



SAMPLE ONLY

# Garden Concept Design

for



by



SUN AND SOIL  
ORGANIC GARDENING

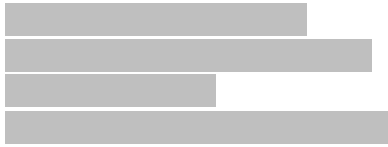
**Revision A**  
4<sup>th</sup> August 2020

Prepared by Melissa Smrecnik and James Blyth  
*Sun and Soil Organic Gardening*  
[www.sunandsoil.com.au](http://www.sunandsoil.com.au)  
359 Annerley Road Annerley | Ph. 0415 168 963 or 0481 756 057 | [info@sunandsoil.com.au](mailto:info@sunandsoil.com.au)

# Table of Contents

<b>Client</b> .....	<b>3</b>
<b>Designer</b> .....	<b>3</b>
<b>Scope of the Report</b> .....	<b>3</b>
<b>Site Information</b> .....	<b>4</b>
Locality Map and Aerial Imagery	4
Existing Site Plan	6
<b>Proposed Garden Design</b> .....	<b>8</b>
Planting Zone 1	8
Planting Zone 2	9
Planting Zone 3	9
Planting Zone 4	10
Planting Zone 5	10
Planting Zone 6	10
<b>Your Composting Needs</b> .....	<b>11</b>
<b>Your Water Needs</b> .....	<b>12</b>
<b>Appendix A – Garden Path Options</b> .....	<b>13</b>
<b>Appendix B – Banana Circles</b> .....	<b>14</b>
<b>Appendix C – Plant Information</b> .....	<b>15</b>
Annual Crops	15
Perennial Greens	16
Perennial Herbs	18
Companion Planting for Integrative Pest Management	21
Other Useful Permaculture Plants	23
Small Trees – Fruit, Root and Leaf Crops	24
Larger Trees – Fruit, Root and Leaf Crops	26
Native Bush Tucker	28

## Client



## Designer

Melissa Smrecnik and James Blyth  
Sun and Soil Organic Gardening  
0415 168 963  
[info@sunandsoil.com.au](mailto:info@sunandsoil.com.au)  
[www.sunandsoil.com.au](http://www.sunandsoil.com.au)



## Scope of the Report

The purpose of this report and plan is to provide some conceptual ideas for redesigning [REDACTED] into a productive and edible site incorporating composting systems, water capture and optimisation, native biodiversity, fruit trees, medicinal and culinary herbs, rotational and perennial vegetables, soil improvement and integrative pest management. The report includes background information of the site, a description of the proposed garden concept and some information on recommended plant species.

This report is intended to be read in conjunction with the accompanying concept design plan.

The concepts presented have been based primarily on the discussions with the client during the initial consultation on the 8th of July 2020.

## Site Information

---

Address: [REDACTED]

Property size: 641m<sup>2</sup>

### Locality Map and Aerial Imagery



Source: Google Maps 2019



Source: Google Maps 2019

## Site Photos

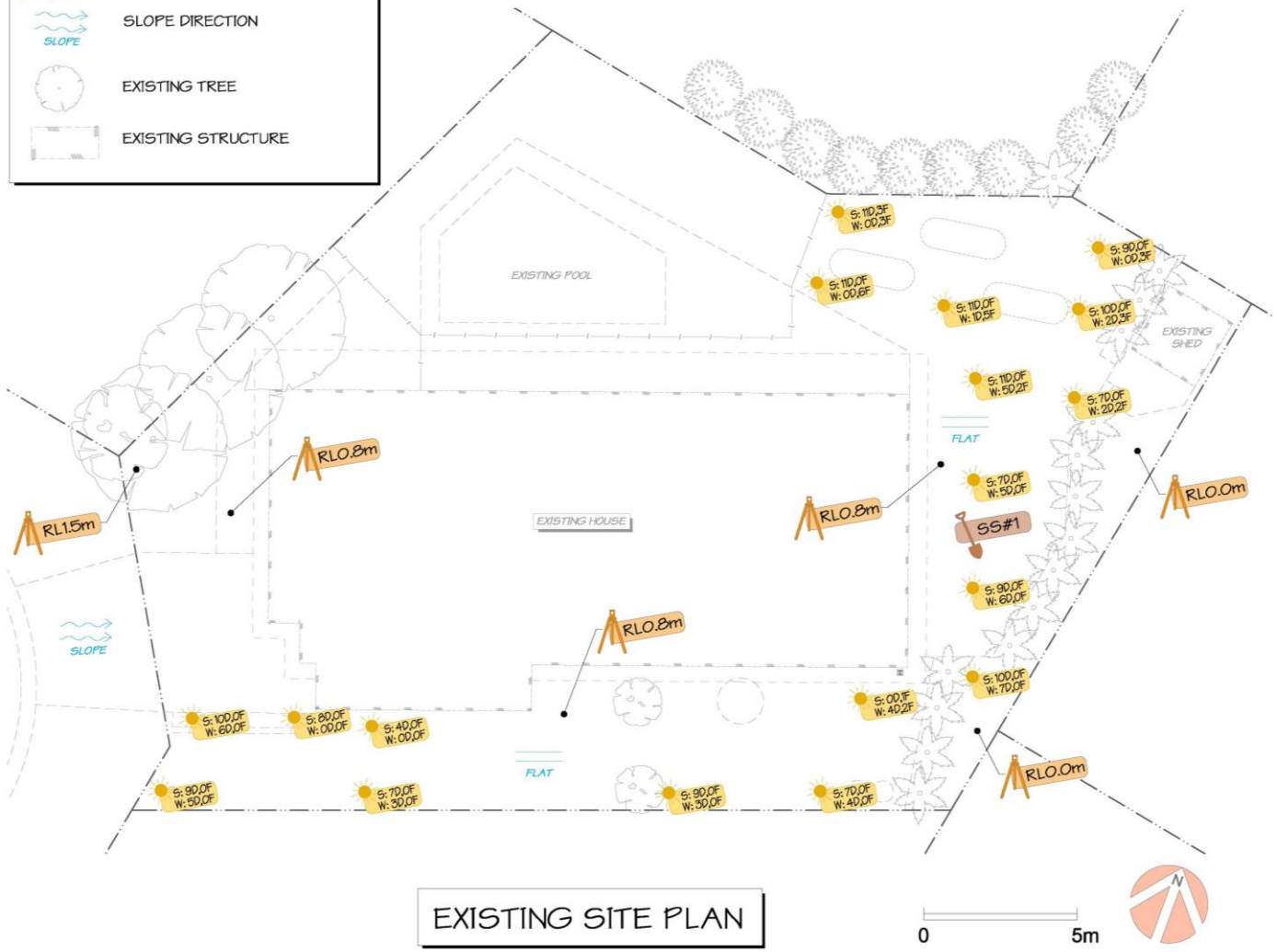
All photos taken during initial site visit July 2020.



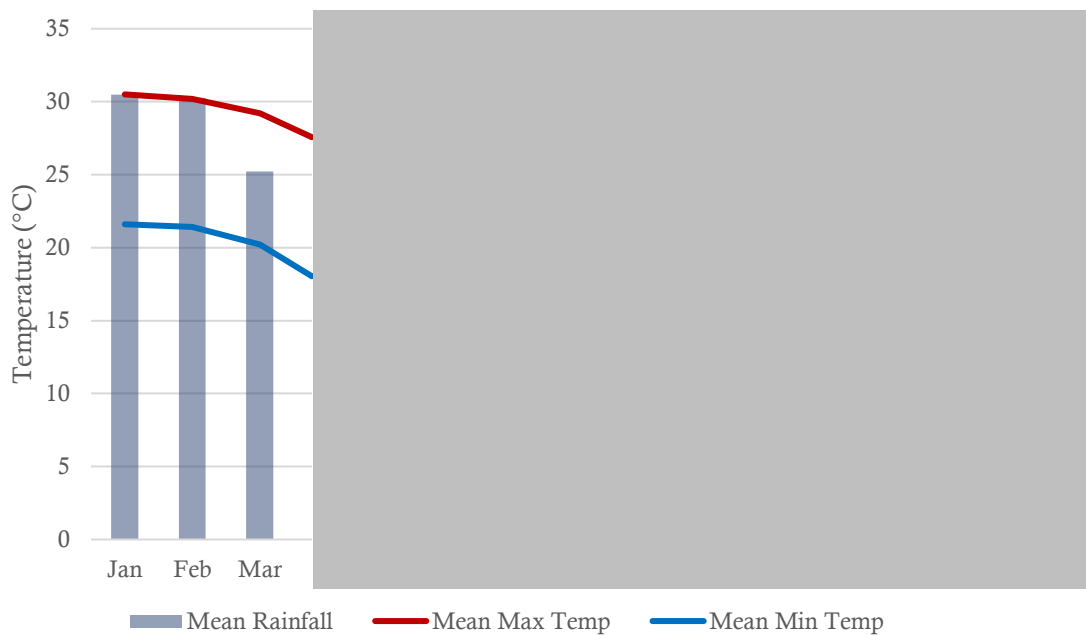
# Existing Site Plan

**LEGEND**

- HOURS OF DIRECT & FILTERED SUNLIGHT IN SUMMER & WINTER
- SOIL SAMPLE LOCATION
- RELATIVE LEVEL OF GROUND
- SLOPE DIRECTION
- EXISTING TREE
- EXISTING STRUCTURE



## Climate Information



**Figure 1:** Rainfall and Temperature Statistics (Brisbane Area)

The graph above shows the coolest month of the year is July with an average minimum temperature of 10°C and the hottest month is January with an average maximum temperature of 31°C. The wettest period is during Summer (Dec – Feb) with average monthly rainfall totals of up to 140mm (5.5 inches). The driest period is between July and September with average monthly rainfall totals of around 25mm (1 inch).



**Figure 2:** Wind Direction and Intensity Summary

The diagram above shows the wind direction is predominantly from the east with the highest wind intensity during the mornings of the months of May, June, July and August.

All climate data sourced from the Australian Government Bureau of Meteorology website (<http://www.bom.gov.au/climate>).

## Proposed Garden Design

---

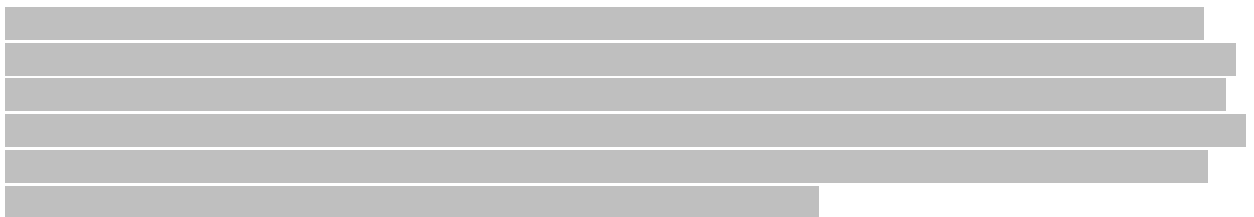
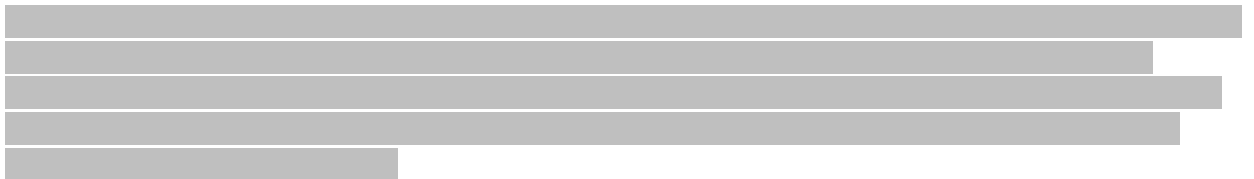
As discussed during the consultation we have designed the site taking into consideration the following aspects:

- Focused on creating a productive edible growing space incorporating fruit trees, herbs (medicinal and culinary) and rotational and perennial vegetables
- Composting systems to recycle household waste for soil improvement
- Water capture and optimisation including drip-line irrigation, water tank, grey water reuse
- Support native wildlife and biodiversity which will form part of the integrative pest management system

For each of the planting zones please refer to Appendix C for a more in-depth explanation of suggested plant species.

### Planting Zone 1

We recommend the construction of 5 raised timber garden beds (approx. 2m-3m long by 1m wide) in planting zone 1, positioned directly outside of the back outdoor area. These beds can be used to plant a range of seasonal annual and perennial crops. We have chosen this spot due to its optimal sun exposure (5-6h winter and 7-9h summer) and close proximity to the back entrance of the house for easy harvesting. If possums or foraging wildlife are a problem, these beds can also be netted. Please see Figure 4 for an example of an exclusion tunnel.







**Figure 4.** Exclusion tunnels on raised garden beds

## Planting Zone 2

[Redacted text block]

Zone 2 has been designed to incorporate elements of a food forest with stratification (dwarf fruit trees, will small shrubbery and ground covers) and as an herbal sensory garden. Plants used in this area will be perennial meaning that once established these plants will not need to be replanted with the changing seasons. A herbal sensory garden involves planting out a range of plants that provide a certain sensory experience. This may include an interesting texture for touch, strongly scented herbs such as rosemary and lavender that are pleasant to the nose, flowering herbs to attract butterflies and pollinators that are pleasant to the eyes and interesting flavoured herbs that are pleasant to the tongue.

[Redacted text block]

[Redacted text block]

## Planting Zone 3

[Redacted text block]

[Redacted]

### Planting Zone 4

We recommend replacing the existing vegetation in this area with a banana circle. A banana circle is a permaculture concept that involves: 1) creating a mounded circle that captures water runoff 2) has an open pit where spent plants, woodchip and pruning's are put into (any compostable material) and 3) has a range of crops such as bananas, papayas and sweet potato grown along the top of the mound. These plants thrive from the added organic matter and water runoff. This site was chosen due to optimal sun exposure and located at the lowest point on the property, where the water runoff would naturally fall. For a further description and diagram of a banana circle please see Appendix B.

[Redacted]

### Planting Zone 5

Along the south-east fence boundary, we recommend planting a range of edible fruit trees that can be maintained as a narrow hedge to prevent blocking access. Examples may include Acerola Cherry, Brazilian Cherry, dwarf Mulberry and Guava. These can be somewhat shaped using a combination of espalier principles and general pruning techniques. These species were chosen due to their hardiness to grow in the poor quality soil in this area. Understory of hardy Mediterranean plants may include curry bush, rosemary, lavender and lemon grass.

[Redacted]

[Redacted]

[Redacted]

### Planting Zone 6

[Redacted]

[Redacted]

## Your Composting Needs

---

To meet your composting needs we recommend an integrative approach consisting of in-ground worm farms and a banana circle. The following shows you how your waste can be divided between these two systems.

### In-Ground Worm Farms

Worm farms are a great way to recycle kitchen scraps and make them into super fertile compost. Worm farms can come in a number of different styles and sizes from a small in-ground worm tower up to a large commercial sized farm suited more to schools or community gardens. In-ground worm towers are great for small raised vegetable gardens as the worms do all the work spreading the nutrients throughout the soil (see picture). These worm farms can be placed in zone 1.



### In-Ground Pet Poo Worm Farm

Another in-ground worm farm can also be set up to allow worms to process your pet poo and enrich the surrounding soil. Pet poo worm farms are not recommended to be placed in vegetable gardens, however can be set up within zone 3 in amongst the fruit trees.

### Banana Circle

The Banana Circle can take any excess of organic waste including food scrapes, spent plants, tree prunings, spare woodchip etc.

## Your Water Needs

---

### Irrigation Systems

To minimise water usage in the garden, it is highly recommended to install a drip line irrigation system with an automated timer. Drip line systems use around 15 times less water than sprinkler systems for a given area and many crops such as tomato, pumpkin and zucchini are more prone to fungal attack if their leaves are regularly wet. Most decent quality drip line is now pressure regulated, meaning that each drip hole delivers the same amount of water no matter how far from the source. It can also be buried in the soil without any blockage issues.

[Redacted text block]

[Redacted text block]

### Rainwater Harvesting and Grey Water Reuse

Part of being a responsible water citizen on this dry continent involves doing your part to minimise water usage in the home and garden. By harvesting rainwater for use in your garden, toilets, washing machines and hot water systems along with reusing your greywater to irrigate parts of the garden, water savings of around 40% can be made. Rainwater is also much better for your garden as it does not contain residues from water treatment such as chlorine, salts and fluoride which can be harmful to soil microbes.

The most obvious part of rainwater harvesting is the tank, which should be sized to give good reliability based on rainfall patterns in the area. For most urban or suburban properties in southeast Queensland a tank size of at least 5000L is recommended to give decent (over 50%) reliability for a medium sized garden. Larger rural properties would benefit from a larger (10,000 to 15,000L) tank, especially when the catchment is from a smaller structure such as a shed.

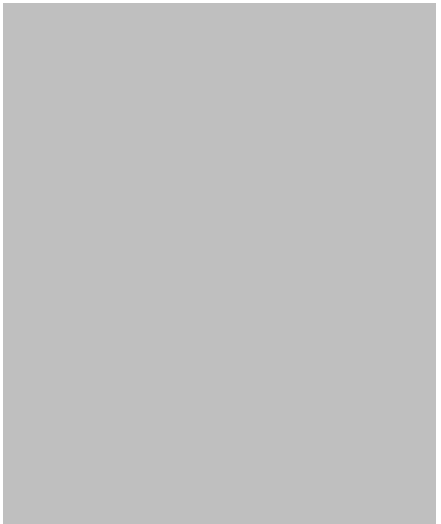
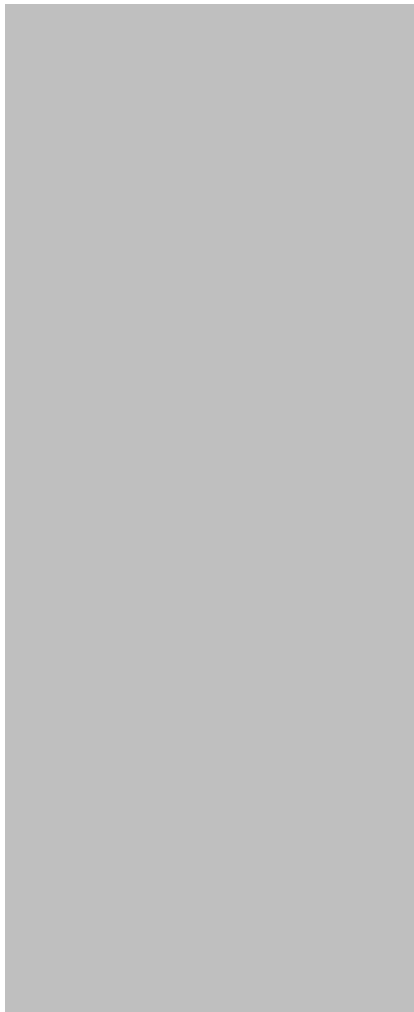
[Redacted text block]

[Redacted text block]

[Redacted text block]

**Options for Garden Paths**

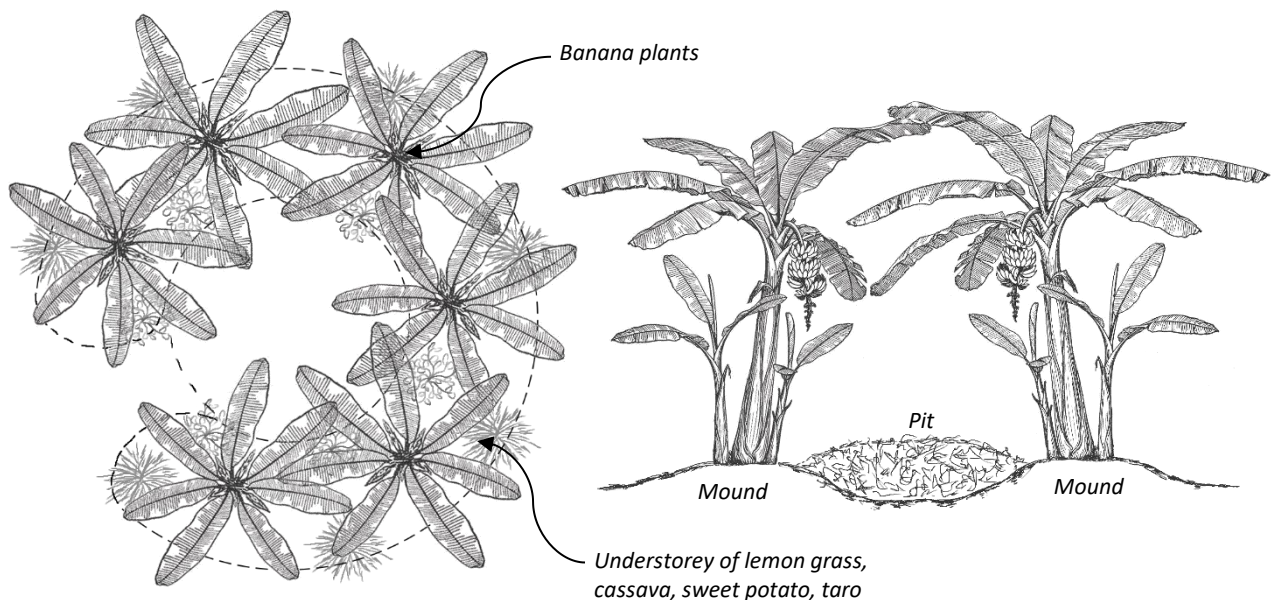
Below are a number of options for creating pathways around your garden. From left to right: round pavers with low growing herbs; wooden planks with gravel;



## Banana Circles

A banana circle is an excellent way to grow fruit and root vegetable crops whilst doubling as a compost system for pruning waste and spent plants. This allows for all plant material to be recycled back into the system on site.

A banana circle is a circular mound of soil surrounding a mulch-filled pit in the ground. The pit collects and stores water from rain, runoff, and grey water from household water use, like a laundry machine, to keep the thirsty bananas well watered.



**Figure 4:** Banana Circle Typical Plan and Elevation

\* Note that growing bananas in much of Australia is regulated and there are laws in place to restrict the transplanting or cultivating of banana plants to prevent the spread of diseases. As of 2016, a permit is no longer needed to grow bananas in Queensland however all banana plants must be purchased from a QBAN accredited nursery and owners may have to show proof of purchase if their property is inspected. If you transplant a sucker from a friend's backyard or purchase one through Gumtree, you may be liable for prosecution.

## Appendix C – Plant Information

The following plant information corresponds to each of the planting zones referred to in this report and on the concept plan. For any species not commonly known, we have included plant descriptions and uses. Once you have read through the plant lists please make a list of:

- 1) Plants you definitely want to include (depending on availability, suitability and season)
- 2) Plants you would be happy to include if there is space
- 3) Plants you do not want to include

Alternatively if you would prefer we are also happy to select species we think are highly valuable to include.

### Annual Crops

#### Planting Areas: Zone 1

Definition of Annual crops: Plants with a life cycle that lasts only one year. They grow from seed, bloom, produce seeds, and die in one growing season. They need to be replanted each season and therefore require more time input.



<i>Subtropical Summer Crops</i>	<i>Subtropical Winter Crops</i>
Corn	Cabbage
Cucumber	Mustard greens
Zucchini	Lettuce
[Redacted]	[Redacted]
[Redacted]	[Redacted]
[Redacted]	[Redacted]
[Redacted]	[Redacted]
[Redacted]	[Redacted]
[Redacted]	[Redacted]
[Redacted]	[Redacted]
[Redacted]	[Redacted]
[Redacted]	[Redacted]
[Redacted]	[Redacted]
[Redacted]	[Redacted]
[Redacted]	[Redacted]
[Redacted]	[Redacted]
[Redacted]	[Redacted]
[Redacted]	[Redacted]
[Redacted]	[Redacted]
[Redacted]	[Redacted]
[Redacted]	[Redacted]
[Redacted]	[Redacted]



**Amaranth leaf** - A nutritious, leafy green for warmer areas. It is a fast-growing and best to harvest the whole plant as older plants get tough and bitter tasting. Successive sowings will provide greens over a long period. The leaves have a sweet, tangy flavour and are best cooked, raw leaves should not be eaten very often, as they are high in nitrates and oxalic acid. In China and Japan it is the main vegetable used as a cooked green.

## Perennial Greens

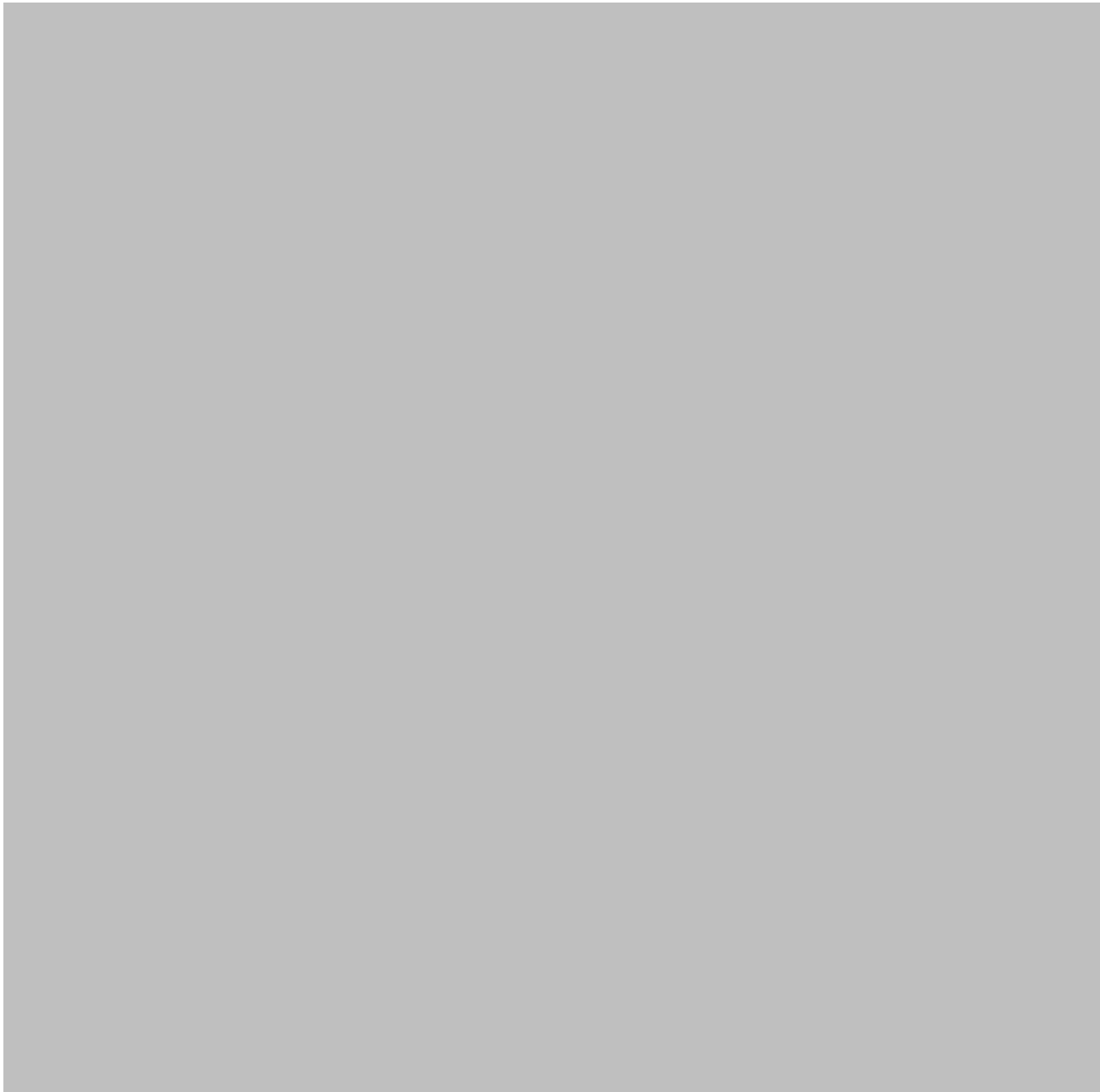
### Planting Areas: Zone 1 and 2

Definition of Perennial: A plant that lives more than two years and therefore does not require to be planted seasonally. These plants require little attention.





**Sambung Lettuce** - Sambung is a bushy perennial plant to 80 cm high with yellowish orange thistle-like flowers, it is a close relative of Okinawa Spinach. The leaves are green and fleshy and said to taste like green beans. The young leaves and shoots can be eaten fresh in salads or steamed like spinach. Sambung traditionally has many medicinal uses and is reputed to extend life which is why it is called 'Leaves of the Gods'. It is also a useful forage plant for poultry.

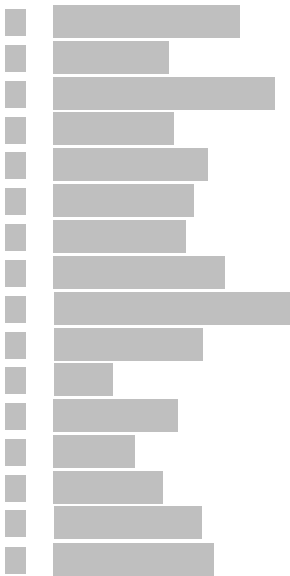


## Perennial Herbs

### Planting Areas: Zone 2 and Zone 5 (indicated by \*)

The following species are recommended for their hardiness in our subtropical climate and their low maintenance requirements.

- Mexican Tarragon
- Pineapple sage



**Pineapple Sage** - Pineapple sage is an herbaceous perennial that grows 1.2 - 1.5 metres tall. Its grey-green leaves have a delicious scent when crushed. The flowers are bright scarlet red with a long blooming period. Like most salvias it is attractive to honeyeaters and bees. The edible leaves and flowers can be used in a salad or as garnish.



**Holy Basil** - Sacred Basil is native to India and revered by Hindus; it is often planted around shrines. The long purple flowers appear late spring to early winter; the green foliage has a spicy, clove-like fragrance. The leaves are used for herbal tea and added to salads. In herbal medicine the distilled oil is used as an antibiotic and insect repellent. It is attractive to bees and beneficial insects. It does well in containers and is traditionally grown for good luck near the front door of the house.

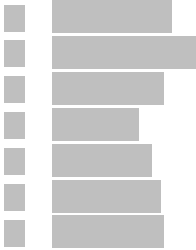
**Cardamom Leaf Ginger** - is one of the hardiest members of the ginger family with a wide range of uses. The plant forms good-sized clumps fairly rapidly and can be used as a 1 m tall screen. The evergreen foliage is attractive and can be used to create a tropical feel. The leaves have a very distinctive cardamom fragrance when crushed, although this is not the plant that produces the cardamom pods. Use the leaves in desserts; to add flavour to steamed rice, or to wrap fish. In a herbal tea they are delicious combined with lemongrass and ginger. The flowers are white, shell-like sprays and bloom prolifically. They are considered edible and can be used in salads or preserved in sugar to decorate cakes. The plants are surprisingly drought tolerant and resistant to pests and diseases. It will grow in full sun but prefers partial shade. One of our favourite uses is to cut and gather armfuls of fragrant leaves for mulch.



## Companion Planting for Integrative Pest Management

### Planting Areas: Zone 2

- Tansy
- Scented Geranium (see description above)



**Wormwood** – is an aromatic, herbaceous perennial growing from 80cm to 1.2 meters with white-silver leaves. It is extensively cultivated and has been known for its use in several alcoholic drinks, notably Vermouth and Absinthe. As with many herbs there was a wide range of traditional medicinal applications for wormwood. However, it was very well known for its treatment and prevention of intestinal worm infestation, for both humans and chickens. Being strongly aromatic, wormwood forms part of the integrative pest management system by masking, confusing and repelling insects from the garden.



**Marigold** - is a favourite, no-fuss annual that can bring the colour of sunshine to your garden, as well as butterflies, bees, ladybugs, and other beneficial insects. They are one of the most well-known insect-repelling plants keeping aphids, mosquitoes, and other pests away.



## Other Useful Permaculture Plants

### Planting Areas: Zone 2

- Arrow Root



**Arrowroot** – A very hardy, clump-forming perennial plant to 2 m high. The tuber has a high potassium content and 1-3% protein; the young leaves and shoots are nutritious and contain 10% protein. They can be used all year round, as a potato substitute and can be processed into a flour and used as a gluten-free alternative or as a thickener in soups. It has many medicinal uses. Arrowroot provides an excellent on-going source of mulch and material for making compost.

## Small Trees – Fruit, Root and Leaf Crops

Planting Areas: Zone 3; 5 (indicated by \*) and 4 (indicated by \*\*)

The following species are recommended for their suitability to our subtropical climate and compact size.

- Dwarf citrus (lemon, orange, kumquat, lime, kaffir lime, mandarin, lemonade, tangerine)
- Dwarf Fig Tree



**Acerola Cherry** - This bright red cherry-like fruit has varying tastes during different stages in maturity. When fully ripe the fruit is juicy and aromatic with its acid content giving it a sweet acid apple-like flavour. The tree can produce a number of crops each year, making for quite a long harvest season. The fruit is said to have 65 times more vitamin C than oranges. The small tree has a maximum height of 2-5m and can be pruned to 2m.





**Cranberry Hibiscus** - A very nutritious vegetable; the leaves are high in vitamins B3 (niacin), B2, A and C. It is high in protein and an excellent source of antioxidants and anthocyanins. The young leaves are known for their pleasantly tart flavour, eaten either raw or cooked. As the leaves contain oxalic acid, cranberry hibiscus should not be eaten in large amounts - e.g. as the only raw green vegetable in a salad - or more than once a week. Unlike Aibika, it is not particularly mucilaginous. Cranberry hibiscus leaves retain their colour after being cooked. Flowers are used to make teas or other drinks where they contribute colour rather than taste. In Central America the flowers are combined with ice, sugar, lemon, or lime juice and water to make a purple lemonade.

## Larger Trees – Fruit, Root and Leaf Crops

### Planting Areas: Zone 3

The following species are recommended for their suitability to our subtropical climate.

- Moringa



**Moringa** – A fast grow tree that can be pruned to height of 2-3 metres. The pungent root is used as a substitute for horseradish, eaten as a vegetable or pickled. The young foliage and flowers are a ready source of vitamins A and C as well as calcium, phosphorus; the leaves contain up to 38% protein. Leaves should always be cooked - add them to soups, stews, curries and pickles. The immature pods are cooked and curried like okra. Young seeds are used as a vegetable, mature seeds can be roasted and eaten like peanuts. An edible oil, 'ben oil', is expressed from the seeds, used in salads and for lubricating delicate machinery. The seeds are used for clarifying water. The powdered suspension added to the surface of turbid water will bring it to the clarity of tap water within one to two hours, taking bacteria and other microorganisms with the sediment to the bottom. The flowers also provide a great nectar source for bees.



**Jaboticaba** – The jaboticaba fruit tree has a habit of producing the fruit directly on the trunk makes this a striking tree. The black fruit has an edible thin, but tough skin. The texture is similar to a grape with a sweet and aromatic flavour. Cropping can begin at 5 years with several crops maturing from spring to autumn. A versatile small tree with decorative coppery foliage that makes for an ornamental specimen tree or superb hedge.

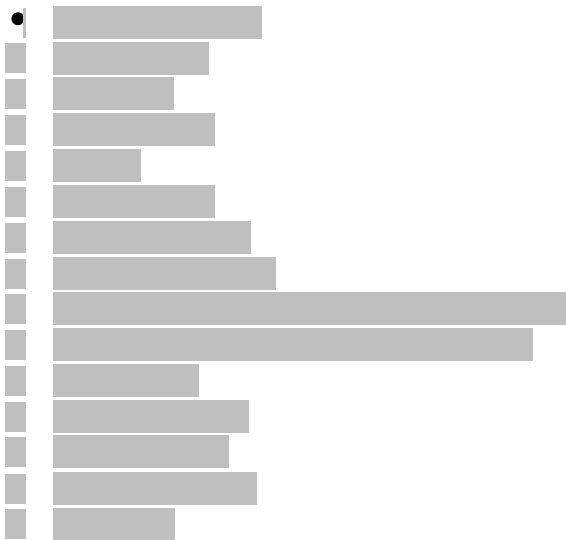


## Native Bush Tucker

The below provides some examples of Native Bush Tucker that can be grown in addition to other native species for wildlife such as Grevillea and Callistemon Bottlebrush. Some of these species are quite rare and sometimes hard to source so may not be guaranteed to be available for plant out. This section provides some examples of how to make a native garden also edible.

Planting Areas: Zone 2 (indicated by \*) and 6

- Old Man Saltbush
- Bloodroot \*
- Native Lemongrass
- Native Thyme \*





**Native Oregano** - is a type of native mint, used traditionally as a medicinal herb for treating headaches and colds. These days, it's more common as a culinary herb and ornamental bush. A strongly aromatic herb, Native Oregano is a superior native substitute for common oregano. It's less sweet in flavour with earthier tones and a slightly citric tang. Use it to add flavour in salads, savoury meat dishes, sauces, or steep in hot water to make a fragrant herbal tisane.

**Midyim berry** - Midyim berries are among the most delicious of all the bush tucker plants, similar in taste and appearance to the blueberry; a favourite among the Aboriginal people. Berries are sweet and tangy, and may be eaten fresh or used in pies and preserves.



**Dianell lonifolia** - an evergreen, stemless, clump-forming perennial plant with sword-like leaves. The leaves are gathered from the wild for their fibre and use in basket making. Dark blue to purple berries are edible when ripe. Berries sweet and juicy (slightly gritty) and make a great addition to fruit salad.



**Lomandra** grass has a clumping habit with green, flat blades and a height and spread of about three feet. Among the many interesting tidbits of Lomandra information is its traditional use by Aborigines to make nets and baskets, with one species also used as a food source.