



Fronds

Friends of the Australian National Botanic Gardens
Number 78 December 2014



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Email or post material to the *Fronds* Committee at the above addresses 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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Barbara Podger



New Council and President

The Friends' new President is Lesley Jackman, who has been a member of Council since 2011, and in that time has convened the Thursday Talks committee, helped establish the Photography Group, and been Vice President since 2013. She has some

experience at raising corporate sponsorship and also public affairs diplomacy, which has been most useful as the Gardens and Friends look for new sponsors for the Summer Concerts (see Friends Briefs for the success story).

Lesley will be supported by a new Council with a mix of experience and fresh enthusiasm. From the previous Council Jan Finley is now Vice-President, Marion Jones will remain as Treasurer, and Dennis Ayliffe, who chairs the Friends projects committee, will also continue. Many congratulations to some new faces: Rita Maclachlan, from the most recent Guides intake, will replace John Connolly as Secretary; new non-executive members, Christianna Cobbold, the new Guides convenor; Barbara Tyler, a volunteer in the Visitor Centre; Sue Serjeantson, Lesley's successor as convenor of the Thursday Talks committee; and Ian Primrose, also on the Thursday Talks committee.

Retiring President David Coutts completed his term, and elected members John Connolly, Warwick Wright, Anne Campbell and Glenys Bishop stepped down. We thank them for all for their hard work around the Friends and the Gardens.

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Cover: A diverse array of colourful lichens growing on the top of the Growing Friends' old shade cloth; the ANBG estimates there may be as many as a dozen species that have established over a 15 year period. The shade cloth is now on display in the administration area. For more stunning photos go to the ANBG Facebook page. This photo by Anne Rawson.



Daisies galore

Naarilla Hirsch, Jonette McDonnell
and Don Beer

From left: *Calomeria amaranthoides*, *Leucochrysum graminifolium*, *Olearia phlogopappa*, *Vittadinia meulleri*, *Coronidium elatum* subsp. *elatum*, *Leucochrysum molle*, *Rhodanthe chlorocephala* subsp. *rosea*, *Rutidosia leptorrhynchoidea*, *Olearia argophylla*. All photos by Murray Fagg © ANBG.

The new Asteraceae Garden is now ready to show its true colours. In September, a group from the Friends helped Gardens' staff put the first 3,000 plants into the ground, as part of the massed displays of daisies that are a feature of this garden.

The Friends have strongly supported development of this new Garden, including through funding of just over \$13,000 to help fund construction, and are represented on the Asteraceae Working Group.

Design of the Asteraceae Garden has focussed on displaying the huge diversity of this plant family. Daisies are found in most habitats in Australia, from deserts to rainforest fringes, coastal sand dunes to alpine areas. This is reflected in the Garden's design, with water harvesting measures creating wet areas through an undulating landscape. Combinations ranging from wet depressions to raised well-drained mounds and full sun to shade will allow specific species to be matched with their preferred conditions. For example, the endangered *Leucochrysum graminifolium* (Pagoda Rock Daisy) will be on a mound between rocks, similar to its usual habitat of exposed sites in Blue Mountains heathland.

A feature of the Garden's design is the central circular area surrounded by five 'petal' beds. Each of these beds will contain one or two species illustrating one of the five different types of daisy flowers, with explanatory signage.

One of these, *Microseris lanceolata* (Yam Daisy, Murnong, Native Dandelion) was a staple part of the Indigenous diet in areas of south-east Australia (even though daisies were not commonly used as food plants). The tubers were

generally cooked in baskets and were available all year round, although less palatable in winter.

Another is the endangered *Rutidosia leptorrhynchoidea* (Button Wrinklewort). This local species has been grown by the Gardens and replanted on a biodiversity offset block of box-gum woodland at Williamsdale. Its genetics have been studied in detail by Andrew Young and others at CSIRO, providing useful insights into preservation of the species.

Nearby will be *Xerochrysum bracteatum* (Golden Everlasting Daisy), which was one of the earliest plants grown by Napoleon's wife Josephine at Malmaison. When exiled to St Helena, Napoleon took up gardening for exercise and interest, and planted this daisy. Today it is found all over the island, having spread from Napoleon's walled garden to the hills and valleys.

Another interesting plant we will see is *Calomeria amaranthoides* (Incense Plant, Plume Bush), a tall biennial herb with large reddish plumes as flowers and sticky leaves that exude an aromatic scent. This plant was introduced to England from Sir Joseph Banks' collection and was placed in ballrooms there because the scent was thought to be an aphrodisiac. Recent research has suggested that extracts from this species may be a deterrent to ovarian cancer.

The Asteraceae Garden promises a great sensory experience. The mass plantings will be spectacular when in flower, and there will be plenty of interest during the rest of the year. In the longer term the Gardens hope to be able to display some of the more weird and wonderful daisies in pots.



Andy Rawlinson

Wise words and Masterplans

*Following are summaries of the reports to the 26th AGM of the Friends on 21 October 2014
by David Coutts, President; Marion Jones, Treasurer; and Dr Judy West, Executive Director, ANBG.
Full reports are on the Friends' website www.friendsanbg.org.au.*

President's Report

In his fourth and final report as President of the Friends, David Coutts said he was enormously indebted to the large number of people who had contributed to the various tasks and activities over his two terms. 'Our membership numbers continue to grow, from 1,625 four years ago to 1,997 at the end of September this year. That is testimony to the dedication and enthusiasm of all who contribute to our operation.'

From fully underwriting the summer concerts to staffing the information desk in the Visitor Centre the Friends had shown their preparedness to take on new activities and respond to the needs of the Gardens over the year. David's full report lists the many events and diverse activities the Friends were involved with, including Botanical Art; propagation and plant sales; support for research; volunteer guides; photography; Thursday Talks; as well as many enjoyable and informative social activities.

Looking at the year ahead, David highlighted the importance of two Masterplans for future development of the Gardens:

- A Public Art Masterplan has been approved by the Gardens and the Friends are funding and steering a feasibility study as a precursor to calling for specific proposals for artwork acquisition and identification of funding sources.
- Development of a site Masterplan for the Gardens is warmly welcomed and the Friends will be involved with the consultative group to work on the Masterplan development.

With many more activities already planned for the coming year, David reflected on the challenges posed as governments have squeezed resources from the Gardens. 'We have made our views on this known. However this cannot go on without quite serious impacts on

the Gardens. The Friends may have to become more outspoken on the issues.'

In particular, he said he would have liked to see more progress on several fronts:

- 'The management structure of ANBG should ideally be like the other national institutions and have its own budget line and Board of Management. As an interim position we have been pleading for many years for at least an Advisory Council for ANBG but so far to no avail, even though this was identified in the fairly recent Management Plan.
- 'Progress on major projects for ANBG will not be possible unless there can be an effective means of tapping into significant non-government resources.
- 'The role of the Friends has been changing in my time, driven largely by the fact that the Gardens have fewer resources. So far we have been able to respond to that in a positive way, but as a purely voluntary organisation we are approaching the limit of what we can do effectively. I am sure we are going to have to face further requests for assistance and we should try to respond positively to that.
- 'I am also passionate that ANBG should be playing a greater role in research on native plants. This can be partly through funding (eg the alpine project) but also through in-kind involvement.'

'I must thank most warmly all those who have helped while I have been President. There has always been someone to step forward when something needs to be done. Things have been harmonious and that is a great tribute to everyone involved. Thank you to everyone in the Friends. It has been a great privilege to serve on Council for the past eight years. I will be available to help as I am needed in the future'.

David Coutts



Walk in the Brindabellas; Original VC volunteer desk; Stocktaking; On the Meeting Place pavement at the opening of the Red Centre Garden.



Adrienne Nicotra in the NSW alps; Tom North at the ANBG Seedbank; Seedyvols sheltering from rain; building the wedding site at the Asteraceae Garden.

Treasurer's Report

Membership receipts for the year reflected the 10 per cent increase in fees. Other income was in line with previous years. Because recent budget cuts prevented the Gardens co-funding the summer concert series, Council decided that the Friends would underwrite all costs for the 2014 series. Fortunately, favourable weather, donations, and good attendances enabled us to cover costs.

Overall expenditure was largely consistent with previous years. Gardens support projects included the final payment of \$29,000 for the Red Centre Garden artwork; \$3,670 for an audio system for Flora Explorer; \$2,800 for new interpretive signs for the Display Glasshouse, and the \$12,000 grant for the Summer Concerts.

The Balance Sheet shows that we have accumulated funds of \$297,079, an increase of approximately \$27,000 since 30 June 2013. Council is confident that the accounts are in a fit state to enable us to meet the aims of the Friends in the foreseeable future.

Marion Jones

Executive Director's report

Judy West said it has been another successful year at the Gardens, with the Friends an integral part of that success, as demonstrated by their support for the new Asteraceae Garden. 'This Garden is a significant accomplishment by Gardens staff and I'm sure will become a major visitor attraction.'

Judy reflected on the Red Centre Garden after its first year. Parliamentary Secretary to the Minister for the Environment, Senator Simon Birmingham, recently revisited the Garden and planted two Quandongs. 'Given that many species in the Red Centre Garden have not been grown in the Canberra region previously, it is encouraging to see the success of most of the perennials, the various annuals and ephemeral species.'

Senator Birmingham recently announced the development of a Gardens' Masterplan. 'A key objective is to develop plans for new infrastructure and other attractions to support the growth of the Gardens' visitor experiences without impacting on the precious living plant collection.'

The Gardens' conservation program continued its focus on plants from Commonwealth reserves, grassy woodland

communities and sub-alpine flora. Several field trips, including Friends' supported rainforest species collecting trips to northern NSW and Queensland, have contributed many new, rare and threatened species into the collection.

Significant collections were incorporated into the National Seed Bank with a focus on grassland species and the endangered ecological communities of Alpine Sphagnum Bogs and Associated Fens.

'The current financial climate means that more than ever we need to be disciplined in prioritising work to deliver the actions in our Management Plan. It is wonderful to have the Friends working with the Gardens to deliver our visitor experiences and programs.'

Judy West

Guest Speaker

Dr Adrienne Nicotra, Associate Professor, Evolution, Ecology and Genetics at ANU, spoke on the successful outcomes of the Alpine Seed Research project supported by the Friends. She said that funding from community based organisations for such scientific work was rare and her team greatly appreciated the



Friends' financial and volunteer contribution. It was also worth noting that there were many researchers, including post-graduate students involved in this project.

Adrienne presented the Report of a symposium on Australian alpine plant research, conservation and management held at the Gardens in June. The report can be viewed on the Friends website and a limited number of hard copies are available on request.

New Life Member

Recently retired Volunteer Guide, Denise Newman, was awarded Life Membership of the Friends at the AGM. Fellow Guide, John Turnbull, spoke glowingly of Denise's contribution to the Guides and to the Gardens.



Les Felke

What? Woody weeds in the ANBG?

Rosemary Purdie



Weedy wattles: *Acacia decurrens*; *A. melanoxylon*; *A. howittii*; *A. longifolia*; *A. stricta*. All photos by Murray Fagg © ANBG.

When people walk around ANBG in spring admiring its colourful displays of native Australian plants, it's likely they rarely think about whether any of these species can be called 'weeds'. A weed is often defined as a plant growing where it is not wanted. The term environmental weed applies to species that invade natural ecosystems and impact negatively on the suite of local native plants (ie indigenous species) present. Environmental weeds can be species introduced to Australia (for horticulture or other specific reasons, or accidentally) or species native to Australia. An example of the former is the Blackberry (*Rubus anglocandicans*), while an example of the latter is Cootamundra Wattle (*Acacia baileyana*). Cootamundra Wattle's natural distribution is restricted to a small area near Cootamundra, NSW, but in other parts of south-eastern Australia it has invaded natural bushland, choking out the indigenous species, and is targeted for removal. The term 'native weed' is generally used for such species native to Australia that have naturalised outside their normal range.

The ANBG grows species from all over Australia. Once cultivated outside, the plants of most species sit there, flower year after year, and eventually die. Some species however produce copious suckers, or seeds that start germinating and grow into new mature plants that can form a self-sustaining population. This process of naturalisation may result in plants spreading into the dry sclerophyll forest vegetation in upper sections of ANBG. If this happens, the species can be treated as native weeds. Highly invasive species that have the potential to invade the adjacent Black Mountain Nature Reserve could become environmental weeds there.

ANBG staff have long been aware of the potential for native species in the Gardens to become weeds. The ANBG Plant Removal Policy, developed in 2006, notes that self-sown seedlings are occasionally retained for aesthetic purposes but most are eventually removed to make room for new plantings. The Policy notes that cultivated species that have naturalised in the Gardens 'are sometimes retained if they are healthy and attractive specimens growing in a suitable position and location'. The ANBG also maintains an ANBG Weed List which indicates those native Australian species known to be invasive weeds elsewhere in Australia, and that should thus be treated with caution if cultivated in the Gardens or elsewhere in Canberra. The Weed List currently includes over 150 species.

Given the large number of native species cultivated and displayed in the Gardens over many decades, how big is the potential for ANBG to be a source of environmental weeds in Black Mountain Nature Reserve? Recent weeding activities in the Gardens organised by the Friends of Black Mountain (FoBM) provided information very relevant to this question.

From February 2013 to June 2014, FoBM and some ANBG Friends removed woody weeds from sections of ANBG around its southern, western and eastern boundaries that are still mostly covered in natural vegetation, the Northern Annex and the northern parts of the Southern Annex. Any woody plant that was not indigenous to Black Mountain was considered to be a woody weed; this included species introduced to Australia as well as native Australian species. Records were kept of the species removed and the number of plants of each species taken out.



Billardiera heterophylla, *Dodonaea triangularis*, *Grevillea rosmarinifolia*, *Pittosporum undulatum*, *Kunzea flavescens*. All photos by Murray Fagg © ANBG.

Approximately 4,200 trees and shrubs were removed or cut and poisoned. They represented around 55 genera and 115 to 126 species. Around 13 per cent of these were exotic species not native to Australia, and included *Cotoneaster*, *Crataegus* (Hawthorn), *Fraxinus* (Ash Trees) and *Rubus* (Blackberry). A whopping 87 per cent of the species were native Australian ones that had become naturalised in the bushland. The number of native species removed was just over three times the number of exotic species, and almost seven times more native weed plants were removed than exotic plants. Native acacias and grevilleas were 'more weedy' than other native genera, with up to 40 species of *Acacia* and 20 species of *Grevillea* taken out.

Where did the native weeds come from? Well, 91 per cent were derived solely from plants cultivated in ANBG garden beds, and included 11 of the 13 most abundant native species removed. Six species of *Acacia*, and one species each of *Grevillea*, *Billardiera*, *Pittosporum*, *Kunzea* and *Dodonaea* cultivated in ANBG had naturalised in large numbers in the upper sections of the Gardens and/or the Northern Annex. Species like these have the potential to invade bushland in the adjacent Reserve.

If so many species have become naturalised from ANBG plantings, does the Gardens have a big 'woody weed problem'? Further analysis suggested not. For example, of the native woody weed species derived solely from plantings within the Gardens, about 68 per cent had only 1–10 plants removed: their small numbers suggest that currently they pose no significant invasive risk. Although at least 529 *Acacia* species have been cultivated in the Gardens, only 7seven per cent were removed during the weeding program, suggesting most species are not naturalising.

Overall, it appears that while around 85 woody species cultivated in ANBG have naturalised, they are a small proportion of all species planted in the Gardens, and the majority of species planted have a low naturalisation

potential. Never-the-less, the handful of species that has naturalised in large numbers and could invade Black Mountain warrants ongoing vigilance.

The full results of the FoBM weeding program and its implications for ANBG are available on-line (www.anbg.gov.au/gardens/research/library/reports/2014/FoBM-weeding-report-to-ANBG-17-Jul-2014.pdf). The work highlighted the importance of ANBG continuing to retain the natural sections of the Gardens adjacent to the boundary fence as buffer areas where no new plantings are made; and the ongoing need for a regular weed removal program in the buffer area and nearby natural areas of the Gardens, targeting both native and exotic weed species. It also showed the importance of strategic decisions about if and where to retain known weedy species in cultivated sections of the Gardens, and whether and where to add new plantings of species that might become invasive.

The FoBM 'woody weeders' shared many enjoyable, productive hours (and delicious morning teas!) helping the Gardens in this important work. They're happy to assist in ongoing programs to prevent native woody weeds jumping the Gardens fence into Black Mountain Nature Reserve.



Substantial woody weeds in a pile outside the Gardens on Frith Road.

Rosemary Purdie

Karijini National Park

Mary Lovett

Terry Lovett



Kalamina Gorge in Karijini National Park

Catch the flavour of this arid-land ecosystem in our own Red Centre Garden. One year on and the River Red Gums, Eucalyptus camaldulensis, that grow in the gorges of Karijini National Park, are establishing well in the Garden's creek bed.

Set in the Hamersley Range in the heart of the Pilbara, the expansive Karijini National Park (KNP) offers spectacular, rugged scenery, ancient geological formations, a variety of arid-land ecosystems and a range of recreational experiences. It is just north of the tropic of Capricorn and lies 1,400 kms north-east of Perth. It is WA's second largest national park and the nearest town is Newman where BHP–Billiton has a very large open cut iron ore mine.

Massive mountains and escarpments rise out of the flat valleys. The high plateau is dissected by breathtaking gorges, and stony, tree-lined watercourses wind their way over the dusty red earth.

This is an ancient part of the Earth. The slow process of erosion has carved the shape of the land out of the rocks that are 2,500 million years old, to form this intriguing landscape and complex ecology.

The traditional Aboriginal tribes, the Banyjima, Yinhawangka and Kurrama peoples have lived in the area for over 30,000 years—imagine the climatic changes they have experienced. The Park is owned by the Aboriginal people of the area and the Visitor Information Centre is designed to fit into the landscape; it represents a goanna moving through country. The tail represents their history, the head the future direction of the traditional owners, and Aboriginal Law makes up the main body.

The Park experiences extreme climatic conditions, highly variable summer rains of 250 to 300 mm and temperatures

reaching 45 to 50 degrees, to dry cold winters with frost. The location and climate along with nutrient deficient soils have produced a surprisingly wide variety of plants suitably adapted to their environment, whether nestled within a deep gorge, a wide open water course or on the high open plateau.

A variety of ecosystems are represented. Even within each gorge there are a series of microclimates supporting a variety of plants depending upon the depth of the gorge, its angle in relation to the sun's path and regularity of the available water. These factors all impact on the types of plants that can thrive. Their characteristics in turn influence the range of birds and other fauna that frequent the area.

There are 15 species of Eucalypts in the park with *Eucalyptus camaldulensis*, River Red Gum, being dominant in the gorges where they can grow to over 20 m. The moist gorges, with rock pools and water falls in the wetter parts of the year, are also home to *Melaleuca argentea* (Silver Cadjeput Paperbark) and fig trees, *Ficus platypoda*. Fig trees are able to establish themselves in the most precarious positions as long as roots can gain access to some moisture. They are often found with maiden hair fern growing up the same rock wall, an amazing sight in such an arid landscape.

Snappy Gum, *Eucalyptus leucophloia*, provides a dramatic accent with their stark white trunks and often black old

branches. Two interesting wildlife homes to look out for are the large, red termite mounds scattered amongst the Spinifex, and the rock piles of the northern pebble mound mouse, one of four pebble mound species that live across the tropical north. Endemic to the Pilbara, it creates mounds of small stones around its burrow. They live in areas dominated by Acacias; mounds are used by successive generations and some are centuries old.

The red plains are dominated by Acacias and Spinifex. There are over 55 species of *Acacia* in the park and they illustrate the vast variety of ways plants adapt to harsh environments; their form ranges from trees to shrubs to low spreading plants. Mulga, *Acacia aneura*, is a hardy, common and extremely complex group and highly variable. Edible Mulga apple, a fruit like structure which is a wasp gall, is found on some species. The Aboriginal people used mulga wood for weapons as well as walking sticks and tapping sticks.

Grevilleas are also represented with Wickham's Grevillea (*Grevillea wickhamii*) being one of the most spectacular. *Grevillea pyramidalis* (Caustic Bush) is a striking plant that is best left alone as the sticky resin on the seed pods is caustic and has been recorded in the Kimberley as having caused second degree burns.

Another interesting plant is *Senna notabilis* (Cockroach Bush). Its leaves closely resemble Sturt Desert Pea, however the flower/seed pod resembles a cockroach.

Robinson's Desert Rose (*Gossypium robinsonii*) with its bright green leaves and large mauve flowers presents quite a contrast amongst the Spinifex. This variety of wild cotton is confined to the Pilbara and is contributing to ongoing biogeographic and evolutionary studies of the cotton genus.

KNP is a special place. The spectacular gorges with rock pools and waterfalls, look outs, walking trails and a variety of accommodation options offer wide appeal.



Gossypium robinsonii Robinson's Desert Rose and *Grevillea pyramidalis* Caustic Bush, both photos taken in the Pilbara by Murray Fagg.

Art in the gardens with friends

Friends' Preview
Friday 20 March
1.00 - 4.30pm



Morgan Phillips



Cheryl Hodges



Vivien Pinder



Eva Henry

Annual exhibition
The Friends'
Botanic Art Groups
21 March - 19 April 2015

2015 Calendar



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Eucalyptus arborella is a poorly known species found in only a few locations in the south of Western Australia. Seed collections were made recently by the Threatened Flora Seed Centre in WA as part of the 1000 Species Project; *Zieria citriodora*; seed of *Angophora inopina*, photo taken in ANBG Seedbank by John Fitzgerald.

The Australian Seed Bank Partnership is a joint effort by the Council of the Heads of Australian Botanic Gardens (CHABG) and the Director of National Parks, through the Australian National Botanic Gardens. The Partnership brings together expertise from Australia's leading botanic gardens, state environment agencies and non-government organisations, creating a collaboration to conserve Australia's native plant diversity through sustainable seed collecting, banking, research and knowledge sharing.

The Partnership is currently focusing its energy on building Australia's conservation seed banking resources and ensuring that some of Australia's most threatened species are safeguarded in seed banks. These collections are made available for essential research into the storage, germination and reintroduction of threatened species. The knowledge resulting from this research is shared between partner organisations and with the broader Australian community to guide conservation and restoration efforts.

Key activities

The overarching project that encompasses almost all the collecting and seed banking activities of the Partnership is the 1000 Species Project. The Partnership aims to collect seed from 1,000 previously uncollected species of threatened and economically valuable Australian plants. Some examples of seed collections that have been banked in the last year are: *Azorella macquariensis* (Macquarie cushion) on Macquarie Island, *Grevillea endlicheriana* in Western Australia and *Zieria citriodora* in southern New South Wales.

In 2013, a study by the Partnership found large gaps in the representation of eucalypts in collections in Australia's conservation seed banks. While there were collections of 666 (58.2 per cent) of Australia's recognised eucalypt taxa, each species was represented on average by only one or two collections. As such, there were several concerns to address:

- 487 eucalypt species still remained with no conservation collections at all
- 14 of the nationally listed threatened eucalypt species had no collections
- the collections did not capture the genetic diversity of many of the eucalypt taxa.

With funding from the Dahl Trust, a targeted eucalypt collecting project was recently undertaken. In 2013-14, there were 39 collections of 23 eucalypt species made in Victoria, South Australia and New South Wales; including adding five new species to seed banks. Collected species include 16 threatened eucalypt species such as *Eucalyptus crenulata* (Silver Gum) and *Angophora inopina* (Charmhaven Apple). Further collections were made from July to November and the information on these collections is still being compiled.

A focus on trees

The Partnership is also enhancing Australia's collections as part of an international conservation project called the Global Trees Campaign. Coordinated through the Millennium Seed Bank at the Royal Botanic Gardens Kew, and supported by funds from the Garfield Weston Foundation, the Global Trees Campaign is the logical continuation of the Partnership's eucalypt project and will also address gaps in the *ex situ* conservation of rainforest trees. It brings to the Partnership an investment of £400,000 over four years to expand collections in Australia's conservation seed banks. The focus is on rare and threatened tree species, species that have not previously been collected and species susceptible to myrtle rust (*Puccinia psidii* s.l.) and other pests and diseases. The Global Trees Campaign will make a critically important contribution to Australia's conservation seed collections. These target species have generally not been collected and banked because the species are mostly rare and located in remote

Safeguarding Australia's native plants a collaboration

Adam Hutt



Tom North © ANBG



Australia's flora: conservation effort

Partner-Koros



Murray Fagg © ANBG



Andrew Crawford © DPaw

Seed of *Grevillea endlicheriana*, photo taken in ANBG Seedbank by John Fitzgerald; *G endlicheriana*; Seed pods of endemic Western Australian *G endlicheriana* subsp. *Wongan Hills*, considered a priority species for collection. Large seed collections were made recently in WA.

and inaccessible areas, requiring significant effort to collect. Some species may only be known by one population in the wild, and so it is critical to have some of their seeds held in *ex situ* collections for safeguarding.

This project will run from 2014 to 2017, by which time the Partnership will have made collections of 380 eucalypt and rainforest taxa new to seed banks. Overall, the work being conducted in Australia will contribute around one quarter of the total global collection targets for the Global Trees Campaign. Collections will be made nationwide, although the majority will be made in New South Wales, Western Australia and Queensland, where most of the priority tree species are located. The collecting institution will divide each collection and bank half in its conservation seed bank and the other half will be sent to the UK to be banked in the Millennium Seed Bank. In this way, the division of collections provides additional insurance for their protection.

Partnership volunteers

The Partnership relies on several kinds of support to conduct its operations including in-kind contributions from the Partner organisations, plus assistance from volunteers. The Partners provide a range of in-kind support including scientific expertise, project management skills, and advice in fundraising, information management, promotion and marketing. In addition to volunteers working in the field and conservation seed banks across Australia, there are volunteers working with the Secretariat at ANBG and they help with editing, office duties, cataloguing images, working on the Partnership website and assisting with maintaining a presence on social media.

Role of ANBG

The Australian National Botanic Gardens is involved in the work of the Partnership in several ways. Dr Judy West,

ANBG's Executive Director, is a committee member of the Partnership's governing body CHABG Inc. Dr Lucy Sutherland is employed as the National Coordinator by the Gardens and she provides strategic leadership and guides the implementation of the Partnership's 10 year business plan. Tom North, ANBG's Seed Bank Manager, is on the Partnership's National Steering Committee and the National Seed Bank team participate in various partnership projects. For example, Tom North is focussing his seed collecting activities in Commonwealth reserves and has been collecting in places as botanically diverse as Norfolk Island and the south coast of New South Wales, to contribute to the 1000 Species Project; he is now planning the collections to be made on Christmas Island for this project. Tom will also be supporting the Global Trees Campaign by working with staff at the George Brown Darwin Botanic Gardens and building their capacity in conservation seed banking. The proposed Northern Territory collections will make an important contribution to the Global Tree Campaign collecting targets in 2015.

For further information visit the Australian Seed Bank Partnership web site: www.seedpartnership.org.au or our Facebook page: www.facebook.com/australianseedbank-partnership.

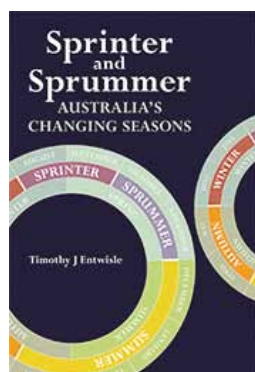


Seedy Vol. Annette Harry and ANBG's Seed Bank Manager Tom North during a recent field trip to Kybeyan Nature Reserve. Over the past year Tom has coordinated field work to make 69 collections of eight species of *Zieria* – all nationally listed as threatened.

Changing seasons

Library books for Friends

Catherine Jordan, Librarian



Thanks to a Friends' grant the Library has obtained books of broader interest which, along with other material in our collection, are available for loan to Friends.

One recent acquisition, by Tim Entwisle, director of the Royal Botanic Gardens Melbourne, is intriguingly titled *Sprinter and Sprummer*. It proposes a five-

season model for southern Australia; 'as a botanist I turn to plants and gardens to track my seasons, rather than to the heavens or the weather,' states Entwisle. Aboriginal seasonal classifications are reviewed briefly, 'Knock'em down storm and other indigenous seasons', demonstrating the complexity and size of Australia. The main part of the book describes each season, bringing a variety of

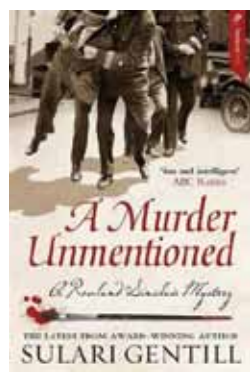
plant examples, history, and opinions, all presented in an extremely readable style. The final chapter considers climate change and how the seasons are shifting whether we like it or not.

If you are interested in exploring the topic of seasons and traditional ecological knowledge you could try: *Mirriwoong seasonal calendar*, a book from the Mirriwoong and Gajirrabeng traditional owners of the East Kimberley, and *D'harawal seasons and climatic cycles* from the D'harawal people of the Sydney region. Locally we have Ian Fraser and Peter Marsack's *A bush capital year* and the audio recordings of Ian Fraser from ABC Radio titled *Four seasons of the bush capital*.

Our catalogue is available for searching via the Library page of Gardens' website: www.anbg.gov.au/gardens/research/library/index.html. The library is located on the first floor of the Botany Building, and opening hours are 9.30-4.30, Monday to Friday. Friends are welcome at any time and you are eligible to borrow once you have registered. To arrange your first visit phone: 6250 9480 or email: ANBG.library@environment.gov.au

Good crime fun

Barbara Podger and Anne Rawson



What do Edna Walling, Charles Kingsford-Smith, and Robert Menzies all have in common? They all appear, doing fictional things, in Sulari Gentill's latest book, *A Murder Unmentioned*. The sixth in the *Rowland Sinclair Mystery* series was sent to us by publishers Pantera Press for review because of the part played by Edna Walling, a well

known Australian landscape designer.

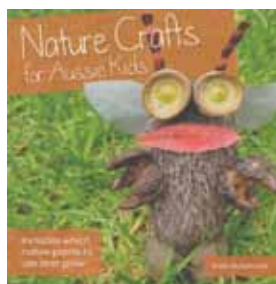
Miss Walling finds the murder weapon when draining the dam on a property near Yass. Robert Gordon Menzies, Deputy Premier of Victoria, unwittingly gives vital evidence to solve one murder and Kingsford Smith teaches our hero to fly. Of course Rowland Sinclair, his very rich squattocracy family and his artistic, communist friends, are fictional.

This mystery involves the murder of the apparently very respectable Sinclair father. All sorts of family tensions and misunderstandings are revealed and resolved as the murderer is identified, and Edna Walling's irrigation system is used to fight the fire burning down one wing of the country mansion.

A good fun holiday read, and you won't want to miss it if you are a fan of this series, or of crime fiction. To go in the draw to win a copy, write down the book's title, your name and phone no. and drop it in the Friends mail box in the Visitor Centre, or email to the *Fronde* editors by 12 December 2014 at: newsletter@friendsanbg.org.au.

From the Bookshop

with Bookshop staff



Nature Crafts for Aussie Kids

Kate Hubmayer

Openbook Howden Design & Print, reprinted July 2014. Paperback, 56 pages, colour photos.

RRP:\$22

Nature Crafts for Aussie Kids outlines 15 fun crafts to encourage children of all ages to use their imagination and connect with nature. Activities include making a bird collage out of gum leaves, boats and rafts out of bark, and an alien out of seed pods. The materials needed are easy to find, the instructions provided are simple and there are plenty of colour photographs for inspiration. The book also includes information on 18 useful and beautiful Australian native plants to grow. A perfect Christmas present!

Growing Friends

Yvonne Robinson

Growing Friends has repaired the structure and replaced the shade cloth that was damaged when a large Eucalypt branch fell and damaged the shade house during strong winds at the end of July. Fortunately there was no damage to the plants but an unexpected beauty revealed itself—see the front cover!

Spring sale

Our spring sale on 8 November again proved popular, raising over \$5,600. Among the plants on offer were a number of grassland and woodland species. These included *Calostemma purpureum* (Garland Lily), *Microseris lanceolata* (Yam Daisy), *Bulbine glauca* and *Patersonia sericea* (Silky Purple Flag; Native Iris). We were pleased to be able to offer the slow growing *Blandfordia grandiflora* that has been in production for well over two years while it established a strong root system.



Murray Fagg © ANBG

Blandfordia grandiflora is a tufted perennial herb with narrow leaves up to 70 cm long. The tubular flowers occur in groups of six or more about 30–60 cm long. The nectar-rich flowers, which usually occur in December and January are quite large and typically red with a yellow tip but forms with all yellow flowers are also known. It is

native to south-eastern Australia, very slow growing and so easily 'swamped' by more vigorous plants. It requires moist, well drained soils preferably of a light texture such as sandy loam. Some protection from the sun is preferable but it should not be grown in heavy shade. Tolerant of at least moderate frosts, it is very suitable for growing in pots. Our propagation was by seed.

Feel welcome to join our normal monthly meeting that is held on the first Saturday of each month at 9.00 am during spring and summer and 9.30 in autumn and winter in the Joseph Banks Building. We also have a working bee on the third Tuesday of each month.



Murray Fagg © ANBG

Calostemma purpureum
(Garland Lily)

Guides

Christianna Cobbold

Glenys Bishop, who has ably led the guides as their convenor for nearly three years, stepped down at the September meeting. Jane Keogh also ended her term as Secretary to the Guides. The guides are very appreciative of their efforts to assist them in their guiding role.

Spring has seen the Guides leading special walks in the Gardens. There were Wattle Walks in the first week of September when the wattles in the *Acacia* section and elsewhere in the Gardens were looking glorious. During Floriade, the regular 11 am and 2 pm walks had a Spring Flower focus and emphasised the abundance of Australian native plants in flower. They attracted many interstate and overseas visitors who were visiting Canberra at this time.

Over the last weekend in September the ANBG had space in the CBR marquee at Floriade and 10 guides took two hour shifts in pairs to talk to several hundred local, interstate and international visitors about Bush Foods and the Gardens. As well as plants from the Gardens there was food to taste and samples to smell.

A Handbook for the new Asteraceae Garden is being prepared by four Guides to aid interpretation when it opens. Guides also assisted in the planting of the Garden in September.



Spouses of the Deputy Heads of Missions (Embassies) on a booked walk on 22 October

Flora Explorer

Don't forget that 45 minute Flora Explorer tours are now running twice a day on Saturdays, Sundays and public holidays, at 10.30 am and 1.30 pm. Tours depart outside the Visitor Centre. Tickets cost \$6 (adults) and \$3 (concessions and children) and may be purchased from the Botanical Bookshop. In school holidays we are also planning to offer tours at 10.30 am on week days. A great way to explore the Gardens with friends!

Photography Group

Elizabeth Kay

The Photography Group is steadily growing. We welcome photographers of all levels of experience—the only requirement is that members are also Friends.

The Group has been fortunate to have some excellent recent presentations. In August, David Taylor, Curator of Living Collections, spoke about the highlights and challenges of his role. He led the Group (over 20 of us) on a walk, pointing out some of the more unusual species in the Gardens such as the Rutaceae collection, and some of the lesser-known spots, some of which involved a good hike to the very top of the Gardens. It was lovely to be shown some of these quiet spots so that we can head there when the Gardens are busy.



Graham Brown

Photography Group listening to David Taylor.

In September, Erica Wrigley, a visual artist and staff member of The Framing Store gave a practical demonstration on framing photos. It was an insight into how our photos can be displayed to best effect with just a little effort. By happy coincidence, Erica is the grand daughter of the late John Wrigley (Curator of the Gardens from 1967-1981) and was very pleased to be presenting to our group with this connection.

Our Committee is now planning our second exhibition for June 2015. We are excited about building on the experience gained from our first exhibition and the encouraging feedback we received.

Kamchatka 2015

Rosemary Purdie will be leading another tour to Kamchatka on 11-29 August, 2015. If you are interested in going or would like more information, please contact her on: rwpurdie@netspeed.com.au.

Public Fund

Barbara Podger, Chair

The Friends Public Fund was set up in 2004 to raise funds for environmental projects within the Gardens, and to offer a way for the Friends to receive tax deductible donations. To date, almost \$200,000 has been received.

The Public Fund is managed by a committee appointed by the Friends' Council. The committee has recently supported the purchase of equipment for the Seed Bank to the value of around \$20,000 including a seed counter which will save time on manual seed counting, for seed weights and germination testing, and a freezer to enable continuation of long term seed collections.

Previous projects funded through the Public Fund have included the Friends' Shelter near the Rock Garden lawn, a Lichen website, Environmental Monitoring Stations, signage for the Eucalypt Walk, and a termite mound for the Red Centre Garden.

The Friends would like to thank all those who have donated in the last financial year. We have decided from now on, to acknowledge major donors to the Fund in *Fronde* (with their permission).

We acknowledge major donors (of \$200 or more) since 1 July 2014:

- Mrs M and Mr W Bush
- Leslie Fifield
- Maureen Fisher
- Colin Hauff
- Rana Munns
- Sue Serjeantson
- Jan and Phil Finley
- Beth Hyde

We welcome your donation to the Public Fund to be used for projects in the Gardens.



The Friends' Vice-Patron (then Patron) Mrs Marlena Jeffery, opening the Shelter funded by the Public Fund in 2010.

Garden Shorts

Master Plan



Gardens' staff brief the master planning team on the Gardens' iconic locations.

The Gardens has brought in one of Australia's most experienced master planning teams to develop a 20-year Master Plan that will be a blueprint for our future development. A key objective is to develop plans for new infrastructure and other attractions to support the growth of the Gardens' visitor experiences, educational and recreational opportunities without impacting on the precious living collection. There are lots of ideas on the table—it could mean things like a new visitor centre, cafe, pathways and learning experiences for children—but the exact mix won't be known until the planning process runs its course. The scope of the Master Plan will also include a new seed bank and horticultural facilities which will increase the horticultural, research and conservation capabilities of this important national institution.

A master plan community workshop will be held at the Gardens on Sunday 7 December. Members of the Friends are invited to drop into the Visitor Centre between 11 am and 3 pm on 7 December to view draft concepts. Presentations will be held in the Theatre at 12 pm and 2 pm. It is anticipated the final Master Plan will be developed by June 2015.

Luminous Botanicus

Next year, as part of Canberra's Enlighten festival, visitors will have a rare opportunity to wander through the Gardens at night and experience illuminated pathways and thematic lighting, complemented by acoustic music and visual performances as part of a new program, *Luminous Botanicus*. This self-guided walk will commence with a 'warm' welcome on the Concourse, then progress through the Rainforest Gully, Conifer section, Rock Garden, Asteraceae Garden, Eucalypt Lawn and Red Centre, concluding with refreshment service and performances in the Red Centre Garden. Friends' volunteer guides will enhance the visitor experience as roving guides along the route each night. The Gardens will hold lantern making workshops for interested staff and volunteers over January/February which will form part of the displays. Interest will be sought later this year. See What's on page 19 for dates, etc.

Red Centre one year on

The Red Centre Garden has gone through the circle of seasons moving into its 'boom' cycle after a dormant period during Canberra's winter. Parliamentary Secretary Simon Birmingham revisited the Red Centre Garden 12 months on from when he opened the Garden last October. Whilst in the Garden he planted two Quondong plants, *Santalum acuminatum*, each growing with a different host plant *Acacia victoriae* and *Acacia ligulata*. All three plants are native to Senator Birmingham's home state of South Australia.



Spot the difference 1

The resident population of Eastern Water Dragon (*Intellagama lesueurii* pictured left) is a popular attraction often seen lazing around ponds and waterfalls at the Gardens. The Eastern Bearded Dragon, (*Pogona barbata* pictured right) is less often seen, but also occurs naturally in the Gardens. They have been spotted this year basking alongside the Water Dragons on the rocks of the Rock Garden Waterfall.



DD

Water Dragon

Eastern Bearded Dragon

Spot the difference 2

Why is there a Giant Spear Lily (*Doryanthes palmeri*) which only occurs in northern New South Wales and southern Queensland, growing among our Gynea Lilies (*Doryanthes excelsa*) in the Sydney Region Flora section? We only discovered this ourselves in the summer of 2011-12 when the plants flowered for the first time, and flowered again this year. The original plant material of the Gynea Lily was collected just south of Sydney when the Gardens was still being established in August 1970. This original material has been successfully propagated throughout the Gardens. Some plants must have been mixed up in cultivation with some collected from much further north.



Murray Fagg

Doryanthes excelsa

Doryanthes palmeri

Barbara Podger

Japanese wood artist

Internationally acclaimed Japanese wood artist, Satoshi Fujinuma, spent 10 days with Gardens seed bank researchers learning about the ecological aspects of bogs and fens, before commencing an 18-day artist-in-residency at Gudenby Ready-Cut Cottage, Namadgi National Park.

As part of his residency, Satoshi spent his time engaging with and interpreting aspects of the environmental protection of bogs and fens—endangered peat-forming wetlands, home to a number of unique plant species, as well as important breeding habitats for the endangered Corroboree frog. Satoshi used his enhanced understanding of these systems to inform and inspire the formation of objects carefully carved from wood that interpret the natural world of bogs and fens. His work aims to reflect new understandings and connections with the bogs and fens landscapes.



Turned object from Craft ACT website at: www.craftact.org.au/projects/2014artistinresidence/

The alpine bogs and fens theme for this year's Artist-in-Residence Program linked directly with seed research and collection at the Gardens. Work by Satoshi (and his two fellow artists-in-residence) will be displayed in a Bogs and Fens artists-in-residence exhibition at Craft ACT 9 April to 16 May 2015. A special exhibition highlighting the artists' research, preparatory and developmental work will run simultaneously at the Gardens.

Compiled by Sabrina Sonntag

Friends Briefs

Concerts have a sponsor!

The Friends are delighted to welcome ACTEW Water as a sponsor for the Summer Sounds concerts.

Message from ACTEW WATER

ACTEW Water is proud to be a sponsor of the 2015 Summer Sounds Concerts at the Australian National Botanic Gardens. As we move into 2015, you'll notice ACTEW Water changing its name to Icon Water, in recognition of the 100 Years of service to the ACT as we continue to provide some of the best water and sewerage services in Australia. Icon Water looks forward to providing grassroots support to events and organisations which allow the very fabric of the Canberra community to flourish, grow and make a real difference to our everyday life in one of the best cities in the world.

Sculptural experience



Barbara Podger

Friends admire 'Hill Arches' by Henry Moore on their recent visit to the Sculpture Garden at the NGA.

Wanted! Concert volunteers!

Concerts are on again this summer, with a new sponsor! Dates and details are in What's on page19.

Get involved! If you would like to volunteer to help at the concerts this summer, we would love help with:

- Collection of entry fees and welcoming visitors at the two main entry points to the Gardens
 - Drivers for the Flora Explorer and additional electric vehicle (must be an ANBG accredited driver)
 - Friends wine/drinks table (must be aged over 18)
 - Information Tent /Children's Table
- To volunteer, please email: events@friendsanbg.org.au or write your name on the roster in the Friends Lounge



Changes to Friends' parking permits

The ANBG will introduce three hours daily free parking for Friends on 1 January 2015. However, Friends who volunteer at the Gardens, or are active members of Friends groups, will be given 12 month all-day parking passes. Volunteers' passes will be provided through the volunteer supervisors. Friends' interest group coordinators will arrange passes for their group members. There will be a transition period in January when the Rangers will monitor the operation of these arrangements.

Detailed information about these arrangements, in particular eligibility and distribution, has been published on the Friends website, in a broadcast email, and is available in the Visitor Centre and Friends Lounge.

Schools photo comp

Alan Munns



Prize winner, Ingrid Dam, with friends and family and her prize winning photo.

There was an excited buzz around the Gardens' Theatre on Saturday 18 October as award winners in the 18th annual Friends' schools photographic competition gathered to receive their prizes. The competition is run for students from ACT and Queanbeyan Region high schools and colleges and all photos must be taken in the Australian National Botanic Gardens. The Friends thank all the schools that participated and also Friends and ANBG staff who made the competition happen. Competition judge Ken Crawford congratulated the winners and all entrants and gave very useful advice about ways to improve an already high standard of photography.

Plant Science Group

The Technical Talks on the first Monday of each month (bar Public Holidays) will start again in February, 2015. The email address for the Plant Science Group has recently been changed to plantscience@friendsanbg.org.au for those Friends wishing to get in touch or to join the mailing list for updates on forthcoming activities.

Friends' Silver Anniversary

Next year marks the 25th anniversary of the foundation of the Friends in October 1990. Celebrations will kick off with a special Anniversary Dinner in February (see details on reverse of your *Fronds* address sheet), to be followed by other events and activities during the year. Watch this space!

Breakfast with the Birds

Lindell Emerston



Tawny Frogmouth baby in the nest and below, two babies out of the nest with a parent.

A very successful Breakfast with the Birds was held over four weekends in September and October. The season was completely sold out and the 190 participants and their guides enjoyed fine weather every day for their early morning walk in the Gardens.

Seeing the Tawny Frogmouth nesting was a treat and the Bowerbird and his bower (this year more hidden than previously) was well worth the bending and peering through the Grevillea to see. The Honeyeaters along the main path and in the Sydney Region, Common Bronzewing, King Parrots, Gang Gang Cockatoos and nesting Magpies, Currawongs, Magpie Larks and Wattle Birds all proved interesting to our visitors. Many saw the Eastern Yellow Robin and, of course, the White-browed Scrub Wrens and Superb Fairy Wrens with their leg bands.

Most participants were new to birding and the binoculars were well used—at times all ten pairs—and all enjoyed the sights of the Crimson Rosella in the nest at the bridge outside the café and bathing in the creek near Tom Green's seat. Participants concluded their visit to the Gardens with a delicious breakfast at Floresco and conversation about the birds, the Gardens and return visits.

Christianna Cobbold

David Bassett



STEPping out

Fanny Karouta-Manasse



Friends explore the Southern Tablelands Ecosystems Project (STEP), Forest 20, at the National Arboretum in October.

AAFBG Conference

The Australian Association of Friends of Botanic Gardens held their biannual conference at the Gold Coast in August. Papers included managing threatened species at the Gold Coast; an interactive USB on rainforest plants; collaborating with Councils and other partnerships; and impact of environmental weeds. There was a delicious dinner, trips to the new Gold Coast Botanic Gardens, and lots of talk. See our Friends' website for the latest edition of *Campsis*, the AAFBG newsletter.



R Noone

Gold Coast RBG Visitor Centre.

Parkinson's exhibition

The exhibition in January in the Visitor Centre Gallery marks the 20th anniversary of the Painting with Parkinson's Art Therapy Program, which has been running in the Banks Centre since 1994. The Program was founded by Churchill Fellow, Nancy Tingey, and has achieved international recognition as a pioneering method for dealing with both the physical and psychological impacts of this disease. One of the great elements has been the ambience of the Gardens and the help of staff—the exhibition is one way of highlighting their contribution. See What's on page 19 for details.

What's on at the Gardens

December 2014 – April 2015

Details of events are correct at the time of printing. For changes and updates please check the Friends' website at www.friendsanbg.org.au or on the Gardens' site at: www.anbg.gov.au or in the local press.

The Friends of the ANBG thank the many speakers who volunteer their time and talents to further the knowledge of all who attend the events in the Gardens. The Friends use the 'gold' coin donations received at each activity to support Gardens' programs and development. The Friends thank all those who have donated.

Please note: unless otherwise indicated, talks are in the ANBG Theatre.

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.

DECEMBER

EXHIBITION

Visitor Centre Gallery

Wed 12 Nov to Wed 3 Dec
Bush Blitz through the Lens



See up close and personal photos of some of the weird and wonderful plants and animals from Australia's largest nature discovery program. Photo of Green Jewel Bug from Fish River NT.

Monday 1 December 9.00 am
Plant Science Group: Dr Russell Barrett, 'Seduced by sedges'
Theatre

A decade of studies on Australian Cyperaceae.

SUNSET CINEMA

Wed, Thurs, Fri and Sat evenings
until 20 December at 7.00 pm
Eucalypt Lawn

Enjoy latest releases, children's and classic films among the eucalypts. Bring a picnic or purchase refreshments on the Lawn. Info and bookings www.sunsetcinema.com.au/canberra



Friday 5 December 10–11 am
and first Friday every month

Enjoy stories and craft activities in the Gardens \$5 per child. Suitable for pre-schoolers. Follow the signs from the Cafe bridge

Friday nights during December
2014 to March 2015

Delicious AfterDARK Rainforest
to Red Centre

An 'adults only' night combining the best of the Gardens' afterDARK experiences with gourmet food and wine. For times and prices: www.anbg.gov.au/gardens

Sunday 7 Dec 11.00 am–3.00 pm
ANBG Master Plan Community
Workshop

Friends are invited to drop into the Visitor Centre to view draft Master Plan concepts. Presentations will be held in the Theatre at 12 pm and 2 pm. See Garden Shorts page 15.

EXHIBITION

Visitor Centre Gallery

Friday 5 Dec to Sunday 11 Jan
Illustrating Outback Australia:
Visualising blessing in the
Gospel of John



An exhibition of original watercolour paintings by Fiona Pfennigwerth reproduced in her recently self-published book *The Gospel according to John illuminated*.

Thurs 11 December 11.00 am

Opening drinks and artist's talk in the Visitor Centre. All welcome.

JANUARY 2015

Commencing January 2015
Enchanting AfterDARK

Join the Storytellers Guild with Gardens' rangers in a series of night time wanderings exploring 'Flower Fairies and Magical Folk' and 'Night Flight'. Suitable for young families. For times and prices: www.anbg.gov.au/gardens

What's on

SUMMER SOUNDS CONCERTS



Sats and Suns 3 Jan – 25 Jan
5.30 to 7.30 pm

Australia Day Sunday 25 Jan
Special extended concert
5.30 to 8.30 pm
on the Eucalypt Lawn

Feel the Gardens come alive with the sounds of rockabilly, jazz, blues, country, Irish jigs and more this January. \$5 adult, \$2 concession, 17 years and under free

Sat 3 Jan	Dorothy-Jane Band
Sun 4 Jan	Humbug
Sat 10 Jan	Big Boss Groove
Sun 11 Jan	Hit Parade
Sat 17 Jan	Dr Stovepipe
Sun 18 Jan	The Fuelers
Sat 24 Jan	Annie & the Armadillos
Sun 25 Jan	Franklin B Paverty

(Australia Day concert to 8.30 pm)

Sponsored by **ACTEW
WATER**

SNAKES ALIVE!



12-16 Jan 10.00 am – 4.00 pm
17-18 Jan 10.00 am – 6.00 pm
Crosbie Morrison Building,

See live snakes, lizards, turtles and frogs. \$5 adult, \$4 conc. \$2 child.

SCHOOL HOLIDAY PROGRAM

SciBOT 'Summer Explorer'
Thur 15, Wed 21 & Wed 28 Jan
9.00 am – 12.00 pm

Hands-on program for kids who love to investigate, explore and learn. A scavenger hunt, compass training, pond dipping and building a terrarium. \$40 pp including morning tea and take home materials. Suitable for children 7–13yrs. Online bookings essential.

EXHIBITION

Visitor Centre Gallery

Painting with Parkinson's
Friday 16 Jan to Mon 16 March



Marking the 20th anniversary of this painting group that meets in the Banks Building. See page 17.



Saturday 31 January 6.30 pm
Commbank Flix in the Stix
Eucalypt Lawn

Enjoy a unique night out with short films, comedy from *Tripod* and live music from *My Friend the Chocolate Cake*. Various ticket and seating price options. For further information visit www.flixinthestix.com.au/canberra

FEBRUARY

Thursday 5 February 12.30 pm
Tim the Yowie Man 'Beyond the Bark: the hidden faces of Canberra's trees'

Tim, *Canberra Times* journalist and cryptonaturalist, will reveal fascinating stories behind some of our trees and tell of nature's little known secrets in the Canberra region.

Thursday 12 February 12.30 pm
Professor Susanne von Caemmerer 'Improving the productivity of the world's rice crop'

Susanne, ANU researcher, will describe the work of the international C4 Rice Consortium.

Thursday 19 February 12.30 pm
Dr Susan Serjeantson 'The Banksia Story'

Sue, Convenor of the Thursday Talks Committee, will explore the history of the discovery of banksias.

Thursday 19 February 6.30 pm
25th Anniversary Dinner
Floresco in the Gardens

See the reverse of your *Fronde* address sheet for all the details and booking information.

SPECIAL ENLIGHTEN EVENT



Luminous Botanicus

Fridays, Saturdays and Sundays
27, 28 Feb, 1 Mar; 6, 7 and 8 Mar

See Garden Shorts page 17 for more details. The complete program and online ticket sales will be available in mid December.

Thursday 26 February 12.30 pm Dr Richard Groves 'My Life in Weeds'

Richard, CSIRO, will explore the potential for biological control of Spiny emex (*Calotropis procera*), thistles, Bitou bush and Bridal creeper.

MARCH

Thursday 5 March 12.30 pm Ben Walcott 'Some notable gardens of England, France and Spain'

Ben and Ros Walcott, ANBG Friends, will highlight the diversity of garden styles in these countries.

Thursday 12 March 12.30 pm Sally Barnes 'Parks Australia – Strategic Visions'

Sally, Director of National Parks, will discuss the Vision and Strategic Direction of Parks Australia, with particular attention to the ANBG's programs and partnerships.

Thursday 19 March 12.30 pm Dr Penny Olsen 'An Eye for Nature: The Life and Art of William T. Cooper'

Penny, Bill Cooper's biographer, will tell us what led David Attenborough to call Cooper 'arguably one of the greatest of all bird artists.'

Friday 20 March 1.00 to 4.30 pm



Friends preview of Art in the Gardens with Friends. See page 9.

Thursday 26 March 12.30 pm Dr Sarah Ryan 'More than Food Miles: Choosing Food for a Lower Environmental Footprint'

Sarah will outline lifecycles of foods commonly eaten in Canberra and suggest ways to reduce our environmental footprints.

APRIL

Thursday 2 April 12.30 pm Dr Roger Hnatiuk 'The National Arboretum: How big are the trees? How fast are they growing? What scientific monitoring is telling us'

Roger will talk about the sampling strategies for assessing tree growth at the National Arboretum.

Thursday 9 April 12.30 pm Professor Peter Kanowski 'The World's Forests: State and Prospects'

Peter will discuss Australia's role in sustaining the world's forests.



Scavenger hunt during March and April

A night-time botanical scavenger hunt for families with treasures and treats to be found. Finish the night with an open air fire, toasting marshmallows and supper in the Red Centre Garden. Check What's On in the Gardens' website for details: www.anbg.org.au/

Friends' Benefits

As a Friend you are entitled to:

Three issues of *Fronde* a year

Free parking pass

Botanical Bookshop – a discount on most items

Discount at Floresco cafe

You also get:

Special Friends only events

Advance details of lectures

Advance bookings for some events

Discounts on some events

ANBG library membership – borrow books, serials, videos, DVDs plus use of computers and interactive CD ROMs

Function facilities – special rates for functions at ANBG

Become a member of:

Botanical Art Groups

Growing Friends

Photography Group

Plant Science Group

Assist with Gardens research projects

Become a Guide

Relax in the Friends Lounge – in the Ellis Rowan Building, open to members 9.30 am to 4.30 pm. Relax with tea/coffee and lots of interesting reading.



where friends meet to eat

**Open every day (except Christmas)
8.30 am-4.30 pm**

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(on production of membership card or name tag)*

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always welcomes Friends!
with a 10% discount:

- on purchases over \$10
- on purchase of gift vouchers
- on production of your membership card
- to the person whose name is on this card

(no discount on redemption of gift voucher)