

THE BOTANIC GARDENer

The magazine for botanic garden professionals

ISSUE
39
JULY 2014



Theme: New beginnings – innovations
to meet changing demands

ISSN 1446-2044 | www.bganz.org.au



Editorial Committee

JANELLE HATHERLY
Managing Editor

ALAN MATCHETT
Team Leader/Curator,
Dunedin Botanic Gardens

MARK FOUNTAIN
Deputy Director Collections
and Research, Royal
Tasmanian Botanic Gardens

DALE ARVIDSSON
Curator, Mackay Regional
Botanic Gardens and
BGANZ President

EAMONN FLANAGAN
Executive Officer BGANZ

SIOBHAN DUFFY
Graphic Designer

DISCLAIMER: Please note the views expressed in articles are not necessarily the views of BGANZ Council. We aim to encourage a broad range of articles.

Feedback and comments on the newsletter and articles are welcome. Please email: secretariat@bganz.org.au

COVER: The Moonlight Cactus *Selenicereus chrysocardium*. The photo of this flower was taken behind the old Tropical Centre (soon to be Biome Stage 1) at the Royal Botanic Gardens in Sydney. To see it open you have to visit early in the morning. It has a refreshing citrus/sherbert scent. Photo Credit: Kim Ellis

CONTENTS

2 President's view
Dale Arvidsson, BGANZ President

4 Editorial insights
Janelle Hatherly, Managing Editor

Feature Interview

6 Outstanding in the field:
Kim Ellis, Executive Director
Sydney Parklands and Botanic Gardens

What's New

14 Botanic news: from home and abroad

17 Local news: BGANZ members
on the move

19 Pollinating great ideas

Feature Articles

22 Creating innovative learning
environments with digital technology
Kelly Carabott, Lecturer Faculty of Education Monash
University, and **Jo Henwood**, botanic gardens educator
and storyteller

25 Using surveys for evaluation and
review of services
Janelle Hatherly, Managing Editor

28 Bush Kinder – making space
for nature play
Sharon Willoughby, Manager Public Programs,
Royal Botanic Gardens Cranbourne

31 New Zealand botanic gardens and the Global Strategy for Plant Conservation

Rewi Elliot, Curator/Manager Otari Native Botanic Garden, Wellington, New Zealand and
Tom Myers, Botanical Services Officer Dunedin Botanic Garden, New Zealand

35 Trends and challenges at Western Australia's Kings Park & Botanic Garden

Mark Webb, CEO Botanic Parks and Gardens Authority in Western Australia

Book Review

39 'Virginia Woolf's Garden' by Caroline Zoob

Reviewer: **Barbara Wintringham**, Volunteer Guide, Brisbane Botanic Gardens – Mount Coot-tha

Feature Garden

42 Singapore's 'Gardens by the Bay' – two perspectives

Duc Le, financial analyst and 'member of the public' and
Tim Entwisle, Director and Chief Executive Royal Botanic Gardens Melbourne

Professional Networks

50 Botanic gardens reports

BGEN (BGANZ Education Network)

Sharon Willoughby

BRON (BGANZ Records Officer Network)

Tom Myers

BGANZ NSW

Paul Tracey

BGANZ Victoria

Sharon Willoughby

54 Calendar of conferences and events

2014 BGANZ Queensland Conference

7th Biennial BGANZ Congress

The theme of the November 2014 issue is *Thematic planning and collections management*. The deadline for contributions is Friday, 12 September, 2014. Please contact the Secretariat (secretariat@bganz.org.au) if you are intending to submit an article or have a contribution to What's New.

President's view

Dale Arvidsson, BGANZ President



Dale Arvidsson, BGANZ President

Welcome to this issue of THE BOTANIC GARDENER magazine with the theme '*New beginnings – innovations to meet changing demands*'. Since Dunedin and the exciting opportunities that BGCI brought to the BGANZ Congress, it can be easy to let the momentum subside as we get back to our jobs – especially with the end of financial year upon us. Your BGANZ Council is committed, however, to keep this impetus going by engaging both new ideas and continuing to progress actions commenced at Dunedin and in previous years.

Key to communicating the refreshed focus of Council is through the re-branded magazine now led by education & interpretation specialist Janelle Hatherly. Janelle saw the potential 'The Botanic Garden' had, but realised that there were many new opportunities to use this publication for connecting with our members. We have started by refreshing the content and layout and ensuring that all staff at botanic gardens and arboreta can access the stories featured within and find relevant information and ideas.

Please ensure that THE BOTANIC GARDENER in your inbox is distributed to all staff, volunteers and Friends groups. If the best way to ensure readership is to print a copy and leave it on a staff lunch room table, please justify the printing with the knowledge that some inspiration may come from the reading!

However there's more than THE BOTANIC GARDENER that's experienced a 'new beginning'. BGANZ has officially received its first two sponsors – the Australian National Botanic Gardens as a gold sponsor, via a Memorandum of Understanding that offers financial and in-kind support to the BGANZ executive operations, and Kate Heffernan Horticulture Consultant as our first silver sponsor.

The BGANZ Council decided at the annual meeting held at the Maroochy Bushland Botanic Gardens that it was time to look beyond membership to the wider world of sponsors to help support new initiatives. It's great to see this program commence.

BGANZ has officially received its first two sponsors – the Australian National Botanic Gardens as a gold sponsor, and Kate Heffernan Horticulture Consultant as our first silver sponsor.



With a 'finite' membership base – finances for BGANZ new projects could only be achieved via the biennial congresses that you support by attending. To further develop funding for professional development and joint promotional opportunities, that will benefit a wide range of our members, we are planning to expand sponsorship opportunities by building long term relationships with benefits for both parties.

Thank you to our first two sponsors and, if you are aware of any new potential relationships for BGANZ to explore, please pass on your recommendations to your regional group representative or to a member of the BGANZ executive.

Another new initiative is to expand BGANZ to become not just the peak body in Australia and New Zealand – but Oceania as well! Whilst our focus has and always will be on our two countries, there was representation at Dunedin from existing and new botanic gardens and arboreta from the wider Pacific.

We always welcome new members and there may be interest and some exciting opportunities for our members to assist these botanic gardens.

However, it's worth noting that not all botanic gardens and arboreta in our two countries are financial members of BGANZ and it is Council's role to focus on achieving as high a membership from Australia and New Zealand as possible by making membership not just desirable but essential. Your assistance as BGANZ ambassadors to help promote the benefits of BGANZ to non-member botanic gardens and arboreta and all levels of government helps us achieve maximum exposure.

We also welcome and encourage individual memberships from anyone interested in supporting the role professional associations like this one serves in connecting like minds.

'Change' seems to be the most used word at the moment- *climate change*, *political change*, *economic change* and *change management*. Change is clearly affecting the roles of botanic gardens and arboreta now more than ever and so I hope you'll find the stories presented in this edition of THE BOTANIC GARDENer inspiring and informative.



Janelle Hatherly,
Managing Editor,
THE BOTANIC GARDENer

Editorial insights

Janelle Hatherly, Managing Editor

In keeping with the theme of this issue, *'New beginnings – innovations to meet changing demands'*, welcome to your professional publication with its new name, new layout and some additional sections.

Thanks to the 55 members who took time to respond to our Newsletter Review and to SurveyMonkey <https://www.surveymonkey.com> for providing us with a simple effective tool to undertake this audience research. Given the link was emailed to 650 addresses, this is a reasonable response and I'm pleased to say it has served its purpose.

The key to all evaluation is that it's only worth doing if you plan to act on the findings. This doesn't mean you have to embrace all suggestions but it does mean you give serious thought to each consideration before dismissing or 'parking' any of them.

In essence, you like what's been produced to date and we hope this issue has incorporated your suggestions for improvements. The analysis is presented in more detail on pages 25-27.

To encourage your ongoing involvement, here's advance notice of the themes for the next two issues: ***Thematic planning and collections management*** (November) and ***The joys and challenges of wildlife in the gardens*** (March 2015).

Please consider submitting an article, especially if you have never done so before and have good ideas and insights to share. You're the expert in your field and it's easy for us to provide you with editorial assistance. Send in your expressions of interest as soon as you like to secretariat@bganz.org.au.

And I invite any of you to communicate with me personally at janelle.hatherly@bigpond.com if you have any additional insights or want to provide feedback on this issue. This might start a new section called Letters to the Editor.

Post script

Many of you would have met Anahila and Lesieli at the BGCI/BGANZ Congress in Dunedin in October last year and were taken by their enthusiasm to start a botanic garden in Tonga. I followed up with them to see how they're getting on with the Hofoa Botanical Garden Project and Anahila provided this response. I share it with their permission:

Malo e lelei Janelle,

Thank you for your keen interest in our progress. We have the dream still in our hearts. The mythological creatures of Hofoa village are the turtle and the rooster 'Fonu moe Moa'. We understand sometimes the pace is fast, rooster-like, and can be slow moving, like the turtle on land.

Our journey to date since the dream was born; Tonga Government agreed in 2010 to the idea. Their response to us was that the Department of Lands and Survey was directed to survey the area identified in our presentation for the project – for the reservation of Hofoa Wetlands.

However Tonga is holding general elections this year; we hope to continue our efforts to engage the leaders. The pace has been turtle-like, but as the story has been told, the turtle did eventually reach the destination in the end! We hope and pray to achieve the same!

*Thank you again,
Anahila*

We can all empathise with how long this process must take, especially those volunteers whose efforts have resulted in the many regional botanic gardens we have today. We look forward to the day (many years in the future) when Anahila and Lesieli can provide us with an article describing the opening of Tonga's first botanic garden – built on a vision shared by many.



Anahila Kanongataasuisuiki and Lesieli Nui in Dunedin.

Outstanding in the field

Janelle Hatherly interviews

Kim Ellis, Executive Director Sydney Parklands and Botanic Gardens

Congratulations, Kim Ellis, on your recent appointment. You've only been in the job a few months and, as well as overseeing the amalgamation of the operations of the Royal Botanic Gardens and Domain Trust (the Gardens) and Centennial Parklands and Moore Park Trust (the Parklands) you've inherited the master planning process for the Royal Botanic Garden Sydney and Domain. I would like to start by asking you:

What strengths do you bring to the botanic gardens side of your portfolio?

Another way of putting this is 'Why did they recruit me'? Firstly, I don't have a botanical background. It's just a fact, whether it's an issue or not. When the NSW government hired L.E.K Consulting to investigate the amalgamation of these two organisations they concurrently explored what was the right team to run this sort of operation.

Even independently, the Gardens are a \$45 million per annum business, and though their undeniable undisputed principal role is about botany, horticulture and science, to get this working someone's got to manage the accounts, the people, the structures and the communication. Those important core functions/values are resourced and supported by infrastructure, with its associated major capital expenditure.

One of the first outcomes was the combination of the two Chief Executive Officer (CEO) positions. The new job description had a strong focus on issues of organisational structures and leadership and they wanted someone with a strong financial background.

I have these strengths with a strong background in setting strategic plans, putting measurable targets in place, recruiting people who can actually do the job and then leading them and motivating them to deliver.



Kim Ellis, Executive Director Sydney Parklands and Botanic Gardens
Photo Credit: Sydney Parklands and Botanic Gardens

Firstly, I don't have a botanical background. It's just a fact, whether it's an issue or not.

I'd done that in my army career as well as for 17 years working in airports with their large scale facilities.

I was director of passenger operations at domestic and international terminals for six years, managing the interface with people and airlines as well as the associated road access and traffic management issues, airport security, baggage handling, infrastructure and asset management. This also involved delivering the Olympics and the \$600 million rebuilding of the international terminal.

Then I moved to become CEO of the private airport company that purchased the leases from the federal government for Bankstown, Hoxton Park and Camden Airports – a \$40 million per annum business.

People often ask 'What does this have to do with parklands and gardens?'. If you think about it they share high visitation areas (Sydney airport has 30 million visitors a year, and Bankstown airport is the busiest airport in the southern hemisphere) and have very high value public infrastructure with all the associated issues related to high levels of access, maintenance and investment.

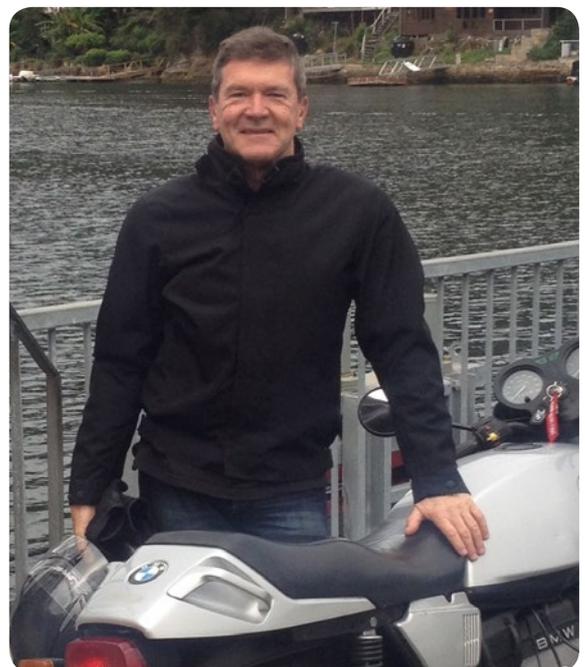
My last three years as Director and CEO of the Parklands have given me the direct experience in horticulture, arboriculture and public environmental recreation.

Since joining the Gardens what have you been pleasantly surprised by?

I'm genuinely surprised and interested in how passionate people at the gardens are about plants. I've always been passionate about the environment and the outdoors. I have spent most of my life outdoors: as a child bushwalking, hiking and camping with my parents, as a teenager surfing at Cronulla, as a soldier constantly out in the bush – and loving it – and as a civilian adult my wife and I do a lot of bushwalking.

For example, a couple of years ago we walked from Kyoto to Tokyo and we've done lots of really interesting walks in Tasmania.

But what I've seen *here* is this enormous passion for individual plants and ... it's quite infectious. I walked in the gardens this morning (I try to walk either in the Parklands or the Gardens every day) and when you stop and actually look at plants you start to realise just how amazing they actually are.



Kim jumps up and gets his iPhone to show me an image. I don't even know what this plant is but the fun part is finding out ... this is one of the joys of working here ... and I'm beginning a journey of discovery, learning more about the gardens and the plants.

This absolute passion and total commitment to plants and biodiversity is in sharp contrast to the situation I experienced at airports. There, people were committed to making sure airports ran smoothly and the passions ranged from 'don't interrupt the neighbours, don't delay me at the airport, make sure the toilets are clean, make sure the security is safe, get me easy parking'.

A lot of those translate to here, of course, and if you look at the Master Plan they're the sort of issues that have come up. There is 'How do we control the buses on Mrs Macquaries Point? How do we guide and direct people? How do we provide them with adequate toilets and cups of coffee?' – all those things that run parallel to the passion for horticulture.

What is your leadership style?

This is a huge portfolio and I think I underestimated the scale and complexity of the job. It is *huge* – there are nearly 360 staff, there are seven different sites (if you take the three botanic gardens, four parklands including Domain, Centennial Park, Queens Park and Moore Park). And there are challenges on every one of those sites – the Parklands just as much as the Gardens in finding sufficient funding, managing high visitation and the conflict between users.

My leadership style is about creating the organisation that actually meets the needs of its owners, who are actually the people of NSW. So my job is very much about meeting the Trusts' requirements but making sure that whatever we do, the people who own the land get what they want – that is, access, visitation, and the right sort of events, education, science and horticulture.

The idea is to get the structure right and then recruit the right people to run those parts of the structure. And then to make sure they've got a strategy that, with measurable targets, they can drive what they're doing ... and then ... to leave them alone.

My view is not to manage their day-to-day activities because I'm not a horticulturist, a scientist or even an educator. Those are really highly qualified positions and there are capable people, already in this organisation, and what they really need from me is to make sure they've got a direction, that they've got support and mentoring and that they've got the resources to actually get the job done.

This issue of your magazine is all about change and renewal so it's very interesting to come back to 'so why have they employed a non-scientist/botanist to run this place? As you know, they have brought in non-specialists to run other cultural institutions such as Kew, the Australian Museum and the Australian War Memorial.

This is an interesting trend ... and all of these have been done independently of each other. I raised this recently with a journalist and cynically their response was 'That's because they're bringing in people who are more likely to sack scientists than another scientist is'. This isn't some conspiracy. They are just moving towards slightly different models. The issue facing botanic gardens is that it is getting increasingly difficult to get the funds you need to do the job and so it's increasingly important for the organisations themselves to be very efficient and competently run.

At no point has anyone said to me – government, Board or advisers – that I should cut the science or horticulture or sell off the gardens or put up more revenue-raising things or get rid of some of these plants. No-one has ever said that.

What they have said to me is 'You need to run the place so that there's enough money and enough focus to make sure that all of those things are done properly. So get rid of all the excess in the other areas to make sure that it all runs well'.

And in talking to people, I suspect that the same things are being said to all these other organisations.

At no point has anyone said to me – government, Board or advisers – that I should cut the science or horticulture or sell off the gardens

What do you see as the biggest challenges facing botanic gardens at this time?

Contemporary botanic gardens worldwide have to look at ways to become sustainable. In the purest sense, financial sustainability is just as important as environmental sustainability. If you ask the Director at Kew Gardens. I'm sure he would tell you that, it's more important for him now more than anything else to ensure financial sustainability.

And on the issue of environmental sustainability: how do we balance the need to protect and preserve the living collections with the need to meet the increasing costs of maintaining them?

Every time you see in the paper that somebody's upset that their gas or water bill has gone up (they use the common phrase 'working Australians') ... someone's also got to remember that it's also affecting 'working botanic gardens'.

All the water we use on our plants here is town water and every time our staff turn on a tap we pay the same water rates as you pay at home. So my job is to put strategies in place to make that more efficient.

We need to implement environmental efficiencies across all seven sites: such as how we use solar power, how we use grey water and storm water etc.

Interestingly enough, three years ago we put in place a strategy at Centennial Park that addressed this and now there's a pond network and storm water reuse in place to do all our irrigation from storm water. And now we're going to solar lighting ... these same things, and the skills and experience of how to do this, will be transplanted here.

Communications is another significant issue. Demonstrating that the science botanic gardens do is relevant, and communicating complex environmental issues, is a challenge globally. If governments are to fund our taxonomy and research, our science has got to have some sort of state wide contemporary focus that looks at some of the problems the government wants solved – whether it's invasive species, food security, loss of habitats and biodiversity or infrastructure damage to native spaces.

So then let us tailor some of our research towards that. For example, at the moment we've started a new program called 'Restore and Renew NSW' and that's about using our science to look at how we can restore and replace areas that have been denuded etc. And this is where our science is *really* relevant. It's not university level science; it is practical, hard-edged science that utilises our herbarium, our seedbank, our living collections.

There are also short term communication goals – we've got to get better at telling the story, better at engaging people, we've got to establish the relevance of the Gardens to the community at large.

A prominent Australian recently said that what he likes about the Gardens is that he can come in here, clear his head and leave thinking about nothing ... and I thought, that's not really what I want.

What I really want people to do, is to come in here and leave having learnt just one or two things about horticulture or botany. I want them to leave knowing one more plant species or, like me, to be entranced by the beauty or shape of a flower, a tree or a leaf. So that's our challenge in communication.

As lovely as these Gardens are, this morning for me was typical. I found this wonderful flower and do you think I could find a sign, or a marker or interpretation that told me what that flower was ... not a whiff! How much better would it be if a tourist or a visitor or a child could have taken this photo (it is a very spectacular flower) and then have sent it to a friend via Facebook or Twitter saying 'this is a moonlight cactus flower and I saw it at the botanic gardens'.

One of the strong themes, as we go forwards, will be to broaden our outreach by digitally streaming our products and programs.

And there's another challenge for botanic gardens. We've got to recognise that people want to have a wow factor as well as places for peaceful and relaxing recreation. As part of the Master Plan we're proposing to have a well-established program of seasonal displays ... especially in Stage One of the Biome project, ... ready for the bicentenary of the Royal Botanic Gardens in 2016.

What do you see as the fundamental differences between parklands and botanic gardens?

Good question. Can I start by considering their fundamental similarities?

Apart from those already mentioned there's a strong sense of place, with people passionate about them and their management, with strong custodial responsibilities. They share a need to carefully manage 'well-meaning' governments, neighbours and organisations who want to erode the boundaries ... by just wanting a little bit to build a bridge, a road or a light rail or expand a particular building.

As well as quality horticulture, both organisations also have responsibility to engage in education. So my plan is to continue to build the education product because, if we can engage children now, and, of course we need to engage adults as well, on the real values of green space and conservation, and on the impact of environmental issues, we can create 'botanists for life'.

You know, I have no problem at all with the relocation of bats from here to the Parklands because it's given us one more tool to educate people. We're just about to open up some self-guided walks that lead through those bats – because they are fascinating. They are critical pollinators in our native environment and the trees there are native. We need to tell kids that and say to them 'don't be frightened of the bats and don't dislike them because they smell a bit odd, but appreciate them as part of your environment'.

We can show them the wetlands, how Lachlan Swamp gets dry in summer and wet in winter and we can look at the animals in the water. We've been able to get some corporate support to live stream to schools to show how we test for the healthiness of some of the natural pond network.

FEATURE INTERVIEW

The real difference, though, is that these three botanic gardens are living scientific collections (notice I leave the Domain out of this). There's a completely different focus on the management of those. They have to be preserved and protected either as conservation collections or collections about conservation. A classic demonstration of this was when we had Princess Laurentien of the Netherlands visit recently.



Kim with Environment Minister Hon. Rob Stokes and Princess Laurentien of the Netherlands.
Photo Credit: Sydney Parklands and Botanic Gardens

She came talking about environmental issues. Her Highness planted the *Chrysophyllum imperiale* tree from the rainforests of Brazil which is listed as endangered on the IUCN Red List of Threatened Species. The Red List was established in the early 2000s by Fauna and Flora International of which the Princess is President.

This is a good example of the ability of how these botanic gardens actually hold, preserve and protect ... and educate. The absolute pinnacle of this is the PlantBank –it's a living example of this idea of preserving living botanical material so that we can actually protect ourselves against habitat loss, invasive species and changing climates.

So the new organisational structure reflects this and is just in the process of getting approved. Actually, the charters of the two Trusts are almost written that way with broad themes that are similar but the Gardens with a focus on science and the Parklands with a focus on preserving the space for public access and recreation.

In the direct reports to me you'll see that we've also got Sports and Recreation as a separate department across the seven sites. That's because the Gardens have also got the Domain which is a very strong sports facility ... and there are sports, such as the mountain biking, at the Mount Annan site.

Over the course of your career, who have you found interesting and has influenced your thinking and personal development?

The answer is that it's not the people who have led me, but it's the people I have led who have made the difference. I've had an extraordinary good run of having great people work for me; people who are much smarter than I am and much more capable.

I've just been fortunate. As an army officer I had really good subordinates who carried me through – literally from the time I graduated from Duntroon, through the year I spent in the Antarctic and as a Regiment commander. And I can say the same for the teams at the airports and the Parklands.

I've just been fortunate to work with remarkable people – at all levels in the organisation. The greatest joy I get out of my work is actually to get out and work with the staff.

I went out about a week ago with the arborists here. As a leader, I like the idea of being there with people and encouraging them. Providing the broad direction is really all they need – people are remarkably capable of delivering.



Kim with the arborist team at Centennial Parklands.
Photo Credit: Sydney Parklands and Botanic Gardens

What are you reading/watching/listening to at this time?

I love all music and listen to almost anything and, in fact at the moment, when I drive backwards and forwards between workplaces, I'm listening to SBS Chill because it actually relaxes me. My favourite band is Talking Heads and I go back to them all the time. What am I reading at the moment? Well actually, for the last month literally everything I have been reading has been to do with the botanic gardens. I also listen to a lot of podcasts and I like Radio Lab, ABC Science Show, Skeptoid (I'm an inherent sceptic) and I've started listening to the ABC Philosophers Zone.

And just last night, I read what Catherine Stewart wrote about our draft MasterPlan on Garden Drum (<http://gardendrum.com/>). I quite like this blog site and am reading it prolifically because it's a very interesting snapshot for me of the interface between the horticultural sciences and the community gardening issue. It's not a gardening site with 'How do I plant...?' or 'What are we doing about invasive species?', but it's about broadly connecting people with plants.

Our interview ends with a commitment by Kim to find out more about the flower he saw today. That evening he emails me a photo and information on the plant ... it's the moonlight cactus, Selenicereus chrysocardium, which appears on the cover of this issue.

Botanic news: from home and abroad

Melbourne's Royal Botanic Gardens struggle with more attacks of vandalism

For the many people who love these gardens it was devastating to learn that the William Tell Rest House, the historic Lake View Rest House and a toilet block, were torched in a senseless arson attack on the morning of Saturday 17 May.

As director Dr Tim Entwisle said at the time: 'After the vandalism last year we have increased security patrols, installed strategic surveillance cameras and taken the unprecedented step of fencing a tree (the Separation Tree, the subject of an attempted ring-barking last year).

It's such a hard thing: we want people to get close to the plants so we don't want to do anything to deter that, but we need to provide some protection. To have this happen is a shock and difficult to comprehend. We will rebuild and replant. We will also give the police every assistance we can to catch the perpetrators.'

<http://www.theage.com.au/victoria/arsonists-burn-pavilions-in-melbournes-royal-botanic-gardens-20140517-38g86.html#ixzz32s9xJLUY>

Plant Pavilion – the focal point of a new botanical garden for China

A 22,749 square metre glasshouse has opened in Qingdao, China as part of the 2014 International Horticultural Exhibition.

The facility, China's first low energy glasshouse, and the largest public glasshouse in Asia, has taken three years to construct. After the six-month exhibition is over, the Plant Pavilion will become a permanent fixture and the focal point of a new botanical garden for China. It is expected to be a key tourist destination for Qingdao.

The glasshouse exhibits 3,000 varieties of plants ranging from bamboo to cactus, palms and tree ferns with space for 30m high trees. There is also an ocean tank for seaweed and marine displays and a cultural bamboo house. <http://www.hortweek.com/go/news/article/1292241/largest-public-glasshouse-asia-designed-weddle-landscape-design-opens-qingdao/>

Cypress Gardens Florida home to Legoland?

Started back in 1936, Cypress Gardens in Winter Haven, Florida quickly became world-famous for its lush botanical gardens & elaborate water skiing shows. In the early 1950s, MGM filmed an Esther Williams movie on location at Cypress Gardens.

In 2010, Merlin Entertainments (the world's second largest theme park and attraction operator) purchased Cypress Gardens and transformed it into LEGOLAND Florida. LEGOLAND Florida is making every effort to mix the old with the new and has taken great care to preserve the soul of the park – the historic gardens established on the grounds of its Cypress Gardens predecessor, more than 75 years ago.



Cypress Gardens, Winter Haven, Florida, USA.
Photo Credit: Huffington Post

http://www.huffingtonpost.com/jim-hill/how-is-legoland-becoming_b_5390989.html

Royal Botanic Gardens Kew under threat

Kew is recognised as the premier botanical gardens in the world scientifically and has an absolutely crucial role in looking after our botanical heritage and the planet's botanical future. Globally important conservation and science are experiencing government cuts – £5M deficit which will lead to the loss of over 120 posts. Kew has now been told to expect further cuts of at least another £1.5M before the end of 2016.

The UK government need to urgently reverse the existing and proposed cuts to Kew's aid funding and annual operating costs. How can we help to ensure that its globally-important plant and fungal collections continue to be used to support plant and fungal science and conservation around the world? Consider joining the petition at:

<https://www.change.org/en-GB/petitions/globally-important-conservation-and-science-under-threat-at-royal-botanic-gardens-kew-due-to-uk-government-cuts-5m-deficit-will-lead-to-loss-of-over-120-posts>

Sydney's draft Master Plan

When a 25-year Master Plan for the redevelopment of the Royal Botanic Gardens and Domain was released in draft form to the public recently, it was met with polarised passion.

The media had a field day drawing attention to the proposed 150-room hotel with rooftop gardens to be located on the south-east edge of the Domain; the conversion of historic depots and lodges into cafes and function spaces, and a plaza between The Pavilion Restaurant and the Art Gallery of NSW.

For a snapshot overview and for more detailed information on these and suggested improvements to horticultural displays visit:

http://www.rbgsyd.nsw.gov.au/welcome/feature_stories/master_plan/Navigating_the_Master_Plan

Albury Botanic Gardens 1 – the bats 0

Albury Council is investigating ways to remove the colony of fruit bats (Grey-headed Flying Fox) plaguing Albury Botanic Gardens. The bats moved into the gardens in October last year with some giving birth soon after. Their presence caused a section that contains the children's garden to be temporarily shut down in January this year.

The relocation couldn't take place until after March, when the last of the pups were fully fledged. After gaining the appropriate approvals from the Office of Environment & Heritage for a grey-headed flying fox camp assisted translocation, the Albury Botanic Gardens staff are very pleased to announce that, early in May, noise herding has worked a treat.

Paul Scannell reports: 'The bats have moved half a kilometre to the edge of the river, in the direction we were hoping for. Fingers and toes crossed, we wish the bats well in their assisted migration.'

<http://www.bordermail.com.au/story/2277744/albury-botanic-garden-bats-get-their-noisy-marching-orders-video-photos/>

Local news: BGANZ members on the move

Ross McKinnon has decided to retire at the end of July. Ross celebrates 42 years of service with the Brisbane Botanic Gardens, the last 30 years as Curator-in-Charge. Awarded the Order of Australia for outstanding services to horticulture in 1999, Ross is a Patron, Life or Honorary Member of 30 horticultural organisations. We can still enjoy his enthusiasm and expertise as he intends to honour all his lectures/speaking engagements/conference commitments over the next 18 months.

Katrina Nitschke has taken up the role as Head of Public Programs at the South Australian Museum after nine years leading the Community Engagement and Education team at the Botanic Gardens of Adelaide. Katrina is now responsible for leading the development of programs, events and exhibitions that bring the story of the museum, its research and collections to life.

Anne Duncan, former President of BGANZ, is busy completing her PhD in business strategy and biodiversity. She has also set up her own consulting business, Duncan Nairn Reid Pty Ltd. As part of this, she provides administrative services to the Sydney Weeds Committees Inc. (sydneyweeds.org.au) whose aim is to promote strategic weed management in the Sydney basin. Anne is also on the Strategic Advisory Board of the National Arboretum Canberra.

Stephen Alegria has been appointed as Executive Manager at the National Arboretum Canberra.

Fran Jackson, the Manager of the Royal Botanic Garden Sydney will be leaving Australia in mid-June to take up a place in the internationally respected Masters Program in Public Horticulture at Longwood Gardens and the University of Delaware. Sydney Parklands & Botanic Gardens are currently recruiting a temporary replacement for Fran, who does intend coming back when she completes the Masters Program in 2016.

Note: Longwood Gardens, one of the world's great gardens, in Pennsylvania USA, has over 9,000 taxa in its living collection contained within 435 hectares of open space and 16,000 square metres of conservatories.

Course participants undertake course work and a thesis at the University of Delaware, while undertaking a parallel executive development program supported by Longwood Gardens. The development program includes international and North American garden tours, a management project undertaken on a specific public garden or arboretum, and a Board seat on one of the many public gardens or arboreta in the Delaware/Pennsylvania area.

BGANZ would like to thank our two most recent sponsors

GOLD SPONSOR



AUSTRALIAN NATIONAL BOTANIC GARDENS

Alive with diversity

From rainforest to Red Centre

Visit the Australian National Botanic Gardens and experience the diversity of Australian plants and landscapes

Enjoy free daily guided walks – 11 am and 2 pm

Clunies Ross Street, Acton ACT | Ph 02 6250 9540
www.nationalbotanicgardens.gov.au/gardens
 Open 8.30 am – 5.00 pm | Follow us on Facebook 




SILVER SPONSOR



KATE HEFFERNAN
 horticulture consultant
Plant & Preserve



After 15 years in a key role gathering support and establishing the Gold Coast Regional Botanic Gardens, Kate understands what it takes to bring a botanic gardens to life.....

- Design and implementation of planting projects
- Community engagement, volunteer training & management
- Grant writing & fund raising
- Interpretation, Education and Visitor Services
- Reports, Policies and Documentation
- Media, presentations and promotion
- Maintenance evaluation and guidelines
- Group Tour organisation

QLD & Interstate



Before

After

Visit the Botanic Gardens pages of Kate's website for more information : www.kateheffernan.com.au
 Phone 0404 853 043 or 07 55 278 462 | Email kate.heffernan6@bigpond.com

If you like to sponsor BGANZ please email: secretariat@bganz.org.au for details.

Pollinating great ideas

Bringing the climate change message closer to home

Since 2007, there has been a notable decline in public interest around the globe about climate change. The hardest part for most people is grasping this very large concept. Freelance writer Sue White brings this concern closer to home (and for use in botanic education programs) in her article on ABC's Environment (on-line).

Here she focuses on the fate of seven favourite foods – chocolate, oysters, coffee, meat, mangoes, beer and wine. She refers to the work of Kew scientists in predicting that changing climate could lead to Wild Arabica (*Coffea arabica*) being wiped out by 2080. Read more at <http://www.abc.net.au/environment/articles/2014/05/19/4007400.htm>

Simple signage is effective

Volunteer guides are a great asset to any botanic gardens and their daily interactions with the public help staff work out when additional interpretation is needed.

Barbara Wintringham (our guest book reviewer this issue) is a weekend volunteer guide at the Brisbane Botanic Gardens at Mount Coot-tha. Barbara wanted to make sure visitors didn't miss out on seeing the spectacular flowering *Triplaris*. Visitor Services Coordinator Margot McManus obliged with this temporary signage, seizing an opportunity to educate visitors about potential weeds while sharing the blooming joys of the garden.

Look up!



Flowering tree alert...

Triplaris americana

Common name: ant tree

The female tree has the bright pink/red flowers; the male tree has white flowers.

Originally from South America, the ant tree is regarded as an emerging weed in North Queensland.

LinkedIn's Botanical Garden Professionals Group

According to Wikipedia, (<http://en.wikipedia.org/wiki/LinkedIn>) Australia is up there as one of the top three countries with the most LinkedIn users.

A LinkedIn feature that is gaining interest is the BG professionals group. It has over 3,400 members worldwide and is growing 5% every week. Two themes that are currently receiving lots of comments are *What is your favorite plant?* and *Does anybody have experience of using QR codes to facilitate interpretation? If so, do you have data or opinions about take-up rates in your garden.*

Even if you 'don't want to play' LinkedIn, look at the great youtube.com video *What is Your Favorite Plant*. It's posted by Longwood Gardens and features many of their horticultural team members.

Country	Users	Penetration
United States	93 million	29.90%
India	24 million	2.02%
Brazil	16 million	7.69%
United Kingdom	14 million	22.41%
Canada	9 million	25.82%
France	7 million	9.91%
Spain	6 million	11.54%
Italy	6 million	9.88%
Mexico	6 million	4.72%
Australia	6 million ^[54]	23.88%

LinkedIn memberships January 2014



Advice from a tree

Stand up tall and proud
Sink your roots into the earth
Be content with your natural beauty
Go out on a limb
Drink plenty of water
Remember your roots
Enjoy the view!

– Ilan Shamir

Blended Learning

This is a new-ish term used to describe education that adds the use of modern technology to more traditional methods of interaction between teachers and students. Why is it happening? As a report from the Victorian Department of Education and Early Childhood Development said:

We live in a connected world with unparalleled access to a vast array of online information and experiences. Our children are growing up in a world where excitement and opportunities are just a screen touch away.

The website 'Your True Nature' by Ilan Shamir is achieving just this and his video 'Advice for being True to You' (directed at school children) is an excellent example of how connecting with plants can help build self-esteem. http://www.yourtruenature.com/our-best-advice#.U4u_jyhjHbw



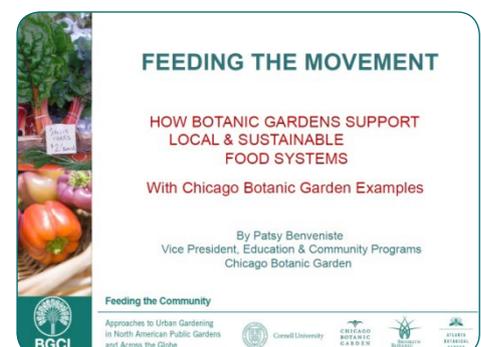
Access to the internet has revolutionised our ability to find out things that interest us. In particular, it is changing the lives of many in underdeveloped countries as they broaden their education on-line. As advocates for sustainable living, it's our responsibility to direct children outdoors (away from computer games) and then back to their computers for wonderful learning opportunities.



www.slideshare.net

SlideShare is a Web 2.0 based slide hosting service that was voted among the World's Top 10 tools for education & e-learning in 2010. Through this website, large PowerPoint presentations can be uploaded and distributed widely. There are many useful ones put up by botanic gardens, for example, this one put together by Patsy Benveniste, Vice President, Education & Community Programs, Chicago Botanic Garden.

It's all about 'not reinventing the wheel' and, with appropriate acknowledgment, 'it's not copying' but pollinating great ideas!



Creating innovative learning environments with digital technology

Kelly Carabott, Lecturer Faculty of Education Monash University, and Jo Henwood, botanic gardens educator and storyteller



Kelly Carabot, running a digital learning workshop for Museums Australia Education (MAE)

The digital technology revolution is having a profound effect on society and education and the increasing number of mobile devices has created opportunities for instant communication and learning, anytime and anywhere.

The flexibility and portability of mobile devices allows technology to be used at the point of learning, thus becoming a seamless and embedded learning device as well as a data recording tool for processing and synthesis later.

Integrating digital technology into educational programs in botanic gardens is about balance, a balance between the traditional and newer forms of learning. It is a combination of instruction, hands-on learning and digital learning. It is also a balance between experiencing 'the real thing', consuming information and creating information.

Botanic gardens are great environments in which to make meaningful connections, create contexts, and provoke focused and purposeful responses.

As we move towards being co-constructors of knowledge, educators in botanic gardens are well placed to help students assimilate facts and information and develop skills in collaboration, creativity, civic awareness and critical thinking through exploration and discovery. Digital resources can nourish teachers to be more exciting and irreplaceable educators than ever before!

Technology can be used to store data through digital repositories for content in multiple formats; films, photos, texts, graphs, music. Students can gather data through photographs, interviews, recording the results of temperature measurement or leaf shape classification into graphs, using avatars (Voki, Tellagami) to represent abstract phenomena.

Integrating digital technology into educational programs in botanic gardens is about balance, a balance between the traditional and newer forms of learning

Much more information can be accessible, with a greater certainty of accuracy, through these means. And this content can be created by educators or created by the learners – before, after and during visits. However, it remains the responsibility of educators to ensure that the purpose of the data has a meaningful objective, rather than merely the equivalent of selfies at a pretty location.

The digital tools listed over the page contain both web based and apps for mobile devices. The apps are iPad apps, alternative apps can also be found for android tablets. The opportunities for teaching and learning are unlimited.

More tools are tutorials can be found on Kelly's blog 'Litology and More'
<http://ictintheclassroom.edublogs.org/>

As an active member of Museum's Australia, Jo coordinates professional development days for MAE (NSW). Jo's website is <http://www.johenwoodstoryteller.com.au>

MEA link is <http://museumsaustraliaeducation.wordpress.com/>



Pic Collage (free): This app allows you to create a collage with text and photos. Students can use this app to take photos of plants. Plants could be classified using photos and presented in this app. Students can create a postcard of the gardens.



Animoto app (free): This app allows you to create a moving slideshow of photos, music and narration which is produced as a movie. Students can take photos of the botanic gardens and create a slideshow for an authentic purpose. A slideshow of content can be created by educators for students prior to their visit.



QR codes (free): can be used to provide further information as students move around the gardens. These QR codes can be created using a QR generator and a QR scanner app (which is free). Scan on this QR code here to access a You Tube video and tutorial I have created surrounding how to create these codes.



imovie app (\$6.49): A video editing and production app, which allows for narration and music. This tool can be used by students to record their thoughts and reflections of the visit. They can create a visitor's guide to the gardens; they can interview each other about the various plants they see, and they can create and film role plays about historical events.



30 hands app (free): This app allows you to create digital stories which can be narrated.



Educreations app (free): This app allows you to add photos or drawings, add text and record narration. Students could use this to record their learning (e.g. take a photo of a tree and narrate how material moves through the vascular system, how to save water etc).



Tiki Toki (free): A web based time line creator which would be a good tool for a historical post-visit activity.



ThingLink (free): A web based tool which allows you to create an interactive picture with video, text and images.

References:

Anstey & Bull (2006) Teaching and Learning Multiliteracies, International Reading Association.

Trilling, B., & Fadel, C. (2009). *21st Century Skills: learning for life in our times*. San Francisco: John Wiley and Sons Inc.

Using surveys for evaluation and review of services

Janelle Hatherly, Managing Editor

Why we conducted the BGANZ newsletter review?

Good communication is a two-way process and the process of evaluation enables us to get feedback before (front-end evaluation), during (formative evaluation) and after (summative evaluation) project planning and program development.

With the opportunity to re-brand BGANZ's tri-annual publication, the Editorial Committee wanted to gather data about the effectiveness of past issues as well as to explore members' needs and interests (audience research) to give us direction for the way forward. If 'Letters to the Editor' becomes a regular feature of the magazine, then we'll have hit the trifecta.

There are many evaluation tools, such as survey questionnaires, focus groups, in-depth interviews and participant observation. Thanks to modern technology, the on-line survey method we used was a very straightforward process. SurveyMonkey is a very astute company, providing novices with a basic package for free and then charging for upgraded features. This way individuals can 'trial before buying' and learn the simple steps first. After mastering the basics, the challenge to do more leads to ongoing commitment to the product and a willingness to use more services. If only other software providers did the same!

What we found out

As expected, 80% of you enjoy this BGANZ publication as part of an organisational membership. I used to as well but, when Phil Moors (in the early days of our fledgling association) encouraged us to actively support BGANZ, I took out an individual membership as well. This now guarantees I get communication through my own email address, no matter where I work.

Also and understandably, 75% of respondents (in a wide range of jobs) regularly read the newsletter with the majority reading most articles. This is encouraging because it shows that what is being produced is perceived as interesting and relevant. Our challenge is to do this even better and to reach out to those who didn't take the survey or don't even know this publication exists.

We learnt that 75% of you read it online with many printing out hard copies for reference later. This encourages us to include lots of links to other useful websites. And when asked to rank the sections and what you like to see more of, we learnt that there's strongest interest in the garden profiles and articles that relate to professional themes.

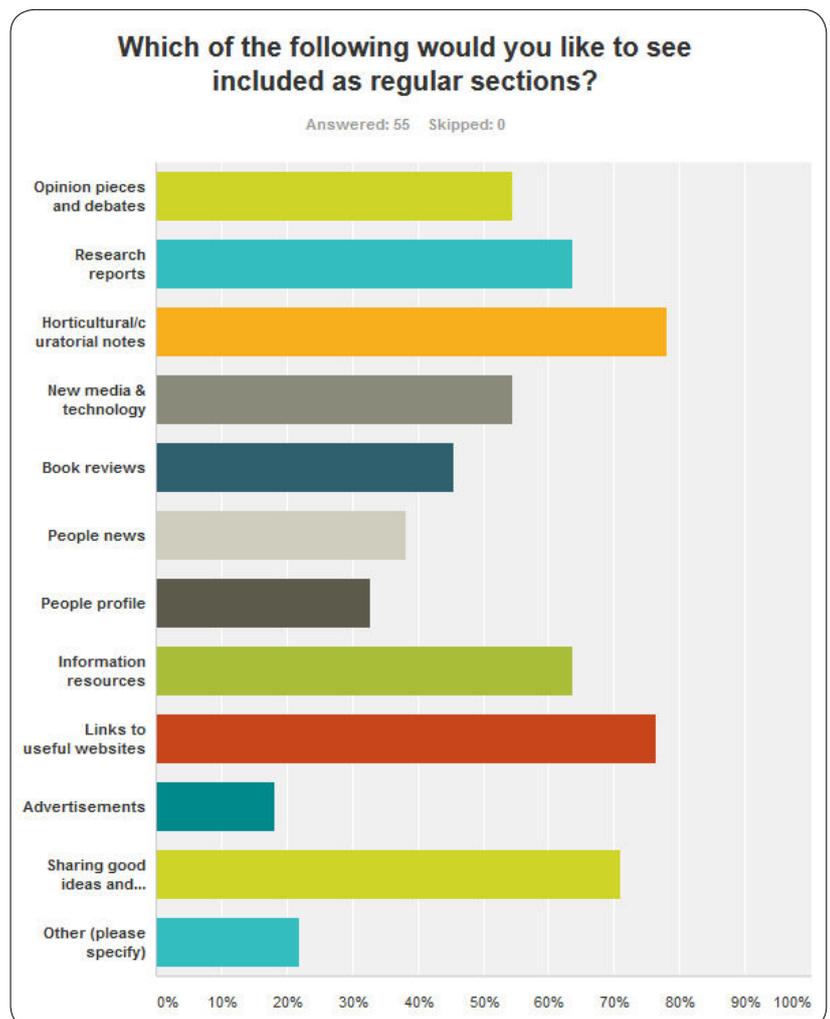
You asked for: *Real life examples of how people meet challenges and achieve what they set out to do, or beyond; Success stories and failures; Up to date info. on what is happening in many diverse gardens especially those I might not usually visit; More "higher level" thought-provoking professional articles (as opposed to technical) as well as lots of "How to ...?"s*

You read this publication to: *Find out what's going on; Be informed about developments and trends, to compare and to be inspired; Get information about what other institutions are doing and what works for them and what doesn't and see how it can be applied in our own situations.*

Regarding design and production, you requested consistent and concise formatting with higher resolution images and more advanced notice of future themes so you have time to consider submitting an article. Someone also suggested we *increase readership and advertising to create a revenue base for BGANZ*. Regarding the suggestion that we include job advertisements, we've decided that this is best delivered to you in regular BGANZ bulletins rather than in this publication, which is only produced every four months.

How we found out

Using a SurveyMonkey questionnaire, the results are analysed and presented in a very readable format. For those unfamiliar with SurveyMonkey, the accompanying diagrams show the analysis provided for Question 8. Colourful bar graphs, relative percentages and number of respondents provide useful quantitative data, and qualitative answers to open-ended questions are linked back to individual surveys. SurveyMonkey also lets you store surveys for future reference.



Answer Choices	Responses	
Opinion pieces and debates	54.55%	30
Research reports	63.64%	35
Horticultural/curatorial notes	78.18%	43
New media & technology	54.55%	30
Book reviews	45.45%	25
People news	38.18%	21
People profile	32.73%	18
Information resources	63.64%	35
Links to useful websites	76.36%	42
Advertisements	18.18%	10
Sharing good ideas and useful tips	70.91%	39
Other (please specify)	21.82%	12

● Responses (12)
▲ Text Analysis
📁 My Categories

PRO FEATURE
 Use text analysis to search and categorize responses; see frequently-used words and phrases. To use Text Analysis, upgrade to a GOLD or PLATINUM plan.

[Upgrade](#)
[Learn more »](#)

Categorize as... | Filter by Category | Search responses

Showing 12 responses

- Garden profiles including staff resources / structure profiling Apprentice and Trainee articles Professional development options Regional/ international Internship opportunities. Letters or emails to the Editor
5/28/2014 2:05 PM [View respondent's answers](#)
- International Gardens news, perhaps member reports on visits, interesting feature articles reprinted from other international Bot Gardens, overseas initiatives.
5/23/2014 9:29 AM [View respondent's answers](#)
- Resources of suppliers other Bot Gardens have used such as suppliers of garden signage, interpretation signage etc.
5/22/2014 4:06 PM [View respondent's answers](#)
- More Job Advertisements
5/21/2014 6:52 PM [View respondent's answers](#)
- updates from groups eg. BGEN, BRON
5/16/2014 8:36 AM [View respondent's answers](#)
- section where you can ask for help/advice on work issues

Total Respondents: 55

Analysis to Question 8 provided by SurveyMonkey <https://www.surveymonkey.com> (the free basic online survey & questionnaire tool)

Bush Kinder – making space for nature play

Sharon Willoughby, Manager
Public Programs, Royal Botanic
Gardens Cranbourne



Bush Kinder, RBG Cranbourne.
Photo Credit: Rebecca Bos

Bush Kinder, running kinder or ‘kindy’ sessions in the great outdoors rather than inside a kindergarten centre, is a deceptively simple yet extremely powerful idea. This approach to early childhood education is spreading like wildfire through playgroups and kinders Australia wide.

Offering wild or garden spaces where these groups can meet, play and explore is an important new frontier for botanic gardens. In this model the garden is simply the host, the responsibility for the children attending remaining with the facilitators or parents who are running the group.

The benefits are a garden animated with engaged children, colour and life – at very little cost to the garden, beyond a little extra maintenance. Encouraging the use of our gardens by Bush Kinder and other playgroups is an important strategy in engaging the early childhood sector. It is also a key to promoting connection to the natural world and plant literacy in our community.

Bush Kinder is an Australian reinvention of the 50-year-old Scandinavian Forest Schools approach to preschool. The defining components of this model are that children spend the majority of their time in self-directed play and exploration in nature – whatever the weather.

Bush Kinder sessions are very active with lots of walking and exploring. Children spend much of their time focusing on what they can find around them in nature and on each other. Sessions are

sometimes themed around exploration of plants or animal habitats or maybe expeditions into unfamiliar territory.

There is ample room for the serendipitous, the seasonal and the unexpected. A newly fallen log, abandoned bird's nest or scatter of strangely shaped seedpods becomes a whole new world of discovery. In the last decade this style of preschool has become an international movement. In Australia it has morphed into Bush Kinder, Beach Kinder, Nature Kinder, Garden Kinder, Gardening Kinder or Playgroup as each group finds its own wild patch to explore.

So why is Bush Kinder creating such a stir?

Richard Louv's ground breaking 2006 book *Last Child in the Woods: Saving Our Children from Nature-Deficit Disorder* provided a clarion call to parents and educators alike. Increasingly we hear news reports, or read research, that show children are spending less and less time in the great outdoors exploring and 'getting lost' in the wild – as we did. Green time, time in nature, is steadily being replaced with 'safe' screen time indoors.

Offering wild or garden spaces where these groups can meet, play and explore is an important new frontier for botanic gardens.

There is growing evidence that the disconnection from the natural world has negative consequences for children in terms of learning outcomes and health and well-being later in life.

In contrast, unstructured play outdoors is shown to encourage creativity and confidence, and build social and problem solving skills. Outdoor play encourages exploration of 'risk', decreasing anxiety and building resilience from early childhood. Bush Kinder is simply an antidote to what ails us all. It is a model for engaging children that sets them up to tackle the future.



Bush Kinder, RBG Cranbourne.
Photo Credit: Rebecca Bos

Botanic gardens have begun to work with Bush Kinder groups: Centennial Park, RBG Cranbourne and RBG Melbourne, Bendigo and Geelong Botanic Gardens to name just a few.

It can be as simple as making sure that local Bush Kinder groups are aware that they are welcome in your gardens. The rewards in terms of community engagement and connection are significant.

As the great children's author Maurice Sendak once wrote: *'Now', cried Max, 'Let the wild rumpus start!'*



Bush Kinder, RBG Cranbourne.

Photo Credit: Rebecca Bos

Explore Further

- Playgroup Australia and State chapters
<http://playgroupaustralia.org.au>
- An article about Doug Fargher at Westgarth Kindergarten one of the pioneers of the Bush Kinder movement in Australia on pages 23-25:
<https://www.eduweb.vic.gov.au/edulibrary/public/inspire/inspirejul2012.pdf>
- *Forest School and Outdoor Learning in the Early Years* by Sara Knight, SAGE Publications, 2013.
- *Understanding the Forest School Approach: Early Years Education in Practice* by Jane Williams-Siegfredsen, Routledge, 2013.
- Research report on the Climbing Trees: Getting Aussie Kids Back Outdoors 2011 study: treeday.planetark.org/documents/doc-534-climbing-trees-research-report-2011-07-13-final.pdf

Top tips to get started:

1. Foster connections with the Early Childhood and Maternal Health Officers in your local government area – they know the lay of the land in the preschool sector in your region.
2. Invite local kinders and playgroups to use your garden as a permanent, temporary or expedition space for Bush Kinder sessions. Starting with a pilot session might help you and the group work out how it will run in your garden.
3. If you have education staff or volunteers: offer an introductory session to groups. Orient them to your site. Where are the toilets and drinking water? Are there any risks, such as snakes, or deep water that they need to be aware of?
4. Kindergarten is a highly regulated space, like primary or secondary school. Children will come with early childhood educators and parents who have the responsibility for the children in their care. Playgroups are less regulated and are run by a facilitator or a parent. Most playgroups are members of Playgroup Australia (or their state group); this provides them with appropriate insurance. Encourage them to join if they are not. Playgroups will have a parent with each child.
5. Encourage groups that use your garden to record their time in a journal or scrap-book – this is a great tool for evaluating the impact the program is having on the children and families who attend.

New Zealand botanic gardens and the Global Strategy for Plant Conservation

Rewi Elliot, Curator/Manager Otari Native Botanic Garden, Wellington, New Zealand and **Tom Myers**, Botanical Services Officer Dunedin Botanic Garden, New Zealand

Botanic gardens are remarkable places! They are institutions with a unique mix of skilled people and infrastructure, and our 'botanical gardeners' are much more than professional gardeners, potentially involved in horticultural displays, education and scientific research.

To successfully champion this esteemed title, botanic gardens need to be active in a wide range of plant related issues – including plant conservation. Sir Ghillean Prance hit it on the head: *'A botanic garden that does not emphasize plant conservation in its mission programme ... is not adequately responding to the challenges of today's world'*.

This article is derived from a presentation delivered at the 5th Global Botanic Gardens Congress, organised by Botanic Gardens Conservation International (BGCI) in Dunedin, 20-25 October 2013. It is presented here to raise awareness of valuable international tools and frameworks and shows how they are being used to add significance to the work of New Zealand botanic gardens.

In 2011 a major initial call came from the heads of several botanic gardens for the Convention on Biological Diversity (CBD) to adopt a strategy for plant conservation. Now, the Global Strategy for Plant Conservation (GSPC) provides a framework for botanic gardens worldwide to achieve conservation action at global, national and local levels. The GSPC includes 16 targets grouped into five objectives to help guide plant conservation activities. Further information can be found on the BGCI website at <http://www.bgci.org/ourwork/gspc/>.



Otari staff collecting seed for the NZ flora seedbank.
Photo Credit: Rewi Elliot

We are lucky in New Zealand because the scale of the issue is reasonably apparent and well documented. We have a good understanding on what species are present and how many are threatened. Currently New Zealand botanic gardens hold nearly 40% of New Zealand's indigenous vascular plant species considered to be threatened. This is on par with international averages for Target 8 of the GSPC. Having already achieved this percentage, without a targeted attempt to do so, places New Zealand botanic gardens in a very positive position. So how do botanic gardens fit into conservation work in New Zealand?

Most gardens are funded by a city or local authority (district or regional council). Many are relatively old by New Zealand standards; some even predate the start of centralised government. Most predate events that have shaped how conservation work happens in New Zealand today, such as the enactment of the Treaty of Waitangi Act 1975, formation of the Department of Conservation (DoC) in 1987 and of Crown Research Institutes in 1992.

However, there is no act of government that defines what a New Zealand botanic garden does, so we depend on our individual management plans. With the instigation of the GSPC we have gained a valuable international tool and a framework to work with. However, there are some issues:

- The GSPC has not been promoted as a framework for us to use and we receive no contact from the New Zealand GSPC national focal point.
- Botanic gardens, largely ex-situ practitioners, have not historically been supported by national frameworks, reflected in our national statement on the website of the CBD: *'The Government's primary focus is on indigenous biodiversity, particularly endemic species, and for conservation work in situ rather than ex situ.'*
- New Zealand botanic garden management plans, while clearly stating our role in conservation, mostly do not include any mention of the GSPC or the CBD.
- The recent instigation of BGANZ has allowed much stronger networking and collaboration between botanic gardens, but BGANZ meetings in New Zealand generally do not address the GSPC.

Practical steps we can take

- Start incorporating the GSPC into our everyday business and culture. We put plant conservation on the agenda at meetings and conferences. When considering management plans, interpretation or education policy, or staff development plans, have them reflect the GSPC targets. (supports GSPC Target 14).
- Contribute our living collection names to the national service, the New Zealand Organism Register (NZOR) and ensure supporting herbarium voucher specimens are made where appropriate (supports GSPC Target 1).



Auckland Botanic Garden Threatened Native Plant Garden.

Photo Credit: Jack Hobbs

- Share our knowledge, publish it in our newsletters and magazines, put it on our websites, and present our successes (and failures) to our colleagues, so that we increase our collective knowledge. Record and share horticultural and propagation methods, especially in relation to threatened plant species (supports GSPC Target 3).
- Build our threatened species collections in a targeted, meaningful way. Find out what species we might be able to contribute to the survival of, and with whom. Form partnerships to assist with germplasm storage; build and make our collection available for recovery programs (supports GSPC target 8).
- Explore methods to record and share weediness data; participate in weed surveillance programs; support sentinel plant research for pests and diseases (supports GSPC Target 10).
- Explore appropriate and sensitive recording of plants with local customary use by recording only what is appropriate and supportive to local community use of plants; Work appropriately with the Treaty of Waitangi Act 1975 including the treaty claim WAI262 relating to indigenous flora and fauna (supports GSPC Target 13).
- Send staff to NZPCN conferences, network with local botanical societies and attend their field trips. We need to learn more about how ex-situ conservation can best support in-situ conservation. The Royal Botanic Gardens Kew offers an International Diploma in Plant Conservation Strategies; the NZPCN offers two plant conservation related courses that botanic gardens are perfect facilities to deliver: Introduction to Plant Life in New Zealand and Plant Nursery Management and Propagation (supports GSPC target 15).

- Partner with and build relationships with others such as the BGANZ network; DoC, non-governmental organisations (such as the New Zealand Plant Conservation Network), and various ecosanctuaries, and with universities and crown research institutes. Develop a relationship with the BGCI that is more relevant to our national situation and engage in dialogues with private landowners (whether on a 1000 hectare farm or a quarter acre section) who are interested in biodiversity conservation on their properties (supports GSPC Target 16).
- Develop visitor interpretation and educational messages that express the work we do and provoke thought about plant conservation (supports GSPC target 14).

Many of these changes require persistent effort on the part of botanic gardens and enthusiastic individuals, as well as the support of partners. There is no better time than the present to begin.

References:

Blackmore, S., Gibby, M. & Rae, D. (2011). Strengthening the scientific contribution of botanic gardens to the second phase of the Global Strategy for Plant Conservation. *Botanical Journal of the Linnean Society. Special Issue: Science and development of government policy post-Global Strategy for Plant Conservation: lessons for the future*. Volume 166, Issue 3, pages 267–281.

de Lange, P.J., Rolfe, J.R., Champion, P.D., Courtney, S.P., Heenan, P.B., Barkla, J.W., Cameron, E.K., Norton, D.A. & Hitchmough, R.A. (2013) *Conservation status of New Zealand indigenous vascular plants, 2012. New Zealand Threat Classification Series 3*. Department of Conservation, Wellington.

Guerrant, E.O., Havens, K. & Maunder, M. (eds) (2004) *Ex Situ Plant Conservation: Supporting Species Survival in the Wild*. Island Press, Washington, DC, USA.

Secretariat of the Convention on Biological Diversity (2009). *The Convention on Biological Diversity Plant Conservation Report : A Review of Progress in Implementing the Global Strategy of Plant Conservation (GSPC)*. Montreal, Canada.

Secretariat of the Convention on Biological Diversity. Country Profiles: New Zealand - Overview. Accessed: 31 January 2014. <http://www.cbd.int/countries/?country=nz>

Wyse Jackson, P. and Sharrock, S. (2011) The context and development of a global framework for plant conservation. *Botanical Journal of the Linnean Society*. Volume 166, pages 227–232.

Trends and Challenges at Western Australia's Kings Park & Botanic Garden

Mark Webb, CEO Botanic Parks and Gardens Authority in Western Australia



This article first appeared in the Winter 2013 issue of the American Public Garden Association's (APGA) Public Garden journal and is reproduced here with their permission. This quarterly publication is internationally highly regarded for demonstrating best practice and thought-provoking articles.

Located just over half a mile from downtown Perth, Western Australia's capital, Kings Park and Botanic Garden (Kings Park) covers more than one thousand acres, of which nearly two-thirds is natural bushland with a rich Aboriginal history. Managed by the Botanic Gardens and Parks Authority and situated in Australia's only terrestrial biodiversity hot spot, Kings Park is a world-recognized scientific institution.

With six million visitors each year, Kings Park is Western Australia's most visited single attraction. Here, over one quarter of our state's twelve thousand native plant species are on permanent display. The Park is open year-round and entry is free.

Kings Park was first set aside in 1831 as public space, but its formal transition into a park did not occur until 1895. Perth is one of the most isolated capital cities in the world, and when first established it was very much the 'city in the bush'. Over time, Perth has grown to its current population of 1.7 million with an urban footprint stretching over seventy miles from north to south, and Kings Park has now become the 'bush in the city.' Kings Park is a contemporary botanic garden with extensive and high-quality visitor facilities, plant research programs focused on species and ecosystem conservation and restoration, school and public environmental education programs, and a native plant selection and breeding program.



Using a LiCOR analyser for determination of photosynthesis.

In looking forward and identifying trends and challenges for Kings Park, some key issues include:

Funding

Just over half of the funding to manage Kings Park comes from the State Government, with the remainder being own-sourced. A major challenge in the medium term is to maintain the current level of government funding in real terms and to diversify and increase avenues of own-sourced funding. Kings Park currently receives own-sourced funding from concessions such as a restaurant and cafes; summer concerts, theatre, and outdoor movies; and from its own retail outlet *Aspects of Kings Park*.

A range of partners and sponsors also support various activities, and when a contribution is substantial, naming rights to the area or activity may be provided in recognition of that support. For example, \$8.5 million was raised to develop the first stage of the recently opened *Rio Tinto Naturescape Kings Park*, a fifteen-acre adventure learning experience to connect children to nature. The resource company Rio Tinto was the major funder of the project and has naming rights for a defined period. In addition to capital, supporting partners often provide operating funds to maintain named facilities for the duration of the partnership.

The naming of major facilities or activities to reflect partner contributions is a relatively new concept for Kings Park, and over the past decade we have attempted to strike a balance between delivering new facilities and better services and addressing community perceptions that the park might become 'too commercial'. This concern necessitated taking the community on a journey with us to demonstrate the benefits of funding from corporate and private partners in delivering better facilities and services. These partnership or sponsorship arrangements, which are a feature of many American botanic gardens, are now relatively common in Kings Park and most other Australian capital city gardens.



Children playing in paperbark creek in Rio Tinto Naturescape Kings Park.

Photo: J. D'Arcy

For over twenty years, Kings Park has been reliant on fee-for-service activities (also known as ‘sponsorships and grants’), especially in the resources sector, to fund research activities. While this model has proved successful in funding a range of important research programs, maintaining ongoing funding can be challenging and is dependent on the level of investment and general activity in the resources sector. In more recent times, Kings Park has also been engaged in international fee-for-service activities, especially in the Middle East where its expertise in horticulture and the restoration of arid and semi-arid areas is being used to assist the development of low-cost, research-based, and scalable restoration solutions for disturbed landscapes.

Infrastructure

Pressure from our six million visitors on infrastructure and services is a key challenge for Kings Park. Maintenance funding for any new facility is increasingly part of partner or sponsor agreements, but even this source is usually only available for a defined period, after which ongoing funding needs to be found from core funding. There is also unlikely to be any increase in car parking within or around the park to provide for increased visitation. That means that if local gridlock is to be avoided especially on weekends, increased use of public transport to the park and shuttle buses to move people around the park will need to be more widely embraced by a community that is generally focused on using personal vehicles for transport.

Volunteers

Although Kings Park has only 160 staff, it has over fifteen hundred volunteers, a third of whom are regularly active. The life-blood of our organisation, they perform a wide range of duties including staffing the visitor information center, providing free guided walks daily, assisting with bushland restoration including weeding and planting, delivering a free garden advisory service, providing technical support to the science and plant breeding programs, assisting with plant displays, and growing native plants for public sale. With high visitation and constant pressure on services and facilities, and finding new sources of income always a challenge, increased and targeted volunteer engagement is critical to assisting in the delivery of high-quality visitor services and core botanic garden activities.

Education

Western Australians live in a biologically rich and diverse landscape but have the dubious honour of having one of the most unsustainable lifestyles on the planet. In response, Kings Park has formal and informal school and public education programs to promote sustainable living and the importance of plants and ecosystem conservation in maintaining a healthy environment. In 2011, partner funding allowed Kings Park to add to its facilities with the opening of a new underground school education centre.

The university sector is a major partner with Kings Park and fourteen PhD students are currently undertaking continuing study and research. These students provide an invaluable resource for advancing conservation and restoration sciences.

Less than ten percent of Kings Park visitors spend time in its natural bushland, which comprises about sixty-seven percent of its territory. The recently opened first stage of the aforementioned *Rio Tinto Naturescape Kings Park* aims to partly address this imbalance by providing children with an adventure learning experience in a bush-style landscape with creeks and wetlands to explore, towers and ropes to climb, and cubbies to build. A key challenge is to educate our visitors about the intrinsic value of Kings Park bushland and the importance of natural areas generally in providing valuable ecosystem services.



Children playing in Rio Tinto Naturescape Kings Park.
Photo: J. D'Arcy

Bushland Conservation and Restoration

In total, the Botanic Garden and Parks Authority manages over sixteen hundred acres of urban bushland that is floristically rich and taxonomically diverse. Surrounded by suburbia and with high visitation, these woodland and heathland remnants suffer from weed infestation, arson, and fragmentation and require active management. Over the past thirty years, Perth's rainfall has been declining, and current projections are for a continued drying climate with increased temperatures. If these projections prove correct, it will mean that over the next one hundred years, the composition and diversity of plant species in these urban bushlands may change, placing pressure on ecosystem complexity and resilience. Decisions will have to be made about managing these urban bushlands that could impact on current species composition and abundance.

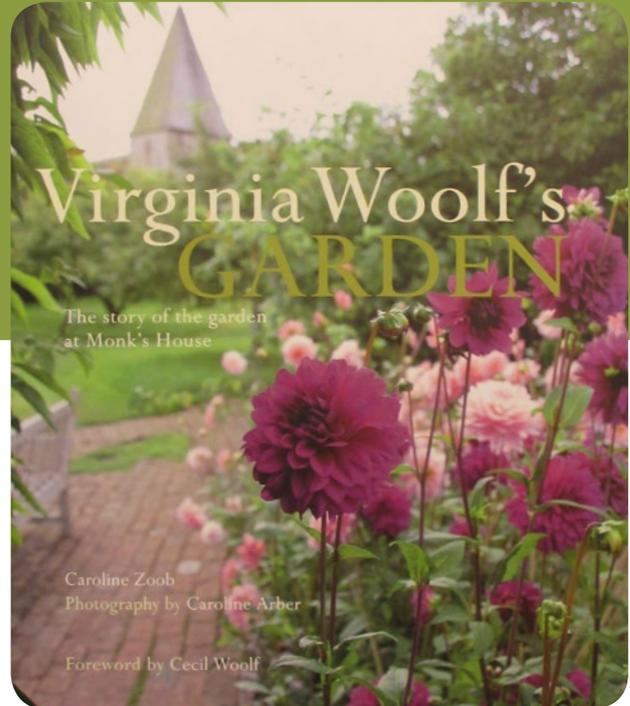
Mark Webb is chief executive officer of the Botanic Gardens and Parks Authority and can be reached at mark.webb@bgpa.wa.gov.au.

BOOK REVIEW

'Virginia Woolf's Garden' by Caroline Zoob

Reviewer: **Barbara Wintringham**,
Volunteer Guide, Brisbane
Botanic Gardens – Mount Coot-tha

Photographs by Caroline Arber.
Published by Jacqui Small. Nov 2013



Caroline Zoob and her husband, Jonathan, rented Monk's House, Rodmell near Lewes, East Sussex, from the National Trust for 10 years. This had been the home of Virginia Woolf and her husband, Leonard. They bought it in 1919 and took to the garden with passion. With Virginia's help Leonard turned an ordinary cottage garden into something special.

Caroline writes that they found the house in a reasonable state, and it was open to the public four or five days a week, but the garden was overgrown. The condition of their tenancy was that they would restore the garden at their own expense.

The only stipulation from the National Trust was that it should have 'the Bloomsbury look'. With the help of friendly volunteers, and a lot of research, they set about this big task.

They knew the history of Virginia Woolf who is one of the best known modernist writers of the twentieth century, though she had a sad history of nervous breakdowns and near madness. In fact she walked from that garden to the River Ouse where she ended her life in 1941 when she felt the madness returning.

This garden was her haven, her sanctuary and the inspiration for a number of her books.

With Virginia's help Leonard turned an ordinary cottage garden into something special.

BOOK REVIEW

Caroline and Jonathan researched the history of the garden and found Leonard's meticulous lists of plants purchased, and letters about growing them, very helpful. Both Virginia and Leonard were great letter writers. They also found Adam Nicolson a great help with photographs and memories as his grandmother, Vita Sackville-West, was a good friend to both Virginia and Leonard.

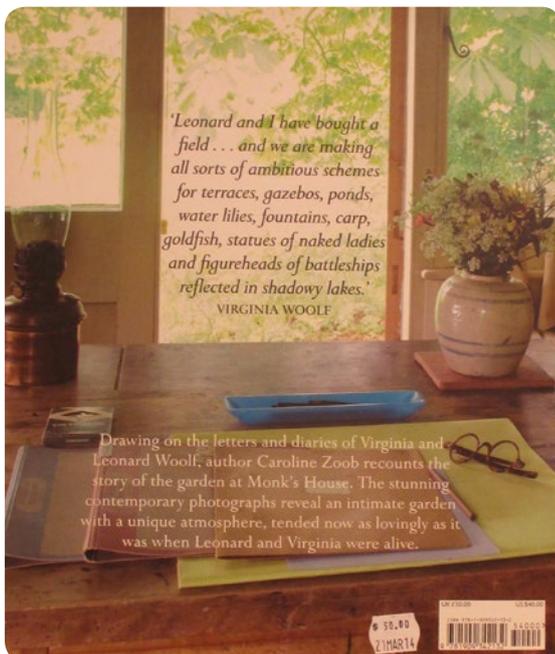
Vita visited often and helped with plants and advice as she was creating one of England's most famous gardens – Sissinghurst in Kent, not far away. Virginia and Leonard were full of ideas and became obsessed with the garden which they both loved.

Occasionally Virginia would complain that it was an absolute sink where money poured away but fortunately her books were starting to be recognised. In 1928 'Orlando' became a best seller and they were never poor again.

She wrote a number of her books in a small shed in the garden. Their home and garden were a safe haven during the London Blitz when their Bloomsbury premises were damaged.

In one of their letters Caroline found a delightful anecdote. Virginia and Leonard were strolling round one summer evening and Leonard had his pet marmoset, Mitzi, on his shoulder. This little monkey had come to them from a friend and had been rather sick.

Leonard had nursed Mitzi back to health and she became deeply attached to him, but was very jealous. As they wandered and chatted Mitzi took off and climbed a lime tree near the path. As darkness fell no entreaties from Leonard or Virginia would bring her down so Leonard, knowing his pet very well, started to kiss Virginia. Immediately Mitzi rushed down the tree in a jealous rage.



Caroline found many descriptions and photographs of the garden as it was and they worked hard to restore it near to its former glory with plants that Virginia and Leonard would have chosen.

She is meticulous in using correct botanical names throughout and she writes with enthusiasm, carrying the reader with her on this very challenging quest to restore authenticity to the garden. She recounts how they slowly started to feel that they were able to help many visitors see the garden very much the way it would have looked to Virginia and Leonard.

The excellent photos in the book, taken by Caroline Arber, certainly strengthen that feeling.

Occasionally Virginia would complain that it was an absolute sink where money poured away but fortunately her books were starting to be recognised



Reviewer Barbara Wintringham

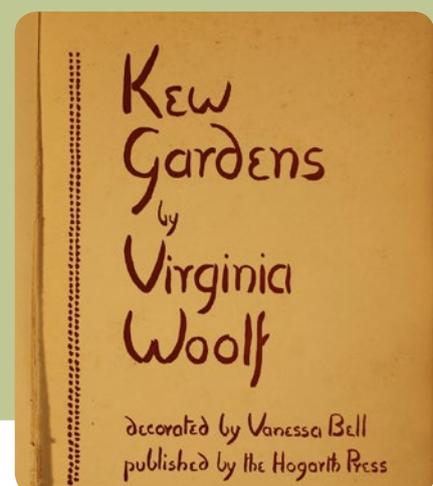
Caroline describes how the almost constant stream of visitors during visiting hours could be rather a trial at times, particularly when remarks such as 'why were they afraid of her?' were made. But there would be many genuine pilgrims and one day she found a woman in tears near the gate, thinking of Virginia and her sad end.

This is a book that can be enjoyed by anyone interested in: the restoration of an historic garden; the lives of intelligent young people who work hard to restore such gardens and live in a national treasure, and those who admire Virginia Woolf.

Caroline Zoob is a teacher of embroidery and home ware design. She writes clearly and well. The book has an example of her work to start each chapter. Perhaps this explains why the publisher is Jacqui Small who has published mainly cookery and craft books. This is a lovely book to look at and a joy to read.

We are very fortunate to have young people like Caroline, Jonathan and their volunteer helpers who are prepared to put in all the hard work of research, and real gardening expertise, to give us back these jewels of historic gardens.

One of **Virginia Woolf's** most enduring short stories is set in Kew Gardens. It was privately published by Hogarth Press, an enterprise she cofounded with her husband Leonard in 1917. The first hand printed edition included woodcut illustrations created by her sister Vanessa Bell, who was as experimental a painter as Virginia Woolf was a writer. Read it for yourself at http://www.online-literature.com/virginia_woolf/862/



FEATURE GARDEN

Singapore's 'Gardens by the Bay' – two perspectives

Duc Le, financial analyst and 'member of the public' and **Tim Entwisle**, Director and Chief Executive Royal Botanic Gardens Melbourne

Introduction

The first phase of the Singapore's Gardens by the Bay opened to the public in October 2011. Since then it has attracted millions of visitors and generated huge interest worldwide. Gardens by the Bay are an integral part of a strategy by the Singapore government to transform Singapore from a 'Garden City' to a 'City in a Garden'. The stated aim is to raise the quality of life by enhancing greenery and flora in the city.

Below are two reports of visits to Gardens by the Bay – from a visitor's and colleague's perspective. It's interesting to see what different individuals remember and what is important to each of them.

Tim Entwisle is well known to BGANZ members but not Duc Le. Duc is 26 years old and, after studying economics and finance at Australian National University, now works as a Financial Analyst in the Australian Government's Department of Finance. BGANZ's Executive Officer Eamonn Flanagan first met Duc as a Year 11 student in his economics class at Canberra College.

Duc was born in Hanoi, Vietnam but has lived in Australia since he was eight years old. Duc does not visit botanic gardens often but chose to visit the Gardens by the Bay on the basis of a strong personal interest in design. He sent photos of the unique styles of the two greenhouses and artificial trees to his friends. Eamonn asked Duc to share his experiences with BGANZ members.



Duc Le – Singapore Gardens by the Sea walkway.

Hello readers,

I recently visited the newest botanic gardens at Singapore, the Gardens by the Bay which is next to the very famous triple tower Marina Bay Sands. In summary, they are simply amazing as spectacle and as art, not just as gardens.

The gardens are a complex built on reclaimed land and have roughly four separate sections. There are two enclosed 'greenhouses', 80 meter high artificial 'trees' and the more typical botanic garden sprawl. The standout for me would be the two air-conditioned greenhouses (the Flower Dome and the Cloud Forest).

The Flower Dome provides by far and away the best curated horticultural display I've ever seen in my life. The complex showcases flora from all around the world and indeed I saw some Australia banksias while I was there. Each section was devoted to a particular region, showing the typical plant life from that area of the world and its unique characteristics. From a design standpoint it was stunning, each way you looked and each new angle you stood from gave you an interesting view.

Perhaps one drawback was the lack of educational panels but personally I thought this gave everything much more of a 'garden' feel and less of an artificial museum feel. However, you can hire audio guidebooks if you wish. At the centre of the first greenhouse is a feature display and it just so happened to be tulips while I was there. This included a number of 'classic' Danish items including the Amsterdam townhouse, clogs, cheese wheels and windmills.



Visitors numbers are high at Singapore Gardens by the Sea.

Photo Credit: Duc Lu

I then moved onto the second greenhouse, the Cloud Forest, which was smaller but much taller. It was jaw dropping because as soon as you walk in through the doors you see an eight story high artificial mountain and waterfall. This greenhouse showcases plant life through various altitudes which you experience by taking a lift to the very top and walking your way down through the different levels.

Certain sections are suspended quite high and far away from the mountain and create great perspective. There was understandably less diversity here than the Flower Dome, but again, a very well curated display which really allowed you to take in individual details or just admire how good everything looked. In addition to the plants, there was also a small cave/crystals exhibition.

FEATURE GARDEN

I spent a total of five hours in the complex and it was not nearly enough. I think I missed at least 50% of the complex. A plant lover could easily spend two full days here.

I then took a walk through the 'typical' section of the Gardens to get to the Supertree Grove, a cluster of artificial trees covered in plants. Once again the walk there was interesting in itself with plenty of variety in the plant display. There is a walk between two of the tallest trees, but I was unable to go on this due to the thunderstorms around that evening.

My primary criticism of traditional botanic gardens is that everything starts to look the same, but this was absolutely not the case with Gardens by the Bay. I spent a total of five hours in the complex and it was not nearly enough. I think I missed at least 50% of the complex. A plant lover could easily spend two full days here.

I would have no hesitation in recommending to anyone and everyone to add Gardens by the Bay as a must-see in Singapore. Tip: you can buy your tickets online and receive them electronically which allows you to skip the very long entry queues.



The High artificial mountain and waterfall was jaw dropping.

Photo Credit: Duc Lu



Plants Galore at Singapore Gardens by the Sea.

Photo Credit: Duc Lu

The following account first appeared on Tim's Blog Spot on Tuesday 11 February 2014. Tim's trip was generously supported by the Charles and Cornelia Good Foundation.

Visit <http://talkingplants.blogspot.com.au/> for more of Tim's images of Singapore's Gardens by the Bay.



Like the Australian Garden at Royal Botanic Gardens Cranbourne, this is a garden designed to provoke. Singapore's Gardens by the Bay isn't your typical urban park. It's the flagship project for the Singapore National Parks department who set themselves the ambitious and tantalising vision of creating a City in a Garden.

The total area of the three public gardens at Marina Bay is 100 hectares – 2.5 times the size of Melbourne's Royal Botanic Gardens or to use a more universal (if Melbourne is the universe) measure, 50 times the area of the MCG playing field. So it's big.

Singapore, it seems was after a cross between Central Park in New York and Kew Gardens in London. What they got was something entirely different, and all the better for it. An interesting distinction is made between these Gardens (by the Bay) and the (Botanic) Gardens uptown. Both are run by the National Parks department, but the former is for horticultural recreation, the latter (largely) for education, research and conservation.

This is perhaps not a surprising distinction but one that is not made often. Most botanic gardens around the world, including the three I've worked in (Sydney, Kew and, Melbourne) would argue that they combine science, conservation and recreation. Not only would they argue this but their Acts usually obligate it and their actions actively pursue this agenda.

The total area of the three public gardens at Marina Bay is 100 hectares – 2.5 times the size of Melbourne's Royal Botanic Gardens

The Singapore Infopedia page on Gardens by the Bay says the Singapore Botanic Gardens 'were being overstretched by the demands of leisure, research and academic usage'. I take this to mean they were either at capacity in terms of visitor numbers (or perhaps facilities to service those visitors) or, to put it bluntly, they couldn't be made pretty or interesting enough due to the constraints of being a scientific garden.



Photo Credit: Tim Entwisle

This new project has been driven by former head of the botanic gardens and Singapore National Parks, Dr Tan Wee Kiat. Dr Tan is a fascinating cross-over himself, being a scientist expert in orchids who then led the transformation of Singapore's parks from pretty green wallpaper to part of the everyday life in this very green city.

Chief Operating Officer, Kenneth Er, visited me in Sydney in 2006 when I was Executive Director of the Royal Botanic Gardens and Domain Trust. We discussed growing and displaying Australian plants in the Mediterranean glasshouse they had planned, and the planning and managing of parks and gardens generally.

In the end two UK companies won the international design competition for the Singapore project, Grant Associates to do the southern section and Gustafson Port to do some temporary work in the east; the central area was parked for later. Construction began in late 2007, with the opening of Bay South in 2012. Just over a year ago Linda Green posted an excellent assessment on GardenDrum, noting that 'the Australian garden is one of the healthiest that I have seen outside of Australia but it is early days yet'.

Now, nearly two years after the grand opening, I finally got there. I made my first visit in the afternoon, waiting until dusk to see how it was transformed at night (it closes at 2 am).

The next day, Kenneth Er met me for a guided tour of the outdoor gardens and two large glasshouses. I was lucky to have a tour led by Kenneth. The following week he was to become Chief Executive of Singapore National Parks (his current boss Dr Tan's previous job), looking after both Singapore Botanic Garden and Gardens by the Bay, as well as lots of parks and roadsides throughout the city.

Gardens by the Bay is a massive project, and expectations always rise with cost. The bill for the 54 hectare Bay South was around one billion Singapore dollars (just under AU\$900 million at current exchange rates). They predicted visitation of 2.7 million a year, with a payback time of ten years. In their first two years of full operation they have already had eight million visits (60% tourists, 40% local).

Bay South has a simple goal: to attract people who don't normally come to botanic gardens and to get them interested in plants. The more you talk to people like Kenneth, as well as newly arrived Deputy Director of Research, Dr Adrian Loo, and Dr Tan himself, the more you realise they have loftier goals. All of them want people to appreciate plants, to understand why they are important and to teach people care for the environment.



Kenneth Er and Adrian Loo in the Cloud Forest.
Photo Credit: Tim Entwisle

Equally, all of them feel this can come later, and should come gently. The important thing is to use colour and drama to attract people and make them marvel at the plant landscapes.

The first objective is to create 'a garden filled with colour and vibrancy throughout the year'. A close second one, according to Kenneth, is to make the garden comfortable: e.g. there are lots of covered walkways to protect from sun and rain, and the whole garden is raised up a few metres to catch the breeze.

There are two huge conservatories, the Flower Dome for Mediterranean climate plants (such as those from Australia), and the Cloud Forest, with plants from high altitudes around the world. Apparently there are 226,000 plants in the two conservatories combined, about the same number as we have in Royal Botanic Gardens Melbourne.

The Cloud Forest is already a dramatic and enticing plant display. The way you weave up and down, and around and inside, the 'mountain' is brilliant. The plants are not exclusively cloud forest species and again the aim has been to provide colour and excitement.

That said, there are some fascinating orchids and other plants (e.g. a beautiful collection of carnivorous plants with a Venus fly trap in flower) dotted around and the plan is to introduce a garden of rare plants. These few pictures don't do the scale justice but you get the idea.

The Flower Dome is more subdued at the moment, and many of the large trees (baobabs, olives) needs to settle in a little. There are regularly changing displays in the main foyer, at the moment a mix of temperate flowering shrubs and, next up, roses.

The Cloud Forest is already a dramatic and enticing plant display. The way you weave up and down, and around and inside, the 'mountain' is brilliant.

The Australian plants are still in great health. It would be nice to supplement these with some of our showier understory species in time. Already Kenneth has been able to keep his kangaroo paws flowering almost continually for two years using adjustments to the night temperatures (they can zone the temperatures a little within the giant conservatory) and pH.

Most striking at Bay South are the so-called Supertrees, 18 installations from 25 to 50 metres tall, inspired by the trees that emerge from rainforests. If you count the plants attached to these 'artificial trees' you'll get to about 163,000, I gather, with 200 different kinds of plants represented. These structures double as vents for the conservatories, carry solar panels for lighting them up at night, and another place to collect and harvest water. Some also include places for humans to eat!

The energy to cool the conservatories comes partially from an underground biomass boiler fed with horticultural and other organic waste. The boiler powers a steam turbine, sending cool water through pipes at ground level in the conservatories. Warm air is vented out the top and a liquid desiccant dehumidifies the air to make it more efficient to cool.

And there is more. Areas away from the public will be used as nature reserves. Already 91 bird species have been recorded, with many of them forest dwelling birds not usually seen in the middle of city. There are butterfly attracting plantings and all the water features serve to store and filter irrigation water drawn from rainfall as well as the nearby Singapore River.



Photo Credit: Tim Entwisle

In summary, Gardens by the Bay is spectacular, inspiring and impressive. Every visitor will at least have to admit that plants can be cool (and not just in the glasshouses). In time there will be more plant labels, more plant information and even more creative interpretation (there is quite a bit scattered about already).

In summary, Gardens by the Bay is spectacular, inspiring and impressive.

There are already 500,000 different kinds of plants (species and cultivars) and diversity is important: the first major plant collection was 210,000 bromeliads from America and the development includes a research facility (HortPark) to help them learn how to grow plants not native to Singapore.

The whole site looks amazing at night as well, the evening attracting almost as many people as the day. This is the best picture I could get, but to finish let's return to the daylight of yesterday. For a place like this, pictures are far better than words.

Botanic gardens reports

BGEN (BGANZ Education Network)

Sharon Willoughby, Manager Public Programs, Royal Botanic Gardens Cranbourne

The BGEN committee met on 6 March 2014. Final amendments were made to the Charter and the document accepted by the committee (the Charter is now available on the BGEN Resources Page).

Two potential BGEN projects were discussed: 'Food Stories' a partnership with the National Museum Australia (NMA) will partner a number of botanic gardens around the country with stories on the NMA website.

The second project an extension of the partnership with EarthWatch Institute will look at developing a simple signage system for botanic gardens wishing to participate in the ClimateWatch App and Map project.

A proposal for the BGANZ council will be developed with EarthWatch over the next few months. A Resources Page has been created on BGEN Group portal to post relevant documents for access by BGANZ members.

Next tasks for BGEN are to develop a strategy for the next two years focused on growing membership and developing professional development opportunities for staff and volunteers.

BRON (BGANZ Records Officer Network)

Tom Myers, Botanical Services Officer Dunedin Botanic Garden, New Zealand

The recent *Records Survey* of BGANZ members showed a clear interest from some gardens in a low cost database with standard fields. The 2013 BGANZ Congress BRON meeting identified two stages to achieve this – a spreadsheet, followed by a simple database. The idea being to provide these two formats for regional botanic gardens to adopt or adapt. Our working group has seen fluctuating numbers, sometimes being reduced to three active members. Helpful suggestions have come in, but more are welcome. We will also make some changes to the BRON website and email group to better share the results and discussions.

BGANZ NSW

**Paul Tracey, Curator,
Wollongong Botanic Gardens**

Professional Development

Here's just a quick update on the Living Collections Workshop hosted by the Wollongong Botanic Gardens on 1 April 2014. In my view, and in participant's feedback at the end of the day, this professional development session was a big success.

There were 44 participants with staff from Wollongong, Royal Botanic Garden Sydney and Blue Mountains Botanic Gardens Mount Tomah as well as Auburn, Eurobodalla, Orange and Booderee botanic gardens in attendance. Also attending were Horticulture Diploma students from TAFE Illawarra, landscape manager from University of Wollongong, board members from the Southern Highlands Botanic Garden and Janelle Hatherly, our new BGANZ magazine editor.

A key theme expressed on the day was the need for NSW to re-establish these professional development opportunities as networking opportunities are as valuable as the content of the workshops being delivered.

John Arnott BGANZ Vice President and Manager Horticulture Royal Botanic Gardens Cranbourne facilitated the workshop, where attendees received the BGANZ Collections Planning Toolkit and Handbook. This has been developed to assist botanic gardens managers, curators and horticultural staff in the development and implementation of plant collections plans.

This was followed by collections planning case studies to demonstrate how collections planning can be applied to different circumstances:

- Eurobodalla Regional Botanic Gardens (Ryan Harris)
- Orange Botanic Gardens (Neil Bollinger)
- Wollongong Botanic Gardens (Paul Tracey)



John Arnott presents the BGANZ Living Collections Workshop to over 40 people at Wollongong Botanic Gardens April 2014.

A key theme expressed on the day was the need for NSW to re-establish these professional development opportunities



Ryan Harris Seed Bank Officer outlining Eurobodalla's botanic gardens approach to collections management.

In the afternoon, attendees formed into groups to workshop a practical example of a living collection using the workbook.

Ian McAlister handed out the Dubbo Conference flyers, and Greg Bourke from the botanic gardens at Mount Tomah offered to host the next PD opportunity – a Weed Identification and Risk Assessment workshop.

BGANZ Victoria

Sharon Willoughby, Manager Public Programs, Royal Botanic Gardens Cranbourne

What's cooking at the Australian Botanic Gardens Shepparton?

On Thursday 27 March 2014 the BGANZ Victoria Executive Committee travelled to Shepparton in Central Victoria for their March meeting. The day was hosted by the Friends of the Australian Botanic Gardens Shepparton (FABGS) who gave the committee an opportunity to explore the developing Gardens first hand.

The day started out at the City of Greater Shepparton Council Offices (made all the better by Jill Grant's lovely date slice – see recipe opposite). The bulk of the committee's work at the moment involves planning the calendar of events for the year ahead.

The committee also reviewed the recent Urban Horticulture Forum held at the University of Melbourne in February. The forum was attended by 40 registrants from 18 different organisations. Feedback on the day has been very positive and will inform future activities.

The committee then enjoyed a BBQ lunch hosted by the FABGS which provided an opportunity for the committee to learn more about the current work of the Friends – a great forum for cross pollination of ideas and challenges between gardens.



BGANZ Victoria Executive Committee and the Friends of the Australian Botanic Gardens Shepparton enjoying a moment of sunshine between rain showers.



Local Mayor Cr Jenny Houlihan (@GrSheppMayor) and Friend lead a tour of the developing Gardens.



View from the top of the Mound looking down onto a terrace garden and across to the surrounding bush land.

The ABGS occupies 50 acres of land near the confluence of the Goulburn and Broken Rivers. The site includes the former Kialla Tip site, now a large capped mound, an ephemeral wetland created when soil was extracted to cap the tip and some spectacular remnant bushland.

The Gardens are managed by the FABGS (established or renamed in 2011) who are a community volunteer group that assists, the section 86 committee of, the City of Greater Shepparton Council to renovate, rehabilitate the land and create the ABGS. The work and progress of a small but committed team of volunteers is truly inspiring and will create a resource for the Goulburn Valley Region for generations to come.

The base of the Mound held in place by rock filled gabion baskets artfully 'Yarn Bombed' by local crafts women.

No matter how you slice it the committee had a great day! The Australian Botanic Gardens at Shepparton is charging ahead under the passionate stewardship of the Friends.

Jill Grant's Date Slice – meeting fuel

- 1 cup self raising flour
- 3/4 cup sugar
- 1 dessertspoon Golden Syrup (Jill loves the taste so always adds more)
- 1 cup chopped dates
- 1 cup white choc chips
- 3/4 cup coconut
- 4oz (125g) melted butter
- 1 egg

Add sugar and Golden Syrup to melted butter. Beat egg lightly and add all the dry ingredients. Line a tray (approximately 20 x 30 cm) with baking paper. Bake in a moderate oven for 20 minutes. Leave in tin until cool, then cut and lift out.

Calendar of conferences and events



2014 BGANZ Queensland Conference

The program for the 2014 BGANZ Queensland Conference is shaping up nicely with keynote speaker Kate Faithorn (Director, Public Engagement, Royal Botanic Gardens & Domain Trust) coming to speak on the theme for the conference, *Cultivating Connections*, and providing an insight into the public engagement programs that the Royal Botanic Gardens Sydney run for their three estates. Kate will also be running a 'Marketing Your Garden' workshop and passing on her more than 15 years' experience marketing botanic gardens.

Another exciting addition to the speakers line up is Andrea Ambrosio who last year was voted 2013 Australian Institute of Management – Qld & NT AIM30: 30 Under 30 Making a Mark. The 30 Under 30 program highlights a list of young management talent across Queensland and Northern Territory. Andrea is a highly respected grants writer who has been responsible for successfully attaining over \$40 million in government grants & tender contracts on behalf of an extensive portfolio of corporate and not-for-profit clients in a multitude of industries in the North & South-East Queensland regions over the last eight years.

For more information on the conference please go to <http://www.cairns.qld.gov.au/cbg>

7th Biennial BGANZ Congress

Wollongong Botanic Garden, 27–30 October 2015

Wollongong Botanic Garden is pleased to be hosting the 7th Biennial Botanic Garden Australia and New Zealand (BGANZ) Congress in 2015. We are currently developing an innovative congress program with a mix of keynote speakers, seminars, presentations, workshops, garden tours, team building exercises and evening networking events.

Proudly referred to by locals as 'The Gong', Wollongong lies on the narrow coastal strip between the Illawarra Escarpment and the Pacific Ocean in the Illawarra region of NSW. The Gong delivers a mix of metropolitan style, seaside living and small town charm, just one hour south of Sydney's domestic and international airport.

For those of you who may like to extend your stay, Wollongong offers an endless array of outdoor activities to enjoy including skydiving, hang gliding, horse riding and surfing – to name only a few. And for the discerning foodie, the Gong is a melting pot of cuisines to satiate every palate.

We encourage you to discover the beauty of our region by browsing through a selection of images posted on the [Destination Wollongong](#) website.

We expect the Congress website to be launched later in 2014 so stay tuned.

BGANZ Congress – October

27–30 October 2015
Wollongong Botanic Garden,
New South Wales, Australia.

BGANZ Victoria & Parks and Leisure Australia (PLA) Seminar

Low inputs – High Outcomes
Creating resilient horticultural landscapes
Royal Botanic Gardens Cranbourne
Thursday 28 November 2014

BGANZO Conference

Cairns 2–4 October 2014

BGANZ NSW Conference

Dubbo 21–23 November 2014

Association of Friends of Botanic Gardens (AFBG) Conference

Gold Coast 8–10 August

29th International Horticulture Congress

Brisbane 17–22 August 2014

International Rhododendron Conference 2014

Dunedin NZ 20–24 October 2014

7th BGANZ Congress

[Wollongong Botanic Gardens, NSW](#)
27–30 October 2015

9th BGCI International Congress on Education in Botanic Gardens'

Missouri USA April 26–May 1 2015

6th BGCI Conference Geneva 2016

(details to be announced)

2014 BGANZQ Biennial Conference Date Claimer



The BGANZQ Biennial Conference will be held in 2014 at the Cairns Botanic Gardens. Details for the conference are:

Date: 2 - 4 October 2014

Where: Cairns Botanic Gardens,
Collins Ave, Edge Hill, Cairns, QLD

Registration: will open 1 April 2014

ABOUT THE CONFERENCE

The organising committee is pleased to invite papers, case studies and interactive workshops from botanic gardens academics, workers and volunteers.

This year's theme is "Cultivating Connections" with keynote speaker, Kate Faithorn, Director Public Engagement, The Royal Botanic Gardens Sydney, setting the tone for the three day event.

For more information, please go to the conference website,

www.cairnsbotanicgardens.com.au,
or call the conference secretariat,
Rebecca Anderson on 07 4044 3019.





New Zealand Rhododendron Association

INTERNATIONAL RHODODENDRON CONFERENCE 2014

NZRA Celebrates it's 70th Anniversary
with this **SPRING** Conference

See species and NZ hybrid rhododendrons
as you visit internationally famous gardens
at conference, plus pre and post
conference tours of 4-6 days.

Enjoy local and renowned international speakers.

20 - 24 OCTOBER 2014

Dunedin • New Zealand

"First for Rhododendrons"



Rhododendron Marquis of Lothian



www.bganz.org.au