BOTANIC GARDENS
AUSTRALIA AND NEW ZEALAND INC

BGANZ Collections Planning Toolkit

Handbook

1 Introduction

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 recent survey of regional botanic gardens in Victoria, Australia, indicated that many have conservation management plans and masterplans but very few gardens have documented policies or collections plans as key tools to guide and manage their living collections.

In response to this Botanic Gardens of Australia and New Zealand (BGANZ) have developed a Living Collections Management Toolkit. 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, whilst aimed at target audience of botanic gardens that may not have fully developed collections plans, also serves as a valuable checklist or reminder/reaffirmation for gardens that have well established collection-planning documentation and processes.

There are two documents associated with the toolkit:

The handbook
A step by step guide that provides background information, definitions, discussion on the range of different approaches and assessing the right approach for your garden. The handbook provides explanation and examples of collection planning processes, which have been successful in other botanic gardens.

The workbook
The workbook is a series of templates and prompts that enables participants to personalise the toolkit and systematically work through a collection planning process.

The handbook can be used in conjunction with the workbook to create a collections plan in stages. To assist we have highlighted 'Workbook Action Prompts' where you can go to the workbook and make notes.

Acknowledgements
The BGANZ Collections Planning Toolkit has been developed as a collaborative project through the commitment of members of the BGANZ Victoria Committee to supporting regional gardens.

Many regional botanic gardens have over many years received support and guidance from the Royal Botanic Gardens Melbourne in developing their collections plans. Templates in the workbook have been modelled on RBG Melbourne documents, generously provided in support of regional gardens.

2 The Big Picture

2.1 Some important definitions to begin with:

What are the elements or features of botanic gardens that defines them as being *botanic gardens*? We know that botanic gardens come in all shapes and sizes from major capital city gardens with many hundreds of staff through to regional gardens, which may be managed completely by volunteers. Without doubt the unifying features at the core of any botanic garden are its collections of plants.

Royal Botanic Gardens Melbourne

Some definitions of a botanic garden are:

"Botanic gardens are institutions holding documented collections of living plants for the purposes of scientific research, conservation, display and education.' (Peter Wyse Jackson - Botanic Gardens Conservation International 2000).

The Royal Botanic Gardens Melbourne defines a *collection* as "a managed group of plants demonstrating a particular theme(s). It serves one or more of the general goals of research, conservation, education or ornamental display".

BGANZ refers to a botanic garden as: "gardens open to the public, which grow plants for public enjoyment, scientific, horticultural, conservation, or educational purposes, and which have local, national or international roles".

Different gardens will place more (or less) of an emphasis on the various elements associated with these definitions. Some gardens may facilitate all the elements; other gardens may focus on just one key element as their core objective.

Workbook Action Prompt – Think about your garden and how it relates to the above definitions.

2.2 The importance of having a current vision and mission for your garden

The importance of a vision and mission statement is that they can articulate in simple language what your garden is aiming to achieve and how you are planning to go about achieving your aims.

Your *vision* tells you where you are heading; your **mission** outlines what you will do to get there.

What is a vision?

A vision is a statement that defines where your organisation is heading. It focuses the expectations and aspirations of your team. It should be succinct and memorable.

A vision is the foundation of your organisation and connects with everything you do. It provides clarity for your strategic direction, simplifies decision-making and shapes your day-to-day operations.

Image Courtesy RBG Cranbourne

"Vision without action is merely a dream. Action without vision just passes the time. Vision with action can change the world." Joel A Barker

Some examples of vision statements:
Austin Health's the Surgery Centre – Surgery when you need it.
Austin Health's Olivia Newton John Cancer and Wellness Centre – You matter.
Film Victoria – A world leading screen economy and culture.

What is a mission?

A mission is a statement that defines your organisations purpose and reason for being. It must answer the question, how do we contribute to our vision? Any organisation operating without a mission runs the risk of wandering through the world without being able to verify the path that it is going to take to reach its vision.

An example:

BGANZ NSW - To establish a network of Regional Botanic Gardens, which will enable members to gain mutual benefit through cooperation, exchange of knowledge, ideas and experience, sharing of resources and increased strength associated with belonging to a large and influentialorganisation.

Geelong Botanic Gardens – 21st Century Garden

The Geelong Botanic Gardens in Victoria Australia have linked their Mission with a statement about their role/s

"Geelong Botanic Gardens is an innovative and leading regional Botanic Garden connected to its community."

"The Geelong Botanic Gardens primary role is to hold plant collections for the purposes of conservation, education, research and display."

Its' secondary role is a public garden as a place for:

plants and people

discovery and learning

ideas and innovation

community engagement and pride

conservation and the environment

quiet contemplation

BGCI have good on line resources that can help with the development of a mission and vision for your garden. http://www.bgci.org/resources/start_

Workbook Action Prompt – Think about your garden…do you have a vision and a mission – are they current and relevant?

2.3 Other strategic planning documents

Are there other strategic documents that would provide impetus to your garden and its living collections?

Masterplans are typically long-range documents (10 – 20 years). They are strategic documents that are often spatial or zonal based. A good Masterplan is agenda setting and guides the future use, management and development of gardens. Masterplans can incorporate a broader management framework that includes a vision, mission, goals, policies, strategies and action plans.

Bendigo, (Victoria, Australia) Botanic Garden Masterplan 2011

Management Plans most often explore a higher level of detail than a Masterplan. They are instructive and guide the implementation of key projects and work programs. Management plans set specific objectives and strategies/actions in order for these to be addressed. Typically management plans would be reviewed more frequently than a Masterplan.

For Heritage Gardens *Conservation Management Plans* often contain an inventory of the key heritage elements or significance of a place, the conservation policies to be applied to protect that significance in the face of change, and a strategy through which the policies will be put into action.

For gardens funded by Local Govt. authority's Council strategic plans, precinct structure plans, environment and sustainability policies, open space planning and parks policies may offer some valuable cues for setting direction and identifying priorities for collections.

Workbook Action Prompt – Think about your garden, do you have any of the above documents or are there other strategic planning documents – are they current and relevant?

2.4 The difference between curation of collections and maintaining a garden

Alongside zoos, aquaria and many museums, botanic gardens form the suite of what is often referred to as “life science institutions”.

We recognise that museum curators actively manage how their collections are *curated.* IE. How their various collections are acquired, developed, maintained, documented, interpreted and displayed. Similarly, living plant collections in botanic gardens, as curated collections are actively managed with specific aims and purposes.

As previously discussed there can be a fine line between high quality parks/ gardens and a botanic garden. Many parks and gardens are well managed/interesting landscapes and have any number of specific purposes and aims at their core. It is however the *curation of living collections* that forms the distinction.

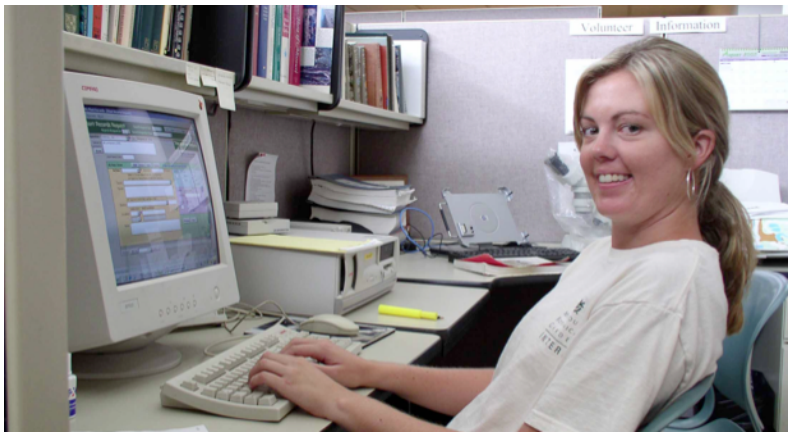
There are numerous approaches to curating collections and alongside botanic gardens a range of different types of gardens are potentially involved in managing plant collections, including:

Arboreta
Zoos (zoological horticulture)
Heritage landscapes
Crematoriums
Public gardens
Private collections
Specialist nurseries with display gardens

The key element that would elevate such gardens to be considered to be ‘botanic gardens’ would be the extent to which they are actively curating and managing plant collections.

Record Keeping

A critical element of managing and curating collections that plant collections are accurately identified, documented and labeled. Across the network of botanic gardens there are a wide range of approaches from a simple spreadsheet with basic information on a plant and its location in the garden, through to elaborate databases with many plant curatorial fields.



BGANZ recently facilitated a survey about gardens record keeping systems. BGANZ is working on a records management toolkit in support of regional botanic gardens in Australia. The information gathered in the survey was to help the project team identify some of the issues that were presenting botanic garden in managing their records.

46 gardens responded to the survey

- 89% manage plant records
- 38% are happy with their recording system and it effectiveness
- 49% say their record system is somewhat/slightly effective
- 43% are not satisfied or only slightly satisfied with their system
- 63% spend less than 5 hours/week on records
- 60% are labelling plants
- 50% have access to a mapping program (not necessarily using in garden)
- 25% know what is in their collection
- 18% don't know what is in their collection
- 43% Guess how many plants are in their collection

It is worth noting that 20% of the responses of the survey came from major capital city botanic gardens who have invested heavily in their own systems. This suggests that in Australia regional gardens (in the main) do not have recording systems that are working well. This gives great impetus for BGANZ to continue with the records toolkit.

Workbook Action Prompt – Do you have a record keeping system? Is it effective?

2.5 Collection Categories and Types of Collections

It is a useful exercise to sort botanic gardens collections into collection categories. Collection categories are helpful in determining how collections are acquired, developed, maintained, documented, interpreted and displayed. For example sourcing plants for a collection based on relatively common ornamental plants would be a very different prospect to that of a conservation collection where plant provenance (wild origin) would be considered essential – the source of plant material for the ornamental display could reasonably be from cultivated material.

The Royal Botanic Gardens Melbourne uses the following categories/definitions to classify various types of collections: *There can often be overlap between collection categories*

Cultural & Ornamental Collections: are collections of plants, which display ornamental attributes, and/or reflect on social or historic values relating to our cultural heritage. This is a wide-ranging category that can be expressed in many different ways. A historical or heritage garden fits well within this category, as would a display of low water plants linked to a sustainable gardening program. A display garden of ornamental plants or an ethnobotany display would also be examples of cultural & ornamental collections.

Display of Citrus diversity – Eden project UK

In Australia most regional botanic garden collections are likely to be based on cultural & ornamental collections. The main driver of this being that Local Government authorities fund the majority of regional gardens in Australia and local government is strongly focused on providing a range of services for their constituent communities. In this light cultural & ornamental collections are arguably the most accessible and relevant collections for regional gardens.

Examples of Cultural and Ornamental Collections:

- The Exhibition Gardens at the Royal Botanic Gardens Cranbourne
- The Water Conservation Garden at Warrnambool Botanic Garden
- The 21st Century Garden at Geelong Botanic Gardens
- The Summer Walk (Garden for a Changing Climate) Sale Botanic Gardens

Geographic Collections: are collections of plants from a defined geographic area. Typically these collections would be based on displaying plants from a particular country or region within a country. These collections are sometimes referred to as bioclimatic collections. Gardens that display solely native plants could be considered to be holding geographic collections, as would a garden displaying indigenous (or local native) plants. Conversely a geographic collection may be a single collection or element of a mixed native and exotic garden.

Examples of Geographic Collections:

- The Californian Garden at the Royal Botanic Gardens Melbourne
- New Zealand Plants at Gisborne Botanic Gardens
- The New Zealand Collection at the Royal Botanic Gardens Melbourne
- Otari Wilsons Bush at the Wellington Botanic Gardens
- South African Plants in the 21st Century Garden – Geelong Botanic Gardens
- Sub Antarctic Island Collection at Royal Tasmanian Botanical Garden

Sub Antarctic Collection RBG Tasmania

Ecological Collections: are collections of plants which typically grow together in an ecological community defined by a range of environmental conditions. Typically these collections would be habitat based collections or representative of a plant community/s. A rainforest garden or collection of plants from prairies or grasslands would both be examples of ecological collections. Many zoo exhibits are based on presenting naturalistic landscapes and could be considered broadly as ecological collections.

Examples: of Ecological Collections

- Australian Rainforest Plants at Maranoa Gardens
- Otway Heathland Plants at Colac Botanic Gardens
- Basalt Plains Grassland Plants at Werribee Zoo
- Alice Spring Desert Park

University of Queensland

Taxonomic & Evolutionary Collections: are collections of plants, which demonstrate principles of plant classification or evolution. Typically these would be based on collecting a number of species of a particular Genus or group of plants. Taxonomic collections are historically the collections most associated with botanic gardens. Gardens are often known for the work that they undertake with their respective taxonomic collections.

Examples:

- The Salvia Collection at the Geelong Botanic Gardens
- The Telopea Collection at Karwarra Gardens
- The Pinetum at Williamstown Botanic Gardens
- The Palmetum at Townsville Botanic Gardens
- The National Rhododendron Gardens – Parks Victoria

Palmetum Townsville Botanic Gardens

Research & Conservation Collections: Conservation Collections are collections of plants developed in line with state, national and international conservation plans for protection of plant biodiversity, highlighting rare and threatened species and remnant vegetation. Integrated plant conservation is a term used to describe the setting of plant conservation targets, using a range of methods and techniques (*ex situ and in situ*) to achieve these targets. It is likely that *ex situ* conservation programs and techniques, such as establishing rare and threatened plant displays and propagation programs, targeted education programs, long-term seed storage etc. would be the main means of involvement for regional botanic gardens in plant conservation.

Sophora toromiro

For some gardens proximate to conservation reserves or areas of high conservation value, involvement with in *situ* conservation programs may be a focus. *In situ* plant conservation would include managing threatened plant populations in the wild, habitat protection - (minimising threatening processes), translocation – (actively increasing population size/s) and associated recovery programs.

Research Collections may (or may not) be based on species with conservation significance. The range of research activities associated with research collections is as wide ranging as the global research agenda for botanic gardens.

Examples of Conservation Collections:

- The Rare and Threatened Garden at the Royal Botanic Gardens Melbourne
- *Diuris fragrantissima* collection at the Werribee Zoo
- Rare and Threatened plans of the Clyde, the Deua Catchments at Eurobodalla Regional Botanic Gardens

Examples of Research Collections:

- *Brachyscome* Climate Change Research
  Melbourne University/RBG Melbourne/Cranbourne
- Holy Leafed *Grevillea* Project - National Herbarium of Victoria

Workbook Action Prompt – Think about your existing (or future) collections and how they might fit into the above categories.

3. Knowing Your Garden and its Context

In order to make sensible decisions and set directions for your collections planning it is important to know your garden's physical, climatic and horticultural conditions to a high level of detail and accuracy. Historically Botanic Gardens have gone to great lengths to modify environments to be able to grow plants from around the world. Modern approaches are often more climate conscious and so a clear understanding what the growing conditions and horticultural input which may be required to grow a particular collection or specimen is vital in the decision making process. Following is a checklist of things to consider and understand.

3.1 Growing Conditions

What are your growing conditions? – Soil, pH and any other governing factors such as salinity, coastal exposure, and predation by both native and pest animals (eg. In Australia possums, cockatoos, rabbits etc). predation by possums, cockatoos, etc. Consider and identify any microclimates that may exist on site and that may be possible locations for collections, e.g. wet spots, free draining spots, shady areas, etc.

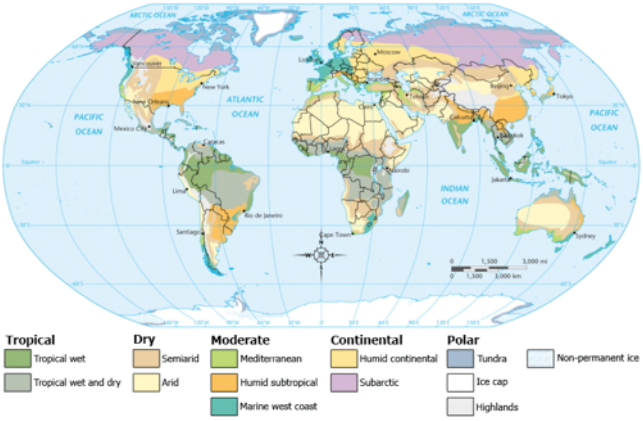
Wilson Botanic Park, Victoria Australia

Water supply and irrigation
What is your situation regarding water and your capacity to irrigate, including water quality and security? Water is one of the major limiting (or enabling) factors when considering the appropriateness of collections for your site.

Climate
Gaining an understanding of existing and projected climate underpins decision making associated with determining the suitability of new collections and the ability to develop current collections.
What is your existing and projected climate, including extremes?

3.2 Climate Matching

Once you have an understanding of your regions climate an important consideration is to select plants that are matched to the prevailing environmental and climatic conditions of your site. This can be referred to as "climate matching" and is a key strategy in making sensible decisions as to the suitability of collections to your garden.



The opposite of climate matching is to manipulate or modify local conditions to create optimum conditions for a particular group of plants.For example: creating high humidity conditions through misting irrigation systems and shading in order to create optimum conditions for cool climate species to grow in dryer/harsher climates.

A useful exercise is to establish a list of similar or as closely matching climates to yours. In SE Australia many inland botanic gardens show Mediterranean climate patterns - the same is not so true for those closer to the coast.

Eden Project Cornwall, UK

3.3 Proximity to native vegetation

According to the priorities of the Botanic Gardens Conservation International (BGCI) Global Strategy for Plant Conservation, first priority should be given to conservation of rare and threatened species of the local or regional flora.

You may be fortunate to have nearby conservation reserves or areas of remnant native vegetation. This provides you with some wonderful opportunities to access interesting local species and to display a representation of your regions flora.

The geographic spread of gardens in regional and national networks gives significant scope to develop multi-site conservation collections based on regional gardens cultivating and displaying their regions indigenous flora. This is something that BGANZ in Victoria, Australia are giving consideration.

4. The Collections Planning Team

Who do you want involved in the Living Plant Collections planning process? Potential participants could include local team members, local partners and people considered to be 'external' to your garden. While it may seem daunting to involve external parties there can be considerable benefits, including the ability to expand your knowledge base. For example there may be considerable knowledge that exists in local specialist interest groups or individuals in the formation of a collection of indigenous plants to your region.

What is critical is to establish key roles and responsibilities and identify who in the project team would be best suited to each role. The project team could be drawn from the following sources:

Gardens Staff
Other Council Parks and Gardens staff
Parks Manager or Superintendent
Council Environment Department staff
Education, marketing and communications staff
Friends Group/s
Peers - staff from other gardens
Local Garden Club
Australian Plant Society
Field Naturalists
TAFE (Horticulture, Natural Resources and Conservation & Land Management)
Garden Plant Conservation Association (GPC)
People in your network with expertise you can draw on

5. Determining Collections

In determining collections we have already established the need to consider:

- The big picture issues, presence or absence (and relevance) of existing strategic planning documents such as vision and mission statements, masterplans
- The range of different categories of collections
- The establishment of a thorough understanding of your gardens physical and environmental attributes
- The balanced composition of the collections planning team to enable objectivity and a breadth of expertise

Gathering this background is critical to inform sensible decisions and set directions for collections planning. There are however many other factors, both objective and subjective, that will ultimately influence how you might approach determining and assessing existing and future collections.

The following points are a series of questions or prompts to help inform decision-making in determining and assessing collections.

5.1 Thematic Planning

In recent times Botanic Gardens have embraced thematic planning as a major driver in determining the appropriateness or relevance of plant collections. This change in philosophy has been to shift the focus from the plant collection being an "end in itself" to the collection being the basis to deliver on a number of possible themes. Significant opportunities exist to expand the potential for plant collections to deliver on a broad range of ecological/educational/cultural interpretive themes.

It is important to link your collections directly and strongly with education and interpretation. Asking the question "what is the *key message* I want people to go away with from seeing this collection?" can help formulate the objectives and key messages associated with collections. If you can't clearly define why you grow it then you should question whether you should have, or develop, that collection.

Healing Garden Singapore Botanic Gardens

The approach undertaken by Parks Victoria, (the major parks agency in Victoria, Australia) to communicating key messages to visitors is an interesting model. Their approach is to develop an Information, Interpretation and Education (I I & E) plan for their parks and reserves. This multi-disciplinary approach provides options for how messages are delivered to visitors.

Information: Is just that, information about your garden and its features - regulations would also be considered as information. Generally information about your garden is factual and not targeted to a particular audience.

Interpretation: Is the action of explaining the meaning of something - whilst still factual interpretation is more interactive and often themed and targeted to a specific element/s of your garden - a guided walk, lectures and tours, an information board, interpretive signage and even art in the garden may form an element of your interpretation program.

Education: Usually relates to more formal and structured learning with clear learning outcomes. Education is most associated with be schools based programs that are based on a set curriculum but Botanic Gardens can contribute in a meaningful way to tertiary education programs and adult education, particularly delivering horticulture based learning opportunities for gardeners.

Workbook Action Prompt – What themes or I,I&E do you think would be good to explore in your garden?

5.2 What already exists?

If you have an established garden, an understanding of the composition and diversity associated with current plantings is essential. Knowing what you are successfully growing can provide valuable insights for further development of your existing plant collections, or ideas for the future based on what's currently growing well. Equally knowing what is struggling to thrive in your garden can also provide valuable clues for evaluating prospective collections.

Analyse what you have by asking the following questions:

- Do you have a large range of taxa from one genus?
- Do you have a range of plants from one particular geographic region?
- Do you have a large number of particular plant type(s) eg, succulents, bulbs, etc.
- Consider anything that could group plants together into a 'collection'.
- If your garden is being re-established consider what plants used to exist and could these be the basis of future or reinstated collections?
- Was your garden well known for particular horticultural features?

5.3 What are some potential sources of collaboration and partnership?

Without doubt every successful botanic garden, regardless of size, scale and budget, will collaborate with other agencies, organisations and individuals in the management of their living plant collections.

Who are the local individuals and groups that might be available and interested in working in collaboration with your garden? This may include sharing of knowledge, exchange or donation of plant material and ongoing support in developing the collection.

There may be a range of horticultural industry and local community groups with the interest and capacity to work with you on projects. As with all collaborations a clear understanding of respective roles and responsibilities is critical to establish upfront.

You might consider partnering with another botanic garden on a duplicate or multi-site collection; seek support for the supply of propagation material, or assistance with developing expertise in the horticultural management of particular plants.

5.4 What are some potential sources of plant material for collections?

There are a range of approaches to plant acquisition that will depend on a number of factors. Perhaps the two most significant factors would relate to your capacity to propagate plants and if the plants are sourced from cultivated material or from the wild.

If you do not have the facilities to propagate plants it would be critical to establish a link with a local production nursery, horticultural training institution or other botanic garden that you could send propagation material to and could then propagate on your behalf. If this is not possible you may be quite limited and reliant on networks of existing nurseries and their standard commercial lines.

Assuming first that plant material is likely to be sourced from cultivated material the following may be potential sources of propagating material:

Other Botanic Gardens
Garden Plant Conservation Association Collectors
Other Private Collectors and Private Gardens
Australian Plant Societies (APS) and APS Study Groups
Universities
Nursery Industry – specialist Nurseries

A large number of botanic gardens will place a major emphasis on collecting wild origin material.
If there is the capacity to collect from the wild there are a range of permits and logistics that would need to be considered. It's likely that most gardens that regularly collect plant material from the wild will have developed their own collection procedures and protocols. Sourcing wild collected material and undertaking-collecting trips is likely to be outside of the available resources for many gardens.

Field Collecting

5.5 Climate matching

It makes perfect sense to select plants and potential collections for your garden based on the plants being well matched to the prevailing environmental conditions of your site. What areas of your country,, or elsewhere in the world are you a favorable match in terms of climate? It's reasonable to assume that plants from these areas would be well suited to your garden.

What areas of will match your projected climate with climate change modeling and predictions?

5.6 What plants do staff want?

Is it reasonable to assume that throughout the history of many of our gardens that numerous plants and perhaps even entire collections may have been developed based on the likes and interests of garden curators and gardeners?

Whilst open to whim, rather than being strategic, there is every prospect that this will still happen into the future. The important thing is to ensure that the rationale we are discussing in this document is considered to assess the relevance of proposed collections to your botanic garden alongside personal likes and there is continuity of interest if a key staff member were to leave.

5.7 What are the gaps in existing Botanic Gardens collections?

Like any business it's always wise to find a niche market or point of difference. Ideally botanic gardens should reflect diversity and retain a local flavor. Selection of collections should give consideration to what already exists and not replicate collections that are already held in a number of other gardens. There is of course the counter argument that duplicating collections may well be a sensible approach as a conservation objective.

It's really a matter of assessing things on a case-by-case basis. Developing an understanding of the breadth of collections in your region, exploring collaborative projects for similarly themed collections which would focus on shared objectives and simply taking a risk and concentrating on an under-represented segment of the world's flora could result in your collections being unique.

5.8 What is the weed risk of the collection?

A significant percentage of some of the world's worst environmental weeds are garden escapees, species that have been dispersed from gardens and have established in native vegetation. Given the role of botanic gardens in introducing plants into cultivation they have unequivocally contributed to this weed flora in the past. It is essential today that all new plants and collections are subject to a weed assessment process.

In considering a prospective or new collection it is today contingent on botanic gardens managers to ask, " is it possible that a large number of the taxa in the collection could turn weedy?" If the answer to this is yes then under normal circumstances that collection should not be further developed.

Acacia baileyana

Workbook Action Prompt – become familiar with the BGANZ Weed Risk Assessment Procedure (WRAP) at http://www.bganz.org.au/resources

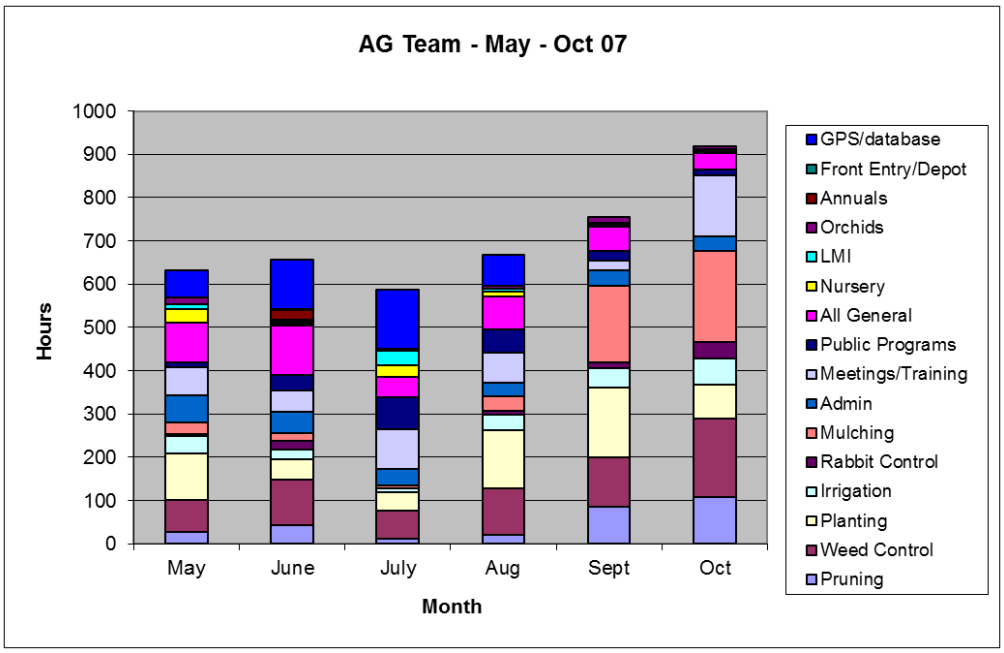
6. Resource Planning

One of the big challenges in undertaking a collections planning exercise is to consider the resource requirements and implications associated with planning, acquiring, establishing and maintaining living plant collections. Critical to this is to ensure that there are sufficient resources (labor/ time and available budget) to allow the collection to be successfully developed.

Perhaps the first step is to establish what the elements are to be considered in developing a resource plan. Staff numbers, skill levels, time to maintain collections, record keeping capacity are all-important factors. Consider benchmarking with other gardens of similar complexity and gardens with additional resource levels to establish some base line information.

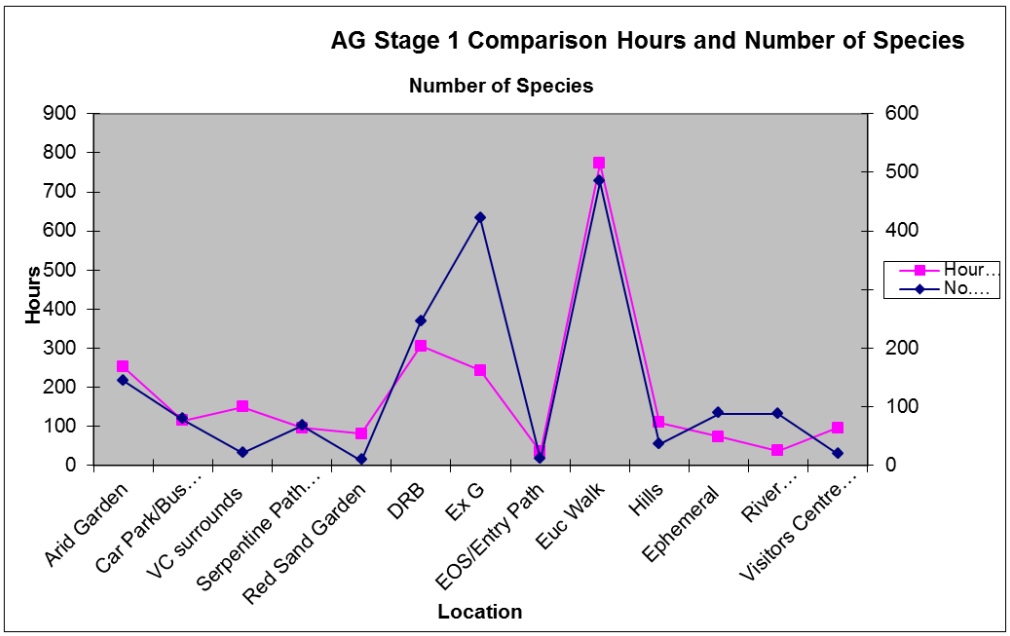
The Royal Botanic Gardens Cranbourne undertook an extensive audit over a 12-month period of the activities of the horticulture staff. Consideration was given to how much time was being spent in what areas of the garden and on what activities.

Figure One: Assessment of tasks undertaken in the Australian Garden RBG Cranbourne



Of further significance to this discussion is the correlation that was established between species diversity and maintenance resources required. High diversity = high resource requirement to adequately maintain these plants to display standard.

Figure Two: Assessment of species diversity and maintenance (time) allocation Australian Garden RBG Cranbourne



This data was used to inform the planting design in Stage Two of the Australian Garden where the design team were instructed to ensure that there was a mix of areas of high species diversity and areas of very low diversity. This zoning is something that may be useful to consider for other gardens.

Another interesting case study is the approach taken at Melbourne Zoo to resourcing/facilitating its plant conservation agenda. The approach was to focus on a single species *Diuris fragrantissima*. This allowed the zoo to contribute in a meaningful way to the conservation of the species but keep the resource requirements at a modest level that the organisation could support. Rather than over commit and not achieve outcomes, the aims and goals of the project were in sync with the available resources.

Again this approach may be useful to consider for regional gardens. Plan collections around available resources and achieve good results within known constraints. Be realistic about time-frames and establish achievable tasks to achieve long-term goals.

Working with volunteers and establishing collections partnerships becomes compelling with limited resources. Indeed many gardens are completely reliant on the direct support afforded by Friends and Volunteers.

Workbook Action Prompt – What is your current and projected resource capacity and is this in sync with your aspirations?

7. Evaluating Collections

Evaluation of existing or proposed collections is essential to determine if you can turn all of your ideas into reality- or just some of them, a few of them, or one at a time. This is the point where passion for plants meets the 'reality check' head on. An evaluation process is a necessary tool to ensure that your planning team takes an objective approach to determining which collections will be implemented.

Both existing and potential collections should be evaluated. Decisions about the merit of continuing with a collection can inspire a renewed commitment to and development focus for an existing collection.

By this stage in your collection planning process we suspect you've accumulated a long list of inspired ideas about collections you 'must have' for your garden but this list may not be realistic. The evaluation process is likely to (and probably should) result in the elimination of a number of the possible collections.

Ask yourself. Does this collection…

Plant Collection :	Does it fit with our vision?	Will it grow well here?	Does it have weed potential?	Can we resource the collection?	Can we develop expertise?	Do we have partners to help us?	Do we have clear interpretive themes?	Priority to implement- High/Med/Low

Workbook Action Prompt –do the 'plant collection reality check' exercise.

8. Collections Management Plans

The final element of the collections planning toolkit relates to the practical implementation of collections through the preparation of collection management plans. To date the discussion has been based around the factors and elements to consider in determining collections. Collections management plans assume that the collections are active or a commitment has been made to develop the collections in your garden.

Collections management plans aim to direct and document in practical terms how the collection will be curated detailing specific objectives, strategies and actions.

The collections management plan template as detailed in this handbook is solely based on the Royal Botanic Gardens Melbourne Collections Management Plan documentation and we acknowledge their support and willingness to share this document with BGANZ Vic.

The RBG Melbourne management plan provides a broad framework for the documenting and managing living plant collections and includes the following fields:

- Location Information: Where the collection is held and its size
- Primary Collection Category: One of the categories as detailed in 2.5
- Objectives of the Collection: Specific horticultural or conservation objectives relating to the collection
- Interpretation Objectives: Detailing key interpretive messages and themes
- Current Status vs. Objectives: An assessment of the current status against identified objectives
- Priorities for collection development: Targeting specific priorities guiding acquisition and collections development
- Actions: A practical action plan with specific targets and milestones
- Site conditions: Soil type, drainage, aspect etc
- Brief History of the Collection:
- Horticultural Management Notes: Detailing cultural requirements and treatments
- References
- Review Date/s

Workbook Action Prompt – use the template to create your own collection management plans.

9. Tools for Success

9.1 Collections Planning Workbook

The workbook follows the same structure as this handbook. The workbook is a series of templates that enables participants to systematically work through a collection planning process, which has been successful in other Botanic Gardens. The workbook is written to be used in conjunction with this handbook to assist you to create a collections plan in stages.

Collections Planning Toolkit Appendices examples/samples of collection management plans from the RBG Melbourne, Geelong Botanic Gardens and Bendigo Botanic Gardens

9.2 Internet resources

Climate Information

Climate Change In Victoria	http://www.climatechange.vic.gov.au/publications
Bureau of Meteorology Climate Data Online	http://www.bom.gov.au/climate/data/ (Can access long term datasets for specific locations)
Bureau of Meteorology - Australian Climate Change and Variability	http://www.bom.gov.au/climate/change/aus_cvac.shtml
Victorian Bioregions	http://www.dpi.vic.gov.au/dpi/vro/vrosite.nsf/pages/biodiversity_bioregions_vic
National Strategy and Action Plan for the Role of Australia's Botanic Gardens in Adapting to Climate Change	http://www.anbg.gov.au/anbg/botclimate/index.html

Plant Conservation Information

Flora and Fauna Guarantee Act - Listed Taxa
http://www.dse.vic.gov.au/dse/nrenpa.nsf/FID/-0488335CD48EC1424A2567C10006BF6D?OpenDocument

Global Strategy for Plant Conservation
http://www.bgci.org/worldwide/gspc/

International Union for Conservation of Nature (IUCN) Red List
http://www.iucnredlist.org/

Environment Protection and Biodiversity Conservation Act lists of Threatened Flora
http://www.environment.gov.au/cgi-bin/sprat/public/publicthreatenedlist.pl?wanted=flora

Botanic Gardens Information

Botanic Gardens Conservation International (BGCI)
http://www.bgci.org/

Botanic Gardens of Australia and New Zealand (BGANZ)
www.bganz.org.au/

Appendix 1. Palm Collection Royal Botanic Gardens Melbourne Living Plant Collection Management Plan –

ROYAL BOTANIC GARDENS MELBOURNE
LIVING PLANT COLLECTION MANAGEMENT PLAN

NAME OF COLLECTION	Palm
LOCATION	Across the landscape
COLLECTION THEME	Taxonomic and Evolutionary
RELATED COLLECTIONS	

BRIEF HISTORY OF COLLECTION (see Appendix 1 for more detail)

Collection origins
Guilfoyle introduced many palm sp to the South Yarra site. Extensive use as a landscape feature due to their exotic look and characteristic shapes

Major donors or collectors

Key historical dates and development
1880 Palm Lawn established.
1889 Palm transplants in various locations.

Plants of major significance (max of 6)

Plant	Criteria
Butia capitata	Landscape significance
Livistona australis	Rare in Victoria
Phoenix canariensis	Signature RBG species
Washingtonia robusta	Significant landscape feature
Washingtonia filfera	Significant landscape feature
Brahea armata	Landscape feature

DESIGN INTENT OF COLLECTION

- Exhibit a broad range of Palm species from different regions of the world throughout the RBGM with a particular focus at the Palm lawn.
- Palms are one of the most significant and characteristic plant groups across the RBGM site. Their distinct form and bold foliage contributes significantly to the 19th century character of the gardens. This character must be maintained through appropriate planning (ie selection of new sites and nomination of succession plants).
- Selection of future sites should consider site lines and vistas that maximise their potential in the landscape.
- Palm plantings can be arranged as single specimens or on some sites as palm groupings. Palm planting sites need to be done in consultation with the support team.

AIMS OF COLLECTION

1. To display a diverse selection of Palms (Arecaceae).
2. To provide a suitable selection of taxa for reference material and plant identification.
3. To support plant conservation programs through *ex situ* cultivation of threatened species.

4. To add value to the amenity and rich tapestry of the Guilfoylean landscape.
5. To display and interpret unique characteristics and ethnobotanical uses of palms

OBJECTIVES OF COLLECTION

1.1. Maintain and expand representation of Palms especially those that highlight Gondwanan relationships.
1.2. Increase diversity of Palms that will grow within the constraints of Melbourne's current and projected climate.
2.1. Maintain a suitable range of species for taxonomic reference as advised by PSBD.
3.1. Protect and duplicate representation of rare and threatened species.
4.1. Grow a range of palm species in suitable microclimates across the Gardens to highlight their ornamental characteristics as landscape feature plants.
5.1. Identify and cultivate signature species for display and interpretation.
5.2. Interpret biological and taxonomic uniqueness, cultural uses and evolutionary relationships.

KEY PRIORITIES FOR COLLECTION DEVELOPMENT

Interpretation

Individual plants:	*Butia capitata. See also significant plant list*
Plant Groupings:	Palm lawn and points Western Lawn Rose pavilion precinct Phoenix group
Key Messages:	Cultural uses: food, fibre, Palms for a wide range of climates, Palms on the edge of their growing conditions, and characteristics of Palms; uniqueness of morphology ie largest leaf, fruit and monocot.; wide distribution – every continent except Antarctica
Garden structures:	
History:	Guilfoyle's pacific islands influence. History of Palm lawn

Plant Records

Identifications:	Increase percentage of species to ID2L or ID3.
Labelling:	Increase percentage of labels on site.
Mapping:	Ensure mapping is up to date. Conduct an audit of Palm species on site and develop list of what other species would be suitable to grow here.
Database:	Ensure planting and death sheets are processed promptly.

Plant Acquisitions

Propagation:	(see Appendix 2 for detail if required) Develop list of current and additional species suitable for Melbourne's climate. Dry subtropical to tropical species.
Sourcing:	Develop a list of desirable species that will suit our climate for sourcing and introduction into the landscape. Reputable suppliers with known provenance.
WRAP:	All new acquisitions
Donations:	
Alternative planting sites	Eastern Lawn, Western Lawn, Grass Bed, Malus Bed, Arid Garden, Volcano precinct, Fern Gully.

Plant Maintenance

Pruning:	(see Appendix 3 for detail if required) Horticulture to remove dead fronds with extension pole saw. Provide advice to Arboriculture regarding maintenance regime.

	Thin selected *Phoenix reclinata*
Pests & Diseases:	Monitor species for mealy bug. Monitor for *Armillaria* sp in Fern Gully, and Palm Pink Rot on *Archontophoenix cunninghamiana* Identify and manage any serious threats
Irrigation:	
Drainage	
Mulch	Mulching provides a slow-release source of a wide range of nutrients
Nutrition:	Focus on identifying and meeting palm nutritional needs. Mn and K deficiencies seem to be an issue for palms in the RBG, especially for *Phoenix* spp. Additional nutrition will probably be required in lawn areas due to direct competition and also a lack of nutrient release from breakdown of organic matter.
Soils:	
Light:	
Microclimates:	
Monitoring	
Weeds	Some palms can be weedy in their own right – especially the *Livistona australis* (threatened in Victoria) in the RBG, and the seedlings are not susceptible to herbicides. **Do not use systemic herbicides to control turf around the base of Palms** because being non-woody plants and often surface and above surface roots there is an unacceptable risk of chemical entering palm tissues. Non systemic herbicides are acceptable

Landscape Development

Redevelopment:	See alternative planting locations above. Development of the point beds on the Palm Lawn.
Expansion:	Select sites for 10 *Phoenix canariensis* currently held in Nursery to be planted. Selected locations on Eastern Lawn Grass Bed and Malus Bed in conjunction with Bamboo and Grass Collection Management Plan. Grey Garden, Arid Garden, Fern Gully
Aesthetic Association:	
Design Intent:	
Tree Management	In conjunction with Curator of Arboriculture develop a cyclical maintenance program to remove dead fronds, remove seedlings and thin selected species throughout the Gardens. As well as seedlings emerging from crowns.

Research

Plant Sciences and Biodiversity:	
Botanic Gardens and Institutions:	Cairns, Townsville, Darwin, Fairchild (Florida), Singapore BG (propagation)
Plant Trials:	
Evaluation:	

Professional Development

Outreach:	Tim Uerbegang University of Melbourne Mike Smith (micsmi@pyrotek-inc.com) and Chris King (contact to be confirmed)

	Palms for Brisbane Townsville Botanic Gardens Singapore Botanic Gardens Other Botanic Gardens: Cairns, Darwin, Fairchild (Florida),
Training:	
Exchange:	
Mentoring:	Chris Cole Bill Bampton
Succession Planning:	
Transfer of Skills:	

REFERENCE MATERIAL

A resource for Pests and Diseases of Cultivated Palms
http://itp.lucidcentral.org/id/palms/palm-id/index.html
Beck, Hans, T. and Michael (1990) *Useful palms of the world: a synoptic bibliography*.
Boyer, Keith. (1992). *Palms and Cycads, beyond the tropics*
Chase, A.R and Broschat, T.K. (eds.) (1991). *Diseases and disorders of ornamental palms*
Cronin, Leonard (1989). *Key guide to Australian palm, ferns and allies*
Jones, David. L. (1995). *Palms throughout the world*. Reed New Holland. Sydney.
Meerow, Alan W (1992).*Betrock's guide to landscape palms*

MANAGEMENT PLAN COMPILED BY	Cole, Laidlaw, McNabb, Turner, Symes, Wee
DATE	August 2011
REVIEW DATE	2015
SIGNED CURATOR	
SIGNED BRANCH MANAGER	

CMP Priorities	2012-2013 Goals	Status
Interpretations Individual plants, plant groupings, collections, key messages, garden structures, history.	Develop text for one plant based article.	Completed and submitted text on Licuala ramsayi to MM &TT
Plant Records Identifications, labelling, mapping, database.	At least 5 plants identified to ID3.	Approx. 6 palms were Identified by Michael Smith. These have been emailed to Roger Spencer. There fore ID status is pending. 5/12/12
	At least 3 plant labels requested.	Submitted 10+ label requests for palm lawn area Jan 2013
Plant Acquisitions Propagation, sourcing, WRAP, donations,	Seek to source suitable palm sp via Michael Smith and or Tim Ubergang.	Michael smith has informed me he will donate some palms to the gardens. Some c which are WRAP process completed and approved by Roger Spencer Jan 2013.rare. Palms donated by Michael smith collected in Feb.

CMP Priorities	2012-2013 Goals	Status
alternative planting sites		Palm seed donated by Palms from Brisbane, Flecker and Townsville Botanic Gardens passed WRAP process April 2013.
	WRAP conducted on palm sp to be introduced.	See above notes:
Plant Maintenance Pruning, irrigation, drainage, pests & diseases, nutrition, soils, monitoring, light, microclimates, weeds	Implement pruning maintenance program in North and communicate requirements with curators so that they can continue pruning.	On going some delays have been encountered due to injury and shortage of arboriculture staff.
Landscape Development Redevelopment, expansion, aesthetic association, design intent, tree management	Meet with Landscape Architect to identify and document future planting locations for Palm sp introductions.	Eastern Lawn

Appendix 2. Salvia Collection Geelong Botanic Gardens Living Plant Collection Management Plan

Collection	**Salvia**
Location	Salvia beds (central part of heritage garden) 21st Century garden
Area (approx m2)	50 m2
Primary collection Category[1]	Taxonomic- genus
Secondary or associated collection	Cultural & Ornamental- *S. microphylla, S. leucantha, S. greggi* and *S. nemorosa* cultivars

Objectives of Collection:

1. To display a broad representation of the genus Salvia
2. To conserve cultivars of *S. microphylla, S. leucantha, S. greggi* and *S. nemorosa* for their horticultural merit

Interpretation Objectives:

- Salvias are found on the main continents and grow in temperate, sub-tropical and tropical regions
- Many species are drought tolerant and suitable for Australian gardens
- Salvias belong to the mint family and display key characteristics (square stems, lipped flowers)
- Some Salvia have culinary or medicinal uses

Current Status vs objectives:

- There are approximately 900 species of Salvia world-wide. GBG collection holds approx. 180 species
- GBG collection includes species from Asia, Europe, Sth America, Sth Africa
- Strong partnership with Salvia Study Group
- Collection registered with the Garden Plant Conservation Association of Australia (GPC)
- The collection is currently spread throughout the garden and difficult to interpret geographic origin of species in collection
- Potential size of collection needs to be in proportion with other garden collections- greater focus on target species to include in collection to limit total accessions
- No formal accessions for collection, need to source wild collected species where possible
- Friends Growers are promoting Salvias for sale through Friends nursery, including top 10 drought tolerant species

[1] Geographical / Ecological / Cultural & Ornamental / Taxonomic & Evolutionary / Research & Conservation

Priorities for Collection Development:
○ Focus on developing collection to reflect geographic regions Salvia come from ○ Investigate what Salvia species may be rare and threatened and include in collection and distribute to other collectors we have partnerships with and Botanic Gardens ○ Develop stronger theme of Salvia useful for medicinal or culinary purposes

Strategies to achieve objectives:	
○ Determine rare and threatened plants ○ Develop partnerships with other Botanic Gardens to access wild collected material ○ Re-design salvia planting to reflect geographic regions ○ Develop a themed planting for the Central Bed display to promote Salvias for medicine and culinary use	
Key actions:	
Refer to action plan for 2011 which includes transition of collection to new collection manager	*Deadline*
Current site conditions:	
Soil type:	Sandy Loam on Limestone bedrock
Drainage:	Good drainage in all areas except Bed No 6, which tends to hold water after heavy rain, due to low aspect and drainage from other areas.
Aspect:	Wind damage occurs periodically as it enters from the south west, Beds No 1 & 5 are the worst affected.
Light:	Majority of beds receive afternoon sun, shaded in morning due to tree canopies. This problem does not exist in winter due to trees being deciduous.
Microclimate:	Salvia Bed No 6 receives considerable shade during the summer months influencing the choice of species in this Bed. Washingtonia Beds are shaded all year round by the palms. Salvia Bed No 1 around Raintree, *Koelreuteria paniculata* gives morning sun and afternoon shade in summer, African species planted in this area.
Irrigation:	Spray and drip irrigation.
Strategies for site improvement:	
Refer action plan	
Background on collection:	
For many years there have been Salvias growing in the Geelong Botanic Gardens, 17 Salvia are listed in Daniel Bunce's 1862 Catalogue. The collection was scattered throughout the gardens in various garden beds. During 1993 the GBG imported seed from France, Portugal, Denmark, and South Africa and as well from local sources. In 1999 Graham and Velda Ellis members of the Salvia Study Group of Victoria donated plants	

to the GBG. Soon thereafter additional tube stock was purchased and an additional garden bed was developed. The collection gained momentum when Bill Whitehead, of the Salvia Study Group offered to help with species identification donation and exchange of plants.

Horticultural Management Notes:	
Fertilising requirements:	Once a year, spring, with Organic Slow Release Fertiliser, such as Seamungus. Salvia in the nursery collection is fed with non-flowering osmacote and slow release nitrogen, in spring. After pruning all Salvia in Garden Beds are usually fed with liquid seaweed.
Pest or disease problems:	Relatively Pest and Disease free, but have suffered damage occasional from various pests. Caterpillars, of the Cabbage White Butterfly, attacked in December 2004, S.scuttellariodes, spayed with Dipel. S.forskaholei, S.algeriensis, S.cadmica, S.sclarea can be attacked by snails. Most basal growing Salvias are prone to snail damage. • Peas sprouting from pea straw are the main weed problem, have to be hand weeded. Also Poa annua is a seasonal problem. Sow and Prickly Sow Thistle, Sonchus oleraceus and Sonchus asper ssp. Glaucescens, Cleavers has mostly disappeared, (except under Raintree) since mulching with pea straw. Occasionally Oxalis spp. and Euphorbia peplus. Buttercup, Ranunculus repens severe seasonally in Bed No.1 & 4. Scarlet Pimpernal, Anagallis arvensis all over mostly on edges, easily controlled by spraying. Italian Arum, Arum italicum, Bed No.5, improving over last 5 years, needs to be repeatedly dug up before flowering.
Propagation:	Most species are easily propagated by vegetative propagation such as cuttings, layering and suckers. Several of the salvia hybrids cannot be grown from seed as they will not grow true to form. All of the Salvia sp can be grown from seed but more work needs to be done in this area.
Cultivation:	All Beds are mulched with Pea Straw to a depth of 15cm, 2-3 times a year.
Pruning:	Majority should not be cut back more than a third as they will die, see Pruning and Maintenance notes for further reference.

Reference material:

Eg. Books, websites, reports, individuals, organizations

- Salvia News, Victorian Salvia Study Group, (A branch of the Herb Society of Victoria)
- A Manual for Salvia Growers Meg Bentley
- Des Lawrence Salvia Notes
- Salvia Assoc. of Australia Inc

People Meg Bentley
Bill Whitehead
Lyndi Garnett
Trudi Fry
Jillian Barkell

Graham and Velda Ellis Sue Templeton
Attachments:
Map showing collection locations (to be updated after movement of plants) Plant list from database (to be updated after movement of plants)
Plant database:
Collection records up to date: No (to be updated after movement of plants, including nursery stock) Records contain photographs: Yes

Management Plan Established:	2010
Management plan developed by:	Annette Zealley & Des Lawrence
Due for review	2013
Management Plan Reviewed by:	
Date reviewed:	
Due for review:	

Appendix 3. Examples of some entries in the Bendigo Botanic Gardens Living Plant Collections Plan

Examples of some entries from Bendigo Botanic Gardens LPCP

Geographic

Definition: a collection of plants from a defined geographic area.
Collection focus: geographic areas with a climate match to Bendigo (known as homoclimes)
Collection principles: Geographic collections will demonstrate one or more of the following attributes:

- Suitability for use in home gardens and public landscapes
- Represent key vegetation communities of the region

Collections:

Southern California
Objectives of collection: To demonstrate a range of plant species of southern California, with an emphasis on plants from homoclimes. To research and demonstrate the potential to use these plants in home and public landscapes.

Interpretation objectives: There are many parallels between central Victoria and southern California, both culturally (ie, gold rushes, lifestyle, etc) and climatically. Many Californian plants are suitable to Bendigo growing conditions. Some taxa from this area are rare, threatened or endangered in their natural range and Botanic Gardens have a role to play in their conservation. Plants from homoclimes have weed potential so we must act responsibly in this regard.

North Africa
Objectives of collection: To demonstrate a range of plant species of North Africa, with an emphasis on plants from homoclimes. To research and demonstrate the potential to use these plants in home and public landscapes.
Interpretation objectives: There are many plants from North Africa, the Canary Islands and the south-western Mediterranean which are already grown in our parks and gardens because they suit this climate. There are less commonly known taxa from this area which are also suited to central Victorian gardens. Some taxa from this area are rare, threatened or endangered in their natural range and Botanic Gardens have a role to play in their conservation. Plants from homoclimes have weed potential so we must act responsibly in this regard.

Ecological

Definition: a collection of plants which typically grow together in an ecological community defined by a range of environmental conditions.
Collection focus: Ecological collections will focus on habitats within and near the City of Greater Bendigo, with a particular emphasis on threatened EVCs.

Collection principles: Ecological collections will demonstrate one or more of the following attributes:

- Characteristic plant associations of the particular ecological community
- Suitability for use in home gardens and public landscapes

Collections:

Whipstick-Kamarooka

Objectives of collection: To show the range of plants indigenous and endemic to the Whipstick-Kamarooka area.

Interpretation objectives: To illustrate the beauty and unique character of the plants of this region. To show the inter-relationships of these plants. To show that many of these plants are suitable for home gardens. Also to use this collection to explain the terms endemic, indigenous, native and exotic.

Goldfields Creekline Grassy Woodland EVC

Objectives of collection: To show the natural composition of this flora, including dominants, floristic composition and spatial density.

Interpretation objectives: To give an example of the original vegetation that would have occurred in the creek vicinity and its importance to riverine health. To tell the story of aboriginal relationships to these plants including names, uses and other aspects.

Northern Plains Grasslands

Objectives of collection: To show the unique floristic composition of the EVC.

Interpretation objectives: To create an understanding of this threatened Victorian EVC. To create an appreciation of why it is important to protect threatened ecosystems and individual species. To explain what is being done to protect and conserve this EVC in the wild.

To illustrate the beauty and unique character of the plants of this region. To show the inter-relationships of these plants. To show that many of these plants are suitable for home gardens. Also to use this collection to explain the terms endemic, indigenous, native and exotic.

Cultural and Ornamental

Definition: a collection of plants which display ornamental, historic and/or social values relating to our cultural heritage.

Collection focus: Cultural and Ornamental collections will focus on plants grown in Victorian domestic and public gardens in the late 19th and early 20th Century (within the heritage section) and plants suited to the Bendigo region's current and predicted climate (heritage and new sections).

Collection principles: Cultural and Ornamental collections will demonstrate one or more of the following attributes:

- Traditional or modern horticultural design styles
- Hybrids, cultivars and species grown for horticultural interest and display
- Plants which have heritage associations with the Gardens. This may include re-introducing past collections

- Plants of historic importance which demonstrate original design intent
- Plants which are linked to the traditional use, belief systems, art, medical treatments, etc, of a defined cultural group
- Plants which demonstrate modern horticultural responses to the region's current and predicted climatic conditions
- Suitability for use in home gardens and public landscapes

Collections:

Cannas
Objectives of collection: To collect, preserve and grow a representative range of ornamental Canna species and cultivars that would have been grown in Victorian gardens in the late 19th and early 20th Century, with a cut-off date of 1940. To collect and grow a range of Canna species and cultivars known to have been bred by and/or donated to Bendigo by John Cronin (Director, Melbourne Botanic Gardens). To collect and grow a range of Cannas known to have been grown previously in the Bendigo Botanic Gardens.
Interpretation objectives: Tell the story of plant donation from the Melbourne Botanic Gardens to Bendigo. To explain the continuity of growing Cannas at the Bendigo Botanic Gardens. To give an example of the type of Canna bedding display typical of early in the 20th century. To tell the story of plant collecting and breeding of an ornamental species which was typical of horticultural pursuits of that period.

Lavenders
Objectives of collection: To collect, preserve and grow a comprehensive range of *Lavandula* species, hybrids and cultivars.
Interpretation objectives: To tell the story of Lavender and its cultural history and uses. To tell the story of the collecting, breeding and selection of an ornamental and economic species.

Home demonstration gardens
Objectives of collection: To collect, trial and exhibit a range of plants that are of interest to home gardeners of the region and which are sustainable.
Interpretation objectives: To show it is possible to have an interesting and colourful garden which is also sustainable.

Research and Conservation

Definition: a collection of plants developed in line with state, national and international conservation plans for the *ex situ* protection of plant biodiversity, highlighting rare and threatened species and remnant vegetation.

Collection focus: Conservation collections will focus on plants from the greater Bendigo region.

Collection principles: Conservation collections will demonstrate one or more of the following attributes:
- Rare and threatened plants identified under the Flora and Fauna Guarantee Act.
- Plants existing within the site which are rare, threatened or endangered in Australia or overseas

- Remnant vegetation within the site

Collections:

Rare and threatened species of the greater Bendigo region

Objectives of collection: To demonstrate the full range of rare and threatened plant species of the district. To undertake the role of ex situ conservation of threatened species. To demonstrate the potential to use these plants in home and public landscapes.

Interpretation objectives: To show living examples of the rare and threatened plant species of the Bendigo region. To explain how and why they are on 'endangered' lists. To explain how 'endangered' lists are devised, defined and monitored. To demonstrate the Bendigo Botanic Gardens' role in their conservation. To demonstrate that many of these plants are suitable for home and public gardens.

Appendix 4. Example of collection interpretation themes: Cycad collection- Bendigo Botanic Gardens

General Topic:

Generally, I want to tell visitors to the collection about **CYCADS**

Specific topic/s:

At its most specific level, however, I want to tell the audience about:

Cycads remain unchanged by the passage of time
Cycads' survival in the wild is under threat

Theme:

After visiting the collection, I want people to know that:

Cycads are a connection to our past and have remained largely unchanged for millions of years.
Cycads are cone-bearing palms which makes them unique in the plant world.

When it comes to this collection, I think it is really, really important for visitors to understand that:

Cycads have remained unchanged for millions of years but now, more than ever, their survival in the wild is under threat.