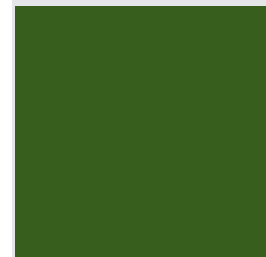


Sustainable Gardening



in East
Gippsland &
Wellington



Contact us

The shires of Wellington and East Gippsland are committed to contributing to the achievement of sustainability within Gippsland and promoting sustainability to others.

Wellington Shire Council - Sale Office

Port of Sale Civic Centre, 70 Foster Street
Residents Information Line: 1300 366 244 Fax: (03)5142-3499
Email: enquiries@wellington.vic.gov.au Web: www.wellington.vic.gov.au

Wellington Shire Council - Yarram Office

Council Office, 156 Grant Street
Phone: (03) 5182 5100 Fax: (03)5182-6264
Email: enquiries@wellington.vic.gov.au Web: www.wellington.vic.gov.au

East Gippsland Shire Council 273 Main Street, Bairnsdale, Vic 3875

Phone: (03)5153 9500 Residents Information Line 1300 555 886 Fax: (03)5153 9576
TTY (03)5153 9531 Emergency After Hours (03) 5153 9500
Email: feedback@egipps.vic.gov.au Web: www.egipps.vic.gov.au

East Gippsland Shire Business Centre Locations

Bairnsdale Corporate Centre, 273 Main Street
Phone: (03)5153-9500 Fax: (03)5153-9576 Monday to Friday 8:30am to 5pm

Lakes Entrance Library & Business Centre, 18 Mechanics Street
Phone: (03)5153-9500 Fax: (03)5153-9576 Monday to Friday 8:30am to 5pm

Orbost Library & Business Centre, 1 Ruskin Street
Phone: (03)5153-9500 Fax: (03)5153-9576 Monday to Friday 8:30am to 5pm

Omeo Business Centre, Day Avenue
Phone: (03)5153-9500 Fax: (03)5153-9576 Monday to Friday 8:30am to 5pm

Paynesville Library & Business Centre, 55 The Esplanade
Phone: (03)5153-9500 Fax: (03)5153-9576
Monday 1pm to 5pm Wednesday 9am to 12noon & 1pm to 5pm Friday 9am to 1pm

East Gippsland Shire Outreach Centre Locations

Buchan Resource Centre, Davidson Street
Phone: (03)5155-9294 Fax: (03)5155-9377 Monday to Friday 9am to 4.30pm

Mallacoota Mudbrick Building, Maurice Avenue
Phone: (03)5158-0680 Fax: (03)5158-0743 Tuesday to Friday 10am - 4pm

Cann River Community Centre, Princes Highway
Phone: (03)5158-6465 Fax: (03)5158-6391 Monday to Friday 10am - 2pm

Bendoc Outreach Centre, 18 Dowling Street
Phone: (03)6458-1402 Fax: (03)6458-1402 Tuesday & Wednesday 9am to 5pm



Sustainable Gardening Australia is a non-profit organisation dedicated to helping Australians to garden in an environmentally sensitive manner. SGA provides free advice on gardening practices and clearly identifies low environmental impact products. Our mission is to change the way all Australians garden, to ensure they are working with the environment while engaging in their favourite hobby – gardening! Find out how sustainable your garden is by visiting SGA's website: www.sgaonline.org.au and follow the links on the home page to conduct your own sustainable garden audit. And while you are there, check out the free sustainable gardening information pages and garden forum.

This booklet was produced by Wellington Shire and East Gippsland Shire

Text by Sustainable Gardening Australia,
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Contents

This booklet recommends plants to assist gardeners in making appropriate choices to reduce the use of weeds in home gardens which have the tendency to escape garden boundaries. Indigenous plants to the Shire region are suggested first. When an indigenous option is not available, plants native to Victoria have been listed. Plants in this booklet are largely selected based on their non-invasive characteristics and commercial availability for the home gardener.

Introduction 2

Gippsland's Environmental Values 4

Sustainable Garden Design 5

- Biodiversity protection & enhancement 5
- Water conservation & quality 6
- Minimising energy requirements 8
- Sustainable purchasing 9
- Bushfire management 9

Garden Design Examples 11

- Cottage gardens 12
- Formal gardens 13
- Japanese gardens 14
- Informal bush gardens 15
- Water features 16
- Gardens for kids 17

Gardens for Wildlife 18

- Small Mammals 18
- Birds 19
- Butterflies 21
- Lizards 22
- Frogs 23
- Other wildlife friendly practices 26

Vegetation Regulations 27

Caring for Your Soil 29

Greywater Reuse 31

Raingardens 33

- How do I create a raingarden? 33

Using Pesticides, Herbicides and Fertilisers 35

Plant Selection 37

- Indigenous Plants Guide 39
- Common Garden Weeds 44
- Environmental Weed List 50

Produce Gardening 53

Sustainable Lawns 55

Roadside Reserves 57

Sustainable Garden Products 58

- Mulch 59
- Alternative garden edging products 59

Further Information 60

- Useful links 60
- Further reading 60

How Green is Your

Garden Self Audit 61

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Introduction



Gippsland is a magnificent place to live, work and play. It contains some of the most ecologically important areas within the State of Victoria. Gippsland is one of the only regions in Australia with continuous native vegetation (over a very extensive area) from alpine regions to the coast.

Both East Gippsland and Wellington Shire value their natural environment, and would like to pass it on to future generations in a healthy state. The vegetation on our road reserves and on our farms and properties is also extremely valuable, and this booklet may help you to live within our natural landscape more sustainably.

We acknowledge the Gunai/Kurnai traditional owners of the region and their enduring relationship with country. The significance of land is intimately bound in the spirituality surrounding the origins of landscapes and the animals, plants and people that inhabit them. If you tour through Gippsland you will be following the well worn routes the Koorie people of our region have been travelling for over 18,000 years. The path which is now the Princes Highway formed the backbone of the network of trails and trading routes which spanned the region.

A major part of respecting the original custodians is to respect and value our country. Sustainable gardening is one way we can all do this. It is also a step towards reducing our ecological footprint. By planting locally native species we provide food and shelter for native mammals, birds and insects. By removing weeds from our gardens we can reduce their impact on our bushlands and roadsides. By taking care with stormwater runoff from the land we can help keep our waterways healthy. If we purchase garden products made from renewable resources, we can help protect our old growth forests and river ecosystems.

Left: Gippsland scar tree - a living reminder of the thousands of years people have occupied our region.

Sustainable gardens can be introduced gradually, for example, when an exotic plant dies, replace it with an indigenous species. Sustainable gardens are low maintenance and lower cost, as they require less water, fertilisers and chemicals, and less mowing and pruning.

It is important in our community to have diverse and interesting gardens. It is also important to consider the origins of the products we use in our gardens and the impacts our purchasing decisions can have on other communities.

This booklet can assist you with creating a sustainable garden that fulfils your needs and desires while also providing a positive benefit to our natural environment.

We hope you find this booklet both informative and useful as you seek to further enhance our beautiful Shire in your own backyard.

Below: Native Hop (*Daviesia latifolia*)
grows naturally in Gippsland.
It is a colourful and attractive garden plant
that provides habitat for local wildlife.



Gippsland's Environmental Values

Gippsland contains some of the most ecologically important areas within the State of Victoria. The region encompasses alpine and sub-alpine environments, rainforests, forested hills, fertile river valleys, undisturbed beaches and extensive Red Gum plains.

Gippsland also boasts highly significant waterways with the Gippsland Lakes being the largest estuarine lagoon system in Australia, fed by various major rivers, including the Mitchell (the largest unregulated river in Victoria), Avon, Thomson, Latrobe, Nicholson, Macalister and Tambo.

Native vegetation is an important environmental asset of both Wellington and East Gippsland Shire. Native vegetation is not just the trees but also the equally important, but often overlooked, understorey. The understorey consists of small trees, shrubs, grasses and herbs. Both Shires contain some of the best examples of the endangered Gippsland Plains Grasslands. When in bloom, the grasslands display an array of spectacular native flowers.

East Gippsland plants are very significant at the continental scale due to the area overlapping southern cool temperate and eastern warm temperate zones. There are many species of plants and animals which are absent from, or rare in, the rest of Victoria. Similarly Wellington Shire boasts the beautiful Strzelecki Ranges which supports warm and cool temperate rainforest, with luxuriant tree ferns, giant mountain ash, sassafras and ancient myrtle beech.

The fauna in Gippsland consists of a huge variety of strange and unique animals, including mammals, amphibians, reptiles, fish, insects and other invertebrates. Our natural ecosystems are threatened by weed invasion, drought, incremental land clearing and changing climatic conditions.



Sustainable Garden Design

Many gardens today still maintain a traditional layout that stems from English or European gardens many years ago. This includes a paved area, large open lawn and flowerbeds of exotic plants around the outside. Today our busy lifestyles are preventing us from having time to spend enjoying and maintaining our gardens. Proper planning in advance can help you to create a garden that benefits your local environment, is easy to establish and maintain, and still looks great.

When you plan changes to your garden take some time to consider what elements you want in the garden (shed, washing line, kids' play area, entertainment area), and what the features of your garden site are (sunny, slope, shade, privacy) and try to work them in with elements of a sustainable garden listed below.

Biodiversity protection and enhancement

Gippsland has some of the most important biologically diverse natural assets in Australia. The Wellington and East Gippsland Shires also contain critical habitat for many threatened flora and fauna species.

TIPS TO PROTECT LOCAL BIODIVERSITY

- ⚡ Link or add to any existing indigenous vegetation.
- ⚡ Consider working with neighbours to link tree canopies especially in new housing estates.
- ⚡ Remove or at least control environmental weeds.
- ⚡ Recognise that native animals will be attracted to and flourish in indigenous gardens.
- ⚡ Retain dead trees for habitat value. Dead trees provide roosting sites and hollows for nesting.
- ⚡ When planning for bushfire prevention, consider the biodiversity as well.

Right: Native bees on a Copperwire Daisy (*Podolepis jaceoides*)

Left: Butterfly Flag Iris (*Diplarrena moraea*) is native to Gippsland.



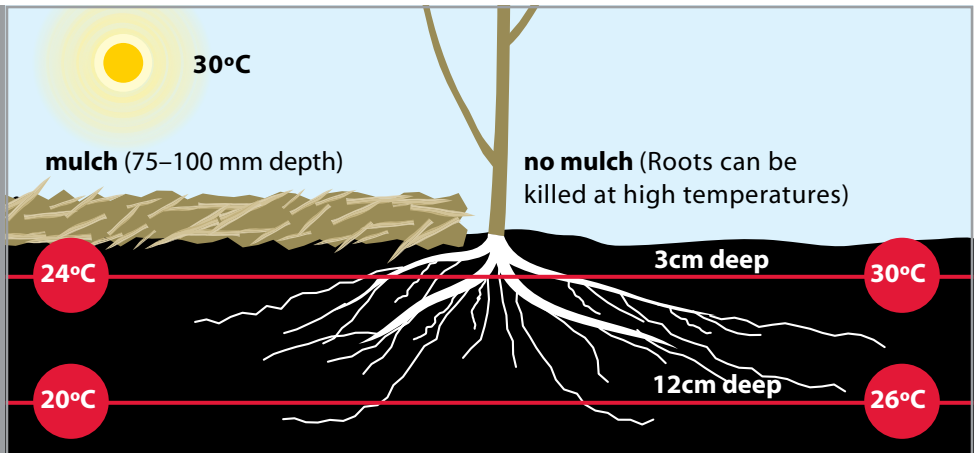
Water conservation and quality

With water resources increasingly limited, all garden designs should incorporate efforts to reduce demand for potable or 'mains' water for non-drinking purposes, and to improve the quality of water before it enters waterways.

TIPS FOR SAVING WATER IN THE GARDEN

- ∴ Keep lawn areas to a minimum – lawns consume 90% of water used in Australian gardens.
- ∴ Lawns can be replaced with porous paving, ground cover plants, gardens or outdoor structures such as playgrounds and gazebos.
- ∴ If you retain your lawn consider watering with greywater (see 'Greywater' section, page 31).
- ∴ Choose plants that have low water requirements once established – in most cases this will be indigenous plants.
- ∴ Place plants that require more water (e.g. ferns) in cooler more shaded areas of the garden.
- ∴ Group plants together according to their water requirements to make irrigation more efficient.
- ∴ Use mulch (75–100mm recommended depth) or indigenous ground covers to reduce water evaporation from garden beds.

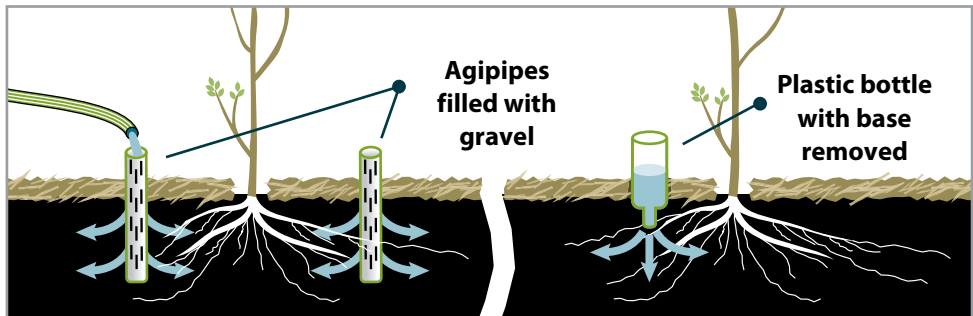
Below: Mulch protects roots and reduces water evaporation.



- ∴ Where irrigation is required use drip lines or subsurface 'weeper' hoses, not micro-sprays which waste up to 70% of the water through drift and evaporation. Keep your system well maintained to avoid leaks.
- ∴ Take account of all water restrictions in place and how or when your gardens may be watered.

For more information on water restrictions visit www.ourwater.vic.gov.au or contact your retail water authority:
 East Gippsland Water on 1300 720 700
 South Gippsland Water on (03) 5682 0444
 Gippsland Water on 1800 066 401

Below: Deep watering of trees/large shrubs delivers water slowly to the roots and encourages deep roots.



TIPS FOR CATCHING AND USING WATER ON-SITE

- ∴ Install a greywater tank and treatment unit for reusing household water for use in the garden (see 'Greywater' section, page 31).
- ∴ Use porous paving to allow for water **infiltration** into your garden, not stormwater **run off**.
- ∴ Consider integrating a water treatment system to help capture and purify stormwater (rain) or wastewater (septic) on site for reuse (see 'Raingarden' section, page 33).
- ∴ Incorporate a rainwater tank into your garden to collect water from our roof for watering gardens, washing cars, fighting bush fires or toilet flushing. Rainwater tanks now come in a wide range of designs and colours to suit diverse needs.

How to size a tank for your home

You need to consider variations in monthly rainfall and water use between the seasons to purchase a tank size to suit your needs.

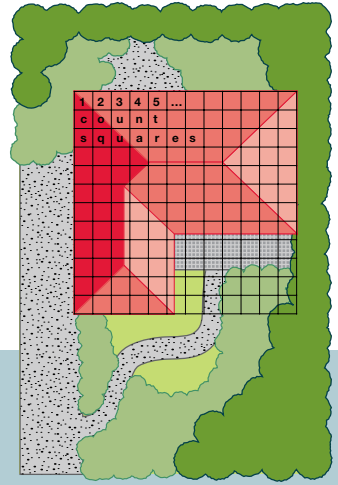
To calculate your catchment area for a rainwater tank, you need to know your roof area for proposed collection and average rainfall for your area.

For rainfall information visit: <http://reg.bom.gov.au/climate/data/>

For every 1mm of rain on 1m² of roof = 1 litre

Example: 150m² roof area with monthly rainfall of 50mm

150 x 50 = 7,500 litres over that month



To further reduce your consumption of drinking water supplies, you can plumb your rainwater tank directly to your toilet for flushing. An average household uses 15% of its water consumption per year for toilet flushing.

For more information on water saving devices visit:

Green Plumbers www.greenplumbers.com.au or your local water retailer:

East Gippsland Water www.egwater.vic.gov.au

South Gippsland Water www.sgwater.com.au

Gippsland Water www.gippswater.com.au

Minimising energy requirements

Reducing the energy requirements to establish and maintain a garden is most effective if done at the planning stage, leading to a well maintained and enjoyed garden.

Energy requirements come in many forms:

- :: human labour to mow lawns, water plants, apply fertilisers and herbicides;
- :: petrol or electricity to run mowers and whipper-snippers;
- :: electricity to run pond pumps, lighting, leaf blowers;
- :: energy costs involved in producing and using herbicides or fertiliser; and
- :: transport of garden products long distances.

TIPS TO REDUCE ENERGY REQUIREMENTS

- ∴ Keep lawn areas to a minimum – they require a lot of energy (water, fertiliser, mowing) in their establishment and continual maintenance.
- ∴ When creating new lawns use grass seeds, not instant turf which uses large amounts of water and fertilisers to “manufacture” and establish in your home garden.
- ∴ Use locally available products to reduce transport energy costs and to keep with the local character. Avoid river pebbles harvested from Asia or Merbau timber decking from Indonesian rainforests.
- ∴ Choose plants that are not weedy and will not require on-going intensive maintenance, including human labour to mow or prune and herbicides to control.
- ∴ Select plants and planting arrangements that contribute to the solar efficiency of buildings by providing shade in the summer and allowing sun through in the winter.
- ∴ Install solar lighting for garden paths, outdoor areas and solar powered pond pumps.

Sustainable purchasing

The Shires of East Gippsland and Wellington are committed to the principles of sustainability. Landscape designs on private property need to account for environmental sustainability by:

- ∴ using materials produced from renewable resources: mulch, garden sleepers, decking materials, stone/recycled brick (see pages 58–59);
- ∴ using materials that are locally sourced so do not carry high transportation costs to the environment; and
- ∴ selecting plants and built features that conserve water and treat stormwater run-off.

Bushfire management

If your property is located in a potential bushfire area you will need to appropriately manage the vegetation in the garden around your home. Proper planning in the design phase of your garden can provide the appropriate mix of elements required to reduce the risk while protecting the biodiversity values of your property. Please seek additional advice on how to manage your vegetation if your garden is in a high bushfire risk area (see ‘Further Information’ on page 10).

TIPS TO REDUCE FIRE RISK

- ❖ Design breaks to vegetation (gravel driveways, pathways) around your house to separate areas of fuel to slow the spread and speed of the fire and reduce the level of heat.
- ❖ Graded or ploughed breaks disturb soil which encourages weeds or causes soil erosion so consider other ways of creating low-fuel areas, such as permeable paving or slashing.
- ❖ Consider the building location in relation to prevailing summer winds, as this indicates the most likely direction from which a bushfire may come, and remember that bushfires travel much faster up hill.
- ❖ Ensure good access to water for firefighting. This may mean incorporating a water tank into your garden, ensure all above-ground water fittings are metal ones and ensure you have adequate hose length to water down your garden. Check with your local CFA for preferred fitting standards. If a fire threatens your property, water restrictions are waived to allow residents to defend their homes. Keep plants well-watered and moist as this can reduce how easily a plant will become fuel for a fire, and use mulches with a low flammability.
- ❖ Remove existing weeds and do not introduce new ones into the garden as weeds often contribute to high fuel loads that feed fires.
- ❖ Do not plant large shrubs and trees too close to buildings (within 2m) as the radiant heat from burning trees can shatter windows and cause materials to self combust. Trees may also drop limbs and send the fire over the building.
- ❖ Along natural watercourses plant indigenous vegetation suited to the local waterway – these areas naturally retain moisture and can be less fire prone.
- ❖ Remove fine fuels such as twigs, leaves and bark, from around your house, including your roof and gutters. These fine fuels burn very easily and assist the fire in spreading quickly.

"You should not rely on published lists of 'fire-retardant' or 'hard to burn' plant species. Many of these lists are out of date and advocate plants that may have little impact on the safety of your home. Some of these plants are also weeds." CFA References: **Managing vegetation around your home** brochure, **Living in the bush** bushfire survival plan workbook.

FURTHER INFORMATION

Shauble, J. (2004), **The Australian Bushfire Safety Guide**, Harper Collins

Ramsay, C. & Rudolph, L. (2003), **Landscape and Building Design for Bushfire Areas**, CSIRO Publishing

CFA brochure **Building in a Wildfire Management Overlay** applicants kit

CFA: www.cfa.vic.gov.au Phone: 9262 8444

Garden Design Examples

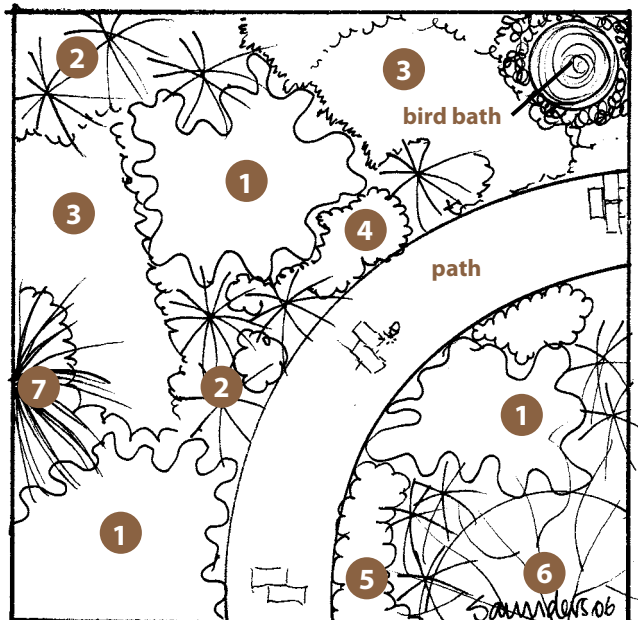
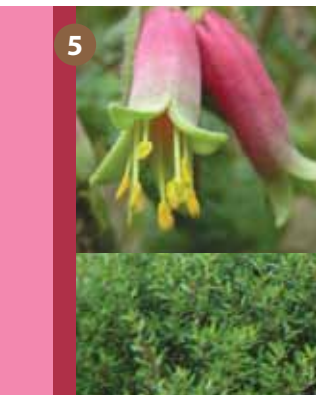
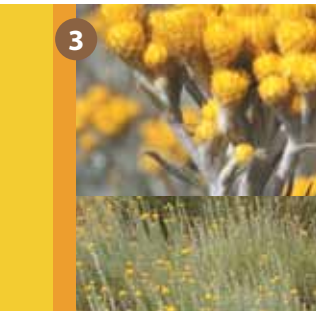
Using indigenous plants in your garden does not mean that you cannot enjoy the latest garden styles. Following are some ideas that can be adapted to suit a range of designs sustainably.



Cottage gardens

The cottage garden look is easily achieved with indigenous plants but unlike the traditional cottage garden, this garden can look interesting and colourful all year round because many indigenous plants flower in winter. And this cottage garden is water wise too. Tall Blue-Bells (*Wahlenbergia stricta*) look stunning growing with the Clustered Everlasting (*Chrysocephalum semipapposum*).

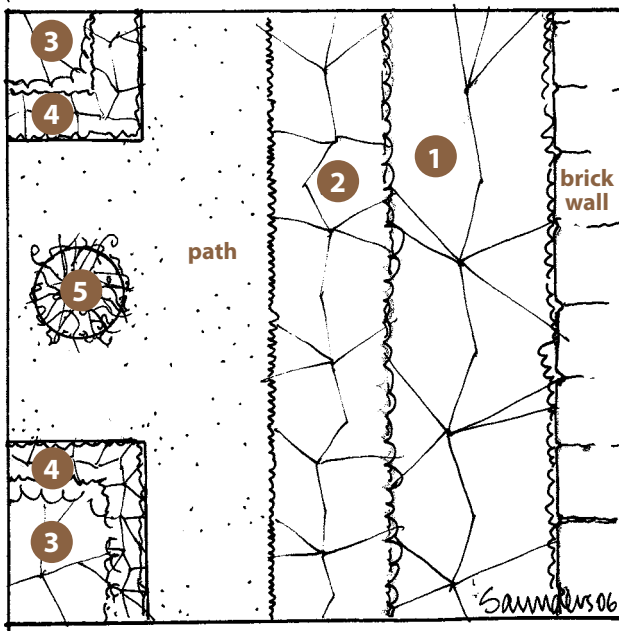
- 1 Tall Blue-Bells (*Wahlenbergia stricta*)
(30cm x 50cm)
- 2 Black-anther Flax Lily (*Dianella revoluta*)
(50cm x 1.5m)
- 3 Clustered Everlasting
(*Chrysocephalum semipapposum*)
(50cm x 1.5m)
- 4 Cut-Leaf Daisy (*Brachyscome multifida*)
(20cm x 50cm)
- 5 Common Correa (*Correa reflexa*)
(60cm x 1.5m)
- 6 Rock Correa (*Correa glabra*)
(1.5m x 1.5m)
- 7 Common Tussock Grass (*Poa labillardieri*)
(50cm x 1.2m)



Formal gardens

There are many indigenous plants that can easily be grown into neat clipped hedges and shapes to complement the straight lines of a formal garden. A formal garden requires a bit more maintenance but at least the plants chosen can be water wise and more suited to the local environment and Australian climate. Here a hedge of Rock Correa (*Correa glabra*) is grown in front of a taller hedge of Dusty Miller (*Spyridium parvifolium*), which is against a brick wall. Straight paths intersect in front and a large urn filled with Running Postman (*Kennedia prostrata*) greets ambler.

- 1 Dusty Miller (*Spyridium parvifolium*)
(1.5m x 1.5m)
- 2 Rock Correa (*Correa glabra*)
(1.5m x 1.5m)
- 3 Hop Goodenia (*Goodenia ovata*)
(1.8m x 1.5m)
- 4 Common Correa (*Correa reflexa*)
(60cm x 1.5m)
- 5 Running Postman (*Kennedia prostrata*)
(10cm x 2m) growing in an urn



Japanese gardens

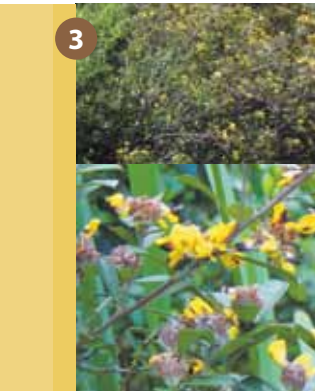
The sculptural and often minimal look of a Japanese Garden creates a quiet, thoughtful place. There are many indigenous and native plants that work very well in this style of garden and sit beautifully with Japanese sculptural elements. Here, for example, clumps of the Common Tussock Grass (*Poa labillardieri*) look dramatic in a gravel garden with feature rocks. A single specimen shrub, Large-leaf Bush-pea (*Pultenaea daphnoides*) is a striking sculptural element. If using water features consider using rainwater, not drinking water, to keep them refreshed and topped up.



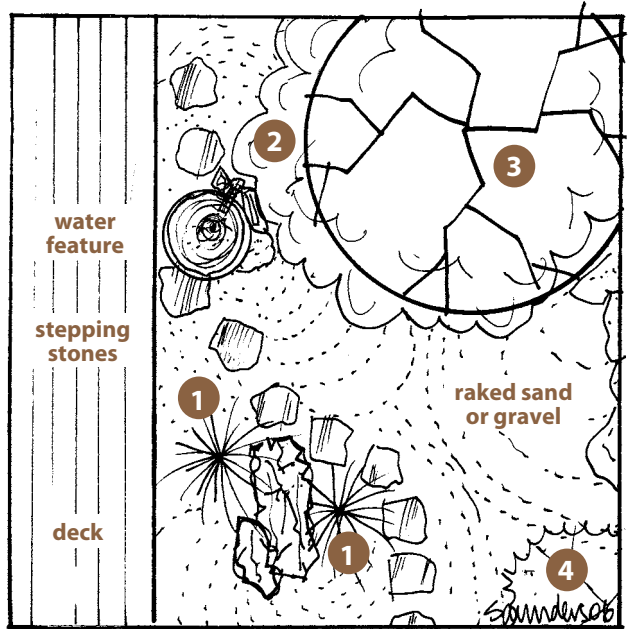
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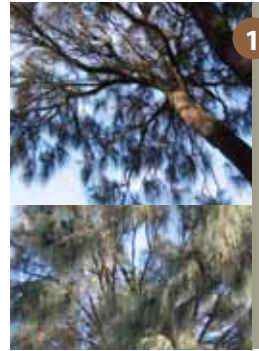
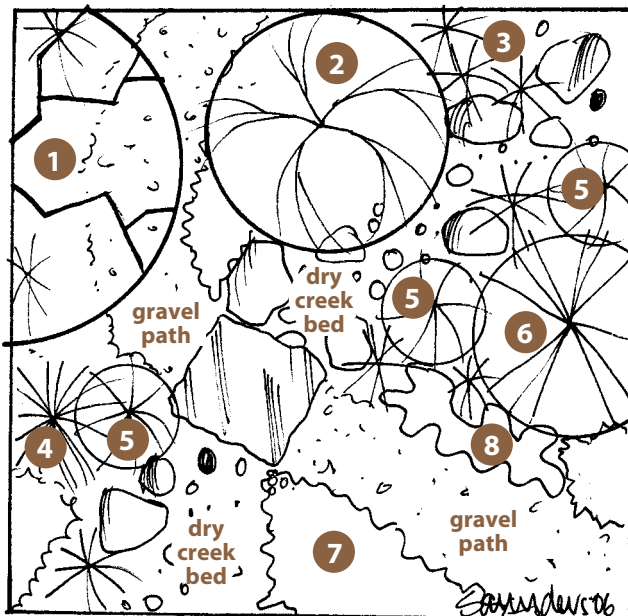
- 1 Common Tussock Grass (*Poa labillardieri*)
(50cm x 1.2m)
- 2 Kangaroo Grass (*Themeda triandra*)
(40cm x 80cm) lawn
- 3 Large-leaf Bush-pea (*Pultenaea daphnoides*)
(2m x 2–3m)
- 4 Rock Correa (*Correa glabra*)
(1.5m x 1.5m)



Informal bush gardens

The famous Australian bush garden has a relaxed easy-care feel about it. A meandering path allows for surprises to be created around corners. These gardens are a haven for wildlife and a great refuge for humans. And with a bit of planning, you can ensure there is something in flower just about all year round. Remember to keep low-growing plants close to path edges, and medium and taller plants behind them.

- 1 Black Sheoke (*Allocasuarina littoralis*)
(8m x 4m)
- 2 Golden Wattle (*Acacia pycnantha*)
(8m x 3.5m)
- 3 Black-anther Flax Lily (*Dianella revoluta*)
(50cm x 1.5m)
- 4 Common Tussock Grass (*Poa labillardieri*)
(50cm x 1.2m)
- 5 Austral Indigo (*Indigofera australia*)
(1.5m x 1.5m)
- 6 Dusty Miller (*Spyridium parvifolium*)
(1.5m x 1.5m)
- 7 Tall Blue-Bells (*Wahlenbergia stricta*)
(30cm x 50cm)
- 8 Clustered Everlasting (*Chrysocephalum semipapposum*)
(50cm x 1.5m)



Water features

There are a huge variety of plants that belong in the category of water plants. Some like to be in water all the time, but others prefer only boggy conditions, like Tall Sedges (*Carex appressa*) and in fact many cope with summer drought.

Water features vary from formal constructed ponds, which can be very costly, through to naturalistic streams and ponds that can be relatively cheap to build. Both types can be suitable for a variety of water plants. With a bit of extra planning a water feature can become a 'frog bog' and attract frogs to your garden to control mosquito populations and provide a night time chorus (see 'Frogs' section, pages 23-25).

Below: This natural water feature is easy to create, and once established with a variety of plants, is easy to maintain.



Gardens for Kids

There are many benefits to creating a space for kids to play in your garden and to encourage them to take an interest in sustainable gardening. Tree houses, sand pits and native fairy gardens (as well as growing fruit and vegies) are all fun things to do.

Inspire digging by adding a sandpit in the play area. Make the play area look like a secret hideaway by creating a fairy garden. Seating could be nothing more than a painted bench, a colourful hammock or a log.

Concrete stepping-stones are easy to make yourself and the kids will love helping. Allow them to add their own artefacts like pebbles, shells, marbles etc. They can even add their handprints. Place them in the garden and the kids will take great pride in their work.

Wind chimes make great accessories as well, and these can be easily constructed from found objects to stimulate the imagination. Water features are another good way to spark imagination. Remember to keep it simple and safe, especially around younger kids.

A great way to learn about our native animals is to help kids attract wildlife to the garden. See the “Gardens for Wildlife” section of this booklet for information and inspiration.

The Royal Botanic Gardens at Cranbourne have a “Garden Grubs Kids Club” for 5 to 10 year olds, with loads of special programs and activities just for kids. A fantastic way to get children into gardening and sustainability, visit www.rbg.vic.gov.au/garden-grubs-kids-club to join.



Gardens for Wildlife

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

Small Mammals

There are a number of small native mammals that can become regular visitors to a garden. Brush-tailed possums and Ring-tailed possums generally rely on leaves for food and are often considered a pest by gardeners who enjoy growing plants like roses. If your garden is close to bushland or near large old trees with hollows, your garden may already host various nocturnal mammals. The tiny marsupial Agile Antechinus looks like a mouse but is closely related to carnivores such as the Quoll or Tassie Devil. Another Gippsland visitor from the possum family is the Sugar Glider (right). These delightful creatures feed extensively on insects and flowers, and get their name from both their ability to glide, and from their habit of biting the bark of Eucalypts and Wattles to feed on the sugary sap. A favourite source of sap is the Black Wattle (*Acacia mearnsii*). Sugar Gliders are social animals which nest together in family groups in a tree hollow. Small insectivorous bats or "Micro-bats" may be seen flying at dusk. During the day they shelter in hollows, under loose bark or in roof spaces. A Micro-bat can eat up to twice it's own weight in insects, such as mosquitos, in one night.



Photo: Mark Lambie, Photographer.

Many wildlife friendly gardens now use nesting boxes if there are no mature trees nearby. Each species requires different specifications. Almost any sort of weather-proof box with a small entry and at least one wall that is rough enough for them to grip with their feet (such as carpet or hessian hung inside) will suit Micro-bats. Much research has however gone into the design of nest boxes so they encourage native animals to take up residence while discouraging unwanted pests. Design specifications are readily available on the internet, or ready made nest boxes can be purchased from specialist manufacturers.

Birds

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

Shelter

Birds need shelter from predators such as cats, foxes and predatory birds. By providing prickly or dense plants at various levels in your garden, and particularly near water sources, you can help protect your feathered visitors.

Water

A reliable water source, particularly in summer and most especially in drought 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

Feeding stations are not recommended as a way of attracting birds. Use native plants as an alternative to avoid creating dependency, which can impact on their long term survival in the wild.

Below: King Parrot feeding on Acacia seed pods.

Photo: Marty White (SYR)





Small birds

Silvereyes, Wrens, Finches, Fantails and Thornbills forage in the lower levels of the garden feeding on insects and helping to keep your plant pest numbers down. Native grasses such as Common Tussock Grass (*Poa labillardieri*), Kangaroo Grass (*Themeda triandra*) and Wallaby Grass (*Austrodanthonia* spp.) attract insects to the garden, as do a variety of plants such as Paperbarks (*Melaleuca* spp.), Teatrees (*Leptospermum* spp.), Wattles

(*Acacia* spp.), and daisies such as Clustered Everlasting (*Chrysocephalum semipapposum*) or Cut-leaf daisy (*Brachyscome multifida*).

Honey Eaters

Birds such as Honeyeaters, Red Wattlebirds and Spinebills are specialist nectar feeders. They use their brush-like tongues to collect nectar from the flowers of Grevilleas (*Grevillea* spp.), Paperbarks (*Melaleuca* spp.), Correas (*Correa reflexa* or *C.alba*), Banksias (*Banksia spinulosa* or *B.marginata*) and Kangaroo Paws (*Anigozanthus* spp.). These birds also like to eat insects as a source of protein.

Parrots

Crimson and Eastern Rosellas feed on Eucalypt flowers and seeds, while Cockatoos and Galahs prefer the seeds of Hakeas (*Hakea nodosa*), Callistemon (*Callistemon sieberi*) and Eucalypts (*Eucalyptus radiata* or *E. ovata*). Red-rump Parrots feed on grass seeds.

Large birds

Magpies, Kookaburras and Butcher Birds feed on larger insects, frogs and small lizards. Creating a garden with small shrubs, leaf / bark litter and logs provides habitat to encourage these creatures who then support the diets of large birds.



Left (top): *Leptospermum* spp. (Tea Trees) provide an insect-attracting shrub layer, that in turn attracts insectivorous birds.

Left (bottom): Silver Wattle (*Acacia dealbata*) is a wonderfully rich source of food that attracts insects, birds and mammals.

Butterflies

Butterflies are a welcome addition to any garden, and with a few simple design principles are easily attracted, adding movement and colour to your garden.

Nectar traps

Colourful, massed beds draw butterflies in and keep them happily moving through the garden. They particularly like blue, yellow and red, but are attracted to a large range of colours, with bold clusters of flowers more effective than single plants dotted through a garden.

Flowers

The shape of the flower is important too, with simple, flat flowers easier for butterflies to extract nectar. Double flowers with their multiple petals are too complex. But native Daisies, Pelargoniums (*Pelargonium australe*), Bluebells (*Wahlenbergia* spp.), Saltbush plants (*Atriplex cinerea*), and Pea flowers (*Bossiaea prostrata* or *Platylobium obtusangulum*) are especially useful.

Left: Australian Painted Lady butterflies can be seen from late winter and early spring in southern Australia as they migrate from NSW and Queensland.

Photo: Elaine Shallue, SGA



Position, position, 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 the butterfly to lay her eggs. The caterpillars are generally small and shy, and won't devastate the garden. Popular indigenous plants include Bursaria (*Bursaria spinosa*), Sedges (*Gahnia sieberiana*) and Mat Rush (*Lomandra longifolia*), and grasses such as Kangaroo Grass, Wallaby Grass and Common Tussock Grass.

Lizards

Most lizards we find in our 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 or even a Lace Monitor, but these beautiful creatures are not as common as they used to be.



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

- ∴ tussock grass and hiding spots of rocks and logs for protection;
- ∴ a protected sunny spot on a rock, log or brick path; and
- ∴ natural leaf mulch to support insects and larvae they feed on.

Above left: This rock retaining wall with Running Postman (*Kennedia prostrata*) rambling through it could be a great place for lizards to bask or hide, especially if there are gaps under some of the rocks.

Below: Blue Tongues aren't poisonous, they just have a blue tongue to frighten attackers, and they like to eat insects, snails and juicy plants.



Frogs

What could be more interesting than frogs in your garden? 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 frog bog or semi-permanent pond with certain features, but you'll also need to live near a frog population to attract them from.

Frog bogs are easy to create in heavy clay soil. Even more so if a depression is dug in an area of the garden that is already wet during winter. This will trap even more water and when planted with suitable plants these areas make great habitat for frogs.

Frog bogs are designed to dry out in summer, but there will usually be enough water below ground to keep the plants green and quite lush during dry times. Australian frogs have evolved with summer drought, so they find places to hide during drier periods.

Below: Striped Marsh Frogs can be a common sight in your garden if you provide suitable habitat and avoid chemicals.

Photo: www.flickr.com/photos/eyeweed



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

- ⋈ damp bog zone for adult frogs;
- ⋈ shallow water zone for laying eggs; and
- ⋈ deep zone of at least 30cm for tadpoles.

Your frog pond should also have the following:

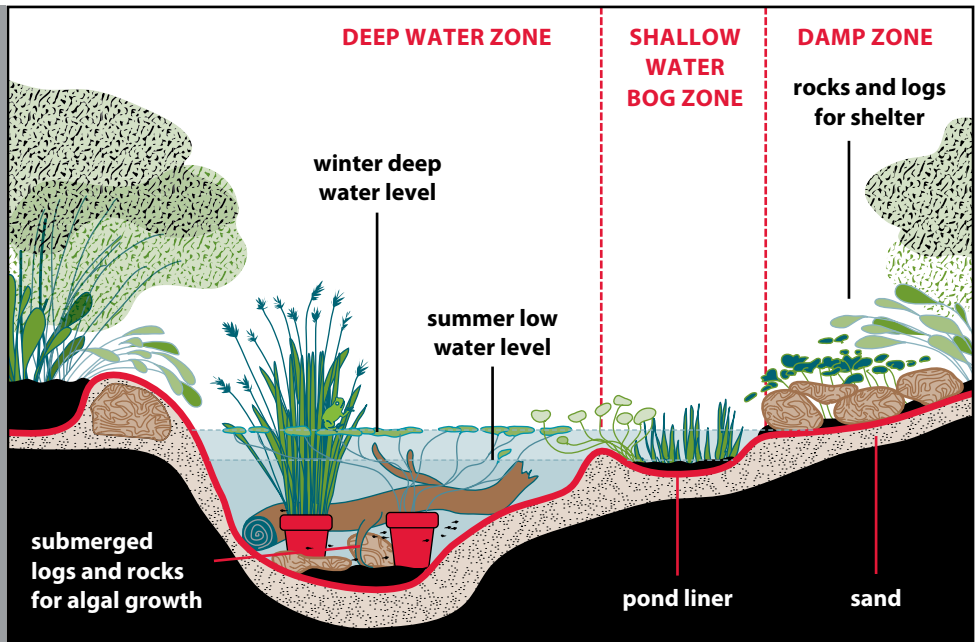
- ⋈ soft, thick vegetation that droops into the water, for shelter and protection;
- ⋈ rocks, logs, bark and leaf litter;
- ⋈ mostly shade;
- ⋈ sloping sides for frogs to crawl out;
- ⋈ be made from non-toxic materials (concrete ponds will need to be sealed and plastic ponds be made of food-grade plastic); and
- ⋈ food plants for tadpoles (and they will eat them, so don't put in your prize water plant).

Photo: Caroline Carvalho (SYR)



Above: An example design of a frog bog

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



Frog-friendly plants include the following:

Grasses

Kangaroo Grass (*Themeda triandra*)
 Weeping Grass (*Microlaena stipoides*)
 Wallaby Grass (*Austrodanthonia* spp.)

Tufting plants

Kangaroo Paw (*Anigozanthus* spp.)
 Black-anther Flax-lily (*Dianella revoluta*)

Bog plants

Soft Water Fern (*Blechnum minus*)
 Thatch Saw-sedge (*Gahnia radula*)
 Knobby Club-rush (*Isolepis nodosa*)
 Grassy Mat-rush (*Lomandra confertifolia*)
 Tassel Cord-rush (*Restio tetraphyllus*)

Water Plants

Common Nardoo (*Marsilea drummondii*)
 Tassel Sedge (*Carex fascicularis*)
 Jointed Twig-rush (*Baumea articulata*)
 Water Ribbons (*Triglochin procerum*)
 Common Reed (*Phragmites australis*)

Here are some things to avoid:

- :: Most fish will eat tadpoles;
- :: Tadpoles and eggs can be killed by fountain pumps;
- :: Cats and dogs – protect the frog area of your garden with dense or spiky plants that will deter them;
- :: Pesticides and herbicides – frogs eat insects, so you don't want to spray them. Frogs are also very sensitive as they absorb moisture and oxygen through their skin, and the chemicals they may contain. For this reason, you should not handle frogs;
- :: Fertiliser runoff will pollute the pond water;
- :: Allowing duckweed or Azolla to cover the top of the pond will reduce the oxygen available to the tadpoles; and
- :: 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 – same rule for all native animals and plants.



Above: Water Ribbons (*Triglochin procerum*) make a beautiful addition to your water feature or frog bog, are surprisingly drought resistant and you can even harvest them for use in your kitchen. *Beware* – Keep them netted until established as native ducks love them for snacks!



Photo: Emma Campbell (SYR)



Photo: Alex Maisey



Other wildlife friendly practices

- ⚡ Maintain dead trees as they provide hollows for nesting or incorporate nest boxes if you don't have suitable hollows. Resist the desire to "tidy up" all fallen branches and leaves.
- ⚡ Reducing the use of pesticides in the garden will provide insect eating wildlife with a safe food source.
- ⚡ Securing cats and dogs, especially at night, so they don't prey on native animals. Work with your neighbours to make sure they also secure their cats and dogs.
- ⚡ Keep the telephone number of a wildlife rescue service handy and plug it into your mobile phone. RACV will connect you to the nearest relevant wildlife rescue service wherever you are in Victoria (Ph: 131 111).
- ⚡ You don't need to (and shouldn't) provide shop bought / food scraps for wildlife. You can have a close encounter using nest boxes and water sources (e.g. birdbaths).

Above right: Skink Left from top: Gang-gang Cockatoos enjoying a bird bath, Echidna, Sword-grass Brown Butterfly and bat box

FURTHER INFORMATION

Flora for Fauna – www.floraforfauna.com.au

Nesting boxes – www.latrobe.edu.au/wildlife/nestboxes

Vegetation Regulations

In Wellington and East Gippsland, there are hundreds of Shire reserves and roadsides which have a cover of remnant bushland. Remnants of native vegetation are found on private properties, shelterbelts, reserves, parks, gardens, cemeteries, roadsides and along watercourses. Sometimes the roadsides contain the last fragments of bush, after clearing for towns, roads and farming.

The loss of areas of remnant vegetation leads to the following:

- ∴ the decline of natural ecological systems through the loss of wildlife habitat and depletion of the genetic diversity in plants and animals, which makes them more susceptible to attack and disease; and
- ∴ reduced agricultural production, nutrient loss, soil erosion, silting, and pollution of waterways.

Victoria's Native Vegetation Management - A Framework for Action 2002 (the Framework), has been created to provide direction for the protection, enhancement and re-vegetation of native vegetation across the State.

The major goal of the Framework for native vegetation management is: *'A reversal across the entire landscape, of the long-term decline in the extent and quality of native vegetation, leading to a Net Gain'*.

The Native Vegetation Provisions in the Shires' Planning Scheme (Clause 52.17) outline when a planning permit is required to remove native vegetation and help achieve the avoid, minimise, offset objectives of the Framework. There are some exemptions which could apply.

Council recommends that you make contact before removing any native vegetation and to seek clarification on the exemptions, and avoid a fine.

If the plant is listed as an environmental weed in the Shire's Planning Scheme or is a State listed noxious weed, there is no permit requirement to remove, lop or destroy the plant. A list of Environmental Weeds is found on pages 51–52. Current noxious weed lists can be found on the Department of Primary Industries website (www.dpi.vic.gov.au).

All land owners are required by law to remove and/or control noxious weeds on their land. Penalties exist for not doing so.



Above: Gippsland Red Gum Grassy Woodlands and associated native grasslands are critically endangered nationally. A planning permit is required for removal of native vegetation, even for native grasslands.

These are some of the biggest threats to our natural environment:

- ⌘ illegal clearing (often incremental, one tree here and another there) of indigenous vegetation which is a breach of the Planning Scheme;
- ⌘ illegal earthworks where cleared land can allow weed invasion or damage tree roots which could cause their death; and
- ⌘ illegal dumping, especially of green waste, which may contain weeds.

If you see any of these illegal actions taking place, please contact your Shire and make a confidential report.

Caring for your 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. Organic matter needs to be replaced as plants absorb nutrients. If organic matter is not added, the soil becomes hard, like concrete, in the summer and a sticky mess in the winter. In addition, most people want a low maintenance garden. This is much easier to achieve if you look after your soil.

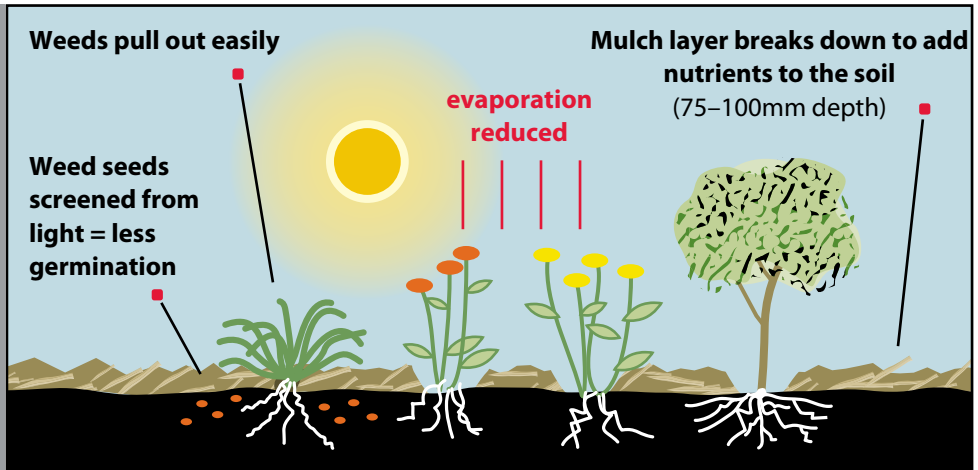
SOIL IMPROVEMENT TIPS

- ❖ 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 veggie garden! Bark mulch has very few nutrients so don't rely on it to improve your soil.
- ❖ Mulches made from recycled organics are an excellent choice as they save water, are long lasting and feed the soil when they break down. Mulch should be applied 50–75mm deep, and will need to be topped up every year. Avoid mulch from rare forest types like Red Gum or Jarrah.
- ❖ 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.
- ⋮ Composting kitchen scraps and waste, grass and garden clippings, or using a worm farm provides an excellent source of free garden food and soil improver. Composting also reduces greenhouse gas emissions, saves water and dramatically reduces waste going to landfill.

Below: The benefits of mulch



FURTHER INFORMATION

Handrek, K. (2001) **Gardening Down Under**, CSIRO Publishing, East Melbourne.

Hodges, Jeff (1996) **The Natural Gardener**, Angus & Robertson, Melbourne, Victoria.

Roads, M.J. (1989) **The Natural Magic of Mulch**, Greenhouse Publications, Elwood, Victoria.

For more information on composting and worm farming, visit the Sustainable Gardening website information pages at: www.sgaonline.org.au

www.wellington.vic.gov.au

www.egipps.vic.gov.au

Greywater Reuse

Greywater is domestic wastewater, excluding toilet waste. The best quality greywater comes from the rinse water of your washing machine, bath, shower or hand basin. Toilet and kitchen wastewater should always go to sewer or onsite septic. Untreated greywater can be diverted on a temporary basis to sites **within** your backyard. However, the continual discharge of greywater can potentially cause problems for your garden if not managed.

Greywater can contain a number of micro-organisms such as bacteria and viruses as well as chemicals from cleaning agents, so be careful to follow the tips recommended below. A level subsurface trench is one option for applying diverted greywater. Slotted stormwater pipe placed in the trench, and covered with gravel assists in conveying the water along the length of the trench. An alternative is to collect greywater in a bucket and apply the water to areas of greatest need.

DOs

- ❖ Divert only low risk greywater such as bath, shower, hand basin or final rinse water of washing machine.
- ❖ It is preferable to apply greywater below the ground surface. An irrigation system specific for greywater is most suitable.
- ❖ Only use low phosphorous detergents.
- ❖ Avoid powdered detergents as they contain large volumes of salts, which can affect the salinity in your garden soil.

DON'Ts

- ❖ Do not divert kitchen wastewater as this has high levels of contaminants.
- ❖ Do not divert greywater with any blood or faecal contamination, such as water used to wash soiled nappies.
- ❖ Do not water vegetables for human consumption with greywater.
- ❖ Do not allow greywater to pool or stagnate as this will cause odours and attract pests.
- ❖ Never store untreated greywater – it must be used within 24 hours.
- ❖ Avoid piping greywater into existing irrigation systems as it may cause blockages. Consider setting up a filtration system to remove lint and other particles that



Above: All water from the shower and the laundry is piped into a greywater system, which returns it to the toilet cistern for flushing.



Above: The capacity of this system is about 150 litres. What isn't used in the toilet is pumped automatically onto the garden once daily.

Use soaps, shampoos and detergents that are free of animal products (reducing greasy waste) and phosphorous (better for garden plants).



Above: Perforated hose is attached to the greywater system and run around the well-mulched garden. These pipes should be laid below the surface at a 2% slope (2cm drop per metre) to provide the safest way of using greywater, a more efficient way to irrigate and reduces evaporation.

The images above are reproduced courtesy of Museum Victoria.

will block an existing system or check with irrigation suppliers on suitable irrigation systems suitable for greywater.

- ∴ Route greywater to areas that will prevent children and pets coming into direct contact.
- ∴ Never allow greywater to enter the stormwater system or neighbouring properties.

Blackwater is domestic toilet waste. In many residences in Gippsland, along with greywater, it is piped into the trunk sewerage system for treatment and disposal; while some is treated in backyard septic systems. It is important for residents to maintain their septic systems. Systems should be pumped out and serviced by a professional every 3–5 years. Leaks add nutrients to stormwater runoff which suits weed growth (native plants prefer low nutrient environments) and can be a public health issue. The runoff can also cause die back of our magnificent native trees, destroying old areas of forest. As explained above the greywater component can also be diverted as a resource.

Since 1988, the Environment Protection Authority (EPA) regulations require all wastewater to be contained and treated on site by approved septic systems. Systems installed pre 1988 are still permitted to discharge untreated greywater off site, however, this practice is causing damage to our local environment and should be prevented.

Check your system – when was it installed? Last serviced? Seriously consider upgrading it to protect your local environment and your own health.

If you are considering reusing your greywater as a garden resource, you should contact the Shire's Public Health team for guidance or advice.

For more information on greywater re-use, including case studies from around Melbourne, visit: www.museum.vic.gov.au and search "Gardening".

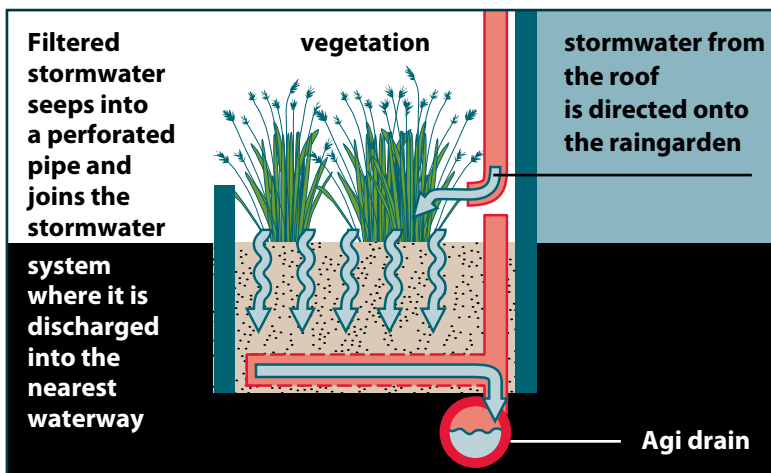
For more information on choosing greywater friendly laundry detergents visit: www.sgaonline.org.au/?p=281

Raingardens

Raingardens have water directed into them from a downpipe or paved area. They are designed to slow down rainfall during a rain event, but do not form a wetland or frog bog. By using a free-draining sand, water is able to flow through the system at a fairly rapid rate which cleans the water and avoids flooding. By slowing down the speed of the water, the filter media and plants used are able to assist with removing pollutants which would normally pass directly into our drains and local streams. Additionally the plants will also provide habitat for native fauna such as birds and butterflies. Keeping rain where it falls by putting it into a raingarden is a simple solution to stormwater pollution and is part of making your home water-sensitive.

How do I create a raingarden?

Raingardens can be created to look or feel however you would like your garden to look or feel. For instance they can be built as raised beds or excavated at ground level. When it rains, the water is directed from hard surfaces, such as a roof, guttering or paved areas into the raingarden, where the free-draining sand (as outlined in the diagram below) and your plants are able to remove and trap pollutants from the water, and will over time, naturally break these down (decompose). The water then passes into an agi-pipe at the base of the raingarden, allowing the cleansed water to flow into the stormwater and waterway system safely.



Left: How a raingarden works.
 Note: If your raingarden abuts a wall of your house, ensure that you use an impermeable barrier to prevent water seepage under your building.

Note: A raingarden must have an overflow pipe to reduce the risk of localised flooding in the event of a major storm or downpour. If you find that water is left sitting or pooling on the surface of your raingarden, particularly after rain has stopped, then your system is not working correctly and may need re-setting – it should be free draining.

A wide range of native plant species are suitable for raingardens. When choosing plants for your raingarden make sure they have the following qualities:

- :: tolerate short periods of inundation followed by longer dry periods;
- :: have spreading rather than clumped growth forms;
- :: are perennial rather than annual;
- :: have deep fibrous root systems; and
- :: would form understorey if grown with shrubs and trees.



Above: Kangaroo Grass (*Themeda triandra*) is just one of the many plants that are suited to a raingarden environment

TIPS TO HELP YOUR RAINGARDEN MATURE AND FUNCTION WELL

Raingardens are low maintenance especially when planted with native plant species. They don't need to be watered, mowed or fertilised. However these few simple tips can help your raingarden to mature and function well:

- :: If it doesn't rain, water your new garden until your plants have established (usually the first year or so);
- :: Raingardens need to be mulched with rocks and pebbles. Organic mulch is not suitable as it can simply float away in heavy rain! The fine material in organic matter can also cause the agi pipe to block, so the system won't work properly;
- :: Weed where necessary;
- :: Reduce fast flowing water over your garden to limit erosion during heavy rainfalls, by keeping your raingardens flatter or in a depression as opposed to a steep garden bed;
- :: Inspect your garden regularly – replace plants and repair erosion in your garden when necessary; and
- :: Don't park, drive over or squash your raingarden. If your raingarden is squashed (compacted), water will no longer freely move through it.

For more information on water treatment systems such as 'raingardens' visit: www.melbournewater.com.au/wsud

Using Pesticides, Herbicides and Fertilisers

Chemicals and fertilisers can be transferred from our home gardens to the natural environment. Chemical sprays can drift in the wind and powders can wash into waterways. Strong chemicals can kill native insects, plants and animals. The application of too much fertiliser can lead to extra nutrients in our waterways (such as the Gippsland Lakes), contributing to blue-green algae outbreaks that can harm native animals, stock and sometimes people.

TIPS FOR SAFER CHEMICAL USE

- ❖ Prevention is better than cure! Check your garden regularly for pest and disease outbreaks. If problems are spotted early enough you might be able to avoid chemicals altogether.
- ❖ Many insects in the garden such as ladybirds are 'good guys' that will eat pests such as aphids. If you over use chemicals in your garden you may also kill beneficial insects and make your pest problem harder to control. Multi-sprays will kill anything they touch.

Below: A Silver Tussock Moth caterpillar on Running Marsh-flower (*Villarsia reniformis*).





Above: A Southern Brown Tree Frog (left) and a Spotted Marsh Frog (right) found in domestic gardens. (Note: it is not a good idea to handle frogs in this way as there may be a risk of infection to the frog from your skin.)

- ⌘ Use natural alternatives such as pyrethrum and garlic spray to control pests.
- ⌘ Too much fertiliser makes plants produce a lot of leafy growth that often becomes a target for pests.
- ⌘ Organic fertilisers such as compost, manures, seaweed and fish emulsion break down more slowly than synthetic (chemical) fertilisers and generally match the rate at which plants need the nutrients. Synthetic fertilisers break down quickly and can 'burn' plant roots.
- ⌘ Organic fertilisers (such as blood meal, fish emulsion and manure) improve soil structure while synthetic fertilisers (such as ammonium sulphate, ammonium nitrate and urea) add nothing to the soil structure and tend to move easily from the soil after heavy rain or watering.
- ⌘ When a plant looks sick the worst thing you can do is feed it!
- ⌘ Clean your secateurs between pruning plants, to prevent the spread of disease.
- ⌘ Know exactly what pest or disease you are trying to control, as this will help you target the specific pest only.
- ⌘ Don't use chemicals on windy days or before it rains. It will be a waste of your time and money, and the chemical is also likely to end up in waterways or drifting around the neighbourhood.

Plant Selection

Careful plant selection can be the key to creating a sustainable garden that enhances your local environment, provides the desired look and function of your garden and has a maintenance regime suitable to your lifestyle.

We recommend you visit the indigenous and community nurseries in the Shires to get good local advice on plant selection.

Local markets and community fetes can be a good inexpensive source of indigenous plants but be aware that these sellers are unregulated and may not have the most current information on what plants are weeds and are suitable for sale. Indeed, by their very nature, weedy plants are easy to propagate and grow and make easy options for home propagation for sale at local markets.

As with purchasing in nurseries, we recommend you take this booklet along to markets and fetes when you are planning to purchase plants, just to be sure your bargain is not at the expense of the environment.

Below: The gorgeous flowers of *Grevillea* 'Misty Pink' and *Eucalyptus* 'Silver Princess'



THINGS TO CONSIDER WHEN CHOOSING PLANTS

- ∴ Is it a known environmental weed in Wellington or East Gippsland? Many weeds are originally planted as garden plants and many are still available for sale. Take this booklet to the nursery with you when choosing plants and use the list of environmental weeds on pages 51-52 as a reference.



- ∴ Is it an indigenous plant to your Shire? The use of indigenous, or locally native, plants is strongly encouraged as they will increase the environmental value of any garden and reduce the effort you need to invest to make your garden a success. This booklet will serve as a preliminary reference for planning your plant list. For a more detailed indigenous plant list please see 'Further Information' at the back of this booklet.
- ∴ Is it low water use? While all plants take some watering to become established, choose plants that do not require on-going intensive watering. Double check these against the weed list keeping in mind many Mediterranean plants sold as water wise can also be weedy.

- ∴ Does it provide the function you want it to? Do some investigation into the mature size and shape of a plant to determine it's most appropriate placement and if it will provide the right function (screening, bird-attracting, feature etc.) Take into consideration the seasonality of a plant as the ability of it to provide that function may change throughout the year. Try and select a range of plants that will provide fast and slow growing components to your garden to provide a more immediate as well as a long-term effect.
- ∴ Is the plant suited to the site's environmental conditions? For example, is it shade tolerant, does it require full sun, what type of soil is it best suited for; can it handle water logging or long periods of drought? There are indigenous plant options available for all situations.

Above left Sweet Bursaria (*Bursaria spinosa*) in a hedging trial. With a bit of creativity, many indigenous plants can be used successfully instead of introduced species.

Indigenous Plants Guide



The following list of plants provides a small snapshot of the range suitable for Gippsland gardens, as they grow within the region naturally 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 so require less maintenance.

Some of these plants provide habitat for:



butterflies



birds



frogs



lizards

Groundcover and Tussock Species (HxW)



Common Tussock-grass

(*Poa labillardierei*)

(50cm x 1.2m)

Flowers Spring–summer



Kangaroo Grass

(*Themeda triandra*)

(40cm x 80cm)

Flowers Spring–Summer



Bulbine Lily

(*Bulbine bulbosa*)

(40cm x 30cm)

Flowers Spring–Summer





Purple-Coral-pea
 (*Hardenbergia violacea*)
 (10cm x 2m)
 Flowers Spring–Summer



Photo: Barry Sheffield

Black-anther Flax-lily
 (*Dianella revoluta*)
 (50cm x 1.5m)
 Flowers Spring–Autumn



Photo: Kelly Castelletti

Bidgee-widgee
 (*Acaena novae-zealandiae*)
 (10cm x 2.5m)
 Flowers Summer



Photo: Caroline Carvalho

Kidney Plant
 (*Dichondra repens*)
 (5cm x 50cm)
 Flowers Spring



Spiny-headed Mat-rush
 (*Lomandra longifolia*)
 (50cm x 1.5m)
 Flowers Spring–summer



Running Postman
(Kennedia prostrata)
 (10cm x 2m)
 Flowers Autumn–Summer



Clustered Everlasting
(Chrysocephalum semipapposum)
 (50cm x 1.5m)
 Flowers Summer–Autumn



Cut-leaf Daisy
(Brachyscome multifida)
 (20cm x 50cm)
 Flowers year-round



Shrub Species (HxW)



Sweet Bursaria
(Bursaria spinosa)
 (3.5m x 2.5m)
 Flowers Summer



Crimson Bottlebrush
(Callistemon citrinus)
 (4m x 2m)
 Flowers Spring - Autumn

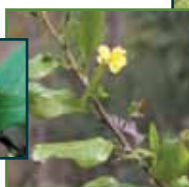




Common Correa
 (*Correa reflexa*)
 (60cm x 1.5m)
 Flowers Autumn–Winter



Hop Goodenia
 (*Goodenia ovata*)
 (1.8m x 1.5m)
 Flowers Winter–Summer



Austral Indigo
 (*Indigofera australis*)
 (1.5m x 1.5m)
 Flowers Spring



Photo: Caroline Carvalho



Dusty Miller
 (*Spyridium parvifolium*)
 (1.5m x 1.5m)
 Flowers Winter–Spring



Photo: Iain Harrison, Swinburne TAFE

Alpine Grevillea
 (*Grevillea alpina*)
 (1.5m x 1.5m)
 Flowers Spring–Summer



Photo: D Allen



Photo: Kelly Castelletti

Tree Species (HxW)



Golden Wattle
(Acacia pycnantha)
 (8m x 3.5m)
 Flowers Winter–Spring



Blackwood
(Acacia melanoxylon)
 (15m x 8m)
 Flowers Winter–Spring



Photo: Shire of Yarra Ranges



Victorian Christmas Bush
(Prostanthera lasianthos)
 (4m x 3m)
 Flowers Summer



Photos: Marty White

Below: Blackwood (*Acacia melanoxylon*)



Common Garden Weeds

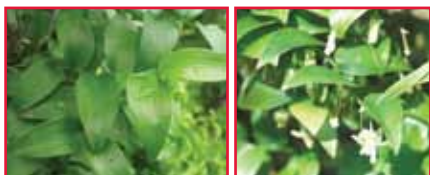
All the plants listed in the left column of this section are weeds that have escaped from gardens in Gippsland into surrounding bushland. Even native plants from other regions can become weeds. They may be found for sale in nurseries, community markets or fetes. Please do not plant these species. If you have them in your garden, we encourage you to remove them. Further advice on how to remove them is available from your Shire. They can be replaced with one of the suggested similar non-invasive native plants listed in the right column.

Weed 

Blue Periwinkle
(*Vinca major*)



Bridal Creeper
(*Asparagus asparagoides*)



LHS photo SYR

English Ivy/ Cape Ivy
(*Hedera helix* / *Delairea odorata*)



Replacement 

Purple Coral Pea
(*Hardenbergia violacea*)



photos (left to right):
C. Canallho, Barry Sheffield

Wonga Vine
(*Pandorea pandorana*)



Creeping Boobialla/Boobialla
(*Myoporum parvifolium* / *M. insulare*)



Weed



Bluebell Creeper
(*Billardiera* spp.)



Wandering Tradescantia
(*Tradescantia fluminensis*)



Photos left and centre: Caroline
Canalho

Asparagus Fern
(*Myrsiphyllum scandens*)



Banana Passionfruit
(*Passiflora mollissima*)



Photo:
Vivien Freshwater

Gazania
(*Gazania linearis*)



Replacement



Common Appleberry
(*Billardiera scandens*)



Ivy-leaf Violet
(*Viola hederaceae*)



Maiden-hair Fern
(*Adiantum aethiopicum*)



Austral Clematis
(*Clematis aristata*)



Photo: David Blair

Cut-leaf Daisy
(*Brachyscome multifida*)



Weed **X**

Arum Lily
(*Zantedeschia aethiopica*)

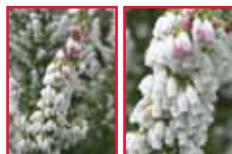


Photos:
Caroline Carvalho

Fountain Grass
(*Pennisetum setaceum*)



Spanish Heath
(*Erica lusitanica*)



Agapanthus
(*Agapanthus* spp.)



Photos:
Caroline Carvalho

Pampas Grass
(*Cortaderia* spp.)



Replacement **✓**

Kangaroo Paws
(*Anigozanthus* spp.)



Photo right:
Caroline Carvalho

Wallaby Grass
(*Austrodanthonia* spp.)



Common Heath
(*Epacris impressa*)



Photo: Kelly Castelletti

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



Photo right:
Kelly Castelletti

Red Fruit Saw-sedge
(*Gahnia sieberiana*)



Weed 

Bulbil Watsonia
(*Watsonia meriana* var. *bulbillifera*)



Cotoneaster
(*Cotoneaster* spp.)



English Broom
(*Cytisus scoparius*)



Flax-leaf Broom
(*Genista linifolia*)

Replacement 

Long-leaf Mat-rush
(*Lomandra longifolia*)



Lilly Pilly
(*Acmena smithii*)



Golden Tip
(*Goodia latifolia*)



Sticky Wattle
(*Acacia howittii*)



Weed **X**

Hawthorn
(*Crateagus monogyra*)



Mirror Bush
(*Coprosma repens*)



Cootamundra Wattle
(*Acacia baileyana*)



Desert Ash
(*Fraxinus angustifolia*)



Photos: Caroline Carvalho

Replacement **✓**

Snowy Daisy-bush
(*Olearia lirata*)



Victorian Christmas Bush
(*Prostanthera lasianthos*)



Photos: Marty White

Golden Wattle
(*Acacia pycnantha*)



Blackwood
(*Acacia melanoxylon*)



Photo right: Shire of Yarra Ranges

Weed



Pine tree

(Pinus radiata)

Cedar Wattle

(Acacia elata)

Peppercorn Tree

(Schinus ariera)

Red Cestrum

(Cestrum elegans)

Photo: Vivien Freshwater

Replacement



Black She-oak

(Allocasuarina littoralis)

Blackwood

(Acacia melanoxylon)

Banyalla

(Pittosporum bicolour)

Photo: Alex Maisey

Alpine Grevillea

(Grevillea alpina)

Environmental Weed List For Gippsland

A weed is a plant that establishes itself outside its normal environment and thrives. A weed can either be introduced from overseas, or a native plant that is growing in the wrong place and flourishing.

One of the greatest threats to our native flora and fauna, and agricultural productivity results from weed invasions. Environmental weeds threaten the values of natural ecosystems by invading native plant communities and out-competing them. The result is a reduction in plant diversity and loss of habitat for animals and birds. Agricultural weeds threaten sustainable productivity, and some are toxic to humans and stock.

SOME WEED FACTS:

- ∴ The cost of weeds to agriculture in Australia is estimated to be \$4 billion annually (in lost production and eradication efforts)
- ∴ Weeds cause serious problems to economy, environment, human and animal health, biodiversity, eco-tourism, water quality, recreation, amenity, landscape, and can be a fire hazard.
- ∴ It is estimated that 65% of weeds introduced to the Australian landscape are “escapees” from urban gardens and parks
- ∴ Six of Australia’s worst invasive plants have degraded over 20 million hectares of grazing and natural lands

Weeds on private properties can spread into the bushland via stormwater run-off, wind and birds. To help keep Gippsland’s bushland reserves looking attractive and to minimise weed cover, please keep your property free of environmental and noxious weeds. You can also:

- ∴ reduce stormwater run-off from your property
- ∴ reduce fertiliser use in the garden as it can promote weeds and discourage native plant growth
- ∴ grow native plants instead of exotics
- ∴ avoid dumping garden waste (including grass clippings) into bushland

Many of our worst weeds have come from the garden by jumping the back fence and establishing in our waterways and bushland. Birds and foxes eat the fruits of plants such as Cotoneaster and Privet, which they can carry kilometres away. Seeds also blow long distances in the wind and wash down drains into waterways, where they grow and spread.

Environmental Weeds in Gippsland

The following list contains environmental weeds (some of which are declared noxious weeds) in East Gippsland and Wellington Shires:

Agapanthus (*Agapanthus praecox* ssp. *orientalis*)

Arum Lily (*Zantedeschia aethiopica*)

Asparagus Fern (*Asparagus* spp)

Banana Passionfruit (*Passiflora mollissima*)

Blackberry (*Rubus fruticosus*) × ×

Blue Periwinkle (*Vinca major*)

Bridal Creeper (*Asparagus asparagoides*) × ×

Capeweed (*Arctotheca calendula*)

Cleavers (*Galium aparine*)

Cotoneaster (*Cotoneaster* species)

Cootamundra Wattle (*Acacia baileyana*)

Fennel (*Foeniculum vulgare*) ×

Gazanias (*Gazania* spp)

Hawthorn (*Crataegus monogyna*) ×

Ivy – English (*Hedera helix*)

Kikuyu Grass (*Pennisetum clandestinum*)

Morning Glory (*Ipomoea* spp)

Montbretia (*Crocasmia x crocosmiiflora*)

Oxeye Daisy (*Leucanthemum vulgare*) ×

Peppercorn Tree (*Schinus ariera*)

Wandering Tradescantia (*Tradescantia fluminensis*)

Water Hyacinth (*Eichhornia crassipes*) ×

Willows (*Salix* species) × ×



× Signifies a 'declared noxious weed' – these plants cannot be legally traded in Victoria and reasonable efforts should be made to remove any existing plant/s on your own land and/or adjoining roadside.

× × Signifies a 'weed of national significance' – this plant is recognised as one of the worst 20 weeds in Australia due to its highly invasive nature. All WoNS are declared Noxious weeds in Victoria.

Useful Links

- **Weeds Australia** – www.weeds.org.au
- **Department of Primary Industries website** – www.dpi.vic.gov.au and click on Victorian Resources Online/Land and Water Management/Invasive Plants/Full Listing of Weeds
- **Department of Primary Industries website** – www.dpi.vic.gov.au and click on Agriculture/Crops, Pasture and Weeds/Weeds
- **East Gippsland Catchment Management Authority** – www.egcma.com.au and click on Major Projects/'Protecting the Best' and 'From the Highlands Down'
- **Weeds of National Significance** – www.weeds.gov.au/weeds/lists/wons
- **Catchment and Land Protection (CaLP) Act** – www.austlii.edu.au/au/legis/vic/consol_act/calpa1994267
- **The Weed Society of Victoria** – www.wsvic.org.au
- **Victorian Serrated Tussock Working Party** – www.serratedtussock.com
- **For Schools see Weed Warriors website** – www.weedwarriors.net.au

Below: *Agapanthus* is a garden escapee that has become a weed in parts of Gippsland.



Produce Gardening

Growing fruit and vegetables commercially uses a large amount of energy and chemicals for heating, cooling, spraying weeds and pests and for transporting produce. Fruit and vegetables begin to lose their vitamins as soon as they're picked. After five days some have lost 40–50% of vitamins. Growing your own vegetables is so easy, and even easier if you've improved your soil. They're healthier, convenient and children love to watch them grow. Even if you only grow tomatoes, herbs and lettuce in a pot, it's a great start!



Below: A vegie garden can be quite a design feature, as SGA showed at the Melbourne International Flower & Garden Show in 2005.





ORGANIC PRODUCE TIPS

- ❖ Fruit and vegetables generally like to grow in the full sun with plenty of water, organic fertiliser and compost, while local and native plants do not need a lot of water and fertiliser. It is therefore best to grow them in separate parts of the garden.
- ❖ You can grow vegetables in no-dig beds and in big pots. (Refer to the SGA website for an information sheet on how to establish a no-dig garden, <http://www.sgaonline.org.au/?p=601> or produce gardening in general at http://www.sgaonline.org.au/?page_id=969).
- ❖ We strongly recommend that CCA treated pine not be used in vegetable gardens as some chemicals may leach into the soil over time.
- ❖ Use recycled plastic sleepers to make raised beds. These will not rot.
- ❖ Rotate the position of vegetables in your garden every year to stop diseases from spreading.
- ❖ Use natural alternatives such as pyrethrum and garlic sprays to control pests.
- ❖ You will need to apply regular water to your vegetables and check for pests, especially snails on new seedlings.
- ❖ Use heritage seeds (these are from plants with historical importance) for more variety and often superior flavour. You can plant early, mid and late season tomatoes.

Sustainable Lawns

Traditional turf lawns are often high water users. 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, depending on the look you are trying to achieve.

- ∴ One of the most successful indigenous grasses for creating the look of a traditional lawn is Weeping Grass (*Microlaena stipoides*). Unmown it grows up to 30cm, but mown a few times a year will grow well in a wide range of soils and provide a lawn look. Once established, Weeping Grass is drought, frost and shade tolerant. It is excellent for a front lawn and can be grown from seed or plugs (seedlings in bulk trays). Like any lawn, use edging to separate garden beds from lawns to reduce your maintenance efforts. For heavy traffic areas opt for paths.
- ∴ If you like clumps of tussocky grasses then Kangaroo Grass (*Themeda triandra*), Wallaby Grass (*Austrodanthonia* spp.) and Tussock Grass (*Poa* spp.) are great alternatives.

Below: Wallaby Grass (*Austrodanthonia* spp.) used as a lawn





∴ Use groundcover plants that form dense mats, don't require mowing and perform well in shade. Examples include: Kidney Plant (*Dichondra repens*), Creeping Boobiella (*Myoporum parvifolium*) and Native Mint (*Mentha diemenica*).

∴ Planting out a mass of native wildflowers to create a meadow look can be spectacular particularly in spring and summer. This works particularly well as a front lawn alternative. Examples include: Tall Bluebells

(*Wahlenbergia stricta*), Grass Trigger-plant (*Stylidium graminifolium*), Bulbine Lily (*Bulbine bulbosa*) and Climbing Saltbush (*Einadia nutans*).

Use of instant turf should be avoided as it has higher water and chemical application requirements during establishment, and tends to contain weedy grass species like Couch and Kikuyu.

There are exotic tussock grasses that are non-invasive, grow well in shade or high use areas, are all deep rooted, or have a short rhizome to allow them to recover from dry periods. Examples include: Fescues, Blue Grass and Bent Grass.

While indigenous grass lawns require more effort in the establishment phase with hand weeding, once established they can provide a hardwearing, attractive lawn that won't invade bushland or garden beds, and requires less overall maintenance than an exotic grass lawn.

Above left: Weeping Grass (*Microlaena stipoides*) Below (left to right): Kangaroo Grass (*Themeda triandra*); Creeping Boobiella (*Myoporum parvifolium*); mixed wildflowers and native grasses



Roadside Reserves

Roadside reserves and nature strips are linear reserves of public land between your property boundary and roads. While technically the property of East Gippsland and Wellington Shires, in the majority of cases the Shires rely on private landowners to assist in the maintenance of these areas. However, vegetation protection measures still apply to these areas and indigenous vegetation must not be removed or destroyed without a permit.

Planting of roadside reserves may be allowed in some circumstances where the plants will not cause a safety hazard or obstruction to footpaths or services. If you would like to plant on the roadside reserve adjacent to your property please contact your Shire for further advice before planting.

Environmental weeds must not be planted on Roadside Reserves.

If your property is adjacent to a high conservation roadside with good quality remnant vegetation please take care to prevent any garden weeds jumping your fence and spreading into these areas.

Please contact your Shire to register any community roadside revegetation projects or tree plantings before you start.



Below: Love Creeper (*Comesperma volubile*) is a fine-stemmed indigenous twining plant, with bright purple flowers.



Sustainable Garden Products

When we buy products for the garden we often don't think about where they have come from. For example, Red Gum firewood and garden sleepers come from threatened woodland ecosystems (or vegetation communities) that support sensitive native fauna. Red Gum timber is also used to produce items such as bark chips, tomato stakes and railway sleepers – harvesting this product is unsustainable. And huge amounts of shiny river pebbles are dug out of active rivers in Asia so we can create a garden feature.



Using recycled materials such as second-hand bricks and timber looks great in a garden and it's a good practice to adopt! Recycled plastic garden materials are also available now, such as sleepers, decking boards and garden furniture.

Left: Recycled plastic garden seat – sourced from residential kerbside collections.

ALTERNATIVE PRODUCT TIPS

- ⌘ There are usually alternative garden products available. For example, pebbles that are quarried in Victoria from inactive streambeds are preferable because they are not destroying living habitats.
- ⌘ Look up www.timbershop.org to find out which timbers are sustainable. While many outdoor furniture companies claim that Teak is plantation harvested in Asia, this magnificent tree is a rare rainforest plant that cannot be grown in plantations.
- ⌘ Plants such as grass trees, tree ferns and native orchids may have been sourced illegally from the forest. When purchasing these plants look for a government tag stating that they have been legally collected.
- ⌘ Make sure you ask where mulch has come from as some varieties are sourced from the logging of old growth forests and others may contain weed seeds.
- ⌘ Ceramic pots fired using gas and produced locally have a lower environmental impact than those pots fired using coal or wood and transported from overseas. Ask where a product comes from and avoid buying unsustainable products.

Mulch

Mulch should be applied to all garden beds to assist in controlling weeds and retaining moisture to sustain plants. Various types of leaf litter or wood chip mulches are available, but ones that are sourced from less abundant tree species (such as Red Gum) should be avoided.

Here are some appropriate mulches:

- :: recycled garden waste (see below);
- :: plantation grown timber (pine bark);
- :: sawmill off-cuts (e.g. eucy-mulch);
- :: recycled timber;
- :: jute mat; and
- :: pebbles or scoria.

Note: It is highly recommended that all weeds, in particular perennial weeds such as Couch Grass, Kikuyu and *Oxalis*, be controlled before mulch is applied, to reduce the chance of them continuing to invade garden beds.



Alternative garden edging products

- :: Sugar Gum
- :: recycled plastic sleepers
- :: recycled railway sleepers
- :: local stone
- :: recycled brick
- :: treated pine (not recommended for vegetable gardens or children's playground areas)
- :: products made from a combination of wood fibre waste and recycled plastics

Further Information

Further reading

Grow Me Instead, A Guide for Gardeners in the Gippsland Area. Available from Wellington Shire, East Gippsland Shire and Latrobe City

Indigenous Flora Species Selection Guide for Bairnsdale and Surrounds. Greening Australia, South East Victoria Region

Indigenous Flora Species Selection Guide for Landholders in the Maffra and District Landcare Network

Indigenous Plants of Wellington Shire. Revegetation Guide for Coastal Areas

Common Weeds of Gippsland, East Gippsland and Wellington Shire

East Gippsland UTE Guide, 2nd Edition 2010. Landcare East Gippsland Region

Useful links

- :: Sustainable Gardening Australia – www.sgaonline.org.au
- :: Weed Society of Victoria – www.wsvic.org.au
- :: Invasive Species Council – www.invasives.org.au
- :: Department of Sustainability and Environment – www.dse.vic.gov.au
- :: Weed CRC – www.weeds.crc.org.au
- :: Greening Australia – www.greeningaustralia.org.au
- :: Trust For Nature – www.trustfornature.org.au



HOW GREEN IS YOUR GARDEN?

Sustainable Gardening is all about gardening in a way that minimises the impact our gardening practices have on the natural environment.

This information sheet has been designed to enable you to conduct a sustainability audit on your garden. Simply tick a box if it is something you are doing in your garden and add up your total at the end. You can continue making your garden more sustainable by aiming for more ticks in six months and 12 months.

If you require more information about an issue refer to one of the Sustainable Gardening booklets on the SGA website. www.sgaonline.org.au



Give yourself a tick if you do any of the following:

Garden Design – do you?

- Have a plan of sun/shade, slope and soil variation in your garden
- Have a rough planting plan that groups plants according to their needs
- Have less than 50% of your garden area taken up by lawn
- Have designed your garden to be a place for people to socialise.

Design Score /4

Compost – do you?

- Make your own compost
- Can list 10 things you can put in compost and three things you shouldn't put in compost
- Use your compost as a fertiliser in your garden.

Design Score /3



Soil – do you?

- You know which are the best types of mulch for different types of plants
- Check mulch levels and replace every year to bring back to 8-10cm deep
- Regularly add organic matter to your soil
- You have at least 3 worms in a spadeful of soil wherever you dig in the garden
- Only dig your soil when you have to.

Design Score /5

Chemicals – do you?

- Avoid using chemicals before it rains or on windy days
- Check your garden regularly for pest outbreaks
- Know exactly what pest or disease you are trying to control
- Use chemicals that have a low toxic level (Refer to the SGA Low Environmental Damage Chemicals)
- Use chemical alternatives (eg garlic sprays) or if you do spray, you target-spray only the affected plant/s
- Use organic fertilisers (compost, manure, seaweed and fish emulsions)
- Don't over fertilise your plants producing excessive plant growth and excess green waste from additional pruning.

Design Score /7

Water – do you?

- Mulch all garden beds and pots
- Have 50% or more of your garden planted with local plants or drought tolerant plants
- Don't have a lawn, or if you do, you cut your lawn long (8-10cm) over summer
- Water in the cool of the day
- Water around the plant root zone with long infrequent watering
- Use a soaker hose or dripper system under the mulch instead of sprays
- Have either a timer on your taps or shut off valves on your hoses
- Have at least 3000 litres of water in a tank for summer watering
- Recycle greywater from the laundry and bathroom to the garden using EPA approved techniques or systems.

Design Score /9

Produce – do you?

- Grow any herbs, fruit or vegetable
- Use organic fertilisers and no artificial weed or pest killers.

Design Score /2



Plant selection – do you?

- Know the difference between native, indigenous and exotic plants
- Have more than 30% of your garden planted with local plants
- Have not planted any environmental weeds
- Have at least one shade tree of suitable size for your garden
- Have made a planting plan for a new or established garden to suit drought conditions
- Have grouped your plants according to their water, sun and nutrient needs.

Design Score /6

Products – do you?

- Ask where a product comes from
- Use recycled products, like bricks, timbers, plastic sleepers
- Take your own plastic bag or canvas bag to a garden centre to carry home products and plants
- Reuse your plastic plant pots or put them in a garden center pot recycling bin.

Design Score /4

Sustainable Gardening Score Card

Now	/40
6 Months	/40
12 Months	/40



www.sgaonline.org.au