

Robin Clayfield



You can have your
Permaculture
and EAT IT too!



TASTER OF
You Can Have Your
Permaculture
and Eat It Too

By

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YOU CAN HAVE YOUR PERMACULTURE AND EAT IT TOO

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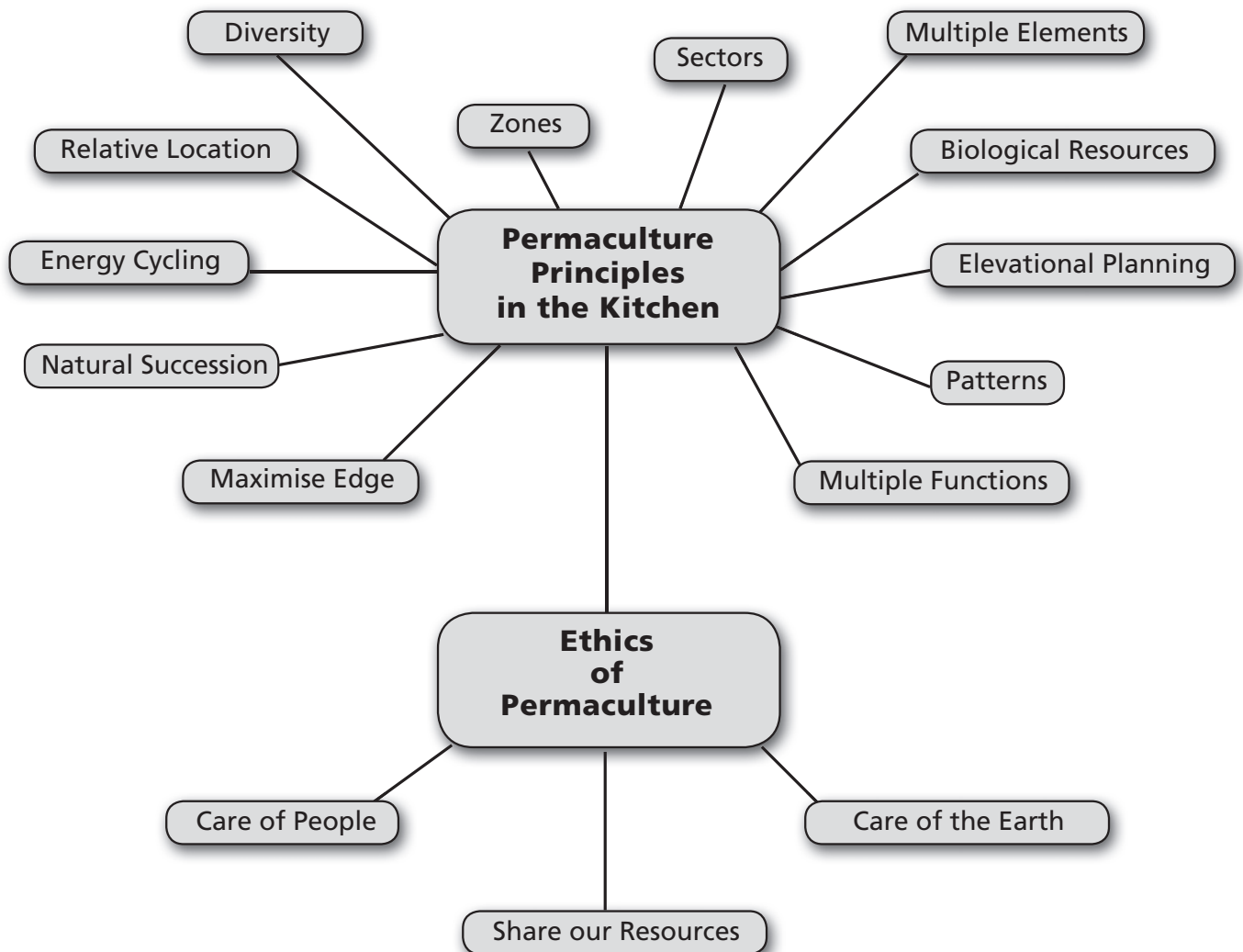
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Principles of Permaculture

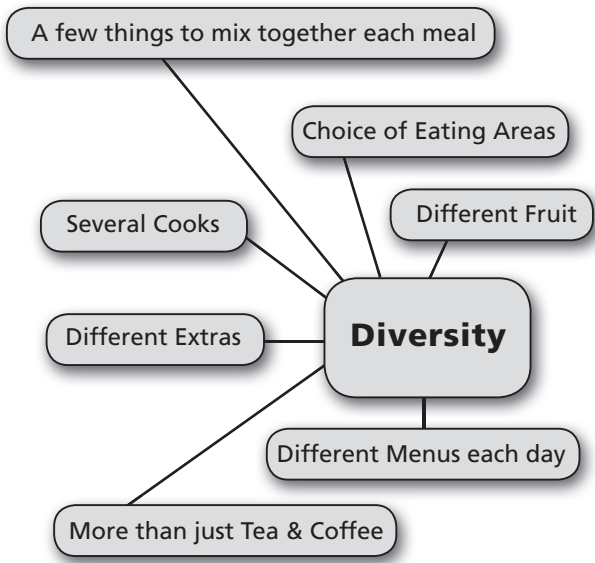
Once we have an understanding of the principles of permaculture, we can use them to design any aspect of our life or surroundings.

I thought relating the principles of permaculture to cooking and food preparation might be an interesting exercise, which would help us reach a greater understanding of the principles in general.

The Permaculture Ethics have also been explored in this way.



Diversity



Diversity is about creating variety in life. It is about the number of functional connections between elements. It is not really the number of things, but the number of ways in which things work. It is a guild of elements that work harmoniously together. If we take the principle of diversity and relate it to cooking, what we would do is have different meals every day, so that people don't get bored having the same thing all the time. We would possibly mix a few compatible and complementary things together rather than just having one single component to a meal.



Diversity /Bec

A diversity of colour and shape can add extra dimension to a meal, as it does also in the garden. A variety and balance of colours in a meal can compliment any menu. Greys and whites can help to add contrast in the garden. Paler colours can do the same thing for a meal.

We might look at having more than just tea and coffee as something for the household or visitors to indulge in as a hot drink, or for the participants of a course. We could

cater to different tastes by including coffee substitutes such as Ecco, carob or some sort of chocolate drink, and a whole variety of herbal teas - if we can grow the herb teas ourselves then all the better.

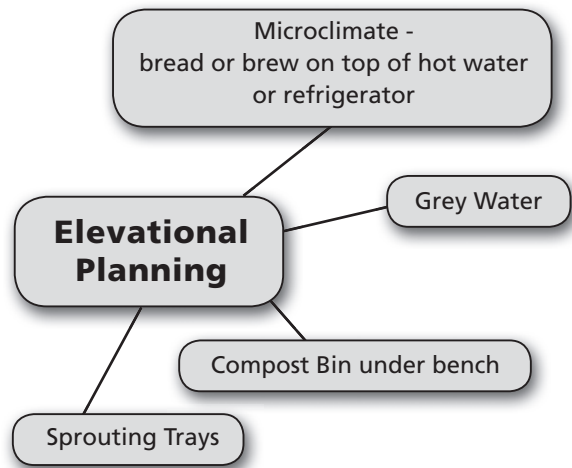
We could look at having a diversity of "extras," such as tamari or chilli sauce, some people like to have salt and pepper, tahini often goes well drizzled on top of things like rice, so we can provide a diversity of accompaniments to a meal.

Having a variety of fruit can be really good, especially in a course or workshop - people have really different tastes so instead of just the standard apples, oranges and bananas, adding fruits of the season can be especially enjoyable.

A diversity of places to eat around the home can cater to people's differing needs, like having places in the sun, places in the shade, having warm areas, especially in wintertime; nice little nooks and crannies for private or personal eating.

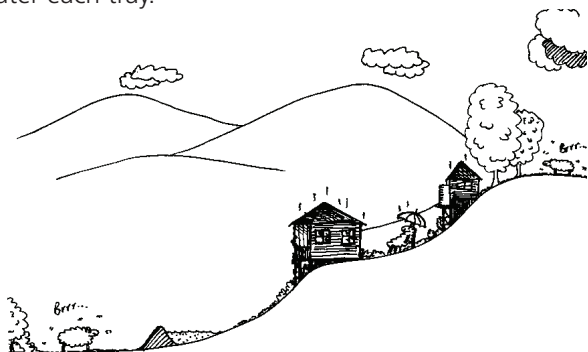
Also, in a course or workshop situation it can be really good to have a diversity of cooks in the kitchen - then you get a whole range of different styles of cooking. We have found from experience doing courses that people really enjoy this variety. Even in a nuclear family household, encouraging everyone to cook at times gives variety and diversity, if not a little equality.

Elevational Planning



This principle looks at the site in profile, and helps us to use the elevation of a piece of land, to design various elements into a system using the dynamics of elevation as inspiration. For example, water flows downhill, so use elevation to gravity feed from a tank attached to a roof at the top of a hill, down to the kitchen - so rainwater is gravity fed into the house.

There are several ways we can use elevational planning when we look at cooking or food preparation. Put the compost bin under the bench or right under where we are working so we use gravity by just pushing the compost scraps off the chopping board straight into the bin. When sprouting, you can buy commercial sprouting trays that stack on top of each other so that when you water the top tray, the water flows through to the next ones and then down into a catching tray, so you are actually using the same water throughout the system to water each tray.



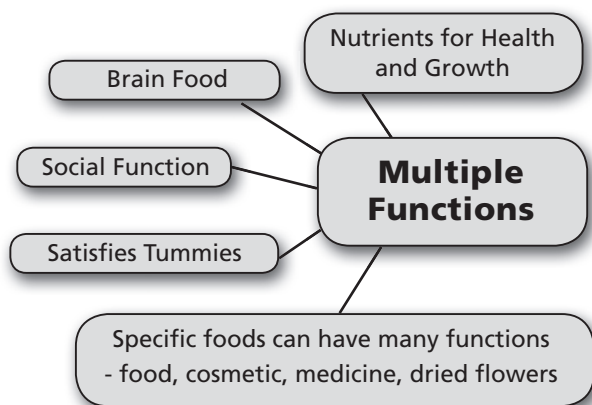
Elevational Planning /Bec

When dealing with grey water, we can use the principle of elevational planning to gravity feed grey water down to a macrophyte (plant filtration) system that cleanses and purifies the grey water, which can then feed out onto different plants or fruit trees.

We can also use higher elevations where heat rises or emanates, for example, on top of a hot water system or a fridge. This warm little microclimate can be used for rising bread, brewing home-brew, or incubating yoghurt.

Elevational planning can be used in designing your house so that in a cold climate the bedrooms are upstairs, able to catch the warm air that rises from a fire or stove. Also, installing a vent in the top of the house enables hot air to escape if desired and creates a more pleasant dining and living space in hot times.

Multiple Functions



The principle of multiple functions looks at using a certain thing for many purposes. Every element, be it a plant, animal or structure, can be placed so that it serves at least two or more functions.

Considering cooking, food can do many things; it satisfies our tummies, it provides nutrients for our health and growth, it is brain fuel, it also provides a social function. It is quite important for people to get together and to share and grow from their interactions. Often, having food at a social function or ending a meeting or gathering with a meal can be very beneficial. Food can also serve the function of celebration - how many of us celebrate Christmas or a birthday with a massive feast?

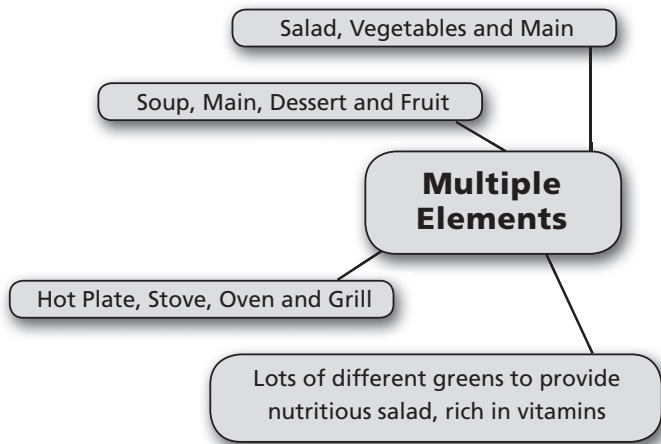
Specific foods can also have many functions, for example, a food may also be medicine, or a cosmetic, it may be used as dried flowers, or the flowers may be used as a garnish, it may also be forage or fodder for some animals, it may be a legume, which provides nitrogen for the soil, such as bean plants. One good example of a multi-functional plant could be a sword-bean. The bean seeds, once dried and boiled, can be eaten; it is a legume providing nitrogen; it holds and binds the soil together; and it also has ornamental qualities, if you dry out a cluster of the pods they can be used as decorations, or painted and given as presents.



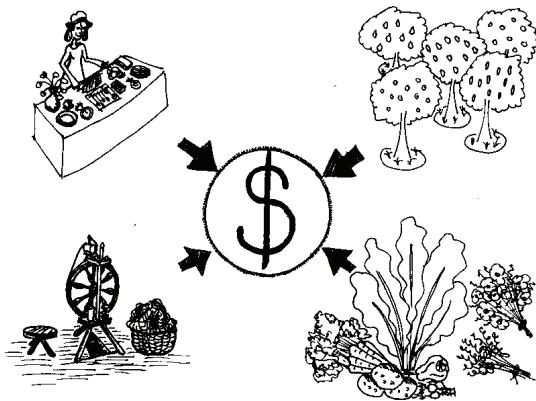
Multiple Functions /Bec

So too is the kitchen multifunctional. It is a preparation and cooking space, often it is storage space, wood stoves provide a warm place to huddle on winter evenings. A kitchen is often also a social hub. Think back to all the wonderful conversations and connections you have had with friends or family while creating a meal or washing dishes!

Multiple Elements



The principle of multiple elements simply means that there is more than one way to get what you want. Every function is served in more than one way. For example, the function of protecting our home from fire can be served in several ways, by having a circular road around our house to create a fire-break, excavating a pond to the north or in our fire sector to safeguard against a fire coming through, and growing fire-retardant plants as barriers. We may also have a sprinkler on our roof. The result is a design where many elements protect our home from fire.



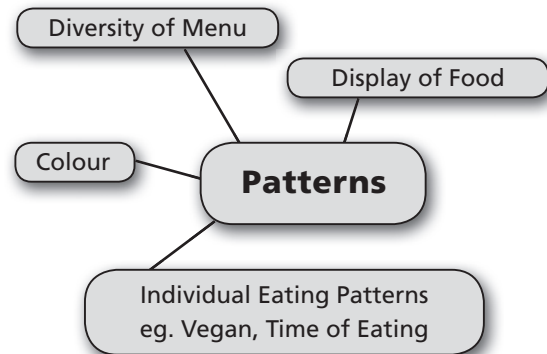
Multiple Elements /Bec

To apply this principle to cooking and food preparation, we can grow many foods to feed ourselves, and we can select a diversity of ingredients to create a meal or menu. For example, a specific main course meal may involve a casserole, a side vegetable and some salad. The whole meal may have several components in that there may be soup for starters, then a main meal and this may be followed by dessert. We are not just relying on one component or dish to feed everyone.

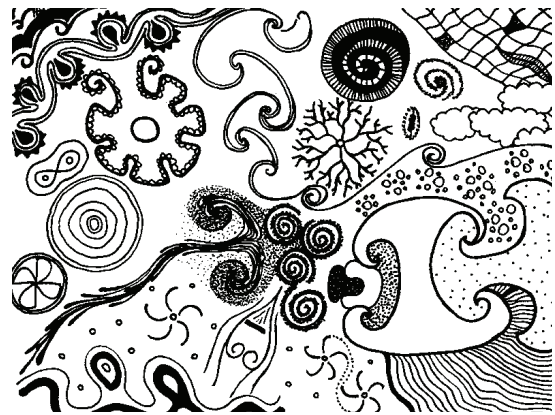
Another example might be having multiple ways to cook food in the kitchen. We may have hot plates, an oven, a grill and open fire. Taking salad as an example we might use lots of different greens to provide a nutritious salad which is rich in vitamins and minerals. We may have things growing in our garden such as lettuce, sorrel,

salad burnet, ceylon spinach, kang-kong, silver beet, New Zealand spinach, all sorts of different herbs, parsley etc, which can all be thrown together to create a wonderful salad - just lettuce leaves can be a little boring.

Patterns



Patterns are another of the principles of permaculture. These help us to see the shapes of life. We can use patterns to create the flow and function of different elements in relation to each other. Basically it is a way in which our designs are held and woven together.



Patterns /Bec

By using patterns in our cooking or food preparation we can display our food in an attractive arrangement, using different foods to create colourful patterns. For example, grated beetroot gives us a brilliant maroon red colour, grated carrot is obviously orange, most salad leaves are green, and coconut provides white colouring. Depending on how we arrange them, we can create patterns in our display of food. We can integrate patterns and diversity together so that the pattern of the menu for a course or our family is such that there is a variety of food and colours, so that we don't have two curries in a row, or two tomato dishes in a row. Here the pattern of the weekly menu comes into play.

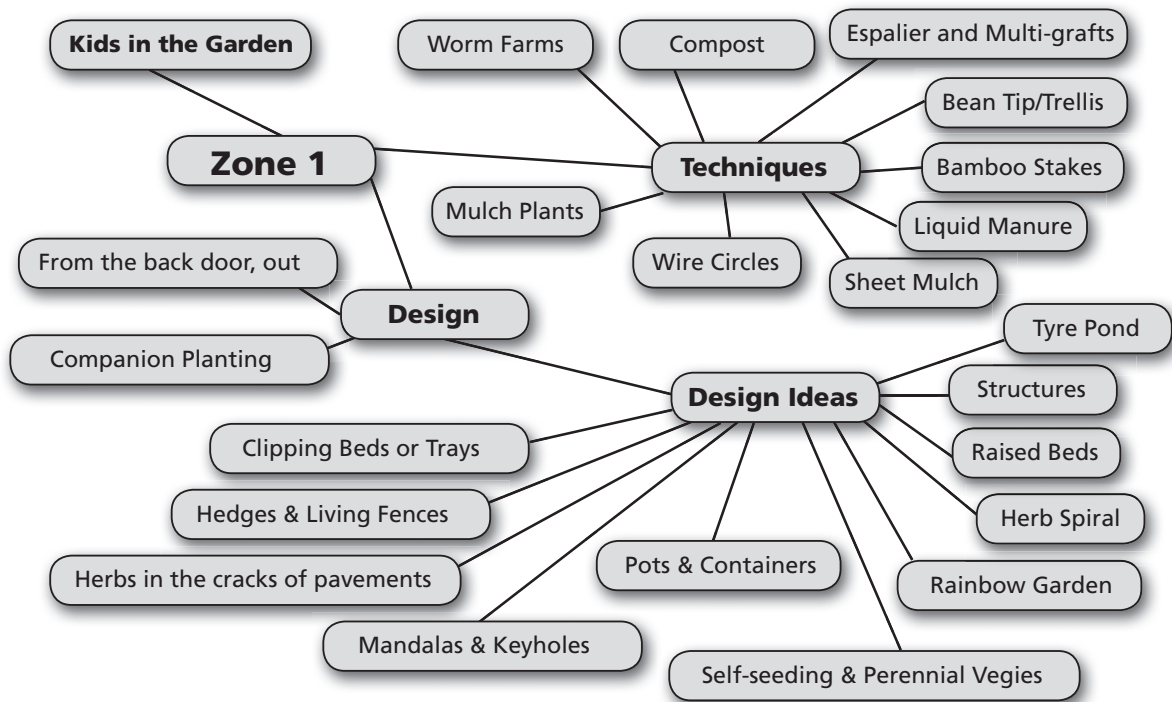
Also, individuals have varying eating patterns which are important to consider, for example, vegans, non-dairy eaters, or people with a wheat intolerance. We need to consider these special needs and design our menus accordingly. The time of the day that people eat their meals can be a pattern. I am not necessarily suggesting

Zone 1 Design

When I think about Zone 1, I think in terms of working "from the back door out," because there is a direct correlation between the demise of the vegetable garden and the distance it is from the kitchen. We are more likely to water, tend and pick things that are close to the kitchen door. If this area is not sorted out, how can we take on a project way down the back garden?

The idea is to work gradually outwards. Start at the back door and get it under control, then work a little further out bit by bit.

The concept of zones in permaculture design looks at the intensity of use and the distance that we need to go to get to things. Zones are about the flow and connections between things.



Energy Efficiency

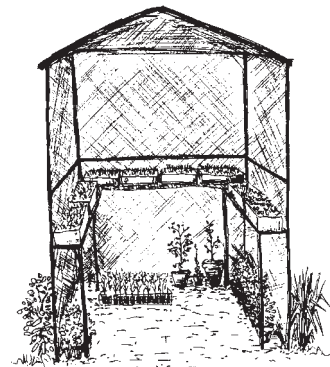
Zone 1 is about energy efficiency. If we need to pick a plant or it needs us to keep an eye on it (like berry fruits or leafy greens), we might plant it along the pathway from the back door out to the clothes-line or the chook house. We might plant lavender bushes close by to dry our hankies on them so they smell nice, as Edna Wallings used to do back in the 1940s.

Zone 1 naturally incorporates maintenance of intensive systems such as a greenhouse, or maybe a chook-shed at the edge of zone 1. These need to be close by for ease of maintenance and frequent visits. It also houses complex operations such as espalier fruit trees, detailed pruning, sprouts and clipping greens or worm farms. These things need lots of care and attention.

Zone 1 also enables things to be close to services, so that the phone is within easy distance to run in from the garden, the greenhouse is close by, tools are close at hand.

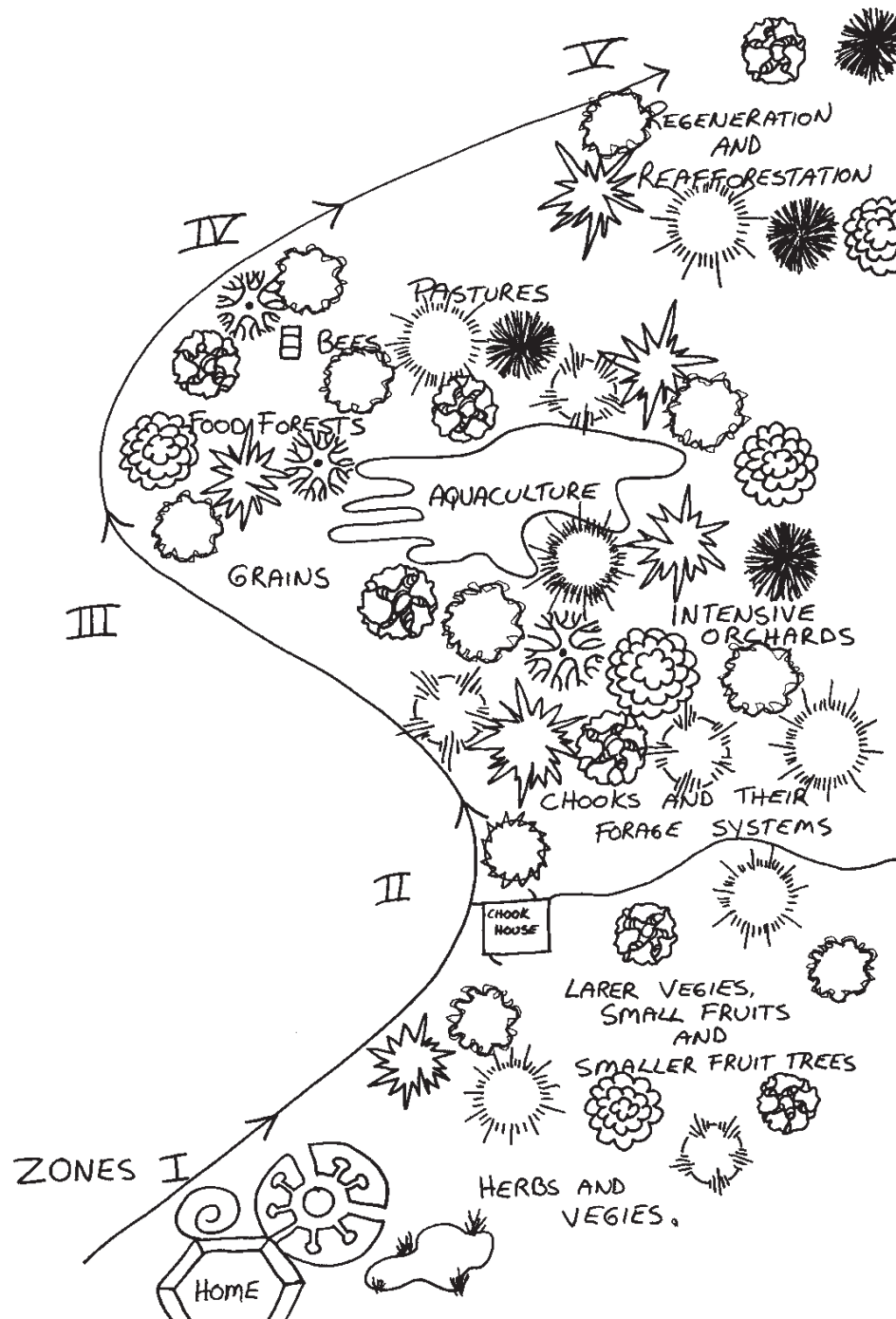
The clothes line is an obvious one to have close to the house and maybe a lemon tree - so that we can quickly go and pick a lemon to zap up a salad dressing. Also, when we are out in the garden, we don't want to be too far away for a quick cup of tea!

A suburban house block can comfortably have a zone 1 and 2. Within a permaculture system, we find that zone 1 grows most of the food, at least volume wise and the outer zones add diversity and quality of life.



Nursery/Bec

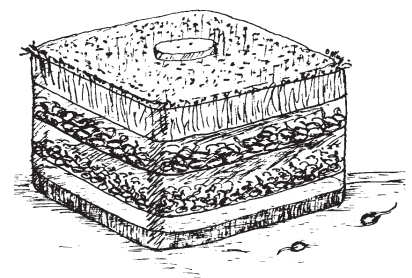
"THE MORE I NEED TO VISIT IT THE CLOSER I PUT IT."



Zonal Energy Use / Robin

Sprouts

Within zone 1 we can design in special places for our favourite foods. We can design appropriate sprouting boxes, either very close to the house or ideally inside the kitchen.



Sprouting in the Kitchen / Annetta

Children in the Garden

One of the permaculture principles is Natural Succession. Given that our children will be the gardeners (and Prime Ministers) of tomorrow, it makes sense to cultivate in them a love of gardening and healthy food from an early age.

Here are some simple ideas to encourage children.

Kids Own Garden

If your child is already helping you in the garden, suggest they may like their own garden. Help them select a site:

- not too far away from the house
- close to water
- in sunlight and some shade

They may like you to help them set up a seat, stepping stones, tyre pond, raised beds, keyhole gardens. Offer at the start to work in there with them if they invite you to.

Potting Up

Most children love to get their hands in the dirt. Ask them to help you pot up some seeds or seedlings. They may also enjoy helping to cut up old yoghurt/ice cream containers into plant labels or to make a potting mix with worm casting, sand and charcoal. Pounding up the charcoal would be an ideal task. See **Hands On in the Garden** Chapter for potting mix recipe.

Planting bulbs for a spring time pot of flowers will prove to be popular.

Sprouting

Sprouts are the simplest things children can grow. All they need to do is spend five minutes twice a day to produce a bundle of tasty greens. See the "Healthy Eating" chapter for instructions on how to grow sprouts.

Alfalfa sprouts seem to be a favourite with many children especially on sandwiches. If children grow and eat sprouts from an early age, they will probably enjoy them throughout their life.

Buckwheat greens and pea sprouts are also popular, and are grown in small clipping beds outside in the garden rather than in jars or trays inside (refer to page15 and Healthy Eating chapter page136). Children will enjoy cutting these greens with scissors and collecting them in a bowl.

Wheat People

1. 1 old sock (preferably light in colour)
2. a small quantity of cotton wool
3. old rags
4. waterproof felt marker
5. narrow necked glass jar mostly full of water
6. 3 tbs whole wheat (soaked overnight)

- On the top half of the sock (on one side) draw a face (eyes, eyebrows, nose, mouth, ears) with the marker.
- Next place the drained wheat in the toe end of the sock above where you have drawn the eyebrows.
- Place a layer of cotton wool over the wheat and
- stuff the rest of the 'face' with old rags.
- Tie a knot in the throat to hold all this tight.
- Sit the whole thing in the jar of water with the ankle part of the sock in the water acting as a syphon.
- Place on a windowsill.
- In a few days the "hair" will start to grow and children will be able to give the wheat person a haircut after a week or so.
- The "hair" is yummy chewed for its juice or sprinkled on salads and sandwiches.

A Potty Herb Garden

Many herbs grow well in pots. A collection of pots can be kept near the house or on a verandah in a sunny spot. Hanging baskets can also provide interesting herb gardens for children provided they can easily water them.

Some herbs that are easy for children to grow, and which survive in pots include:

- Bay
- Chives
- Garlic Chives
- Lemon Balm
- Mint
- Nasturtium
- Parsley
- Sorrel
- Strawberries
- Thyme
- Lavender

Growing Fruit Pips

Avocado, citrus, paw-paw, passion fruit, tomato, ice cream bean, watermelon, and pumpkin all grow quite easily from seed. If the children are interested they can rescue seeds before they end up in the compost or chook scrap bin. They can then propagate them in pots full of soil or potting mix.

Avocado seeds are best suspended by toothpicks over a jar of water with the flat base of the seed just touching the water. It can be kept in the dark until sprouted and then potted up.

Watering and Liquid Manuring

Some children may be keen enough to join in the daily watering ritual or to help make liquid manure from herbs grown around the place and/or manure from animals.

Worm Farmers

Children will probably delight in the squirmy, wormy wrigglers that provide us with lush, rich castings for potting mix and fertilising the garden.

Some children may like to look after their own worm farm as they would a pet.



Helping in the Kitchen/Jenny

Kitchen Helpers

Ask for help harvesting produce, provide a basket and a "grand plan" for a meal then find ways that the children can help in the kitchen.

Recipe for a Healthy Garden

You will need one handful each of
energy - passion - love of gardening - commitment - time

Combine these with
healthy friable soil - micro organisms - humus - pest predators

Mix together well and add equal quantities of
vegetables - herbs - flowers

Add
mulch - manure or compost - liquid manure - rock minerals - companion planting
until desired consistency is achieved.

Serve sprinkled with diversity, abundance, thankfulness, bees and water.

Elements and Strategies for a Zone 2 Garden and Orchard

Lets now look at specific elements and strategies we can use.

This is so important that I want to repeat it: Legumes in all dimensions of the orchard (ground cover, bush and tree legumes) mixed with fruit trees, herbs, vegetables, vines and understorey plants will assist the orchard to become a balanced, diverse and healthy environment.

Legume Tree Mix

Poultry

Chooks are multi functional:

- they remove weed seeds
- they provide wonderful manure as they forage
- they are pest predators and
- they are the best way to clean up fruit fly or codling moth.
- they produce eggs
- they are scrub-bashers. If we grow a whole diversity of the beneficial understorey plants, including lots of wild vegetables and grains, we will hopefully end up with a knee-high dense weedscape. This will be a weedscape that was intended, rather than grasses and local weeds that aren't necessarily of benefit to us.

Often chooks need to be watched in the orchard because they scratch around the roots of trees and cause great damage. If the understorey is creating lots of biomass and chooks are not introduced until the trees are established, they will then become scrub bashers by keeping the vegetation low while not hurting the trees, and they'll have a great time as well! What they are actually doing is making mulch available to the plants; we need to be careful with this so the chooks won't cause too much damage. If you are worried about your tree roots use tree guards around each tree or rock mulch them. Too many chooks can create a desert. If bare ground starts appearing everywhere then you know you have too many, so de-stock the numbers a little. Chooks do, however, need an area for dust bathing.

If you don't want chooks for their eggs, you may like to have ducks or geese in your orchard instead. Keep in mind though that you will need some water for them. Geese are predominantly grass eaters, so if you have a lot of grass in your orchard they could be your lawn mowers. Geese can be trained as weeders – there is a whole business built in Washington USA by a permaculture

man who calls his business "Weeder Geese." From the time the geese are babies, he feeds them only the local weeds that he wants to get rid of, so throughout their life they will always feed on that weed - if you want to grow onions or lettuce for food or market, don't feed these to the geese!

See page 55 for more detail on poultry.

Shelter and Living Fences

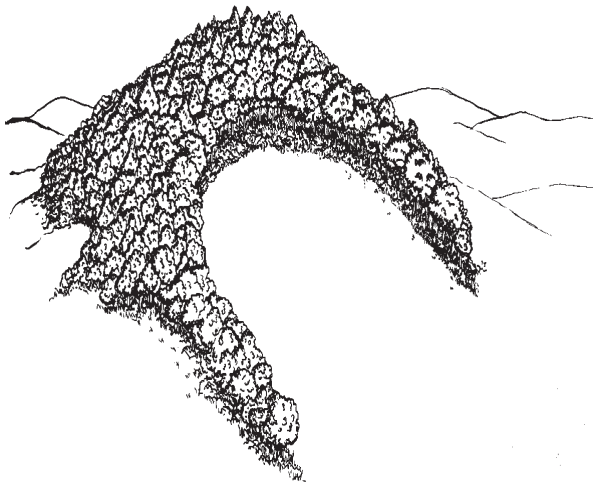
Creating shelter in an orchard is important to protect young trees, wildlife, and also for pollination and fruit set. Windbreaks can give trees maximum protection from wind. We can mix bird-attracting plants into the windbreak to gain maximum benefit (see 'Exposure' page 35). Weed barriers, in the form of living fences, can also be multi functional because they could be a windbreak, provide habitat, bee forage, chook food and mulch. The lemongrass and comfrey barriers mentioned are excellent. Using *Canna edulis* (Queensland arrowroot) is effective throughout spring and summer for small areas or to protect young trees in the sub tropics. One of the barriers I use as a living fence is hedge bamboo (Golden Goddess - *Bambusa glaucescens* var. multiple). Mugwort makes an excellent living fence and hedge, and is also a smelly plant to keep pests away. As mentioned earlier, many animals eat mugwort to worm themselves. Coral trees, leucaena and casuarinas can all be planted closely together as living fences. I have seen these grown a foot apart and once a year a chainsaw is used to chop off the lot at shoulder height. This encourages them to bush out and form quite a dense living fence (I can't bring myself to do this to a tree, this is an ethical question so I mention it here for you to have the option). We've also planted a living fence on the lot here at Crystal Waters using pineapple as the inner layer, then lemon grass and natal plum. The idea being that they are all fairly prickly tough plants. Hopefully this will become dense enough to be fully effective as a chook fence. On a larger scale, carobs, olives and Indian tamarind can be used.

If we consider sectors we can decide where to place fences or hedges to give maximum protection.

Stacking

Another form of shelter is created by stacking. This has already been mentioned. If we plant all the elements of our system at once, i.e climax trees, pioneer trees, legume and understorey trees they will provide protection for each other. This in many ways emulates a natural system, which is one of the things we are aiming to do.

Solar Arcs



Solar Arc /Bec

By selecting appropriate varieties, we can increase the bearing time of fruits. We can also do this by making use of microclimates. An excellent way to create a warm microclimate is to use solar arcs as suntraps.

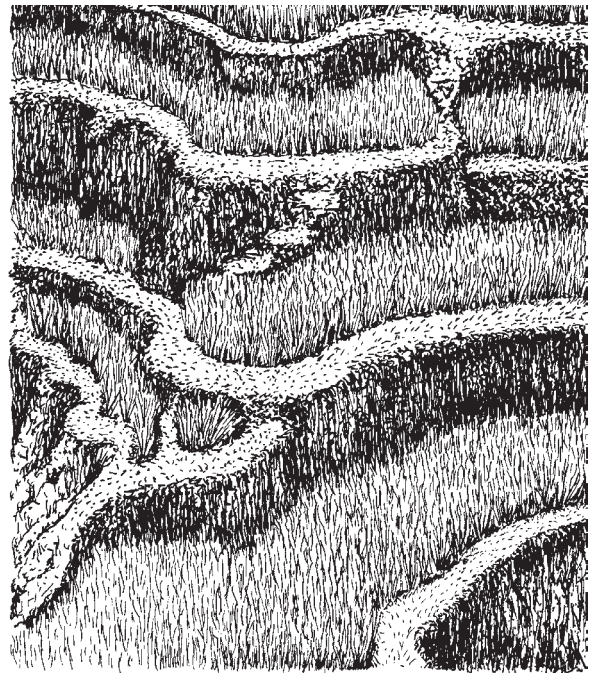
Solar arcs trap and reflect the heat and encourage the cold air to flow away downhill, leaving the inside of the suntrap protected and warmer than outside. By using such a strategy and facing it towards the sun, we can grow plants that may not be possible otherwise. For example - in this climate - cashews, mangosteens or sapodilla.

Solar arcs can be used in a couple of different ways. We can plant the solar arc as if it were a great big windbreak, with our whole orchard cradled into the opening. Or we could create small solar arcs of a few little trees arced around a particular fruit tree that we want to protect or keep warmer.

Terracing

There are a few other strategies we can use for improving the infrastructure of our orchard. If we are working on a slope, terracing can be beneficial - if a slope is gently terraced it can make life much easier. We can cut pioneer trees and lay them along the contour, thus creating gradual terraces.

We can also chip paths along the contour, and then plant trees along the edge of the contour path so that the slope gradually takes on a terraced effect.



Terracing of Paddies in Asia/Bec

Swales

We can also create swales along the contour. Swales are contour depressions that collect and absorb water. It seems that they have become trademarks of permaculture.

Swales are built exactly along the contour, especially the top of the bund wall, so that when it rains and the swales fill up, the water gently gets spread over the top of the bank and erosion does not occur. The idea is that the moisture seeps into the ground and is made available a bit further down slope, so fruit trees would be placed in front of the bund, downslope from the swale (see diagram). Another strategy is to design in an overflow at one end of the swale that is possibly rock mulched or stabilised, with another swale picking up the water further down.



Pest Control

Pests seem to know when there are delicious vegetables growing in the garden. In our gardens and orchards we can aim to keep these pests to a minimal or acceptable level. Ideally this happens by emulating natural ecosystems. Diversity in natural systems increases their ability to withstand external and internal pressures. We aim to achieve a balanced system, and the best way to do this is to increase diversity in the garden, which naturally increases pest predators as well.

To achieve such a system, patience is all-important. We can not expect our system to be instantly in balance, especially if we are working on degraded land. There is often a transition period where we may need to intervene and become the pest predators ourselves. Let's look at what a pest really is.

What is a Pest?

A pest is anything in the wrong place at the wrong time, or anything out of balance with its environment. We need to realise that the way pests are often looked at is similar to Western medicine, where only the symptom is treated. What we really need to do is fix the problem, not the symptom. The problem is that pests get out of balance in the system. So why do pests get out of balance? There are many reasons, some of which are:

- unhealthy soil
- a lack of pest predators, which can be caused by indiscriminate spraying, destruction of their habitat, or lack of their food
- monoculture
- poor hygiene - burying or composting diseased or infected fruit often perpetuates the cycle. For example, fruit fly larvae pupate in the soil, so by burying rotten fruit or putting it in a compost bin, the flies will just keep breeding. What we need to do is collect the fruit and submerge it in water (in a bucket or thrown in a pond). Ideally we would have chooks around, who would eat the grubs in the fruit and break the cycle. (Also see Tips for Garden Hygiene below, page 75).
- catastrophe or climatic variations, for example fire/flood/drought.
- plant-breeding techniques - plants are now bred to have softer leaves, to be less hairy and more palatable, thus they are of course more palatable to the pest as well as to humans. Growing things out of their environment can also make them more vulnerable to pests, i.e grapes and figs tend to rot in a sub-tropical environment, and zucchinis and lettuce rot in the wet season.
- if plants are healthy there is less chance they will attract pests and diseases.

To be healthy, plants need:

- healthy soil with appropriate nutrients and pH for each plant
- a suitable climate and microclimate for their needs
- adequate water
- good drainage for most plants
- friendly companions
- some love, care and observation from the gardener

Encouraging Pest Predators - Some Strategies for the Veggie Garden and Orchard

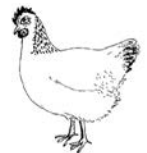
- Keep chooks, guinea fowl or ducks. Don't overfeed them so that they will want to forage for pests.



Duck /Bec



Guinea Fowl /Bec



Chook /Bec

- Lizards and snakes are pest predators so pile up a few rocks in the corner of the garden for habitat, away from where people walk or go.

- Frogs can be encouraged by putting in a tyre pond or a water garden. Make sure you create a ladder for them to get out.



Frog /Bec

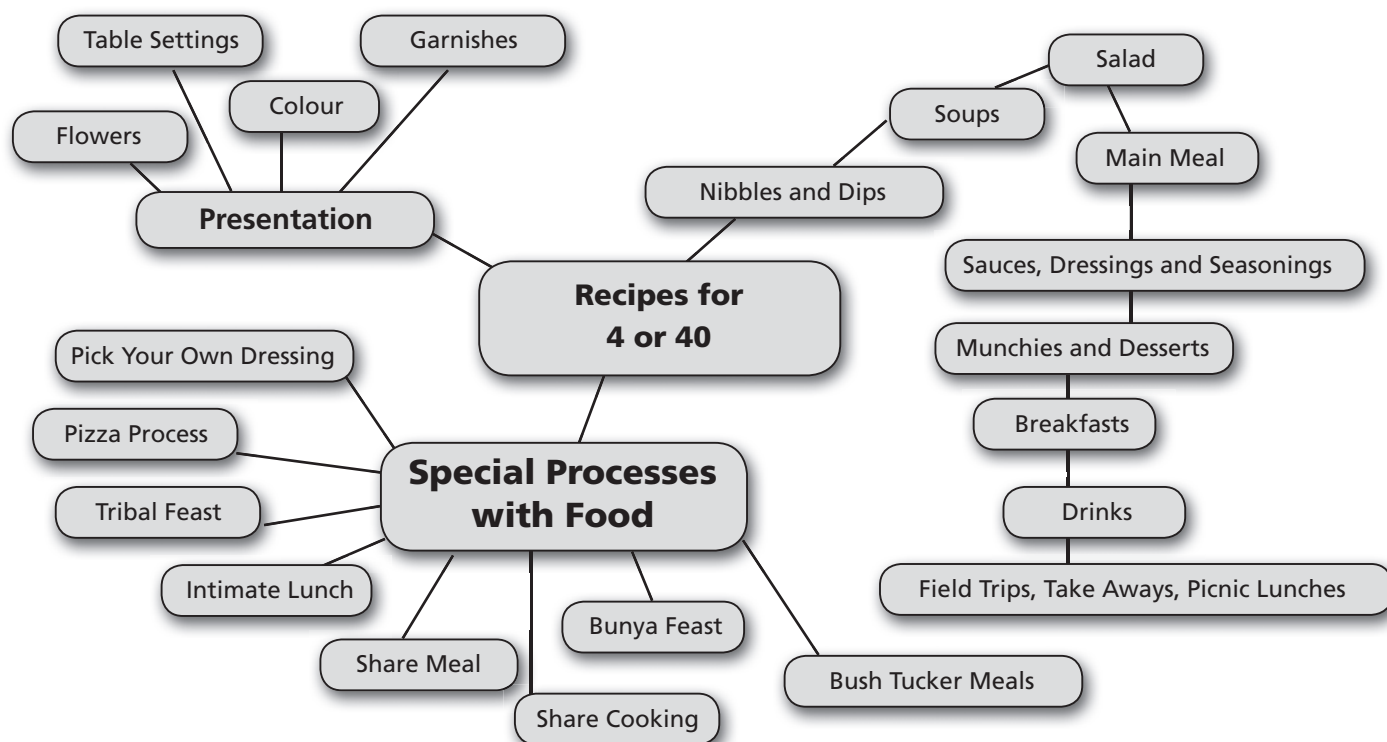


Bird /Bec

- Birds need nesting sites and will be attracted by things such as hakeas or grevilleas in a windbreak, and by flowering shrubs. Where there is an absence of nesting sites, plant some - or you can build bird boxes.

Recipes for 4 or 40

Whether cooking for 4 or 40, the recipe stays the same - all we need to do is multiply the ingredients and the time taken for the original recipe, and expand the size of the pots. What I plan to do in this chapter is share with you recipes that feed 4 people - you can then multiply amounts by 5 so that you get an idea of the quantities for 20 people. If you want bulk amounts then multiply by 10 if cooking for 40 people, and so on. Most of these recipes I've made up myself or have written down after creating a successful meal. Other recipes have been adapted from existing recipes from friends or books. At 18 I became a vegetarian and ate rice and vegetables for the next 3 years. As you can imagine, I got quite bored and taught myself to cook. The more I experiment with different foods the more I seem to know what tastes good together. I hope you enjoy my recipes (and those of some of my friends). The recipes in this chapter are compiled in honour of every course participant who has eaten my cooking. Your requests for my recipes have inspired this book.



Nibbles & Dips

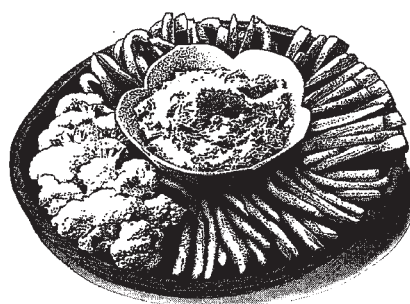
Sesame Crisps

1 cup wholemeal flour
6 tbs sesame oil
½ cup water
½ tsp herb salt or powdered dried herbs of your choice,
eg, onion, garlic, parsley
A few sesame seeds

Method

Blend the water and oil and mix in the flour.
Knead as you would bread dough for 5-10 minutes.
Leave to sit for 10 minutes.
Divide the dough into two equal quantities and roll out onto a greased biscuit tray.
Sprinkle with the herb salt or seasoning and the sesame seeds.
Run a roller over the top again to indent the seeds and salt thoroughly into the mixture.

Take a knife and mark triangles or squares across the mixture.
Prick with a fork and bake for 10 minutes in a medium oven
(you could also use a solar drier or dehydrator to dry until crisp).



Dips / Jenny

Cheese, Walnut and Herb Scrolls

250 gm wholemeal self raising flour
½ tsp herb salt
½ tsp mustard powder
½ tsp paprika
½ tsp freshly grated black pepper
50 gm butter, softened to room temperature
100 ml milk
150 gm tasty cheese, finely grated
100 gm walnuts, chopped
Chives, parsley, paprika to taste

Method

Mix together the flour, salt, mustard, paprika and black pepper. Rub the butter into this until you have breadcrumb consistency. Mix in the milk 'til you have a dough. Knead this for a couple of minutes on a floured board. Break the dough in half and roll out each piece to 1cm thickness. Sprinkle with walnuts, chives, parsley, cheese, and more paprika. Starting from one side, roll up the dough into a log, using milk to glue up the seam. Cut into 3cm bands and place, flat, on an oiled baking sheet. Cook in a preheated medium-to-hot oven, 'til golden.

Savoury Cornbread

1½ cups self-raising flour
½ tsp cayenne pepper
¾ cup cornmeal
2 tbs honey
2 tbs chopped parsley
125 gm butter
1 onion
1 egg
1¼ cups milk
1 tsp tamari

Method

Mix the cayenne into the flour. Add cornmeal and parsley. Saute onion in butter 'til tender. Stir this into the cornmeal mixture. Add lightly beaten egg, milk and honey. Mix well and pour into a loaf tin (Cover with greased foil if you like). Bake for 45 minutes in a moderate oven.

Snacks

Pepitas and/or sunflower seeds can be roasted lightly in an oven with a little oil and tamari drizzled over the top. Leave to bake for 10 to 20 minutes.

Any nuts can also be prepared in this way.

Chapattis

Wholemeal flour
Water

Method

Mix together flour and water to a firm dough-like consistency. Make sure it is not sticky. Knead for a few minutes. Break into small pieces and roll into balls about the size of golf balls. Take one at a time and squash down flat in the palm of your hand. Flatten more and more until you have a very thin circle (as thin as it will go without breaking). Heat a cast iron frypan or skillet and cook them individually for about 2-3 minutes on either side. The idea is to lightly cook either side just enough to cook through to the middle. Serve warm or cold as an accompaniment to dips, curries etc or use in place of bread. Can also be used as a pizza base.

Pesto

2 large bunches (or more) fresh basil leaves
1 cup pine nuts
½ cup parmesan cheese
3 cloves garlic
½ cup cold pressed olive oil
½ cup lemon juice
½ tsp cayenne powder

Method

Blend in a food processor until nicely homogenised. Serve as a dip or a sauce for pasta or vegetables. Note: white walnuts can be substituted for pine nuts.

Celery Boats

½ bunch celery, washed and chopped into 10cm lengths

Fill the celery with your choice of filling:
peanut butter
cottage cheese with garlic and parsley
ricotta cheese with chopped dried apricots and pine nuts
sunflower paté
hummus
any firm dip or paté
left-over stuffing from enchilada picadillas (p 106)

Guacamole

2 ripe avocados
1 clove garlic, finely chopped
1 tbs lemon juice
½ tsp tamari
½ tsp chilli sauce
3 tbs sour cream
1 tsp freshly ground black pepper

Method

Mash the avocados and mix in the other ingredients. Use as a dip for corn chips or biscuits or as a topping for tacos, nachos, salad or steamed vegetables.

Garlic/Parsley/Cream Cheese Log

375 gm cream cheese
3 cloves garlic, finely chopped
1 bunch parsley, chopped very fine

Method

Soften cheese to room temperature, mash in the garlic. Roll into a log shape and roll in the parsley so it is completely covered. Serve on a plate with a knife and crackers or biscuits.

Avocado Dip

1 avocado
1 tbs almond butter
1 lemon, juiced
1 orange, juiced
¼ tsp freshly ground black pepper
1 clove garlic, minced

Method

Combine all ingredients.

Use as a dip, sauce or dressing, or to put in roll ups.

Other Dips

The following recipes can be used
Chilli Peanut Sauce, page 115
Lentil Dhal, page 116
Tahini & Onion Sauce, page 116
Hummus, page 147

Use the corn chip recipe for dipping, or veggie sticks or chapattis etc.

Also refer to the sauces and dips in the Healthy Eating chapter.

Soups



Soup /Jenny

Pumpkin Soup

2 onions, chopped
1 tsp cumin
2 tbs butter
1 pumpkin (the brighter orange the better)
1 tsp freshly ground black pepper
1 tbs tamari

Method

Fry onions and cumin in butter. Add pumpkin, some water and cook. Blend, then add freshly ground black pepper and tamari to taste.

Tomato and Grain Soup

1 onion, chopped
1 carrot, chopped
1 sweet potato, chopped
2 cloves garlic, chopped
2 tbs oil
1 cup whole wheat grains
2 tbs oat flour
1 kg tomatoes, skinned then chopped
1 tbs tamari
1 tbs honey
2 tsp fresh basil, chopped
2 tsp fresh oregano, chopped
1 tsp fresh marjoram
½ tsp freshly ground black pepper
3 cups milk
2 tbs butter

Method

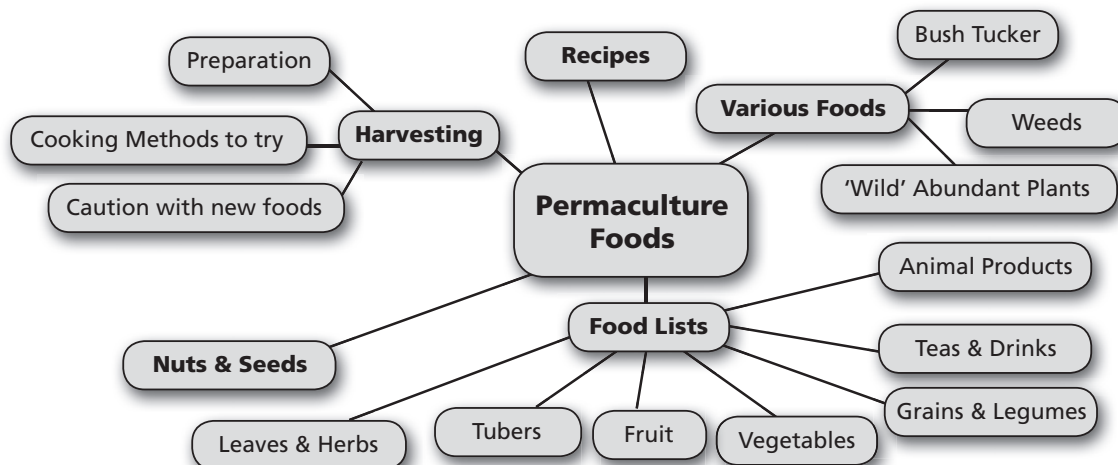
Saute the onions and garlic in the oil until golden. Add carrot, sweet potato, wheat and oat flour and cook for 5 minutes, stirring regularly until wheat is toasted. Add the tomatoes, tamari, honey and herbs and cook until wheat is soft, 35 minutes. Add a little water if necessary. Blend the mixture in a blender. Return to the pot and add the milk slowly, then the butter. Reheat but do not boil. Serve with dollops of sour cream.

Permaculture Foods

In permaculture we often aim to grow foods that will become wild plants - those that don't need sowing repetitively, that will grow and look after themselves, and will provide us or our livestock or the soil with a useable crop year after year. We focus in this chapter on some of these foods.

Caution with New Foods

It is very advisable when experimenting with new foods, especially some of the bush tucker plants or weeds that you may not have used before, to do your research. In the Reference section at the end of the book there are several wonderful books listed that you can buy or borrow from a library or friends, to enable you to research some of the plants that you may want to grow or eat. To take an example, nearly all the native Australian beans and legumes are extremely poisonous to humans. Prepared sufficiently, they may become edible, but there is a great caution that goes along with this. Many people, especially new settlers, have died or been badly poisoned from eating food that wasn't prepared properly. So please bear this in mind when experimenting with new foods, do your research, find out how these foods were traditionally prepared, find out how different peoples in different countries prepare them.



Harvesting

There are different ways to harvest foods. For example, a whole banana plant is cut down so that one bunch of bananas can be harvested. This may seem excessive except when we realise that the plant won't fruit again and needs to give way to its baby suckers so it can reach its fullest potential. A lot of bush tucker yams, roots and tubers were traditionally dug up with sticks. Often fruit is simply plucked from the bush the same as we pluck greens in the garden. Clipping herbs may need a pair of scissors to cut them close to the ground. If trees are bearing heavily and there are weeds or thick growth under the tree, we can place a tarp or blanket under the tree to collect falling fruit. We can use the permaculture principle of elevational planning to funnel or channel harvested fruit, especially something like macadamia nuts which will roll downhill. They could be channelled into a container or depression where we can then simply go and collect them all.

Local Agriculture Departments have information available on various fruits, vegetables, nuts, seeds and grains that can be grown commercially. Resourcing this information and appropriate books can give us hints about how to harvest special foods.

The same goes for bush tucker. There are various books available that give us information on how to harvest specific plants. The best key to harvesting is experience. By being out in the garden or bush and learning to identify different foods, we begin to see what is available in the forests, bushlands, cities, suburbs and road verges at different times of year.

Once we have identified them as suitable for eating, we can experiment with different harvesting methods, and in turn learn how to prepare and cook the various foods.

Preparation

Different foods need different preparation; most nuts need shelling, most leaves and greens need washing and draining. The native Australian beans and legumes need much preparation before eating. For example, the black bean was cooked quite severely by the Aboriginal women, then leached in the creek for up to several days to leach out the toxins, then cooked again.

Foods can be prepared by soaking to make them softer, chopping them in various ways to make them smaller or bite-sized, blending in a blender or mortar and pestle, chopping and grating in a food processor, mincing or simply serving in their whole natural form.

Cooking Methods to Try

Since fire has been part of every day living for a long time, we have derived many methods of cooking:

- boiling
- steaming
- frying
- deep frying
- baking, placing on a griddle
- baking in the sun
- cooking in jaffle iron type equipment
- baking in camp ovens
- solar cookers
- stir frying in a wok
- toasting
- roasting
- grilling
- barbecuing
- slow cookers

A method for grains or vegetables is to place them in a pot with water, bring to the boil with the lid on, then turn the heat off and leave to sit. When cooled right down you can bring to the boil once more and leave to sit again. This way lots of energy is saved, however, you do need the time to be able to do this.

There are many other methods that can be experimented with such as the traditional Maori hungi or cooking in the coals of a fire.

Cooking on an open fire is probably the most traditional and multi functional way of cooking, providing light, heat, and a beautiful central focus.

Various Foods

I will now look briefly at these unusual groups of food: bush tucker, weeds and abundant plants. Hopefully this small taste will inspire you into finding out more.

Bush Tucker

Why Grow Native Food?

Here are a few good reasons for growing native foods and harvesting wild bush tucker.

- Honours our tribal roots and/or the energy of the land.
- They help us appreciate and protect our native species.
- More suitable to local conditions.
- Suitable for permaculture and organic gardening as they don't need chemical fertilisers.
- Less susceptible to pests than introduced species.
- New industry in providing bush tucker to restaurants.
- Gives greater diversity to our diet.
- More suitable to the native micro organisms (if growing plants endemic to your area).

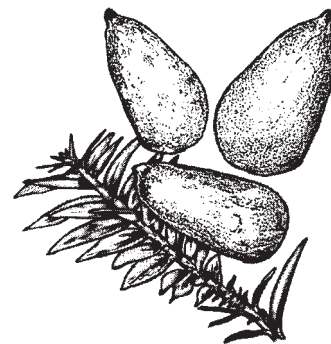
- Attracts birds into the garden for pest control and dispersal of native seeds.
- Diversity of tastes and textures.

Recommendation

If you identify a native plant as edible, please research its use and preparation before eating it. It is also a good idea to test the plant by rubbing on your wrist to gauge any allergic reaction before dabbing on the tip of your tongue. If you have any reaction (slight rash, prickly feeling or bitter taste) don't eat it. Many native plants are poisonous. Some can be eaten only after specific preparation, often requiring soaking, leaching, boiling, pounding etc - so I implore you to do your research first.

Recommended reading includes any of Cribbs' books, "Bush Tucker" by Tim Low and the Mutooroo book. See the reference section, page 255, for details. I have resourced these books heavily in creating the following species lists.

The list is provided as a guide only for many plants used by Aboriginal people. By all means use the recipes as they have been tried and tested, but before using any other plant that you are not familiar with, please do the research.



Bunya Nuts/Jenny

Robin Clayfield



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Robin Clayfield is an internationally acclaimed facilitator, educator, author and social change practitioner who regularly facilitates courses in Australia and overseas. She is best known for training and coaching a diverse cross-section of leaders, facilitators and educators to effectively engage their audiences through creative interactive processes and innovative learning methods. Robin's passion (since 1983) for practising Permaculture; gardening, designing, cooking and teaching is the inspiration for this much celebrated book.



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