two weeks, so it's always up-to-date.

Points of interest are marked on a map and signposted in the Gardens. The step-by-step guide provides a photo



of what to look for, and gives both common and scientific names of plants. There's also a short description of the plant, and where it grows in Australia.

The current version of Flowers, Fruit and Foliage is always available from the Friends' website friendsanbg.org.au

You can print your own hard copy or pick one up from the Visitor Information Centre. Alternatively, you can view the guide on a mobile device while walking in the Gardens.

Thursday Talks

August to December 2022

Lunchtime talks are held at 12.30 pm every Thursday from February to November in the Gardens' Theatrette. Talks last for one hour. Admission is by gold coin donation. The Friends use the donations received to support Gardens' programs and development and thank all those who have donated.

The talks are in line with COVID-19 guidelines which can change rapidly. Bookings are a good idea as talks sometimes book out very quickly. The booking link for each talk is on the Friends' website at friendsanbg.org.au/calendar. Bookings can be made from the Friday before the talk until the Wednesday night before the talk.

The Friends of the ANBG thank the speakers who volunteer their time and talents to further the knowledge of all attending events in the Gardens. Some summaries or PowerPoint presentations of Thursday Talks are available to Friends from the ANBG library. A donation to the Friends for the use of this material will be gratefully accepted. Please direct queries to the Thursday Talks Team by emailing talks@friendsanbg.org.au

August

Thursday 4 August

Dr Penny Olsen

The Norfolk Island Morepork: Rebuilding a population from the last survivor

Penny, an Honorary Professor in Division of Ecology and Evolution, ANU, led a group that found only one Morepork owl on Norfolk Island in 1986. What to do? A recovery program began and today a small population persists.

Thursday 11 August

Dr Liz Milla

Bee patrols: How bees and other pollinating insects can help us monitor and protect Australia's biodiversity

Liz, Research Scientist from CSIRO, will show how DNA from pollen is being used to identify the pollen species carried by pollinating insects and how this helps to monitor and manage plant and insect species and to detect potential biosecurity threats.



Bee collecting pollen

Thursday 18 August

Dr Rosemary Purdie

Some Persian gardens of Iran

In this talk Rosemary, Honorary Living Collections Botanist ANBG, will briefly explore history and features of Persian garden concept, then walk us through four World Heritage listed gardens in Iran.



Rosemary Purdie

A Persian garden

Thursday 25 August

Meena Sritheran

What makes plants rare?

Meena is looking at how fire, soil properties and plant interactions may play a role in driving the rarity of species, and how this knowledge would aid conservation management of rare species and ecosystems.

September

Thursday 1 September

Dr Tim Barrows

The last Ice Age in Canberra and at Lake Mungo

In this talk, Tim will describe new work on Black Mountain in Canberra and the Southern Tablelands to date and describe the lowest elevation of periglacial activity, the extent of which has been the subject of controversy.

Thursday 8 September

Dr Pep Canadell

The rise of mega forest fires under climate change and what to do about it

Pep, a Chief Research Scientist at CSIRO, will discuss recent trend analyses on fire activity in Australian forests and their close links to human-caused climate change, along with limited options to reduce the rising impacts of wildfires.

Thursday 15 September

Ian Fraser

How did Australian birds get English names?

Ian Fraser, a local conservationist, says the stories of these name creations can be intriguing, funny, erroneous and sometimes downright ridiculous, telling us more about us than the birds. This talk is a celebration of birds, words and history.

Thursday 22 September

Dr Heidi Zimmer Orchids of Norfolk Island

Heidi will talk about her recent fieldwork (alongside Mark Clements), from retracing the steps of Bauer to find the critically endangered *Adelopetalum apetalum* to literally falling over orchids on well-worn walking tracks!

Thursday 29 September

Professor Simon Haberle What you never knew about poo!

Simon, from ANU, will tell a fascinating story of tiny fungi that live on dung and what they tell us about giant animals that roamed the earth.

October

Thursday 6 October

Stuart Rae 'Little Eagle'

The Little Eagle Research Group has amassed a wealth of data on the breeding ecology and range of the eagle, and a botanical perspective helps explain the bird's distribution.



Little Eagle juvenile

Thursday 13 October

Sally Holliday Exploring wellbeing through nature

Sally, from Landcare ACT, will explore the art of nature-connection and the myriad ways this intentional practice enhances wellbeing.

Thursday 20 October

Dr Judy West Some insights to the ANBG

Judy, Executive Director, will give some insights to the ANBG and its key roles, nationally and internationally, in conservation of flora.

Thursday 27 October

Alex McLachlan Eyebrights at risk of climate change?

Alex will present results from his research project on alpine and sub-alpine eyebrights (*Euphrasia*). He is improving understanding of their dormancy, germination, and what effect climate change might have on these regeneration processes.



Euphrasia collina ssp. *diversicolour*

November

Thursday 3 November

Dr Roger Farrow Insects and flowers: 130 million years of co-adaptations'

Roger will trace the origins of insect pollinators among the gymnosperms and through the rise of the flowering plants to their diversity at the present day, and how the pollinators have affected the diversity of flower structure and function among modern plant families.

Thursday 10 November

Frank Zich Botanical art and botany: The work of Wendy and Bill Cooper

Frank, Collection Manager and Curator of the Australian Tropical Herbarium in Cairns, will introduce us to William T. Cooper one of Australia's most talented botanical and bird artists and Wendy Cooper, renowned botanist and taxonomist. He will discuss aspects and examples of their works of great artistic beauty and scientific merit.

Thursday 17 November

Margot Schneider Fuel flammability and past fires?

Margot, 2020 winner of National Parks Australia ACT scholarship, will talk on the effect of past fire on fuel flammability, with particular emphasis on the leaf chemistry of *Eucalyptus pilularis* (Blackbutt).

Thursday 24 November

Dr Gavin Hunter Biological control of sea spurge in Australia

Gavin, research scientist at CSIRO will talk about the journey from field surveys in France to host-range testing and field release in Australia to control *Euphorbia paralias* (sea spurge), which reduces nesting spaces for shore birds and amenity to beaches.



Friends of the
Australian National
Botanic Gardens

Helping the Gardens Grow