

THE BOTANIC GARDENer

The magazine for botanic garden professionals

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collections management

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Editorial Committee

JANELLE HATHERLY
Managing Editor

ALAN MATCHETT
Team Leader/Curator,
Dunedin Botanic Garden

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

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encourage a broad range of articles.

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

COVER: *Rhododendron zoelleri*
With its almost iridescent
funnel-shaped flowers,
R. zoelleri is a highly visible
shrub at the Emu Valley
Rhododendron Botanic Garden,
this issue's Feature Garden.
It can be found in the Vireya
section flowering twice a year,
in winter and summer.
Photo Credit: Heather Walmsley

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BGCI Education Congress Missouri 2015

The theme of the March 2015 issue is *Showcasing plants and managing wildlife in botanic gardens*. The deadline for contributions is Friday, 26 January, 2015. 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

Increasing economic rationalisation, proving our relevance in the face of proposed cuts and changes of government on many levels has led many botanic gardens and arboreta down the crucial path of reviewing their living collections to find further efficiencies and to justify who is managing their collections and why they exist.

As stated in the BGANZ Collections Planning Toolkit '*Plant collections are the essential and defining feature of any botanic garden*' and we should question why we have in our collections 'what we do' as every collection, every plant counts towards our core reason for being. In the case of younger gardens and arboreta – theming and interpretation is at the very heart of modern design intent. For older gardens, it can be a challenge that leads to necessary review. Developing a team, undertaking a review, developing and – even more challenging – implementing a living collections policy/plan including a timetable of further review, are all tasks that if we haven't already commenced, we should now find time for.

Developing a symbiotic interpretation plan of our living collections gets across our key messages and the reason for having each collection. What do you want to tell visitors about what they see? What message do you want them to walk away with?

Today, more than ever, thematic planning and concise and engaging interpretation is so important for communication. In order to be relevant to a technology savvy, time poor and broader audience than we are historically used to, we all need to understand that the people who work with our visitors are often at the cutting edge of understanding current trends and themes. This keeps our collections accessible to the public and ultimately their importance is communicated to everyone both up and down the management line.

Read on for what our member botanic gardens and arboreta have contributed to this edition of THE BOTANIC GARDENer. From Canberra, Hobart, Eurobodalla and Bendigo – as well as other news and international contributions – you'll discover fresh and innovative ideas that may assist your own journey as another busy year races to a close.

Editorial insights

Janelle Hatherly, Managing Editor



Janelle Hatherly,
Managing Editor,
THE BOTANIC GARDENER

If asked, **'What is a botanic garden'** what do you reply? This is the question many of us return to time and again when planning ahead and working out our garden's strategic priorities.

A documented collection of living plants for the purposes of scientific research, conservation, display and education seems

to cover it all. Yet every adjective and noun in this definition is laden with meaning and we are constantly challenged by how well we are fulfilling our roles as custodians of these culturally significant places.

This issue of THE BOTANIC GARDENER goes to the heart of what's involved in setting up, documenting and maintaining collections. As you will read, it's a complex and challenging process and it is being tackled in many different ways. Yet there seem to be guiding principles underlying all approaches.

I hope you gain some valuable insights from the array of articles your colleagues have submitted and will use the links and references to explore the issues further. I have certainly learnt a lot and have come to view a well-selected and well-documented collection as the basic toolkit of our profession and the essence of a quality botanic garden. I couldn't resist adding BGCI's 'A guide for public gardens' (P48-51) as it clearly shows international focus on the need to strategically build collections for conservation.

The next issue will focus on using our documented plant collections for the purpose of display. As the theme 'Showcasing plants and managing wildlife in botanic gardens' suggests, there's opportunity to share with your colleagues what you do well, your insights as well as the challenges you've faced when trying to establish meaningful displays.

By their very nature, plants on display appeal to many other living things besides humans! Please consider sharing your experiences on how you manage 'wildlife' (in all its manifestations) in your gardens.

With two issues of THE BOTANIC GARDENER in this new format, the editorial committee can now provide you with useful guidelines for reference when preparing your submissions.

[Click here](#)

Outstanding in the field

Janelle Hatherly interviews

Mark Richardson, Botanical Consultant

It seems to me that if botanic gardens are primarily about plants, then living collection management and thematic planning must be at the very heart of any well-functioning botanic garden. I am interested in how one gets into this field and what exactly is involved in studying, selecting, growing, maintaining and displaying a diverse array of flora. I would like to begin by asking you:

How did you come to work for botanic gardens?

After finishing my science degree at ANU in Canberra, and travelling around the Pacific islands for nine months, I worked as a seasonal gardener with Canberra City Parks' Research Unit. This led to doing urban forest and turf research work with City Parks, and getting experience in horticultural management.

At that time (1970-80s) Canberra was still managed by the Federal Department and the then National Botanic Garden was part of City Parks. As a result, I became involved with the research and living collections sections of the botanic gardens. When the position of Curator of Living Collections at the Australian National Botanic Gardens (ANBG) became vacant in 1985 I was fortunate enough to be appointed to it ... and have been working with botanic gardens ever since, both in Australia and abroad.

You've been associated with botanic gardens for 30 years now. What have been the highlights of your career?

When I first went to work with the ANBG, interest in plant conservation in the world's botanic garden community was still fairly minimal. However, the ANBG Director at the time, Robert Boden, was closely involved in developing preliminary conservation thinking at an international level. As a result, conservation started to be viewed as a part of ANBG's mission. I certainly saw this as an important part of my position and we started to seriously develop an ex-situ conservation collection with extensive collecting trips in south-eastern Australia.



Mark Richardson,
Botanical Consultant

I also felt that ANBG had a duty to encourage and support other botanic gardens around Australia to participate more in plant conservation and so develop a more widely based national conservation collection.

It was often felt that, as the national botanic garden, ANBG should develop a 'national collection'. Although I agreed with this in terms of having a living collection showing the range of plants from around Australia, I also felt that ANBG had a duty to encourage and support other botanic gardens around Australia to participate more in plant conservation and so develop a more widely based national conservation collection.

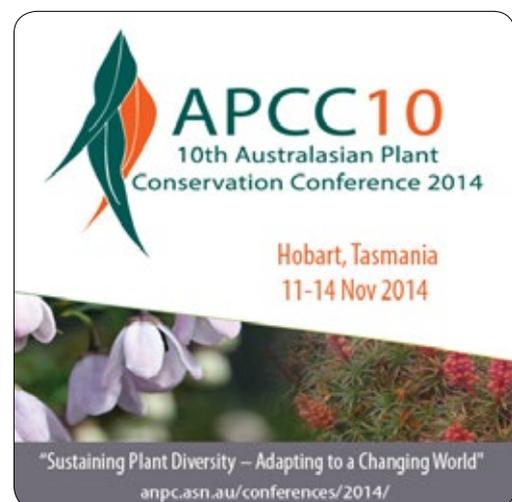
With funding from the Federal Government's Endangered Species Program in the late 1980s we produced a national list of the collections of threatened species being grown by botanic gardens throughout Australia. The success of this further inspired my thinking about the establishment of a national network.

The network came together in 1992 at a national conference held in Canberra. It involved an excellent group from around Australia and also important players from the newly formed Botanic Gardens Conservation International (BGCI) and the Centre for Plant Conservation in the US. From that meeting came the establishment of the Australian Network for Plant Conservation (ANPC).

ANPC will have the 21st anniversary of its first national conference in Tasmania later this year. It has successfully brought together a wide range of people interested in plant conservation and continues to hold a good reputation internationally.

A second highlight in my career was my involvement in the establishment of the Alice Springs Desert Park. The separation of plants and animals and culture into botanic gardens, zoos and museums respectively is part of a tradition that I feel is underpinned by a 'stamp collection philosophy'. The idea of a holistic 'biological and cultural park' had always appealed to me.

What was to become the Alice Springs Desert Park seemed an opportunity to see whether the amalgamation of the three institutions could work. I was very fortunate in that the people initially involved all held the same views and we were able to bring our ideas together extremely well. It was also a chance for me to look at a botanic garden as part of a commercial venture and explore the concept of 'product' as well as 'philosophy'.





Mark at the BGCI workshop in Shanghai



Mark chairing the meeting to establish the East Asia Botanic Gardens Network in Osaka, Japan while working as the Director Middle East and Asia for BGCI's 'Investing in Nature' Program

What I learned from these two experiences set me up, in many ways, for the wide range of projects that I later worked on in the Middle East and Asia (as a Director with BGCI) and since, as a consultant back in Australia.

Your work has taken you around the world. Can you give a snapshot of the role of botanic gardens worldwide?

I have visited botanic gardens in many countries, since about 1990, and have had the opportunity to meet with a good number of notable players in this field. This has given me a strong view of where those botanic gardens are heading and what's important that should be kept in mind for both the establishment of new botanic gardens and the ongoing development of existing gardens.

An interesting aspect about the world's botanic gardens is that they seem to be strong early indicators of what's considered important in society. When it became acceptable for different communities to mix with one another, such as in countries like England in the mid 1800s, botanic gardens provided an excellent venue for this to happen; when strong nationalistic views were on the rise, for example in South Africa and Australia in the 1900s, interest in those country's botanic gardens growing native flora increased. When conservation and biodiversity were being widely promoted in the media, botanic gardens were already well on top with diverse displays and relevant research. And, more recently, as environmental sustainability takes centre-stage in society, botanic gardens are seeking to demonstrate their commitment.



Mark with the horticultural staff after the first plantings at the Oman Botanic Garden

In addition, over the past 30 years, botanic gardens worldwide have started to look 'beyond their garden walls' and promote this critical thinking to their visitors and communities. It has been interesting to see how quickly new ideas are being shared. The global botanic garden community at the higher levels interacts extremely well and that thinking is shared with national and regional botanic gardens communities. Australia is a strong player at all of these levels.

What are the biggest challenges facing botanic gardens in Australia at the present time?

All botanic gardens today face ongoing budgetary issues. However, perhaps the biggest challenge for botanic gardens in Australia is to ensure that the people responsible for the funding (and often the people managing the botanic garden) fully understand the difference between a botanic garden and a recreation park and ensure that they are actually fulfilling the former's definition.

Whereas probably all councils and governments understand the idea of a museum being a cultural collection, it seems that this is rarely the case for botanic gardens – whether in Australia or overseas. This is partly because botanic gardens do not always fulfil the definition of a current botanic garden or promote it effectively if they are.

Botanic gardens do not always fulfil the definition of a current botanic garden or promote it effectively if they are.

In a recent study I did for an Australian botanic garden, it was obvious (from how this botanic garden fitted into the organisational structure of the Council) that it is primarily appreciated in terms of its role as an attractive park to visit. I am certain this is not in the least bit unusual, nor do I think this means that Councils are not responsive to botanic gardens better defining themselves in the town or city.

In fact discussing this with the Council in question, and explaining how respect for their botanic garden and visitation to their town could be greatly improved without enormous expenditure, was very productive. As a result, a two year plan (aimed primarily at using what they already have to raise their position in the botanic community of Australia) is to commence this year. Hopefully such action will result in governing bodies of botanic gardens throughout Australia having a much better idea of why they have a botanic garden and a better understanding of how such institutions should be managed.

Growing plants and assembling living collections is a long term process, yet organisational priorities change over time. What impact does this have?

The fact that a botanic gardens is primarily made up of a living collection means that changes in missions and thematics cannot be done lightly. It is vital for a botanic garden (including all its staff) to understand why it has what it has and who it is there for.

When the Alice Springs Desert Park was being established we were keen to have something in place that would guide and drive what we were trying to achieve. For us this came down to the key message that we wanted visitors to take away with them – basically that ‘the desert isn’t as empty as you think it is’. Using this message greatly helped us all in our work. Not only in terms of not trying to just fill the park up with collections but actually working to highlight diversity. This was not only in terms of species of plants and animals selection, but also the way in which people, particularly the local Aboriginal people, connected with these plants.

Of course, establishing a *raison-d’être* is much easier for a new botanic garden. Older institutions have the added challenge of curating living collections that represent the thinking of a wide array of people over a long period of time (in some cases exceeding 150 years). Some of their plantings weren’t linked to any relevant societal mission at all but expressed the collecting passions of individuals.

It is vital for a botanic garden (including all its staff) to understand why it has what it has and who it is there for.

While this does not stop a botanic garden having a contemporary mission, it does mean that the organisation has to, in some way, accommodate what is already planted with an associated and phased strategy to replace those collections and themes that do not fit. While it is possible that there are many collections in established botanic gardens that cannot be removed in the short term, it is still necessary to have a strategy in place that will ensure that everything that dies is not automatically replaced with more of the same.

In many ways, the mission should be something that produces an overarching culture in a botanic garden that must be shared with any new staff early in their employment at the botanic garden. In Alice Springs, I always spent a day with any new botany section staff member, including apprentices, walking the Desert Park site and fully explaining what we were trying to achieve and how that person should view their role.

In addition, the significance of a botanic garden's mission must also be understood by those responsible for heritage issues. While many botanic gardens have strong historical links, I do not think the fact that a plant has been growing in a particular place for a long time should be given as the first reason for replacing it when it dies. Most botanic gardens have limited space and it is often the natural demise of earlier plantings that provides the opportunity for introducing new ones that better reflect the mission of the contemporary botanic garden. However, this is not something that can be addressed lightly as any significant planting may be part of an original important design.

What do you think are the main criteria for selecting plants for accession into a living collection and what documentation should be produced?

This again comes back to the need for a full understanding of why you have any collection. If it is important for research or conservation, or is a part of a particular horticultural/education collection, then information about the source of the material, including any information that you have about its provenance, is vital. In addition, any information collected with regards to its propagation, growth and survival should be recorded.



The wildflower display at the Alice Springs Desert Park

What is recorded in relation to the origin of accessions often depends on the nature of the botanic garden. For a botanic garden like the desert park with a collection of indigenous plants found growing within a radius of about 500km from Alice Springs, the vast majority of the plants are wild collected and the provenance data has always been viewed as very important.

For a botanic garden with a much broader range of collections, it is often likely that what is grown will not be wild collected and sometimes there is limited information about the origin of propagation material. While this is a reality, it is still a collection and there should be some effort made to document the plants and keep track of their origins.

There was a recent discussion thread on LinkedIn's Botanical Garden Professionals group: Has anyone done an audit of their living collections? Any tips, insights, suggestions? How would you respond to this?

I have done a number of living collection audits though they have not all been the same. Several were largely related to what was being grown, how it fitted with the original themes of the different garden beds and how those themes fitted in with the purpose of the overall collection. One of the important issues that came to light from many audits was the fact that a significant number of plant beds, which originally had very definite taxonomic or habitat related themes, became 'mixed plantings' rather than what the original themes intended.

It usually happened over a number of years with different people seeing the beds as suitable for non-theme related plantings. If this type of audit was done earlier and more regularly it would have been possible to decide whether the original theme should be retained and a few inappropriate plantings be removed. It is always possible that any themes might best be changed over time but it should happen as a result of an agreed decision and not by random plantings.

For the last three years and for a different purpose, I have been auditing the collection of the new National Arboretum Canberra.

Also, for the last three years and for a different purpose, I have been auditing the collection of the new National Arboretum Canberra. Being a collection of mono-cultural forests it has not been a matter of assessing variations in collection themes but has involved looking at the horticultural standard of the plantings, looking for possible mis-plantings and identifying needs to either finish the plantings or replace plants that have been lost. The issue of plantings needed is now being addressed by the Friends of the Arboretum who are conducting a very detailed stock take which will be extremely valuable in terms of providing information regarding future sourcing, propagation and plantings.

Alternatively, the auditing of theme plantings, assessing the condition of the plantings and determining the need for further plantings can be combined. While this would not be a quick job, it would be an excellent way of determining the content and condition of what is basically the very foundation of any well-functioning botanic garden.

What advice would you give to young botanists/horticulturists/ plant records officers starting out on this career path?

I think that anyone working in a botanic garden should not hesitate to be involved in as wide range of work as possible. Botanic gardens are often noted for being places where people have long careers, no matter what part of the garden they work in. Unfortunately, there are frequently limited interactions between different work areas and so forming links early in one's career in a particular botanic garden is worthwhile.

This not only helps unify the institution, but I have also seen people initially viewed as being best suited for one type of work ending up developing their career in a different role. This applies, for example, to horticulturists who become involved in education programs or become focused on researching a particular collection.

The other important thing for newcomers is to remember to occasionally 'look over the wall'. As I mentioned earlier the botanic garden community is very big and well-connected globally. The chance to see how others do it and share ideas, successes and failures is invaluable for everyone and should always be there. I certainly was very fortunate in terms of making those connections early and having the opportunities to travel.

Perhaps a good example of just how rewarding our work in botanic gardens can be was revealed while I was at the Desert Park. I had spent a sunny afternoon helping volunteers pull out buffel grass to restore natural vegetation on the site and later sitting in my office, covered in red dust, I received a phone call asking if I would join an international committee to review the botanic gardens of South Africa. It doesn't get much better!

Dr Judy West Executive Director, Australian National Botanic Gardens Branch Head of Parks Australia - Parks and Biodiversity Science has kindly agreed to be our feature interviewee next issue.



Attempting to establish mono-cultural forests at National Arboretum Canberra

Botanic news: from home and abroad

Hamilton Gardens wins International Garden of the Year award

Hamilton Gardens has received the prestigious International Garden of the Year award. The win was announced on 1 October as part of the 2014 Garden Tourism Awards held at the International Conference Gardens without Limits conference in Metz, France.

The annual award is presented to gardens which distinguish themselves in the development and promotion of the garden experience as a tourism attraction. Previous winners have included the Singapore Botanic Garden – which is currently applying for UNESCO World Heritage Status – and the Gardens of Trauttmansdorff Castle in Merano, Italy.

Hamilton Gardens Director Dr Peter Sergel says: 'Many local individuals and organisations have contributed to the creation of Hamilton Gardens, and this is some well-deserved recognition for what they have achieved. There is a lot more garden development still to occur and we're constantly improving the way we do things. However this international award confirms we're on the right track'.

Hamilton Gardens' concept of tracing *The Story of Gardens* through different civilisations and time is considered internationally unique. This concept was recognised by award juror Michel Gauthier, who said the award from industry peers indicated Hamilton Gardens was 'a leading example of integrating quality garden experiences to the tourism industry'.

'Many local individuals and organisations have contributed to the creation of Hamilton Gardens, and this is some well-deserved recognition for what they have achieved.'

Hamilton Gardens' development has been fast-tracked after Hamilton City Council approved a targeted rate for five more gardens within four years adopted in Council's 2014/15 Annual Plan. The proposed gardens, and associated visitor facilities, will cost \$7 million, however consultancy firm Horwath HTL estimates this investment will be recouped within three years through increased economic benefits to the region. Additional funding for the Gardens is being sought from grants and sponsorship.

Hamilton Gardens will be our feature garden next issue.

Samoan breadfruit is leading the way in tackling hunger world wide

The Director of the Hawaii-based Breadfruit Institute of the National Tropical Botanical Garden, Dr Diane Ragone, has just handed over a royalty cheque to the Deputy Prime Minister of Samoa.

Ma'afala trees have been distributed to 27 countries, including Haiti, Jamaica, Ghana, Nigeria, Liberia, and Myanmar since 2009.

And Dr Ragone says the means are now there to produce and distribute millions more for tree planting projects in the tropics, where hunger and lack of food sustainability are prevalent.

This is a nice postscript to the Dunedin conference where we heard the breadfruit story from keynote speaker, Chipper Wichman. Listen to this interview on ABC's Pacific Beat program at: <http://www.radioaustralia.net.au/international/radio/program/pacific-beat/samoan-breadfruit-leading-in-tackling-hunger-world-wide/1348746>

Australian flora wins at the RHS Hampton Court Palace Flower Show in UK

The 'Essence of Australia' show garden, presented by the Royal Botanic Gardens Melbourne, won a prestigious Best in Show title and Gold Medal at the RHS Hampton Court Palace Flower Show 2014 in July. This is the world's largest flower show, attracting 154,000 visitors and reaching up to 27 million Britons through a range of press coverage.

The red sands and rocks in the garden were sourced in the UK and the 1,453 Australian native plants were sourced from nurseries in the UK, Spain and Holland and prepared by UK nursery Hortus Loci.

Designed by highly respected Melbourne-based landscape designer Jim Fogarty, the garden was constructed over a period of 19 days, including seven days of planting by a nine-member planting team comprising horticultural staff from the Royal Botanic Gardens and volunteers from the horticultural industry.



The timber-clad structure references the rock formations of the Northern Territory and is symbolic of Melbourne's modern architecture and contemporary design. The colours of the garden are based on red sands, natural timbers, charcoal, and red style lines on the timber structure to reflect the outback of Australia and the architecture located in the Australian Garden at the Royal Botanic Gardens Cranbourne.

No materials were sent from Australia (significantly reducing the project's environmental footprint) and after the event, the plants were donated to Kew Gardens in London.

<http://www.rbg.vic.gov.au/visit-cranbourne/attractions/australian-garden/essence-of-australia>

A super-colony of bats threaten an internationally recognised rainforest in Townsville's Palmetum

Thousands of bats infesting Dan Gleeson Memorial Park in Kirwan have now migrated to the 17 hectare Palmetum botanical garden, valued in the millions, where they have already ripped apart the treetop canopy.

The Palmetum was a 1998 Bicentennial Project which features a diverse and rare collection of Pandanaceae and cacti and succulents.

With the trees at the Palmetum already showing considerable damage from the bats stripping away the canopy, sunlight breaking through threatens to wipe out ground foliage and forest floor plants not conditioned to the light.

Deputy Mayor Vern Veight said 'We've got some rare plants here that we have to find a way to protect given that the trees are having their canopies shredded ... and we have very limited capacity to do anything about the bats'.

North Queensland Wildlife Care flying fox coordinator Dominique Thiriet said the bat migration was just 'a natural process' and 'we need to accept this is how it goes'.

A range of measures have been suggested to rid Townsville of the bats, ranging from helicopters to green ants, but the council fears scare tactics could drive them into residential yards.

Source and read more: <http://www.townsvillebulletin.com.au/news/bats-shred-palmetum-leaf-cover/story-fnjfzs4b-1227008120802>



The hordes of bats and the stripped vegetation at the Palmetum, Townsville.

Green Army Projects for Gold Coast Regional Botanic Gardens

Gold Coast Regional Botanic Gardens (Gold Coast RBG) have been successful in securing two Green Army Projects at the Gardens. The Green Army is a Federal Government vocational training program that supports local environment and heritage conservation projects across Australia, and provides training and hands-on work experience for young Australians.

The Green Army program provides a team of nine participants and a supervisor to work full time for six months at each project site, as well as tools and a small contribution towards consumables. Both projects will be implemented in partnership with Friends of Gold Coast RBG. Gold Coast RBG has benefitted significantly in the past from similar programs.

The first project, starting this November, is aimed at conserving and promoting the indigenous and European heritage of the region. Working alongside local Aboriginal groups, an Indigenous Story Garden will be developed that will reflect the bush calendar and incorporate threatened and locally significant plants of the region.

The second project, starting in May 2015, will see restoration of a 0.83 hectare wetland with native macrophytes. As well as improving water quality and fauna habitat, this project will involve interpretation to showcase the value of native plants in amenity horticulture and wetland management.



The wetland area to revegetate.

The Gold Coast RBG Conservation and Cultural Diversity Project and Wetland

Restoration Project are supported by the Australian Government's Green Army Program and the City of Gold Coast.

For more information <http://www.environment.gov.au/land/green-army> or contact Liz Caddick, Curator, Gold Coast RBG LCADDICK@goldcoast.qld.gov.au

The future of the Brisbane City Botanic Gardens

The City Botanic Gardens in Brisbane's CBD was established in 1828, becoming Queensland's first public garden. The gardens span 18 hectares including 1.2 kilometres of river frontage.

The gardens were identified as a key inner-city space for future renewal in Council's City Centre Master Plan 2014. Environment, Parks and Sustainability Chairman Cr Matthew Bourke invited community input and the consultation period for the City Botanic Draft Master Plan concluded on Friday 26 September. Council is currently in the process of reviewing feedback.

The City Botanic Gardens is Brisbane's most significant and much loved heritage park, and this is a 'once in a generation' opportunity to shape it for the future'.

'The City Botanic Gardens is Brisbane's most significant and much loved heritage park, and this is a 'once in a generation' opportunity to shape it for the future', Cr Bourke said.

'The gardens have become a precious leafy sanctuary in the CBD for residents and visitors, and this master plan is about ensuring we are unlocking the gardens potential as the green heart of the city for generations to come'.

'Council is committed to protecting and enhancing the park's unique heritage and environmental features as well as meeting the changing needs of the city, its visitors and residents'.

Cr Bourke said priority projects proposed in the plan included:

- increasing activation by improving grounds and facilities,
- creating an information kiosk as the first phase of a visitor centre,
- designing a suite of wayfinding signs to help visitors find their way around the gardens and locate facilities and displays,
- supporting the existing Gardens Club café to help educate the community about edible crops in the gardens, and
- building the City Botanic Gardens Brand.

Cr Bourke said Council had also created a community reference group who would discuss the best ways to revitalise and activate the City Botanic Gardens.

For more information visit: <http://www.brisbane.qld.gov.au/planning-building/planning-guidelines-tools/city-centre-master-plan/city-making-moves/city-botanic-gardens-master-plan>

Australian Garden History Society continues its support of significant regional botanic gardens

In June 2014 the Koroit Botanic Gardens Restoration Committee was successful in obtaining a grant from the Australian Garden History Society to continue the restoration of its collection and garden beds to the original 1880 William Guilfoyle master plan.

Winter plantings have included a 'subtropical' style foliage border with species of *Calodendron* and *Dracaena* and varieties of cordyline, trachycarpus and bamboo. A new Coral Tree *Erythrina caffra* has also been added to the collection of African trees, adding to the existing *Dracaena draco* in the gardens, which is individually listed as a specimen of state heritage significance.

Shrub beds to protect the root zones of the oldest trees are continuing to be developed. They keep vehicles and mowing crews off critical root zones and mulch beds helps improve soil condition and permeability. Large climbing shrubs and colourful floral displays including Proteaceae, Tree Dahlias, cannas, hibiscus and iochroma, attract the appreciation of non-gardeners and the general public.

A Muttonwood, *Rapanea howittiana* which is believed to be one of Baron Ferdinand von Mueller's 1870s donations appears to have finally died. The Muttonwood rapidly defoliated at the end of the drought about four years ago and with the removal of an original southern conifer hedge wind break nearby. Despite mulching and summer irrigation the Muttonwood had reached the end of its life.

However, if bougainvillea plantings around its base develop quickly enough, the Muttonwood may have a new role as a climber support structure. The Muttonwood is unlikely to be replaced with the same species. Koroit's average annual rainfall (around 700 mm) is probably marginal for its growth and the Koroit gardens, like most public parks in this day and age, will not be able to provide ongoing irrigation.

Future goals for the Koroit Botanic Gardens are to rapidly expand the range and diversity of flowering plants and to have an identification sign installed. An information brochure for children is also planned.



Extract of 1880 Guilfoyle master plan. The implementation of the eastern bed design is well-underway.

'Before and After' revitalisation at Horsham Botanic Garden

Horsham's Botanic Gardens were established in the 1870s and designed by the curator of Melbourne's Royal Botanic Gardens, William Guilfoyle. The gardens were originally a reserve of 37 acres, but only eight acres remained by 1982. Clubs and individuals have donated trees and shrubs over the years and several thousand thrive in this peaceful haven.

Children's playground and picnic facilities are included amongst trees, lawn areas, rose gardens, sculptures and floral displays beside the Wimmera River.

Rob Moir, Sustainability Environment & Emergency Manager, Horsham Rural City Council says, 'The Horsham Botanic Gardens has been a popular destination even during the drought. Despite being one of the greenest locations of that time, the gardens were subject to varied water quality and restrictions and did suffer like many other gardens throughout the state.'

Currently underway is an exciting revitalisation program which includes the development of an entirely new area of the gardens. A new entrance will allow people to walk through the gardens rather than around.

The development includes:

- removal of senescing, diseased, damaged and dangerous trees,
- constructing of new paths and walkways,
- installation of a new western entrance/exit to the gardens linking the gardens to the Wimmera River precinct via the urban forest walk,
- construction of a new low water use lawn area with in-ground sprinklers on the automatic system,
- planting of two new Moreton Bay Fig trees in the new lawn area, to complement the existing fig which was planted in 1960 and has spent all its life crowded out by recently removed gum trees,
- new collections of plants used by the local indigenous inhabitants, species traditionally used for food, medicine, weaving etc, all of which are planted around a listed scar tree (signage will provide detailed information on these plants and their usage),
- new collections of native plants including Acacia, Callistemon, Grevillea, Banksia, Eremophila, Correa and native grasses, and
- rock edging sourced from local mountain ranges.

In the interim, many of new beds have been planted as a wildflower meadow with native everlastings around the outer fence line. This is hoped to provide a spectacular display in time for the Spring Garden Festival.

All works have primarily been undertaken by the apprentices in the horticulture and landscape unit under the guidance of unit coordinator Barry Roberts.

More seating will be provided to encourage the general public to use this newly developed area.

BEFORE



AFTER



Horsham Scar Tree (above) and Horsham West End (below). Images taken in March and May this year. How many improvements can you spot? Photos: Barry Roberts.

BEFORE



AFTER



People news: BGANZ members 'on the move'

John Siemon has been appointed to the newly created position of Curator Manager, Australian Botanic Garden, Mount Annan as part of the restructure process associated with the amalgamation of Sydney's botanic gardens and Centennial Parklands. Prior to this, John was Facility Project Manager for The Australian PlantBank, the newly established state-of-the-art plant and seed storage facility, as well as innovative education and research centre at Mount Annan.

Greg Bourke has been appointed to the newly created position of Curator Manager, Blue Mountain Botanic Garden, Mount Tomah. Greg joined this cool climate estate of Sydney's Royal Botanic Gardens and Domain Trust about three years ago as Senior Supervisor Garden Services. His interests include carnivorous plants, Stylidiaceae and exploring swamps.

Ryan Harris has recently moved from his role as Seed Bank Officer at Eurobodalla Regional Botanic Gardens to work as a Certified Gardener at Wilson Botanic Park Berwick. Located in Melbourne's south eastern suburbs, this is currently one of the fastest urban growth areas in Australia. Ryan is excited about joining this small team responsible for maintaining and developing a high standard of horticultural excellence at the Park.

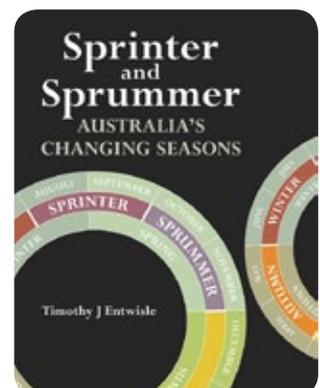
Liam Cole, Wellington Shire Council's Open Space Officer, was awarded the inaugural PLA David Aldous Student of the Year Award at the Parks and Leisure Australia Awards of Excellence at the National Conference in Cairns in August.

By undertake senior roles whilst studying for an Associate Diploma in Applied Science (Parks Recreation & Heritage), Liam was able to research and develop initiatives and projects focused on the development of open spaces and the engagement of the local community.

Kate Heffernan, Friends of Gold Coast RBG, has been appointed President of the Committee for 2014-15 of the newly renamed *Australian Association of Friends of Botanic Gardens Inc.* (AAFBG).

Prof. Tim Entwisle has written a book in which he argues the case for a new five-season approach that recognises Australia's unique biodiversity. It was launched on 1 September which coincides with the first day of 'traditional' spring and National Wattle Day.

Sprinter and Sprummer: Australia's Changing Seasons (RRP \$29.95) is published by CSIRO Publishing. Proceeds from the sale of this book will assist the Royal Botanic Gardens Melbourne to advance the knowledge, conservation and enjoyment of plants.



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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.....

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- 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 would like to sponsor BGANZ please email: secretariat@bganz.org.au for details.

Pollinating great ideas

The design of an accessible potting bench for a botanic garden

Karen Hagan, Design Engineer and **Erin Collins**, Senior Occupational Therapist

Introduction

In Dubbo Regional Botanic Garden, the Sensory Garden extends over approximately one hectare and contains over eighty species of plants and trees chosen to provide continual colour, smell, taste (under guidance), texture (for touch) and sound (rustling leaves) throughout the year.

The garden may be explored by a winding path – the surface of which changes in texture to provide a changing sound as it is traversed. It also has a variety of fountains designed to encourage visitors to interact with water, and a large pond with a bridge and stepping stones.

Volunteer gardeners and visitors are encouraged to physically interact with the garden by weeding, planting and propagating cuttings. To make this easier, Dubbo City Council decided to install a multi-accessible potting bench in a central position in the garden.

Research revealed that there were no suitable potting benches available for purchase so it was decided to design a potting bench specifically for the Sensory Gardens.

The Design Process

The design process began with the creation of a multi-disciplinary team comprising Dubbo City Council's manager of horticultural services, a senior occupational therapist, a design engineer with experience in designing equipment for people with disabilities and the supervisor of the team of TAFE students who would build the potting bench on site as part of their Certificate IV Horticulture tertiary qualification.

An appropriate central site in the Sensory Garden was identified and the following preliminary specifications for the bench were identified. It needed to:

- be accessible by people with wheelchairs of different heights
- be accessible by small children
- facilitate gardening activities by groups of mixed ability, age and size

- complement existing design elements in a manner which is functional yet pleasing to the eye
- be a safe and durable piece of public park furniture
- be constructed of wood. The durability, aesthetic quality, good strength to weight ratio, availability and competitive price when compared with other materials such as steel, made wood a good choice for this project. Furthermore using wood meant that the bench could be constructed on site without specialist tools save for common carpentry tools.

The Sensory Garden has a wheelchair accessible picnic table. When tested by an adult and a child in a standard Otto Bock Start M5 comfort manual wheelchair the following observations were made.

- The height of the potting bench is critical in terms of visibility of the work area, reach and general comfort. People with shoulder weakness or stiffness are particularly sensitive to bench height.
- Wheelchair users need different heights of work bench dependent upon the size of the wheelchair user and the height of the wheelchair (both manual and electric wheelchairs come in a wide variety of heights).
- The foot rests of wheelchairs take up a lot of room under a table and these need to be accommodated.
- Access to and from the potting bench should take into account the turning circle required by wheelchairs.
- The path in and out of the potting bench should be completely flat and hard to ensure that the wheelchair wheels do not meet any obstacles, get bogged or roll over a ledge making it difficult for the wheelchair user to back away from the potting bench.
- Access under the potting bench should not be obstructed in any manner (e.g. by a shelf or structural support) that is not visible to the wheelchair user as they approach the potting bench as this may result in injury to their knees or legs.
- The width of access under the bench (between the supporting legs) is important particularly when wheelchair users approach the potting bench or attempt to back away from it. Wheelchairs come in a variety of widths.
- There is a tension between wheelchair accessibility in public park furniture and social exclusion. A piece of park furniture that is wheelchair accessible may inadvertently make the wheelchair user more conspicuous and put them on the edge of the social gathering.

Volunteer gardeners and visitors are encouraged to physically interact with the garden by weeding, planting and propagating cuttings.

As a result of this investigation, the original brief was expanded and refined to include the following specifications.

- The potting bench top should have three different heights: 700mm, 800mm and 900mm so that wheelchair users and non-wheelchair users can choose a height which is comfortable for them to work at.
- There should be three bays each of them 900mm wide (measured distance between supports) which allow wheelchairs easy access to the bench.
- Each of the three work benches will be at least 950mm wide and 750mm deep and be accessible from both sides.
- Space and accessibility makes it necessary for the wheelchair users to have their back to the rest of the Sensory Garden when they are using the potting bench. To reduce social exclusion children are encouraged to use the other side of the bench (so that they are facing the wheelchair users) by the provision of pedestrian access and a step (integral to the design) to help them reach the bench tops.



Sometimes you've got to build it yourself

A number of designs were considered by the design team. The design was kept very simple to reduce the number of design variables during evaluation by wheelchair users. For example, it was decided not to include shelves and brackets for tools in case difficulties arising from these distracted the users from the quality of the main design concept.

To maximize the clear space beneath the work bench, 18mm AA grade marine plywood was chosen. This grade of plywood is suitable for exterior use when appropriately sealed. The rest of the bench was made from treated pine. When the final design was approved a full set of engineering drawings were prepared.

A concrete pad was laid adjoining an existing paved area. The pad is the same height as the paved area to ensure easy wheelchair access and completely flat to help wheelchair users maintain maximum control as they approach and leave the potting bench. The hard surface of the concrete prevents wheelchairs from sinking into the surface and getting bogged.

The paved area is curved and this organic shape is complemented by the shape of the work bench tops.

TAFE students built the bench on site within two days ... and the wood was treated with linseed oil.

Preliminary Evaluation

The public's response to the new potting bench was very positive. It was incorporated into educational programs and used by over one hundred people ranging from two years old to senior citizens during the first week of its installation. A special needs class from a local high school which included two wheelchair users found the bench easy to use.

The central position of the potting bench highlights the inclusive community philosophy of the Sensory Garden. The design has proven to be robust despite being climbed on by numerous visitors and is coping well with Dubbo's harsh climate.

One drawback has been that use of the bench is hampered by the lack of shade during summer but a temporary shade structure is erected for group bookings.

Growing fish and vegetables together

Adam Smith, Senior Horticulturist and **Sally Nowlan**, Media Relations, Parks Victoria

Imagine growing fresh veggies and raising some tasty fish to eat at the same time.

That's just what a group of horticultural students are learning to do in a Werribee Park glasshouse.

The system is called Aquaponics, a combination of aquaculture and hydroponics that produces vegetables and fish with one system that uses no soil and a lot less water.

'The students have been amazed as they watch the plants mature in around four weeks instead of nine in a veggie patch. No weeding is required and only recycled materials are being used in this system.'

The students attended the onsite horticultural training program at Werribee Park, and part of their studies was learning how to create a closed loop system to grow veggies, herbs and fish together. This trial project used the waste produced by twelve goldfish to provide all the nutrients for the hydroponic herbs and vegetables. The plants, in turn, purified the reticulated water.

WHAT'S NEW

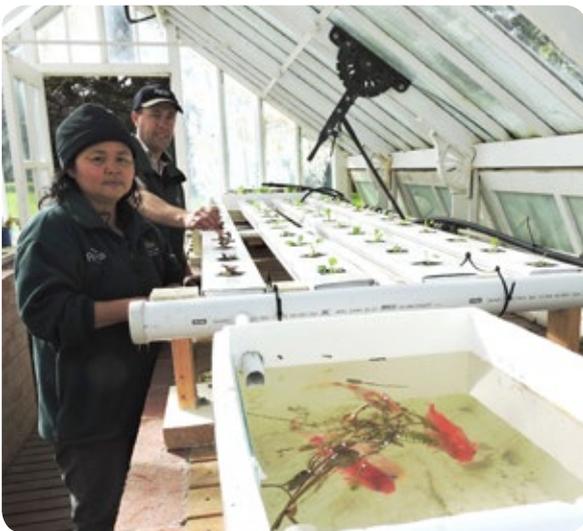
Parks Victoria ranger and horticulturalist, Adam Smith is in charge of the project which he and the students have carefully designed. 'This particular system uses three types of hydroponic methods; gravel growing beds which act as a filter, gutter growing beds which use pots, and floating beds where the plants virtually walk on water. And it uses 90% less water than a conventional soil garden.'

'The students have been amazed as they watch the plants mature in around four weeks instead of nine in a veggie patch. No weeding is required and only recycled materials are being used in this system.'

'The plants are growing so fast it's amazing,' says student Hsar. 'We've grown lettuces that are almost ready to eat in just a few weeks. It's easy because it doesn't need a lot of work, and it's great to see the fish growing at the same time'.

The veggies and herbs will be shared by both the park's hotel restaurant and the students, and the goldfish will stay in the tanks for a couple more harvests. They will eventually be returned to the park's parterre garden pond and edible species like barramundi will be used in the future.

'This has been a great learning project,' says Adam, 'and one that we will definitely be continuing. It's such a quick and efficient system that we'll be planting different crops about every four weeks after each harvest.'



Adam Smith and intern Evelyn Kunoo at the start of the project (left). Students checking on their flourishing crop (right).

BGCI's journal on databases to support plant conservation

The defining feature of a botanic garden is a documented collection of plant species and for many years botanic gardens have been recognised as the guardian of knowledge about plants.

The latest issue of BGCI's BGjournal (Volume 11, No. 2, July 2014) focuses on the uses of databases within the botanic gardens community and beyond. As well as exploring the range of online tools to support the recording of species available globally, this issue shows the evolution of new careers in 'biodiversity informatics' and how botanic garden(er)s are using these tools to manage in-situ conservation efforts.

A global survey of living collections showed that horticultural display is a key element all botanic gardens share and that education is seen as their most important role with conservation highlighted as a close second.

By coincidence, this publication complements the theme of this issue beautifully, so BGANZ has arranged a direct link to this publication for members to download. [Click here.](#)



BGANZ's Collections Planning Toolkit

Managing plant collections is one of the key features that distinguishes a botanic garden from other high quality public parks or gardens and highlights their role as a valuable scientific, horticultural and cultural resource.

Given this, one would assume that the majority of botanic gardens would have active collection policies and/or collections plans as guiding documents, setting broad aims for collections, setting priorities and assisting gardens both large and small in the management and presentation of plant collections.

In reality, this may not be the case. A survey of regional botanic gardens in Victoria, Australia indicated that many have conservation management plans and master plans but very few gardens have documented policies or collections plans as key tools to guide and manage their living collections.

In response to this, BGANZ developed a Living Collections Management Toolkit and has run several professional development workshops. The aim of the toolkit is to assist botanic gardens horticultural managers, curators and horticultural staff in the development and implementation of plant collection plans.

The toolkit aims to target botanic gardens that may not have fully developed collections plans, however it also serves as a valuable checklist or reminder/reaffirmation for gardens that have well established collection-planning documentation and processes. For access to this valuable resource, [click here.](#)



Plant Identification Courses – Paluma, North Queensland

Correct identification of plants is essential in many land management roles, whether it is for weed control, threatened species management, or simply to confirm that a labelled specimen in a garden is correctly named.

Over the past fifteen years, plant identification has been made much simpler through the wide introduction of 'Lucid' keys. Lucid, a computer program developed at the University of Queensland, provides an easy-to-use interactive tool for plant identification. Lucid keys have now been published for the Australian eucalypts, wattles, mangroves, grasses and tropical rainforest plants – some of these are available for free online. A Lucid key for the rainforest plants of south-eastern Australia is soon to be published by Terania Rainforest Publishing.

The Australian Tropical Herbarium and the Wet Tropics Management Authority, as part of their public engagement programs, have developed a series of plant identification short courses, using the CSIRO Lucid Key to Australian Tropical Rainforest Plants as a learning tool.

The short courses introduce participants to the skills and resources needed for plant identification using the Lucid Keys. Targeted at the interested layperson, the courses cover:

- how are plants named?
- plant structure and terminology.
- practice in the use of the rainforest plant identification key.
- a walking tour of a nearby rainforest.
- hands-on learning through identification of local native plants.



Rainforest fruit Photo: G. Wilson

The next course will be a special three-day residential course, held in the highland retreat of Paluma, near Townsville, from 28-30 November. Spaces for this course are limited. For Cairns locals, courses will be run at James Cook University Cairns Campus in June 2015.

For more information, or to be put on the mailing list, please contact the Australian Tropical Herbarium 4042 1837, or by email: enquiry@ath.org.au. Course brochures and enrolments are available at alumni.jcu.edu.au/PIC2014

200 years of planting: a living collections plan for the Royal Tasmanian Botanical Gardens

Natalie Tapson, Horticultural Botanist, Royal Tasmanian Botanical Gardens

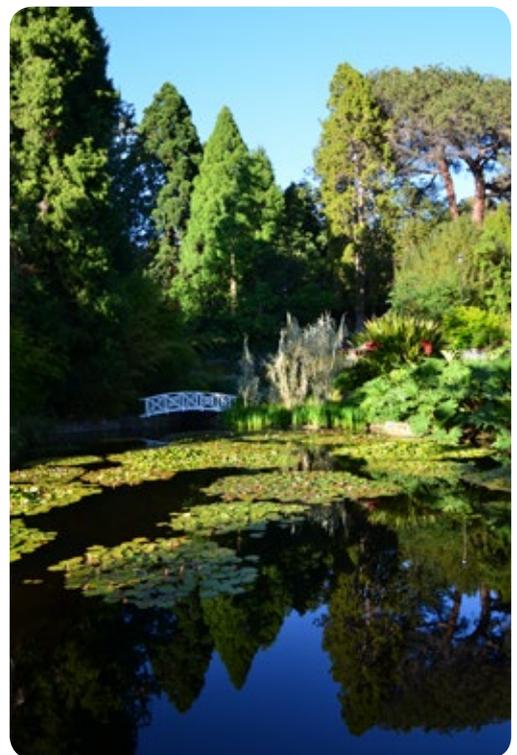
The Royal Tasmanian Botanical Gardens (RTBG) has produced a report outlining recommendations for the management of the living collections as we move towards and beyond our 200th anniversary in 2018.

During its long history, the focus of the gardens has changed many times from its original role as an acclimatisation garden that provided produce for the Governor's table to a 21st century botanic garden with a strong emphasis on conservation and education and Tasmania's native and Southern Hemisphere flora.

During those 200 years there have been long periods of unfocussed collection development that have resulted in the potential to blur the reason and purpose of the collections over time.

The genesis of the review came through the development of a Living Collections Plan as part of the 20 year Strategic Master Plan 2009. It was decided that an in-depth review of the collections was needed with the aim of giving value to those that best fitted with the vision and mission of the gardens.

The vision and mission acknowledge the importance of the conservation of Tasmania's natural flora but also recognise our 200 year history and the importance of the gardens' heritage landscape and the role of the RTBG in education and enriching the social and cultural life of Tasmania.



Heritage landscape of Lily Pond (1848) backed by the Pinetum planted in the 1860s.

Objectively reviewing the collections

The review was undertaken by the on-ground horticultural and nursery teams and management and was the first part of a three step process. The 45 existing collections, which included potted nursery collections and the seed bank, could be divided into the four themed areas: Tasmanian; Conservation & Research; Southern Hemisphere and Cultural & Ornamental. There were a range of focuses within each themed area: for example Tasmanian collections were divided into geographic, taxonomic, demonstration, heritage and horticultural significance. These divisions gave a good indication of the diversity behind the basis for different collections within a theme.

The value of each collection was then evaluated based on a set of attributes with points from 1 (poorly met) to 5 (well met) for specific assessment criteria. The attributes that were scored were divided into the classes of defining, use and managerial attributes. Defining attributes considered such things as regional, botanical, historical and conservation significance; use attributes considered such things as interpretation, educational or recreational use of the collection, and managerial attributes considered factors such as site suitability and the general management of the collection. The scoring of the different attributes was weighted in line with their importance with the defining attributes given a value of x3, the use attributes x1.5 and the managerial attributes x1.

The 45 existing collections, which included potted nursery collections and the seed bank, could be divided into the four themed areas: Tasmanian; Conservation & Research; Southern Hemisphere and Cultural & Ornamental.

The utilization of a scoring system based on a set of attributes with defined criteria allowed for an objective assessment of the RTBG's collections. From this review process we found collections given the highest overall rating included the Subantarctic, Tasmanian Native Section, Tasmanian Seed Conservation Centre and Conifer Species while those with the lowest ratings included the Protea and Conifer Cultivars.

Acting on the findings

The second step to be undertaken following the review was to consider what could be done to each of the collections to improve the score in each of the three attribute classes. Again, this was undertaken by horticultural staff and managers and involved a series of brain-storming sessions to gather ideas and suggestions about how collections could be improved.

For example, although the Tasmanian Native Section was one of the collections that scored highly in the review, a suggestion to value add to the collection was for separate labelling to highlight rare and threatened species. A consideration of the site suitability under the managerial attributes led to the conclusion that there was currently not enough on-ground space dedicated to Tasmanian flora and the RTBG could better display this important theme by bringing the different Tasmanian themed collections together in a dedicated sector within the Gardens.



At present the major part of the in-ground Tasmanian collection is restricted to a line of narrow beds in the northern precinct of the Gardens.

Documenting the recommendations

The third stage of the process was for the horticulturists responsible for the various collections to bring together all the information from Stages 1 and 2 of the review with a discussion of the current strengths and weaknesses of the collection and an indication of the possible future directions for the collection.

The final step to bring together all the information from the three stage review process was to look at the individual collections at the RTBG on a landscape scale. A series of workshops was held with relevant horticultural staff and management. The aim of the workshops was to develop a design brief for a broad concept plan for the two current RTBG precincts and a recommendations statement for each area for the final recommendations document.

Once the evaluation process was completed it was up to the Deputy Director of Collections and Research, Horticultural Coordinator and Horticultural Botanist to gather all the information together into a Recommendations Report that will provide a basis for the on-going management of the RTBG's living collections.

Major strengths included the heritage landscape with its backbone of significant trees, the Tasmanian and Conservation Collections including the Tasmanian Seed Conservation Centre and Subantarctic Plant House, and a number of high standard ornamental collections such as the Friends Mixed Border and Conservatory. Weaknesses included the general lack of interpretation of collections, the disjointed nature of themed collections such as the Tasmanian collections, and recognizing that some collections clearly did not match the RTBG's strategic directions and lacked botanical and thematic integrity.

A clear way forward

The final document is the *Royal Tasmanian Botanical Gardens Recommendations for the Development of the Living Collections 2014*. This document was prepared by the Living Collections Working Group and is the realisation of the collections review in the Living Collections Plan 2009 originally produced by Inspiring Place in collaboration with the RTBG Living Collections Working Group and Alan Matchett Team Leader, Curator at Dunedin Botanic Garden. The Living Collections Plan can be accessed at <http://www.rtbg.tas.gov.au/file.aspx?id=1595>

The in-depth and inclusive nature of our review process has resulted in a recommendations report that can operate on a number of levels: from large scale 'whole of landscape' planning to specific major projects such as creating the proposed immersive Tasmanian rainforest experience, right down to recommendations that focus on horticultural detailing and interpretive opportunities.

These recommendations guide our daily work and the results will be multifold: staff will work satisfied that their achievements are part of a plan they helped create, visitors will enjoy the gardens more and the mission and values are clearly on show.

**[These recommendations
guide our daily work ...]**

Developing a local provenance plant collection

Ryan Harris, Certified Gardener, Wilson Botanic Park Berwick

One of the biggest challenges for most botanic gardens is deciding which plants have a place in their collection. In the past many gardens have taken a subjective approach to plant selection. Often this has resulted in an indiscriminate mix of plants and landscapes which don't maintain relevance over time. Determining priorities for which species to collect is fundamental to establishing a successful collection.

A personal account

Until recently I was employed as a Seed Bank Officer for Eurobodalla Regional Botanic Garden (ERBG) where part of my role was to assist with the development of the local provenance plant collection.

The ERBG has as its vision to collect and cultivate plants that are native to the local area – that is, to develop, showcase and maintain a local provenance collection.

In 2012 the Friends of ERBG applied for and were successful in obtaining a Biodiversity Fund Grant. The project's aim was to develop a reliable source of seed and tube stock targeting high conservation value ecosystems, over-cleared landscapes and identified corridors of local and regional significance. In line with the project aims, this enabled an expansion of the ERBG living collection.

The Australian government's Biodiversity Fund assists land managers to store carbon, enhance biodiversity and build greater environmental resilience across the Australian landscape. It provides support for the establishment of native vegetation or better management of existing native vegetation.

Determining priorities for which species to collect is fundamental to establishing a successful collection.

This funding meant we could undertake plant collecting trips, develop our seed bank and propagate and grow tube stock in our production nursery. Established seedlings could then be planted out in the botanic garden or sold to farmers and other land managers to increase the region's biodiversity.

This task primarily fell to me and my manager, Michael Anelzark, and we had 2,000 species to choose from!

Where to Start?

I spent many hours researching the development of plant collections. Defining what exactly we wanted our collection to be seemed to be the best place to start.

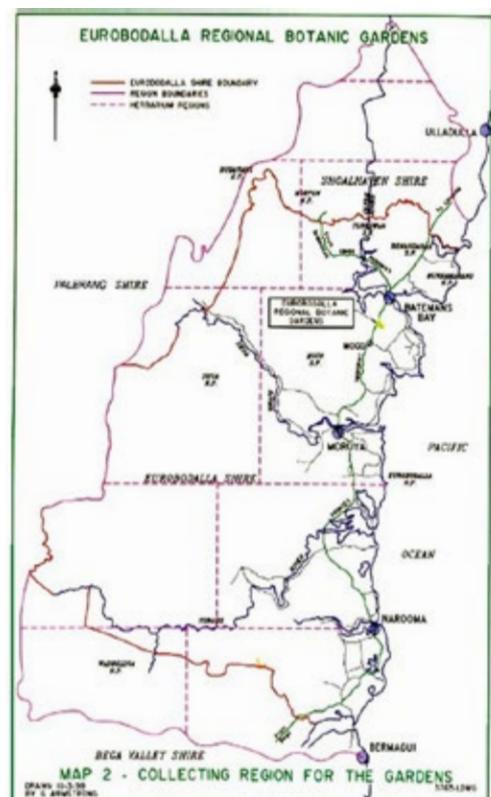
This took time but we found that having a clear single purpose to the collection that is understood by everyone – staff and visitors, was worth the effort. Here I endeavour to share the steps, methods, success, tips, tools and possible shortcomings of my personal experiences in such an undertaking.

This concept required defining the Eurobodalla Regional Botanic Gardens Collection area. That is:

Eurobodalla Regional Botanic Gardens (ERBG) only collects and cultivates plants from a defined region. The flora grown in the Gardens is drawn principally from the Shire of Eurobodalla, but also includes parts of the Shoalhaven, Palerang and Bega Valley Shires. This is because the collecting region has a geographical base that covers the catchments of the district's three large rivers, the Clyde, the Deua and the Tuross.

These rivers flow eastwards from the crest of the Great Dividing Range to the coast; therefore the collecting region encompasses a wide range of plant communities, from high altitude sub-alpine to coastal dune and sea strand.

Over 80 percent of the region is held in National Parks, State Forest or other Government area. This comprises some 2,000 species and the ERBG endeavours to collect and cultivate and display as many of these species as possible for conservation, education and recreation purposes.



Keeping the above in mind, ERBG still had a list of over 2,000 species within the local provenance area from which to choose.

What priorities does ERBG have for choosing which species to collect?

ERBG endeavours to cultivate and display as much of the region's flora as possible. Despite this, it's not easy to decide which species to collect, cultivate and maintain in an ex-situ collection.

By developing the following criteria and values we were able to identify some of the priorities of the ERBG collection.

- Consistent with garden thematics
- Desirable species in amenity horticulture
- Ability to propagate and cultivate
- Threatened species
- Protected species
- Species of endangered ecological communities
- Species used in conservation projects
- Commercial value
- Education values
- Cultural values
- Research values

Objective species selection

The dot points above only started to provide a suitable selection tool – a more objective approach to selecting species for the collection was needed. It would help if we were able to rank the priorities as well. We weighted each of the above with a point score that emphasised their relative importance. For example, we considered a species which occurs in an endangered ecological community to be more significant than a species readily available commercially.

Using Excel, I created a spread sheet model and then placed all 2,000 species found within the area on it. Each species was then given weighed scores against the selected criteria. This became the basis for the objective approach to species selection for collection.

Family	Genus	Species	Found in a Endangered Ecological Community	Desirable in Conservation Projects	Valueable in Amenity Horticulture	Not Found in ERBG Collection	Saleability	Found Outside ERBG region	Total Score
MYRTACEAE	Eucalyptus	melliodora	3	3	2	6	4	1	19
PITOSPORACEAE	Bursaria	spinosa subsp lasiophylla	3	3	2	6	3	1	18
CYPERACEAE	Gahnia	aspera	3	3	2	6	3	1	18
CYPERACEAE	Gahnia	melanocarpa	3	3	2	6	3	1	18
MYRTACEAE	Kunzea	ericoides	3	3	2	6	3	1	18
CYPERACEAE	Lepidosperma	concovum	3	3	2	6	3	1	18
ERICACEAE	Monotoca	elliptica	3	3	2	6	3	1	18
THYMELAEACEAE	Pimelea	axiflora	3	3	2	6	3	1	18
THYMELAEACEAE	Pimelea	curviflora	3	3	2	6	3	1	18
POACEAE	Austrostipa	rudis ssp australis	3	3	2	6	2	1	17
ASTERACEAE	Cassinia	longifolia	3	3	2	6	2	1	17

A snapshot of a very basic collection model

Without a doubt, creating such a model and giving species scores, based on identified criteria, can take many hours depending on the list of species you have to play with. Time needs to be spent researching reference books, publications, plant profiles and trawling the internet.

Understanding Data

Definition: A database is an organised collection of data; facts and statistics collected together for reference and analysis.

Once I began to research plants and attempted to score or justify our species selection, I found that having a well-equipped database was the single most useful tool for growing, monitoring and managing the collection.

Many projects often become bigger than ever expected and by ordering and understanding data flow in the first place, it is easy to expand and add more elements as required. Expansion beyond the initial development of the collection might include: research finding on species collected/cultivated, gardens interpretation/educational resources and seasonal performance.

For many gardens it is a matter of understanding existing data management systems. Many times wheels get reinvented unnecessarily and many hours could be saved in the efficient use of established suitable spread sheets and databases.

Once I began to research plants and attempted to score or justify our species selection, I found that having a well-equipped database was the single most useful tool for growing, monitoring and managing the collection.

How and where to source plants?

In conclusion, ERBG is fortunate in having a defined collecting area and a known number of species. We were able to cultivate all species from plant material with wild collected plant provenance.

This may not always be an option for all gardens and sourcing plants for local provenance collections may not always be easy. There are many barriers affecting this. Often many of the species you wish to grow are not readily available or are hard to cultivate.

The following are some suggestions for sourcing of local provenance plants:

- Collect and propagate your own (with relevant permissions)
- Local specialist nurseries
- Australian Plant Societies
- Seed Banks
- Environmental community groups
- Other botanic gardens
- Other local gardens with similar collection ideas.



Ryan Harris collecting *Pultenaea subspicata*.

Lavender diversity in Bendigo

Brad Creme, Curator, Bendigo Botanic Gardens

The Lavender Garden at the Bendigo Botanic Gardens (BBG) was established in the autumn of 2013 and has since had a year of growth. Entering its second spring, our understanding of how the different species and cultivars perform on this site has improved.

This collection found its way to Bendigo for several reasons. Our climate was deemed the most suitable when compared with other regional gardens for the majority of lavenders, and they also fit in with some of our garden themes such as 19th century horticulture, heritage gardens and dry climate cottage plants. We also had an empty 'roundabout' which was crying out to be planted up with something, having previously been the site of the former curator's cottage. This was also chosen as the most suitable space in the garden to design a garden bed that best showed off this group of plants.

Of the 11 species (including 81 cultivars) that we hold, most are very tolerant of Bendigo's climate but many need some help to make it through the extremes of winter and summer.

We also had an empty 'roundabout' which was crying out to be planted up with something.

As a relatively new Bendigonian, originally hailing from a more temperate and coastal location, I understood and was prepared for the reduced rainfall of Bendigo. Bendigo gets about 500mm per year compared with over 800mm per year in the south east of Melbourne.

What I wasn't prepared for was the impact that the extremes of temperature would have on plants. The 'normal' local climate that gardens have to cope with in Bendigo includes over 30 days of frosts in winter, with some late ones in August getting down to minus 4 and summer temperatures of over 45 consistently for days and weeks on end. It's fair to say that here in Bendigo there isn't really a traditional autumn or spring the way there is in Melbourne. Here, it's basically six months of winter followed by six months of summer.

In the context of growing lavenders, the summer conditions suit this collection quite well. Cultivars within species groups such as *L. intermedia* and *L. angustifolia* all enjoy the hot weather. We put the sprinklers back in the ground for summer to provide an additional water source for establishing plants during the heat. These ones seem to cope quite well with the winter as well, and have shown no signs of frost damage.



Lavandula angustifolia 'Patricia's pink' (on the left) and *L. 'guaranitica'* (on the right)

Lavandula angustifolia 'Patricia's pink' is a New Zealand-bred pink flowering cultivar and the one on the right in the photo was labelled as *L. 'guaranitica'* when we got it but our research has failed to find any reference to this name. It is quite different to the other angustifolias in our collection and points to the need to confirm its identification. Perhaps it was incorrectly labelled and got mixed up with *Salvia guaranitica* at some stage. When it flowers next we will attempt to identify it more accurately and get a pressed specimen.

More sensitive lavenders that struggle through winter and summer include the cultivars from the species groups *L. multifida*, *L. canariensis*, and in particular the *L. aristibracteata* and *L. pinnata* cultivars. These 'fern leaf' lavenders can be treated as annuals and many just don't make it through the year to flower again.



Lavandula pinnata 'Sidonie'

Lavandula pinnata 'Sidonie' (discovered in 1992 in a NSW garden by Sidonie Barton) suffers frost damage which can be pruned off after the risk of frosts are over allowing new growth to develop before the long hot summer.

A program of annual propagation is conducted by the Friends of the BBG to ensure we don't lose any species from the collection, and also to allow us to sell a few at the Friends' biannual plant sales.

Our garden design also factors in these different frost tolerances. Smaller frost tender cultivars are planted in the centre of the bed offering more protection and a more stable microclimate, while the larger more reliable cultivars are planted around the outer edge of the garden. This design also encourages visitors to 'walk in' to see the full collection. As the larger ones grow, the microclimate in the middle will become more stable.

Other fairly reliable performers that can be considered 'moderately hardy' include *L. dentata*, *L. viridis*, *L. lanata*, *L. latifolia*, *L. × chaytorae*, *L. × heterophylla* and *L. allardii*. These ones perform quite well in our local conditions and usually bounce back after sulking their way through winter a little bit.

This 'Grey French Lavender' *Lavandula dentata* var. *candicans* originates from North Africa, extending from Morocco and Algeria in the west, all the way to Saudi Arabia and Ethiopia in the east. It was introduced to Australia for its cut flowers, its ability to form 1.5 metre tall hedges and its long flowering times of over eight months per year. *L. dentata* is the only species we hold that has its cultivars flowering in August.

This Lemon lavender *Lavandula viridis* originates from Southern Spain and Portugal and is known for its unique white flowers, sticky foliage and lemony scent which help with moth pollination at night. It is not known whether it is indigenous or introduced to the island of Madeira, but it is definitely present on this island. Sir Joseph Banks sent someone else to Madeira to collect it and he then introduced it into cultivation in 1777 in the Royal Botanic Gardens Kew.

The Woolly Lavender next to it is an equally tough plant which originates exclusively from Southern Spain at altitudes over 1km. It forms silver domes of foliage which allows it to be used in various ways in the contemporary garden. It was first named by Linnaeus in 1780 but he called it *L. spica* var. *tomentosa* in reference to its hairy white foliage. It dislikes wet winters and would tolerate growing under a tree very well also.

There are over 30 species of lavender worldwide and at the BBG we don't hold any that are considered too weedy in Australian conditions or have no association with the history of Australian lavender cultivation. The commonly sold *L. stoechas* cultivars may dominate the nursery industry, but are not cultivated in the BBG for these reasons.

A useful reference for anyone wanting to learn more about this fascinating group of plants is: 'The Genus *Lavandula*' by Tim Upson & Susyn Andrews, Timber Press, Portland, Oregon. Copyright held by the Board of Trustees of the Royal Botanic Gardens, Kew 2004.

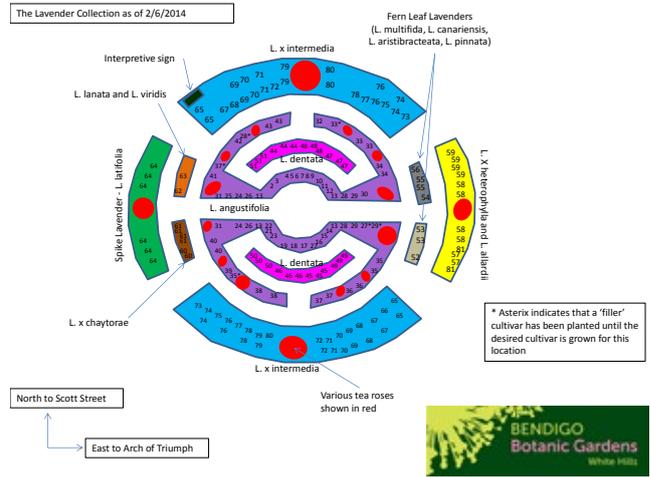


Lavandula dentata var. *candicans*



Lavandula viridis (on the left) *Lavandula lanata* (on the right)

To help keep track of all of our lavenders we have a simple Excel spreadsheet with their names, quantities held, quantities required and some other information and a simple PowerPoint based map of the garden bed showing where each is planted. These are updated as required and allow the 'precinct leader', who is our Leading Hand at BBG and a lavender-connoisseur-extraordinaire to keep track of the collection.



Databases and collection documentation can be simple and effective and form a sound basis for future development.

Other special collections we hold such as cannas (we have over 50 cultivars) and bearded irises (over 80 cultivars) are also 'databased' this way. Our database for the entire garden is a bit simpler and functions as a simple Excel spreadsheet at the moment. Bigger and better databases are hopefully in our future, but the resources of this regional botanic garden don't lend themselves to developing or properly using a big fancy database.

The important thing for us is to know what we've got, where it is and to maintain a critical level of stock plants to ensure the genetic diversity we hold is insured. We do lose some plants to weather extremes, vandalism, theft and general plant damage, and replace these losses by propagating enough of them in our nursery.

Generally speaking, the public has warmed to this new garden bed and we regularly see this part of the garden used for wedding photos and functions. We're looking forward to the best flowering season yet this summer.

The future of Bendigo's involvement with lavenders will include promoting various lavender products such as oils and crafts. We were lucky enough to receive a donation of a lavender still from Rosemary Holmes which is on display in the Samuel Gadd Centre at the BBG. This was an early prototype of the larger industrial distilleries used in large scale production of essential oils.



A lavender still and BBG Master plan

And finally, I'd like to extend you an invitation. The photos in this article were taken on the second day of spring 2014 when only the *Lavandula dentata* cultivars were in flower, but many others were already forming buds. To see the full diversity and range of lavenders (and cannas!) in bloom, visit the BBG in the middle of summer.

Pulling together the threads: a curatorial management planning case study

John Arnott, Manager Horticulture and Sharon Willoughby, Manager of Public Programs, Royal Botanic Gardens Cranbourne

The frenetic pace to complete the *Australian Garden* at the Royal Botanic Gardens Cranbourne (RBGC) has now abated. This extraordinary new garden has been open to the public since October 2012 and staff (while still running hard uphill) are now involved in landscape establishment and maintaining the garden.

Our attention has turned to taking stock of this experience ensuring that we have adequate documentation of the Australian Garden 'as imagined' to enable us to manage the garden into the future. This has required pulling together a multidisciplinary team with expertise from the various branches and undertaking a curatorial management planning process. This has taught us a lot about how we can best utilise our combined skills and strengths.

Our goals in running a curatorial management process 'post-delivery' of the Australian Garden is to capture a number of key drivers that impact on the final garden. These are:

- Taylor Cullity and Lethlean working with Paul Thomson, as the designers for the project, have an intended look and feel for each precinct throughout the garden.
- The horticultural team has goals for each precinct in terms of collections management.
- The Infrastructure and Land Management team has requirements in terms of management of the fabric of the place.
- The Public Programs team has a narrative and themes that they will use to ignite conversations with visitors and prompt deeper learning through education programs and connection to the garden itself.

The main aim is to test the garden as it stands today against our vision for the garden.

The main aim is to test the garden as it stands today against our vision for the garden.

How have we pulled the threads together?

The Australian Garden is divided into 21 distinct precincts. Our process has been to look at each precinct in turn with a team made up of staff from horticulture, infrastructure, planning and public programs.

The first step for this cross-disciplinary team was to develop a standard template in order to capture all the required information – this took longer to thrash out than we expected but was a really rewarding step to take.

Then looking at each precinct in turn, we captured the plans for each precinct, the intent of the various stakeholders represented by the team, how we expected visitors would use the space and what particular maintenance requirement each space would have.

This process saw a number of honest and robust conversations where mismatching perceptions of intent had to be negotiated. Staff brought a good deal of honesty and patience to the table during this phase and the rewards in terms of team building and motivation were high.

The next step of judging the outcome on the ground against intent was also challenging. This often required a site walk and more frank and robust discussions – this was at times testing.

The structure of the curatorial planning template follows these prompts/headings:

1. Precinct name:
2. Description from design team:
How has the design team described the precinct in master plan documents or precinct briefs?
3. Organisational objectives:
What does the RBGC want to achieve in this precinct?
 - 3.1 Precinct narrative:
What is the story or narrative of this precinct from the RBGC's perspective – what is this all about?



The team at work: Landscape Planner Jill Burness, Manager of Land Management and Infrastructure Ricardo Simao, Co-ordinator Infrastructure Russell Gibb, Co-ordinator Visitor Programs Jo Fyfe and Manager Horticulture John Arnott.

3.2 Landscape objectives:

What is the presentation, aesthetic standard that the RBGC wants to achieve in the precinct? What are the critical view lines that need to be maintained? What fine details are key to the success of this area?

3.3 Information, interpretation, art & education (IIA&E) objectives:

What do we want visitors to see, feel, learn, and interact with?

3.3.1 Conversations:

We would like to start the following conversations with our visitors and develop the following understandings.

3.3.2 Feelings – Mood:

What mood or feelings are we expecting this area will provoke?

3.3.3 Visitor Use:

How will visitors use this place, what are the visitor needs in this area, what facilities are proposed/needed in this area to achieve our objectives?

3.3.4 Artworks:

Document the opportunity and constraints for artwork in this area from IIA&E plan. Document the existing environmental artworks in this area.

3.4 Horticultural objectives:

What horticultural objectives does the RBGC have for this precinct? This would incorporate horticultural responses to landscape and IIA&E objectives. This section would detail the focus for collections in terms of the groups of plants that would be incorporated into the precinct, priorities for collections development.

3.5 Asset management objectives:

What asset management objectives and risk management objectives need to be captured to this area? This would incorporate objectives for all built infrastructure, fences, structures and amenities.

3.6 Environmental objectives:

What environmental management/issues need to be captured to this area? This would include impacts on conservation zone, weed risk assessments, pest animals and wildlife management.

3.7 Scientific objectives:

What are the objectives of this precinct that relate to, or highlight, the scientific objectives of the RBGC?

4. Current status vs objectives:

An assessment of how the precinct is performing against the identified objectives. If applicable, identify the gap between the objectives and current status.

5. Strategies/actions for improvement:

The development of an action plan linked to fulfilling organisational, landscape, information/interpretation/educational, horticultural, asset management and scientific objectives.

Weaving the thread together – What have we learnt?

The most interesting part of this process is what we learnt about the garden itself. For example, how visitors are using it – or sometimes, not using it as we expected. We captured stories that we didn't realise would be out there and saw opportunities for future developments that we had not yet dreamed of. In many ways, this whole 'post-delivery' process is a mirror image of an inclusive development phase process that would achieve stronger integration of ideas across teams.

The storytelling on the hill was about mallee regions and plants whereas the collection had begun to evolve towards a group of Western Australian plants, in which only some were mallee plants.

When working on the precinct within the Australian Garden called *Howson Hill*, we found a big disconnect between the collections management and interpretation planning. The storytelling on the hill was about mallee regions and plants whereas the collection had begun to evolve towards a group of Western Australian plants, in which only some were mallee plants. After identifying this disconnect through the curatorial management process, the decision was taken to shift the planting back towards mallees from across the mallee regions of Australia, grouped by zone.

Most importantly, we now have a list of actions that will improve the garden. Some have already changed and improved the garden experience for visitors; other actions will have medium and longer term outcomes.



Howson Hill: with the most southerly *Nuytsia floribunda* in cultivation in flower. Photo: Alex Smart

2013 BGANZ collections assessment

Abby Hird, Program Director, BGCI-US

Plant Search



The PlantSearch database, maintained by Botanic Gardens Conservation International (BGCI), connects living collection to researchers, conservationists, educators and horticulturists around the world. PlantSearch is the only global database of plants, seeds and tissues in *ex situ* collections and is completely free to use (www.bgci.org/plant_search.php).

One of its main applications is to identify plant diversity maintained in living collections. Recent global and regional assessments conducted by BGCI and collaborators have provided critical information for monitoring progress towards the 2020 Global Strategy for Plant Conservation (CBD, 2010). Specifically Target 8 aims to have:

At least 75 per cent of threatened plant species in ex situ collections, preferably in the country of origin, and at least 20 per cent available for recovery and restoration programs.

These assessments have found that 42% of European threatened native taxa (Sharrock and Jones, 2009), 23% of globally threatened taxa (Sharrock et al., 2010) and 39% of North American threatened native taxa are maintained in *ex situ* collections (Kramer et al., 2011). Furthermore, these assessments found many threatened taxa only represented in one or a few collections, which likely reflects low genetic diversity in existing *ex situ* collections. This trend indicates that there is still much work to do to meet the 2020 GSPC Target 8.

In July and August of 2013, Botanic Gardens Conservation International-US (BGCI-US) partnered with the BGANZ network to conduct a novel assessment of *ex situ* collections of threatened plants native to Australia and New Zealand. Goals for this regional assessment included gauging plant diversity in collections, measuring progress towards the GSPC Target 8, and identifying threatened native taxa absent from or underrepresented in collections. All of this ultimately aimed at providing guidance for future *ex situ* conservation efforts in Australia and New Zealand.

We used BGCI's PlantSearch database for data collection. Through our outreach efforts, 43 of 143 (30%) living plant collections throughout Australia and New Zealand were compiled in 2013. This is a similar response rate to that observed in previous regional surveys. We also assembled a list of threatened taxa native to Australia and New Zealand by combining and harmonizing data from the IUCN Red List (IUCN, 2013), the New Zealand Threat Classification System lists 2008-2011 (de Lange et al., 2009) and the Australian EPBC Act List of Threatened Flora (TSSC, 2013).

By comparing taxa reported to PlantSearch with known threat statuses of the region, 56% (854 of 1519) of threatened native taxa were identified in living plant collections of Australia and New Zealand. This is well above the findings of previous regional and global assessments, and is significantly close to the 75% GSPC goal.

However, 665 threatened native taxa were absent from *ex situ* collections in Australia and New Zealand. For example, five critically endangered (IUCN, 2013) native taxa were not reported by *ex situ* collections: *Diuris byronensis*, *Eucalyptus recurva*, *Prasophyllum favonium*, *Puccinellia raroflorens* and *Vandiemenia ratkowskiana*. Additionally, 38% of threatened native taxa were reported by only one collection (80% in five or less collections). This suggests low genetic diversity in existing *ex situ* collections, and identifies important potential *ex situ* collection targets.

The overall results of this collections assessment are encouraging and provide useful insights into collection strengths, gaps and priorities for conserving threatened plants of Australia and New Zealand. It is possible that Australia and New Zealand could be the first region to reach the 75% goal of the GSPC Target 8. This would be a tremendous accomplishment for both the region and the world, as we meet the mid-point of the 2020 deadline for the GSPC.

Even if the 75% target is reached, however, genetic diversity of *ex situ* collections is still a major concern. Efforts to further assess and increase genetic representation of threatened native taxa in *ex situ* collections of Australia and New Zealand is greatly needed. This will require greater capacity in garden networks and collections management, and ultimately will lead to greater use of collections to advance research, conservation, horticulture and education.

Following this initial assessment, BGCI continues to encourage contributions of annual collection taxa lists to BGCI's PlantSearch database, to ensure that up-to-date *ex situ* information is available.

Future goals include developing a follow-up assessment to include more *ex situ* collections and track progress through time. It would be particularly beneficial to incorporate seed bank taxa lists from Australia and New Zealand, which are typically genetically diverse collections of high conservation value.

Seed banks in the region are estimated to hold 15-20% (ca. 200-300) additional threatened native taxa, plus many more taxa already reported by living plant collections. Incorporation of updated conservation status information will also support further analysis (ex: New Zealand's threatened species list was updated in late 2013 (de Lange et al., 2013)).

BGCI would be happy to share the data that supports this initial assessment, and collaborate with anyone interested in furthering this effort. A follow-up assessment could be structured as an undergraduate or graduate student project or even for an internship. More information on the 2013 BGANZ collections assessment can be found at: <http://www.bgci.org/usa/bganz2013/>.

It is possible that Australia and New Zealand could be the first region to reach the 75% goal of the GSPC Target 8.

If you have questions, comments or suggestions please contact Abby Hird, BGCI-US, abby.hird@bgci.org.

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Building living plant collections to support conservation:

A guide for public gardens



The rare Sinkhole Cycad, *Zamia decumbens* in the wild in Belize

The foundation of public gardens is built on the amazing diversity of the world's plants, yet today more than 20% of plant species are in danger of extinction.

Your garden has the power to ensure extinction isn't an option by strategically building and using your collection to support conservation of threatened species. In doing so, you contribute to the **Global Strategy for Plant Conservation** and support global efforts to halt the continuing loss of plant diversity.

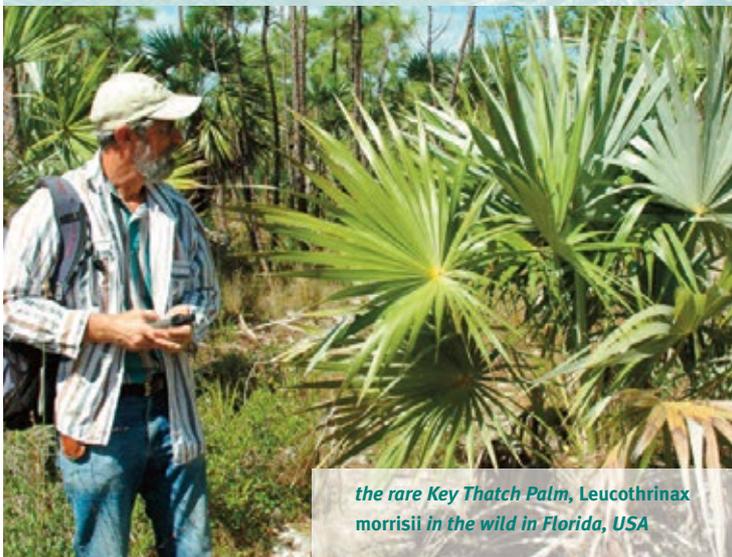
This guide provides a general blueprint to help you strategically build your collection for conservation.

Did you know that oaks and many palms and cycads are 'exceptional species'?

Some 10-25% of globally threatened plant species are 'exceptional', and rely solely on living plant collections, cryopreservation and in vitro propagation for ex situ conservation.

Define your purpose and scope, and then choose your species wisely.

Many living plant collections at public gardens can *indirectly* support conservation by providing opportunities to advance research, horticulture, and education. Some living plant collections can also *directly* support conservation by providing seeds or plants needed to reintroduce extirpated or declining populations. Building high quality and genetically diverse collections to support reintroduction efforts requires a significant investment in time, expertise, and resources. However, it can be difficult to know where to start, and how to strategically maximize conservation potential while minimizing costs. We recommend identifying a single species with the greatest need where your efforts can make a real difference. Here are some ways to do this:



*the rare Key Thatch Palm, *Leucothrinax morrisii* in the wild in Florida, USA*

- **Focus on threatened species.** Threatened plants have the greatest need for protection. You can quickly identify species globally threatened with extinction in the wild by uploading a list of your collections to [BGCI's PlantSearch database](#). Regional threatened plant lists can be useful, too.
- **Focus on long-lived 'exceptional species'.** 'Exceptional species' cannot be seed banked, so living collections may be their last line of defense against extinction. Living collections of 'exceptional species' can also support needed research on cryopreservation and micropropagation techniques. For more information, visit www.bgci.org/usa/ExceptionalSpecies.
- **Build on your strengths and location.** Select a species that matches your mission, expertise and climate to ensure they will thrive under your care and be available for conservation purposes when needed.
- **Build partnerships.** Partner with researchers, land managers, and other conservation organizations to integrate your collection with broader efforts, and provide an outlet for using your collection to encourage and support research, conservation and education activities in countries where the species occurs.
- **Tell a story.** The plants in your collection are important tools to engage the public on important conservation issues. Species that meet all of the above requirements and have a memorable economic, ecological, or cultural story are always a good choice. For free interpretation resources for threatened plants, check out the Care for the Rare program: www.bgci.org/usa/CareForTheRare

Build your living plant collection thoughtfully.

Once you select a species to conserve, how you create and curate your collection will directly impact the conservation value it can provide. Here are some rules of thumb for building your living collection to maximize its conservation value for restoration and reintroduction:

- **Curate first generation, wild-collected material from well-documented sources.** This is often the most challenging (but necessary) part of establishing a collection for conservation. If you don't know where your plants came from (or if they are many generations removed from the original wild collection) they will be less useful for conservation and research efforts.

*Montgomery Botanical Center researchers work with in-country partners from Belize Botanic Gardens to collect seed of threatened cycads like *Zamia decumbens* for ex situ conservation and research*



Collaborative research and conservation projects benefit all organizations involved



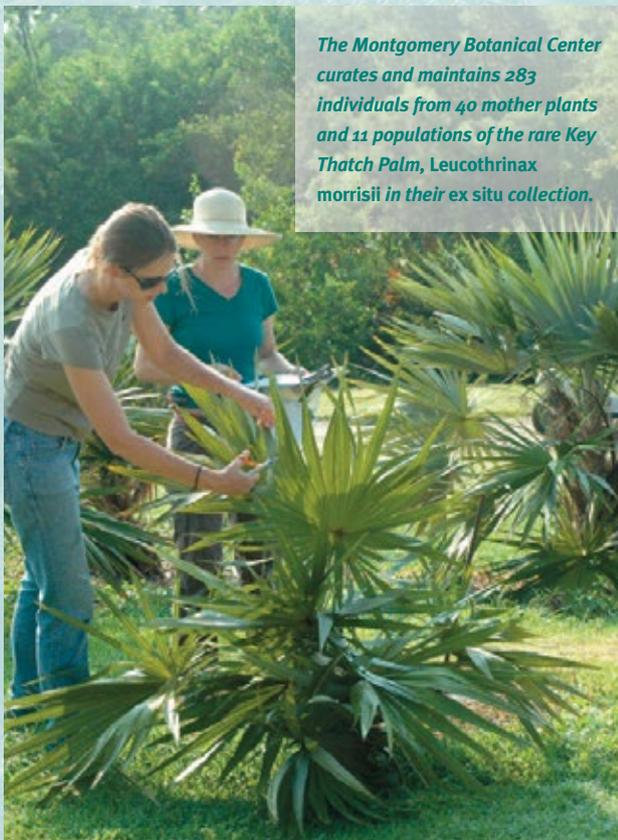
- **Keep good records.** Maintaining the associations between living plants in your collection and information about their wild origins is an ongoing process and vital for conservation. Documenting their biology (including growth rate, habit, phenological events, pests and diseases) can also provide valuable information to guide conservation efforts.

- **Curate genetic diversity.** For most species, the more individuals you curate the greater the genetic diversity you can conserve, and the greater the conservation value of your collection. Curating a genetically diverse collection is relatively easy and affordable for seed bank collections, but much more challenging for living plant collections. This is why it is best for living plant collections to focus on conserving ‘exceptional species’ that can’t be seed banked. Balancing space and cost limitations while maximizing the number of individuals your institution can sustainably curate in its living plant collection is critical.

Why is genetic diversity important?

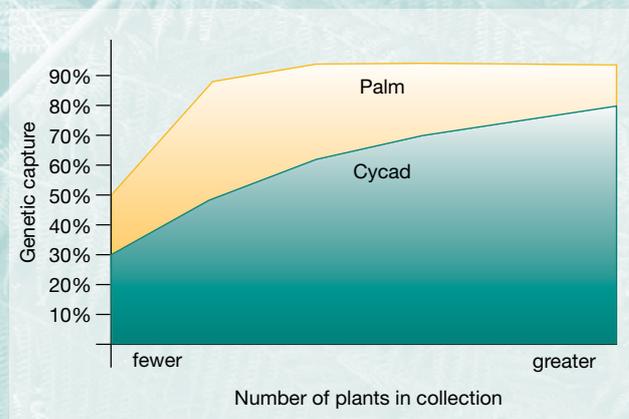
Genetic diversity provides options for species to survive new pressures (like pest and pathogen attacks or environmental disasters) without going extinct. Species with high genetic diversity are more likely to survive these pressures, while too little genetic diversity increases the risk that no individuals will have the right genetic makeup to survive new conditions.

How many plants is ‘enough’ to conserve genetic diversity?



*The Montgomery Botanical Center curates and maintains 283 individuals from 40 mother plants and 11 populations of the rare Key Thatch Palm, *Leucothrinax morrisii* in their ex situ collection.*

Unfortunately, the answer is different for every species, as illustrated by recent work on palms and cycads at the Montgomery Botanical Center (MBC) in Coral Gables, Florida. For the rare Key Thatch Palm, *Leucothrinax morrisii*, curating 10 plants can conserve as much as 80% of a population’s genetic diversity (measured using one type of genetic marker called ISSR). However, for the rare Sinkhole Cycad, *Zamia decumbens*, curating 30 plants only conserves about 35% of the cycad’s genetic diversity (measured using microsatellite markers). It may take more than 300 individuals to capture 80% of known genetic diversity for this cycad.



So how do you decide how many plants to curate? Collections representing many mother plants and populations will capture more genetic diversity than collections representing only one mother plant from one population. But knowing exactly how many plants and populations are appropriate is challenging and species-specific. Partnering with researchers and conservation organizations can help to answer these questions for the species you work with (see resources below for additional information).



*The Montgomery Botanical Center maintains 364 individuals from 13 mother plants and 3 populations of the rare Sinkhole Cycad, *Zamia decumbens* (each tracked individually in their plant records database) to capture genetic diversity for ex situ conservation and research*

For additional resources on this topic, including detailed protocols for collecting genetic diversity from wild populations for *ex situ* conservation, visit: www.montgomerybotanical.org/Pages/Collection_Genetics.htm.

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Photos:

All photos and images were generously provided by the Montgomery Botanical Center.



Sale Botanic Gardens management plan

Liam Cole, Open Space Officer, Wellington Shire Council

'By 2020 the Sale Botanic Gardens will be the most visited public gardens in Gippsland. The gardens will be broadly recognised across the state for their outstanding presentation, contemporary design and commitment to sustainability and community engagement programs'
Draft Sale Botanic Gardens Management Plan 2015-2020.

Steeped in history, and noted as Gippsland's premier public garden, Wellington Shire Council has developed the Sale Botanic Gardens Management Plan to guide the direction of the botanic gardens into the future.

The 150 year old Sale Botanic Gardens is east Victoria's only significant surviving botanic gardens of colonial times. William Guilfoyle was known to have visited the site and provide planting advice to the early enthusiasts.

Its 5.5 hectares adjoin picturesque Lake Guthridge and have some special features including a Summer Walk, Sensory Garden, Elm Forest, a contemporary fauna enclosure as well as many historic trees planted from around the 1860s.

Sale Botanic Gardens provides numerous recreational and educational opportunities for the community. From quiet informal relaxation within large shaded grass areas of remnant woodland, pleasant walks along the formal paths through the established garden beds to the active area at the top of the hill which has a fabulous Children's Playspace, barbeques and publicly accessible tennis courts. The precinct is now recognised as a favourite place to visit, picnic, walk, jog or cycle.



The Jolly Swagman in the Elm Forest carved by John Brady 2006.

The active Friends of Sale Botanic Gardens, along with a dedicated park team, facilitate a variety of regular and well attended seasonal events and activities, including a Teddy Bears Picnic, Family Fun Day, and Summer Sing-along. In addition, many community events are held in the botanic gardens, including Australia Day Celebrations, Sale Music Festival, Fun Runs and Carols by Candlelight.

The onsite park team is led by the Team Leader Horticultural Services and is well supported by the Open Space Officer and Coordinator Parks Services in delivering high quality garden management for the community.

The gardens have undergone a significant refurbishment program over the past decade. Further planned improvements will ensure the Sale Botanic Gardens continue to hold their rightful place as one of regional Victoria's premier public gardens.



Overlooking the Sensory Garden to the Adventure Playspace.

To ensure that the direction of the gardens is clear in moving forward Wellington Shire Council has developed the Sale Botanic Gardens Management Plan which will guide development for the next five years.

From the extensive consultation in the development of the Management Plan, the following aims have been identified to achieve the vision of the gardens.

Wellington Shire Council aims to:

- increase community awareness of the Sale Botanic Gardens by building community connectedness, encouraging participation and involvement, and hosting a diverse range of activities.
- continue to maintain and enhance the various features in the Sale Botanic Gardens with a particular focus on the horticultural excellence through progressive and contemporary approach to achieving high quality standards.
- develop and implement a series of activities and events in the Sale Botanic Gardens which, along with provision for volunteering and learning/development opportunities, will increase the use and profile of the gardens as a destination.
- maintain a series of living collections that focuses on the preservation, and interpretation of a significant group of plants.

One key feature that distinguishes botanic gardens from highly maintained parkland is their ability to maintain a collection of plants and promote the importance of a horticultural or cultural purpose. The Sale Botanic Gardens prides itself on its current collections of horticultural and cultural significance that visitors can enjoy.

The Sale Botanic Gardens Management Plan, while not yet complete, is currently being reviewed by the BGANZ Vic Executive Committee. It is hoped that the peer review will ensure that industry best practices are met to deliver the high level of horticultural standard that the staff at Wellington Shire Council strive to attain.

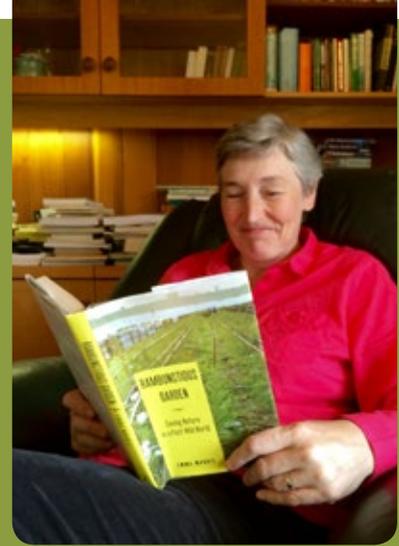
BOOK REVIEW

'Rambunctious garden: saving nature in a post-wild world' by Emma Marris

Reviewer: **Anne Duncan**, Past President BGANZ

Published by Bloomsbury Press USA

Paperback and audible audio editions (Narrator: Renee Chambliss) 2013



This could be the shortest book review on the planet: I feel like just saying 'read it - everyone should'. But that wouldn't be a review. The reason I think that everyone should read it is that 'Rambunctious Garden' spoke to me in a way a book about conservation has not spoken to me in a long time.

It made me think, gave me hope, and impressed me as a piece of scholarly yet accessible nature writing. Even if you don't agree with everything that's in it, you will find the perspective worth considering. The book's central premise is this: humans are already running the earth, so to run it more effectively we must recognise our role and embrace it, temper romantic notions of 'untrammelled wilderness' and find room next to it for 'a more nuanced notion of a global, half-wild rambunctious garden tended by us'.

This allows us freedom to see opportunities for conservation everywhere rather than only in places that are pristine. It means we can be proactive, rather than reactive, and build on whatever state we have before us, rather than making a value judgement that some nature is better than others, and characterising some species as 'good' while others are 'bad'. The author explores this in some detail and with some rigour, using case studies, and explores both the positives and negatives. In that way it succeeds in not being a dogmatic treatise, but rather a personal exploration by someone who could be you or me.

This book is particularly relevant for those of us who work in the 'gardening profession'. It extends the relevance of the idea of gardening to a planetary scale, and if you work in education and interpretation, it is really a must: it provides a way of framing the conservation challenges of the modern world in a more positive way.

I heard Emma Marris speak about this book before I read it and she is a skilled verbal communicator as well. I see she has written other books about nature 'gardening' and I will certainly be having a close look at them too.

Well, that's a bit more of a review ...

FEATURE GARDEN

The Emu Valley Rhododendron Garden

Mark Fountain, Deputy Director Collections and Research
Royal Tasmanian Botanical Gardens

The Emu Valley Rhododendron Garden (EVRG) is an extraordinary place, to begin with it is an 11 hectare garden entirely created, managed and owned by volunteers. To have developed the gardens from the very first plantings in the early 1980s to what can be seen now (easily one of Australia's best and largest Rhododendron collections) is a testament to the effort and commitment of the garden's volunteers and supporters.



The day the new Kubota arrived



Eric Weeks stone walling



John & Melvie Moore in the yakus (*R. yakushmanum*)
Photos: Ian & Jenny Chalk



Footings for the Chinese Pavilion

FEATURE GARDEN

Set in a natural amphitheatre sloping towards the Emu River and overlooking Bass Strait, the garden has a series of picturesque lakes, with native tree ferns and established Blackwood trees *Acacia melanoxylon* sheltering and enhancing the feature plants.

The original brief for the garden was to display both species and hybrid rhododendrons in a woodland style setting and, in the longer term, to create a gene pool of available material for scientific research and hybridization. The area's deep soils, mild maritime climate and regular rainfall provided the ideal conditions to grow a comprehensive collection of the world's rhododendrons out in the open.

The collection now contains over 22,000 rhododendrons ranging from the high Himalayas to New Guinea's vireyas and includes many species that are now endangered in the wild. The collections are laid out around a central ornamental core surrounding the main lake. The plantings focus on hybrids and vireyas and other ornamental trees and shrubs.

The original wild species rhododendrons are located around the perimeter slopes in country of origin collections, arranged the same way that they grow geographically in the Northern Hemisphere. Each of the geographic gardens (there are now 16 'countries') is planted with rhododendrons, conifers, deciduous trees and other complementary plants from the country of origin.

In the case of China, the country with the most species of rhododendron, the planting areas are further divided into provinces. It's worth noting that the majority of the plantings nowadays come from the EVRG's on-site nursery.

In addition to the botanical collections, the Emu Valley volunteers have designed and built some very impressive and authentic bridges and pavilions, particularly in the Japanese and Chinese sections. These structures add significantly to the unique ambience and experience of the garden.

The combined efforts of the volunteers include a multitude of skills. Fortunately these skills include lobbying and fundraising which has enabled the organisation to design and build a central visitor centre/function room. This facility has the capacity to cater for community events, tour groups and even some commercial activities like weddings.

The EVRG is privileged to have Maurice Kupsch as their resident Rhododendron 'Oracle'. Maurie has probably had something to do with the majority of the plantings across the site. I understand that the EVRG team is now working hard to make sure Maurie's deep knowledge of the site is recorded for posterity.

The collection now contains over 22,000 rhododendrons ranging from the high Himalayas to New Guinea's vireyas and includes many species that are now endangered in the wild.



EVRG Photos: Heather Walmsley

If you are in Tasmania's bucolic north-western corner I would thoroughly recommend that you make certain you visit the Emu Valley Rhododendron Garden. For spring blossom try September to October, for the rhododendrons try mid-October to November, for spectacular autumn colour try visiting the site in April.

Spring colour commences in late August with the early flowering of the impressive display of 'big leaf' rhododendrons; followed by continuous rhododendron & cherry blossom colour peaking in October and early November and concluding with the late rhododendron species, *R. auriculatum* flowering in January.

The garden is also becoming renowned for the autumn colour largely generated by its collection of over 40 different maple species. The vireya rhododendron display has flowers throughout the year.

To appreciate the extraordinary result of the efforts of many dedicated volunteers over a thirty year period, visit any time and visit often!



EVRG Photos: Heather Walmsley

Botanic garden reports

BGEN – Botanic Gardens Education Network Australia and New Zealand

Stephen Speer, BGEN Committee Chair

I'm watching from my office an Education Ranger engaging with a school group over a banksia fruit. The students appear totally bemused as the Ranger mimics brushing her hair with the banksia. Howls of delight from the boys and faces of disgust from the girls! Watching this interaction reminds me that Education staff do an amazing job, engaging students with the fascination of plants, often with limited resources.

Are you involved in education/learning programs, public programs, interpretation, community engagement or visitor services at botanic gardens? Have you considered joining BGEN – the Botanic Gardens Education Network of Australia and New Zealand?

BGEN is a special interest group serving as a professional development network for botanic gardens staff and volunteers working in education/learning, public programs and visitor services.

Our main networking tool is the BGANZ website (www.bganz.org.au), which provides both an online forum for members and portal for sharing knowledge and resources. Our intention is to establish a strong online community of botanic gardens staff and volunteers to share experiences and resources. This is particularly beneficial to staff at the smaller and regional botanic gardens who have limited access to resources and expertise.

Want to join the BGEN online forum and start sharing resources and experiences? Please contact the Secretariat (secretariat@bganz.org.au) to set up your access to the BGEN portal.

The BGANZ Congress is an important gathering for botanic gardens education and public program staff and volunteers from Australia and New Zealand. A chance to share experiences and problem solve together. Planning is underway for the 7th BGANZ congress at Wollongong Botanic Gardens in October 2015. BGEN is looking for your input into the planning of the education and public programs sessions. Please contact myself (stephen.speer@environment.gov.au) or Michael Connor (mconnor@wollongong.nsw.gov.au) with your suggestions for education, public program and visitor services topics or themes you would like discussed at the Wollongong congress.

BRON – Botanic Gardens Record Officers Network Australia and New Zealand

Tom Myers, BRON Committee Chair

Over the last period some progress has been made with developing the BRON page of the BGANZ website. Eamonn Flanagan has both opened the network forum up for all to see (BRON forum: <http://www.bganz.org.au/index.php/forum/bron-bganz-record-officers-network>) and helped with some questions over email settings.

There is still a fair way to go to engage people to use the forum, with BRON members showing a readiness to post, using the old Google site rather than responding to the same posting on the BGANZ website. At the time of writing this article, the BGANZ website has 175 users signed up, but just 23 guest users currently online, so it seems that we (me included) tend to use the website without logging in, but at least some of us are looking at the website!

I encourage everyone to try posting questions to the forum, and give us some feedback on how it works, and how to improve the service.

It is great to see in this issue the updated article by Abby Hird of the BGCI – thanks to all who contributed data to this project (BGANZ Survey 2013: <http://www.bgci.org/usa/bganz2013/>). New data can be added directly to BGCI at any time and would be very welcome (PlantSearch Upload Instructions: <http://www.bgci.org/resources/PlantSearchUploadInstructions/>).

PDWG – Professional Development Working Group – Where are you?

Anne Duncan, BGANZ PD Committee Chair

It's been a long time coming. Many people have had a go, in fact sweated blood over this area of BGANZ endeavour (big thanks to Paul Scannell, Peter Symes and Annette Zealley).

Finally a professional development strategy has been crafted, based on all that has gone before. It will require some constructive comment from members in the near future and more importantly some enthusiastic people to get involved in implementing it.

Yes we need a working group, which ideally would contain a variety of people who work in botanic gardens, of all levels and persuasions. If you are looking for an opportunity to contribute to your profession then this might be it. If there is even a glimmer of interest, then send me, Anne Duncan, an email PDWG@BGANZ.org

Conference papers and reports

BGANZ at 29th International Horticultural Congress, Brisbane, 17-22 August 2014

Kate Heffernan, BGANZO

Dale Arvidsson and I represented BGANZ at the recent International Horticulture Congress held in Brisbane. This conference was themed 'Sustaining Lives, Livelihoods and Landscapes' and in his opening plenary, science presenter and writer Juliann Cribb warned of the growing world food crisis. The role of endemic food species was emphasised as part of the potential solution and was a perfect segue into our presentation made later that day for the Education and Research Symposium.

'Botanic Gardens and Arboreta - Linkages Between Science, Horticulture and the Wider Community', prepared together with Lawrie Smith, was designed to inform delegates of the opportunities for joint and sponsored research or trials with Australia's botanic gardens. Several case studies contributed by various botanic gardens were outlined in the presentation.

Attending a horticultural congress of such breadth, and which attracted around 3,000 delegates from countries across the globe was a reminder of the importance for botanic gardens, big and small, to partner with broader industry and educational institutions for common outcomes and benefits.

After the Congress, Dale, Kate and Lawrie along with Brisbane Horticulturist Russ Higginbotham, were tour leaders for two coach loads of delegates to Brisbane Botanic Garden Mt Coot-tha, Brisbane City Botanic Garden, Roma Street Parkland and Southbank.

The tour was put together by Lawrie Smith with representatives of each of the venues. The tour provided an opportunity to elaborate on the presentation, promote BGANZ and socialise with scientists, educators, horticulturists and industry leaders from countries including China, Russia, USA, Singapore, Africa and Inner Mongolia.



The delegates are from Inner Mongolia and Chinese Taipei and on the right is the City Botanic Gardens Guide, Roger. Photo: Les Isedale.

National Conference of the Australian Association of Friends of Botanic Gardens, Gold Coast, 8-10 August 2014

Rana Baguley, Coordinator of the AAFBG 2014 Conference Committee, Friends of the Gold Coast Regional Botanic Gardens

Friends of the Gold Coast Regional Botanic Gardens (Gold Coast RBG) were very happy with the success of the National Conference of the Australian Association of Friends of Botanic Gardens (AAFBG) at the Mercure Gold Coast Resort at Carrara. Many months of coordination had gone into the organisation of this and we were blessed with wonderful winter weather as we welcomed 97 delegates plus presenters to the conference and showcased our Gold Coast RBG.

Preparation for the Conference started more than two years ago in Port Augusta when Friends of Gold Coast RBG put their hand up to host the next biennial AAFBG conference. We looked upon this as a great opportunity to attract Friends of Botanic Gardens from around Australia to Queensland for the first time and to show what has been achieved in the now eleven years since the first Community Planting Day at our gardens in 2003. We also wanted to show that the Gold Coast does have a 'green heart' in the midst of all the glittering gold!

We looked upon this as a great opportunity to attract Friends of Botanic Gardens from around Australia to Queensland for the first time.

The Friday Evening Welcome set the tone for a friendly, interactive conference amid floral arrangements, displays and art exhibits. Councillor Paul Taylor welcomed delegates to the Gold Coast as he expressed a sense of pride that the Gold Coast RBG is 'the jewel in his City of Gold Coast Council Division'. On Saturday morning, the superbly created regional floral display became the perfect stage for the 'Welcome to Country' performed by Linda and members of the Yugambeh Youth Choir. It was a very emotive experience as our national anthem was sung in Yugambeh language. The Hon. John-Paul Langbroek MP, Minister for Education, Training and Employment, and Member for Surfers Paradise officially opened the conference.

With the theme 'Growing Matters ... Growing Gardens, Growing Friends', Professor Tim Entwisle, as Keynote Speaker, spoke about the nature of Australia's changing seasons. Delegates remarked on the diversity of presenters and the quality of their presentations in each of the three themed sessions. These presentations can be viewed and downloaded on the AAFBG website: www.friendsbotanicgardens.org

The Memorandum of Understanding now established between the AAFBG and BGANZ acknowledges the contribution that Friends make towards botanic gardens and, in the future, this partnership will strengthen the role of Friends in the continued development of botanic gardens around Australia. The visit to the Gold Coast RBG was well received with seven groups being guided around the different precincts of our gardens. The only complaint was that there wasn't enough time to explore further!



Tim Entwisle

The Memorandum of Understanding now established between the AAFBG and BGANZ acknowledges the contribution that Friends make towards botanic gardens.

The Conference Committee was well supported by a team of hard working Friends who ensured that our botanic gardens were ready for the conference. Our Friends continue to work in partnership with the City of Gold Coast Council. The Curator, Dr Liz Caddick and the horticultural team gave assistance financially and in kind. We thank Cr Paul Taylor and local State Member of Parliament, Hon. John Paul Langbroek MP along with Zeppelin Travel, Wallum Nurseries, Fleming's Nursery, Bunnings, Gold Coast Tourism, Karen Andrews MP, Federal Member for McPherson and the Mercure Gold Coast Resort.

All conferences require a collaborative effort to be a success. The AAFBG Committee, in particular, Geraldine Davis as President and 2012 Conference Convenor, Annie McGeachy as Secretary, and Rosemary Noone as Administrative Assistant gave welcome advice and sound support. The Mercure Gold Coast Resort was a wonderful venue with its very helpful staff, excellent facilities and delicious bush food themed menus on both days. Destination, Conference & Incentive (DCI) was very professional and friendly in handling the registrations and booking of accommodation.

Thank you to everyone who contributed in any way to the success of the conference! We wish Kate Heffernan, the Founder of Friends of Gold Coast RBG all the very best as the new President of AAFBG, and extend our support to the Friends of Geelong Botanic Gardens as they prepare for 2016 AAFBG Conference.

Calendar of conferences and events

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 conference 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 [Wollongong website](#).

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

BGANZ AGM 2014

(Note change of date)

Teleconference – All Welcome

27th November 12 noon – 1:30pm AEDT

Email secretariat@bganz.org.au for teleconference details.

Australasian Conference of Volunteer Guides in Botanic Gardens Sydney 21-25 September 2015

The Royal Botanic Gardens and Domain Trust will host the Australasian Conference of Volunteer Guides in Botanic Gardens in Sydney 21-25 September 2015.

Against the spectacular backdrop of Sydney Harbour, this conference will highlight the extensive plant collections of the Royal Botanic Gardens and Domain Trust; discuss current botanical research; explore issues of climate change; and provide opportunities for an exchange of ideas between volunteer guides in botanic gardens.

Tours will be offered to the Australian Botanic Garden Mount Annan, site of The Australian PlantBank, and to the Blue Mountains Botanic Garden Mount Tomah.

This conference will be a lead-up event of the 2016 celebration of the bicentenary of the Royal Botanic Garden Sydney. Registrations will open in March 2015.

For immediate enquiries contact: Donna Osland Manager Volunteer Programs at Donna.Osland@rbgsyd.nsw.gov.au. Please forward expressions of interest to Lynne Cusack, Head Guide, Volunteer Guides, The Royal Botanic Garden Sydney at lynne.cusack15@gmail.com. The link to the website is http://www.rbgsyd.nsw.gov.au/support/volunteers/Australasian_Conference_of_Volunteer_Guides_in_Botanic_Gardens

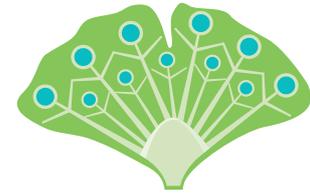


BGCI's 9th International Congress on Education in Botanic Gardens, Missouri Botanical Garden, St Louis, 26 April – 1 May 2015

Does your work involve communicating and engaging the public with issues of biodiversity, plants, natural history and natural sciences?

Join us for the BGCI's 9th International Congress on Education in Botanic Gardens at Missouri Botanical Garden, St Louis, between April 26-May 1 2015

The congress will include a broad programme of interactive sessions, workshops, special events and eminent keynote speakers surrounding the theme of Biodiversity for a Better World: Wild Ideas Worth Sharing.



BIODIVERSITY
FOR A
BETTER WORLD
Wild Ideas Worth Sharing

St. Louis, MO • April 26–May 1, 2015
BGCI's 9th International Congress on
Education in Botanic Gardens

www.bgcieducationcongress2015.org

Every day, extraordinary new species of life are discovered, named, and introduced to the world.

Every day, species that none of us even know about anonymously go extinct. Every day, ecological connections and relations between all life on Earth are uncovered. Every day.

Biodiversity enables life as we know it, from our first breath to our last. As one of the world's most purposeful advocates for biodiversity conservation, botanic gardens around the globe share their plants, people and places with millions of people every day. They do so in ways aimed at broadening public awareness, deepening scientific knowledge, building skills and capacity for more sustainable living. Every day, botanic gardens do this worthy work, and as a global network of peers, we get better when we have the opportunity to connect with each other, learn from each other, challenge each other, ask big questions, and together, strengthen our impacts.

The Congress will provide an excellent opportunity for botanic garden educators and other professionals to exchange ideas and think creatively about how to reframe and engage the public with the importance of biodiversity.

9th BGCI International Congress on Education in Botanic Gardens St Louis, Missouri 26 April - 1 May 2015 (submissions for abstracts due NOW: [visit www.bgcieducationcongress2015.org](http://www.bgcieducationcongress2015.org)).



www.bganz.org.au