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*Newsletter of the Friends of the Australian National Botanic Gardens
Number 71 August 2012*

Inside:
Red Centre
plants in the
nursery



Friends of the
**Australian National
 Botanic Gardens**

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| Growing Friends | Kath Holtzapffel |
| Botanic Art Groups | Helen Hinton |
| Photographic Group | Graham Brown |
| Social events: | Jan Finley |
| Exec. Director, ANBG | Dr Judy West |
| Post: | Friends of ANBG, GPO Box 1777
Canberra ACT 2601 Australia |
| Telephone: | (02) 6250 9548 (messages) |
| Internet: | www.friendsanbg.org.au |
| Email addresses: | info@friendsanbg.org.au
membership@friendsanbg.org.au
newsletter@friendsanbg.org.au |

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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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Cover: Rainforest lighting on the clear, cold night of Saturday 7 July. Image courtesy Geoffrey Dunn (www.lushpupimages.com)

Launch of Flora Explorer



After a couple of weeks of trial runs Flora Explorer, the Gardens' new electrically powered mini bus (funded by the Friends), was officially launched on her way by General Manager Peter Byron and Vice President of the Friends, Barbara Podger, on Tuesday 29 May. One of the more expensive projects that the Friends have funded, the vehicle was donated to the Gardens to provide a new opportunity for our Guides to show people parts of the Gardens they can rarely reach on foot in a one hour walk. Areas that were previously accessible only to the fit and energetic are now able to be enjoyed by almost everyone.

Talented mural artist, Kurt Laurenson from Stylized Impact, has transformed the vehicle into an adornment to the Gardens. His work is actually still in progress, but the cold and damp weather has not been making it easy!

Ride, Stop and Talk Tours will run at 1.00pm on Saturdays, Sundays and public holidays, starting by the cafe bridge. Tickets may be purchased from the Visitor Centre. See the Gardens' website for details.

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Reflections on Murray's 42 years at ANBG

John Wrigley and Warwick Wright

Not long after the arrival in Canberra of a small red Gogomobil, I was introduced to the owner, one Murray Fagg. At this time, I had been extremely keen to expand means of interpreting the Gardens to the visiting public using information boards and leaflets. Murray, who was working in the Herbarium, came to me in 1970 requesting that he be involved with a small display in the entrance hall illustrating the significance of Captain James Cook's bicentenary. It aroused considerable interest and shortly afterwards he joined my staff and we began to construct regular displays. His great artistic and photographic talent soon made this an important part of the Garden's interpretation programme and Murray became responsible for it. He was given charge of the Rangers; he developed the Garden's photographic collection; assisted with signage throughout the Gardens, including the Nature Trail and an Aboriginal Food Trail.

As well as developing a close working association, Murray and I became good friends and when I was approached by a publisher to write a book on Australian native plants in 1976, I asked him if he would be interested in preparing the drawings and photographs to illustrate it. He agreed and in subsequent years he became close to our whole family as the work on this book was all completed outside Gardens' hours. He even chose our back yard in the Garden's cottage to marry Rosemary.

After I left the Gardens in 1981, our friendship continued and some eleven books have been published under our joint authorship with a sixth edition of *Australian Native Plants* currently in press.

Murray has met the challenge of modern technology head on and the inspirational work he has achieved as webmaster for the Gardens has made the website the envy of many.

Murray's love for the Gardens and for nature generally is displayed in many ways. A weekend off usually includes coffee at the Gardens and a stroll with Rosemary to obtain a few more photographs for his

collection. Field trips, of which we have done several together in obtaining material for our books, have

always been made enjoyable by his enthusiasm and desire to get each photograph 'just right'. I wish Murray every success in his retirement, realising that another cup of coffee at the Gardens will never be far from his mind.

John Wrigley AM, BSc, Former Curator, ANBG.

A True Friend

by Warwick Wright

Murray Fagg put ANBG on the tourist map; his initiatives to encourage visitors included starting a newsletter promoting the Gardens and canvassing the formation of a Friends group. Response was overwhelming and before long, with Anne Joyce as Public Relations Officer, the Friends was created. This would not have been possible without Murray's positive support and encouragement in overcoming conservative attitudes.

Murray has also been an instigator or supporter of just about all the growth initiatives of the Friends. He largely developed the volunteer program, probably first in the Herbarium, followed by Growing Friends and the Guides. Most recently, he was the brains behind the Botanical Resource Centre initiative and generously gave his time and advice to help get the Photographic Group started. As a true friend, we wish Murray the happiest of retirements and we hope the Friends will feature prominently in it.



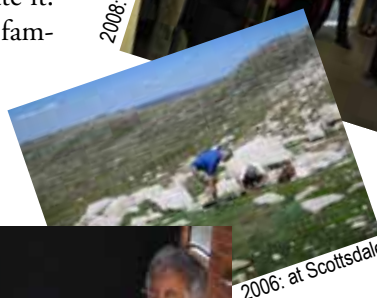
2012: on Christmas Island



2010: 40 Years at ANBG



2008: BRC opening



2006: at Scottsdale



2005: Authors signing their book



1990: ANBG Action bus launch



1970: Opening ANBG



1970: Gogomobile



1987: Working on Aboriginal Trail

Pruning – the kindest cut

Margaret Clarke, Anne Rawson, Fanny Karouta-Manasse and Graham Brown

Those who garden with Australian natives are soon aware that they are not ‘plant and forget’ plants and that pruning is the best way to avoid that sparse ‘leggy’ look.

At the Gardens, Living Collections Curator, David Taylor and his team, have made pruning into an art form. David shared some of his secrets with Friends at a recent Thursday lecture, demonstrating the diverse approaches needed to manage and best display the huge variety of species and landscape forms in the Gardens.

David’s secret to knowing which technique to use for which plant is to look at how they grow and regenerate in their natural landscapes. Do they re-sprout after fire (and so take heavy pruning) or regenerate from seed (so like a light prune only)? Or are they pioneer plants (like *Acacia* and *Asteraceae*) with short life spans that are usually best replaced rather than pruned when they are past their prime? His second piece of advice, is that being Nature, there are of course always exceptions to these generalised rules!

David and his team don’t apply any treatments to the ‘wounds’ and for major pruning they cut flush with the branch or trunk so that the cut is as unobtrusive as possible. So, unless you see the pruning in action you might never know how extreme some of the plant makeovers in the Gardens can be.

Our thanks to David Taylor, Rosella Uwedo-Hampshire, Phil Hurlle and Troy Miles for demonstrating the art of pruning. Useful information on growing native plants, including pruning advice, is available for many species on www.anbg.gov.au/gnp



Lifting

Large shrubs with foliage to the ground can sometimes overwhelm a small garden. One solution is to ‘lift’ the foliage up by removing the lower branches to create a more tree-like effect. This can have the added advantage of creating a new area of garden for low level planting, opening up vistas through to other plants, allowing more light into the garden bed or displaying lovely bark textures on the newly uncovered trunks.

Left: Troy removes the lower branches of a big old *Banksia serrata* to show off its wonderful textured bark. Below: David and Troy ‘lift’ a row of *Banksia conferta* to reveal a row of *Isopogon anemonifolius* planted behind and allow more light through to them. Photos by AR.



Tip Pruning

Wallabies do it in the wild but it’s usually up to the home gardener to snip back a few centimetres from the softwood tips in the growing season to establish a framework for a nice bushy plant as it ages. This is especially good for the Rutaceae family (eg *Correa*, *Crowea* and *Boronia*), Myrtaceae (eg *Callistemon*) and most *Grevilleas* which resent heavy pruning in an attempt to reshape them as mature plants. As with all pruning, avoid periods of drought, heat or frost to minimise post-pruning stress.



Severe Pruning

Plants like Waratahs and Mallees that re-sprout after a bushfire are often good candidates for severe pruning. The brutal clearing by fire in nature does have the benefit of opening up the canopy to light and releasing potassium from the ash into the soil. In the garden a severe prune can be used to reinvigorate and promote more multi-stemmed growth habits.

Plants suited to this type of pruning often have a lignotuber (swellings at the base of the trunk that are rich in dormant buds). Here a *Eucalyptus gregsoniana*, which has outgrown its location outside the Ellis Rowan Building, has one of its two trunks cut down to ground level. The tall trunk is removed in stages to avoid stem splitting. Several smaller trunks should now sprout from the cut providing a ‘mallee’ effect. If this is successful, the remaining tall trunk will probably receive the same treatment.



Two trunks leaning on roof. Photo: AR.



First cut. Photo: FK-M.



Cut back to the lignotuber. Photo: AR.



BEFORE

It's sometimes a case of seeming to be cruel to be kind. Here the Gardens' best flowering Waratah, *Telopea* 'Canberry Gem', is being razed to ground level! When it grows back it will be reinvigorated and should produce over a hundred stunning blooms in its peak season. But remember, any severe pruning puts a plant at risk, so in the Gardens, only a selection of plants in a group is done at any one time.

Photos by AR.



AFTER



Artistic Pruning

This *Melaleuca cuticularis* has been deliberately shaped to look like it is on an exposed windswept plain – it is in fact in a very sheltered spot.

Photo by GB.



Reveal Flowers

Flowers hidden by foliage on this *Banksia spinulosa* var. *neoanglica* are beautifully revealed by snipping away at any stems arching over them.

Photo by FK-M.

Ecological science meets urban amenity

Max Bourke AM, Chairman Capital Woodlands and Wetlands Conservation Trust

Can you imagine the city of Canberra in 100 years? Say at our Bicentenary? Perhaps half a million people? Gungahlin and Molonglo valleys full of well developed suburbs, high rise around all of the urban centres, as well as...?

Can you imagine having 1700 hectares of open space, over half of it the woodlands of the southern tablelands as they were before European settlement? With not only the native flora in good health but a good suite of birds and mammals from pre-settlement supported, of course, by the insects, lizards and other species that go to make up a healthy ecosystem?

Well there is now a journey under way to make that possible.

Just as botanic gardens and arboreta and zoos provide 'arks' for flora and fauna, actively sustaining living ecosystems is going to become much harder as we move towards nine billion people on the planet.

The ACT Government initiated the Capital Woodlands and Wetlands Trust as a new form of collaboration in the management of conservation and amenity lands for the ACT at the end of 2011. The Trust has been quietly establishing its infrastructure and putting in place management plans for the two major sites it is concerned with. The Mulligans Flat Woodlands and the Jerrabomberra Wetlands have both had Boards of Management working with Territory rangers to develop and manage these sites, but the Trust will provide a form of overarching governance, fund raising and co-ordination to assist these important places reach their full potential.



Mulligans Flat, on the northern boundary of the ACT and NSW, is hugely important because along with its neighbouring land on the east, the Goorooyaroo Nature Reserve, we have 1500 hectares of one of the most endangered ecosystems in Australia, the Yellow Box-Red Gum Grassy Woodland. This ecosystem has sadly been 'loved to death' and while it extended once from southern Queensland around through southern Victoria, over 90 percent has now been destroyed for farming/grazing/urban development. This site is arguably the largest patch of it left managed for conservation.

Within Mulligans Flat is one of the most interesting ecological experiments under way in Australia. Led by Associate Professor Adrian Manning of ANU, a major

long-term scientific experiment has been designed to test a lot of ecological theory. In 2007-08 a 400 hectare feral proof enclosure was developed which allows people access but not cats and foxes/dogs and makes control of rabbits possible. Using this Sanctuary, plus the surrounding land of both Mulligans and Goorooyaroo, a series of 96 test sites have been established to examine the interaction of fallen trees, stocking rates of kangaroos, and other factors with the woodland ecosystems. As well reintroductions of birds (the first is the Brown Tree Creeper (*Climacteris picumnus*)) and marsupials, the first is the Eastern Bettong (*Bettongia gaimardi*) both widespread before urban development, have been released into the area to re-establish colonies.

...sustaining living ecosystems is going to become much harder



Jerrabomberra Wetlands on the other hand promises to bring the world of both migratory and sedentary wetlands birds within the sight of the urban dwellers of Canberra. These 201 hectares of largely artificial wetlands now support

a wide variety of local and migratory species in a diversity of habitats surrounded by urban and industrial Canberra. If we can get the support to develop them like the superb London Wetlands we will have a heritage site of both local and international significance as a wetland high in the Murray Darling Basin.

Both of these projects are in their earliest stages but we will welcome contact with Friends of the Australian National Botanic Gardens as we have many similar aims.



Ark by Anne McNamara, Bettong by Neville Cayley from ANBG website, Brown Tree-creeper by Paul Taylor from COG website.

PS Friends of ANBG will know from media reports that 31 holes were cut recently in Mulligan's Flat fence. The Trust understands that this was done by people concerned about kangaroo culls. Rangers fixed the fence but were concerned about foxes, so monitored the site for several weeks and found no damage had been done to the Bettongs.

Tony Peacock, Member Capital Woodlands and Wetlands Cons. Trust.

Small, brown birds with coloured bands

Geoffrey Dabb



White-browed Scrubwren. Photo by Geoffrey Dabb.

An alert visitor to the ANBG will soon be aware that there are a lot of small birds around that have colourful plastic bands on their legs. The birds have been trapped and banded for the purpose of various research projects. Being thickly populated by small birds, and close to the Australian National University, the Gardens are a convenient site for studying aspects of behaviour and life histories of Australian birds.

As most Australian birds come from a separate evolutionary stream from the more intensively studied birds of the northern hemisphere, there is much about their behaviour that is not known. Some of the research in the Gardens is ground-breaking by world standards, and receives international attention accordingly.

For example, a great deal has been discovered, and published, about what goes on in the family life of the little Superb Fairy-wrens that hop so actively around paths and shrubs throughout the gardens. All those banded birds have been logged and monitored, some over several years.

A less obvious sight is the White-browed Scrubwren, a brownish bird with a harsher note than the fairy-wren. 'Scrubbies', as sometimes called, are year-round residents in Canberra, generally favouring dense shrub growth where the nest is well-hidden. If you have them in your own garden, it will be a sign it is getting overgrown.

Recent research on the scrubwren has been conducted by Tonya Haff, together with Rob Magrath, a world authority on the species. One project was directed to the effect of begging calls by nestlings on the rate of predation by currawongs—a notorious predator of small birds. Experiments showed that the playing back of calls strongly attracted currawongs to active nests. It was shown that there was a 'cost' of calling to be balanced against the benefit of calling to attract parents with food.



Wire shields a nesting site from predators. Photo by Barbara Podger.

In those experiments nest enclosures were used to avoid unnecessary destruction of nests. Tonya's estimate of the number of scrubwrens in the gardens is about 120 individuals, of which most have been banded.

Other projects by Rob Magrath and his students, going back 20 years, were directed to learning the basic pattern of the scrubwren breeding cycle. Like several other Australian birds of the same general kind, the scrubwren is a 'cooperative breeder', meaning that relatives of the basic breeding pair assist in raising the young. Studies have been directed to the pattern of feeding by different members of the group, and the effect of group size on nesting success. We now know that this species often raises two broods of young in a season, and sometimes three, with relatively long periods of incubation and parental care for the young after they leave the nest.

Some of this research receives international attention

These findings reinforce the conclusion that during their long separate development some Australian bird species have evolved breeding strategies that are quite different from northern hemisphere bird groups.

All this is achieved by long hours of painstaking watching and recording. It is important to identify individual birds within a group, so as to follow the individual's role and career within and, if it leaves, outside the group. Hence the need for the coloured bands.

So when you see a young person in the Gardens not seeming to be doing very much, but with clipboard and binoculars and a distant expression, they are not spending idle hours enjoying the flora, but are unlocking the secrets of evolution by gathering information on bird behaviour.

ANPC: Collaboration for conservation

Deserving a twenty-one gum salute!



Plant conservation is a complex endeavour and communication between all its many and varied practitioners is the key for success. This is where the Australian Network for Plant Conservation (ANPC) comes in as the national network that links people, research and action in plant conservation.

To meet its mission of promoting and developing plant conservation in Australia, the ANPC has been proactive in getting the message out to conservationists on new conservation threats. It is, for example, currently running training courses on the recognition and management options for Myrtle Rust, a serious threat to Australia's biodiversity. Its recent quarterly journal has the special theme of monitoring and community involvement, throwing up the new term 'crowdsourcing' to describe networks for community monitoring, which can now be made easier by new technologies for data input.

The ANPC has a long standing partnership with the ANBG. It was at a meeting in the Gardens in 1991 that the concept was born and its small national office (now in the Ellis Rowan Building) has been hosted by the Gardens since day one.

In the spirit of networking practitioners, the ANPC is holding a National Conference in Canberra later this year to look at how plant conservation has changed in Australia over the past two decades, and how it will need to change over the next 20 years. The Gardens are a partner in the Conference and, on a lighter note, will give the Network a '21 Gum Salute' with the planting out of 21 threatened Eucalypts as part of the Conference opening event.

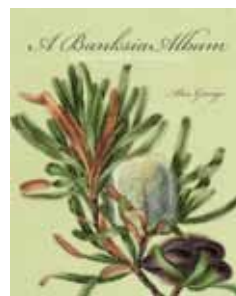
The Friends became ANPC members in 1999 and are keen to help the Network celebrate its twenty-first year as one of the sponsors of its Conference event. Friends are involved in Conference planning and organisation. Send

an email to anpc@anpc.asn.au if you would like to help with registrations during October. Further details will be on the Friends website.

Registration for the conference is now open and the ANPC welcomes abstracts for presentations and suggestions for workshops. Registration details and information about submitting an abstract is available on the ANPC website at: www.anpc.asn.au.

Register early for the conference to take advantage of the early bird discounts which are available until 24 August 2012.

From the Bookshop with Tom Butt, Shop Manager



A Banksia Album: 200 years of botanical art.
by Alex George
National Library of Australia, 2012
132 pages, colour illus, paperback
ISBN: 9780642277398
RRP: \$34.95

With their bold flowering and fruiting spikes, Banksias remain a favourite among artists and gardeners alike. *A Banksia Album* features over 90 stunning full-colour reproductions of watercolours, pencil and sepia-wash drawings, colour prints and early hand-coloured engravings and lithographs of Banksias from the National Library of Australia's collections. It covers over two centuries of botanical illustration, from 1770 when the Endeavour's artist, Sydney Parkinson, was the first European to make

Continued →

Volunteer guides on Flora Explorer

Glenys Bishop, Convenor Volunteer Guides

About a dozen guides completed the training to become driver-guides for the Flora Explorer tours and are now conducting tours for paying customers. It has been something of a leap for the guides, from leading walking tours to conducting a bus tour.

Each tour follows the same route from the Visitor Centre, up the southern edge of the gardens past the Eastern Mallee, up and round to the Western Mallee, then past the Red Centre to a stop between the Eucalypt Lawn and the Sydney Basin, giving the guide an opportunity to point out the contrast between these three areas. The next stop is above the Rock Garden, near the Acacias followed by another stop between the NSW Rainforest and the Wollemi Pines, before driving down the edge of the rainforest towards the café and back to the Visitor Centre.

A running commentary while the guide is driving the vehicle is difficult as the guides cannot turn around and talk while driving. Maintaining the peacefulness of the gardens precludes the continual use of a PA system but it may be possible to have one in operation for the 'long drive' from the Eastern to the Western Mallee.

It's tricky talking about the tall trees when passengers can't see them because of the roof, but we are experimenting with keeping passengers on the bus for the whole time or allowing them to alight at selected stops to walk around and look at the trees. The decision depends to a large extent on the needs of the passengers on any given tour.

These bus tours have significant implications for the Guides; do we want to conduct both kinds of tours or should there be a different group for Flora Explorer?



Flora Explorer, ready to go.. Photo by Anne Rawson.

Apart from driver training, should there be different training for these guides? What impact is Flora Explorer having on the free guided walks?

It will be interesting to compare our experiences when we have a few more months of tours behind us.

Calling volunteer driver guides for Flora Explorer

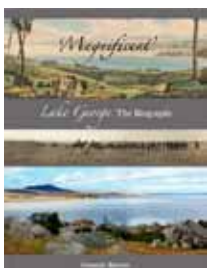
Information session and training workshop on Tuesday 21 August from 11 am to 12 pm in the ANBG Theatre

Interested Friends are invited to attend the information session on becoming a volunteer Flora Explorer driver guide.

More information: Contact Jennifer Salkeld 6250 9559 or 6250 9540. email: jennifer.salkled@environment.gov.au

From the Bookshop with Tom Butt, Shop Manager

drawings of Banksias at Botany Bay, to 2007 with two prints of *Banksia rosserae* by Celia Rosser. A beautiful book.



Magnificent Lake George: the biography

by Graeme Barrow

Dagraja Press, 2012

114 pages, illus, maps, paperback

ISBN: 9780977532858

RRP \$33.00

Lake George attracts fascinated interest because its waters regularly disappear, before returning sometimes years later. Evaporation is the cause, with the rate of loss

exceeding replenishment of the lake through rainfall and inflow from creeks. Indigenous people knew of the lake for thousands of years before Europeans discovered it in 1820. The Aboriginals called it Weereewaa, but Governor Lachlan Macquarie, who saw it for the first time in October 1820, decided to ignore this charming name and call it Lake George after a dissolute English King. It is noted for its extraordinary birdlife and acts as a refuge for water birds when inland lakes dry up. This book has a wonderful collection of photographs, maps and diagrams to accompany the detailed history that Graeme Barrow has put together. It is of value to anyone interested in the history of the lake or the district, but is also a good read for anyone from this area—just for the joy of discovering things around us that we did not know!

The Red Centre Garden



Establishing a supply of plants for the Red Centre Garden is throwing up some interesting challenges for Joe McAuliffe and nursery staff who have been patiently trialling soil and propagation mixes, rooting hormones, watering regimes and other growing conditions to find what best coaxes these heat and dry loving plants to life in Canberra. ‘Drainage is everything’ they say.

The first challenge, that of sourcing seeds or cuttings for propagation, has been taken up by Paul Carmen. Given the expense of dedicated collection trips to remote desert locations, Paul has had to creatively search out alternative sources. Some seed has come from the Alice Springs Desert Park and Uluru-Kata Tjuta National Park. Newly arrived seed is firstly sent to the Seed Bank for germination testing to ensure the Nursery isn’t wasting time and effort on non-viable seed.

No self-respecting red centre garden would be complete without the ubiquitous Spinifex (*Triodia sp.*) with its mounding growth habit and interesting ring formations, an iconic image of the red centre. But it turns out they are extremely difficult to propagate from either seed or cutting and the dearth of literature on the subject confirms that few have tried. Just one close encounter with these very prickly plants is enough to appreciate their absence from domestic cultivation. After many trials, only four plants of the Spinifex, *Triodia scariosa*, have matured sufficiently at the Nursery to progress to the 90mm pot stage. The trials continue!

At almost the other end of the scale, *Acacia peuce* germinates readily from seed but is then frustratingly slow to grow. This striking Acacia, growing to around 15 metres, is only found in three widely separate localities around the Simpson Desert and has unusually short horizontal branches with a conifer-like habit. These potted specimens in the Nursery are three years old.

Allocasuarina decaisneana or Desert Oak, are widely scattered across the Spinifex grasslands of the red centre. They are another very slow growing species and it is claimed that these grand old oaks of the desert may be up to 1000 years old. Their woody ‘cones’ are the largest of all casuarinas. Seeds germinate rapidly aided by a coating that attracts water and forms a mucilaginous layer. The radicle quickly penetrates the soil where it develops into a massive tap root. A seedling 20 cm high may have a root extending well over a metre into the soil.

Juvenile Desert Oaks are more like vertical spikes than trees, like wispy pencil

From the top left: Heather Sweet and Amber Howe, Nursery staff who have worked on red centre plants, smell crushed leaves of the aromatic grass *Cymbopogon oblectus*, a member of the same genus as the culinary lemongrass; the hard to grow Spinifex, *Triodia scariosa*; spinifex on the Canning Stock Route, photo by Tony Dyson; rocket pots of *Acacia peuce*; the Desert Oak *Allocasuarina decaisneana* looks quite bushy in this very early growth phase; *Schoenia cassiniana*.

n: starting from scratch

pinus. On reaching maturity (after some twenty or thirty years) they form a large spreading canopy and deeply furrowed corky bark that protects the tree from fire. This sudden growth spurt is a sign that their tap root has hit water. In the desert this might be at a depth of around thirty metres so it will be interesting to see what, or when, this happens in our Red Centre Garden.

The 'Do Not Water' signs on the Ghost Gums, *Corymbia aparrerinja*, say it all. Watering is strictly monitored and controlled so these precious plants are not part of the routine watering regime.

In the propagation tunnels where seeds and cuttings are first germinated or rooted, the benches are heated and the usual overhead misting system is turned off. Once potted up and moved to the shade house, the plants are widely spaced out to ensure each one has good air circulation.

Pots are another growing tool on trial here. The knobby Rocket Pots holding the *Acacia peuce* are designed to improve drainage (the lower knobs are open) and promote development of a fibrous root system. The felt-like root control bags holding the *Livistona mariae* (which will eventually form the Gardens' own version of Palm Valley) are designed to allow only small feeder roots to penetrate. This means reasonably mature plants can be planted out in their bags in a holding area of the Gardens. They can then be easily dug up and fully planted out if needed to replace a plant that has died.

There will be plenty of flowers in the Red Centre Garden too. Pink paper daisies, *Schoenia cassiniana*, are already happily flowering in their tube pots and would make a wonderful carpet-of-pink effect in sufficient numbers. The enormous yellow flowers on the potted *Hibbertia glaerrima* look stunning but Heather laments they are hard to keep alive—those drainage issues again! Fortunately the gorgeous feathery-flowering *Ptilotus* species are proving much more reliable.

With around a quarter of the Nursery's production devoted to Red Centre plants, there will be plenty of stock for the first plant out next autumn, ready for the opening in October 2013.

Story by Margaret Clarke, with John Turnbull; Photos (except Spinifex) by Anne Rawson. With thanks to Anne Phillips.



Come and see these plants on Friends tour to the Nursery. See Friends Briefs page 14 for details



From bottom left: The feathery flowerhead of *Ptilotus macrocephalus*; *Calandrinia polyandra*; *Hibbertia glaerrima*; *Livistona mariae* ready to overwinter outside the Nursery in their felt-like pots; Ghost gums, *Corymbia aparrerinja*.

Garden Shorts

From the Executive Director

With the Gardens third Management Plan now approved, I would like to thank Friends for the support and feedback throughout the process to develop the Management Plan. I am confident the plan provides the Gardens with a strong strategic direction for the next 10 years.

Our Seed Bank team is undertaking a three year conservation partnership project with the ACT Government where they are focusing on seed collection, seed banking and germination trials of four local rare and threatened species. The seeds of the target species, *Arachnorchis actensis* (Canberra Spider Orchid), *Corunastylis ectopa* (Brindabella Midge Orchid), *Prasophyllum petilum* (Tarengo Leek Orchid) and *Drabastrum alpestre* (alpine cress or mountain cress), were collected during late 2011 and early 2012. The Gardens' Seed Conservation Biologist, Lydia Guja, Seed Bank Manager, Tom North, and Seed Bank Technician, Sue Lawatsch, are working with orchid expert Mark Clements to perform germination trials of the three orchid species. The outcomes from this work will help inform plant conservation activities being undertaken by the ACT Government.

The ANBG also hosts the Secretariat for the Australian Seed Bank Partnership and is an active member of the Partnership. During late spring and summer, experts from the partner institutions will be seed collecting and undertaking germination trials on native flora as part of a national collecting program entitled the *1000 Species Project*—a project that aims to bank

seed from 1000 native plant species as an insurance policy against current and emerging threats, such as climate change, as well as to improve understanding of Australian flora to support conservation and restoration activities.

Another key feature in the 2012–2022 Management Plan is to identify ways the ANBG's collection can be further enhanced by donations. Following this, the ANBG has developed two donating initiatives—an online donation system and a bequest publication. Donations received through these means will enhance ANBG's current programs as well as helping us develop new initiatives in areas such as horticulture and conservation research and garden development.

The 2012-2022 Management Plan is available on our website: www.anbg.gov.au/gardens/about/management/manplan/.

Judy West

Endangered pea goes home



Curator of Living Collections, David Taylor, plants an endangered small purple pea (*Swainsona recta*) as part of the propagation program.

In partnership with ACTEW, around 70 plants of the endangered small purple pea (*Swainsona recta*) were planted in the ACT following a propagation program delivered by the ANBG.

Setting up for future research, the 18 month propagation project saw expert staff collect tiny seeds from the field, germinate and grow them in the Gardens' seed bank laboratory and specialist nursery facilities.

The young plants of the small purple pea were then planted on the 110 ha Murrumbidgee to Googong pipeline

offset site at Williamsdale—a site where the seedlings can be monitored and carefully managed.

Monitoring climate change



Caroline Bayer, Rachel Maitland and Andy Donnelly of the Earthwatch Institute Australia examine one of the indicator plants on the new Australian National Botanic Gardens ClimateWatch trail.

Inspiring a new generation of young scientists is one of the aims of the ClimateWatch trail recently launched at the ANBG.

The trail located along the Gardens' main path was developed in partnership with Earthwatch Australia and enables visitors to become 'citizen scientists' by monitoring the effects of climate change on Australian native plants.

Visitors can record information such as flowering times and bird, reptile and frog sightings, which will assist scientists in understanding the effects of climate change and how best to respond to it.

The ClimateWatch trail has been funded by the Friends, who are also supporting the initiative with volunteers recording observations and helping visitors to monitor flora and fauna.

Flora Explorer thanks

The Friends would like to thank the Gardens staff who helped our Projects Committee to research and recommend this project for funding by the Friends; Rangers who are providing training and support for the volunteer drivers, and staff from Communications and Visitor Services for providing support and briefings in interpretation for the tour.

Boom and bust In the Red Centre



Red Crace rocks in foreground, escarpment and black circle meeting place in the Red Centre Garden. Photo by Anne Rawson.

The Gardens newest development—the Red Centre Garden—is well underway and the construction area is changing rapidly with thanks to the hard work and dedication of all those involved in this exciting new project.

The central concept of the Red Centre Garden is 'Boom and Bust' and the Garden will invite people to take a closer look at how plants, animals and people have survived and adapted to the desert's extreme climate variability.

All the elements in the garden will be invested with meaning, so that visitors become immersed in an interpretive space. Patterned and timed plantings replicating boom and bust cycles, interpretive signs, sculptures and decorative elements will be used to show, explain and celebrate the intricacies of desert life.

The Red Centre Garden will be officially opened in October 2013.

AfterDARK a great success



See the Gardens come to life this winter during the *afterDARK Firefly Tours*. Image courtesy David Boughey.

The Gardens new public program – *afterDARK* – has proven to be a great success with sold out tickets for July and August.

AfterDARK provides a range of experiences for visitors including a night adventure in the recently installed lighting

in the Rainforest Gully and spotlighting tour of the Gardens' various habitats.

During winter, visitors can bring new light to a winter's night with the Gardens' *afterDARK Firefly Tours*.

For information and bookings, visit www.anbg.gov.au/gardens.

Gardens staff return from Christmas Island



Brendan Lepschi and Bronwyn Collins pressing plants on Christmas Island

Australian National Botanic Gardens staff Bronwyn Collins, Murray Fagg and Brendan Lepschi recently returned from a very successful botanical collecting trip to Christmas Island.

A total of 274 botanical specimens were collected, including many weedy species. Specimens have yet to be shipped back to Canberra from Christmas Island for detailed study, but a preliminary count suggests around 250 species were collected, from a total flora of approximately 500 species.

These specimens will be added to the collections of the Australian National Herbarium at the Centre for Australian National Biodiversity Research, as well as forming the basis for a reference herbarium for Parks Australia staff on Christmas Island.

Accompanying the specimens, Murray Fagg took over 1000 digital images as vouchers of plants and vegetation, for inclusion in the ANBG's Australian Plant Image Index.

The success of the trip was due to the efforts of Parks staff on the island, who provided much appreciated help and logistical support, as well as assistance navigating some of the cultural peculiarities of Christmas Island!



Photo by Fanny Karouta-Manasse

Garden Shorts contributed by Julie Akmacic

Friends Briefs

Friends and the Plan

Recently there have been two contrasting developments that will be influential in how the Gardens develops and grows over the next ten years. One of these is the release of the new 10-year Management Plan and the other is the budget cuts that will impact on the Gardens

The new Management Plan (available on the Gardens website) contains a great many excellent initiatives. The Friends will be giving consideration to the Plan and where we feel the highest and most achievable priorities lie.

That leads to the budget pressure that has been imposed on the Gardens. These 'efficiency dividends' were not imposed on virtually all the other national institutions. The Friends have sought an explanation from the Minister, Tony Burke, but have so far had no response. We are concerned that there may be cuts to overall resources and some programs. That would be a great pity after the intensive work by Gardens management, staff and the Friends to improve the position of several years ago, when visitors observed the poor condition of parts of the Gardens.

It is clear that much of what is proposed in the new Management Plan cannot be achieved without additional resources. The Friends will be working with management on how additional resources can be found but it will be a major setback if existing resources are reduced just as the new Plan is released. As things unfold we will keep members informed through the website and other means.

David Coutts, President

Recruiting Seed Bank Volunteers

Are you keen to apply your botanical and recording skills to help in the ANBG seed bank? One or two volunteers are needed to work with seed bank staff to enter data in databases, collating information gathered as part of the ongoing seed bank curation program. Volunteers will support a growing number of seed bank projects, including those outlined by Gardens' Executive Director, Dr Judy West, in her 'Garden Shorts' feature on page 12.

Each Seed Bank database volunteer will work in the seed bank with the Seed Bank Manager, to enter viability and germination data into the new Living Collections database. We are also seeking volunteers with photographic or microscopy skills to help build a visual image library of seed and fruit morphology for ready reference with the collected data.



Where data recording starts. Sarah Fethers in the field. Photo by Barbara Podger

Volunteers will be trained in data basing, seed quality control, microscope use, and seed photography. Interviews will be conducted with interested people. For further information and a copy of the duty statement, please contact Tom North (Thomas.North@environment.gov.au; 6250 9462) or Lucy Sutherland (Lucy.Sutherland@environment.gov.au; 6250 9473)

Tom North

PLANTS FOR SALE

Yarralumla Nursery

Australian plant market day

8.30 am to 4.00 pm

Saturdays 8 Sep, 6 Oct and 3 Nov

Friends only tours

Thursday 4 October 11 am Visit to Parliament House Gardens

This is a rare opportunity for a guided tour of the interior courtyard gardens at Parliament House. The tour will take around one and a half hours. Our guide will be Paul Janssens, Assistant Director of Landscape Services at Parliament House, previously Curator of the Living Collection at the ANBG.

Meet in the foyer of Parliament House, near the desk where visitor passes are issued. Enter from the Forecourt, go through security into the foyer, and turn right. Please be there 15 minutes ahead of the tour starting time.



Photo: Pam and Keith Hammond

Thursday 8 November 10 am Behind the Scenes tour of ANBG Nursery

This tour of the Gardens' Nursery will focus on plants propagated for planting in the new Red Centre Garden (see pages 10-11). Meet at the ANBG Visitor Centre at 10.00 to walk to the Nursery for a 10.30 start. Transport by Flora Explorer available for anyone who might have problems walking to the Nursery.

How to book

These are sure to be popular and numbers are limited so it is advisable to book early, preferably by email to visitparliament@friendsanbg.org.au. or visitnursery@friendsanbg.org.au. If email is not possible, phone Alan Munns on 6249 1154. When booking, please provide your name and phone number, and the same for any other Friends for whom you are booking.

Botanic Art Exhibition

This year's Exhibition and Sale by the Friends Botanic Art Groups showcased 68 beautiful works by 31 artists over four weeks in April/May. A total of \$2,250 was raised for the Friends from commission on the sales of paintings and cards and a raffle.

The exhibition was formally opened on 12 April by Member for Canberra, Ms Gai Brodtmann MP. Supporting the Bush Tucker theme, Aboriginal musician and artist, Duncan Smith, treated the opening night crowd with a performance accompanied by his son on the didgeridoo.

Friends' Council has decided to purchase one artwork from the Exhibition each year to establish a collection of botanic art works for display in the Gardens. In this first year of the program, the Friends purchased the painting chosen as the Exhibition image, *Grevillea rhyolitica* 'Deua' by Marjorie Roche.

This year there was also a special Mothers' Day Exhibition for the last two days of the exhibition which coincided with other activities in the Gardens. Paintings that had been sold, or were not for sale, were taken down and a further 67 paintings were displayed. These paintings were 'gently' priced, up to a limit of \$200. A total of 17 paintings were sold in just two days.

Honoured

Congratulations to Ted Edwards, Friend, *Fronde's* author, Guide and Lunchtime speaker—not to mention entomologist extraordinaire! Ted, who has spent 40 years studying Australia's 20,000 moth species, was deservedly made a Member of the Order of Australia in the Queen's Birthday Honours, for his huge contribution to the study of moths and butterflies as a researcher, author and mentor. We look forward to more of Ted's fascinating insights into the world of these creatures in future editions of *Fronde's*.



Photo by Cheryl Hodges

This display was supplemented by an area for children where they could colour cards, make book marks, leaf rubbings, cut out and paste something for Mum. Children were also encouraged to complete a quiz on the paintings in the exhibition. It was a joy to see them with their magnifying glasses checking out the paintings. All quizzes were deemed correct and each child earned a number of brightly coloured stickers!

There are two paintings that were purchased during the exhibition that have not yet been collected. Wendy Antoniak has them and she can be contacted on 0407 466 580 or 6161 1685 to make arrangements for collection. The owners of the paintings will need their receipts as proof of purchase.

Wendy Antoniak

Grazing

A different grazing in the Gardens. The Growing Friends have reported heavy grazing of some of their grass plants by a kangaroo. They had hoped to use some of these grasses as hosts for a parasitic species, *Nutsia floribunda*, if they were successful in germinating these seeds from the July session. One of the Rangers has recommended the use of chilli powder to deter kangaroos—apparently it worked in the Grassy Woodland.

Kath Holtzapffel

Annual General Meeting

Tuesday 25 September 2012 at 5.30pm in the Theatrette

Preceded by light refreshments in the Dickson room at 5pm

Full information (including on nominations for Council) will be posted on the website and mailed out around late August. There will be a guest speaker after the official business is concluded

Barbara Daly's drama



Photo by Martin Butterfield

Barbara Daly, Friends' Life Member and producer of the popular 'In Flower this Week' for over 25 years, is missing her regular walks around the Gardens in search of the best blooms. Barbara broke her ankle on a recent ANPS Wednesday Walk but is now recovering well. Our thanks to the wonderful crew of the Southcare helicopter for airlifting her to Canberra Hospital. Best wishes for a speedy recovery Barbara, ready for all those spring flowers!

Two trivial limericks

There was a sweet lady called West who with care of our gardens was blest.

She pruned and she watered and danced and cavorted but found she liked gardening the best!

There was a clever lady called West who with care of our gardens was blest.

She planned & she plotted her staff were besotted but her majesty remained unimpressed

See next page for full report

Friends Briefs cont

Right Royal Trivia Night

Twenty-sixth of May saw Royalists and Republicans flock to the ANBG for a Right Royal Trivia Night. Guests were welcomed by regally resplendent royalty, our gracious Queen and jocular Duke (aka Barbara Podger and Peter Byron). Attendees decorated their persons and tables in suitably celebratory and deferential (or not) creative styles. While enjoying cheese and wine and other royal treats, they wrestled with devilishly difficult royal-related questions designed by the devious Mike, presented by emcee and quizmaster, Fran, and closely controlled by adjudicator, Tricia. Prizes donated by Q Books, Floresco and the ANBG nursery were awarded for costumes, excellent knowledge in obscure royal trivia, limericks and table decoration. Many thanks to all concerned, especially Fran and Mike Johnson, for the huge effort in masterminding and managing this highly enjoyable evening.

Marion Jones



Clockwise from top left: Gracious Queen and Jocular Duke; Quizmaster Fran; Devious Mike; Adjudicator Tricia; Guests enjoying Royal treats. All photos by Jill More.

Growing Friends by Yvonne Robinson

Spring plant sale Saturday November 10 at 8.30 am

Growing Friends propagate from seeds as well as from cuttings (see *Fronds* 70). Most seed will germinate readily if given the right conditions, mainly water, oxygen and a suitable temperature. However, seed from some species need treatment to overcome dormancy.

At our July propagation session, the Growing Friends used four techniques to overcome dormancy:

- Hot water treatment—for seeds with hard or waxy coats (acacias, peas and pomaderris species), we poured soaked in almost boiling water.
- Cold stratification—exposure to cold to encourage germination. Good for *Tasmannia lanceolata*. Seed first mixed with slightly moist peat moss, sealed in a bag and put in the refrigerator for three weeks.
- Smoke water—for seeds which germinate after bush-fires. We used commercially prepared smoke water on seeds of *Dianella*, *Hakea*, *Olearia* and *Patersonia* species.
- Seed starter granules - a commercial product which is similar to smoke treatment –used for the germination of *Nuytsia floribunda*.

Of course, after germination there are a lot of things to consider before the seedlings grow big enough to be potted on and eventually planted – light, temperature, soil mix, moisture, predators (see *Friends Briefs*), correct handling. Let's hope that the Growing Friends can manage these for a good result.

Species from a less well-known Genus that will be available for sale in Spring is *Zieria*. They are small to large woody shrubs with highly aromatic foliage with small or pink four-petalled flowers.



Zieria cytisoides

Downy Zieria

A compact shrub to 1.5m x 1.5m. Hardy in well-drained soil, full sun or semi-shade. The leaves are strongly aromatic when crushed and the hand-

some, all-year-round, foliage makes it an ideal contrasting garden specimen. The foliage is covered with fine, short hairs, giving it a soft, grey appearance. Responds well to pruning and is frost hardy to -7°C .



Zieria montana

Mountain Zieria

A medium, bushy shrub, 2-3m x 1.5m. Suits well drained soils and slightly sunny or semi-shaded aspect.

Tolerates moderate frosts. Small white flower with pink margins in Spring. Potential for hedging and screening.

Photos taken by Murray Fagg at the ANBG

What's on at the Gardens

August – December

Details of events are correct at the time of printing. For changes and updates please check the Friends' website at www.friendsanbg.org.au at the Activities tag, 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, and all those who will.

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

When bookings are required, phone the Visitor Centre on 02 6250 9540. Members who make bookings for events are requested, as a courtesy to their fellows, to notify the Visitor Centre if they are unable to attend.

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.

AUGUST

Reflections of Country



17 July – 28 August
Visitor Centre Gallery

A special exhibition by Duncan Smith, recipient of the 2003 Aboriginal and Torres Strait Islander Artist of the Year Award

Thursday 2 August 12.30 pm
Steve Thomas 'Problems and opportunities for Canberra's urban forest'

Steve Thomas will discuss tree management in Canberra from his experience of examining trees in the urban setting, as well as considering the future of the urban forest developed over the past 99 years.



Bush Magic Story Time

Friday 3 August 10.00 am

Book week stories

Friday 7 September 10.00 am

Flower Fairies and Magical Folk

Friday 5 October 10.00 am

Birthday stories

Friday 2 November 10.00 am

Summer stories

\$2 per child. Suitable for pre-schoolers.

No booking required

Thursday 9 August 12.30 pm

Alison Russell-French
'Shakespeare, the Tale of Genji and migratory shorebirds—what's the connection?'

How is decision-making about the conservation of our landscape influenced by literature, in particular, migratory shorebirds and their habitat? Alison, Past President of Birds Australia, asks 'how can we make a contribution?'

Gardens afterDARK



Lushpup Images

Bring new light to your Saturday night with the afterDARK tours at 6 or 7pm. Cost applies. Online bookings essential www.anbg.gov.au/gardens

Saturday, 4 August, 6 or 7pm

Saturday, 1 September, 6 or 7pm

Saturday, 6 October, 6 or 7pm

Saturday, 3 November, 6 or 7pm

Thursday 16 August 5.30 pm

Dr Lenore Coltheart 'Nursery tales for a garden city'. National Archives

Records from 1913 on from Yaralumla nursery have been digitised and Lenore has written a report on the records and their stories. This is Australian Garden History Society AGM and Annual Lecture

Science Week Sat 11 to Sun 19 August

GARDEN'S SCIENCE TRAIL, EVERY DAY, ALL DAY

Outdoor science engagement for all the family with hands-on self guided trail investigating the science behind the Gardens' plants. Free admission

Sundays 12 and 19, 10–11.30 am Down to Earth Horticulture Banks Glasshouse

Practical gardening programs for the Canberra home/community/farm and designed for hands on learning with professional experts. Free admission. Limited numbers. Bookings essential www.anbg.gov.au/gardens

Workshop 1 – Sunday 12 August
Transform Your Garbage into Gold: backyard composting presented by Gerry Gillespie (Zero Waste Australia)

Workshop 2 - Sunday 19 August
Nuts and Bolts of Healthy Soil: how soil works and how to improve it presented by Matt Kilby (Global Land Repair)

Family Science Day

Sunday, 12 August 10 am–3 pm

For a rare learning experience, the ANBG will be opening the doors of the Australian National Herbarium, Production Nursery and Seed Bank for behind the scene tours. Free admission.

Thursday 16 August 12.30 pm

Bernard Fennessy Memorial

Lecture: Dr Peter Kerr

'Rabbit control: past, present and future'

Australia has been blighted by rabbits ever since their introduction. Dr Peter Kerr of CSIRO, follower in the work of Bernard Fennessy, discusses past control research and methods, concerns about the current rabbit resurgence as the pest develops immunity to the calicivirus, and what the future holds.



Cafe Scientifique

Floresco at the Gardens Cafe

Lively and social science discussions facilitated by expert speakers. Learn, engage and consider a range of environmental science issues. Special Tapis menu available Friday nights and Gourmet Hamburgers on Wednesday night. Free admission

Cafe 1 - Friday 10 August

Climate Change: Threat or Theatre?

Cafe happy hour from 5pm, with presentation from 6pm

Cafe 2 - Wednesday 15 August

Exam time stress and the natural cure

Cafe opens at 4.30pm with presentation from 5pm

Cafe 3 - Friday 17 August

Benefit of foods with local

footprint: fact or fallacy?

Cafe happy hour from 5pm, with presentation from 6pm

Thursday 23 August 12.30 pm

Tony Bartlett 'The role of

collaborative forest research

in enhancing livelihoods in the Asia-Pacific'

ACIAR's Tony Bartlett will describe tree research projects with a focus on projects involving the use of non-timber forest species, including developing plantations of sandalwood in North Queensland and Vanuatu, and the domestication and commercialisation of high value *Canarium* nuts in PNG.



Sunday 26 August 2.00-4.00 pm

Winter Tales at the National

Library: Dr Judy West

The winter tales are a fundraiser for the Australian Women's History Project which gathers and puts online information on Australian women. Talk in conference room, 4th floor.



Thursday 30 August 12.30 pm

Dr Michael Lenz 'Lake George – a refuge for waterbirds'

Michael Lenz, CSIRO Honorary Fellow and long-time member of Canberra Ornithologists Group who has done many waterbird surveys over many years, will describe observations made of waterbirds at Lake George through the recent drought.

SEPTEMBER

1 September - 14 October

Drawn Together Exhibition

Visitor Centre Gallery

An exhibition of stunning artwork inspired by the native landscape including wood carving, wood block prints, textile art and screen printing

Thursday 6 September 12.30 pm

Ben Walcott 'Visiting this year's Royal Chelsea Flower Show'

This year keen local gardeners Ben and Ros Walcott toured the gardens of Italy and also visited the Royal Chelsea Flower Show. Ben will provide an illustrated talk about the Show.

PRELIMINARY NOTICE



HMR

Breakfast with the birds

September:

Saturday 22, Sunday 23

Saturday 29, Sunday 30

October:

Saturday 6, Sunday 7

Saturday 13, Sunday 14

Meet at Visitor Centre at 7.45 am

The ever-popular Breakfast with the Birds returns for another season. This is an excellent opportunity to have early morning access to the Botanic Gardens to view birdlife with a knowledgeable guide, followed by breakfast in Floresco Café in the Gardens. The new *Birds of the ANBG* brochure will be available to participants.

Details of pricing and how to book will be on the Friends' website from early August – go to www.friendsanbg.org.au and follow the link from the homepage. Details will also be provided in an Occasional Newsletter to be sent to all members in August.

Thursday 13 September 12.30 pm Dr Peter White 'A View from the ANBG 200 years ago'

The ANBG was the home of Aboriginal people for 25,000+ years. Archaeologist Peter White discusses how these people may have lived, how they obtained their living from the environment and the still visible traces of their lives.



HMR

Thursday 20 September 12.30 pm Dr Ben Wallace 'An Australian Garden in China'

The Chinese Academy of Sciences asked Ben Wallace to create a garden in the Ben will discuss this very diverse garden, opened in 2000.

Tuesday 25 September 5.30pm 24th AGM of the Friends

Details In Friends Briefs page 15.

Thursday 27 September 12.30 pm David Young 'The Moghul Gardens of Kashmir'

Horticulturalist and former Patron of the Friends, David will tell us how the Moghuls headed to the Kashmiri hills each summer 350 years ago to escape the oppressive heat of Delhi and constructed magnificent pleasure gardens.

28 September – 12 October Canberra in Action

An exhibition of student photographs depicting their meaning of Canberra. Various outdoor locations in Gardens.

Thursday 4 October 11.00 am

Friends Only tour of Parliament House
See Friends Briefs page 16 for details

Thursday 4 October 12.30 pm Peter Byron, 'Red Centre Garden –from concept to construction'

General Manager Peter will discuss the design and implementation of the Gardens' biggest project, the Red Centre Garden.

Sunday 7 October 10am & 1pm Orchids walks on Black Mountain

Join Tony Wood to learn about spring flowering native terrestrial orchids. Wear sturdy shoes, bring a hand lens. Numbers limited to 15 so early booking essential on 6250 9540 indicate which of the walks you would prefer (the afternoon is a repeat of morning). Meet at the car park on Caswell Drive (head south towards Glenloch interchange)

Thursday 11 October 12.30 pm Dr John Passioura 'Perennial plants living with limited water'

CSIRO Plant Industry's John Passioura will discuss how plant communities interact with surface hydrology, and shape landscapes, considering kangaroo grass, mallee, jarrah, and mulga in this context. Eg, conversion of kangaroo grass to 'improved' pastures resulted in farm dams drying up.

Saturday 13 October 9.30 am to noon (or later). Black Mountain Wildflower Ramble

Celebrate spring wildflowers on Black Mountain, in the annual Burbidge/Chippendale walk. Peter Ormay, Laurie Adams, Isobel Crawford and Jean Geue will lead the walk. BYO morning tea, hat, sunblock, water and stout shoes. Please contact Jean on 62511601. Belconnen Way entry, just before Caswell Drive turnoff (look for the balloons).



HMR

Sat 13 - Sun 14 October Canberra Institute of Botanical Art Workshop Crosbie Morrison Building

Creating a collections sampler. Cost applies. Booking essential. Visit www.bibart.com.au/ciba/workshop/

Thursday 18 October 12.30 pm Paul Janssens 'Managing the Parliament House landscape with biological controls'

Parliament House has 23 ha of grass ramps, courtyards and native gardens. Paul, Assistant Director Landscape Services, will discuss the management of this landscape, including the Integrated Pest Management program.

**19 October – 18 November
School Photographic Exhibition
Visitor Centre Gallery**

Friends annual exhibition of student photographs taken in the Gardens

PLANTS FOR SALE

**Saturday 20 October. 8.30-2pm
ANPS Spring Sale
Southern Car park ANBG.**

**Thursday 25 October 12.30 pm
Edwina Robinson 'The ACT's
inner north wetlands'**

Edwina, Urban Waterways Coordinator, talks about design and construction of Sullivans Creek and Gungahlin wetlands and her work with engineers, landscape architects, civil construction companies and the community.

NOVEMBER

**Thursday 1 November 12:30 pm
Dr Lydia Guja 'Oceanic dispersal:
can seeds survive and germinate
under new environmental
conditions?'**

Charles Darwin was among the first to hypothesise and experiment with oceanic dispersal. Lydia Guja, recently appointed to CANBR and the ANBG, will discuss recent WA research on the oceanic dispersal and salt tolerance of native seeds.

**Thursday 8 November 12:30 pm
Stephen Speer 'Spying Eyes
in America – Learning from
the Smithsonian and botanic
gardens in the US?'**

After a recent visit to observe the Smithsonian's engagement with students and teachers, Stephen will discuss what he and other educators learned and what the Gardens can learn from US botanic gardens.

Thursday 8 November 10.00 am

Friends Only tour to ANBG Nursery
See Friends Briefs page 16 for details

PLANTS FOR SALE

Saturday 10 Nov 8.30-11.30 am

Propagated, tended and sold by the Growing Friends from material from the Gardens. In the car park behind the Crosbie Morrison Building. See page 16 for details of some of the plants for sale

**Sat 10-Sun 11 November
Canberra Institute of Botanical
Art Workshop
Crosbie Morrison Building**

Onions and garlic. Cost applies Bookings essential www.bibart.com.au/ciba/workshop/

**Thursday 15 November 12:30 pm
Dr Joe Miller 'Evolutionary and
spatial diversity of the Australian
flora'**

New research on evolutionary relationships combined with spatial data allows us to identify areas containing high (or low) levels of biodiversity that may have been missed when only species counts measured biodiversity. Joe will describe the research and show examples from many large Australian plant lineages.

Thursday 22 November 12:30 pm

Details for this session will be provided on the Friends' website.

**Thursday 29 November 12:30 pm
Ross Bennett 'Reptiles and frogs
of the ACT: how to stop worrying
and love snakes!'**

Ross Bennett will provide an overview of our local herpetofauna, some historical insights into their status and an opportunity to dispel myths surrounding snakes in particular. He will bring a couple of his 'friends' to illustrate some points.

Friends' Benefits

As a Friend you are entitled to:

Three issues of *Fronds* a year
Free parking pass
Botanical Bookshop – a discount on most items
Discount at Floresco cafe

You also get:

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

And opportunities to:

Join Botanical Art Groups, Growing Friends, Photographic Group

Assist with Gardens research projects

Become a Guide or an Education Ranger

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.

*The
Botanical
Bookshop*

www.botanicalbookshop.com.au

always welcomes Friends!

**A 10% discount is
offered:**

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