

Permaculture

What Is Permaculture?

How Does Permaculture Work? Definitions, Explanations, Examples

<http://www.tropicalpermaculture.com/what-is-permaculture.html>

What is permaculture? How does permaculture work? If I had a dollar for every time I answered that question I'd be a very happy permaculturist indeed...

To be honest, to me permaculture is mainly a way to have an organic food garden that's stunningly beautiful, productive, and comes without any tedious garden work...

"Permaculture has, in many people's minds, come to represent a sustainable, organic, home vegetable garden." (Rosemary Morrow)

...but that is only one aspect of permaculture. Of course there is a lot more to it.

There are some official explanations and definitions that answer the question "What Is Permaculture?", but in my experience they still leave people confused. I'll try to explain it a bit more.

I'll start with the history and the official explanations, then I'll translate it into something that makes sense to the average home gardener and suburbanite.

After that intro you best follow the links at the bottom, which will take you to some specific examples. That should make some light bulbs come on and everything should fall into place.

"You can fix all the world's problems, in a garden. You can solve them all in a garden. You can solve all your pollution problems, and all your supply line needs in a garden. And most people today actually don't know that, and that makes most people very insecure." (Geoff Lawton)

What Is Permaculture? - Definitions

The term permaculture combines the words permanent and culture, or permanent and agriculture, and that is the first hint to what it's all about.

The philosophy behind permaculture was developed about thirty years ago in Australia by Bill Mollison and David Holmgren.

During his many years as a wildlife biologist Bill Mollison had witnessed first hand the destruction that humans are causing in natural systems, but he also had a chance to observe how these natural ecosystems work and what keeps them in balance.

Permaculture design is a result of these observations.

Bill Mollison and his then student David Holmgren first published their ideas in 1978, in a book called Permaculture One, introducing a "design system for creating sustainable human environments", based on close observation of natural systems.

In a later book, Introduction to Permaculture, Bill Mollison writes:

"The aim is to create systems that are ecologically-sound and economically viable, which provide for their own needs, do not exploit or pollute, and are therefore sustainable in the long term."

"Permaculture uses the inherent qualities of plants and animals combined with the natural characteristics of landscapes and structures to produce a life-supporting system for city and country, using the smallest practical area."

Now that's a mouthful. What the heck does it mean?

What is Permaculture? - Let me try to explain...

What Bill Mollison describes in his books is a totally integrated design system that's modelled on nature. If you design your garden or farm like a natural system you can save yourself a lot of work, save energy, and eliminate waste.

Think about it, nobody digs and sows, plants and weeds, or sprays bugs in a forest. Still, all those chores are taken care of somehow. The forest grows and feeds its inhabitants, doesn't it?

If any task in your garden is an unpleasant chore then there is definitely a better way to do it or to eliminate it. Learn from nature. Nature has already developed a solution to every problem that you could possibly encounter in your garden.

Nature is also the ultimate recycler. Everything goes round and round. There is no such thing as "waste". Everything is a resource.

And most importantly, it's sustainable. It's something that works in the long run, not something that is based on inputs that will eventually run out, not something that creates waste and problems that will eventually upset the system.

Design is the keyword. It's all about how you place the design elements together. Look at how things work together in nature, and then try and mimic that design in your garden.

You can find plenty of specific examples for this under Permaculture Design Principles, and once you grasped how it works it's easy to apply on a small scale.

The beauty of it is that permaculture principles work everywhere, in every climate and on every scale. They can be applied to whole villages or housing estates (though it takes a deeper understanding and more planning to do that), or to a tiny backyard or balcony (which can be done very easily).

If you think ahead and design your permaculture garden right, it won't take much effort, it will mostly look after itself, and it will also be incredibly productive and beautiful and attractive to wildlife.

Permaculture is about "...saving the planet and living to be a hundred, while throwing very impressive dinner parties and organising other creatures to do most of the work." (Linda Woodrow)

Permaculture Principles

<http://www.tropicalpermaculture.com/permaculture-principles.html>

There are permaculture principles and permaculture ethics. The ethics are sometimes referred to as principles as well. I'll keep them separate.

The permaculture ethics are at the centre of permaculture philosophy and are broad guidelines of how we should behave towards the earth and towards each other.

The permaculture principles, or permaculture design principles, are the guidelines that you follow when you design a permaculture garden or bigger permaculture system.

Permaculture Principles - Ethics

The three ethics at the core of permaculture are quite simple and don't need much explanation:

- Care of the earth: in everyday language you probably more often hear "protect/save the environment". It means the same thing: using renewable resources, recycling, minimising waste, building up soils rather than depleting them, conserving water and so on. Anybody who aims to do that is following that first permaculture principle or ethic.
- Care of the people: this means simply to look after yourself and after others. Health and well-being are important, so are learning, a sense of belonging, communication, trust and respect. All people should have access to what they need to live a safe and healthy life.
- Fair share: it's what your mum tried to teach you many, many years ago. Only take what you need and share the rest. This permaculture ethic focusses on co-operation, networking, contributing to the community and on distributing resources and wealth. But it also looks at reduction of consumerism and requires us to rethink our current ideas about growth and development. Sometimes this principle is written as "accepting limits to population and consumption". We can't go on consuming like we do without putting more thought into where things come from and how we can produce them sustainably, so they will still be available tomorrow.

Permaculture teaches us to observe nature, to understand our environment and so become more ecologically aware and responsible. The philosophy behind permaculture also looks at the global context, it is a big vision. But the three ethics do not immediately convey the main focus of permaculture: the focus always was and still is on sustainable food production.

How permaculture design makes growing fruit and vegetables easier, more sustainable, reduces the work involved and produces a bigger and healthier harvest, that's what the following permaculture principles deal with.

Permaculture Design Principles

Permaculture principles are the result of the observation of natural systems. They outline how things work in nature, and how you can apply that to your design. They also tie in with the three ethics listed above.

There are as many different collections of principles as there are websites about permaculture... Permaculturists keep identifying new principles, and everybody has a different focus.

My focus is food production on a garden scale. Therefore I will focus on the principles as they apply to the average home fruit and vegetable garden. I will cover those principles in detail and give you examples how to implement them. These are the guidelines that will form the basis of your garden design.

Permaculture Design

Principles And Guidelines For Permaculture Garden Designs
<http://www.tropicalpermaculture.com/permaculture-design.html>

The permaculture design principles described here are the guidelines that you follow when you plan your permaculture garden.

Ideally a site for a permaculture garden is first analysed in depth. The whole garden, the house and the needs of all people and animals living there are considered and integrated into the design before any work or planting is done. Permaculture design stems from "protracted and thoughtful observation rather than protracted and thoughtless labour".

For anybody designing a small farm or a commercial operation along permaculture principles this is a crucial step that needs to be done by someone who is suitably qualified and experienced. (A permaculture design course is a way to gain that knowledge and experience.)

Thank god you don't need a course or a specialist to design a permaculture home garden. Sure, it would be great, but it's not essential.

You don't have to be a landscape designer or a certified permaculturist to use and implement permaculture principles and guidelines in your home garden.

Your garden is a great place to experiment with permaculture design and experience its power and effectiveness first hand. This site will help you and point you in the right direction.

It also doesn't matter if your garden is already established. You can always improve things, one small step or experiment at a time. I'll show you how.

Permaculture Design Principles And Guidelines

- The Permaculture Zones In A Design
- The Permaculture Principle Of Multiple Functions
- Relative Location In A Permaculture Design
- Permaculture Turns Problems Into Solutions
- Permaculture Designing For Diversity
- Design Scale - Use Of Space

There are more permaculture principles, or maybe I should say more different ways to explain them. Many other principles that you may see mentioned elsewhere follow from the principles that I explained above. (Some of them already overlap. But hey, some of the things are so important, it doesn't hurt to mention them a few times.) Also, if you look at the philosophy and ethics of permaculture other principles become obvious. Many of us who care about the planet already follow those principles in our life.

Conservation, careful energy accounting, reducing waste, using "green" resources, recycling, but also a healthy lifestyle, pure and fresh food, clean water and a clean environment to live in... It's all part of permaculture, either as part of the design or as a result of the design.

I will finish my attempts at explaining permaculture here. The rest of the site is dedicated to specific growing advice, design ideas and tips on how even a little bit of permaculture design and thinking can make a big difference in your garden and your life.

Permaculture Zones

The Growing Zones In A Permaculture Design

<http://www.tropicalpermaculture.com/permaculture-zones.html>

Permaculture zones are the different growing zones in your permaculture design.

A permaculture garden is divided into growing zones according to how frequently you visit the different areas, and your plants are placed in these areas according to how much attention they need. Permaculture zones save a lot of time and energy by reducing necessary travel. And that makes a huge difference, believe me. The planting zones in a permaculture design are numbered from the inside out.

Zone 0 is the house. From here we count outwards. That gives the initial impression that permaculture zones are just concentric circles around your house, but as you will see, that's not the case...

Permaculture Zone 1

Zone 1 contains all the most visited areas of your garden. Usually it's the area closest to your house, but it also extends along frequently travelled paths. And if there is one side of your house that you rarely go to, then that's not part of growing zone 1, no matter how close to the house it is.

Everything that needs a lot of attention should be growing in zone 1.

Examples for plants to grow here are seedlings that require daily watering, frequently used herbs, salad vegetables, a lemon tree, and maybe your favorite flowers or scented shrubs. Something like the area where you collect compost may also be part of permaculture zone 1.

Let me show you with a few examples why it is important to place anything that needs a lot of attention in zone 1:

Say you have chickens and you visit them daily to feed them and collect the eggs. A propagation area along the path would make sure you don't forget to water your precious seedlings.

Or say you only have a tiny yard and a busy corporate lifestyle. Place your seedlings so you fall over them when you walk from your car to your house, and you'll notice any problems before it's too late.

Or another example: you are throwing a dinner party, it's raining and you started cooking late, because as usual you were held up in the office. The guests have arrived, the soup is ready, and the fresh chives to add that extra zing are at the end of a muddy path right down the bottom of your garden. Are you going to venture out to get them?

Herbs like parsley and chives should grow right on your doorstep, and you will actually use them.

These are just a few examples, but I'm sure you get the drift. Forget that old fashioned idea that useful plants like herbs or vegetables should be separated from your "ornamental" garden and grown in a vegetable patch in a far corner of your yard. Especially for beginners that is the surest way to a neglected, overgrown, weedy, sorry excuse for a vegetable garden...

Herbs and vegetables are very ornamental in their own right, some are outright spectacular.

Just take plain lettuce. Do you have any idea how many colourful varieties with different kinds of leaves there are? You can plant the most beautiful swirls and patterns just out of lettuce. If that pretty bed is next to your kitchen door it takes no time and effort at all to pick the outside leaves every day as required.

For a spicier salad use purple mustard, and tatsoi, and, and... And who says you can't grow flowers amongst them? Nasturtiums add a cheerful splash of bright colour, and you can eat the leaves and the flowers in salads. They taste and look good, like many, many other edible plants.

It's time we give our herbs and vegetables the place they deserve, which mostly happens to be in permaculture zone 1.

Permaculture Zone 2

Zone 2 in a permaculture design also receives a lot of attention, but less than zone 1.

Growing zone 2 is usually fully irrigated - if your climate requires it, that is - and mulched. It contains your smaller fruit trees, shrubs and trellised fruit, bramble berries, hedges, ponds or windbreaks. Anything that will do well even if you don't check it every day.

Permaculture zone 2 also features hardy perennial herbs and spices that you don't use on a daily basis, things like ginger and turmeric or a bay tree. Then there are the herbs that re-seed themselves every year without you doing anything (dill, coriander, borage). They happily grow under fruit trees in zone 2.

Vegetables that take a long time to mature and are only picked once or twice also belong into planting zone 2. Think potatoes and sweet corn, cauliflower and onions. Other species I evict from zone 1 to zone 2 are unruly rambling vines that take up a lot of space and threaten to smother everything else around them (cucumbers!).

Let me make sure at this point that you don't misunderstand that permaculture zone thing:

There are no clearly defined borders between the growing zones in a permaculture design. Most importantly permaculture zones need not be of a circular or any regular shape. I already mentioned the frequently travelled paths, the edges of which belong to growing zone 1. Growing zone 2 would start right behind the plants on the edge.

The main questions to ask yourself when looking at your permaculture design is how often you visit certain areas, and how much your plants - or animals - need you or you need them. That's what ultimately determines the permaculture zoning.

Unless you live in a rural area and have a lot of land to play with, you won't have much room to include the remaining zones, so we'll only cover them shortly:

Permaculture Zone 3

...is still a managed growing zone, but not as intensely managed. It would not be mulched and not visited on a regular basis. This growing zone features your large fruit or nut trees. On farms it would include your main crop areas and the large pastures.

Permaculture Zone 4

...is only semi-managed. This is an area for gathering wild foods and for growing timber.

Permaculture Zone 5

...is your unmanaged bush.

Now, I said that these zones are not relevant to you unless you have a huge block of land, but permaculture zone 5 is an exception. Even on a garden sized bit of land you can set aside a suitable area for native plants and wildlife only.

This is especially the case if you are lucky enough to have your block adjacent to a wild area like a state forest or a nature reserve (I know, realistically few of us are that lucky). You can then even have a strip of permaculture zone 5 cut through your growing zones 1 and 2, a wildlife corridor straight to your favorite deckchair!

And now imagine that every garden had a strip of permaculture zone 5, and that we could link them all together, can you imagine how much of a difference we would make? Dreaming, I know, but the dream is always the first step to change the reality. So what do your neighbours think?

Permaculture Design Principles II

Multiple Functions

<http://www.tropicalpermaculture.com/permaculture-design-principles-2.html>

In permaculture each garden element has multiple functions

The permaculture design principle of multiple functions is the best way for beginners to start thinking (and understanding) the "permaculture way".

But before we get to the examples let's understand the background:

No living being can function on its own. It's true for you and for everything in your garden. You need food, shelter, other human beings, an interesting and challenging job and a whole lot of other things in your life to be happy.

Plants need water, food, light, (those are obvious), but also pollination, pruning, transplanting and other things to be happy.

In a conventional garden you would be the one who has to satisfy all the needs. A permaculture design is a bit smarter. A good permaculture design outsources or eliminates many tasks (especially boring, repetitive tasks) and that way saves you a lot of time and work.

To understand the multiple functions of each element in your garden is one vital step on your way to such a smart permaculture design.

Once you understand the functions of each element, you can **place elements together that mutually benefit each other**. It's easily done. Still, many gardeners never take advantage of these possible connections, where one plant or element looks after the needs of another plant...

This may still sound confusing, so let's look at some examples:

The easiest way for permaculture design beginners to get started is to try to think of three uses for every element in your garden. I can usually come up with about five, but three is enough for beginners:

- A tree can provide fruit, provide shade, and act as a windbreak.
- Dill can be used as a herb, the flowers attract beneficial insects, and add visual appeal to your garden.
- A hedge can provide fruit, privacy, and shelter for wildlife.
- A pond can grow aquatic plants, hold fish, and attract birds and other wildlife.
- A wall can give privacy, support climbing plants, and store heat (for growing tropical plants in cooler areas).

Look at what every element can provide, and what it needs. Once you understand that you can then put elements together so they support each other.

Let's look at a compost pile in my permaculture garden:

So what does a compost pile do?

The obvious function is, it turns weeds and dead leaves and other things from my garden into compost, chock full of nutrients and growth factors and other stuff that makes plants happy.

That are two functions already: taking care of garden waste and producing plant food. What else? Come on, I said at least three.

Ok, here's what I can think of:

- It is a great breeding place for earth worms.
- With all the critters in it, it's a food source for those lizards and birds that eat critters.
- The surrounding frame supports climbing plants.
- The compost tea from it provides liquid fertilizer.

And now let's look at how the multiple functions of the different elements, and of that particular compost pile, are put together.

Permaculture Design Principles III

Relative Location

<http://www.tropicalpermaculture.com/permaculture-design-principles-3.html>

The permaculture principle of relative location is where that whole permaculture design thing starts to come together.

Here we look at the location of your garden elements in relation to each other. The aim is to place the elements in your permaculture garden so that one fulfills the needs of the other. It's all about connections.

If there is a task in your garden that is laborious, repetitive, or in any other way not much fun, there is probably a better way of doing it, or arranging for nature to do it for you.

The easiest way to explain this is again with examples:

On the previous page I looked at the multiple functions of each permaculture design element, and for an example I used one of my compost piles. Now let's look at how relative location makes the most of those functions and saves me a lot of time and work:

Whenever I start a new compost pile I put it under one of my favourite fruit trees, under the edge of the canopy.

Every time it rains, valuable nutrients get washed out of the pile. It's the same effect that you use when making compost tea by soaking compost in water. Instead of that valuable liquid fertiliser being lost in the ground, the tree will take it up and thrive (the edge of the canopy is where most of a tree's feeder roots are located). I saved myself fertilising the tree.

I use a circle of wire mesh to enclose my compost piles (it's flexible, can easily be moved and doesn't rot). Because the pile sits on the edge of the canopy, the outside gets enough light to grow plants. I

usually grow a couple of tomato plants on that side. I just saved myself building a tomato trellis AND fertilising the tomato. Of course the tomato will help itself to all the goodness in the compost.

When I empty the compost bucket onto the compost pile I pick the tomatoes that are ready. Just saved myself an extra trip into the garden.

When the tomato plant is finished I pull it up and throw it on the compost. Saved myself another trip.

To return for a second to the multiple functions:

The tomato plant...

- gives me tomatoes,
- gives my chickens the odd bug eaten or rotten tomato (which they love),
- shields the ugly compost pile from view (a loaded tomato bush is much prettier),
- shades the sunny side of the compost pile, you don't want a compost pile to dry out,
- and in the end it provides nutrients for the tree when it is turned into compost.

The tree...

- shades the compost pile and prevents it from drying out,
- salvages the nutrients that leach out of the pile, and turns them into leaves that will eventually turn into mulch on the ground,
- is home to lots of birds that help with insect control, so I end up with more tomatoes than the chickens get.

The tree, compost pile and tomato bushes in this example all work together and look after one another, and that means less work for me.

Remember, I'm so intrigued with permaculture design because I'm lazy. All I do in the end is pick what I need for my pasta sauce and salad. I only wish I could find somebody to cook it for me!

Here is some more permaculture design inspiration:

Herbs like dill and coriander attract predatory insects ("good bugs" that eat the "bad bugs"). Those herbs also self seed every year, so they are great for growing under fruit trees. They don't need to grow in rows there, you can let them self seed. That's one less task for you. The good bugs, which love the flowers of the herbs, will save you spraying, and nobody likes spraying.

My kitchen garden is located between the house and the chicken pen. I collect garden refuse on one way (chickens love caterpillar riddled greens), and on the way back I pick the salad for dinner, (caterpillar free leaves, the chickens and me usually end up going halves that way).

Grow messy fruit trees inside the chicken yard. Pick what you want, and don't worry about the rest. Saves on feeding the chickens, there's no need to clean up fallen fruit and no need to fertilise the tree. The chickens take care of all that.

I put my bird bath where I can see it from the kitchen sink. Doing the dishes is one task that I haven't managed to outsource to some garden creature yet, so anything that makes it more pleasant needs to be done. Making the gardener happy is an important function of garden elements too!

Let me repeat my opening statement. If there is a task in your garden that is laborious, repetitive, or in any other way not much fun, there is probably a better way of doing it, or arranging for nature to do it for you.

The list above gives examples for permaculture design in bigger gardens, but even if yours is much smaller, this should get you started thinking in the right direction.

Can you see how, if you think things through ahead, everything can beautifully work together so you have less work?

Make yourself a cup of tea, sit down in your favourite garden chair, (that's what gardening is all about) and brainstorm some outsourcing strategies.

Permaculture Principles IV

Turn Problems into Solutions

<http://www.tropicalpermaculture.com/permaculture-principles-4.html>

"You don't have a snail problem, you have a duck deficiency!"

That is this permaculture principle in a nutshell, summed up in one of Bill Mollison's most popular quotes.

If you see yourself confronted with a perceived problem, why not try and look at the situation from a different angle? Is there any way to use it to your advantage?

A common example for this permaculture principle, one that you will find cited in many permaculture books, is that low lying spot at the bottom end of your garden. You know, the spot that's always muddy, where the water just won't drain away and you just can't get the lawn grass to grow...

You have the perfect location for a pond, or a bog garden with swamp plants. Thought about growing watercress, water chestnuts, or kangkong (a tropical water spinach)? How about iris, primulas and lilies? Many flowers are suited to boggy spots. The ducks you are getting for eggs and to clean up your snails will love it, too.

Got an ugly wall? If it gets sunlight it will help you to grow frost sensitive species outside their range. The wall stores the heat from the sun over night and keeps your lemon or avocado tree warm. You can hide the ugliness behind some heat loving trellised fruit.

So the builders left a pile of rubble behind? Any chance of turning it into a rock garden? Throw on some soil, collect a few better looking rocks to place on top of the rubble, and look for plants that like to grow on rocks. Now you have a feature instead.

When the builders cleared the area for my house, they left behind a huge pile of dead shrubs, trees, and grass mixed with soil. I don't own any machinery to remove it and didn't want to hire any. I just asked them to push it out of the way a bit, towards the other side of what would become the driveway.

Then I planted a circle of coconut palms around it. (I live in a warm climate, you can use species suited to your conditions). I left an opening wide enough to back a trailer into it, and invited all neighbours to dump their "garden refuse" there, instead of burning it or taking it to the rubbish tip. (Yes, that's what they usually do with it.) One massive compost pile...

I continue to use this area for bulky prunings, whole trees or branches and similar stuff. Saves me cutting it up or shredding it.

The palms are thriving and I never have to mulch or fertilize them. I later interplanted them with suitable shrubs and flowers and more. (Heliconias, turmeric, papayas, sweet potato, guavas...)

You can't see the pile anymore. Everything is thriving and I never did any work other than stick cuttings or tubers in the ground and throw a few seeds around...

The inside is now totally sheltered from any winds and is always very humid because of the thick vegetation. I'm going to grow rambutans there. That's a tree that thinks my climate is not tropical enough. Well, inside my coconut circle it is! Everybody is happy.

The permaculture principle of turning problems into solutions goes hand in hand with one of the main ideas at the core of permaculture: working with nature rather than against it. There is no point in trying to create a lush tropical garden if you live in a desert climate. There are stunning succulents to add aesthetic appeal, and many useful plants that get by with very little water, like dragon fruit and pineapple, to name two delicious examples.

Don't waste your money, time and energy by trying to force something that nature never intended to happen. Look creatively at what you already have. Try to see the benefits and look at ways to use the situation to your advantage.

What I like best about this permaculture principle is that it applies to the rest of our life as well. Next time you face a problem remember this principle and search for the good in the situation. It's always there, all it takes is the willingness to see it.

Permaculture Design Principles V

Design For Diversity

<http://www.tropicalpermaculture.com/permaculture-design-principles-5.html>

Permaculture design aims for as much diversity and variety as possible. It is the exact opposite to conventional agriculture, which relies on huge monocultures and struggles with all the associated problems.

To mix and match as many different plants as possible has many advantages:

- Different plants have different nutrient requirements. Put the right species together and you can fit a lot more plants into a small space without depleting the soil.
- Different plants also have different shapes and heights, and different light requirements. You can fit a lot more plants into the space you have available than you might think possible...
- Pests and diseases are often very specific in what they like. Having all the same plants growing together makes it easy for the bugs to find them (you're basically putting on a big feast for them), and it makes it easy for diseases to spread.
- In a mixed and varied garden diseases rarely get a foothold. They can only move between related plants, so just don't plant too many of the same plants next to each other. Mix and spread them around.
- Some bugs identify the plants they like by their look. If you mix say your cabbages with taller herbs and flowers and spread them around the garden they are much harder for cabbage moths to find.
- Moths can not recognise the cabbage as easily if it hides amongst dill and carrots and marigolds.
- Any strong smelling herbs will confuse insects that find their food by scent.
- If you keep the bugs searching for their favourite plants a lizard or bird can get the bugs before the bugs get your best broccoli.

- Beneficial insects have different food requirements altogether. Obviously they don't live off your vegetables or they wouldn't be beneficial insects but bad bugs, right? So you need other plants as well.
- The more different species you mix in with your food crops and the more native species you manage to fit in your garden, the more local wildlife and beneficial insects will take up residence.
- Lizards, frogs, birds and good bugs all help keeping things like bad bugs and snails under control.
- Some plants from different species really like growing together and benefit each other. I'm sure you heard of companion planting. Permaculture designs make use of those connections.
- There are many different varieties of individual vegetables. Some tomato varieties are particularly nice for eating fresh, some are good for bottling. Some varieties fruit earlier, some later. Mix them and you will have a longer tomato season.
- Every variety has slightly different preferences regarding soil and climate. Some may do better in your garden than others. Some are resistant to certain diseases. It's worth tracking down the old heirloom varieties and planting two or three different kinds rather than relying on just one species.
- Mix in some deep rooted plants to capture the nutrients that leach past the reach of the more shallow rooted vegetables. That way nothing gets wasted.

And that are just some of the benefits of diversity in your garden. The more variety a design has, the more successful and stable the system will be.

Have a look at nature, a forest, a wildflower meadow, a wetland... There is no single area that has only one plant species. It's always a mixture of species that are suited to the conditions and support each other.

I think the hardest thing to do when starting with permaculture design is to let go of the idea that a food or vegetable garden has to be a separate plot, away from the rest of the garden, that things have to grow in rows or in their allotted beds, that the orchard is a different part again and has only fruit trees... and so on and so forth.

Forget all that. It doesn't make sense!

Permaculture design is not about making a vegetable garden. It's about integrating food plants into your garden while creating a healthy and balanced ecological system. Because it's the much smarter and easier way to grow fruit and vegetables.

I don't have a vegetable garden. I do have a kitchen garden though. It's the area of my garden that is closest to my kitchen door, hence I call it my kitchen garden, which sounds nicer than zone 1. (That would be the proper permaculture term, but I'm not that hard core).

Sure, all my most used herbs and vegetables grow in that kitchen garden area, saves me running around more than necessary.

But there are also a few native trees that are always full of birds. There are flowers that I grow just for the sake of having pretty flowers, a beautifully scented vine climbing up one veranda post, some shrubs with berries that the birds like, some wildflowers that I leave alone to do what they like, two smaller fruit trees...

It wouldn't make sense to separate the food plants from the others. It works a lot better like this, for the vegetables, the birds and for me.

Permaculture Design Principles VI

Design Scale - Use Of Space

<http://www.tropicalpermaculture.com/permaculture-design-principles-6.html>

One of the permaculture design principles is to use as little space as possible. There are several reasons for this.

The less space you use the more natural environment is left untouched. Permaculture tries to interfere as little as possible with nature. (Of course, if we want to grow gardens and food we have to interfere somewhat...)

Even if you have a very small garden, by using it efficiently you can grow a year round supply of fresh herbs and vegetables and set some space aside for wildlife.

There is another advantage to smaller scale designs. They are a lot more time and energy efficient. Why travel across many acres every day when you can grow the same amount of crops in a fraction of the area?

You can minimise the space you use and maximise your harvest by using techniques like "stacking" and "guild planting".

Permaculture Design - Stacking

Stacking means to utilise vertical space. If you look at forests, in particular rainforests, you can see that there are many layers of plants stacked on top of each other (of course they all have their roots in the ground).

There are the low ground covers and creepers, then the herbs and grasses, then shrubs and smaller trees, and at the top the tall giants. Vines and climbers are rambling over everything as well. And they all occupy the same space on the ground.

When you read about permaculture you will sooner or later come across the term "food forest". Permaculture looks at how nature does it and tries to mimic that strategy. However, most gardens and farms devote any one area to only one crop. That's a waste of space and resources.

Take onions and carrots for examples. Most people would plant either one or the other in a bed/row. But they can occupy the same space.

Onions sit half above the ground, and their roots are very shallow, spreading out around the bulb. They mine only the surface for nutrients. And have a look at their leaves: they are poking straight up. Plenty of light left for others...

Carrot roots go straight down. Carrots don't care if the surface of the soil is already occupied by the onions. They find their food deeper down. And the big feathery carrot leaves make use of all the sunlight that otherwise would just heat up and dry out the soil.

Another classic example are sweet corn, beans and cucumbers. The tall corn acts as a trellis for the beans, and the cucumbers ramble over the ground. Three crops can grow in the space of one.

There is usually lots of light left under and around fruit trees. Utilise that space and grow something, like perennial herbs or low shrubs. Make extensive use of trellises and other structures. Let things grow up rather than have them spread out.

You will be surprised how much food you can fit into the smallest garden.

Permaculture Design - Guild Planting

Guild planting is a permaculture design term for stacking and planting different species together to make the maximum use of vertical space and of the resources available (nutrients, water, light). Permaculture guilds also use the concepts of companion planting and crop rotation.

Permaculture Design - When You Get Started

There is one more aspect to permaculture design scale that I would like to talk about, and that is the scale of your design when you start out.

The biggest mistake that beginners make is to try to do too much at once. A huge vegetable plot is dug up and money is spent on seeds and seedlings, but the initial enthusiasm without exception exceeds the available time and energy by far!

There isn't enough time to mulch everything properly so the weeds move in and take over. There isn't enough compost available, or enough time to spread it, so the vegetables struggle. Sickly vegetables attract bugs and diseases. Of course the weeds don't care, they are still doing well...

The result is a neglected and overgrown garden, a frustrated gardener, and the common misconception that growing fruit and vegetables is just too much work and too hard.

Yes, design and plan your whole permaculture garden. Absolutely. Think it all through. But don't do it all at once. Start small. And most importantly, start right on your door step.

Remember the permaculture zoning principle? Start in zone 1 with one garden bed. Select a few species that are easy to grow, well suited to your conditions and that you love eating. If you use that space well you can grow a lot on a square metre or two.

Once you see it's all going well and you have time left over start the next project. And then the next, and the next...

See, once an area of your permaculture garden is well established it doesn't take up much time. If you designed it right it will mostly look after itself. It's only the initial set up that takes some time and energy.

One well looked after small garden bed on your door step will supply you with a lot more produce than a huge and neglected vegetable plot at the back of your garden.

Start small, and start on your door step, and you will enjoy a big harvest.