

Sustainable Gardening

in the Western Water Region





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Contents

Introduction	2
Garden Design	4
Soil	6
Compost	8
Worm Farming	10
Watering	11
Vegetable Gardening	17
Habitat Gardening	18
Local Plants	24
Garden Escapees	32
Sustainable Plants	31
Lawn Alternatives	38
Chemicals	39
Sustainable Products	40



Sustainable Gardening in the Western Water region is a companion booklet to Home Harvest in the Western Water region: a guide to growing produce. To obtain a copy of Home Harvest contact Western Water.

Introduction

It is easy to create beautiful gardens that suit our local climate and soil and have a low impact on our natural environment. Sustainable gardens are low maintenance as they require less watering, lower application of fertilisers and chemicals, and less mowing and pruning.



Gardening can have a positive benefit to the health of our environment. When we:

- use local plants we provide food and shelter for birds and butterflies
- conserve water in the garden it helps to maintain water levels in our reservoirs
- reduce chemical use in the garden there will be less chemicals in our creeks and streams
- compost our household and garden organic waste it reduces the amount of waste going into landfill and therefore cuts the amount of greenhouse gas produced

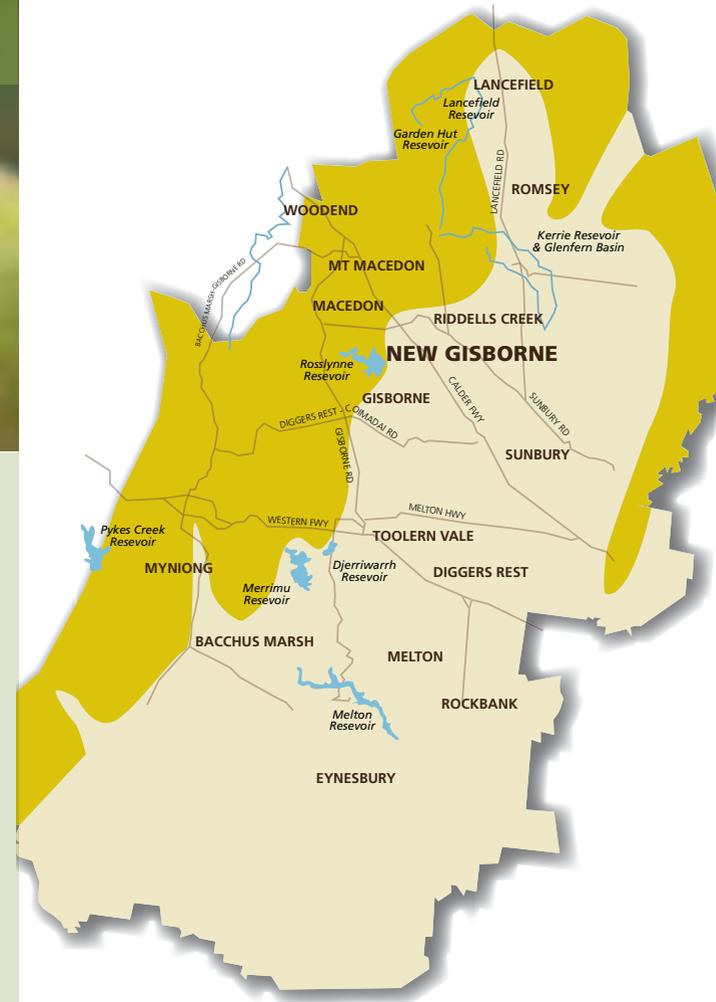
- purchase renewable resources for the garden instead of non-renewable resources, it can help protect our old growth forests and river ecosystems.

Gardening is all about creating a beautiful environment. It is important that we create diverse and interesting gardens for our family and friends to come together to work, play and socialise. This booklet has been designed to provide information and inspiration to create your own sustainable garden in the Western Water Region.

Western Water Bioregions

Bioregions are defined as large land areas, whose particular soil, climate, topography and rainfall patterns give rise to a unique blend of plants and animals. The Western Water region is home to two major Victorian bioregions representing an astonishing array of ecosystems, flora and fauna.

Home gardeners looking to create sustainable gardens can benefit from knowing their bioregion and in turn which plants and animals are locally native to the area, as well as being better able to garden in harmony with their soil, climate and rainfall.



VVP - Victorian Volcanic Plains

Typically the landscape is flat with the occasional extinct volcanic cone protruding. Soils variable but often acidic clay is prominent. The climate on the Plains tends to be dry and windy.

CVU - Central Victorian Uplands

Granite outcrops and soaring hills are typical of the Uplands. Soils are poor however alluvial deposits in the river valleys can produce a more fertile soil. The Central Uplands typically have higher rainfall and cooler temperature.

www.westernwater.com.au/pages/ServiceAreaMap.aspx
www.data.vic.gov.au_bioregionmap

Garden Design

To design a sustainable garden you need to decide what space is available, how much time you have to tend to your garden and what type of garden you would like to create.



Do a site analysis:

- where are your sun/shade areas in summer and winter?
- do you have any wind tunnels?
- do you have any significant slopes?
- are there any drainage issues?
- where are your water points?
- what are your access issues?

formal
contemporary
native
cottage



Think carefully about what you would like to incorporate in your garden.

Do you need a shed for tools, a space for a compost bin, an entertainment area, a cubby house, a clothesline, a shady space for reading, a vegie patch or a space to kick the footy with the kids?

What currently exists? Do you have straight garden beds that would be more interesting curved? Do you have a slab of concrete down the back that could be replaced with raised garden beds and granitic sand paths?

What plants do you have in your garden? Have they been grouped according to their water needs?

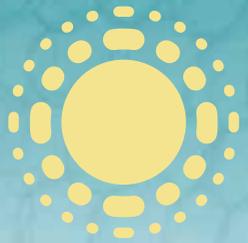
Think about the style of garden you would like to develop.

Do you want a formal garden, a cottage garden, a native garden, succulent beds or an informal riot of colour and textures? Flick through garden magazines. Check out what is working in your neighbours' gardens.

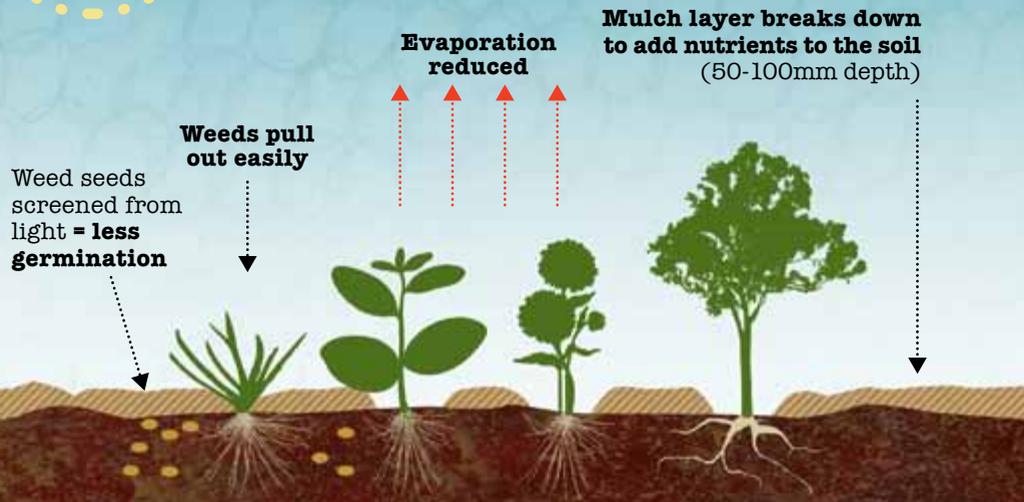
Develop a scaled plan and work out what would comfortably go where. Consider locations that are practical.e.g. a vegie or herb patch near the back door; compost bin down the back in full sun. Decide what needs to be done first. Remember it doesn't all have to be done immediately but rather according to a plan.

Soil

Healthy soil = healthy plants. Soil needs organic matter (leaf litter, compost, manure, grass clippings). Worms break down organic matter to make food for plants, and worm burrows allow air into the soil so that plant roots can breathe.



The Benefits of Mulch



For more information on soil types, mulches and compost visit the Sustainable Gardening Australia website and search Fact Sheets at: www.sgaonline.org.au

Organic mulch can be purchased at Kyneton, Woodend and Romsey Transfer Stations. Bring along your trailer and pick up a load. For prices visit: www.mrsc.vic.gov.au and search 'mulch for purchase'.

Soil Improvement Tips

- Soil should be damp before you add mulch, generally spring is the best time to apply mulch, once the winter rains have soaked in.
- Spreading compost over your soil (before mulching) will encourage worms in your garden. Pea straw and Lucerne are good options if you have not mulched the soil for a long time as they break down quickly, returning nutrients to the soil – excellent for the vegie garden! Bark mulch has very few nutrients so don't rely on it to improve your soil.
- Mulches made from reclaimed green waste are an excellent choice as they save water, are long lasting and feed the soil when they break down.
- Mulch should be applied 50-100mm deep, and will need to be topped up every year. Avoid mulch from rare forest types like Red Gum and recycled wooden pellets.
- Soil improvement (such as pea straw placed on the soil surface) is generally only required for exotic plants, vegetables and fruit trees. Most local and native plants like a relatively infertile soil so they prefer a bush mulch or recycled timber mulch on its own without soil improvement.
- When buying new soil for your garden don't just buy topsoil, buy a soil that is mixed with recycled organics or compost.
- Don't cultivate your soil unless it is very compacted after building

works. Digging destroys the soil structure, which thereby destroys air holes and drainage spaces.

- When watering use a trigger hose with a spray setting so as not to compact the soil as the water hits. The concentrated pressure of the water stream can close up valuable air spaces.

Soils in your region

There are a wide variety of soils across the Western Water region from the alluvial soils of Bacchus Marsh to the deep red soils of Mount Macedon. These soils drain well and are excellent for gardening.

By far the most challenging soil gardeners have to work with are the volcanic clay soils. These soils harden when dry and become 'sticky' and waterlogged when wet. Gardeners can either focus on growing local plants that have adapted to these soils, or improve the soil to enable a wider range of plants to be grown.

To improve a clay soil you will need to work on your topsoil before you plant out. Sprinkle gypsum across the surface like a layer of icing sugar. Add lots of organic matter, such as compost and aged animal manures, to your garden beds. Regularly top up with organic matter to prevent the soil clumping together.

Compost

Compost is what organic material turns into when it has been broken down. Composting your food scraps, grass and garden clippings (organics) can provide you with an excellent source of free garden food and soil improver.

Compost can be made at home or is readily available commercially. Aged animal manures and vermicompost (worm castings) are rich in nutrients and are excellent for use in the home vegetable garden. Compost does not have to be dug into the soil. Unless the soil needs to be improved the

compost can be laid on top. Mulch layers will also break down over time to add nutrients to the soil. Composting organics is one of the best things you can do in your garden – as well as creating great fertiliser, it reduces greenhouse gases, saves water and reduces your waste.

ADD to your compost

- **Fruit and vegie scraps**
- **Coffee grounds**
- **Tea bags**
- **Herbs**
- **Leaves**
- **Egg shells** – crushed
- **Pizza containers**
- **Egg cartons**
- **Vacuum cleaner dust**
- **Onion** – outer skin
- **Finely chopped citrus peel**
- **Grass clippings**
– thin layers 3 to 4cm
- **Chopped prunings**
- **Weeds**
– not bulbs or seed heads
- **Shredded newspapers**

KEEP OUT of your compost

- **Meat and fish scraps**
– they can attract vermin
- **Dairy**
– again they attract vermin
- **Office paper**
– bleached or glossy
- **Weed seeds and bulbs**
– you will only spread them around your garden
- **Bird, dog and cat poo**
– can be a health risk
- **Large tree branches**
– unless you've put them through a chipper
- **Citrus fruit**
– okay in small quantities
- **Diseased plants**
– spreads disease

Building a layered compost heap

1. Build your compost in thin layers (3 to 10cm).
2. Alternate high nitrogen (e.g. food scraps) and low nitrogen (e.g. dry leaves) layers.
3. Aim for a ratio of 3 buckets low nitrogen to 1 bucket high nitrogen.
4. Use a diversity of materials.



This diagram is an example of the different layers. Alternating kitchen and garden waste layers with an occasional layer of manure works well.



Compost bins can be purchased from your local nursery or hardware store.

Worm Farming

Keeping worms in containers and feeding them fruit and vegetable scraps is an excellent way to reduce the amount of organic waste you place into your garbage bin. Worm farms can be purchased from garden centres and come with instructions, bedding material and a bag of worms. There are specific composting worms that eat food scraps only and are different to the earthworms that you find in your garden. Worms produce rich inexpensive garden fertiliser, called worm castings and worm tea, that is great for your garden.

Food – when starting your worm farm worms may not eat for the first weeks after introduction and then slowly build their appetite. If you are adding more food than the worms can eat your worm farm may become smelly as the food is rotting. Be sure to monitor and adjust the amount of food you are giving your worms. Avoid onion, garlic, citrus fruit, bread and meat.

Moisture – worms need to keep their skin cool and moist to breath. Keep a few layers of moist newspaper over the top of your worms before placing a lid on your worm farm. Do not flood your worms and take care not to leave your worm farm uncovered if it rains. If your worm farm is too wet you may have huge numbers of small vinegar flies. Add some torn up newspaper to absorb the excess moisture.

Temperature – worms stop eating if they are cold and will die if they are too hot. They like a temperature between 18-24°C so it is important to keep your worms in a shady place out of direct sunlight in summer and warm in winter.

Using Your Castings and Worm Tea – castings can be mixed directly into the soil around your plants or before you add seedlings to the soil. Because worm castings will never burn plants you can use as much as you like. Worm tea is a strong nutrient boost for your plants and needs to be diluted 1:10 in water before you add to your plants.



Watering

Australia is one of the driest continents on earth. Water use in the garden is a major contributor to high water consumption levels throughout the Western Water region. By improving the soil and using alternative water sources for the garden such as rain water collected in tanks, storm water directed into the garden, grey water and installing efficient irrigation systems along with good garden design, significant water savings can be made.

Water Tips

1. Plant local (indigenous) native plants to reduce water use and maintenance.
2. Group plants according to their water needs
3. Water the base of plants, not the leaves and use mulch to reduce evaporation and run-off.
4. Use a drip watering system or porous hose which cuts wastage by ensuring that the water only goes where it is needed.
5. Avoid micro-sprays. They waste up to 70% water through drift and evaporation and if the soil is mulched, water will not penetrate the soil.
6. Check and clean your irrigation system every Spring.
7. Position irrigation systems so that water isn't wasted on paths, patios, driveways and buildings.
8. Install garden tap timers to reduce over-watering.
9. Use a rain sensor in your garden so that watering doesn't occur automatically when it is wet.
10. Check the weather forecast to avoid watering before rain.
11. Stop water evaporating before it reaches your plant roots by watering in the early morning - subject to restrictions.

BE INFORMED ABOUT WATER RESTRICTIONS

Details on current Water Restrictions and Permanent Water Saving Rules can be found at www.westernwater.com.au or phone **(03) 9218 5400**

Rainwater Tanks

A rainwater tank is a good way to reduce the amount of mains (drinking) water used on your garden. Collecting rainwater from the roof will provide water for the garden that is not subject to the same restrictions as mains water.

Rainwater tanks can also be used to directly supply water to the toilet, bathroom, laundry and kitchen. If mains water is connected to a rainwater tank the water must be used in compliance with current water restrictions for garden use. Victorian Government rebates are available for rainwater tanks under some circumstances. Visit the Western Water website and search 'rebates'.

The ideal tank size will depend on what the water will be used for, the size of your roof and local rainfall patterns. The larger the tank the more expensive it will be, and obviously the more room it needs.

A smaller tank might be enough to provide 'opportunity' water for occasional use, but is not likely to last through the summer. For greater certainty of supply, and to reduce your water use overall, a larger tank is needed. A tank holding 3000 litres or more is ideal for summer watering. Also consider whether a pump will be needed to move water around your garden, as there will be less water pressure coming from a rainwater tank.



Passive Water Sensitive Urban Design (WSUD)

Before urbanisation rainfall would slowly percolate into the soil before seeping into our waterways through the ground water table. This process slowed down the rate of flow and improved the quality of water by removing excess nutrients and pollutants. In modern times much of our urban landscape has hard surfaces and is impervious to water. Consequently when it rains a large volume of water rapidly enters our stormwater system carrying pollutants, affecting flow rates and often resulting in the erosion of river beds and banks.

With thoughtful consideration and careful planning you can direct a considerable amount of water onto your garden thereby maximising the use of this valuable resource and reducing the volume of stormwater entering our waterways whilst improving its quality.

Porous Paving

If you are putting down paving on pathways, driveways, or courtyards, consider a porous alternative. Commercial concrete grid and modular plastic blocks are available. Consider laying your pavers with spaces in between that will enable water to percolate into the soil. Granitic sand and gravel paths require more maintenance than pavers, but they look fantastic.

Landscaping

By introducing gentle slopes across the surface of patios, driveways and paths you can direct water onto your garden beds.

By creating a small swale (vegetated channel) you can also direct rainwater away from paved areas and onto your garden.

Consider directing runoff into a small wetland that can become a wonderful frog habitat.



spacing
between pavers
enables water
to percolate
into the soil

For further information
on WSUD visit: www.melbournewater.com.au/wsud

Raingardens



A rain garden is a shallow depression in the ground, natural or man made, that is designed to hold rain that would otherwise turn into stormwater runoff.

Photos courtesy of Melbourne Water

Raingardens are a great way to utilise stormwater, and are often planted with species that are used to extreme dry and wet periods. Raingardens look great and are fantastic for the environment, especially our waterways, as they help to clean and slow the rate of stormwater entering our local rivers and creeks. Raingardens can be built in any shape or size, have different layers of sand, and often have an inorganic mulch like small pebbles or stones (available from most gardening and DIY stores).

Raingardens should be located in a relatively flat place where it will receive runoff. You want to make sure runoff flows towards your raingarden site. However, raingardens are NOT a solution to wet areas with standing water. The garden must have good drainage so that water can soak in within 24 hours after rain. Your raingarden should be at least 30cm (300mm) away from the house, receive full or partial sunlight and not be constructed over a septic system.

How a raingarden works

1. Rain and stormwater wash pollution into raingarden
2. Water spreads throughout raingarden where plants use up nutrients
3. Water seeps down through layers of raingarden trapping sediments and pollutants
4. Filtered stormwater is collected in pipes and flows to local waterways.

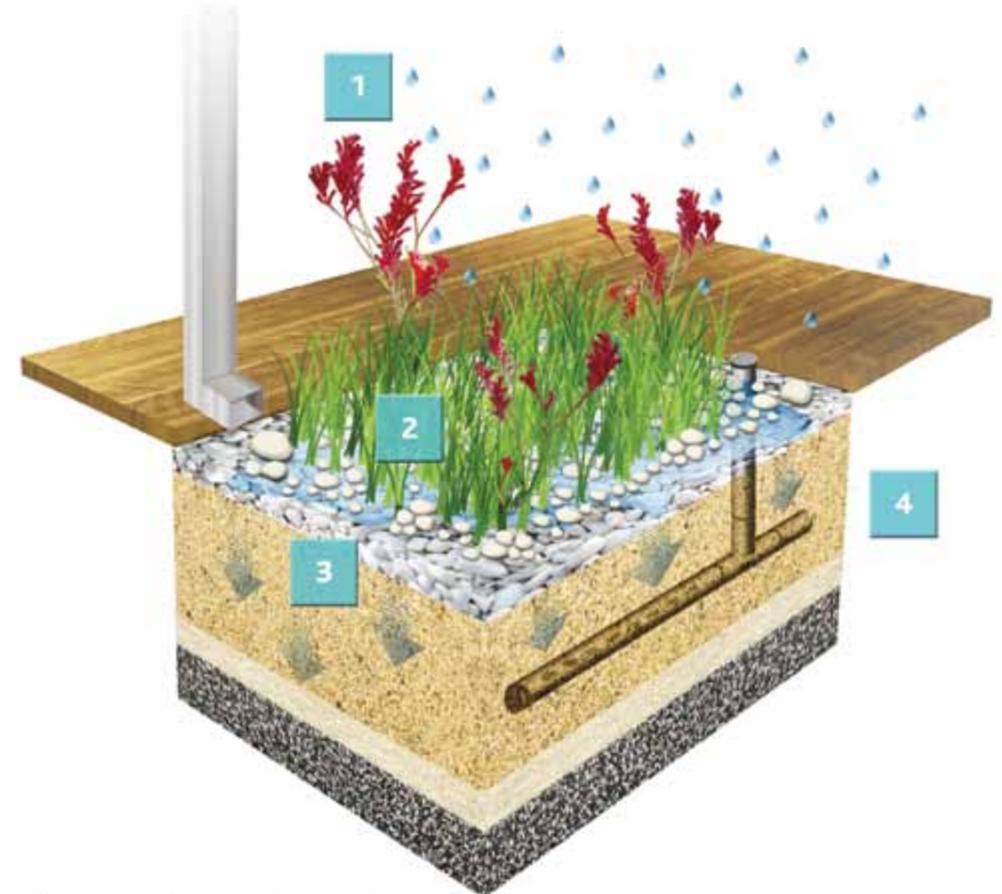


Diagram courtesy of Melbourne Water

For more information of raingardens visit:
www.melbournewater.com.au/raingardens

Greywater

Greywater is domestic wastewater, excluding toilet waste which is sometimes referred to as blackwater. Providing care is taken with the products used (eg. low phosphorous and sodium washing powders) grey water from the laundry (rinse cycles) and bathroom can be used directly in the garden. Untreated greywater can be diverted on a temporary basis to sites within your garden. It can contain a number of micro-organisms such as bacteria and viruses, as well as chemicals from cleaning agents. The continual discharge of greywater can potentially cause problems for your garden. An alternative is to collect greywater in a bucket and apply the water to areas of greatest need. To avoid potential health risks greywater from the bathroom and laundry must be collected and used according to EPA and Council regulations.

For further information on greywater re-use, including case studies from around Melbourne, visit:

www.museum.vic.gov.au

and search "Gardening".

www.epa.vic.gov.au

www.sgaonline.org.au

Do:

- Only use wastewater from baths, showers, hand basins and washing machines (final rinse water).
- Only use greywater on the garden and rotate the areas you water.
- Only apply water that the soil can absorb.
- Wash your hands after watering with greywater.

Don't:

- Apply to produce plants
- Use greywater that has any faecal contamination, for example wastewater used to launder nappies.
- Use kitchen wastewater (including dishwashers) due to high concentration of food wastes and chemicals.
- Store greywater for more than 24 hours.
- Let children or pets drink or play with greywater.
- Allow greywater to flow from your property or enter stormwater systems.

STOP:

Using greywater during wet periods.

Using greywater if odours are generated and plants do not appear to be healthy.

Vegetable Gardening

Growing fruit and vegetables commercially uses a large amount of energy and chemicals for heating and cooling, spraying weeds and pests and transporting produce. Fruit and vegetables begin to lose their vitamins as soon as they are picked. After 5 days some have lost 40-50% of their vitamins. Growing your own produce is easier if you have taken the time to improve your soil. Home grown fruit and vegetables are healthy, convenient and an essential part of any sustainable garden.



To learn more about growing your own food, pick up a copy of the Home Harvest booklet from Western Water which has great tips on how to get your home veggie garden going.

For further information of growing produce visit: www.sgaonline.org.au

Habitat Gardening

Attracting native animals to your garden can add extra colour and interest. It can assist pest control by attracting insect predators and contribute to keeping native animal populations viable by providing a pathway for them to commute between bushland areas. All you have to do is provide your garden visitors with food, water and shelter.

BIRDS

Birds are beautiful creatures that are a joy to watch in any garden. In addition, many birds feed on plant pests such as aphids and scale, contributing to non-chemical pest control in the garden! To attract birds to your garden consider the following points.



Red-browed Finch

Supurb Fairy-wren

Eastern Yellow Robin

Kookaburra

Shelter: birds need shelter from predators such as cats and predatory birds. Help protect your feathered visitors by providing prickly or dense plants at various levels in your garden.

Water: A reliable water source, particularly in summer will attract birds to your garden. If you install a birdbath, place it near dense or prickly plants to provide birds with protection from predators.

Food:
Small birds – Silvereyes, Blue Wrens, Finches, Fantails and Thornbills forage in the lower levels of the garden. They feed on insects and help to keep plant pest numbers down. Native grasses such as Tussock-grass (*Poa labillardierei*), Kangaroo-grass (*Themeda triandra*) and Wallaby-grass (*Rytidosperma spp.*) provide an important source of food for grass seed-eating birds such as Red-browed Finches and Crested Pigeons.

Honey Eating birds – Honeyeaters, Red Wattlebirds and Eastern Spinebills are specialist nectar feeders. They use their brush-like tongues to collect nectar from the flowers of plants such as the Common Correa (*Correa reflexa*), Cat's Claw Grevillea (*Grevillea Alpina*) and the Silver Banksia (*Banksia marginata*). They also like to eat insects as a source of protein.

Parrots – Rosellas and Lorikeets feed on Eucalypt flowers and seeds, while Cockatoos and Galahs prefer the seeds of Sheoaks (*Allocasuarina verticillata* or *A. littoralis*) and Eucalyptus spp. Red-rump grass parrots feed on grass seeds.

Large birds – Magpies, Kookaburras and Butcherbirds feed on larger insects, small lizards and skinks.

LIZARDS

Most lizards found in the garden are little Grass Skinks that feed on insects and larvae. You may be fortunate enough to encounter a larger lizard such as a Blue-tongue, but these beautiful creatures are not as common as they used to be.



Blue-tongue lizard

To create lizard habitat in your garden, provide the following:

- Tussock grass and hiding spots between rocks and logs for protection.
- A protected sunny spot on a rock, log or brick path.
- Natural leaf mulch to support the insects and larvae they feed on. Avoid using snail bait as Blue-tongue lizards will eat the poisoned snails - use a beer trap instead.

BUTTERFLIES

Butterflies are a welcome addition to any garden and with a few simple design principles are easily attracted.



Australian Painted Lady

Nectar traps: Colourful, massed flower beds draw butterflies in and keep them happily moving through the garden. They are attracted to a large range of coloured flowers, in particular blue, yellow and red.

Flowers: Simple, flat flowers make it easier for butterflies to extract nectar. Double flowers (multiple layers of petals) are difficult for butterflies to feed from, but simple flowers like Daisies, Pelargoniums (*Pelargonium australe*), Bluebells (*Wahlenbergia communis*), Saltbush plants (*Atriplex semibaccata*), and Pea flowers (*Bossiaea prostrata*) are more suitable.



Sweet Bursaria (*Bursaria Spinosa*)

Position: Butterflies use the early morning sun to warm themselves and retreat to cooler, shadier places during the heat of the day. Providing a sheltered position that combines warmth and protection is ideal. Also consider adding flat rocks for butterflies to bask and to court each other. Mud puddles or a dish of damp sand can provide them with water and salts.

Host plants: Incorporate host plants for butterflies to lay eggs. Caterpillars are generally small and shy, and won't devastate the garden. Popular indigenous plants include Bursaria (*Bursaria spinosa*) and Mat-rush (*Lomandra longifolia*), and grasses such as Kangaroo-grass (*Themeda triandra*), Wallaby-grass (*Rytidosperma* spp.) and Tussock-grass (*Poa labillardierei*).

FROGS

What could be more interesting than watching tadpoles grow into frogs and then being serenaded by their calls at night? Frogs also help control pests in your garden as they eat flies, mosquitoes, slugs, snails and even spiders.

In order to enjoy frogs in your garden you will need to provide a pond with certain features, but you'll also need to live near a frog population to attract them from.



Water Ribbons

A frog pond can incorporate one or all of the requirements for each part of the frogs' lifecycle:

- Damp bog zone for adult frogs.
- Shallow water zone for laying eggs.
- Deep zone of at least 30cm for tadpoles.

Your frog garden should also have:

- Soft, thick vegetation that droops into the water, for shelter and protection.
- Rocks, logs, bark and leaf litter.
- Mostly shade.
- Sloping sides for frogs to crawl out.
- Been made from non-toxic materials (concrete ponds will need to be sealed and plastic ponds be made of food-grade plastic).

- Food plants for tadpoles (and they will eat them, so don't put your prize waterlily in there).

Frog-friendly plants:

Tufting plants – Pale Rush (*Juncus pallidus*) or Black-anther Flax-lily (*Dianella admixta*).

Bog plants - Sedges (*Carex* spp.), Club-rushes (*Ficinia* spp.), Rushes (*Juncus* spp.).

Water plants – Common Nardoo (*Marsilea drummondii*), Purple Loosestrife (*Lythrum salicaria*), Tassel Sedge (*Carex fascicularis*) and Water Ribbons (*Triglochin procera*).



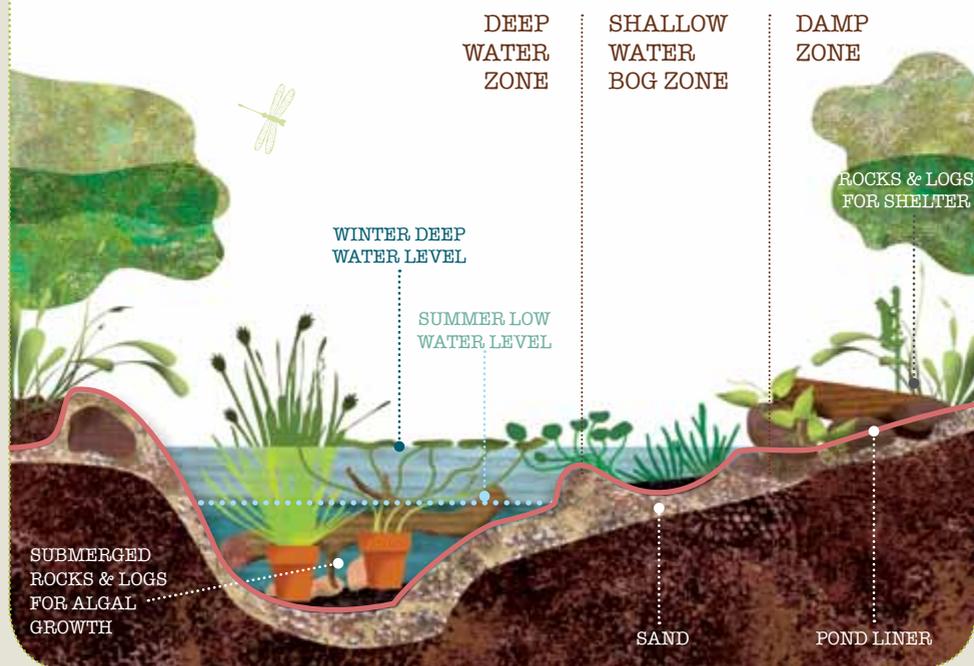
Perons Tree Frog

replace with...pobblebonk, spotted marsh Common Froglet, Brown Treefrog or Growling - pic dependent

Things to avoid:

- Fish – most fish will eat tadpoles.
- Fountain pumps – tadpoles and eggs can be killed by them.
- Cats and dogs – protect the frog area of your garden with sharp, spiky plants.
- Chemicals – frogs eat insects, so you don't want to spray them. Frogs are very sensitive to chemicals which can be absorbed through their thin skin.
- Allowing floating plants such as Duckweed or Azolla to cover the top of the pond. This can result in reduced oxygen levels for tadpoles.
- Cleaning out the pond too often – tadpoles need some material to be breaking down in the pond water to provide food for them.
- Collecting tadpoles from the wild is illegal in most parts of Australia.

The elements of a frog-friendly garden pond or frog bog



MAMMALS

As the human population grows urban development has replaced natural habitat. Our unique native animals have either adapted or suffered a dramatic decline due to loss of habitat, traditional food, disruption of breeding cycles or become victims of road kill. While you may be incredibly lucky to encounter a koala or echidna, you are more likely to have possums and bats as regular visitors.



Brush-tail Possum

Possums: If you would like to attract possums, or particularly the more vulnerable animals such as the Sugar Glider to your garden, you could plant Banksias, Callistemons, Wattles, Teatrees and Eucalypts. Put in some appropriate nesting boxes to provide a safe, warm haven. It is important not to feed wildlife as human food can be dangerous and cause serious dietary imbalance. Common Brush Tail and Ringtail Possum populations have adapted magnificently to the urban environment. With an abundance of highly nutritious food and great nesting sites in the roofs of buildings, their populations are higher in the urban areas than in the bush.

If possums are becoming a problem you may try the techniques recommended by the Department of Sustainability and Environment (DSE):

- Build a floppy fence around the garden. Use 80cm wide, heavily

galvanised chicken wire, bury the bottom 20cm and support the remainder on vertical lengths of flexible, high-tensile fencing wire. Bend the wire to curve the upper section outwards. When the possum attempts to climb the fence it will bend over and then spring back.

- Use collars (strips of hard plastic) to protect fruit trees.
- Repellents – some commercial products are available aimed at deterring possums from damaging plants through smell, taste and/or feel which are thought to be unpleasant to possums. Some people use home made chilli and garlic sprays. A study by Deakin University showed that these repellents have mixed results.
- For more information, visit www.dse.vic.gov.au and search 'possums'.

Western Water region Plant Guide

The following list of species make great plants for gardens in the Western Water region as they are indigenous to the area and provide habitat for native wildlife. Indigenous plants are also the most waterwise plants for your garden as they have adapted to the local climate and soil conditions. See the list of nurseries stocking plants indigenous to the Western Water region at the back of this booklet for a more comprehensive range of local species.



Plant Selection

Plant selection is a very important component of the garden design which affects how your garden looks and also how it contributes to the wider environment. Factors that will guide plant selection for your garden include soil type, drainage patterns, aspect (i.e. full sun, part shade, and shade) and

local climate. Also consider what you are planting for, ie. a shade tree for summer or something that will produce fruit. For best results, plants should be grouped together according to their sun/shade, water and fertiliser needs. Visit a garden centre to find a plant to suit the position you have in mind, not the other way round.

Local (indigenous) plants are well suited to the local soil and climate conditions, do not require large amounts of nutrients and once established, require little water. There are many beautiful plants indigenous to the Western Water region that are featured in this section of the booklet.

There is also a great range of native and exotic plants available in garden centres but you should always avoid using plants that are known environmental weeds. Two thirds of the weeds found in Victoria's natural environment (parks, and along waterways and coasts) are actually 'garden escapees'. Their seeds are spread from gardens by the wind, birds

and animals or by people dumping garden cuttings into the bush and waterways. Weeds compete with our local plants for light, nutrients and water. Before too long they can replace local plants, leaving native animals without food or habitat. As gardeners we need to know which plants can escape. Refer to page 33 for a list of plants considered to be 'garden escapees' in the Western Water region area and consider replacing these with a less invasive plant.

Visit the Macedon Range Flora website for detailed information on indigenous plants and weeds of the Ranges. www.sites.google.com/sites/macedonflora/home



KEY:

Bioregions:

- VVP** Victorian Volcanic Plains
- CVU** Central Victorian Uplands

Suitable As Hedge HHH

Height \updownarrow

Width \leftrightarrow

Full Sun

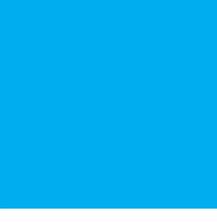
Part Shade

Full Shade

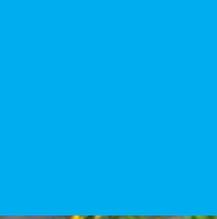
Drought Tolerant

Needs Seasonal Water



GROUND COVERS				SMALL PLANTS			
NAME	REQUIREMENTS	FEATURES	REGION	NAME	REQUIREMENTS	FEATURES	REGION
 <p>Ruby Saltbush <i>(Enchlyena tomentosa)</i></p>	 ↓ prostrate ↔ 1m Well-drained soil.	Hardy plant great for rockeries.	VVP	 <p>Tufted Bluebell <i>(Wahlenbergia spp.)</i></p>	 ↓ 30cm ↔ 15cm Moist, well-drained soil.	Looks great in containers or when planted amongst grasses.	
 <p>Kidney Weed <i>(Dichondra repens)</i></p>	 ↓ prostrate ↔ 30cm Well-drained soil.	An excellent lawn substitute in moist, shady areas where traffic is very light.		 <p>Cut-leaf Daisy <i>(Brachyscome multifida)</i></p>			
 <p>Running Postman <i>(Kennedia prostrata)</i></p>	 ↓ prostrate ↔ 2m Accepts most soils, but avoid poor drainage.	Attractive as a ground cover, in tubs, hanging baskets, cascading over rocks, walls and under trees.		 <p>Sticky Everlasting <i>(Xerochrysum viscosum)</i></p>	 ↓ 60cm ↔ 30cm Well-drained soil.	Prune hard in autumn to extend life. Spectacular planted in drifts.	
 <p>Native Violet <i>(Viola hederacea)</i></p>	 ↓ prostrate ↔ 1m Well-drained soil.	Ideal for shaded areas of the garden.		 <p>Common Everlasting <i>(Chrysocephalum apiculatum)</i></p>	 ↓ 130cm ↔ 60cm Well-drained soil.	An excellent rockery plant with contrasting silver foliage. Prune regularly to encourage new growth.	VVP
 <p>Bidgee-widgee <i>(Acaena novae-zelandiae)</i></p>				 <p>Billy Buttons <i>(Pycnosorus globosus)</i></p>	 ↓ 30cm ↔ 50cm Prefers moist, heavy soils.	Mass plantings look great.	VVP
 <p>Creeping Saltbush <i>(Artiplex semibaccata)</i></p>			VVP	 <p>Austral Stork's Bill <i>(Pelargonium australe)</i></p>	 ↓ 50cm ↔ 40cm Prefers well-drained soil.	Great in rockeries. Aromatic leaves.	



CLIMBERS				SMALL SHRUBS			
NAME	REQUIREMENTS	FEATURES	REGION	NAME	REQUIREMENTS	FEATURES	REGION
 <p>Purple Coral Pea (<i>Hardenbergia violacea</i>)</p>	 ↑↓ prostrate or climber ↔ 3m Well-drained soil.	Climbing plant useful as a screening plant. Grows well in pots.		 <p>Common Correa (<i>Correa reflexa</i>)</p>			
 <p>Small-leaved Clematis (<i>Clematis microphylla</i>)</p>	 ↑↓ prostrate, ↔ 3m Well-drained soil.	A fast growing climber useful for drier sites. Attractive fluffy seed heads.		 <p>Hop Goodenia (<i>Goodenia ovata</i>)</p>	 HHH ↑↓ 2m ↔ 1m Prefers damp soil.	Fast growing. Responds well to pruning.	
				 <p>Austral Indigo (<i>Indigofera australis</i>)</p>	 ↑↓ 2m ↔ 2m Well-drained soil. Lime tolerant.	Needs regular pruning for shaping.	
GRASSES & TUSSOCK PLANTS							
NAME	REQUIREMENTS	FEATURES	REGION				
 <p>Common Tussock-grass (<i>Poa labillardierei</i>)</p>	 ↑ 50cm ↔ 40cm Adapts to moist or slightly dry soil.	Fast-growing grass. Lawn alternative. Attractive contrasting plant.		 <p>Gold Dust Wattle (<i>Acacia acinacea</i>)</p>	 HHH ↑↓ 2m ↔ 2m Adaptable to most soils.	A good low screening plant. Suitable for large pots.	
 <p>Spiny-headed Mat-rush (<i>Lomandra longifolia</i>)</p>	 ↑↓ 1m ↔ 1m Moist, well-drained soil.	A hardy, structural plant.		 <p>Common Cassinia (<i>Cassinia aculeata</i>)</p>			
 <p>Black-anther Flax-lily (<i>Dianella admixta</i>)</p>	 ↑ 80cm ↔ 50cm Well-drained soil.	Hardy, easily maintained plant. Ideal for growing close to trees.		 <p>Large-leaf Bush-pea (<i>Pultenaea daphnoides</i>)</p>			



TALL SHRUBS			
NAME	REQUIREMENTS	FEATURES	REGION
 <p>Sweet Bursaria (<i>Bursaria spinosa</i>)</p>	 <p>↑ 10m ↔ 5m</p> <p>Well-drained soil. Excellent for dry sites.</p>	Bushy forms make excellent screening plants.	
 <p>Prickly Moses (<i>Acacia verticillata</i>)</p>			



TREES			
NAME	REQUIREMENTS	FEATURES	REGION
 <p>Blackwood (<i>Acacia melanoxylon</i>)</p>	 <p>↑ 7m+ ↔ 5m</p> <p>Prefers deep, moist soil, but adaptable. Will tolerate dry conditions once established.</p>	A long-lived tree providing good screening and shade.	
 <p>Silver Wattle (<i>Acacia dealbata</i>)</p>	 <p>↑ 10m ↔ 6m</p> <p>Prefers moist, well drained soil.</p>	Large, spreading tree. Fast growing.	
 <p>Hazel Pomaderris (<i>Pomaderris aspera</i>)</p>	 <p>↑ 6m ↔ 3m</p> <p>Prefers well-drained, moist soil.</p>	Hardy, spreading small tree. Quick growing.	

Sustainable Plant List

These plants are not indigenous but are good for the garden as they are all hardy under variable conditions but are not known to go weedy.

COMMON NAME	BOTANICAL NAME	FORM
Catmint	<i>Nepeta cultivar</i>	Groundcover
Creeping Boobialla	<i>Myoporum parvifolium</i>	Groundcover
Salvias	<i>Salvia species</i>	Herb
Australian Cranesbill	<i>Geranium solanderi</i>	Herb
Flax	<i>Phormium cultivars</i>	Strap Foliage
Agave	<i>Agave species</i>	Strap Foliage
Yucca	<i>Yucca species</i>	Strap Foliage
Kangaroo Paw	<i>Anigozanthos sp.</i>	Strap Foliage
Lavender Cotton	<i>Santolina chamecyparissus</i>	Perennial
Penstemon	<i>Penstemon cultivars</i>	Perennial
Correa	<i>Correa cultivars</i>	Small Shrub
Hebe	<i>Hebe 'Blue Gem'</i>	Small Shrub
Heliotrope	<i>Heliotropium arborescens</i>	Small Shrub
Rock Thryptomene	<i>Thryptomene saxicola</i>	Small Shrub
Rosemary	<i>Rosemarinus officinalis</i>	Small Shrub
Cushion Bush	<i>Leucophyta brownii</i>	Small Shrub
Emu Bush	<i>Eremophilia species</i>	Medium Shrub
Coastal Rosemary	<i>Westringia fruticosa</i>	Medium Shrub
Plumbago	<i>Plumbago auriculata</i>	Medium Shrub
Weeping Bottlebrush	<i>Callistemon viminalis</i>	Medium Shrub
Tea Tree	<i>Leptospermum 'Burgundy'</i>	Tall Shrub
Grevillea	<i>Grevillea 'Ivanboe'</i>	Tall Shrub
Bottlebrush	<i>Callistemon 'King's Park Special'</i>	Small Tree
Crepe Myrtle	<i>Lagersteromia 'Yuma'</i>	Small Tree
Willow Myrtle	<i>Agonis flexuosa</i>	Medium Tree

Wester Water region Garden Escapees

The following list of species pose a significant threat to the natural values within the Wester Water region. These species can smother, choke, replace and out-compete native vegetation. Please do not plant these species. If you have them in your garden, we encourage you to remove them.



Privet (*Ligustrum spp.*)

WEED CONTROL TECHNIQUES

Hand Pull



hand removal of plant, most suitable for small plants and seedlings.

Cut & Paint



cut stem and immediately paint an appropriate herbicide to the stump.

Solarisation



covering plants with a plastic sheet with buried edges for a four-week period. This allows the heat from the sun to kill off the plants underneath.

Mulch



smothering plants with a thick layer of appropriate mulch. Beware that the chosen mulch is weed-free.

Scrape & Paint



scrape the outer layer of an area of the plant stem and immediately apply an appropriate herbicide. Most appropriate on vine weeds.

Spray



apply herbicide to the surface of the foliage.

Drill & Fill



use a drill or other small tool to cut into the outer bark layer and apply an appropriate herbicide to the soft layer underneath the bark.

DISPERSAL KEY:

Wind



Water



Birds



Animals



Dumped Garden Waste



Contaminated Soil



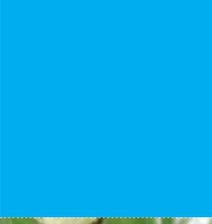
Vehicles



If using chemicals to control weeds remember:

- Use chemical control only if non-chemical control is unsuitable.
- Do not spray in high temperatures or if rain is forecast within 24 hours.
- Spray when plants are actively growing.
- Some chemicals require a Chemical Users Permit.
- Always read the label on the product and follow the directions for application rates, safety procedures and handling.

CLIMBERS AND CREEPERS				GRASSES AND HERBS			
NAME	FEATURES	DISPERSAL	CONTROL	NAME	FEATURES	DISPERSAL	CONTROL
 <p>Blue Periwinkle (<i>Vinca major</i>)</p>	<p>Evergreen creeper that forms dense mats that smother local plants.</p>	   	   	 <p>Gazania (<i>Gazania spp.</i>)</p>	<p>Perennial herb to 30cm. Variable flower colours, spring-autumn.</p>	  	   
 <p>Morning Glory (<i>Ipomoea indica</i>)</p>	<p>Fast growing climber that smothers bushland.</p>	 	  	 <p>Forget-me-not (<i>Myosotis spp.</i>)</p>	<p>A very weedy herb that grows from 20-50 cm tall to cover bushland with a blue carpet of flowers.</p>	   	 
 <p>Bluebell Creeper (<i>Billardiera heterophylla</i>)</p>	<p>Evergreen climber grows to 2-3m tall and strangles plants it grows over.</p>	  	   	 <p>Agapanthus (<i>Agapanthus praecox ssp. Orientalis</i>)</p>	<p>Evergreen herb in leafy clumps to 60cm. White or mauve flowers Nov-Feb.</p>	 	 
 <p>English Ivy (<i>Hedera helix</i>)</p>	<p>Fast climber can grow to 30m up trees or along the ground to form dense carpets.</p>	  	   	 <p>Bulbil Watsonia (<i>Watsonia meriana cv Bulbilifera</i>)</p>	<p>Leaves and flowers die back each year only to grow back in a dense clump.</p>	   	 
 <p>Wandering Creeper (<i>Tradescantia albiflora</i>)</p>	<p>Evergreen creeper that forms dense mats to 60cm deep.</p>	   	   	 <p>Fountain Grass (<i>Pennisetum setaceum</i>)</p>	<p>Can grow up to 1m tall. Distinctive flowerheads from Jan-April.</p>	   	 
 <p>Cape Ivy (<i>Delairea odorata</i>)</p>	<p>Perennial climber and dense ground cover to 30cm thick.</p>	   	   	 <p>Pampas Grass (<i>Cortaderia spp</i>)</p>	<p>Huge perennial grass growing to 2-6m tall with large cream flower plumes Mar-May.</p>	  	 

SHRUBS				SHRUBS			
NAME	FEATURES	DISPERSAL	CONTROL	NAME	FEATURES	DISPERSAL	CONTROL
 Montpellier Broom (<i>Genista monspessulana</i>)	Seeds highly poisonous.			 Prickly Pear (<i>Opuntia spp.</i>)	Succulent up to 5m. tall. Large spines. Edible fruit.		
 English Broom (<i>Cytisus scorpiarius</i>)	Large shrub to 4m usually loses leaves over winter. Yellow flowers Oct-Dec.			 Hawthorn (<i>Crataegus monogyma</i>)	Deciduous thorny shrub to 10m tall. White flowers Oct-Dec. Red berries.		
 English Holly (<i>Ilex aquifolium</i>)	Evergreen shrub with distinct wavy leaves. Bright red berries in autumn.						
 Mirror Bush (<i>Coprosma repens</i>)	Evergreen shrub to 8m tall. Shiny green leaves.			 Monterey Pine (<i>Pinus radiata</i>)	Aromatic tree with needle leaves, often sold as a Christmas tree.		
 Cotoneaster (<i>Cotoneaster spp.</i>)	Evergreen, multi-stemmed shrub with white flowers Oct-Jan. Clusters of bright red berries.			 Sweet Pittosporum (<i>Pittosporum undulatum</i>)	Dark green leaves, small creamy-white flowers. Distinctive, yellow fleshy fruit.		
 Sticky Wattle (<i>Acacia bowittii</i>)	Hardy and fast growing this Gippsland wattle can escape into bushland.			 Cootamundra Wattle (<i>Acacia baileyana</i>)	Bushy tree to 10m tall. Distinctive grey leaves. Flowers from Jun-Sept.		
TREES				TREES			
NAME	FEATURES	DISPERSAL	CONTROL	NAME	FEATURES	DISPERSAL	CONTROL

Lawn Alternatives

Traditional turf lawns are often high water users. However if you do prefer a traditional lawn there are drought tolerant mixes available. These may include Kikuyu and Couch but should be avoided if you live next to a bushland reserve or waterway. If you are looking for an attractive lawn alternative, that can withstand periods of low water supply and less ongoing maintenance, you could consider a range of native grasses or plants depending on the look you are trying to achieve.

Native grasses – one of the most successful native grasses for creating the look of a traditional lawn is the native Weeping Grass (*Microlaena stipoides*). It can be mown regularly and will grow well in a wide range of soils. Weeping Grass is drought, frost and shade tolerant, but does not cope with heavy traffic or dog urine. Excellent for a front lawn. Can be grown from seed or plugs.



Weeping Grass

Ground cover plants - use ground cover plants that form dense mats, don't require mowing and perform well in shade. Examples include: Climbing Saltbush (*Einadia nutans*), Kidney Plant (*Dichondra repens*) and Native Mint (*Mentha diemenica*).



Kidney Plant

Native wildflowers – planting out a mass of native wildflowers to create a meadow look can be spectacular, particularly in spring and summer. This works very well as a front lawn alternative. Examples include: Tufted Bluebell (*Wahlenbergia communis*), Chocolate Lily (*Arthropodium strictum*), and Bulbine Lily (*Bulbine bulbosa*).



Tufted Bluebells & Straw Flowers

Chemicals



Pesticides, herbicides and fertilisers can be transferred from our home gardens to the natural environment. Sprays can drift in the wind and powders wash into waterways. Strong pesticides and herbicides can kill native insects, plants and animals, while the application of too much fertiliser may lead to extra nutrients in our waterways, contributing to blue-green algae outbreaks harmful to animals and sometimes people.

CHEMICAL TIPS FOR PREVENTION

- Healthy plants can protect themselves, provided they have a healthy soil, are mulched, not exposed to synthetic fertilisers and are regularly watered.
- Many insects in the garden such as ladybirds are good guys that will eat pests such as aphids. If you overuse chemicals you may also kill beneficial insects and make your pest problem harder to control.
- Check the micro-climate. Many fungal diseases occur when there is too much shade or poor ventilation due to plants being too close together.
- Accept that some losses and blemishes are normal in a chemical free garden.
- Practice a range of techniques – plant companion plants, manually

remove weeds and encourage biodiversity in the garden.

- Sharpen your pruning tools so cuts are clean and bark isn't torn. Prune diseased or damaged wood from trees before they cause bigger problems
- Clean your secateurs by wiping the blades thoroughly with eucalyptus oil before moving between plants.
- Home remedies are often very effective. E.g. Milk spray can be used to combat powdery mildew; beer traps for slugs/snails; or linseed oil for earwigs.
- Check your garden regularly for pests.



Ladybird eating mould

Sustainable Product Selection

When buying products for the garden we often don't think about where they have come from. For example, River Red Gum trees grow in woodlands which are part of an intricate ecosystem that supports native fauna – harvesting this product is unsustainable. With some thought we can support more environmentally sound practices through the products we choose for our gardens and homes.

ALTERNATIVE PRODUCT TIPS

1. Visit www.goodwoodguide.org.au to find out which timbers are sustainable. While some outdoor furniture companies claim teak is plantation-harvested in Asia, this magnificent tree is a rainforest plant that cannot be grown in plantations.
2. Grass trees, tree ferns and native orchids may have been sourced illegally from the forest. Plants should be sold with a government tag stating they have been legally collected.
3. Make sure you ask where mulch has come from as some are sourced from the logging of old growth forests or contain weed seeds.
4. Ceramic pots fired using gas and produced locally have a lower environmental impact than those fired using coal or wood and transported from overseas.

5. River pebbles may have been sourced from waterways in developing countries such as China and India. This destroys the local ecosystem and causes silt to wash down stream to communities who rely on the river for drinking and washing. Use locally crushed rock and granitic gravel.

SUSTAINABLE SHOPPING TIPS

1. Ask where a product comes from and avoid buying unsustainable products.
2. Use sustainable products such as secondhand bricks, recycled timbers, or recycled plastic sleepers.
3. Take your own plastic bag or canvas bag to a garden centre to carry home products and plants.
4. Reuse your plastic plant pots or return them to a garden centre pot recycling bin.

Reference and further advice

For advice on indigenous plants:

Western Plains Flora

628 Wildwood Road, Wildwood
Ph: 03 9740 3178

Wild Nursery

42 Anslow St, Woodend
Ph: (03) 5427 2788

For ecological and indigenous plant advice contact:

Atlas Ecology,
P.O. Box 718, Woodend
Ph: (03) 5427 4303
Email: info@atlasecology.com.au

Useful links:

Department of Environment & Primary Industries
www.depi.vic.gov.au

Friends of the Macedon Ranges Inc.
www.sites.google.com/site/macedonrangesfriends

Riddells Creek Landcare
www.riddellscreeklandcare.org.au

Woodend Landcare
www.woodendlandcare.wordpress.com

Macedon Range Flora:
www.sites.google.com/site/macedonflora/

Macedon Ranges Shire Council environment pages
www.mrsc.vic.gov.au

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

Australian Plants Society (Keilor Plains Group)
www.apskeilorplains.org.au/

Sustainability Victoria
www.sustainability.vic.gov.au

Weed Society of Victoria
www.wsvic.org.au

Wildlife Victoria
www.wildlifelifevictoria.org.au

Further reading:

APS Keilor Plains Group (2012) **Plants of Melbourne's Western Plains: A Gardener's Guide to the Original Flora.**

Davis, A & Kemp, B. (1984) **Native Plants of the Macedon Range - A Field Guide. Macedon Ranges Conservation Society.**

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Costermans, L.F (1933) **Native Trees and Shrubs of South-Eastern Australia**, Lansdowne Publishing Pty Ltd, Sydney.

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Sustainable
Gardening
in the Wester Water Region