Dear Friends

What tremendous differences we have seen at the Arboretum over the past three months?

Over 130,000 visitors have enjoyed the new Village Centre and the Arboretum itself—how fantastic? For the Friends, ‘business’ has really been changing. Our 110 trained guides have swung into action and received a great deal of praise for their professionalism and friendliness while making the ‘visitor experience’ truly unique. Our tree measurers now continue their work under the gaze of the general public—with vests that advertise the work of the Friends. The Bonsai explainers facilitate the enjoyment of thousands of visitors to the wonderful collection. And as the new Arboretum team takes on all the challenges of running the Arboretum, Friends are there to offer support.

New activities have become possible. As I write this, there are over 60 members ‘secretly’ creating the knitted material to cover the trunks of selected groves of trees for a temporary art installation—Warming Trees—that will take place in July. This will provide a very different winter activity at the Arboretum, particularly for children (we plan to have treasure hunts available on weekends and during the school holidays, all managed by Friends’ volunteers). This initiative has clearly appealed to the many members who are already knitting their own ‘works of art’, but it is not too late if you would like to participate—just contact us at friends@arboretumcanberra.org.au or phone me on 0406 376 711.

I asked for people interested in working as meeter/greeters at the visitor centre and more than 60 Friends are now on the list. This role will evolve as the Arboretum settles its business planning into the future.

Over 20 people are interested in planning what to do with the products that can be harvested from the forests. We plan to have the first meeting for the harvesting group in June. Although there is a considerable lead time before some harvests become available, we can still make great plans!

And the next training sessions for guides will be held in July—already 30 new people have registered an interest in training to become guides.

So our wonderful members continue to make many great contributions to the ongoing development of the Arboretum.

A key issue for members is the arrangement for parking near the visitor centre. The Council is in discussions with the ACT Government about a beneficial arrangement. In the meantime just remember that the revenue raised from parking goes directly towards the development of the Arboretum. Some people have written to me about parking fees and I am very happy to receive your views.

The Pavilion was officially opened on 6 May (see page 5) and bookings have now closed for the Friends’ first function there: a ‘Celebration’ on 24 May. Our raffle will be drawn that evening and this will be a wonderful opportunity for 120 Friends to get together and enjoy this unique facility in our favourite surroundings.

So much to do and so many choices. Is there enough time for it all, I hear you ask? Yes, I think there is. Whichever way you are involved with this wonderful Arboretum, you can be sure that there will be many more diverse activities in the years ahead. As I said at the formal opening—this is just the beginning!

See you at the Arboretum!

Jocelyn Plavits
Chair
Friends Forest: Planting Stage 2

BY JOCelyn Plovits

On 13 April 2013, a beautiful sunny day, 85 eager and willing Friends gathered in the Friends Forest (Forest 100) to plant more trees and this number of Friends was the most we’d ever had at a working bee!

It was wonderful to see that the trees we planted in Stage 1 were doing so well but there were a few which had succumbed and needed replacing. Also the Arboretum’s Horticultural Manager, Adam Burgess, had suggested that the forest should be planted more densely as found in nature, so 98 trees were planted on the day.

The Friends Forest is situated at the southern end of the Arboretum, next to the back fence. The first planting was undertaken by 75 enthusiastic volunteers on 4 July 2010, a sunny but much colder day. Drooping she-oak (Allocasuarina verticillata) trees were chosen for this forest (in collaboration with the Arboretum) because of its importance as a food source for a threatened bird species—the Glossy Black-Cockatoo. We were advised about the need for these trees by the Canberra Ornithologists Group, and this year our trees were supplied by Greening Australia which is organising for more drooping she-oaks to be planted in other parts of the Canberra region.

Particular thanks go to Max Bourke and the Arboretum team, without whom this event would not have been possible, to the Friends who were just there to help, and to Colette Mackay for organising the refreshments.

We do not expect to have such a large activity in this forest again, now that all the planting is done, but there is an opportunity for up to 20 members who could help Max with maintenance twice a year. We may also need to have additional working bees in this forest, so if you are interested in participating in these activities, please contact me on hackman@grapevine.com.au or mob: 0406 376 711 and I can advise Max who can contact you at the relevant time.

Donations to assist with costs for the forest are always welcome and can be tax deductible.

A full list of all the members who have helped plant this forest (in Stage 1 or Stage 2), will be put on our website: www.arboretumcanberra.org.au.

Max instructing the troops.

Next, collect your tree, your tools and your tree-guard.
The tube-stock looked so very tiny when compared with the Stage 1 plantings!

Helpers came in all shapes and sizes. There were also the young and the not so young.

Most people found that planting the tree was easy, but erecting the tree-guard and knocking in the stakes was another matter.
More about the Glossy Black-Cockatoo

Information contributed by Max Bourke

The Friends Forest of drooping she-oaks (Allocasuarina verticillata) is a species which is wide-spread around the southern tablelands, including the hills around Canberra such as Mt Majura and Mt Ainslie. This species was chosen for a specific purpose as it happens to be the preferred food source of a truly beautiful member of the parrot family: the Glossy Black-Cockatoo (Calyptorhynchus lathami).

While the male has red under-tail feathers it is not nearly as conspicuous as the Red-tailed Black Cockatoo (Calyptorhynchus banksii). The Red-tailed is found in very large noisy flocks, mostly in northern Australia and inland areas. The Glossy Black-Cockatoo is smaller, travels in quite small flocks and is very picky about its diet. It feeds virtually exclusively on the seeds of drooping she-oaks. When the birds can find these trees with cones they spend much time quietly feeding on them. The females have variable irregular patches of yellow around their neck and face and their under-tail feathers show a mixture of red and yellow, rather than straight red.

The Glossy Black-Cockatoo’s range is from southern Queensland to northern Victoria. Sadly, clearing of their habitat for grazing and urban development has put this species under enormous pressure and it is now listed as ‘Vulnerable to Extinction’.

Greening Australia has worked in partnership with Kosciusko to the Coast to receive support to grow and plant 100,000 drooping she-oaks in Canberra, Queanbeyan and the Cooma region. The Friends Forest has received some of these seedlings.

At this planting, a technique of dunking the seedlings in a bath of sandy soil collected from around healthy drooping she-oaks was adopted. This was done to ‘inoculate’ the young trees with fungal spores from healthy trees so that they can develop the necessary structures to enable them to grow vigorously.

So this forest is truly one for future generations—of Glossy Black-Cockatoos!

Note. This species was first described in 1807 by Coenraad Jacob Temmick, a Dutch naturalist. Its scientific name honours John Latham, the English ornithologist (Ed.).
The Pavilion is open!

BY LINDA MULDOON

The opening of the Pavilion on 6 May 2013 was a low-key occasion, although it was well-attended by representatives of both levels of government.

Kiri Sollis played the flute, silhouetted against beautiful Canberra, while we waited for things to get underway.

The speakers were Jeremy Lasek, Canberra Centenary Executive Director; Katy Gallagher MLA, ACT Chief Minister; The Hon. Catherine King MP, Minister for Regional Services, Local Communities and Territories; and Jocelyn Plovits, representing the Friends and the community.

Nicholas Whitlam, son of Gough and Margaret Whitlam, attended the ceremony with his wife Judy and they watched as Katy Gallagher and Catherine King unveiled the plaque.

Margaret Whitlam died on 17 March 2012, aged 92. She is remembered as a conservationist as well as for many other attributes, and made the list of 100 Australian National Living Treasures as a social activist.

Below: Katy Gallagher sharing the view from the Pavilion with Nicholas Whitlam and Catherine King.

Bottom: Magpies come to all Arboretum ceremonies!
The Sultan of Brunei plants a tree

BY LINDA MULDOON

On 2 May 2013 His Majesty Sultan Haji Hassanal Bolkiah Mu'izzaddin Waddaulah of Brunei Darussalam joined Katy Gallagher MLA, ACT Chief Minister, to plant a *Trachycarpus fortunei* (windmill palm) in the Arboretum’s Central Valley.

As the Sultan was travelling with an all-male entourage of 30, the hosts were somewhat outnumbered by the guests, but there was much clicking and flashing of cameras by the visitors, so this ceremony must surely have gained media coverage in Brunei.

The Sultan has been *Yang di-Pertuan* (Head of State) since his coronation in 1968. Brunei is a small, oil-rich country that is located between Borneo and the South China Sea, with a population of about 417,000. *Trachycarpus fortunei* is native to central China, Burma and northern India. It grows to a height of 12–20m and can withstand heavy frosts.

The Sultan arriving at the ceremonial tree planting with Katy Gallagher MLA, ACT Chief Minister; and below, Katy Gallagher speaking prior to the planting with the Sultan and Gary Byles, Director-General of TAMS, looking on.

Above: The Sultan with one of his many photographers and Gary Byles behind him.

PHOTOS BY LINDA MULDOON

Above: The Sultan planting the palm with the Chief Minister.

Below: A grove of *Trachycarpus fortunei* palms growing in China.

PHOTO BY FANGHONG
Autumn comes again

Some trees, such as Persian ironwood and the dogwoods, have not put on their best display this autumn because their leaves suffered heat stress during those very hot days in summer.

But in general, autumn is getting more and more impressive as the trees get larger.

*From the top: silver birches, European beech, pinoak, callery pear, black tupelo and Yoshino cherry. PHOTOS BY LINDA MULDOON*
Bendora Arboretum (in our own backyard)

BY MAX BOURKE

Located at an altitude of almost 1300m (nearly twice that of Canberra), Bendora is the great survivor! Bendora can be found along the Mt Franklin Road, south of Bulls Head. Off to the left you'll find a narrow road which is usually closed but there is a good parking area at the locked gate. A 1.5km walk in the high country brings you to this last remaining arboretum of the 23 that were located in and around the Brindabellas prior to the 2003 fires.

The area's annual rainfall is 70% higher than that of Canberra and this is evidenced by the beautiful alpine ash (Eucalyptus delegatensis) and mountain gum (Eucalyptus dalrympleana) around the arboretum which also survived the firestorm (incidentally both these species are on the STEP site at our Arboretum, in juvenile form). But the high rainfall also means that conifer species which do not grow well in Canberra, like Douglas fir (Pseudotsuga menziesii) and some of the white pines that can handle heavy snowfalls, do well at Bendora.

In 1940 Charles Lane-Poole, then Inspector (Director) General of the Commonwealth Forestry Bureau, asked (Acting Forester) Lindsay Pryor to select the site and plant the first plots. Over successive years, species of pine, fir and other conifers including western red cedar (Thuja plicata) were trialled both in cleared areas and as understorey trees to the existing eucalypt forest. This was very much a scientific arboretum that was laid out to test species and hybrids of species for commercial uses.

Thanks largely to the efforts of the Friends of the ACT Arboretum (FACTA) which is an associate of the Friends of the National Arboretum Canberra, Bendora has been maintained and is now part of Namadgi National Park as a ‘heritage item’. Today it is a beautiful recreational site that is well worth a visit. FACTA occasionally does guided walks there and these will be advertised in this Newsletter. However it is open all year round and spring and autumn walks are highly recommended.

As you approach the site, you'll see a small hut, originally built as part of a road-workers’ camp, which is still maintained as a shelter. It contains a map of the layout of the arboretum and its plantings which will help you get your bearings before you set off for a walk through the trees.

This photo of European larch (Larix decidua) demonstrates why autumn is a special season at Bendora Arboretum.

(8)
Quercus robur
ENGLISH OAK

BY LINDA MULDOON

English oaks occupy Forest 82 which is a steeply sloping site, located next to the fence line on the southern side of Dairy Farmers Hill. These trees were grown from acorns collected at Palmerville Heritage Park, from oaks which are believed to be the oldest exotic trees in Canberra, dating back to around 1848.

Quercus robur is a large deciduous tree that is native to most of Europe, south-east as far as the Caucasus, Asia minor and parts of North Africa.

The Arboretum’s publications give its size to be 25m in height with a canopy width of 20m but this would seem to be a very modest estimate.

This species is not considered threatened but it is included in the Arboretum as an iconic tree. The Royal Botanic Gardens Kew describes it as “probably the most well-known and most well-loved tree species in Britain . . . the ‘king’ of the forest with the potential to live up to 1000 years with a height of up to 40m”.

When you look at photos of English oaks growing in Britain, they appear to be about equal in width and height or slightly taller than wide. But older oaks in Australia are usually distinctly wider than they are tall, and this is true of all ten oaks on the National Big Tree Register, with the exception of one growing in New Norfolk in Tasmania which is only slightly broader than it is tall, so perhaps latitude has an influence on their proportions. The oaks in Forest 82 will probably also take this broad form.

I have taken approximate measurements of the Palmerville tree in the photo below by measuring the

This is the most impressive of the English oaks growing at Palmerville (only about 10km from the Arboretum). The photo at the bottom of the page is of the same tree but looking from the area to the right of the wire fence.

PHOTOS BY LINDA MULDOON
length of my stride and then stepping it out. I estimated that the canopy (from the centre of the trunk to the tip of the branches) was 17m wide on the south side and 15m wide on the north side, making a total width of 36m. I measured the height of the black star pickets in the fence as 1.8m above the ground and I took a photo showing the entire height of the tree (including a star picket) so that I could work out how many times the picket height could be repeated up the tree. This gave me an approximate height of 24m.

I was unable to get a circumference of the trunk because it sits behind a fence, just a few metres inside CSIRO Experimental Farm land.

There is something magnificent and powerful about a tree that is so large and long-lived. It can make mere humans feel quite insignificant and transient.

If you feel inclined to check out this tree for yourself, Palmerville Heritage Park is the area on the western side of William Slim Drive, between the Belconnen suburb of McKellar and Barton Highway. The entry is off Owen Dixon Drive. If you walk north from the car park along the red granite path, you will come to a point where the path turns right. Here you need to follow the fence line around the corner and continue north for another 100m (a total distance of about 1km).

All Australian examples of old Quercus robur are young when you compare them with old trees around the world. The Majesty Oak in Kent is thought to be over 800 years old and it has a trunk circumference of 12.2m, the thickest trunk of any tree in Britain. Then there is a tree known as Kongeegeen (meaning King Oak) growing on the Danish island of Sjaelland. That is thought to be 1500–2000 years old, although the oldest known living tree in Europe is around 9550 years old. It is a spruce in Sweden, possibly Picea abies.

It is believed that English oak canopy growth slows down after 200 years. Thereafter, most of the growth goes into thickening the trunk and trees with enormous trunks usually have diminished canopies.

REFERENCES
www.kew.org
www.nationalregisterofbigtrees.com.au
www.en.wikipedia.org/wiki/Kongeegeen
The British history of English oak

By David Nicholls

English oak has arguably had more impact on Britain’s emergence as an 18th and 19th century international power, than any other botanical species. From this tree came the timber used to build the wooden ships of the Royal Navy at a time when they were needed to protect England’s maritime trade and their dominance was a paramount factor in the growth of the British Empire.

The common English oak, with a height of 15–25m, is the most common tree in the broad-leaved deciduous woods of southern and central Britain. Throughout Europe, oak has been the predominant source of timber since prehistoric times.

Historically English oak timber was also used for building and furniture-making. Other uses included making beer barrels and wine casks. A solution from the bark was used for tanning leather and apart from being a favourite food for wildlife, the prolific acorns were used for fattening pigs. Twigs and smaller branches were used for firewood and making charcoal.

Throughout Europe, oak trees have a long history associated with folklore. The oak was sacred to many peoples, including the ancient Greeks, the Norse and the Celts. Because of their height, oaks were often split by lightning, leading to them being associated with Thor, the God of Thunder. Oak was was the sacred wood burnt by the druids for their mid-summer sacrifices—in fact the word ‘druid’ means ‘oak-man’.

However, the use of oak for ship-building remains this magnificent tree’s greatest historical focus. Shipwrights had preferences for how it was cut and formed, its bulk measurement and its quality. Wherever possible natural bends in wood were used for ‘knees’ and angled parts. English shipyards preferred the natural strength of oak over ‘festered’ timbers. Oaks from areas of Northern Europe were fine for long straight planking but the gnarled English ‘Hedgerow’ oak was best for the curved timbers used for the ships’ internal strength. Trees were even deliberately bent in certain ways so as to ‘grow’ a certain set of curved timbers. These were known as ‘compass’ timbers.

Timber was measured by the ‘load’, with each load being equal to 50 cubic feet. The average oak tree yielded approximately one load which usually weighed about one ton. The number of loads required to build a line-of-battle warship (74 Guns) in the 18th century was around 3700, with no fewer than 1890 loads being ‘compass’ timber and 150 loads were needed for ‘knee’ construction. Planking which exceeded four inches was known as ‘thick stuff’ and 410 loads of this were used in the hull. In addition, 360 loads of three and four-inch timber planking were also used. English shipwrights were convinced that slow-growing oak (Quercus robur) was the finest ship-building material in the world. They narrowed this preference down to the oak grown in four English counties: Surrey, Kent, Sussex and Hampshire, with Sussex timber considered the best.

The amount of oak timber used for British ship-building in the 18th and 19th centuries was quite extraordinary. Imagine the demand of the Royal Navy transferred onto a landscape comprised exclusively of suitable mature oaks and estimate that about 50 large oaks could be grown on a single acre. A conservative historical estimate indicates an average use of 4000 mature trees for a single ship. Therefore the construction of a single ship-of-the-line would require the clearing of 80 acres of land.

In the year 1790, the Royal Navy had about 300 ships in its fleet. To build this navy, at least 1,200,000 good oaks would have been felled.

Above: The hull framing of military vessels required precise curvatures and to maintain strength the curve needed to be a natural characteristic of the timber used. Image from Pollitt:‘Wooden Walls’.

To this day, ‘Heart of Oak’ is the official march of the Royal Navy, reflecting the importance of the oak tree in its history. First composed as a 1759 opera by Dr William Bryce with words by David Garrick, it begins with this verse (Ed.):

Come, cheer up, my lads, 'tis to glory we steer, 
To add something more to this wonderful year; 
To honour we call you, as freemen not slaves, 
For who are so free as the sons of the waves?

CHORUS
Heart of oak are our ships, 
heart of oak are our men; 
We always are ready; steady, boys, steady! 
We’ll fight and we’ll conquer again and again.
FOREST TALK

FIRST FRUIT ON THE WHITE CEDARS

The *Melia azedarach* ‘Caroline’ trees in Forest 5 were planted in July 2012 but they have already flowered and many of them are now bearing attractive yellow/green fruits, but beware, the fruits and possibly the leaves are toxic.

WATERING THE WOLLEMIS

No, this dramatic scene is not from Middle Earth but just of non-productive clouds gathering on 7 May while water is being pumped to the sprinklers from the dam below. April was a very dry month so now the green grass we enjoyed for so long has been replaced with khaki shades—but aren’t the wollemis looking good?

EVE SAWA’S ‘MAGNIFICENTURY’ AT ANCA GALLERY

Hannah Semmler of the Arboretum team opened this exhibition of paintings (of Arboretum subjects, as part of Canberra’s centenary) on 8 March. The opening was well-attended by the public and some members of the Friends. Below are two of the paintings and Eve (in black) talking to Carol Owen, a member of the Friends, at the exhibition.

FACTA TO BECOME FACTT

The Executive Committee of the Friends of ACT Arboretum have decided on a name change to avoid confusion with our name. Over time they will become Friends of ACT Trees (FACTT) but will use their current name for now.

PROMOTING THE ARBORETUM AT THE ANGB

On 7 April members of the Friends manned a stand at the Family Picnic day at ANBG. From left to right: Ray Sloan, Margie Bourke, and Marie Plunkett-Cole (Max Bourke was also there but took the photo!).

PRAYING NOT TO BE SEEN

This praying mantis thought she looked just like a tree-guard stake!
2013 PROGRAM OF EVENTS FOR THE FRIENDS

- 24 May  Celebration at the Pavilion
- 8 June  Working Bee
- 11 June  Council Meeting
- July  'Warm Trees' installation
- From 5 July  City of Trees exhibition
- 10 August  Working Bee
- 13 August  General Meeting
- 10 September  Council Meeting
- 8 October  Council Meeting
- 12 October  Working Bee
- 12 November  General Meeting
- 30 November  End of Year Picnic

LIFE HAS ITS TWISTS AND TURNS!

Our tree measurers spotted this young weeping snow gum when returning from measuring a forest nearby. It seems to have finally worked out that the only way is up!

PHOTO BY LINDA MULDOON

FACTA WALKS IN WESTBOURNE WOODS ARBORETUM

- 9 June  Tree Domestication and Breeding: led by Alan Brown  Ph 6281 1569
- 8 July  Australian Trees in Westbourne Woods Arboretum: led by Warwick Wright  Ph 6281 3088
- 11 August  Trees Large and Small: led by Roger Hnatiuk  Ph 6251 2228

Free guided walks through the grounds of the Royal Canberra Golf Club. Meet at 9:30am at the gate, off Bentham Street, Yarralumla

No dogs allowed. For more information contact The Friends of ACT Arboretas on Ph 6251 4463.

TREE MONITORING SUB-GROUP PERIODIC REPORT 1 by Roger Hnatiuk

To date, 83 forests have been measured at least once. Of these, 77 have been measured at least twice using the new, statistically robust methods of Dr Cunningham (Fenner School, ANU). There has been a strong turnout of Friends’ volunteers this season and work progresses very well with this increase in support. About 15 forests have not yet been measured. Some of these are cued for work whilst others are waiting for planting plans from the Arboretum staff.

The major management issue for the program is the permanent marking of trees. Once under way, this could have a significant capacity to form the framework for collecting other diverse information and relating it to growth. For example, the weekly measuring of soil moisture for the management of Arboretum watering could be tied into the tree monitoring framework, thus greatly increasing the value of the soil-water measurements collected. Funding for the production of permanent markers is the major issue at this time, but proposals are being developed with the General Manager.

Roger supplying some shade while Yvonne uses a clinometer to measure the height of a silver birch. This method is used wherever trees are over 3m tall.
Membership application form

Please complete the form below OR go to www.arboretumcanberra.org.au where you can join online and make a secure payment.

Yes, I/we wish to join the Friends of the National Arboretum Canberra Inc.

1. Title .................. First name ..................................................................................................
   Last name ..................................................................................................

2. Title .................. First name ..................................................................................................
   Last name ..................................................................................................

Address .......................................................................................................................................
......................................................................................................................................................
......................................................................................................................................................
Postcode ..................................

Telephone (h) ..................................................(w)....................................................................

Email address ...........................................................................................................................

Do you agree to receiving notices of meetings via email?
YES/NO .................................. Date of application ............................................................

Please tick your relevant membership category:

☐ Single ($25.00) ☐ Association or club ($50.00)
☐ Concession ($10.00) ☐ Corporate Friend ($2000.00)
☐ Household ($30.00)

Memberships are due for renewal in December each year

Please tick your method of payment

☐ Cash   ☐ Direct deposit

☐ Cheque (cheques must be made payable to the Friends of the National Arboretum Canberra Inc.)

Details for direct deposit are:
WESTPAC, Petrie Plaza, Canberra, ACT
Account—Friends of the National Arboretum Canberra Inc.
BSB No. 032719 Account No. 375379
If making a direct deposit, please make sure that you record your name so that your membership can be verified.

Send applications to: The Secretary
Friends of the National Arboretum Canberra Inc.
PO Box 48
Campbell ACT 2612

Please remember to notify us about changes to your contact details

Contact

You can contact the Friends at friends@arboretumcanberra.org.au or via our website on www.arboretumcanberra.org.au or by phone on 0406 376 711 during business hours

Friends of the National Arboretum Canberra Inc.

OFFICE BEARERS
Jocelyn Plovits, Chair
Trish Keller OAM, Deputy Chair
Colette Mackay, Secretary
Richard Bear, Treasurer
Spero Cassidy, Web Manager

COUNCIL MEMBERS
Linda Muldoon, Publications Editor
Sherry McArdle-English
The Council (all of the above) meet on the second Tuesday of each month. We invite any member interested in joining the Council to contact us. We would definitely welcome more faces as we need five members for a quorum which is sometimes difficult to achieve.

LIFE MEMBERS
Sherry McArdle-English
Roger Hnatiuk

HONORARY MEMBER
Jon Stanhope

Newsletter

The newsletter is published quarterly. Please contact Linda Muldoon on lindaon@grapevine.com.au if you would like to contribute an article.

The Friends thank the ACT Government, ActewAGL, Supabarn and Yarralumla Nursery for their support.

Information prepared by the Friends of the National Arboretum Canberra Inc.
May 2013