

THE BOTANIC GARDEN

A Newsletter for the Botanic Gardens of Australia and New Zealand



Issue 11 - March 2005

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EDITORIAL

Living Collections

At the core of all botanic gardens are collections of plants. Sometimes they are gathered together in themed gardens or borders. Often they are scattered across the site, growing where they look and thrive the best. Without these collections – however they are displayed – we can’t excite people about plants and their importance in the world.

We all tell stories about plants. Stories about the vanishing rainforests in Borneo or Cape York, about unusual pines in a canyon somewhere north of Sydney, about discovering the first flowering plant on earth, about indigo dye and coffee, about spectacular flowers in dramatic garden landscapes, about growing plants that don’t wreck our environment, even about which dignitary planted what when...

A modern botanic garden is of course far more than the sum of its plant collections, but without them there would be little to say. Collections planning is about saying the right things, with the right collections, and in the best possible way.

In this issue of *The Botanic Garden*, we learn how our colleagues tackle this fundamental task.

Tim Entwisle
Director
Botanic Gardens Trust, Sydney
Chair, CHABG

PEOPLE

New CEO for Botanic Gardens and Parks Authority, Kings Park and Botanic Garden

In November 2004, following the resignation of Dr Stephen Hopper, Mark Webb was appointed CEO of the Botanic Gardens and Parks Authority (BGPA), which manages Kings Park and Botanic Garden and Bold Park in Western Australia. Mark has previously enjoyed a career as a horticultural research/advisory officer with the Western Australian Department of Agriculture. He also spent several years as a Director of a large horticultural farming and consulting company, and has successfully grown several native plant species for export cutflower production.

Mark joined the BGPA in 1998 as Director Living Collections, managing the Botanic Garden, bushland, nursery, reference herbarium and establishing a plant-breeding program. After an organisational restructure in 2000, he also took on responsibility for capital works; parklands and operations; and the visitor, volunteer and events program at Kings Park and Botanic Garden and Bold Park.

Mark has indicated that as CEO, he will continue his involvement in the development and hybridisation of Australian plant species, and in ensuring excellence in horticultural, scientific and conservation activities locally and internationally.



'Dr David Given receives the Sir Peter Scott medal from David Brackett, outgoing Chair of the IUCN Species Survival Commission.'

Award for Dr David Given

In Bangkok last November, at the World Conservation Congress, the Species Survival Commission of IUCN awarded the Sir Peter Scott medal to Dr David Given, Botanical Services Manager for the Christchurch City Council, New Zealand, and Curator of the Christchurch Botanic Gardens.

The award is the SSC's highest honour and regarded as one of the world's prestigious awards for species conservation. Only about 20 or so of these medals have been awarded, and previous recipients have included Dr George Rabb (Director of Brookfield Zoo, Chicago), Jose Figueres (former President of Costa Rica), Dr Graeme Caughley (CSIRO, Australia) Professor Marshall Murphree (University of Zimbabwe), Dr William Conway (President, Wildlife Conservation Society, New York) and Dr Tony Cunningham of South Africa (for his work with African countries on traditional use of plants and their sustainable utilisation).

Dr Georgina Mace, Research Director of the London Zoological Society, and Professor Harry Messel (Australia) were also 2004 recipients.

MEETINGS AND CONFERENCES

**9th National School in Park Management
Queen's College,
The University of Melbourne
26 June – 1 July 2005**

Registration of interest is being called to attend the 9th National School in Park Management, a successfully partnered program between the City of Melbourne, Parks Victoria and The University of Melbourne. Last years program discussed issues on team development, park planning, and business opportunities in parks and recreation and the triple bottom line, but also looked at issues surrounding risk management and public liability and the management of dogs in public places.

Syndicate group topics included a risk management exercise to the Mountain Ash Forests at the Tindale Gardens in Melbourne, recreational planning issues on engaging the community at Royal Park, performance indicators with grassed sporting surfaces, assessing and monitoring the sustainable visitor carrying capacity for the Royal Botanic Gardens, and an asset management study with Carlton Gardens, The City of Melbourne. In addition one day was organised at the Royal Botanic Gardens where participants spent time on contract management and administration, issues to do with indigenous and aboriginal culture and human resource management.

For information on the 2005 program, currently being planned for 26th June to July 1 2005. Contact Assoc Prof. David Aldous by email: daldous@unimelb.edu.au

**National Conference of the Australian Network for Plant Conservation
'The Challenges of Change'
26 September – 1 October
2005**

~~Adelaide Convention Centre,~~
South Australia

The conference will appeal to all those involved in plant conservation from on-ground practitioners to researchers and policy makers. All are invited to share experiences in managing for conservation under extreme conditions. The Conference will include the following themes:

- 1 Extreme policy changes
- 2 Urban ecology
- 3 Revegetation & rehabilitation
- 4 Partnerships - partnering for plant conservation
- 5 Indigenous agendas and conservation

Further information regarding the conference, associated workshops and workshop topics visit the website:

www.plevin.com.au/ANPC2005
or email: events@plevin.com.au

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ITEMS OF INTEREST

Award for the Australian National Botanic Gardens

For the third year running the Australian National Botanic Gardens received the Ecotourism Award in the 2004 Canberra and Region Tourism Awards, an award that recognises excellence in provision of services to tourism at the Gardens.

New website

Jason Brown advises that Wollongong Botanic Garden has launched a new website:
<http://botanicgardens.wollongong.nsw.gov.au>

Errata

An inexcusable error from the Managing Editor in the last issue made reference on page 1 to Kings Park and Botanic Garden “in its spectacular situation overlooking the city of Perth and the Derwent River”. Apologies to the citizens of both Perth, on the Swan River, and Hobart, which when last visited was on the Derwent River!

ARTICLES

The Chosen Ones – Rene Orchiston Collection

Located in the native plant collection of New Zealand’s Dunedin Botanic Garden is a very special collection of plants selected specifically for human use. Collected by a woman with considerable foresight, these plants have been preserved and protected as part of New Zealand’s heritage.

In the late 1980s Rene Orchiston, a flax weaver of Gisborne noticed a shortage of the variety of cultivars used by Maori people in the past for different types of weaving. She drove around the North Island of New Zealand, talking to elderly weavers about their special flaxes and collecting samples. She also investigated areas where early records suggested particular varieties had been grown and found remnants there. Gradually Mrs Orchiston built up a collection of 60 of the most desirable varieties of North Island flax. Today that collection is duplicated throughout the country and since 1996 part of it has been represented at the Dunedin Botanic Garden.

The story has it that when European settlers arrived in New Zealand in the early 1800s, Maori people asked what sort of flax Europeans had at home and they replied that they didn’t have the same flax. Maori found it hard to imagine how people could actually survive without flax, it was such an intrinsic part of daily life.



Korowai/cloak,
Rene Orchiston Collection
(images courtesy of Otago Museum)



left to right :
 kete/basket, muka/string, whariki/
 mat, piupiu/skirt.
 (images courtesy of Otago Museum)

*Each of the flaxes in the Rene
 Orchiston Collection can be used for
 making one or more of the above.*

It's amazing to think that all these cultivars and the many naturally occurring forms of flax descend from just two naturally occurring flax species, *Phormium tenax* or harakeke and *Phormium cookianum* or wharariki.

Clare Fraser, Information Officer,
 Dunedin Botanic Garden



left:
 An interpretation panel recently
 installed at the collection.



National Rose Trial Garden of Australia Inc.

At a meeting in Sydney in 1994 all State Rose Societies agreed to establish a Rose Trial Gardens within Australia. Each State was asked to submit a proposal which would meet certain guidelines and criteria.

In 1995 the South Australian proposal met all criteria and was accepted and the establishment of a National Rose Trial Garden was commenced.

The Trial Garden is a joint venture between the National Rose Society of Australia, Adelaide Botanic Garden, Rose Industry and the Nursery Industry. It is administered by a Management Committee composed of equal representation of each joint venturer.

A total of 40 cultivars comprised the first planting in July 1996. Since then an average of 45 new cultivars have been planted each year.

More than 90% of the roses released in Australia come from breeders in the northern hemisphere, hence the need to trial them for our conditions. In the first 2 years only 5 cultivars from Australian breeders were trialled. This number has steadily increased and in the 2004 planting 15 of the 45 cultivars were from Australian breeders.

All types of roses are trialled: Hybrid Teas, Floribunda, miniatures, shrubs, climbers and ground cover roses. Only new roses that have not been released commercially in Australia are accepted for trial.

National Rose Trial

All roses are trialled over a 2 year period, during which 168 individual assessments are made on each cultivar. Roses are assessed for vigour, hardiness, flowering qualities, pest and disease, tolerance and fragrance.

Roses that average 75% or more over the 2 year period are awarded a gold medal. 73% to 74.9% a silver medal, 70% to 72.9% a bronze medal. Certificates of Merit are awarded to roses that average 68% or more over the 2 years.

To date only 5 gold medals have been awarded. The assessment criteria is undoubtedly the most rigorous of all trial gardens and certainly separates the good from the ordinary.

Teams of maintenance workers from the Rose Society remove spent blooms each month, after the team of 10 individual assessors have allotted

their marks. All positions and work connected with the Trial Garden is done by volunteers.

The Trial Garden is currently entering into an alliance that will be known as 'Pacific Regional Rose Trial Gardens Alliance'. Members of the alliance will be Gifu (Japan), Hamilton (NZ), Rose Hills (California) and Adelaide (Australia).

The alliance, scheduled to be signed in Gifu in May 2005, will help promote the Trial Garden and give it more importance in the rose world.

South Australia is fortunate that it has the only Rose Trial Garden in Australia and that it is positioned in such a prestigious position as the Adelaide Botanic Garden.

Dean Stringer D.A.M. S.M.A. A.R.A
(Secretary)

Feature Garden

Kings Park and Botanic Garden

Like many Western Australians, my earliest recollections of Kings Park and Botanic Garden include family picnics, racing sticks down streams, climbing over natural play equipment and having an understanding that this place was somehow very special. As I became older, my childhood recollections matured into an abiding affection for this Park with its sweeping vistas across manicured lawns to the river and city beyond; to the bushland with its natural display of local plants; the Botanic Garden with its focus on Western Australian plants; and the rich cultural heritage that encompasses Aboriginal and European history, and contemporary experience.



Aerial view of Kings Park bushland

First gazetted as a park and recreational area in 1871, Kings Park and Botanic Garden is Western Australia's No. 1 tourist icon, attracting over five million visitors each year. It is free to enter and open 24 hours a day, every day of the year. Located only 1km from Perth's Central Business District, Kings Park and Botanic Garden covers 400ha and contains three main areas: the Western Australian Botanic Garden, the developed parklands and the bushland.

The Western Australian Botanic Garden

In 1965, a 17 ha botanic garden was established in Kings Park, resulting in a name change to Kings Park and Botanic Garden. Initially, the Botanic Garden contained flora from the Mediterranean climatic regions around the world, but since 1995, has been redeveloped to mainly display Western Australian plants. Many parts of the Botanic Garden have been changed or refurbished since 1965, the latest being the addition of several new display beds featuring Western Australian plants, installed when the Lotterywest Federation Walkway was constructed in mid 2003. The Walkway extends 620 m through the Botanic Garden along a combination of onground pathways and elevated boardwalks, culminating in a spectacular glass and steel bridge that rises 16m above the ground through a canopy of tall eucalypts. The Walkway has attracted over 1.2 million visitors in the 18 months since its opening. The Botanic Garden is also the site for a range of concerts featuring the Western Australian Symphony Orchestra, contemporary artists, and the ever-popular *Shakespeare in the Park*.



The knowledge and experience gained in the Botanic Garden has seen the Botanic Gardens and Parks Authority win accolades at international exhibitions in Chelsea and Japan. In addition, the emerging plant development program is focused on the horticultural development of Australian plant species and hybrids that can be grown in public open spaces and home gardens locally, nationally and even internationally.

The Parkland

The parkland of Kings Park and Botanic Garden focuses on the larger landscapes, including plantings from the early 1900s, displaying trees and shrubs from other areas in Australia and around the world. The main tourist precinct includes an avenue of majestic Lemon Scented Gums (*Eucalyptus citriodora*), framing spectacular views across to Perth city, the Swan River, and foothills beyond. Most of the visitors who come to Kings Park and Botanic Garden each year spend their time in the parklands enjoying the views, having a picnic or visiting the children's playgrounds.

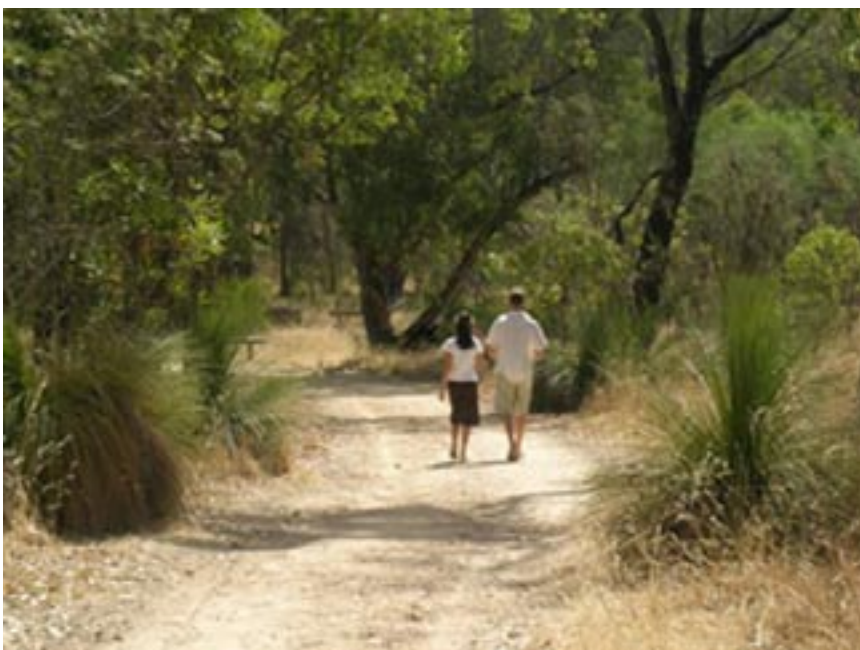
top:
Morning at KPBTG – sugar gums

above:
Award winning Kings Park display in Japan 2004

Kings Park and Botanic Garden also has more memorials, statues and honour avenues than any other park in Australia, with the first memorial erected in 1902 (the South African Memorial honouring Western Australian soldiers killed in the Boer War 1899-1902) to the latest memorial erected in 2003 (the Bali Memorial commemorating the suffering and loss due to the Bali terrorist attack). The State War Memorial, overlooking Perth city, is the site for the annual Dawn Service on 25 April, with over 25,000 people attending each year.

top:
State war memorial – KPBG

below:
Bushland at Bold Park



The most recent addition to Kings Park and Botanic Garden is *Aspects of Kings Park*. Officially opened in February 2005, *Aspects of Kings Park* is a new 400m² retail outlet that will provide a unique visitor experience and support the developing local contemporary craft and design sector.

The Bushland

With over 70 bird species, 319 native plant species and a rich invertebrate assemblage, the bushland of Kings Park covers some 270 ha. It is a remarkable natural heritage site so close to the centre of a capital city, and has been the focus of major research and restoration activities, especially over the past 10 years. New pathways, improved signage and improvements associated with restoration activities have all contributed to a renewed interest by visitors in exploring the bushland.

Integral to the bushland of Kings Park is the Science program. This program delivers innovative research that underpins the conservation and restoration of bushland in Kings Park and Botanic Garden, and Bold Park, and has benefits for biodiversity generally. The Science group is internationally recognised for its activities in plant biology, orchid and rare plant conservation, and conservation genetics. More recently, it has gained recognition for its role in isolating butenolide, the active compound in smoke that has such a wide range of potential uses in ecosystem restoration, horticulture and agriculture.

In 1995, Dr Steve Hopper, former Chief Executive Officer of the Botanic Gardens and Parks Authority made the observation that *while bushland and parkland remain so accessible to so many, there is hope that our increasingly urbanised community will remain in touch with nature and appreciate the vital importance of an ongoing partnership with the world's living system.*

Ten years on, that hope remains, and provides a focus for current activities and new initiatives by the Authority.

Mark Webb
Chief Executive Officer
Botanic Gardens and Parks Authority



top right:
Staff hard at work on plant
collecting trip



right:
Names display at wildflower
festival

below right:
Friends' plant sale at wildflower
festival



above:
Plant breeding and development
activities



'COLLECTIONS' SPECIAL FEATURE

Plants, Collections and Landscape Collections Review Wellington Botanic Garden 2004

In mid 2003 a revised staff structure was put in place in the Wellington Botanic Garden, including the creation of the position of Team Manager Plant Collections, the Collections Supervisors being redesignated as Collection Curators and the employment of a new Wellington Botanic Gardens Manager to fill a vacant position.

This provided a window of opportunity to look and review the plant collections through the Garden. It was recognised that there were a number of collections, including the *Erica*, *Camellia* and the deciduous trees which were not presenting to a standard that could be expected. The creation of Curator positions also implied that staff responsibilities were to alter and to widen.

A small team comprising the Manager, David Sole, Team Manager Plant Collection Leanne Killalea and Rob Lucas as an external consultant, was put together and asked to discuss a draft brief detailing

- The conditions of the plants,
- Their relevance to the garden
- Plant vigour
- The appropriateness of the growing conditions
- The level of maintenance required (though the existence of a collection was not to hinge on this)
- The relevance of the collection to Wellington
- Their standing as a botanic reference collection

- Whether they fitted within the Management and Landscape Plans for the Garden
- Whether the plants meet with the collection policies and are the policies still relevant

Refinement and discussion of the brief before its confirmation added

- The manner in which the collection fitted within the landscape fabric of the garden

This immediately moved the focus of the review from the plants themselves to the landscape as a whole, the way in which the collections interact with it and more importantly, what happens in the gaps between the collection areas. At this point it was confirmed that all areas of the Garden with the exception of designated forest and conifer framework areas (Druid Hill, Mariri Spur), and the general lawn areas were to be included in the process.

Up until that time the role of the Collection Supervisors was that of plant husbandry where the prime focus was on plants and their genus and species groupings that formed collections. This had evolved to an almost myopic view of the garden totally focussed on plants, as often as not on individual plants, to the exclusion of the wider garden. The result of this was clusters of very well maintained plants, and/or collections of plants, some of which simply should not have been created or nurtured where they were located, while the areas in between were cared for on an ad hoc and very much random basis. This meant that there was often little logical connection between the collections and other areas. On top of as this there was often an unwillingness to make hard decisions about pruning and removing plants.

The review team began by making a series of visits through the garden from one end to the other identifying the definable areas of the garden, the collections within these areas and collections that were across the garden such as the Framework Trees and the *Araucaria* collection. The end result was that we went from 37 taxonomic collections or themed collections to 54 areas or collections within the garden. The taxonomic collections were described individually within the defined areas.



The visits completed the team met to discuss notes and the present attractions or detractions and to confirm the area definitions. Area definitions were derived from

- Natural topographical landforms
- Perceivable 'rooms' created by activity, structures, tree configurations or infrastructure
- Transitions where an area went between two more clearly defined areas



It was also decided at that time to move away from detailed plant analysis in favour of the landscape and that the outcomes of the review would expect the Curators to look long and hard at the plant collections according to the criteria listed above. In saying this however, it did not preclude the review team from making recommendations about plants where they were deemed inappropriate, where existing collection policies were not being adhered to, were inadequate or in some instances did not exist and where there were obvious flaws in plant design and management. From this a series of draft recommendations were developed. These were taken out into the field again and checked on site to ensure they were relevant and valid and once verified, the recommendations

were put into a draft document. Further refinement of the document took place as it was considered that if recommendations alone were made that there would be either inaction or slow but gradual reversion to the status quo. The inevitable result would be nothing would happen or, if progress were to be made, it would not be completed without the process being driven by micromanagement. In turn this would have allowed the Curators, to whom the collections/ areas were assigned, to abdicate responsibility. The document included a theme statement, the attractions and detractions, proposed actions, comments to those actions and who had responsibility (in order of seniority), and was distributed to all of the staff.

above:
Main Gardens floral room:
Framed by trees, the roadside fence and the raised bank of the lower Soundshell bank there is an immediate sense of definition of the space.

top:
Stonebridge gully:
Upper part of this gully was not part of a collection area so there was no ownership or development. Located in one of the prime visitor areas of the garden.

Responsibility began at the level of Curator with increasing involvement of other staff as tasks became more complex, there was a need to be more decisive, if an action carried out inappropriately would seriously impact on the garden, or where there were funding implications.

In parallel with the review the Curators have been meeting with curators in the National Library and at Te Papa Tongarewa – National Museum of New Zealand to gain a wider insight into the concepts of Curatorship and help them to understand that their roles are now greater and more holistic than simply caring for plants: that they now ‘owned’ and had responsibility for complete areas of the garden and not just the collections.

Once the Curators had read through the document and had a chance to ingest the proposals the Manager and Team Manager Plant Collections walked around each area with all the Curators discussing the recommendations, how the recommendations had come about and how would they would be implemented. This was very useful as it enabled the Curators to return the documents with informed constructive comments and also helped the review team identify where there might be roadblocks in making the changes and how these might be dismantled or bypassed.

These included ceremonial trees, ‘the only one left in the garden’, historic values, sentimental value and of course the ‘we have always done this!’ comments.

The feed back from the staff was positive and ranged from ‘Great when can we get started?’ to deep historical analysis. Interestingly from both the walk around with the Curators and the written submissions there were many remarks of “we wanted to do that, but didn’t think we could or haven’t been able to” (subsequent to the review surfaced a 1989 document prepared by a previous Curator also identified many similar recommendations to those arrived at during the review process – which reinforced the need for defined actions and timeframes).

The Friends and Guides of the Botanic Garden were also asked to comment as was Mike Oates, Manager Natural and Botanic Areas for Wellington City Council Parks Unit. All were very supportive and were able to add constructively to the process.

A recurring theme that did come through with the comments was the lack of interpretation in the Garden. At the beginning of the review it had been decided not to include interpretation for two reasons:

- the review itself was going to be a major exercise on its own, and
- an Interpretive Strategy was to be commissioned in the new financial year.

Nevertheless the two are very closely intertwined and the success of one depends on the success of the other with the result that at times interpretive recommendations were made. The collections review will be an integral part of the findings and recommendations of the interpretive strategy.



East Path:
View shafts need to be constantly monitored and maintained.

With the large number of actions prescribed it would have been impossible to achieve them all over a year and there would have been a huge and detracting visual impact on the garden. A five-year action plan was drawn up to evenly spread the load into manageable annual chunks with the emphasis in the early stages being on simple easily achieved actions and development of maintenance programmes.

Some of key recommendations arising from the review include:

- All existing collection policies are to be revisited in 2005, either updated/modified if required or where they do not exist, new policies are to be written
- Develop collection maintenance programmes including plant rotation cycles which will define activities and calendars for each collection/area
- The deciduous tree collections be managed as part of the general Framework Trees and that where sufficiently important species exist they will be assigned a separate subpolicy within the Framework Trees policy (to be written)
- Collections such as the rock gardens require comprehensive recording of their seasonal cycles before further planning and development can take place
- The action plans are to be reviewed and updated annually in June each year
- The actions and proposed developments are to recognise and reflect the history of the garden
- Annual maintenance of the margins between the designated forest areas and the collection areas so they do not encroach on each other
- More rigorous low level interventions such as regular pruning, transplants and replacement of plants before they complete their lifecycle

- There are very few opportunities for extending collection areas so the existing areas must be utilised to the fullest extent within the landscape to create a cohesive and meaningful collections and a cohesive and meaningful journey though the garden
- The Erica collection be removed from its existing location and relocated either adjacent to the proposed new access path or within an existing collection area
- The Camellia collection continues with the current maintenance plan for another 2 years. If there is no improvement in the collection the species most resistant to Petal Blight are to be identified and retained, the remaining plants removed and resistant earlier flowering varieties are to be selected for planting.
- That a formal collection of Proteaceae be developed in the garden
- Consideration be given to the effective display of climbing plants
- Consideration be given to the demonstration of plants used for hedges
- A *Cistus* collection be developed

Though outwardly it became very much a landscape review it effectively demonstrated to the staff that while collections were an integral part of a Botanic Garden, the visitor experience should be much more than that. The action plans in turn will require the Curators and the managers of the garden to think very carefully about the management of collections, their relevance, the messages that are being portrayed and understanding that every part of the garden is as important as the individual plants that comprise it.

David Sole
Manager, Wellington Botanic Garden



Geelong Botanic Gardens
entrance

Geelong Botanic Gardens: Collection Categories and Approaches

“The International Agenda for Botanic Gardens in Conservation has provided the basis for the re-orientation of the goals and objectives of the botanic garden in Geelong, Australia. This garden has undertaken a massive change over the last four years and now addresses many of the key issues and challenges outlined in the International Agenda”. (*Conclusions of Symposia, Workshop and Discussion Round Table Meetings: 2nd World Botanic Gardens Congress, Barcelona 2004*).

Without doubt the opening of the 21st Century Garden in 2002 was the catalyst for this change, and brought with it an opportunity to review the

fundamental basis of the gardens operations. Collections planning and management were given particular emphasis in the review process.

The first task in the process of reviewing the GBG collections was to undertake a literature review. We contacted many of the major and regional botanic gardens in Australia seeking a copy of their collection policy/plans and were delighted with the response, as many of the gardens we contacted were forthcoming with sharing their plans and approaches.

What was evident in much of the documentation was the trend towards thematic planning as a driver for the development of living collections. We received great support from the Botanic Gardens Trust in Sydney

who were undertaking a major review of their collections and at the time were facilitating a number of planning sessions and workshops. I was invited to attend a couple of these sessions, which was an invaluable experience. The Botanic Gardens Trust was placing much emphasis on thematic planning, my background had been in Zoos and this approach was familiar. We set out to see if the thematic approach could be applied to the GBG.

We facilitated our own collections planning workshop sessions with participation from Friends of Geelong Botanic Gardens, GBG staff and City of Greater Geelong Management. These sessions allowed for the GBG to articulate a clear set of aims and major collection themes for both the 21st Century Garden project and for the original gardens, these themes would ultimately drive plant selection.

For example, if we aimed to facilitate a meaningful conservation agenda, this could be reflected in themes such as “sustainable horticulture”, “low water horticulture”, “flora for fauna” “indigenous plants”, “rare and threatened taxa”, and so on.

Sustainable Horticulture is the principal theme of the 21st Century Garden. Plants selected for this project needed to meet a range of quite specific environmental tolerances, matched to the prevailing environmental conditions of the site. Rather than modify the physical characteristics of the site and create microclimates to provide optimum conditions for a target species or grouping of plants, in this instance by selecting plants with wide ranging tolerances, matched to the prevailing local conditions we could demonstrate sustainability principals through appropriate plant selection.

Drill down a little further and the “collection” consists of a number of sub-themes each with associated plant collections, form, function and interpretation.

Sub-themes as diverse as indigenous plants and “plants of islands”, sit alongside demonstration low water gardens and displays of exotic succulents. The thing that ties together these quite disparate plant associations is the theme of sustainable horticulture as they are all thriving on site without the need for environmental manipulation to achieve optimum.

We also looked at classifying the GBG living collections into a three distinct collection categories. Collections were evaluated on their complexity of management, their emphasis at the GBG and the resources we could reasonably afford to allocate towards their upkeep.

Three collections categories were developed for the GBG:

- Amenity Collections
- Horticultural Collections
- Botanic Collections

Amenity Collections: Maintained, labelled and documented plants. Plants that fit into this category are display plants, critical to the overall presentation of the gardens but plants without specific taxonomic or horticultural significance or importance.

Horticultural Collections: Managed, labelled and documented plants, still for the purposes of display but with additional functions or focus. In this category plants are of higher botanical or taxonomic significance, are strongly themed, have high potential for interpretation/education programs and horticultural research.

Included in this category are our collections of *Pelargonium*, *Salvia* and indigenous plants associated with the 21st Century Garden.

Botanic Collections: This category applies to only three collections held at the GBG, two of which are linked to associate researchers and scientists. These are the “Mayfield Collection” and the collection of *Dianella* which the gardens is holding to support the work of botanist Geoff Carr who is undertaking a review of the taxonomy of the group. Enid Mayfield is an illustrative researcher who is undertaking the documentation and botanical illustration of the wildflowers of the Otway Plain and Otway Range in Victoria. She collects wild origin material and these plants are held in a reference collection at the GBG. Enid also has her studio at the GBG.

In real terms without these associations the GBG would most likely not be in a position to hold and manage any “scientific collections”.



The other Botanic Collection we are developing relates to the work undertaken by the City of Greater Geelong (CoGG) Conservation Reserves Team (CRT).

The CRT was formed in 2004 with the view to implement some of the key recommendations of the CoGG Biodiversity Strategy. The CRT is a skilled Natural Resource Management team working within the GBG structure in close association with the CoGG Environment and Natural Resources Unit and the community.

In 2005 the team will implement the first stage of an Integrated Plant Conservation Program. The program aims to link the management, protection and enhancement of remnant threatened plant populations within CoGG - to the activities of the GBG, establishing prioritised *ex situ* conservation collections to facilitate the propagation and production of plant material for translocation/reintroduction and for educational purposes.

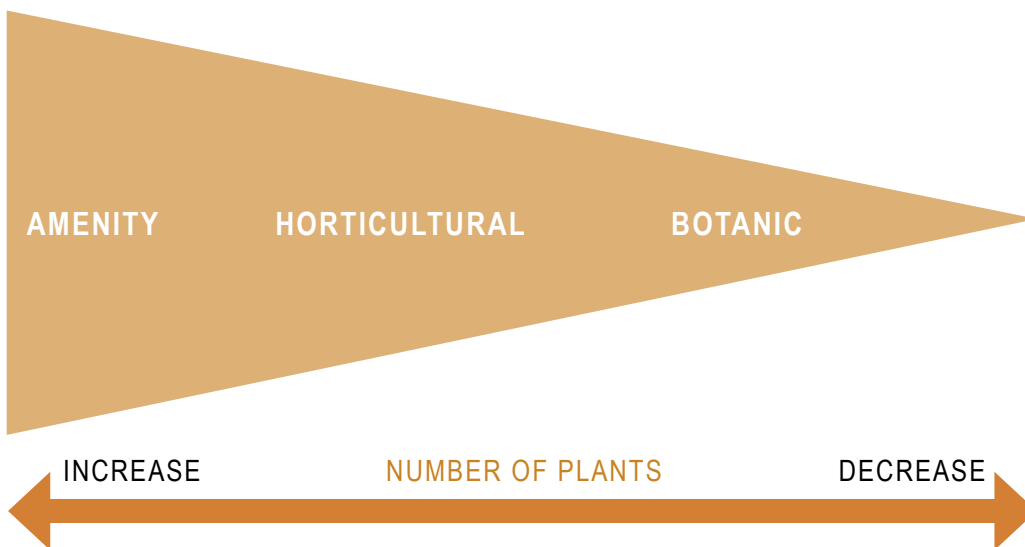
For more information about the program an “Integrated Plant Conservation Program: City of Greater Geelong” discussion paper is available on request, at jarnott@geelongcity.vic.gov.au

Conservation Reserves team

A key feature of the GBG approach to collection management is what we refer to as the “collections triangle”.

It is estimated that there are around 6000 different plant species and varieties associated with the living collection at the GBG. The collections triangle indicates conceptually where these plants fit based on the 3 collection categories as discussed.

The GBG Collections Triangle



The triangle indicates that a significant percentage of our living collection, perhaps even the majority of our plants are for display purposes and that the minority of our plants are of high conservation, taxonomic or scientific importance. The closer to the scientific end of our operations, the fewer the numbers of plants. At first this is quite challenging to acknowledge. Yes there has been a significant shift towards a more botanic approach to our operations and we would now consider that the gardens is meeting and facilitating an important botanic role. Equally we need to be realistic in our appraisal of what is possible and appropriate for a regional botanic garden with modest resources and a local government-funding base.

The great successes of the GBG botanically is that today there are points of scientific/conservation reference, our horticultural collections are relevant, interesting and on the increase and there is a fantastic amenity collections base associated with the original gardens and regional gardens entrance landscape.

We feel that the GBG approach to collection management, based on themes and categories, is both pragmatic and practical. In recent years this general approach has greatly assisted us in developing and articulating direction for the plant collections at the GBG.

John Arnott
Curator

Sydney's Botanic Gardens – Places with Clear Purposes

When it comes to interpretive planning very few of us have the luxury of 'starting from scratch', of working with a clean slate. If we work in national parks, museums, heritage buildings, botanic gardens or other types of cultural institution we face the challenge of implementing a range of interpretive strategies to convey a contemporary organisational mission using long-established and revered collections. We make the most of collections that were assembled and arranged for a different purpose to the one demanded by modern-day audiences who have modern-day educational expectations and priorities for their leisure time.

However, as good interpreters we can interpret anything. We just work out what it is we really want to communicate and then look for elements in the surroundings that support our case. With all the tools in our toolkits we create effective signage and inspirational public programs to get our very important messages across, albeit in a piecemeal fashion. The idea of embarking on holistic thematic planning and changing or rearranging the collections for a common outcome just seems too hard.

However, when we see an organisation similar to our own 'start from scratch' and achieve greatness (that is, popularity and the focus of stimulating debate), we become understandably envious and wonder how we might reinterpret our own institutions.

The Eden Project in Cornwall, England was Britain's most exciting Millennium Project and began life with a clear mandate to showcase global biodiversity and human dependence on plants. It is a dramatic global garden the size of thirty football fields nestled in an old china clay pit overlooking St Austell Bay. Its 50 metre deep crater is home to thousands of important and beautiful plants and three of the world's climate zones have been chosen for interpretation. The Humid Tropics and the Warm Temperate regions are contained within the two giant geodesic conservatories and plants from Cool Temperate zones thrive outdoors in the Cornwall climate along with important crop plants.

Eden has a mission that many botanic gardens could certainly adopt. It is so relevant to our modern society that it attracts visitors from around the globe. Initial planning anticipated 200,000 visitors annually but Eden averages 1.8m visitors per year. So how can our long-established institutions reinvent themselves to meet current community expectations and compete for some of the popularity that 'newness attracts?'

Eden's elements of success can be summarised as follows:

- It's aesthetically appealing with great architecture
- The displays are themed with big, bold interpretive elements incorporated into the landscape
- Public programs complement the exhibits and everything clearly conveys important educational messages
- It was built with organisational partners and significant community involvement

Every staff member and visitor knows that Eden is about global biodiversity and human dependence on plants. It is transparently obvious that Eden promotes sustainable living and that we 'all make a difference' by the way we choose to live.

Being relevant to a contemporary world and 'inspiring an appreciation and conservation of plants' is what the Botanic Gardens Trust in Sydney is all about. Under the leadership of the then Chief Executive Frank Howarth and Alistair Hay, the Director of Botanic Gardens and Public Programs, corporate planning in the first years of the 21st Century holistically revisited the roles and themes of all the Trust's estates to determine what value they can and do have for the community at large. Thematic planning, collections management and interpretation are being discussed and debated as one and the leaders believe that getting the messages right must come first.

The Trust has stewardship of the (Sydney) Domain and three public garden estates:

The Royal Botanic Gardens

(located in the city centre on magnificent Sydney Harbour),

Mount Annan Botanic Garden

(a 419ha Australian native garden 90 kms away in Southwest Sydney)

Mount Tomah Botanic Garden

(a cool climate garden located in the Blue Mountains). The Royal Botanic Gardens date back to 1816 and are on the site of the first ever European Farm in Australia while Mount Annan and Mount Tomah gardens are bicentennial projects and are only 25 years old. All three estates were originally designed with different priorities to today.

While set out as a public park the Trust's traditional role was to amass,

take care of, study and display a valuable collection of plants.

But today's society demands that the botanic gardens belong to the people and those who work in them are stewards of cultural and natural heritage belonging to and enriching the community, but nonetheless with a mandate to influence it. Visitors want to experience peace and tranquillity in a park-like setting but surveys show that they also expect their botanic gardens to be 'more than a park' and to fulfil an educative role.

The focus of living collections has shifted from the collection as an end in itself, to the collection as a basis and medium for programs that actualise the organisation's vision and mission. That is, a fantastically diverse botanical collection is now but a tool to promote species conservation, education about environmental protection issues and sustainable horticultural practices.

How does a complex long-standing organisation like the Trust go about articulating what its three botanic gardens stand for? There is a clearly articulated mission but what *exactly* are our messages? As a multifaceted organisation there is a rich set of possible causes we can align ourselves to. How do we prioritise these and then translate and interpret them to the public through 'plants in the ground'. And will visitors understand them? A colleague at Mount Tomah Botanic Garden remarked recently: "Our visitors are happy with what they see but they aren't sure what it means". We know our visitors, but are we meeting their needs? We have fantastic collections but are we making the most of them and managing them effectively with finite resources, today and with future generations in mind?

These are the challenges the Trust is currently grappling with and we're attacking it from all sides! Staff in our botanic gardens and public programs sections are working on different challenges simultaneously. It's not been easy and we're not about to hand the task over to external consultants to produce masterplans that must be followed prescriptively. One desired outcome is to instil respect in the staff for the needs of the public it serves and develop a learning culture that is not averse to taking risks. In an 'open and safe' learning environment we're experimenting, seeing what works, testing it with our audiences and modifying elements in the light of evaluation. We're looking for examples of best practice and applying strategies that appear to work in one context to novel situations. We're encouraging all our stakeholders to join us for the ride and contribute to 'making a difference' to New South Wales' premier botanic gardens and what they stand for. We're challenging ourselves and growing an organisational culture as a result of it.

What's emerging is that interpretation is driving the process and that there are guiding principles that work for us. For example, these guiding principles were outlined in a recent proposal for a new (provisionally named) Connections Garden at Mount Annan. The site of a tired, abstruse display of plant species arranged in family groups within a phylogenetic theme is being explored as the place for a new display showing the interconnectedness of humans with the natural world.

- Our messages will be powerfully and simply presented

- The renewed garden should motivate visitors to action
- The renewed garden should offer variety and a sense of discovery
- We will involve staff and community throughout the process
- The renewed garden will be horticulturally viable
- What works currently will not be thrown out
- Each garden bed should be themed
- Our messages need to be told primarily through plants

Similar guiding principles underpinned the development of the Cadi Jam Ora – First Encounters Garden which received an IAA award of excellence last year. By incorporating a bicentenary display about the First Farm of 1788 and bulldozing three old morphology beds we've created 'Eden newness' on the oldest cultivated part of Sydney.

When we compare Cadi with Eden's elements of success we find many similarities:

Cadi is aesthetically appealing – it's got great architectural form and is a great place to visit. There are unified themes with big, bold interpretive elements incorporated into the landscape. Public programs complement the exhibits and *everything* clearly conveys important educational messages. It's easy to see and learn what Cadi is about. The aim is to redress the imbalance of the Gardens' Eurocentric cultural heritage and present an Indigenous perspective. The outcome is that visitors and the Indigenous community know about and acknowledge that these Gardens have a multicultural heritage.

Evaluation studies have shown that visitors can articulate many of its objectives, which are:

- to create an experience of what happened here, on this very spot, at the time of European settlement/invasion.
- to convey Aboriginal people's prior use of this site, its significance to them and their understanding of plants.
- to represent the differing environmental perspectives of Aboriginal and European cultures.
- to work closely with local Aboriginal people to foster Reconciliation and show that Sydney has a continuing Aboriginal culture.

Building Cadi involved teams of people and had significant Indigenous community support. From this came sustainable partnerships that continue to deliver complementary public programs. Developing the Cadi Garden gave rise to a stepped process which can be applied to interpretive planning on a bigger scale.

- Articulate the aim: what issue needs addressing?
- Establish objectives: what exactly needs to be conveyed?
- Consult widely with key stakeholders for input and endorsement
- Form a project team and itemise all jobs
- Engage experts to draw together a design plan and interpretive elements
- Get approvals and community support
- Do it! and be prepared to modify it in light of evaluation

We're currently in the process of exploring the role of the Botanic Gardens Trust in the 21st century. All staff have been invited to take part in debates but it is the staff on the ground – principally the horticulturists - who are empowered to work up the individual components.

It's emerging that botanic gardens in Sydney are about:

- Health – a culturally and aesthetically rich place for recreation in a unique setting
- Influence – an inspiring place to learn about plants, gardening, the environment and Sydney's heritage
- Knowledge – a place which generates, manages and disseminates information about plants and biodiversity and
- Stewardship – utilising and demonstrating sustainable management and conservation of living and cultural heritage.

The overarching take-home message from a visit to a Botanic Gardens Trust estate is becoming 'sustaining ourselves by sustaining cultural heritage and the environment'.

As part of the process of devising a thematic plan for the Royal Botanic Gardens estate, we divided it up into manageable chunks called 'precincts', reflecting both differentiated usage and meaningful landscape elements. Teams were then formed to work out specific aims and objectives for each of these precincts. In this way we're slowly developing a shared vision for the role of the whole estate. We've been holding stakeholder workshops to increase our understanding of visitor needs and to refine the purposes of the various components of the garden and collections. It has been useful to form a Trust Botanic Gardens Committee, an authoritative, expert and impartial reference group to present milestones to and to give the approvals necessary to move processes on to the next step. At Mount Tomah Botanic Garden we've revisited the 25-year-old thematic plan and have held similar workshops with staff and external stakeholders in series.

The operational staff has identified the strengths and weaknesses of the existing collections and displays and are working out what makes Tomah unique and have debated what should be kept and what really should be removed. We haven't killed each other yet – in fact the methodology is becoming so familiar that it seems consensus is being reached more quickly!

The Tomah staff is developing an understanding that visitors expect 'a destination experience' and are mindful that this spectacular collection of largely non-indigenous plants sits within a World Heritage area. It's becoming evident that the Mount Tomah Botanic Garden is uniquely placed to provide information and practical advice on how the community can create their own fantastic gardens, improve the designed or degraded environment and value, marvel at and preserve the natural environment, both locally and globally.

In conclusion, regardless of whether the Trust staff is tackling how to interpret an individual garden bed or redeveloping a thematic plan for a whole estate we are all learning from the process. We are openly questioning and challenging long held beliefs of what a botanic garden is for and we are keeping the needs of today's (and tomorrow's) visitor and the general community top of mind. It's becoming clearer and clearer that contemporary botanic gardens are more about debating biocomplexity than displaying biodiversity and that by interpreting the interrelationships in nature and encouraging all aspects of sustainable gardening we can all do something positive for the environment.

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