



FRIENDS of the National Arboretum Canberra

NEWSLETTER

ISSUE 40 SEPTEMBER 2018



Dear Friends

The photo is of a New Zealand ceramic tile decoration featuring the Pohutukawa tree, the native Christmas tree of Aotearoa. If you visit the northern tip of New Zealand there is a small Pohutukawa tree which is venerated by Maori as 'the place of leaping'. However, I bought this tile at the Christchurch Botanic Gardens Gift shop quite recently which, like The Curatoreum, has exquisite giftware. The tile also reminded me of Warm Trees 18 and the pohutukawa project and all those cleverly made blossoms attached to the wire of the gabion walls in the cutting nearest the front door of the Village Centre. I know you'll see them again.

The Friends General Meeting on Tuesday, 4 September, had a full agenda and was well attended.

Our guest speakers were Dr Dave Kendal, senior lecturer in environmental management at the University of Tasmania and Associate Professor Cris Brack from the ANU. His project focuses on the effects of climate variability, climate change and water use in two different types of eucalypt trees at the Arboretum.

Australian cities contain millions of trees that provide amenity, important ecosystems services and habitat for birds and animals. There is a growing recognition that increasing temperatures due to urban heat and climate change are

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a threat to some tree species in our cities and will continue to present a major challenge to land managers across Australia. We heard how the speakers' current research and the results can assist in the creation of successful urban forests of the future.

The Friends submission regarding the value of the natural environment to urbanising Canberra was composed by Max Bourke AM and Roger Hnatiuk. It was lodged and received by the Standing Committee on Environment, Transport and City Services chaired by MLA, Suzanne Orr. It is a very powerful document and I commend it to you. It is on both the ACT Government and the Friends website. There will be public hearings next year.

In my recent travels to NZ I visited Dunedin, the Garden City down south. A visit to Glenfalloch Woodland Garden in Russell Bay on the Otago Peninsula, set in a natural glen, was a highlight. This old garden, begun in 1871, offers rhododendrons, azaleas, fuchsias and magnolias....all in full blossom and quite breathtaking. The Garden is a Garden of Significance identified by the NZ Trust for its prestigious gardens.

Another of the features that caught my eye was the Bridal Lawn. I couldn't help but think that a Bridal Lawn at our Arboretum would be a popular addition..... love seats, gazebo, urns, trellises, soft green lawn, rock walls, seating, hundreds of many coloured hellebores in the luscious surrounds of the lawn, tiny flowered pink and white camellia bushes, waterfall.....The Botanic Gardens in Singapore has a Bridal Lawn with a rotunda and a steady stream of brides and wedding parties queueing up to have their photos taken. If they can.....perhaps we can....

I highlighted the Strategic Plan in my Chair's Report. As you all know, our Friends purpose and key role is to support the Arboretum in as many ways as we can. Previously Council had set many Strategic Plan targets and had been working to implement these over the past couple of years. It was heart-warming to be able to share the highlights with the meeting. They included the investment made in the Friends Garden up on Dairy Farmers Hill, (\$60,000); the \$20,000 investment in the planning of the 'Sky' Garden; the new membership brochure; the \$6,000 payment so activities can be organised by the NAC and Friends receive generous discounts; a slow but steady call for seats to be sponsored; the goodwill created by the Warm Trees Projects and the liaison with diplomatic partners, not to mention the

many, many knitters, old and young, who participated in this fun activity from all around the world.

The Strategic Plan will continue to be on the Council Agenda as the months go by.

Floriade will be an exciting time at the Arboretum, with amongst other things, Themed Forest Walks. All details are on the website.

Our next General Meeting will be in November and the Guest Speaker is Amelda Keys. She and her husband, Glenn Keys AO, are Canberra philanthropists and co-founders of Canberra-based Aspen Medical, a provider of healthcare solutions worldwide. They donated the Labyrinth Garden, a feature of the Gallery of Gardens. Amelda will talk to us about the Labyrinth and how it all came about.

See you at the Arboretum!

Trish

Trish Keller OAM
Chair



Colette Mackay

Life member

I want to thank the Friends for awarding me a life membership this year. Mary Arnold who now produces the Friends Newsletter has asked me if I could write something about myself and my involvement with the Arboretum.

I was born in St Margaret's Hospital in Sydney and came to Canberra at the age of nine with my family. Except for living a short time in Queensland as a teen I have lived since that time in Canberra. I am the eldest of eight children who all currently live in the ACT. I married John Mackay some 46 years ago and have three children and three grand children. I am a gardener, a walker and a golfer.



After the fires John was involved in the Shaping Our Territory Task Force which made recommendations to the Government that the site be developed as an Arboretum and the Chief Minister Jon Stanhope embraced the idea and the ACT Government funded the project. John became Chair of the first Board of the Arboretum.

John and I had just visited Butchart Gardens in Canada and we were both excited at the possibility of an Arboretum in Canberra. Back then Sherry McArdle-English (Inaugural Chair) and Jocelyn Plovits (working in ACT Government on the Arboretum) were involved in setting up the Friends. In 2007 Jocelyn took over as Chair at the AGM with Alan Phillips as Treasurer but no Secretary was endorsed. John came home and said: "The Friends don't have a Secretary!" and so I became Secretary. Seven years later I handed over to Del Da Costa and then took over from Jocelyn looking after donations and sponsorships.

I enjoyed my eleven years on Council immensely but decided this year it was time to have a break for family reasons. I am still involved in the Harvest Group.

A couple of years ago John and I decided to sponsor a garden. There had just been a competition to decide the design for the Celebration Garden sponsored by the



now defunct Open Garden Scheme. One of the designs was based on a local Aboriginal story "Mununja the Butterfly Garden". We joined with the Waldren family to sponsor the Garden. I was particularly pleased that we were able to involve the Mununja story author's family in the opening ceremony.

It has been an honour and a delight being involved in the development of the Arboretum. It is such an exciting and inspirational project. I think over time it will become hugely valuable to the ACT as a tourist destination not only for its unique design and beauty as a venue but also for its scientific interest. I can recommend getting involved ... it is such fun getting to know so many generous people ... in my case, being an active Council member, guiding, joining in the fig harvest, making jam for market stalls or occasionally helping Ange McNeilly

in the Discovery Garden. I am proud of what has been achieved in a short time. This couldn't have happened without our volunteer effort.

By Colette Mackay

Ceremonial planting



His Excellency General the Honourable Sir Peter Cosgrove AK MC (Retd), and Her Excellency Lady Cosgrove

His Excellency General the Honourable Sir Peter Cosgrove AK MC (Retd), Governor General of the Commonwealth of Australia and Her Excellency Lady Cosgrove planted a Golden Wattle (*Acacia pycnantha*) Australia's floral emblem, to highlight National Wattle Day, along with four Islamic School of Canberra students who presented a basket of wattle to their Excellencies. Some last-minute creative adaptations were made to the location of the event to accommodate some very harsh weather conditions



Students from the Islamic School of Canberra with their Excellencies

Wattle Day

To celebrate Australia's National Wattle Day on Saturday 1 September 2018, 120 Golden Wattles trees were kindly donated by the National Wattle Day Association and planted by volunteers from both the Friends of the National Arboretum Canberra and the National Wattle Day Association.



National Bonsai and Penjing Collection

Winter in the Collection by Mike Woolley (continued)

In the previous edition of the newsletter there was a description of some pruning activity that occurs on deciduous trees during winter in the bonsai collection. Towards the end of the description was the following sentence.

'The roots are also growing, gradually filling the bonsai pot and will also require pruning attention to keep the tree healthy.'

It turns out that another late winter bonsai activity is the re-potting of a number of the deciduous species that are the 'early risers' from their dormant state. Depending on local climatic conditions, this is often the maples and elms. A close eye is kept on the buds of deciduous species in choosing the best time to re-pot. The ideal time is just as the buds are beginning to swell – but before they open or any colour of the new leaves is visible.

Bonsai trees are not re-potted every year, only when their roots are beginning to take up too much room in the pot, reducing the ability of the potting medium to retain moisture and nutrients and thereby impacting the health of the tree. Some of the indicators that this is occurring are that

- the water is not penetrating the pot – it just runs off the top of the pot or down the sides and out through the drainage holes in the bottom of the pot
- the potting medium is lifting above the rim of the pot because the roots are becoming too numerous and large, or
- the tree is losing its normal vigour – healthy green leaves and strong growth.

It is not uncommon to remove (prune) up to 50% of the root mass when re-potting deciduous trees if they are normally a vigorous grower. The actual amount of root mass removed will vary however according to what growth is visible once the tree is taken out of the pot. Generally, all the roots are uniformly shortened and larger diameter roots are cut back to a point where a more appropriate size root is available. The aim of root pruning is to cause the tree to grow a new set of roots which are more efficient 'feeders and drinkers' and will allow the tree to gain (or retain) vigour, allowing ongoing pruning and styling above ground (keeping the tree small).

The following images were taken while re-potting a trident maple (*Acer buergerianum*) which is newly on loan to the Collection. The tree is about 35 years old and was initially grown in the ground to develop the large base, taking care to keep a lower branch from which to develop a new canopy. It was then reduced to

that point from a height of about 4 metres, given a quite severe root prune and then placed in a large pot to recover.



Fig 1-Tree before removal from its pot. A blade has been run around the inside of the pot to release the roots from the sides allowing the tree to be easily lifted out.



Figs 2 and 3- Tree after removal – showing the roots that

have assumed the shape of the pot. The white roots are the new growth that has commenced on existing roots as the tree starts to wake up to enjoy spring. Note the black plastic mesh that is used to cover the two large drainage holes that are in the bottom of the pot.



Figs 4 and 5 - With trees this size, re-potting is often a two-person job. The root pruning process can often involve surprising techniques. The use of a root hook is usual to tease out the roots which are then cut back with heavy root scissors or shears. When a large portion of root mass is to be removed, it is not uncommon to use a saw or a (spare) bread knife. It is not necessary to bare root the tree.



Figs 6 and 7- After the roots have been reduced to a desired length and some tidying of the surface roots also undertaken to enhance the base of the tree as the roots enter the growing medium, it is replaced into its pot with new growing medium introduced.

It is normal to use the same pot when re-potting as it has been chosen by the artist to complement the style, species and size of the tree, a bit like a picture frame is chosen for a painting.

In the case of this re-potting exercise the artist preferred to use their own potting medium and being close to Canberra, was able to come in and re-pot the tree himself. The potting medium in this case is a processed, clay-like, product formed into various sized balls and must be imported to Australia. It provides a very good balance between water retention and drainage.

When it comes to re-potting the Collection trees, it is more often the case that the curator, Leigh or his assistant Sam, manage the re-potting process and use a potting medium developed locally to suit both the Canberra conditions and a wide range of tree species.

After the re-potting is completed, the tree is given a thorough watering. This is followed by an application of a seaweed extract to assist the new root growth. Within a week or two, new roots will be growing and the swelling and opening of the new buds will continue. This is the indication that the re-potting was successful and that the tree can go on display. During this settling in period, the tree will be watered so that the potting medium remains moist.

The tree won't normally be fertilized until it has developed its first flush of leaves during spring as there will have been sufficient 'energy' stored in the tree during its dormant period to carry it through the spring. Fertilising at this stage risks overloading nutrient and causing damage to the tender young roots that are forming.

If you get the opportunity, make a visit to the Collection during September as the days warm up to see how the various deciduous trees are springing into life.



WESTONBIRT Arboretum

By Sandra Linsley

In June this year I visited **Westonbirt Arboretum** which is located in Gloucestershire about 3 miles southwest of the town of Tetbury. The Arboretum is managed by the Forestry Commission and is regarded as the most important and widely known arboretum in the United Kingdom.

History

The history of Westonbirt is dominated by two men, Robert Stayner Holford (1808 – 1892) and his son George Lindsay Holford (1860 – 1926).

Robert Holford, a wealthy landowner, began planting in the 1850's in a style influenced by William Sawrey Gilpin – a leading practitioner of the Picturesque landscape movement. Trees were arranged aesthetically rather than by a geographical or botanical system thereby creating the unique landscapes which include stately avenues and beautiful vistas as enjoyed by visitors today.

The Arboretum passed to the care of the Forestry Commission in 1956, the government agency responsible for managing Great Britain's public forest estate, and was opened to the public in 1961. At this time the 'Collection' was mapped and catalogued for the first time and these records form the basis of the current computer-based GIS database of the Collection.

In 1985, The Friends of Westonbirt Arboretum was

group of enthusiasts and has grown to over 28,000 members. Members make up the majority of the 300 volunteers who support

almost all areas of the arboretum's work, similar to the work done by our own volunteers.

In recognition of Westonbirt's significance, it was awarded the Status of National Arboretum in 2001 and is also a Grade One Listed Landscape of International Importance on the English Heritage's Register of Parks and Gardens.

Records show there are around 360,000 visitors per year, peaking in autumn when up to 10,000 can come in one day.



The Welcome Building opened in 2014

The Arboretum

The Arboretum claims to have some of the tallest, oldest and rarest trees and shrubs in the

country. The collection contains over 18,000 numbered specimens representing more than 3000 different kinds of trees and shrubs, all set within 600 acres of beautifully landscaped grounds.

The arboretum can be split into two main areas, each with its own distinctive character: The Old Arboretum and Silk Wood.

Westonbirt works within a wider network of botanical gardens, such as the Royal Botanic gardens at Kew and Edinburgh, which cooperate in national and international initiatives and conventions for plant conservation. This covers a wide range of activity from growing and exchanging endangered species to communicating the threats to trees and forests.

My experience

It soon became obvious to me that it is not possible to see everything at Westonbirt in just one visit. I was there with my friends because they wanted to exercise their dog in pleasant surroundings.

On leaving I visited the education centre and talked to a Volunteer Guide only to learn about some of the other attractions I had missed, including:

- their Wollemi pines (one planted by David Noble himself); or
- one of Britain's oldest trees, a small-leaved lime (*Tilia cordata*) which has been managed as part of a coppice

rotation dating back centuries.

Maybe next time I will go in autumn when thousands of Japanese maples, Persian ironwoods and American hickories, put on their wonderful displays of colour; or perhaps in spring, when there are large tracts of magnolias, rhododendrons, camellias and azaleas in bloom.

Interesting Facts

- Westonbirt cares for five national collections: Japanese maple cultivars, maples, bladdernuts, limes and the walnut family.
- Each year 4000 seeds, cuttings and plants are propagated in Westonbirt's propagation unit.
- Around 100 species grown at Westonbirt are threatened in the wild (IUCN Red List).
- There are more than 27 kilometres of roads, rides and paths in the arboretum.
- The tallest tree at Westonbirt is a grand fir measuring 43.5 metres.
- Five genera of deciduous conifer grow at Westonbirt: larch, swamp cypress, dawn redwood, golden larch and Chinese swamp cypress.

The STIHL Treetop walkway, opened in 2015



TREES IN FOCUS

Podocarpus totara

TOTARA

The botanical name, *Podocarpus totara*, is blend of the Greek *Podocarpus*, referring to the foot stalk of the fruit, and *totara*, the Maori name for the tree. At the Arboretum it is co-planted in Forest 64 with the *Sophora microphylla* or kowhai which was featured in the previous Newsletter.

GENERAL CHARACTERISTICS

The totara is a medium-to-large forest canopy tree. A mature totara tree reaches up to 30 metres, although this takes over 100 years. The leaves are about 2cm long, narrow at both ends and are dull brownish-green. They are stiff and prickly to touch. Like all podocarps, totara trees have cones – male and female cones grow on separate trees. In autumn the female trees produce tiny green seeds which grow on top of the distinctive juicy red base. This is particularly attractive to birds.



HABITAT

The totara is found in forests in both the North and South Islands, although it is most common in the northern half of the North Island. It is a particularly hardy tree, and will grow in almost any soil and situation. It is tolerant of both wet and dry conditions, and can withstand windy sites. Totara is a common sight in paddocks in Northland, where it survives because stock don't like to eat the prickly leaves.

After the kauri, the totara may be the longest living tree of the NZ forest – attaining an age of 1000 and more years.



A mature tree in Anzac Park, Norsewood NZ

USES

This tree was highly prized by the Maori. The heartwood is very durable and could be readily split and shaped with stone tools for canoes, building, and carving. The huge Maori *waka taua*, capable of carrying 100 warriors, were often hollowed out from a single totara log. It was also used for large carvings and framing for *whare* (housing). A pointed totara stick could be scraped on a slab of softer wood such as mahoe to make fire. Medicinally, the smoke was a cure for a skin complaint, and boiled bark was used to reduce a fever. A valued food, the Maori collected the bright red fruit which are sweet and juicy with a slightly piney flavour. Since European times, huge areas of totara have been felled to supply general building timber, railway sleepers, telephone poles.



Mary Arnold

Keeping in STEP

The continuing dry weather has meant all hands on deck with watering over the last month and a half. While some of us have been busy with this task, Jens Svenssen has been conducting his annual tree measuring. This a time-consuming task but heights have been made easier with the use of a high tech infrared measuring instrument. More time consuming is the girth measurement of each tree at a height of 1.3m. There are approximately 430 trees so Jens and his helpers are to be congratulated for their efforts. A report on the years of tree growth statistics since 2009 is being prepared for our 10 year celebrations next year.



Instead of our usual mid-Winter Seminar, this year we went for a ramble around the Arboretum. Led by Max Bourke and Jennie Widdowson, it was a very instructive and enjoyable outing. The group began at the Gallery of Gardens, then proceeded past the top of the Wollemi pines down the valley and up along the edge of the deodars to look at the Chinese magnolias (hidden between other magnolias). From there we made our way to the *Acacia pycnantha* patch and into the cork oaks. After that we climbed the gate and went cross country to a point above STEP. Next stop was coffee at the Village Centre to celebrate a wonderful day out. Thank you to Max and Jennie for their excellent commentary.

We have been fortunate to be able to expand our contact with the CIT. Students under direction of Jamie Barney and Hannah Selmes are in the process of conducting soil sampling across STEP. In discussion with STEP they have set up a grid pattern for sampling sites, testing for pH, electrical conductivity, bulk density and soil moisture. We are hopeful that the results of their work will be useful in determining best places for planting particular species.

Wattle Week is upon us but the wattles at STEP apparently were not told. They are rather slow this year. Suzette Searle conducted two wattle walks on Saturday 1 September and Jennie Widdowson took one the following weekend. The only one I could find in bloom last Thursday was *Acacia genistifolia* - appropriately also known as "Early Wattle".



Spring brings a great range of plants in bloom. I hope you are able to visit and see them.

Judy Smith

President STEP

#BeesInTheTrees Series

The National Arboretum Canberra, in conjunction with the Friends, is offering an awesome series of topical workshops presented by Canberra Bees, and showcasing aspects of bees and beekeeping. The series comprises 5 workshops, one of which is suitable for children aged 8-15 years:

- Bee-haviour: An Introduction to bees and beekeeping - **Saturday 6 October** - 9.30am-12.30pm
- Bee-haviour for kids - **Thursday 11 October** - 10.00am-11.30am
- Bee-friendly Gardens - **Thursday 24 January 2019** - 5.30pm-7.00pm
- Beyond Honey - **Saturday 9 February 2019** - 1pm-4pm
- Honey Appreciation - **Sunday 3 March 2019** - 10am-11.30am

For more information and booking details check the Friends website [here](#)

While we are on the topic you might like to catch up on this article by Susan Parsons in the Canberra Times about Stephen Pickard and the Mt Majura honey, and other bee-related stories.

"Kitchen Garden: what's the buzz around Mt Majura honey"

2019 Friends Calendar

The popular National Arboretum Canberra 2019 calendar is now available. As usual it's packed with gorgeous photos and information about the Arboretum's forest species. ACT and NSW school holidays are also included. A great souvenir or gift.

Available through our [online shop](#) or at the Curatoreum gift shop in the Village Centre.

\$10 including postage

Friends of the National Arboretum Canberra Inc

Office bearers

Trish Keller OAM (Chair)
Mike Woolley (Deputy Chair & NBPCA representative)
Lynley Rees (Treasurer)
Del Da Costa (Secretary)

Council members

Cherie Whan (Social Media Manager)
Lainie Shorthouse (STEP representative)
Mary Arnold
Helen Hemphill
Sandra Linsley
Jan Morgan
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Life Members

Max Bourke AM and Margie Bourke
Roger Hnatiuk
Sherry McArdle-English
Colette Mackay
Linda Muldoon
Jocelyn Plovits

Honorary member

Jon Stanhope AO

Patron

John Mackay AM

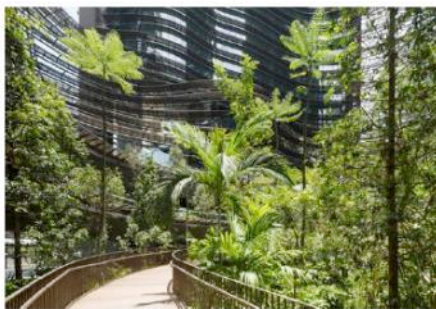
Contact us

via email at: friends@arboretumcanberra.org.au

Newsletter

Please send contributions to Mary Arnold
maryarno@gmail.com





iconic hilltop landmark that has witnessed many of Singapore's historical milestones. This historic place was once home to Malay royalty and it's where the British decided to surrender to the invading Japanese during WW II. Afterwards we'll explore **Serangoon Road, Little India's** central strip that boasts a plethora of jewellery shops, traditional Indian tailors, everything-must-go fashion outlets, fresh fruit and veg stalls, Chinese liquor stores, beauty salons, and of course, row upon row of delicious curry houses. Our Peranakan-style farewell dinner is at the **National Kitchen by Violet Oon** at the National Gallery.

(B, D)

Day 7 Sat 23 March

Depart Singapore

Tour arrangements finish after breakfast. Make your own way to airport for your departure. (B)

Tour Prices (Per person, land only)

Twin share: \$3,350

Single room: \$4,385

Tour price includes 6 nights accommodation in 5-star hotel; 6 breakfasts, 2 dinners and 1 high tea at Raffles Hotel; air-conditioned coach throughout the tour; entrance fees to all gardens and sightseeing as outlined in the itinerary.

Not included: International flights; travel insurance; personal expenses and anything not mentioned above.

Fitness Level - Moderate

About Your Tour

Join Kim Woods Rabbidge in cosmopolitan Singapore to celebrate the tropics. A place where heritage, plus new, internationally acclaimed gardens are revered. Few countries in the 21st Century have put so many resources into gardens, generating opportunities and prosperity for residents, and horticultural extravaganzas for visitors from near and far. This 'City in a Garden' showcases the most innovative contemporary practices in the futuristic Gardens by the Bay. Giant tree-like towers generate solar power used for garden maintenance and for the spectacular evening light show. Marvel at vast displays of exquisite orchids; and be amused by our Bollywood Veggies eccentric hostess while dining in her Poison Ivy Bistro – a favourite weekend destination for locals. Foodies and collectors will love the buzz of markets. Take a reflective moment at historic sites important to Australia. Retreat to your 5★ Hotel at day's end.

Tour Leader



Kim Woods Rabbidge, behind the popular 'Our Australian Gardens' Instagram and blog ouraustraliangardens.com, is an award winning garden writer and photographer, and researcher and scriptwriter for OAG's DVDs. Her articles and photographs appear in several garden books, and national publications including *Gardening Australia*, *House & Garden*, and *RM Williams Outback* magazine. From 2005-2009 Kim was Qld Coordinator and National Newsletter editor for Open Gardens Australia. Kim is the President of the Horticultural Media Association Queensland.

For more detail contact **Opulent Journeys**

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Journeys that Take You to Far Horizons



Singapore Gardens Tour

With Australian Association of Friends of Botanic Gardens

17–23 March 2019



Journeys that Take You to Far Horizons



Singapore Gardens Tour 17–23 March 2019

Day 1 Sun 17 March

Arrive in Singapore

Our tour commences from the hotel. A brief orientation once you've settled into your hotel. Welcome dinner tonight. (D)

Day 2 Mon 18 March

Singapore Botanic Gardens

After breakfast we visit the beautiful UNESCO World Heritage-listed **Singapore Botanic Gardens**. With a rich history, it is home to a n array of botanical attractions and a plant collection highly regarded around the world. We also look at the extraordinary 'orchid story' at the **National Orchid Garden**. Since 1928 the garden has been developing orchid hybrids, which has led to a nationally important industry. We will look at the growing process of one of the world's great collections. This afternoon we'll visit **Kampong Glam**, a bustling multi-ethnic precinct mixing traditional and contemporary businesses. (B)



Day 3 Tue 19 March

Bollywood Veggies & Singapore Zoo

We visit the beautifully designed **Kranji War Memorial** that honours the men and women who died in the line of duty during World War II. Maintained by the Commonwealth War Graves Commission, the gardens are in keeping with the guidelines set out by Edwin Lutyens and Gertrude Jekyll.

Next, we head further into the countryside, for a tour and lunch at **Bollywood Veggies** and step back to Singapore's lush history. After lunch visit **Singapore Zoo** an award-winning wildlife park to see animals roaming freely in natural habitats. Set in 26-hectares, it is home to over 300 species of mammals, birds and reptiles, and has been providing exciting wildlife experiences to visitors for over 40 years. (B, L)

Day 4 Wed 20 March

HortPark & Khoo Teck Puat Hospital

We visit **HortPark**, a 9-hectare site used as a valuable education facility for Singapore gardeners. It has a range of specialised gardens, sales facilities, and educational tours. Facilities like this reflect Singapore's priority on horticulture. Our next stop is **Khoo Teck Puat Hospital Rooftop Garden**. KTPH was designed for patient's wellbeing using biophilic principles. Greenery covers four times the footprint of the hospital buildings. Since opening eight years ago the community-at-large has been engaged, and nearby residents also enjoy the hospital's public spaces which is encouraged by KTPH. Programs such as line dancing, tai chi and Zumba

are regular occurrences, and volunteers (mostly retirees) tend the rooftop gardens alongside staff. Some produce finds its way to the hospital kitchens, and the rest is sold to help with costs. This evening soak in the beautiful experience of music and patterns of dancing light in **Garden Rhapsody** at Gardens by the Bay. Watch the iconic, towering Supertrees transform as the visual sensory extravaganza brings a touch of magic. (B)

Day 5 Thu 21 March

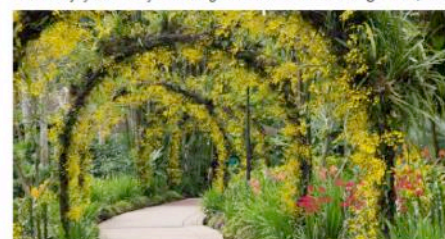
Gardens by the Bay

Today's destination, **Gardens by the Bay**, offers breathtaking waterfront views. The multi-award winning horticultural destination spans 101 hectares of reclaimed land. This extraordinary project, opened 4 years ago, is a complex of outdoor gardens and glasshouses on a massive scale. Advised by the Eden Project in the UK, it covers both tropical and temperate to cool climate specialist gardens. Before heading back to the hotel, we will walk through **Marina One**, 'an international role model for living and working' by Ingenhoven Architects, landscape architect Kathryn Gustafson and her team. The high-density building complex with its mix of uses extends to over 400,000 square meters and, with its group of four high-rise buildings, defines the "Green Heart" - a public space extending over several stories. A treat this afternoon when we take **High Tea at Raffles Hotel**. The Raffles Hotel in Singapore has been serving high tea for more than one hundred years. We'll see their recent extensive refurbishment. (B, High Tea)

Day 6 Fri 22 March

Fort Canning

We'll enjoy an early morning visit to **Fort Canning Park**, an



How to join the Friends

Visit arboretumcanberra.org.au to join online or to find out more about the benefits of being a member

OR

Email your details to: contact@arboretumcanberra.org.au and pay by funds transfer or cheque

OR

Complete the Application Form and mail it to:

The Secretary, Friends of the National Arboretum Canberra,
PO Box 48, Campbell, ACT 2612, and pay by funds transfer or cheque.

☐ **Bank details for funds transfer:**

Westpac, Petrie Plaza, Canberra, ACT: BSB 032 719.
Account: 375379 – please include surname in description.

☐ **Cheques payable to:** Friends of the National Arboretum Canberra Inc.

Membership type	1 year	2 years
<input type="checkbox"/> Individual	\$45	\$80
<input type="checkbox"/> Household	\$55	\$100
<input type="checkbox"/> Concession	\$25	\$40
<input type="checkbox"/> Club/Association*	\$100	\$180
<input type="checkbox"/> Business*	\$500	\$900

* Please see website for details



Membership Application Form

Membership type:

Title: First name:

Last name:

OR

Club/Association/Business name:

Address:

..... State: P/code:.....

Email address for newsletter and updates:

Phone: Mobile:

Number of parking passes:

Total amount payable (include membership/s and parking pass amounts): \$

Signature:

Date:

Parking Pass 1 year

- ☐ Friends' Annual \$27.50 per vehicle (2018)
Parking Pass \$28 per vehicle (2019)

For a parking pass, please include your vehicle's registration number.

Note: An Individual Member is entitled to apply for one Parking Pass at the Friends' discounted rate and a Household Member is entitled to apply for two Parking Passes at the Friends' discounted rate.

