SMART GARDENS for a DRY CLIMATE

Waterwise gardening in a changing climate

Coliban WATER

ABORIGINAL ACKNOWLEDGEMENT

We respectfully acknowledge Aboriginal and Torres Strait Islander peoples as the Traditional Owners and custodians of the land and water on which all Australians rely.

We pay our respects to Barapa Barapa, Dja Dja Wurrung, Taungurung, Yorta Yorta, their Elders past, present and future, as Traditional Owners and the custodians of the land and water on which we rely and operate.

We acknowledge and respect the continued cultural, social and spiritual connections of all Aboriginal Victorians.

We also acknowledge the broader Aboriginal and Torres Strait Islander community and their connections with lands and waters, and recognise and value their inherent responsibility to care for and protect them for thousands of generations.

We acknowledge Aboriginal Victorians as Traditional Owners and, in the spirit of reconciliation, we remain committed to working in partnership with Traditional Owners to ensure meaningful, ongoing contributions to the future of land and water management.

Contributors

CITY OF GREATER BENDIGO

The Smart Gardens initiative started in 1999 as a partnership between Coliban Water, City of Greater Bendigo and the former Department of Primary Industries.

The *Smart Gardens for a Dry Climate* booklet was first published in 2003 in collaboration with Coliban Water and the City of Greater Bendigo and focused on the Greater Bendigo region.

This edition of the booklet has been expanded to include advice and information for the whole Coliban Water region. The City of Greater Bendigo continues to support the development of this booklet and has provided funding for this edition.

Coliban Water acknowledges and thanks the City of Greater Bendigo for its past contributions and continued support in the production of this booklet.

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SMART GARDENS for a DRY CLIMATE

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Disclaimer

The information contained in this publication is of a general nature only.

This publication is not intended to provide a definitive analysis or discussion on each issue canvassed.

While Coliban Water and City of Greater Bendigo believe the information contained herein is correct, it does not accept any liability whatsoever/howsoever arising from reliance on this publication. Therefore, every reader should make their own enquiries, and conduct their own investigations, concerning every issue canvassed herein.

Introduction

Gardening is about creating a beautiful and interesting space we can enjoy with our family and friends. It's good for our physical health, mental wellbeing and social connection.

The Coliban Water region covers 16,500 square kilometres and the climate varies significantly from Trentham in the south to Cohuna in the north. Historically, our region has had a dry climate that has challenged gardeners.

Through our *Strategy 2030* we are planning for a future with less water for more people. Climate change means we are adapting our gardens for longer periods of hotter and drier weather.

Using water efficiently is everyone's responsibility, to help secure our water supplies and maintain greener and more liveable communities now and into the future.

We need to be smart about the plants we select for our gardens and ensure we apply water as efficiently as possible, and plan towards future-proofing our gardens.

Smart Gardens for a Dry Climate aims to provide inspiration, guidance, advice and further resources to help you get started.

Gardening will always be about creating a beautiful and interesting space, we just need to adapt to the reality of our dry and changing climate.

Traditional lands

A large part of our region lies within the lands of the Dja Dja Wurrung. Land that provided for its people.

Great soft-rush

The land provided everything that was needed to sustain people for thousands of years. *Harley Douglas*, Dhelkunya Dja Project Officer at Dja Dja Wurrung Enterprises trading as Djandak, writes about the local plants used by Djaara people for food, fibre and medicine.

Dja Dja Wurrung people (or Djaara) have continuously thrived for thousands of generations within the area of Central Victoria.

The Land was, at times, prosperous and gave abundant harvests to our people. But, at times, the Land was unforgiving; with long periods of drought and even extreme cooling events that later became known as Ice Ages.

Through all of this, our people have learned how to thrive from our surroundings by harvesting plants and animals for food, fibre, and medicine.

FOOD

Meat such as kangaroo, wallaby and fish were just a small part of our diet. The remainder consisted of plant material.

The roots of some plants provided potato-like tubers that are incredibly healthy and filling. *Murnong*, or Yam Daisy, is prized for its tubers, as well as orchids, cumbungi and lilies, to name a few. *Murnong* is prepared by roasting the tuber in hot ashes.

Seeds from wattle trees such as *Wai Wai* (Golden Wattle) and *Ngarri* (Sheoaks) can be eaten raw while young, while other seeds like *Bawatj* (Kangaroo Grass and Wallaby Grass) are ground into flour for cooking into damper.

Berries from plants like *Girrkitj* (Ruby Saltbush) and *Dhurrungmil wawitj* (Apple-berry) were consumed straight from the plant or collected in large amounts by shaking the branches of the plant and catching the falling berries in a *Coolamon* (a vessel with curved sides), saving them for later to add to meat for seasoning.

FIBRE

Fibre refers to the plants that are used for creating baskets, bags, mats, traps for fish, eel, bird and duck, and for sewing animal skins together.

These plants are typically hardy sedges found near, but not limited to, watercourses. These plants are traditionally harvested by women who masterfully craft them into various objects.

Djaara did not have different names for each of the species of fibre plants but referred to them collectively as *witji*.

Chocolate Lily tubers

MEDICINE

There are many plants that were used as medicines for general ailments such as *Dirik* (Old Man Weed) for a cold or fever and, for more difficult-to-treat illnesses like arthritis, *Ngarri* (Drooping Sheoak) was used.

Many of the plants and methods used traditionally for medicine have unfortunately been lost due to heavy colonisation of Dja Dja Wurrung Country.

Both the plants and the knowledge passing away with our Elders before they were able to pass it on to the next generation.

Swamp Wattle; Yam Daisy; Drooping Sheoak

Spiny Headed Mat-rush

CURRENT PROJECTS

The Wanyarram Dhelk (Good Waterhole) project is a partnership between Djandak (Dja Dja Wurrung Enterprises) and the North Central Catchment Management Authority (CMA) that is funded by the Aboriginal Water Unit and the Victorian Government.

Additional funding for discrete work packages have also been provided by other stakeholders in Bendigo Creek, including the City of Greater Bendigo and Coliban Water. Examples include instream and riverbank works at Long Gully. The City of Greater Bendigo also supported willow removal in Sheepwash Creek.

The project's achievements include more than two hectares of treated storm water across two sites, seven terrestrial frog ponds, six instream frog ponds and 10 hectares revegetated with 30,000 plants.

PLANT NAMES IN THE DJA DJA WURRUNG LANGUAGE

Bakap Grass Tree (*Xanthorrhoea australis*)

Buwatj Kangaroo Grass (*Themada triandra*)

Dhurrungmil wawitj Sweet Apple-berry (*Billardiera cymosa*)

Dhurrung wurrkuk Black-anther Flax-lily (*Dianella revoluta*)

Djaa wawitj Inland Pigface (*Carpobrotus modestus*)

Girrkitj Ruby Saltbush (*Enchylaena tomentosa*)

Gitjawil matom Chocolate Lily (*Arthropodium strictum*) and Vanilla Lily (*Arthropodium milleflorum*)

Mayn-mayn durrung Sticky Hop Bush (*Dodonaea viscosa*)

Murnong Yam Daisy (*Microseris lanceolata*)

Mutjang Blackwood *(Acacia melanoxylon)*

Ngarri Drooping Sheoak (*Allocasuarina verticillata*)

Wai-wai Golden Wattle (*Acacia pycnantha*)

Wararak Silver Wattle (*Acacia dealbata*)

Werp yulanyuk Spreading Wattle (*Acacia genistifolia*)

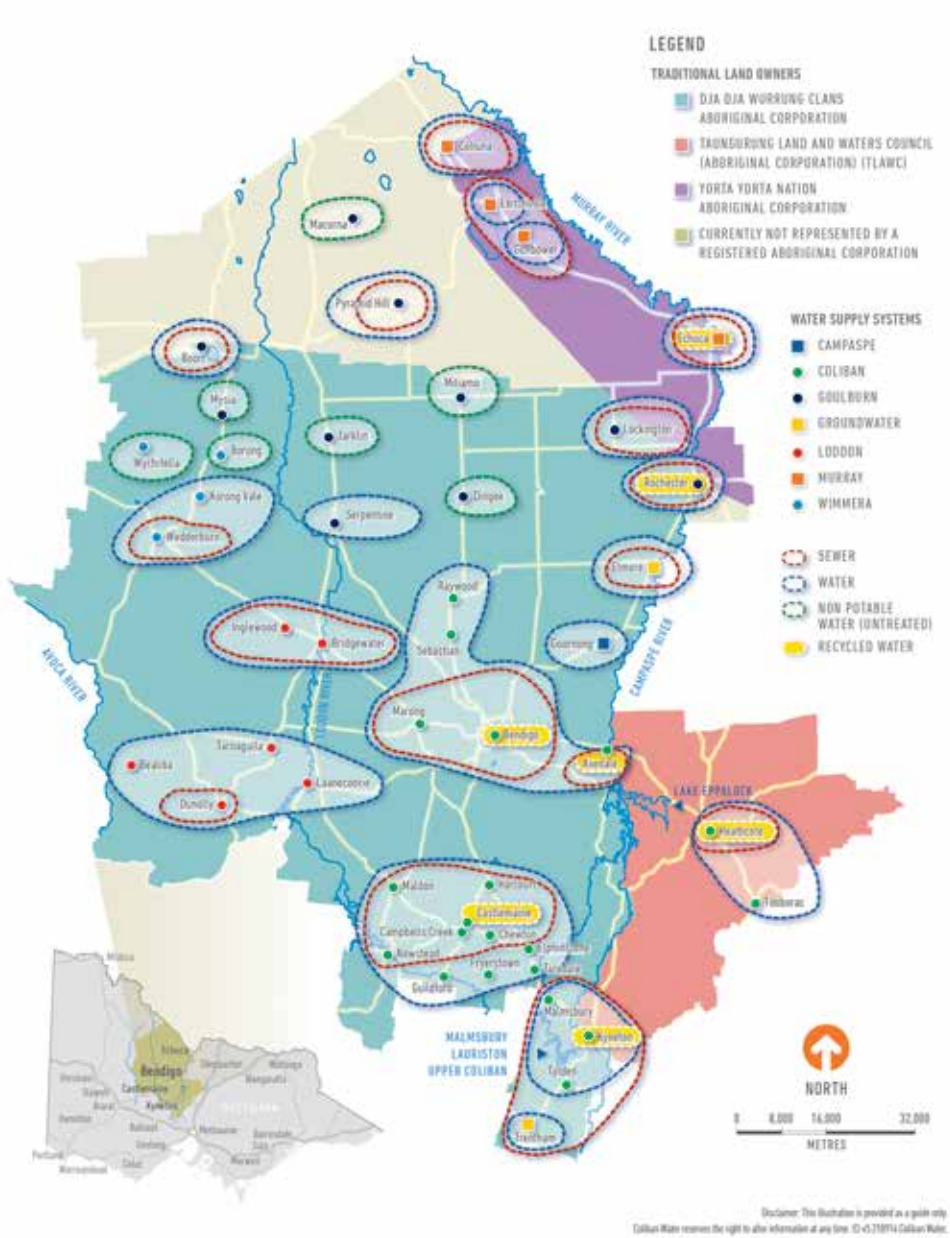
Witji Spiny Headed Mat-rush (*Lomandra longifolia*)

Witji Tall Sedge (*Carex appressa*)

Wurrak Silver Banksia (*Banksia marginata*)

For more information on the plants mentioned in this article see our Plant Guide on page 59.

Coliban Water Service Region



Region focus

There are many beautiful and diverse parts of the Coliban Water region with varying soil types and climate.

Kyneton

OUR REGION

The Coliban Water region covers 16,500 square kilometres of North-Central Victoria across nine local council areas, from Gannawarra Shire in the north to Macedon Ranges Shire in the south.

Climate and soil types can vary across our region, and there are different green waste and garden initiatives run by local councils.

Cohuna

CITY OF GREATER BENDIGO

The city of Bendigo is surrounded by a greenbelt of forest, including Box-Ironbark and Mallee Eucalypts. The area produces premium wines, including Shiraz, from a growing viticulture industry. Bendigo provides services to a large agricultural and grazing area on the Murray Plains to its north.

Serviced towns

Bendigo, Heathcote, Elmore, Goornong, Marong, Axedale

Climate

The region has a relatively dry temperate climate with warm to hot summers and cool to cold winters.

Soil

The soil is a mixture of clay and stone which can become dry and compacted in summer or waterlogged when wet.

Council initiatives

- Fortnightly organics collection for residents in urban Bendigo and Marong.
- Compost Revolution program for residents who live outside the designated organics collection boundary.
- Mulch available to purchase at the Eaglehawk Landfill, 191-193 Upper California Gully Road.

Port of Echuca; Pink Cliffs, Heathcote; Pall Mall, Bendigo

- Biomix sells compost at selected nurseries that has been produced from the organic waste collection. Community groups can access up to three cubic metres of the compost at no cost.
- The council publishes a book on the *Indigenous Plants of Bendigo* and *Home Grown*, a practical guide to growing your own fresh organic food.

www.bendigo.vic.gov.au

CAMPASPE

Campaspe Shire is at the heart of one of the richest and most diverse agriculture regions in Victoria. The Murray River winds along the shire's northern boundary. There is variation in vegetation across the plains and river valleys, from grassland plains to woodlands to river red gum floodplains.

Serviced towns

Echuca, Rochester, Lockington, Gunbower

Climate

The region has a dry temperate climate with warm to hot summers and cool to cold winters.

Castlemaine Botanical Gardens

Soil

The region has an elevated risk of erosion from bare soils in dryland production areas. Salinity and acid sulfate can also affect soil quality in the region.

Council initiatives

- Opt-in food and garden bin collection. The service is not available in rural areas.
- Waste Education Program called WickED (Waste In Campaspe – Know, Educate, Do)
- Rural Tree Scheme
- National Tree Day Planting Days
- Landcare support

www.campaspe.vic.gov.au

MACEDON RANGES

The Macedon Ranges is renowned for its pristine landscapes, native forests, and unique natural features such as forested gullies, waterfalls, native grasslands and mineral springs.

Serviced towns

Kyneton, Malmsbury, Tylden

Climate

The region enjoys good rainfall and a more temperate climate than areas to the north and south.

Soil

The region has volcanic soil which can be challenging for gardeners as it hardens when dry and becomes sticky and waterlogged when wet. To grow produce in clay soil you need to improve your topsoil.

Council initiatives

- Food Organics Garden Organics is a convenient and environmentally friendly way to dispose of your organic waste.
- Transfer stations accept green waste all year round. Fees apply to some types of green waste.
- Mulch is available to buy at transfer stations.
- Break it Down Worm Farm and Compost Bin Rebate Program.

www.mrsc.vic.gov.au

MOUNT ALEXANDER

Mount Alexander is a prominent landmark rising to 744 metres. The region has stunning natural landscapes with abundant wildlife, fern gullies, pastoral country, woodlands, granite boulders and flora reserves.

Serviced towns

Castlemaine, Maldon, Newstead, Harcourt, Taradale, Fryerstown, Campbells Creek, Guildford, Elphinstone and Chewton.

Climate

The climate is warm and temperate with significant rainfall throughout the year. The average annual average rainfall is 609 mm.

Soil

The region has a diversity of soil types that reflect the topography, climate, organic activity and age. Castlemaine is on low sedimentary undulations and hills of the dissected uplands. Much of the surrounding area is hills and wooded slopes with rocky outcrops and granitic boulders.

Council initiatives

- No green waste bin (as at time of publishing).
- Free green waste disposal at certain times of the year.
- Composting information is available on the council website.
- Gardening workshops.

www.mountalexander.vic.gov.au

LODDON

The Loddon Valley is known as Victoria's backyard. The Loddon River runs through the region from the foothills of the Central Highlands to the northern river plains. The shire's large size and low population makes it one of the most rural shires in Victoria. The region supports a mix of agriculture,

Murray River at Gunbower; Pyramid Hill; Sebastian

predominately wool, dairy and wheat, with some wine, fruit, vegetables and olives.

Towns serviced

Bridgewater, Boort, Dingee, Inglewood, Jarklin, Korong Vale, Laanecoorie, Mitiamo, Mysia, Pyramid Hill, Serpentine, Tarnagulla, Wedderburn

Climate

Mediterranean climate with warm, dry summers and cool, mild winters.

Soil

High quality soil when good land management practices are applied to combat soil salinity and erosion.

Council initiatives

- Free green waste disposal four times a year.

www.loddon.vic.gov.au

GANNAWARRA

The Loddon River flows through the region, feeding into the Murray River, the shire's northeastern border. The Gunbower Forest is an important site for birds, mammals and amphibians, and sites of indigenous and European significance. The region's economy relies on irrigated agriculture, food manufacturing, and tourism.

Trentham Falls

Towns serviced

Cohuna, Gunbower, Leitchville

Climate

A semi-arid climate or steppe climate.

Soil

A variety of soil types combined with a suitable climate can support a range of enterprises across both irrigated and dryland properties. The shire is split distinctively between the riverine plain to the east and the Mallee to the west.

Council initiatives

- Opt-in green waste collection service for Cohuna.
- Four transfer stations accept green waste.

www.gannawarra.vic.gov.au

HEPBURN

Hepburn Shire is renowned for its natural beauty and mineral springs. The town of Trentham is the eastern part of the shire, which is hilly with significant native forests.

Towns serviced

Trentham

Climate

The climate is cool and moist. Winters are distinctly cold and snowfall is not uncommon.

Soil

The fertile red volcanic soil has sustained a potato growing industry.

Council initiatives

- Green waste, such as tree branches, grass and leaf litter, can be taken to transfer stations.
- Waste is converted into composted mulch which is available at no cost.
- During November, Council accepts green waste from residents free of charge. This service encourages residents to clean up their properties in readiness for the bushfire season.
- Council has offered subsidised compost bins and worm farms. Not currently available, but Council may restart the program.

www.hepburn.vic.gov.au

CENTRAL GOLDFIELDS

Stunning natural parks and mountain ranges along with fabulous creeks, rivers and lakes. A gold mining area that has developed on the back of agriculture, mainly cropping and sheep farming.

Towns serviced

Dunolly, Bealiba

Climate

Warm and temperate with four distinct seasons. The climate is generally dry and mild with summer average highs around 28°C and winter highs of 12°C. The winter months are generally the wettest and the average annual rainfall is around 530mm.

Bridgewater on Loddon; Mount Alexander Shire; Harcourt; Malmsbury viaduct

Soil

Soils are generally shallow and have lost nutrients through the weathering processes. In many places, the base rock lies close to the ground surface and the roots of hardy plants grow directly into the disintegrating rock.

Council initiatives

- Opt-in green waste collection service for Dunolly.
- Four transfer stations accept green waste.

www.centralgoldfields.vic.gov.au

MITCHELL

Located just 40 kilometres north of Melbourne, Mitchell Shire is Victoria's fastest-growing municipality with a mix of rural and urban living. The region has rolling foothills, open farmland, mountain ranges, rivers and creeks.

Towns serviced

Tooborac

Climate

Tooborac is 306 metres above sea level and has a warm and temperate Mediterranean climate, with significant rainfall in spring and winter and variation between seasons.

Soil

The majority of soil around Tooborac is fertile granite soil with excellent water retention.

Council initiatives

- Compost bin and worm farm subsidy program. Receive up to 50% of the purchase price back when you purchase a compost bin or worm farm.
- Green waste accepted at four Resource Recovery Centres.
- Council publish a Sustainable Gardening and a Vegetable Planting Guide.

www.mitchellshire.vic.gov.au

Design vision

What is your ideal garden space for your lifestyle? Take inspiration from our five design vision gardens.

NATIVE GARDEN

Key features:

Elevated terrace, firepit, dry creek to pond, shade screen, stone walls, steps and wooden bridge.

Plant species (this page) include:

Weeping Bottlebrush hedge along boundary, underplanted with Sticky Boronia.

Creeping Boobialla lawn runs in front of hedge.

Dry creek feature includes informal plantings of Feather Spear-grass, Spiny Headed Mat-Rush, Cut-leafed Daisy and Running Postman (next to bridge).

Plant species (this page) include:

Silver Wattle canopy underplanted with Billy Button, Feather Spear-grass, Ruby Saltbush and Cushion Bush.

Large terrace pot contains a Grass Tree.

Gravel open space/paths from terrace stone steps to bridge over dry creek includes firepit entertainment area.

ENTERTAINMENT GARDEN

Key features:

Covered deck area, tiled patio, outside kitchen with BBQ area including bar fridge, sink, storage, dining table and chairs. Water tank (left behind tree).

Plant species include:

Lemon-scented Eucalypt canopy above TifTuf Couch lawn (open games area). Informal border around boundary provides screening. Border planting includes: Silver Banksia, Pomegranate, Mexican Orange Blossom and Crimson Mallee tree cluster. All border plants are underplanted with Blue Chalk Sticks. A rosemary hedge separates the games area from the patio. The patio is shaded by a pergola with grapevine. Foreground planting (near steps) includes Gaudi Chaudi Grevillea and Silky Net-bush (left).

CHILDREN'S PLAY SPACE GARDEN

Key features:

Raised garden beds, fenced chicken run with coop, cubby house, trampoline and paved area.

Plant species include:

Crepe Myrtle trees in raised bed on left boundary with lavender and rosemary bush understorey.

Assorted vegetables and herbs in raised beds. Espaliered apple trees on chicken run fence. Robinia tree provides dappled shade. Large pots of tulips add colour in spring.

COTTAGE GARDEN

Key features:

Woven wire front fence, a brick-edged gravel path flanked by English lavender leads to home entrance. Informal slate paving provides space for relaxation.

Plant species include:

A Bougainvillea climbs the veranda and a Blue Pacific hedge runs along the front of the veranda.

Lawn areas either side of the path are separated by informal garden beds and rambling paths. A selection of trees including Chinese Elm (rear), Cimmaron Ash, Ornamental Pears and Crepe Myrtles provide shade, colour and texture.

Garden bed plantings include:

Lorraine Lee and Madame Hardy roses, cistus, daffodils, iris, Round-leaved Cotyledon and Acanthus Mollis. Banksia roses provide privacy on side fence.

TOWNHOUSE (SMALL SPACE) GARDEN

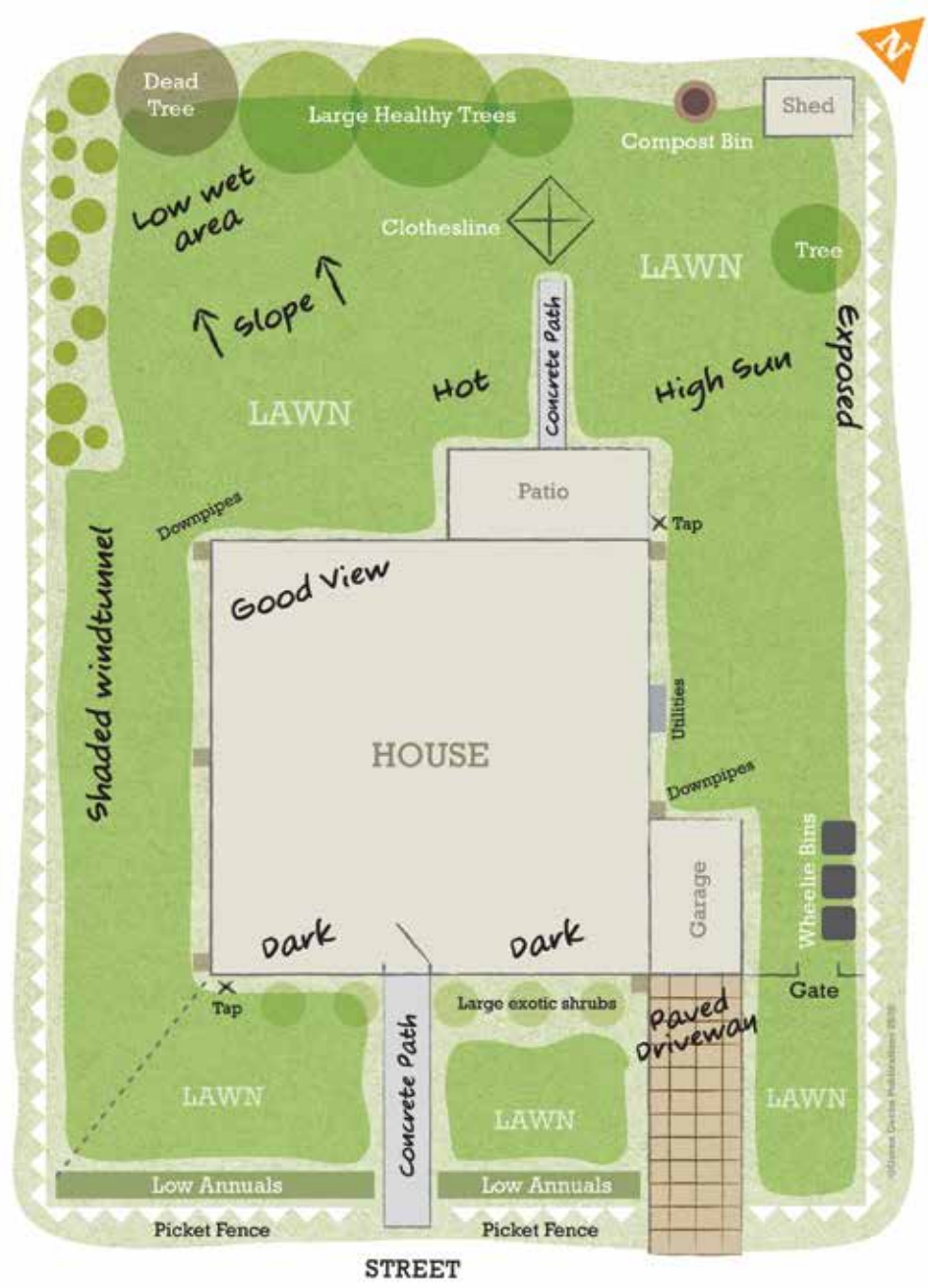
Key features:

Small outdoor terrace with screening and vertical vegetable garden.

Plant species include:

Potted fruit trees (lime, orange and blueberry). Ornamental potted plants include Weeping Maple, Dwarf Sacred Bamboo, Dwarf Kangaroo Paw, Fishbone Fern, Peperomia, Aloe and Madagascar Jewel Plant. Water feature with water lilies.

EXAMPLE OF SITE ANALYSIS



Planning your ideal garden

Once you know what type of space you want, take time to understand your site and plan your ideal garden.

START SMALL BUT PLAN BIG!

Gardens can tend to grow and evolve haphazardly! A plant that caught your eye at the nursery; the rose plant you got for your birthday; the friend that always gives you cuttings whenever you visit; or the box of 50 daffodil bulbs you had to buy for the school fundraiser.

Before you know it, your garden is looking a bit chaotic! Where is the flow? The feature points that draw your eye? The harmony between your garden and house? Where to begin?

It all starts with a good garden plan. You might tackle one section at a time as energy, time and money dictates. Or you might go all Backyard Blitz so you don't have to look at the dustbowl of a lawn for another summer. Just remember gardens take time to grow and a mature and fast fix can be an expensive fix.

Whatever you decide, work to your plan. To come up with a good plan you need to understand your site.

SITE ANALYSIS

Conditions vary across the region in terms of frost, rainfall and soil types. Plants that grow well in Bendigo might struggle in Trentham. One of the best things you can do is observe your garden for a year. Easier said than done, but this will give you an accurate picture of your garden through the seasons when light and shade and moisture can vary enormously.

If you don't have the patience to do this, have a walk around your neighbourhood and observe what plants are doing well, and where they are located in relation to sun and shade.

Ask the neighbours for the plant names (gardeners are a friendly mob and are often pottering around in the front garden), or take a photo and ask at your local nursery.

Hakea bucculenta; Isopogon anemonifolius

6 STEPS TO PLANNING YOUR IDEAL GARDEN

1. What exists?
2. What are your needs?
3. What is your style?
4. Look at your plants
5. The research
6. Develop a plan

Step 1

What exists?

Create a mudmap (basic sketch - see page 26) of your property.

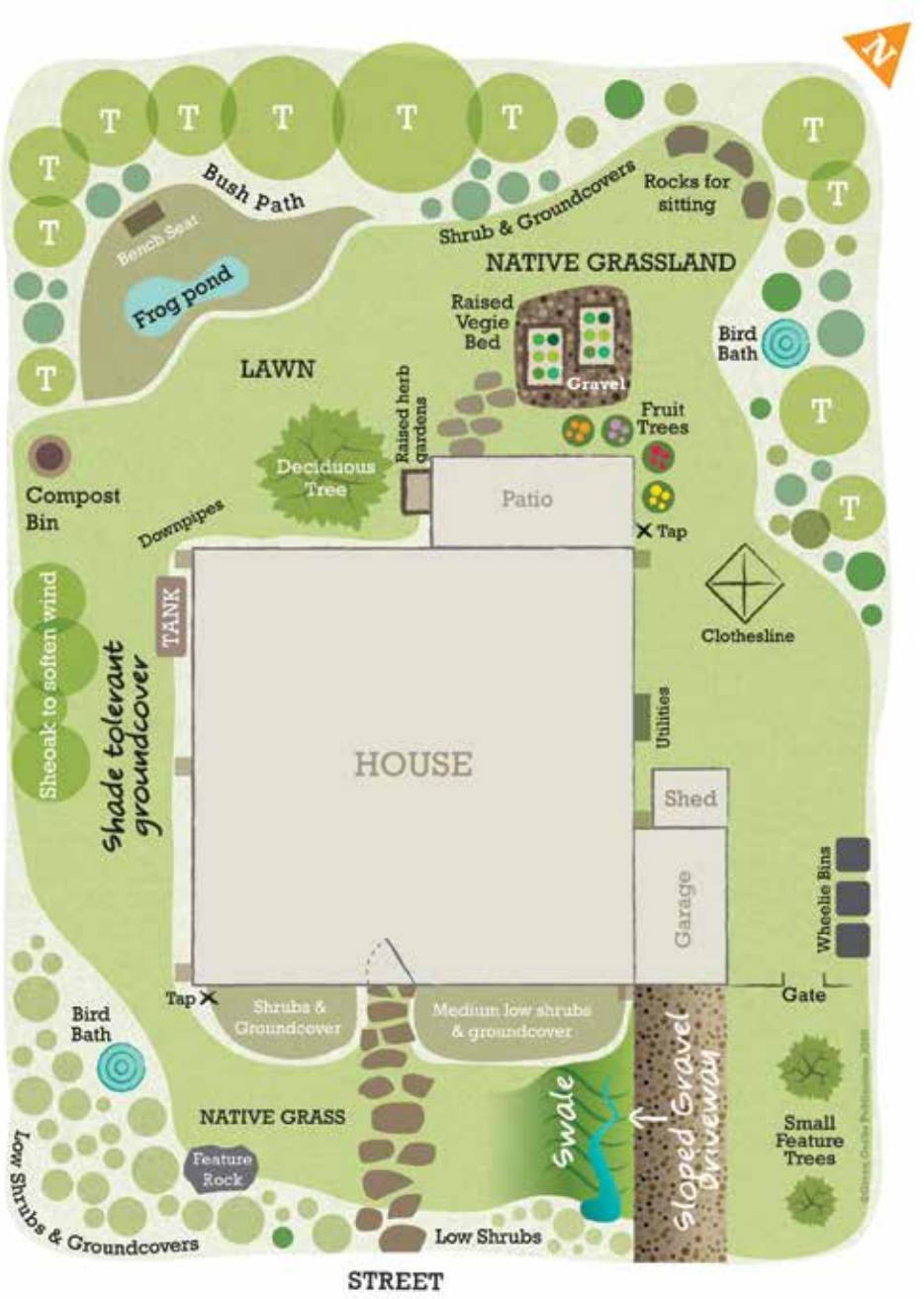
Draw the main structural features: house, garage, fences, pathways, shed, outdoor taps, clothesline, patio, rainwater tank, garden beds, major trees and lawn areas.

Mark north on your map. A north-facing garden is usually exposed to the sun all day, however, west-facing gardens receive the strongest sun at the hottest part of the day in summer. Where are your sunny and shady areas in summer and winter? Do you have west-facing walls or paved areas that will reflect and intensify the heat?

When a hot summer wind blows, what sections of your garden area are most exposed to drying out?

Do you have a sloping block? Are there any drainage issues where the ground is often too wet because of run-off, or too dry because water runs off before it can soak in?

EXAMPLE OF A GARDEN PLAN



Step 2

What are your needs?

Create a wish list. Do you want more space for the kids to play? An entertainment area to enjoy the summer evenings? More birds visiting? A deciduous tree to the north or west to provide summer shade and winter warmth to your house? Do you need screening plants to provide more privacy? Do you want to grow your own produce?

How can your garden be more suited to a dry climate? Where to locate a rainwater tank, a greywater treatment system or irrigation system? Do you want to reduce or remove your lawn? Can you replace any hard surface concrete paths with more permeable surfaces?

How much time do you want to spend maintaining your garden? Be realistic! If you work full-time and seem to spend your weekends driving your kids to basketball games all over Victoria, then a large, high-maintenance garden may not be for you.

Make a note of the initial major works that need to be done, eg: replace front lawn, relocate clothesline, break up concrete path, remove tree.

Step 3

What is your style?

How will your garden complement the style or era of your house?

Do you want a simple, low maintenance garden or do you enjoy working in the garden regularly to create a canvas of colour?

Do you want a native garden to provide food and shelter for wildlife or do you prefer a cottage garden layered for colour and texture? Or perhaps a formal garden of clipped hedges and roses?

Think about creating focal points of interest within your garden. These are features that draw your eye: a tree that cascades with flowers in summer; an interesting group of large rocks; a sculpture or attractive birdbath; a tree that blazes red in autumn. Just don't overdo the focal points or your garden will look too busy.

Look through garden magazines, botanic gardens or your neighbourhood gardens. Make notes and take photos of what appeals to you.

Step 4

Look at your plants

Once you understand your site and have an idea of the style of garden you like, it comes down to the plants you choose to give you the look you want to create.

You need to work with your site and be adaptable to what plants will create that style. For example, you may want a garden that features a Weeping Maple. One blast of a hot northerly wind in summer and there's a good chance your maple will be a shrivelled stick. Consider instead Silver Princess (*Eucalyptus caesia*) that will cope with the conditions and provide the look you are after.

Is your garden exposed to winter frosts? Many areas in our region are noted for frosts, and appropriate plants need to be selected.

One of the most important factors to consider when gardening in a dry climate is the water needs of your plants, and grouping them together according to the amount of water they need to survive.

Zone your garden beds by grouping your plants according to their water needs. They can be a mix of indigenous (local), native (Australian) or exotic (non-Australian) plants.

By grouping plants according to their water needs you can water a whole garden bed when required and not just because one plant in that bed is looking thirsty.

Water zone 1 (WZ1) garden beds will be located on your garden plan in areas that are exposed to hot, windy conditions. Plants selected for this zone will need to be drought-tolerant and tough. Ideally, once they are established, they will not require additional watering.

Water zone 2 (WZ2) garden beds are those that receive some shade during the summer and are reasonably protected from drying winds. Plants selected for this zone will have a moderate drought-tolerance. Once they are established, they will require water every 2-4 weeks depending on conditions.

Water zone 3 (WZ3) garden beds, most types of lawns and vegetable gardens are your heavy water users. Ideally you may have a low area of your garden where rain tends naturally to run allowing you to grow thirsty plants. In a dry climate it is best to reduce garden beds of plants that require regular watering.

Step 5

The research

List any major structures you would like to include, e.g. rainwater tank, sculpture, feature rocks, raised garden bed, drip-watering system. Make an estimate of the cost involved. Can you do it yourself, or do you need a licensed builder or plumber?

Create a list of plants you need to create the style of garden you desire. Group plants according to your water zones. Can you relocate plants from within your garden or will you need to purchase new plants? Make an estimate of the cost involved. This can be time consuming as you'll need to decide what plants you want, their mature height and width, and the spacing between them for the size of your bed. If you visit your local nursery you should find the height and width plus the spacing recommendation on the plant label.

Remember you can save money if you buy young plants that will soon grow to the dimensions of the more expensive larger plants. Also, young plants are more likely to establish and survive, especially natives.

Step 6

Develop a plan

Once you have decided on what you want and what you can realistically achieve and afford, you can play with your garden plan exploring different options. Tracing paper overlays can work well at this stage.

Decide what needs to be done first i.e. the big jobs such as expanding garden beds to reduce lawn area or installing a rainwater tank for a vegetable garden.

Focus on one area at a time so you are not overwhelmed.

Remember, it doesn't all have to be done immediately, but rather according to a well thought out garden plan.

SMALL SPACES

Courtyard gardening

If you have an enclosed courtyard you need to consider the following issues when developing a plan.

- Courtyards often have limited access to sunlight. If this is the case, select shade tolerant plants or use pots on wheels that can be moved about easily.
- Courtyards tend to be paved and enclosed often creating quite hot conditions. While plants will help to cool the area, make sure you include an efficient watering system as their water requirements will be high.
- Poor drainage and flooding can be problems with courtyards that are mainly paved surfaces. If this is the case use container pots with saucers and don't overwater.
- Courtyard space can be quite limited. You can create an illusion of a larger space by using mirrors and layering plants. Think about using your vertical spaces by espaliering trees on a wall, tiered shelving, hanging baskets or window boxes.
- Courtyard gardens often contain a lot of pots. Containers look great when they are grouped together, with pots of all different shapes and sizes closely clustered.

Balcony gardening

Balconies offer a great space to relax and flex the green thumb. Typically, balcony gardens consist of pots and small, raised veggie beds. An excellent option for kitchen gardening. Consider the following issues when designing your balcony garden.

- If you live in a flat or unit check to see if your body corporation has any specific rules relating to what you can put on your balcony.
- Avoid putting too many large pots on your balcony. Remember containers get even heavier when you water them.
- Balconies can be quite exposed to high wind potentially resulting in pots toppling over or plants dehydrating. Select wind tolerant plants that don't grow too tall and avoid light plastic pots. You can also consider attaching a screen of matting to your balcony railing to reduce wind exposure.

Make the most of courtyards and balconies with potted plants

- Select plants that will grow in the conditions of your balcony. If you have a south-facing balcony you will need shade tolerant plants. North-facing balconies will require sun tolerant plants. Most plant labels will indicate the sun/shade preference of a plant.
- Potted plants dry out very quickly so consider self-watering pots, check regularly. Make sure excess water runoff is collected in pot saucers.
- Neighbours will not appreciate water cascading down from your balcony every time you water. Likewise secure your pots to your balcony so they don't become missiles.

WATER SENSITIVE CITIES

What is a water sensitive city?

A water sensitive city is one which is liveable, resilient, sustainable and productive. They are places where people want to live and work.

It is a place that:

- serves as a potential water supply catchment, providing a range of different water sources at a range of different scales, and for a range of different uses;
- provides ecosystem services and a healthy natural environment, thereby offering a range of social, ecological, and economic benefits; and
- consists of water sensitive communities where citizens have the knowledge and desire to make wise choices about water, are actively engaged in decision-making, and demonstrate positive behaviours such as conserving water at home and not tipping chemicals down the drain.

Building water sensitive urban design infrastructure is one way cities can move towards becoming more water sensitive.

In 2017/2018, the Cooperative Research Centre for Water Sensitive Cities undertook a research project and co-developed a *Water Sensitive City Vision and Transition Strategy* for the city of Bendigo. It provides a good local model for other cities in the region.

The region's future climate is predicted to be hotter and drier with occasional intense storms. The water sensitive cities model can be applied to the broader region collaboratively, to achieve a more sustainable, liveable and resilient future. Water sensitive cities need community champions to drive change, support decision making and care for water resources.

Learn more Page 76

HARNESSING RUN OFF

In the natural environment, rain slowly filters through the soil into the groundwater table and eventually enters our rivers and streams. The flow rate is slowed down by plants and other natural features in the environment allowing nutrients and pollutants to be removed. This process results in clean water entering our waterways.

In urban landscapes, vegetation has been cleared and surfaces sealed by concrete and bitumen. When it rains large amounts of water rapidly enters our stormwater drains carrying litter and pollutants. Gardeners can help reduce this problem and utilise a valuable water source.

If you are designing a new garden or modifying an existing one, consider incorporating Water Sensitive Urban Design principles. It can be as simple as installing a rainwater tank, removing an impervious surface such as a concrete path and replacing with porous pavers or creating a beautiful rain garden.

Learn more Page 76

LAWNS

Lawn areas are lovely for children and adults to sit and play. They also help lower the air temperature in summer, cooling the hot winds that blow towards your windows. They can be, however, big water guzzlers! That is why in times of drought, restrictions on watering lawns are applied to help us conserve our limited supply of water.

If a lawn is important to you and your family, consider some of the following points;

- If you want a traditional lawn consider a hardy turf such as Couch, Kikuyu or Buffalo. The latter is a better choice as Couch and Kikuyu both have tendencies to invade your garden beds creating additional weeding work.
- Keep your lawn straight-edged and of a regular rectangular or L-shape as these shapes are more efficient to water than curved lawns.
- Make your lawn as level as possible so that water can soak in rather than run off. A slight slope will help shed excess water during a downpour.
- Can you reduce your lawn area to only one feature space to sit and play?

Lawn alternatives

Consider replacing lawn by extending garden beds. Or use pebbles, gravel or mulch as these permeable surfaces allow rain to soak into the soil. This works well in areas, such as the side of the house, where lawns often receive insufficient light. Why not put stones down the side and plant out with some Mat-rush (*Lomandra* spp.), Tussock-grass (*Poa* spp.) or Clivia (*Clivia nobillis*)?

Consider using **native grasses** as an alternative. They are adapted to our soils; cope with summer temperatures often staying green all year round with not much water and only need mowing a few times a year. Often a combination of native lawn species is used to grow a hard-wearing, drought-tolerant lawn that looks good all year round. They can be slow to get going, but will self-seed over time.

Weeping Grass (*Microlaena stipoides*): tolerant of all kinds of soil and full sun to semi-shade; copes with high temperatures; moderate water usage; looks good and can be mowed.

Kangaroo Grass (*Themeda triandra*): can be mowed to 3cm; will tolerate traffic and requires very little water. Grows in full sun to semi-shade.

Wallaby Grass (*Rytidosperma* spp.): great for areas of low traffic; requires little water; best where height can be kept at 5cm or higher. Grows in full sun to semi-shade.

Choose non-grass alternatives. Some really good plants that aren't grasses make great lawn alternatives in areas of low foot traffic or no traffic. Open spaces with no foot traffic allow for some of the greatest flexibility in terms of style and plant choices. In areas that can be difficult to establish lawn such as under trees or near eaves consider Creeping Boobialla (*Myoporum parvifolium*), Matted Bush-pea (*Pultenaea pedunculata*), *Grevillea* 'Gaudi Chaudi' and Purple Coral Pea (*Hardenbergia violacea*) or Australian Native Violet (*Viola hederacea*). For areas of light traffic consider Dwarf Mondo Grass, Lawn Chamomile (*Anthemis nobilis*), Blue Rock Bindweed (*Convolvulus sabatius*), Kidney Weed (*Dichondra repens*) or Pennyroyal (*Mentha pulegium*). More lawn alternatives are available. No matter what you choose, check that it's right for the conditions and that it is not a weed.

Artificial lawns

Although artificial lawns don't need watering, they are a petroleum-based product that absorbs heat and threatens wildlife habitat. They create pollution and waste in the manufacturing process and are not biodegradable.

From the ground up

Healthy soil is the key to a healthy garden. Find out how to improve your soil and choose the right plants.

Soil provides plants with support, nutrients, water and air. Just as we feed, water, and nurture our plants, so we need to feed, water, and nurture our soil. The health of all soil types will be improved by adding organic matter such as compost, aged manures and mulch. Earthworms and soil microbes readily break down organic matter releasing nutrients, increasing drainage and aeration to your soil. Understanding your soil will help you to improve your soil and to choose the right plants for your garden because not all soils are the same, and while one plant loves a clay soil, another plant will struggle to survive.

UNDERSTANDING YOUR SOIL

Soil across the region

Soil type varies considerably across the Coliban Water region. From a mix of sandy loam and light clay from Echuca to Cohuna; sandy to silty loams across the greater part of the City of Bendigo; sandy loams around Elmore, Harcourt North, Ravenswood and Shelbourne; light clays around Boort and Dunolly; silty clay to loam around Kyneton and loam soil around Castlemaine, Trentham and Maldon (*see our Region focus on page 9*).

In a nutshell, soil comes from rocks. The type of soil in your area depends on the types of rocks originally there. These rocks have been ground down over thousands of years to form your soil. These range from rocks that have produced large gravelly soil particles which form our sand soil types, to rocks that have worn down to produce fine soil particles which form our clay soil types.

Wind and rain over time has also moved soil around as have human activities such as farming, mining and urban development.

The type of soil you have will determine;

- the amount of space between soil particles (pore space) for air, water and plant roots
- the movement of water into and through your soil
- the amount of organic matter (the remains of living things) in your soil
- the activity of living things such as earthworms, ants and microbes and
- the availability of nutrients.

Simple soil test

Time to get your hands dirty! This basic test will help you to determine if you have sandy, loam or clay soil. Be aware that your soil may vary across your garden, so it is a good idea to test from different areas.

1. Take enough soil to fit in the palm of your hand.
2. Wet the soil a little at a time until it is just damp.
3. Knead it into a ball or sausage.

If your ball feels smooth and can be shaped like plasticine without breaking, your soil is clay.

If you can't mould your soil or it falls apart easily, you have sandy soil.

> THE KEY IS TO UNDERSTAND WHAT TYPE OF SOIL YOU HAVE AND HOW TO IMPROVE IT, SO THAT PLANTS ADAPTED TO THAT SOIL TYPE WILL FLOURISH.

Adding organic matter, such as compost, can raise your soil pH

If your sample forms a spongy ball, but is a bit crumbly, then it is a loam - lucky you!

These three categories are fairly broad and you may have a combination of soil types, eg: clay loam.

Clay soil

Clay soil is made up of very fine particles. The pore spaces tend to be small making it more of a challenge for the movement of water, air, plant roots and soil organisms such as earthworms. Clays tend to hold water and nutrients well, and if they are balanced, are a great soil.

The downside of clay soil is that it can hold water a little too well, resulting in poor water drainage. This can result in water getting into your soil and not draining away so that your plants affectively drown! Or if a clay soil dries out, like pottery, it can harden, making it difficult for water to soak in.

To improve your clay soil

Spread around 5-10cm of coarse compost to the surface of your soil when it is damp. Dig it into a depth of around 20cm. Do not overwork the soil. Do this once a year in autumn or spring. Be patient, it may take 2-3 years to see improvement in your clay soil.

Adding organic matter to your clay soil encourages earthworms and soil microbes. These organisms decompose the organic matter. The small clay soil particles bind with the broken down organic matter forming clumps. This results in increased pore spaces allowing better drainage and plant root movement. Plus, earthworm tunnels help water move through the soil. Your soil will be less prone to becoming dry and cracked or sloppy and waterlogged.

If you have a hard crust on the surface of your soil you may want to sprinkle a dusting of gypsum powder (a mineral conditioner) over your soil before you dig the soil over.

Clay soil may need deep-ripping or breaking up when it is almost dry, to help get air into the soil. Do not do this if your soil is wet or very dry as the soil structure will be damaged. Wait until the soil is damp.

Sandy soil

Sandy soils consist of large soil particles that allow water to drain freely. A little too freely! As a result plants dry out quickly and valuable nutrients tend to wash away.

To improve a sandy soil

Regularly dig in fine compost to a depth of around 5cm and add a layer of fine mulch to the surface. This will add organic matter to your sandy soil helping to bind soil

Earthworm tunnels help water move through the soil; if a hard crust forms sprinkle gypsum powder; clay soil needs breaking up when it is dry to get air into the soil

particles in your soil and increasing its ability to hold water and nutrients. You will need to add organic matter to your sandy soil about once a year. At least sandy soils are easy to dig!

Loam soil

Loam soils fall somewhere between sand and clay and are a mixture of fine and coarse particles. They drain well and have a good nutrient base for gardening. So relax, add some organic matter occasionally, and pity those gardeners battling clay!

SOIL AND WATER

When you water the garden or when it rains you want to ensure as much as that water as possible soaks into your soil. Sounds easy, but do you have some challenging situations?

Water-repellent soil

When you water your soil, does it just bead and run off? If you dig down a couple of centimetres after watering, is it as dry as a bone? You may have what's called water-repellent soil or hydrophobic soil. The soil can form a sort of crust and water just runs off the top. This happens when your soil particles develop a waxy coat.

So, what to do? Add compost to your soil each autumn and spring. When you add compost soil microbes and fungi help to break down the waxy soil coating. Plus, the action of digging your compost into the soil helps to form little cracks in the waxy surface to help the water get through. Compost also causes the microbe population to explode, helping to bind the mineral particles in your soil, improving structure and helping it hold moisture.

Wetting agents are another option. This is a special type of detergent that reduces the surface tension of the water, allowing it to wet the waxy surface of the soil particles so the water can then get into the soil. However, care needs to be taken as wetting agents can damage the leaves of some plants if you accidently splash them. In addition, many wetting agents are synthetic, usually derived from petroleum, and should not be used near waterways as they can harm frogs and other aquatic life.

Terracing

The slope of your garden may result in water simply running off before it has a chance to soak in. If you have noticed this, you may want to consider terracing your beds. Cut a series of steps into your bed and support the soil with upright sleepers. Ensure each level is relatively flat, but with a gentle slope for excess water to escape.

SOIL AND NUTRIENTS

A healthy, thriving garden is continually taking nutrients from the soil. Adding organic matter to your soil helps to feed your plants. Healthy plants cope much better with less water.

The pH of your soil controls how much food your plants can obtain. It is like a key that unlocks or locks up nutrients. pH is a measure of how acidic or alkaline your soil is and can easily be tested with a pH testing kit from your garden centre. On the pH scale from 0 to 14, less than 7 is considered acidic, in increasing degree to 0; pH 7 is said to be neutral; and above 7, increasing to pH 14, is called alkaline.

If your soil pH is either very low (acidic) or high (alkaline), your plants can struggle to survive. In the middle is the optimum for growth for most plants. Once you know the pH of your soil you can either select plants suited to that range or adjust your soil pH.

You can raise your soil pH by adding organic matter, especially aged chicken manure. Or you can sprinkle dolomite, a limestone-based product available at garden centres. To lower your soil pH add sulphur or iron sulphate, also available from garden centres.

Learn more Page 76

Mulch and reap the benefits

Mulching is the best way to save water in the garden, reducing evaporation by up to 70 per cent

MULTITUDES OF BENEFITS!

Mulch is an important part of the garden because it smothers weeds, keeps your soil cooler in summer, adds nutrients to the soil and helps hold water in the soil.

In a dry climate mulching your garden will significantly reduce evaporation of water from the soil. In fact, it has been shown that a 70-millimetre thick layer of mulch will reduce soil evaporation by as much as 70 per cent!

TYPES OF MULCH

There are a lot of different mulches available.

- Organic mulches are from formerly living things such as trees, straw and composts. They add nutrients to the soil and reduce water loss. Organic mulch breaks down and needs to be replaced regularly. Avoid artificially coloured and dark mulches as the dyes used could leach into the surrounding soil and they heat up quickly.
- Inorganic mulches include things like stone, pebbles and crushed bricks. They do not provide much benefit to your soil beyond reducing evaporation and keeping the soil cooler. Inorganic mulch is low maintenance as they do not need to be replaced regularly and is better than hard surfaces as it allows water to penetrate into the soil and slows down runoff.

The type of mulch you use will vary depending on what plants you are growing. Pea straw, sugar cane and lucerne hay break down quickly, releasing nutrients for heavy feeders such as vegetables and roses. Pebble and stone mulches are great for hardy succulents. In most garden beds, generally a chunky mulch (pieces larger than 5mm) is best for reducing evaporation and letting water into the soil. Fine mulches (smaller than 2mm) tend to soak up and hold water in the mulch rather than the soil. Native plants tend to prefer a bush mulch that has a mix of mulch particle sizes, much like you would find on the floor of your local forest.

Organic mulches

BEWARE!

If you are thinking of using a fresh organic mulch such as chipped tree pruning from your garden, take care. Fresh timber mulch needs to be left in the weather for around three months to leach out plant toxins, or to break down sufficiently so that it is not taking all the nitrogen from your soil.

Likewise, be wary of mowing the lawn and spreading grass cuttings on your garden. As they break down they get hot, potentially burning your plants. Grass cuttings also tend to mat together preventing water from soaking into your soil. Better to compost your grass cuttings and then add them to your garden.

Inorganic mulches

HOW TO MULCH

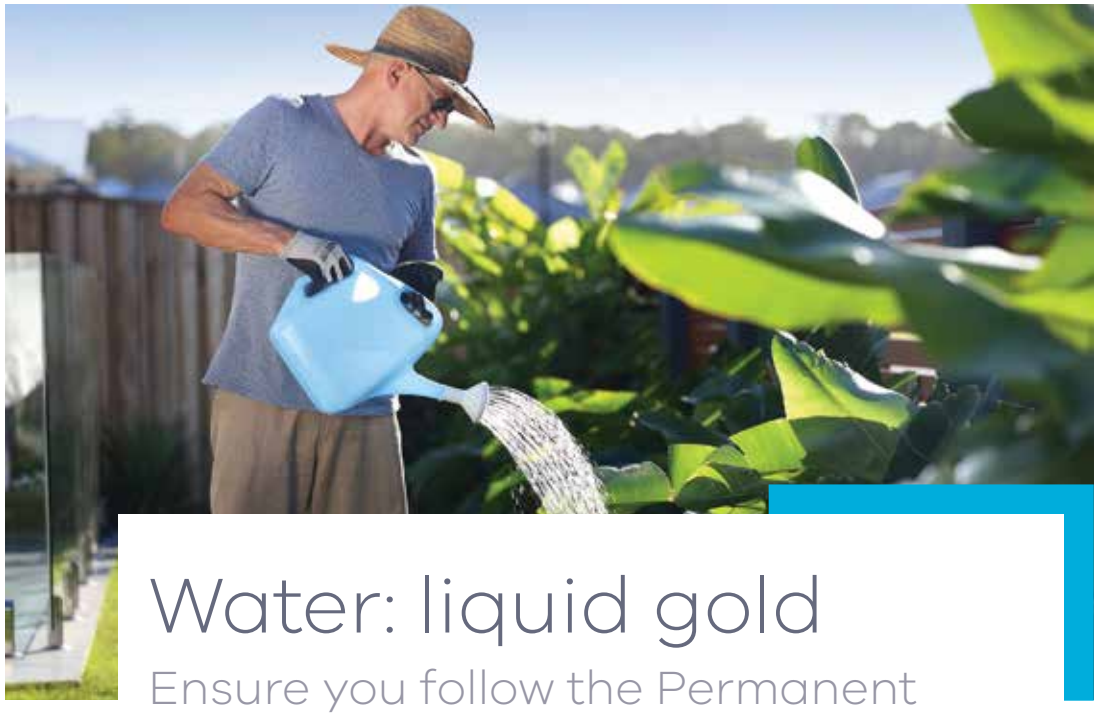
No matter what mulch you choose, mulching is easy.

1. Get rid of any weeds.
2. Make sure the soil is wet.
3. Lay your mulch to a depth of 70mm.
4. Don't mulch right up to the trunk or stem of your plants.

WHEN TO MULCH

Basically, you want your soil to be reasonably moist from winter and spring rains before you mulch, traditionally in early summer. The idea being that once the rains have soaked into your soil and you've mulched over you will reduce water loss during the summer heat. With changing rainfall patterns, you may need to monitor your soil moisture levels to decide when is the best time to mulch leading into summer.

Make sure your soil is reasonably moist before you mulch



Water: liquid gold

Ensure you follow the Permanent Water Saving Rules and apply water as efficiently as possible.

WATER: OUR MOST PRECIOUS RESOURCE

Successful gardening in a dry climate is a combination of good soil and mulch maintenance, choosing the right plants and using water as efficiently as possible.

5 PERMANENT WATER SAVING RULES

Permanent Water Saving Rules are five common-sense rules that help everyone to use water efficiently and avoid waste. They don't affect the use of grey, tank, bore or recycled water.

The rules apply at all times *unless* water restrictions are in place.
To find out if there are water restrictions in your town visit:
www.coliban.com.au/community/your-town

1. Trigger nozzle

- Use a leak-free hand-held hose fitted with a trigger nozzle at any time.

2. Watering systems

- Watering systems can be used on residential or commercial gardens and lawns any day between 6pm and 10am.
- A bucket or watering can may be used at any time.

3. Public spaces

- Public gardens, lawns and playing surfaces can be watered at any time with a hand-held hose, bucket or watering can.
- A watering system fitted with a rain or soil moisture sensor can be used any day between 6pm and 10am.

4. Water features

- Only use fountains or water features that recirculate water.

5. Hard surfaces

- Use a high-pressure hose, hand-held hose or bucket to water hard surfaces during construction or renovations or to remove a hazard.
- Hard surfaces can be cleaned once every 3 months if staining develops.

WHEN TO WATER

This will vary depending on the time of year and whether you've grouped your plants together according to their water needs. It's actually good to put off watering as long as possible. This encourages naturally deep-rooted plants (ie: not vegetables or citrus plants) to put their roots down deep in search of water.

- **Check your soil** – If it's hot and dry, don't just assume your garden needs watering. There's a very good chance your excellent mulching is paying off and the soil underneath your mulch is still quite moist! Take a handful of soil and roll it into a ball in your hand. If it holds together, your soil is damp enough; if it falls apart, it's time to water. Remember to test from different sections of your garden.
- **Check the weather report** – If your garden is starting to dry out and you're thinking you'll need to water soon, check the forecast first. With luck, rain may be predicted saving you time and water. If a hot, dry day is forecast, water before the heat hits.
- **Avoid the midday sun** – Water either late at night or early in the morning. There will be little evaporation at this time, so the water gets a chance to really soak in. Using an automatic watering system set to come on in the middle of the night enables you to water outside the peak demand times when others may be hand watering. Just remember not to set and forget. Watering in the middle of the day can burn plants, and most of the water will be lost in evaporation. Some plants such as apple and pear trees can be prone to the fungal disease black spot and benefit from morning watering rather than night, as do cucumber, zucchini and pumpkin to avoid powdery mildew.

HOW TO WATER

The main aim of watering is to get water to the part of the plant that needs it: the roots. If you make a habit of giving your plants a quick sprinkle with the hose every day, your plants will send their feeder roots searching for moisture up near the surface of the soil. If you can't water because of water restrictions or a heat wave rolls in, your plants will turn up their toes very quickly. By deep watering, but less often, you encourage your plants to send out deeper roots to catch the moisture deep in the soil

- **A slow and deep soak** – Water at a rate that your soil can absorb. If water starts to run off, slow down and let it sink in. Every now and then, dig a small hole after watering and check how far down your water has infiltrated.
- **Space your watering** – You can affectively train your plants to need less water. If you gradually increase the length of time between watering, plants will adapt to a certain point, and require water less often. Keep an eye on water stress symptoms.

Understanding water or drought stress in plants

Common symptoms include:

- wilting or drooping of leaves and stems;
- partial fruit, flower or leaf drop from plants;
- leaf scorch, yellowing and/or browning on edges; and
- footprints left behind on a lawn.

In some plants the signs of drought stress are only temporary and may just be the plants' response to hotter weather. For example, some plants droop their leaves on hotter days to conserve moisture. By night time the leaves have often returned to normal. So keep an eye on your plants and give them water if the symptoms of stress continue for more than a day or so. If certain plants are easily water stressed, consider replacing them.

The exception are plants that need water, such as your fruits and vegetables. These should not be allowed to stress too much, or production will drop and fruit will split or be distorted.

Over-watering of plants, or poor soil drainage that results in roots dying of 'wet feet', will result in the same symptoms as listed above, so always check the soil to verify the cause of the stress before watering.

Watering systems

There are a wide variety of irrigation options available. If you have grouped your plants in water zones according to their water needs, you may end up using different systems on different garden beds. For example, hand-watering your Waterzone 1 plants before a heatwave and drip-watering your Waterzone 2 plants every 2-4 weeks.

Collect rainwater for another source of water; ensure hoses are fitted with a trigger nozzle; watering systems can be used between 6pm and 10am

Dripper systems

Drippers are attached to a poly pipe that runs around the garden under the mulch. Water is delivered at a slow rate to the roots of plants with no water loss due to wind-drift. Drippers require much less water pressure than other systems, so larger areas can be watered at the one time. A pressure regulator installed in the main line after the filter will prevent dripper blowout. It's a good idea to install an inline filter to prevent dripper holes blocking up.

Sprayers and sprinklers

It is best to use systems that deliver large droplets, rather than the fine spray of micro-sprays that tends to drift. Keep your sprinklers as low as possible to deliver water to the rootzone.

Water wicking

A wicking bed is a garden bed with a waterproof lining that holds a reservoir of water in a slotted PVC pipe at the base. Water is drawn upwards through the soil wicking from the damp soil below to the dry soil above.

Diagram of wicking bed

Wicking beds are very efficient and essentially self-watering. You just need to fill up the PVC pipe when the water level drops. They work particularly well as a garden bed for growing vegetables and herbs.

Hand-watering

When hand-watering with a hose, the trigger nozzle can deliver water gently and in large droplets to avoid wind-drift. Long watering wands are useful in getting the water close to the rootzone. Similarly, use a rose on a watering can to apply water gently.

Hand-watering tends to result in shallow watering if you are trying to water the whole garden. Best to focus on a few small areas of your garden at one time. Apply water gently until it starts to run off. Move to another area nearby. After a while return and again water to the point of runoff. Do this several times until you are sure the water has soaked in deeply.

Controlled watering

Various types of garden water controllers help take the guesswork out of watering and can save water and money. Water controllers can be manual, fixed program or variable program timers. These devices are usually available at hardware and irrigation outlets.

Keep sprinklers as low as possible

Of course, every hose should be fitted with a flow shut-off device such as a trigger nozzle. A simple tap-timer will make sure the hose switches off after a set period of time. Automatic controllers can be programmed to maximise the efficiency of your system. Remember to change the settings as the seasons change, as less water is needed in autumn, winter and spring.

Remember, too, that all automatic watering systems installed from 1 July 2006 must have a rain sensor or soil moisture sensor as part of their control system. Even if your automatic system was installed before 1 July 2006 it is easy to have one of these devices fitted, and they will save you water. They work by preventing a system coming on when there has been rain, or the soil is still moist. For example, if you have your system set to come on every seven days and the device

detects plenty of soil moisture or recent rain on day seven, it will tell the controller not to come on for another seven days.

ALTERNATIVE WATER SOURCES

In our dry climate it is definitely worth considering using alternative sources for your garden water. While mains or tap water is subject to water restrictions, alternative sources are not.

Rainwater tanks

Collecting rainwater from your roof can be an ideal water source for your garden. If you are planning on growing vegetables and fruit, it is virtually essential that you have a dedicated rainwater tank to provide for your thirsty summer produce once water restrictions apply. A key consideration here is how much rain falls during a long, hot summer to refill your tanks when you most need it? Can you restrict your tank water use to the peak summer months? Can you afford water cartage fees if you need to fill up your tanks?

The size of a rainwater tank will depend on your roof catchment, local rainfall patterns and garden area. Most garden rainwater tanks range from 2,000 to 10,000 litres. They need to be installed by a licensed plumber on a firm base at least one metre from the property boundary. A pump will be needed to move water around your garden if you are using a hose or irrigation system.

Most garden rainwater tanks range from 2,000 to 10,000 litres

Reusing water around the house

The water we drain away when waiting for the hot water to reach temperature could be a source of water for your garden. Collect and store it in a bucket or basin and it use to water pot plants.

Recycled water

Recycled water is wastewater that's been treated to a high standard so it can be reused for other purposes.

Class A is the highest class of recycled water and is safe to use for a range of non-drinking purposes including garden watering.

Class A recycled water is produced at the Bendigo Recycled Water Factory and delivered through a separate purple pipe system with its own meters and connection points.

If your property has recycled water you'll have a separate water meter, taps and plumbing that are all purple for easy identification.

Class B and C recycled water is used to irrigate parks, public gardens, sporting and non-food crops.

Greywater

Greywater is waste water from the laundry and bathroom, and while it can help your garden survive dry times, it must be used with caution.

There are two types of systems to divert greywater to your garden;

1) **Diversion devices** simply carry greywater from your bathroom (not toilet) or laundry directly to your garden without treating it. This may include a hose, a container such as a bucket, or a diverter valve on your outdoor piping that allows you to choose between diverting greywater to your garden or sewer.
2) **Treatment systems** collect and treat the greywater to various levels of purity and hygiene. Treated greywater can be used in washing machines and toilets, as well as on the garden. Permanent greywater systems require approval from your local council and must be installed by a licensed plumber.

There are limits to what you can do with untreated greywater because of the chemicals and bacteria in it, but treated greywater is somewhat safer to use.

Learn more Page 76

UNTREATED GREYWATER

Dos

- Use it immediately – don't store it.
- Use low phosphorus detergents and soaps.
- Deliver the greywater by sub-surface irrigation.
- Ensure greywater goes into the sewer whenever you are not using it, such as after rain.
- Always wash your hands after gardening near greywater areas.
- Only use the greywater in dry times.

Don'ts

- Never allow the greywater to leave your property.
- Never store greywater for more than 24 hours.
- Don't use greywater on vegetables or anything you eat.
- Do not use dishwashing water as it will contain fats and vermin-attracting food particles.
- Don't water just because you have greywater! Check that your plants need it.

Untreated greywater use has the potential to increase the salinity of your soil by not only adding salts from the detergents you use, but by raising the water table. This brings natural salts in your soil to the surface and can have damaging effects on your soil and plants. It is a good idea to alternate greywater use with tank or tap water and also alternate the areas where you apply untreated greywater.

Stormwater

Stormwater is a valuable water source that can be captured and used by gardeners. This is basically rainwater that runs off across hard surfaces into our downpipes, gutters and stormwater system. Gardeners have a few of options to consider.

Downpipe diversion: by diverting one or two downpipes around your house you can direct stormwater onto your garden or lawn. A licensed plumber is required to install a diverter and hose to your downpipe. Once in place you can open or close a lever on the diverter to direct water into the diverter hose and onto your garden or lawn, or to flow as normal through your downpipe and into the stormwater system if you do not want to use the water.

Rainwater tanks need to be checked for blockages and leaks

Landscaping: water can be directed onto your garden beds and lawn by gently sloping the surface of driveways and patios. This stormwater flow can be controlled by creating shallow mounded ditches (swales) with a gentle gradient to move water to certain beds when it rains.

Paving: if you are laying pavers consider creating a space between that will enable water to seep into the soil. You can plant small plants like Mondo Grass (*Ophiopogon japonicus*) or Creeping Thyme (*Thymus serpyllum*) that benefit from the water and soften the look of a hard-paved surface. Alternatively, there are various porous pavers available which allow some water to seep through into the soil or consider gravel as a better alternative to slowing down the flow.

Learn more Page 76

URBAN SALINITY

An urban salinity problem has developed due to excessive garden watering, over-fertilising, and the replacement of indigenous vegetation with shallow-rooted garden plants and lawns. Urban salinity occurs when the groundwater level rises and the capillary action draws the water to the surface. As the water evaporates it leaves the salt behind in the soil. Signs of urban salinity include waterlogged soil, growth of salt-tolerant plant species, and unhealthy or dead trees.

Learn more Page 76

Creating a healthy garden

How to look out for garden pests and keep your garden healthy.

PREVENTION IS BETTER THAN THE CURE

Garden hygiene

There are some simple practices you can undertake to ensure your garden is as healthy as possible.

- Space plants out to ensure good ventilation to prevent disease.
- Make sure your pruning tools are sharp to avoid tearing stems and branches. To do so leaves the plant susceptible to disease attack.
- Use a rag soaked with eucalyptus oil to wipe down your secateurs blades between moving on to each plant.
- Prune back any dead or damaged parts of your plants as soon as you notice a problem.
- If you are treating a plant for a disease, make sure you collect any fallen leaves and put them in the rubbish bin. Do not compost them.
- Pick up any fallen fruit. Don't leave it to rot on the ground.

Garden pests

Chewing, sap-sucking and rasping pests are part and parcel of gardening. We can often tolerate a minor infestation, but need to take action if the pest is damaging our plants. It is important to correctly identify the pest, its consequences, the severity of the problem, the possibility of natural predators keeping the pest under control, and control techniques you can put into place.

Actions that will help minimise pest problems include;

- Checking your garden regularly for signs of infestations.
- Avoiding high nitrogen fertilisers that produce soft, sappy growth that attracts pests.
- Attracting predatory animals to your garden. Not only do birds, bats, frogs and lizards eat insects, but so do ladybirds, praying mantis, spiders and dragonflies. These good guys are attracted to plants such as alyssum, marigolds, cosmos, parsley, coriander and dill.
- Removing pests by hand if possible e.g. caterpillars and snails.
- Spraying with botanical oils or natural soaps.
- Trying home remedies such as linseed oil traps for earwigs and Portuguese millipedes, or garlic spray for caterpillars, white fly and aphids.

QUEENSLAND FRUIT FLY

Queensland fruit fly (QFF) populations have unfortunately been identified in the Coliban Water region. QFF attacks a wide range of fruits and vegetables. If left uncontrolled QFF can lead to significant crop losses for the home gardener and local agricultural industries.

Agriculture Victoria provides extensive information about the identification and management of this pest. A brochure for home gardeners is available on their website.

The Prevent Fruit Fly website also provides advice for home gardeners and commercial producers.

Learn more Page 76

FEEDING YOUR PLANTS

Composting

Composting your food scraps, grass and garden clippings can provide your garden with an excellent source of nutrients. There are a lot of systems available that range from compost bins, compost heaps, worm farms and kitchen fermentation kits. It all depends on the size of your property, the size of your garden and the amount of scraps you produce.

Learn more Page 76

ADD to your compost

- Fruit and veggie scraps
- Coffee grounds
- Tea bags
- Onion (outer skin)
- Herbs
- Leaves
- Egg shells (crushed)
- Pizza containers (torn up)
- Egg cartons
- Vacuum cleaner dust
- Finely chopped citrus peel (not too much)
- Grass cuttings (thin layers 3-4cm)
- Chopped prunings
- Weeds (not bulbs or seed heads)
- Shredded newspaper

KEEP OUT of your compost

- Meat and fish scraps (attract vermin)
- Dairy (attract vermin)
- Office paper (bleached or glossy)
- Weed seeds and bulbs
- Pet poo (can be a health risk)
- Large tree branches (unless you've put them through a chipper)
- Citrus fruit (too acidic in large quantities)
- Diseased plants and fruit (spreads disease)

Composting food scraps, clippings, grass and leaves provides an excellent source of nutrients

FERTILISER

If your plants are showing signs of a nutrient deficiency, such as yellowing leaves, you may wish to consider a supplementary fertiliser. Some plants are heavy feeders, such as citrus, so will require additional food to keep productive. When feeding plants with fertilisers, follow instructions carefully, and do not overdo it, otherwise you may kill your plants with kindness!

Choose an organic liquid fertiliser such as worm tea, seaweed solution or fish emulsions and feed the roots of your plant, not the leaves.

You can also make your own organic fertiliser by soaking aged animal manure, comfrey leaves or garden weeds in a covered bucket of water for four or five weeks. Strain and use the liquid to make your fertiliser tea. Dilute to approximately one-part bucket liquid to ten-parts water. It should look like weak tea.

Avoid synthetic fertilisers, these often have synthetic nitrogen, heavy metals and the salt content can burn young plants.

Planting

The key to planting is putting it in the ground with care and love.

You can plant into your garden with seeds, cuttings or potted plants of various ages. In general, buying younger stock in tubes (tubestock) or small pots enables strong root development at an early age which is ideal for deep root development (and your wallet).

Traditionally, after the first heavy autumn rain is the best time to put indigenous plants in the ground, particularly for dry areas.

In theory, your new plants get a chance to establish before winter and then flourish as the weather warms up in spring to cope with the summer heat. Many natives are best planted in winter, while deciduous plants such as roses, fruit trees and ornamental trees are best planted bare-rooted in winter, and they'll be cheaper! For frost-prone areas, spring may be a better time to plant out.

As gardeners, you would be aware that traditional rainfall patterns are changing and, in particular, the autumn, winter and spring rains seem to have declined. If you are planning to plant out, consider consulting one of the many long-range weather websites to optimise the success of your plantings. Ensuring there is a good level of soil moisture present before you plant greatly increases the likelihood that your valuable plants will successfully establish.

Planting out

1. Soak your plants in a bucket of water prior to planting.
2. Dig a hole twice the width of the pot and slightly deeper.
3. Fill the hole with water and allow it to drain before planting.
4. Hold the pot upside down and gently tap the plant out of the pot.
5. Trim any particularly long or coiled roots and give your roots a tickle to tease out the roots.
6. Place the plant in the hole slightly lower than the surface level.
7. Firmly replace the soil around the plant.
8. Fashion a circle of raised soil to form a watering basin around the plant.
9. Water the plant in well.

All plants, regardless of how drought-tolerant they are when mature, will require a good soaking once a week when establishing.

PLANT SELECTION

The right plant for the right spot

It is so tempting when you see a gorgeous plant at a nursery and think "that will look fantastic outside the lounge window". The plant requires sandy soil, lots of water and shade... outside your window you have clay soil and full sun. Dig a hole and throw your wallet in!

We've all done it and it does take some research to get it right. Which brings us back to our garden plan.

Try tackling one garden bed at a time to either plant out if it's new, or enrichment planting if there are some gaps or tired looking plants. Write down information about the bed such as:

- Sunlight requirements (full sun, part-sun, shade)
- Soil type (sand, loam or clay)
- Waterzone (1, 2 or 3)

The next step is to develop a list of plants that are right for that spot. You will find nursery staff are very knowledgeable and helpful in this regard and you will make it easier for them to help if you can say, "show me a range of plants that grow in full sun, clay soil and have low water needs".

Or you can do your own research using websites, library books on garden plants or wander around your neighbourhood and see what plants are thriving.

In addition, you may want to add any design information about the type of plant you would like for a particular spot or garden bed such as:

- height of plants, eg: border plant to 30cm or feature tree to 6m
- colour or texture of foliage, eg: grey succulent or green strappy tussock
- any preference for flower colour, eg: pink flowers
- any functional aspects, eg: screening plant, hedge or shade tree

PLANT GROUPS

The following groups of plants are all ideal for a dry climate. You can create a garden of any style using just one group, for example indigenous plants, or you can mix and match selecting plants with similar soil and water requirements across the plant groups.

One important factor to remember relates to nutrient needs. Indigenous plants and many native plants have evolved to cope with Australia's ancient soils that are generally low in nutrients, particularly phosphorous. Adding a commercial fertiliser that is high in phosphorous can damage your indigenous and native plants. If you are mixing plant groups within a garden bed to include indigenous, native and non-native plants, keep up the compost rather than applying commercial fertiliser.

Indigenous plants

The original plants that grow locally in your area are known as indigenous plants. They are adapted to grow in your soil type and local climate. Local wildlife often depend on these plants for their survival. Our region has a fantastic range of indigenous plants of various colours, textures and sizes.

Find out more about how indigenous plants were harvested for food, fibre and medicine in our Traditional lands section on page 05.

Native plants

Plants that come from anywhere in Australia are referred to as native plants. It may be a wattle from NSW or a grevillea from WA. Many native plants are adapted to dry conditions and those sold in nurseries are often adaptable to your local soil and climate. Examples include bottlebrushes (*Callistemon* spp.), banksias (*Banksia* spp.), grevilleas (*Grevillea* spp.), hakeas (*Hakea* spp.), mint bushes (*Prostanthera* spp.), emu bushes (*Eremophila* spp.), native fuchsias (*Correa* spp.), Swan River Daisy (*Brachyscome iberidifolia*), waxflowers (*Philotheca* spp.), wattles (*Acacia* spp.) and gum trees (*Eucalyptus* spp.).

Exotic plants

Refers to any plant that originates from outside of Australia. They can represent a range of plants from the groups on the next page.

Consider the height, colour, texture and functional aspect of plants before you put them in the ground

SUCCULENTS AND FOLIAGE PLANTS

Many of these plants look fantastic in a garden from a texture and interest point of view. They include a huge range of succulents, ornamental grasses and other foliage plants. Examples include agaves (*Agave* spp.), Bird of Paradise (*Strelitzia reginae*), Cabbage Palms (*Cordyline* spp.), New Zealand flax (*Phormium* spp.), yuccas (*Yucca* spp.) as well as indigenous plants such as Soft Spear-grass (*Austrostipa mollis*), Flax lilies (*Dianella* spp.) and Blue Devil (*Eryngium ovinum*).

Grey-leaf plants

Silver and grey foliage plants provide great contrast in colour and texture and they are tough! Examples include lavenders (*Lavendula* spp.), wormwoods (*Artemisia* spp.), Lambs Ears (*Stachys byzantina*), Emu Bush (*Eremophila* spp.), Silverbush (*Convolvulus cneorum*), Panda Plant (*Kalanchoe tomentosa*), as well as indigenous plants such as White Correa (*Correa alba*), Cushion Bush (*Leucophyta brownii*), Ruby Saltbush (*Enchylaena tomentosa*), Drumsticks (*Pycnosorus globosus*), Common Everlasting (*Chrysocephalum apiculatum*) and Lemon Beauty-heads (*Calocephalus citreus*).

TRIED AND TRUE FAVOURITES

Many of these plants survive with little or no care and can be spotted growing around old cemeteries. Examples include old-fashioned roses; bulbs such as lilies, iris, daffodils and jonquils; English Box (*Buxus sempervirens*); Native Fuchsia (*Correa reflexa*) and wattles (*Acacia* spp.).

PRODUCE PLANTS

Growing your own herbs, vegetables and fruit is rewarding, especially with regard to cost and taste. Most produce plants are shallow-rooted and high in water demand and fertiliser. In a dry climate consider focusing on your winter crop, using a dedicated rainwater tank, wicking beds, mulch well with pea straw and only grow the amount you will consume. Some produce plants such as rosemary and thyme require less water than most once established.

ENVIRONMENTAL WEEDS

When a plant invades and thrives in an area where they do not naturally occur they are known as an environmental weed. They can be from overseas or they can be a native plant from interstate. Unfortunately, many a garden plant has escaped and begun a slow march across the countryside! Think Gazania (*Gazania linearis*), Pampus Grass (*Cortaderia selloana*), English Ivy (*hedera helix*) and Freesia (*Freesia alba x Freesia leichtlinii*) to name a few.

Environmental weeds in the bush out-compete indigenous plants for light, water and nutrients. In a short time, they can replace indigenous plants, effectively removing the food source and habitat of local animals. They can also form a serious threat to farmers as they impact productivity of crops and pastures, and cost time and money to control.

Seeds and cuttings can be carried many kilometres by wind, water, tools, vehicles, clothing, pets, birds, and animals. Plants can also spread from people dumping garden waste in reserves and waterways.

You can help by finding out what plants are a problem in your area and not growing them in your garden, and by composting your garden waste whenever possible or dispose of it through your council waste collection program.

Your local council may have information relevant to your area. See our Region focus section on page 09.

Learn more Page 76

Plant guide

Our lists of some of the plants that perform well in a dry climate.

DEFINITIONS

Traditional land plants

Plants used by First Nations people for food, fibre and medicine

Indigenous plants

Plants that grow locally in our region

Native plants

Plants that come from anywhere in Australia

Exotic plants

Plants that originate from outside of Australia

Water

Watering needs if it hasn't been raining.

- additional watering not required once established.
- water once a month.
- water twice a month.

A well-drained soil refers to any soil type that allows water to freely move through it.

- Sun
- Sun/shade
- Shade
- Frost tolerant
- Moderately frost tolerant
- Frost sensitive, needs protection from winter frosts.

Please note: Plant sizes are approximate. Environmental conditions will influence the final height and width of a plant. Flowering times are approximate as climate change is tending to cause earlier flowering in some species.

TRADITIONAL LANDS – FOOD

Including plant names in the Dja Dja Wurrung language

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Chocolate Lily

Arthropodium strictum

Gitjawil matom

Indigenous

The Chocolate Lily's bright purple flowers smell like chocolate. This plant will self-sow, tolerate most soil types and requires minimal watering. After flowering in summer, the plant will die down to its rootstock and wait for the next spring season to begin flowering again. This is when the edible root tubers form at the ends of the roots, with each plant containing many edible root tubers that can be eaten raw or roasted.

Vanilla Lily

Arthropodium milleflorum

Gitjawil matom

Indigenous

The Vanilla Lily is named because of the slight vanilla scent its flowers emit. It is in the same family as the Chocolate Lily and consumed in the same way with the addition of the flowers being edible. The tuberous fruits develop in December to March. It is a frost tolerant plant that requires little watering but will prefer a slighter moister climate than the Chocolate Lily can survive in.

Yam Daisy

Microseris lanceolata

Murnong

Indigenous

Murnong was once the most abundant food source for Djaara, but since being eaten from existence and trampled upon by the hard hooves of sheep it is now extremely rare to see. Journals of early explorers and colonisers detail yellow flowers filling the valley fields as far as the eye can see, as if they were being farmed commercially. The roots contained tubers which were dug up by women using digging sticks and then roasted on hot ashes and consumed.

Ruby Saltbush

Enchylaena tomentosa

Girrkitj

Indigenous

A dry-country ground-cover plant with small edible red, yellow, orange fruits which are shaken off into a coolamon and collected for eating; in some instances, the salty fruits can also be added to meat for seasoning. Flowers from spring to early summer and is followed by the display of many small berries, which can be multiple colours. Ruby Saltbush is salt, drought and frost tolerant, but will not survive in waterlogged or consistently moist soils.

Sweet Apple-berry

Billardiera cymosa

Dhurrungmil wawitj

Indigenous

A sprawling ground cover or can grow as a climber that can reach three metres across and stretch up to 1.5m in height. The Apple-berry has bell-shaped flowers which will appear during spring and summer and in summer features an oblong berry, 2cm long. The fleshy green and purple fruit turns yellow when ripe and the fruit may be eaten raw when it has fallen to the ground or roasted if still green. The skin is hairy and like a peach and the sweet astringent flavour like a kiwifruit.

Inland Pigface

Carpobrotus modestus

Djaa wawitj

Indigenous

A succulent-type plant that grows naturally in the Bendigo region. Because of its soft foliage it is trampled and eaten by grazing animals such as sheep and cattle and only regenerates in areas excluded from grazing. Ideal for low maintenance gardens and will spread like other ground cover succulents. Produces large pink-purple daisy-like flowers over summer but is also known to flower sporadically throughout the year. The fruit is red when ripe and has a salty taste as do the leaves; for this reason, it is used like Ruby Saltbush and added to meats for salting or consumed on its own. The sap that excretes from the leaves is used as an eye cleanser.

Kangaroo Grass

Themada triandra

Buwatj

Indigenous

A tufted perennial grass that can grow to 1.5m tall and 0.5m across. Its leaves are green to grey in colour drying to an orange brown in the heat of summer. Flowers in December through to February but will remain on the plant long after this period. It produces distinct large red-brown spikelets, which occur on branched stems. Kangaroo Grass is gathered in large quantities in wooden bowls. The seeds are separated and grinding stones are used to grind flour which was mixed with water and cooked to make damper. Unfortunately, Kangaroo Grass responds to regular burning and suffers from over-grazing, so it is no longer abundant in the area like it once was.

TRADITIONAL LANDS – FIBRE

Spiny-headed Mat-Rush

Lomandra longifolia

Witji

Indigenous

Spiny Headed Mat-rush is an extremely adaptable sedgy Indigenous plant which can survive both long periods of drought and extended periods of wet. It is often planted near riverways and watercourses for this reason but will not die even if it is refused water; once its long roots have become established in the soil. The smell of the flowers, which occur over spring-summer, can attract pollinating and native bees to your garden. Like other sedges, it is prized for its basket weaving, trapping, mats, and sewing qualities obtained from the leaves.

Carex Sedge

Carex appressa

Witji

Indigenous

Another sedge plant with course edges that will slice the hand if ran along the blade of the leaf. Typically planted around wetlands, rivers, watercourses and dams. It prefers loamy soil and will normally grow 1m x 1m, and, like other sedges flowers over spring-summer. Still commonly used by Djaara women for basket weaving and crafting bags. Carex has also been known to be made into a cape and worn to cure toothache.

Spreading Flax Lily

Dianella revoluta

Dhurrung wurrkuk

Indigenous

Known to occur in dry, heathy woodlands and can survive an array of different climatic conditions including fire, drought, frost and water logging. Grows beautiful purple flowers with yellow filaments which are soon followed by small purple berries. Although the berries on most species are edible, there is no evidence to suggest that Djaara ate them. The leaves are split and then twisted together to make a strong cord fibre, and larger species were weaved into baskets.

Pale Rush

Juncus pallidus

Witji

Indigenous

A dense tufted perennial rush that spreads from underground stems. Erect bluish green to dull green stems that are rounded. Like most other species of rushes, needs to be planted close to water and prefers waterlogged soils. The stems of this and other strong rushes are used for string and to weave baskets and mats.

TRADITIONAL LANDS – MEDICINE

Silver Banksia

Banksia marginata

Wurrak

Indigenous

A well-known Australian plant that once thrived across Victoria. It can grow anywhere between 1-12m in height and will attract honey-eating birds. The Silver Banksia can tolerate most soil types, but preferably dry, and in full view of the sun. The flower cones of all species of Banksias can be soaked in water to make teas from the nectar. The dry cones of the Silver Banksia can be used as strainers and to carry a smouldering fire. Single flowers are also used as fine tip like paint brushes.

This species of Banksia needs fire to germinate seeds in the soil bank and may be the reason why it is no longer seen in all locations of the state.

Drooping Sheoak

Allocasuarina verticillata

Ngarri

Indigenous

The Drooping Sheoak is a medium sized tree (up to 10m) and resembles a weeping pine tree. This tree will grow in a range of different soil conditions and will tolerate most climates once established. The soft young cones are eaten, mature cones are crushed into a powder for sores and chronic pains like arthritis; parts of the bark and wood can also be used medicinally. The wood from Sheoaks is prized for making boomerangs, spears, and other tools.

Grass Tree

Xanthorrhoea australis

Bakap

Indigenous

An incredibly long-lasting plant (600 years) but grows at an extremely slow rate of 2-3cm every year. Typically lives in moist valleys but if grown in pots and in the same climate as it will be planted, it can thrive. An attractive plant with many uses. Grass Trees produce nectar that is collected using a sponge; the sponge is typically made from Stringybark. The stalks from old flowers and fruits is used as tinder in making fire. The heart of the stem is edible. The soft wood provides the base for a fire-drill in making fire. The soft bases of the young leaves were sweet and have a nutty flavour. Tough leaves can be used as knives to cut meat. Globules of hard, waterproof resin from the base of each leaf are collected and used as glue to fasten barbs in spears or stone axes to handles. The Grass Tree has many more uses; and like other Australian species that have adapted to generations of Aboriginal burning practices, responds very well to fire sweeping through the forest it inhabits.

Sticky Hop Bush

Dodonaea viscosa

Mayn-mayn durrung

Indigenous

Widely distributed medium shrub (2-3m) across all states of Australia. Will tolerate long periods of drought and requires very little watering making it the perfect candidate for a dry climate. The juice of the root was applied to cuts and to gums for toothaches.

ACACIA SPECIES

Golden Wattle

Acacia pycnantha

Wai Wai

Silver Wattle

Acacia dealbata

Wararak

Blackwood

Acacia melanoxylon

Mutjang

Lightwood

Acacia implexa

Mutjang

Spreading Wattle

Acacia genistifolia

Werp yulanyuk

Indigenous

Wattles are still commonplace in Victoria and different species can be used for different practices. Golden and Silver Wattles produce an edible gum, and the bark is often deliberately picked so the tree will produce more gum to heal itself; continuing the supply. The bark is soaked in hot water as a medicine for indigestion, but it can also be used to make coarse string. Dry Wattle seeds are ground up to make damper; they are rich in protein, similar to beans and peas. Not every species of wattle is suitable for food though and the correct research should be attained before consuming.

TREES (over 10m)

Tall trees create shade which lowers temperatures and moderates the micro-climate. Ironbarks produce more shade than a lot of other gums as they generally have denser canopies.

Silver Wattle

Acacia dealbata

Indigenous

An easily grown tree with attractive bluish-green leaves and a profusion of yellow flowers through winter and spring to brighten up your garden. Fast-growing, reaching a height of 6-30m and width of 5-10m. Grows best in all deep soils.

White Cypress-pine

Callitris columellaris

Indigenous

A slender, conifer-like tree with a single straight trunk. Bluish foliage and small woody cones.

A slow-growing tree reaching a height of 7-20m and width of 5-10m. Useful as a shade tree or can be grown in a container. Grows best in sandy soils.

Lemon-scented Gum

Corymbia citriodora

Native

Beautiful smooth, pink bark and weeping lemon-scented foliage. Cream flowers in winter. Grows tall to 20-40m and 6-10m wide. Grows well on a wide variety of well-drained soils. A stunning feature tree for a large garden area.

Algerian Oak

Quercus canariensis

Exotic

A large evergreen tree that is semi-deciduous in cooler climates. A slow-growing tree reaching a height of 20m and width of 15m. Grows well in most soil types. An excellent summer shade tree for the garden.

Chinese Elm

Ulmus parvifolia

Exotic

A long-lived deciduous tree with a broad canopy. The bark is orange-brown and finely flaking.

Grows 6-12m high and 5-8m wide. Grows in most soil types. An excellent shade tree.

Cimmaron Ash

***Fraxinus pennsylvanica* 'Cimmaron'**

Exotic

An excellent shade and feature tree which is adaptable to a range of soil types. Can tolerate periods of drought as long as it receives some regular water.

Deciduous with brilliant autumn leaf colour, it develops a rounded form when mature and grows to 15m high and 8m wide.

Turkey Oak

Quercus cerris

Exotic

A hardy deciduous tree with bright yellow autumn foliage. It has a slow to moderate growth rate and grows to approximately 15m high.

Turkey Oak will adapt to a to a wide range of soils and is drought tolerate. It is a wonderful shade tree once established.

Kurrajong

Brachychiton populneus

Native

A very hardy evergreen tree with attractive creamy white flowers in spring – summer. It is adaptable to a wide range of soil types but requires good drainage.

It makes an attractive feature tree which provides good shade and is drought resistant.

White Cedar

Melia azedarach

Native

A fast growing deciduous native to approximately 10m high and 8m wide. An excellent shade tree, White Cedar has fragrant lilac flowers during spring followed by masses of hard yellow fruit.

It is a highly adaptable tree, tolerating extended periods of drought and growing in a wide range of soil types.

The yellow fruits are poisonous to humans and the tree can be weedy in some areas of Australia.

TREES (under 10m)

Lightwood

Acacia implexa

Indigenous

An attractive, long-lived tree with interesting twisted seed pods. Perfumed cream flowers from summer through autumn. Grows to 10m high and 4m wide. An adaptable plant tolerating a range of soil types including clay.

Weeping Myrtle

Agonis flexuosa

Native

A graceful tree with weeping branches and long narrow leaves. New tips are bronze. Fragrant, small white flowers through spring and summer. Grows to a high of 10m and width of 5m. Tolerant of most soil types, particularly sand.

Drooping Sheoak

Allocasuarina verticillata

Indigenous

Rounded, drooping canopy of greyish-green branchlets. Small, yellow flowers in winter and spring provide an attracting golden effect. Grows to 10m high and 6m wide. Grows in a wide range of soil types.

Heath Banksia

Banksia ericifolia

Native

One of the most beautiful banksias with striking orange flower cones from autumn to winter. A fast-growing plant with fine green leaves. Grows to 7m high and 4m wide. Tolerates most well-drained soils, particularly sand. An excellent feature plant in the garden.

Weeping Bottlebrush

Callistemon viminalis

Native

A fast-growing small tree with beautiful red spikes of flowers through summer. Variable forms of this plant but generally grows to 4m high and wide. Tolerates most soil types and may need some frost protection when young.

Crimson Mallee

Eucalyptus lansdowneana

Native

A beautiful small gum tree with interesting bark and a striking display of deep pink to red flowers in winter and spring. Grows to 6m high and 4m wide. Very hardy tolerating most soil types. An excellent feature tree in the garden.

In the depths of winter this plant produces eye-catching, cream tassel flowers that contrast with its grey-green evergreen foliage. Grows to 8m high and 3m wide as a shrub or pruned to a tree. Tolerant of most well-drained soils.

Crepe Myrtle

Lagerstroemia indica

Exotic

A beautiful deciduous tree with pink flowers in summer, autumn foliage and attractive bark. Grows to 3-4m high and wide. Cheapest to buy as a bare-rooted plant in winter. Get them established with plenty of water, to ensure the root system develops well. Hardy once established. Tolerant of most well-drained soils.

Pomegranate

Punica granatum

Exotic

A deciduous tree with small, orange flowers in summer, followed by stunning red edible fruit provided you water well in spring. Leaves change from green to red in autumn. Grows to 5m high and 4m wide. Tolerates all well-drained soils; does not like wet feet!

Ornamental (Callery) Pear

***Pyrus calleryana* 'Capital'**

Exotic

An attractive narrow tree that is hardy and easy to grow. An excellent screening plant when grown in a row. Autumn foliage and white flowers in spring. Grows to 6-7m high and 2m wide. Tolerates all soil types.

Golden Robinia

***Robinia* 'Frisia'**

Exotic

Deciduous tree with striking lime green leaves that change to yellow in autumn. Grows to 10m high and 5m wide. Long white, fragrant flowers in summer. Tolerates most well-drained soils.
An attractive feature tree for its foliage or shade tree for dappled light.

TALL SHRUBS (under 3m)

Gold-dust Wattle
Acacia acinacea
Indigenous

An open, fine-leafed shrub with a profusion of yellow flowers in spring. Grows to 2m high and wide. Benefits from pruning after flowering and makes a good, low screening plant. Adaptable to all well-drained soils.

Sticky Boronia
Boronia anemonifolia
Indigenous

A fast-growing shrub with strongly scented leaves. A profusion of star-shaped pink flowers in spring and summer this plant is an eye-catching addition to your garden. Grows to 2m high and wide. Performs best in sandy soil or a great container plant.

Sweet Bursaria
Bursaria spinosa
Indigenous

This easily-grown plant is attractive in flower and fruit. Variable form from a rounded shrub to small tree. Grows 2-6m high and 2-3m wide. Masses of fragrant, white flowers in summer that attract butterflies. Suits all well-drained soils.

Silky Net-bush
Calothamnus villosus
Native

Bright red flowers in spring and summer attract the nectar feeding birds. An evergreen shrub with pine-like foliage. Grows to 2m high and wide. Makes a good screening plant. Tolerant of a wide range of soils, but loves sandy soil.

Blue Pacific
***Ceanothus* 'Blue Pacific'**
Exotic

A hardy and fast-growing evergreen shrub. Eye-catching display of deep blue flowers in spring. Grows to 3m high and 2m wide. Can be clipped to a hedge, or create a spring splash of colour in the garden. Tolerates most well-drained soils.

Geraldton Wax
Chamaelaucium uncinatum
Native

A profusion of long-lasting pink flowers in winter and spring make this a favourite of the cut-flower industry. A dense evergreen shrub that grows to 3m high and wide make this an excellent screen plant or feature plant. Performs best in sandy soils.

Mexican Orange Blossom
Choisya Ternata
Exotic

A very attractive, easy to grow, evergreen shrub with fragrant foliage and flowers. Beautiful citrus-like white flowers in spring. Grows to 2m high and wide. Can be pruned to hedge or a feature plant in your garden. Grows in all well-drained soils.

Silky Eremophila
Eromophila nivea
Native

A stunning evergreen plant with silvery foliage that stands out on the garden. This contrasts beautifully with its purple flowers in spring. Grows to 2m high and wide. Grows well in containers. Performs best in sandy soils.

Wulfen Spurge
Euphorbia characias
Exotic

A stunning, unusual plant that is tough. Upright, blue-green evergreen foliage, with lime green puff-balls of flowers from spring to summer. Grows to 1.5m high and wide. Tolerates all well-drained soils.

Austral Indigo
Indigophora Australia
Indigenous

A lovely ornamental shrub for the garden. Feathery blue-green evergreen foliage can be pruned to create a more compact shrub. Beautiful sprays of mauve-purple pea flowers in spring. Grows to 2m high and wide. Adaptable to any well-drained soil.

SMALL SHRUBS (under 1m)

Woolly Wattle
Acacia lanigera
Indigenous

A hardy, rounded shrub that can grow to 2m high and wide. Showy in flower during winter with masses of bright yellow ball-like flowers. Grows well under established trees and is an excellent soil binder. Prefers well-drained clay soils.

Small Crowea
Crowea exalata
Indigenous

A compact shrub with attractive burgundy foliage and long-lasting pink star flowers through spring and summer. Grows to 1m high and wide. Tolerates all well-drained soils and grows well in containers.

Grey Parrot-pea
Dillwynia cinerascens
Indigenous

An attractive and adaptable plant for a shady position. Small yellow and red pea flowers clustered on the ends of the branches in spring. Grows to 1m high and wide. Prune to keep compact. Attractive effect mass planted. Prefers well-drained soils.

English Lavender
Lavandula angustifolia
Exotic

Purple fragrant flowers summer and autumn. Grows to 1m high and wide. Grey-green leaves also aromatic when brushed against or crushed. Prune after flowering to keep compact. Tolerates most soils, but prefers sand.

Cushion Bush

Leucophyta brownii

Native

An unusual, densely tangled, round shrub with greyish-white foliage. Grows to 1m high and 2m wide. Responds well to pruning. Small, yellow flowerheads in summer. Tolerates most well-drained soils.

Dwarf Sacred Bamboo

***Nandina domestica* 'Nana'**

Exotic

A low, rounded evergreen shrub with bright red new growth from spring to summer. Grows to 60cm high and wide. Small white flowers in autumn and winter. Tolerates most well-drained soils. A hardy plant that also performs well in containers.

Grey Everlasting

Ozothamnus obcordatus

Indigenous

Beautiful clusters of yellow flowers in spring that can be used as cut flowers. Small dark green leaves woolly underneath. Grows to 1m high and 50cm wide. Responds well to tip pruning. An excellent plant for shallow stony soils.

Scarlet Mint-bush

Prostanthera aspalathoides

Indigenous

A low growing shrub with aromatic foliage and a profusion of 2cm long red flowers in spring and summer. Grows to 50cm high and wide and responds well to tip pruning to keep it compact. Grows in a most well-drained soils.

Mexican Sage

Salvia leucantha

Exotic

A fast-growing, hardy shrub with attractive evergreen grey-green leaves. Spikes of deep mauve flowers over summer and autumn. Requires more watering in late summer into autumn. Grows to 1m high and wide. Adapts to most soil types. Suited to garden beds, borders or containers and an excellent cut flower.

Lavender Cotton

Santolina chamaecyparissus

Exotic

A beautiful evergreen, aromatic shrub noted for its silver-grey foliage and small, button-like yellow flowers in spring and summer. Typically grows in dense mounds to 60cm high and 90cm wide. Can be pruned to hedge. Adapts to all well-drained soils; does not like wet feet!

ROSES (Hardy varieties)

Persian Rose

***Rosa foetida* 'Persiana'**

Exotic

A golden-yellow, double flower in spring and summer with a strong fragrance. Grows to 1.2m high and wide. Prefers sandy loam and clay loam soils.

Lorraine Lee

***Rosa* 'Lorraine Lee'**

Exotic

One of the most famous Australian roses with pink flowers all year, with a flush in winter. Strong fragrance. A vigorous shrub that grows to 2m high and wide. There is also a climbing form. Adapts to most well-drained soils. Large, sharp thorns so keep it away from paths.

Madame Hardy

***Rosa* 'Madame Hardy'**

Exotic

Clusters of brilliant white and strongly fragrant flowers in spring. A hardy rose with bushy growth to 1.5m high and wide. Adapts to all well-drained soils.

Moyesii

***Rosa* 'Moyesii'**

Exotic

Striking open red flowers with a yellow centre bloom in spring. Showy red fruit (hips) also popular in floral arrangements. A large, vigorous shrub that grows to 2m high and wide. Strong arching growth. Well-drained soils.

Peace Rose

***Rosa* 'Peace'**

Exotic

Beautiful, large, fragrant pink and yellow blooms from spring through to autumn. Vigorous upright shrub that grows to 2m high and 1m wide. Glossy deep green leaves. All well-drained soils. Stunning when mass planted or as a feature plant.

PERENNIALS, BULBS, GRASSES AND TUFTED PLANTS

Oyster Plant

Acanthus mollis

Exotic

A fast-growing, hardy evergreen plant that features glossy, dark green foliage. Beautiful tall flower spikes of purple and white that rise above the foliage in summer. Grows to 1m high and wide. Adaptable to most well-drained soils.

Agave

Agave attenuata

Exotic

Soft, fleshy succulent-like leaves form in a rosette to 1m high and wide. Green to bluish-green leaves. In summer yellowish-green flowers appear on tall arching spikes, although it can take 10 years for the blooms to appear. Grows in all well-drained soils.

Feather Spear-grass

Austrostipa elegantissima

Indigenous

A perennial tussocky grass that grows to 50cm high and 1m wide. Beautiful feathery flowerheads on stems to 1m high in spring and summer. A striking contrast plant when in flower. Adapts to most soils.

Cut-leaf Daisy

Brachyschome multifida

Indigenous

Fast-growing, spreading groundcover. Grows to 10cm high and 50cm wide. Attractive mauve or white daisy-like flowers with a yellow centre throughout the year. Hardy and adaptable to a range of soil types. Responds well to hard pruning after flowering.

Common Everlasting

Chrysocephalum apiculatum

Indigenous

Attractive soft grey leaves with clusters of bright yellow flowers above the foliage in spring and summer. Grows to 20cm high and 70cm wide. Adapts to most well-drained soils. Responds well to pruning. An excellent contrast or rockery plant.

Round-leaved Cotyledon

Cotyledon orbiculata

Exotic

Fleshy, grey-green leaves with red margins around 10cm across. Plant grows to 50cm high and wide. Cluster of bell-shaped orange flowers droop from a 50cm flower stalk in summer. Adaptable to most well-drained soils.

Black-anther Flax-lily

Dianella admixta

Indigenous

A rounded tussock with strappy green leaves. Grows to 80cm high and 1m wide. Beautiful starry blue flowers on 1m tall stems in spring, followed by blue oval-shaped fruit to 1cm long in summer. Adapts to most well-drained soils.

Daffodils

Narcissus cultivars

Exotic

Strappy green foliage grows to 30cm high and 10cm wide from a bulb. Beautiful, golden flowers in spring to brighten up the garden or a vase inside. Wide range of varieties. Adaptable to well-drained soils. Easy to grow and long-lived.

Bird of Paradise

Strelitzia reginae

Exotic

A dense clumping plant with broad green leaves. Striking orange and blue bird-like flowers in summer. Grows to 1m high and wide. Adapts to most well-drained soils. Does not like wet feet. Great in the garden or as cut flowers.

Sticky Everlasting

Xerochrysum viscosum

Indigenous

Showy, bright-yellow papery daisy flowers in spring to autumn. Sticky branches with dark green narrow leaves. Grows to 70cm tall and 30cm wide. Pruning after flowering promotes a bushy form and prolongs life. Suited to all well-drained soils.

CLIMBERS

Bougainvillea

Bougainvillea glabra

Exotic

An evergreen climbing shrub with thorny stems. Grows to 4m high. Mass of bright purple flowers in summer and autumn. Protect from heavy frosts. An exposed sunny spot is ideal. Adapts to most well-drained soils.

Small-leaved Clematis

Clematis microphylla

Exotic

An attractive, fine-leaved climber with masses of starry cream flowers from winter to spring. Fluffy white seedheads in summer are also attractive. Grows to 3m high and can be trained to cover a fence or trellis. Adapts to all soils, but does not like wet feet.

Purple Coral-pea

Hardenbergia violacea

Indigenous

A hardy, scrambling climber or groundcover. Masses of purple pea flowers in late winter-spring. Leathery dark green leaves. Adapts to a range of well-drained soils but prefers clay. Can be trained to cover a fence. Attractive groundcover in the garden or in a hanging basket or container.

Black Coral-pea

Kennedia nigricans

Native

A vigorous climber or groundcover with unusual black and yellow pea flowers. Large green leaves. Grows to 10m high and wide so plant away from other plants it may smother, or train along a fence or embankment. All soils.

Banksia Rose

***Rosa banksia* 'Lutea'**

Exotic

A vigorous climbing rose covered in small, yellow, lightly-scented flowers in spring. Thornless stems grow to 5-10m and is an excellent choice to cover arbors and fences. Adapts to most well-drained soils.

GROUNDCOVERS

Blue Chalk Sticks

Kleinia mandraliscae

Exotic

A spreading succulent with silvery-blue finger-like, fleshy leaves and small white flowers in summer. Grows to 30cm high and 60cm wide. A fast-growing groundcover that is easily propagated from cuttings. Suits most well-drained soils, especially sandy soil.

Gaudi Chaudi Grevillea

Grevillea x gaudichaudii

Native

Large red toothbrush-like flowers in spring and summer. Dark green leaves have a bronze tinge on new growth. Grows to 30cm high and 3m wide. Fast-growing and hardy. Adapts to well-drained soils. Excellent underneath trees or spilling over a retaining wall.

Running Postman

Kennedia prostrata

Indigenous

Brilliant red pea flowers with a yellow centre bloom in spring to add a splash of colour to the garden. Soft, grey-green leaves on training stems that grow to 2m. Prefers well drained soils, but will tolerate some limited waterlogging.

Creeping Boobialla

Myoporum prostrata

Indigenous

A dense matting groundcover that grows to 10cm high and 2-4m wide. Masses of star-like white flowers in spring and summer. Fast-growing and hardy it grows in all well-drained soils. An excellent lawn alternative.

Matted Bush-pea

Pultenaea pendenculata

Indigenous

Densely matting, layering groundcover with masses of small red and yellow pea flowers in spring. Small dark green leaves. Grows up to 3m. Looks great cascading over rockeries or retaining walls. Adapts to all well-drained soils.

HARDY LAWNS

Santa Ana Couch

***Cynodon dactylon* 'Santa Ana'**

Exotic

A fine leaf couch. Extremely tough and hard wearing. A running grass that self-repairs wear and tear, but can also be invasive. Dormant in winter.

TifTuf Couch

***Cynodon dactylon* 'TifTuf'**

Exotic

A large number of underground runners helps cope with water restrictions and regrowth after summer. Will brown off during winter. Copes well with wear and tear.

Weeping Grass

Microlaena stipoides

Indigenous

A great lawn alternative as this fine native grass can be mowed and self seeds. Excellent as a front lawn as it does not cope well with heavy traffic or dog urine. Grows well in shade

Kikuyu

Pennisetum clandestrnum

Exotic

Kikuyu is a hardy running grass that loves the full sun and thrives in summer. It doesn't perform so well in shady areas. Yellows off in winter. It's fast-growing nature is great for self-repair but also means it requires frequent mowing and can be invasive.

Sir Walter Buffalo Grass

***Stenotaphrum secundatum* 'Sir Walter'**

Exotic

A hardy grass that is soft and lush if maintained correctly. The largest of the running grasses it tends to self-repair patches from wear and tear. Browns off in winter.

Learn more

Help and advice is out there!

PLANNING YOUR IDEAL GARDEN

Water sensitive cities (page 32)

www.watersensitivecities.org.au

Harnessing run off (page 32)

Melbourne Water's Introduction to Water sensitive urban design
www.melbournewater.com.au/planning-and-building/stormwater-management/introduction-wsud

FROM THE GROUND UP

(page 35)

www.vro.agriculture.vic.gov.au/dpi/vro/vrosite.nsf/pages/soil_texture-soil-surface

North Central Victoria Soil Health Guide published by the North Central CMA
www.nccma.vic.gov.au/sites/default/files/publications/landcare_soils_guide_june_2016_web.pdf

WATER: LIQUID GOLD

Untreated greywater (page 49)

Environment Protection Authority (EPA) guidelines
www.epa.vic.gov.au

Sustainable Gardening Australia

www.sgaonline.org.au/greywater-info/

Stormwater - Downpipe diversion (page 50)

www.melbournewater.com.au and search 'downpipe diversion'

Urban salinity (page 50)

http://vro.agriculture.vic.gov.au/dpi/vro/vrosite.nsf/pages/lwm_salinity_management_urban

CREATING A HEALTHY GARDEN

Queensland fruit fly (page 52)

www.agriculture.vic.gov.au/agriculture/QFF

www.preventfruitfly.com.au/controlling-fruit-fly/gardeners/

Composting (page 53)

www.sgaonline.org.au/the-science-of-composting/

PLANT SELECTION

Environmental weeds (page 58)

www.agriculture.vic.gov.au/agriculture/pests-diseases-and-weeds

www.nccma.vic.gov.au/resources/publications/weeds-identification-guide

www.environment.gov.au/biodiversity/invasive/weeds/weeds/what.html

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Bishop, A.B.
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Free, available from the City of Greater Bendigo.

Indigenous Plants of Bendigo – A Gardener's Guide to Growing and Protecting Local Plants.

Free, available from the City of Greater Bendigo and Australian Plants Society Bendigo.

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Thames & Hudson, Australia (2017)

The New Native Garden: Designing with Australian Plants

Urquhart, Paul
Reed New Holland (2002)

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Snape, Diana
Blooming Books, Melbourne (2002)

The Waterwise Australian Native Garden – A practical guide to garden design, plant selection and much more.

Stewart, Angus & Bishop, A.B.
Murdoch Books, 2019

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Wrigley, John, W. & Fagg, Murray,
New Holland Publishers (2009)

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Lothian, Melbourne (2010)

Gardening Down-Under

Handreck, Kevin
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Weeds of the South-East: An Identification Guide for Australia

Richardson, F.J., Richardson, R.G. & Shepherd, R.C.H
R.G. & F.J. Richardson, Victoria (2011)

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Walsh, Kevin
New Holland Publishers, Sydney (2017)

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Tzaros, Chris
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The Water-efficient Garden: A Practical and Innovative Guide

Archer, J., Hodges, J & LeHunt, B
Random House (1993)

Waterwise House and Garden

Windust, A
Landlinks Press, Collingwood, Victoria (2003)

USEFUL WEBSITES

www.sgaonline.org.au

www.natureshare.org

www.smartwatermark.org

www.sustainability.vic.gov.au

www.weeds.org.au

FOR MORE INFORMATION

Coliban Water
1300 363 200
www.coliban.com.au

City of Greater Bendigo
(03) 5434 6000
www.bendigo.vic.gov.au

Campaspe Shire Council
1300 666 535
www.campaspe.vic.gov.au

Gannawarra Shire Council
(03) 5450 9333
www.gannawarra.vic.gov.au

Hepburn Shire Council
(03) 5348 2306
www.hepburn.vic.gov.au

Loddon Shire Council
1300 365 200
www.loddon.vic.gov.au

Mount Alexander Shire Council
(03) 5471 1700
www.mountalexander.vic.gov.au

Central Goldfields Shire Council
(03) 5461 0610
www.centralgoldfields.vic.gov.au

Mitchell Shire Council
(03) 5734 6200
www.mitchellshire.vic.gov.au

Hepburn Shire Council
(03) 5348 2306
www.hepburn.vic.gov.au

North Central Catchment Management Authority
(03) 5448 7124
www.nccma.vic.gov.au

Agriculture Victoria
Echuca: (03) 5482 1922
www.agriculture.vic.gov.au

Department of Environment, Land, Water and Planning
136 186
www.delwp.vic.gov.au

Environment Protection Authority
(03) 5442 4393
www.epa.vic.gov.au

Australian Plants Society Victoria
Bendigo: www.apsvic.org.au/aps-bendigo
Echuca: www.apsvic.org.au/aps-echuca-moama

The Field Naturalists' Club of Victoria
www.fncv.org.au

Bendigo Field Naturalists' Club
www.bendigofieldnaturalists.asn.au

FURTHER INFORMATION

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- TTY users phone **133 677** then ask for **1300 363 200**
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Our gardens are good for our physical health and mental wellbeing.

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