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## About the Author

Joe Boxall loves his garden.

Joe said, "I've always had a garden and tried a lot of different ideas."

"I want to give my readers a simple guide to the Permaculture system which has many benefits for people that care about their gardens and the food they produce from them."

"Most of the information about using and benefitting from Permaculture techniques are focused on large scale agriculture and many are fairly technical."

"My book will get you started. You can start small and that may be enough for some readers."

"And, I'll point you to where you can get more advanced information and support when you need it."

"I will give you the basics about making your garden more productive and meanwhile you can also reduce the amount of time and money you spend on it."

"And, you can also reduce the amount of trash you put into the landfill by using some of it in your garden!"

"You don't need special gear for these techniques."

"The Permaculture community is world-wide and very supportive. The more you learn, the more you save!"

Joe added, "I think the biggest benefit is that you are growing better, healthier food and your kids will start looking for more home grown food when they have tasted it a couple of times!"

## Introduction

Permaculture is a practical gardening philosophy often used for farms which uses proven techniques to lessen the impact of our gardens on the earth and improve the results we get.

With this system, we step away from the common practice of large sections of the garden with just one type of plant. We group plants together which can benefit each other.

This way, we get more food from the same area.

These methods work and cost less over time. You don't need any special tools, just those usually found in most garden sheds.

You may want to use the information to try a couple of techniques at first and then decide if you want to increase the integration of Permaculture into your garden.

Joe Boxall shares the fruits of his experience and research.

You could find ways to improve the results you get from many of the plants you already have in your garden and be encouraged to try some which you may not have considered until now!

Permaculture involves caring for the land, plants and animals which produce our food and sharing the bounty with others – both food and knowledge.



Chickens and other livestock are commonly part of Permaculture systems. We also encourage bees and butterflies.

You can encourage insects which pollinate and protect your crops and reduce, then eliminate the expensive chemical preparations which are commonly used in modern gardens.

Joe has written a basic guide for you to get started with these techniques.

It's a proven system which can help you make better use of your land, however small or large, reduce the amount of rubbish you add to landfill and

save money while you produce your own healthier and fresher produce just outside your own back door!

## Benefits of Permaculture



If you are still wondering if the benefits from Permaculture will be worth the effort and investment, please read this page.

I don't talk much about the theoretical advantages of Permaculture and similar

techniques because most people have heard so much over-the-top claims, they quickly switch off.

These statements are based on results which have been reported around the world.

Permaculture reduces the use of synthetic materials and reduces costs and amount of waste to be disposed of.

It optimizes the use of natural resources while minimizing wastage by using as much as possible of whatever is available in the area.

Because we clump many items instead of spreading them in rows, more crop is produced from any specific area at a lower cost and often with less effort.

The collections of plants which we combine in a particular area of ground do not mimic combinations which you would find in nature. But, the focus we have is to mimic the processes by which these combinations share resources and produce well.

We take advantage of natural features and amend unproductive areas so that we can use them to produce more food or store equipment or supplies closer to the areas where they are most needed.

We use organic waste to build up the growing areas and then provide nourishment to later planting as the old material breaks down. This reduces the need for the addition of fertilizer and little manual labor is needed after the first couple of seasons.



The mixtures of different plants also ensure as much as possible that we will get some of the plants providing food in even the most challenging of seasons.

## Permaculture Principles

These principles are based on those developed and recorded by Bill Mollison and David Holmgren in Australia in the 1970’s.

Many enthusiasts have adapted the original principles to incorporate or clarify the concepts and goals.

My “plain English” versions may be easier than some other descriptions you find elsewhere.

**1)** Watch and co-operate with nature.

The best way to improve the results you get is to see what is successfully grown in the area you want to use. Start with those plants and use the characteristics as a guide when you are considering what other plants to use.

**2)** Store some of your harvests for when there is less available.

This is obvious but humans have become fairly careless with their bounty. The statistics for wasted food in developed countries are alarming, and the amount of arable, productive land is shrinking.

**3)** Get and use your produce. Don’t let it wither and die. Use as much as you can, even if it is imperfect.

**4)** Share what you don’t need with those who help you.

**5)** Use the residue of what you grow to restore nutrients to the soil and enrich it.

Monitor your results and make changes where needed to ensure your efforts are not wasted.

**6)** Accept the need to improve your systems and invite feedback when it is offered. Mistakes we continue to make may affect the fortunes of generations to come just as we may be less productive at first because of flaws in systems we inherited.

**7)** Understand the value of the resources we use and don’t waste or spoil them.

- 8)** Eliminate waste as far as possible by using what is readily available instead of paying more for crops and supplies which have to be harvested and transported from distant locations.
- 9)** Look for patterns and interconnections which may lead to better methods of achieving your gardening goals.
- 10)** Relate, rather than separate. Working together and sharing the rewards means less duplication and greater benefits for all.
- 11)** Taking the first possible solution can mean you miss something more productive or easier.
- 12)** Accept and benefit from diversity. Each of us has unique qualities which are only seen at their best when we cooperate and accept our natural differences.
- 13)** Accept that your path may not be the only correct one or the best. Interact to get benefits which are not available if you insist on sticking to your own ideas. When you ignore what is around you because it’s different, you risk missing out on opportunities to grow and be a better provider.
- 14)** Use your inner vision to see beyond the immediate effects to the long-term value of something new. That may slow you down, but pay greater dividends for you and those who come after you when implemented.

## **Insect Allies**

Anyone that sets up a working garden or larger area on Permaculture principles is helping more than they know.

Using these methods and following the principles produces a balanced environment for insects, birds and other wildlife as well as ourselves.

Bees are under threat world-wide because of the over-use of strong sprays and damage from diseases which it's not been possible to protect them from.

The more Permaculture gardens we make, the healthier for the bees and the better pollination we get for our food plants

### ***(Most) Insects are Our Allies***

The United States Department of Agriculture confirms that damage from insects and diseases (some are carried by insects) is rising but the insects aren't totally to blame.

The depletion of nutrients from our soils and use of the wrong artificial fertilizers has reduced the health of many of our plants.

They can't get the same level of nutrients in the right form from the soil.

They aren't as productive and can't defend themselves against insects or other attacks as well.

The balanced environment achieved with Permaculture helps plants be healthier.

If we also avoid using insecticides except where there is no choice, we will have more predator insects helping to guard our plants by laying their eggs or eating the destructive insects!

The development of patented plant varieties which don't produce viable seeds is not just a profit-focused move, it reduced the ability of the plants to evolve their own natural defenses through generations.

Using companion plants where some protect the food producers which provide shade or other benefits to those plants is much better all round.

Development of farms where there are very few areas with wild plants gives no room for those predator insects and wildlife which also eat the destructive insects.

That is a short-sighted path which will reduce our productivity and increase the cost of the food we buy for our families in the future.

## Companion Planting



This method of putting different species of plants close to each other to improve the cropping and general health of all the plants is well-known and widely used.

It is usually done by planting rows of different plants, which

are known to benefit each other, together.

When used as part of a Permaculture system, the plants are clustered together instead of being in orderly rows.

The focus is on getting the best results from their placement related to the other plants and the tree.

This way, you often get better results from the time and expense of planting than you used to get with your orderly but space-wasting rows.

### How Do Plants Support Each Other?

Tall plants may provide shade and protection from strong winds for smaller plants.

They can also be used instead of a frame to support vines.

Nitrogen-fixing plants convert nitrogen which is locked in the soil to ammonia which the plants can feed on.

## Designing Your Permaculture System

Permaculture helps you to get more from your land and the resources you have while reducing your impact on it so that it will improve in productivity instead of becoming less usable as happens with many common gardening methods.

Permaculture systems use as much as possible of what is already available in the area you have.

That includes plants, tools, natural features, water and effects of local climate.

### *Permaculture Zones*

Zones are created by drawing lines/sections between your home and the boundary of your property,

You put the most frequently used items and plants in the zones which are closest to your home.

Those items which don't get used as much or need less checking for maintenance or other reasons are put in the outer zones where practical.

Five zones are the norm for any Permaculture system.

The zones are not bounded by actual fences or other markers. They are imaginary areas with borders that can be adjusted as required to conform with your changing needs.

The reason for drawing them up is to help with the physical placement of the items which best suits the system you are developing.

**Zone Zero** is the central zone which includes your home. If you are setting up this particular system on a block with no dwelling, you would usually site the shed or other construction in Zone Zero.

The zones will be irregular in shape so that they enclose as many of the items which should be part of that zone as possible and they will usually ignore physical barriers such as fences, sheds etc.

If your property is small, you may just use the idea of Permaculture Zones to

set out where you put various items and not others to map the area. So, everything is in Zone Zero.

**Zone One** is where you set the most used equipment and plant groups if they are suited to that area. There may be some sections in close proximity to your home or shed which are not often used or visited for some reason. These can be considered part of Zone One for convenience though they are excluded by most serious permaculturists.

Some items which are usually part of Zone One are:

- ✓ Worm farms
- ✓ Beds for kitchen vegetables, herbs and fruit
- ✓ Seed growing beds and frames
- ✓ Woodpile



**Zone Two** is the place for the equipment, structures and plants which are next in frequency of checking and using.

This Zone is commonly used for:

- ✓ Animal and chicken pens
- ✓ Bee hives
- ✓ Pens for other livestock
- ✓ Compost bins
- ✓ Ponds and water tanks

**Zone Three** is the main productive area on farms and other commercial establishments.

This is the area where the crops are produced and the larger livestock, if any, is housed.

In a small garden, you would have most of your producing plants in this



area.

Zone 4 is the region where the equipment and other items which need little checking or are less frequently used are stored.

Zone 5 is for storage of materials such as timber, compost materials etc.

NOTE: Some urban gardeners telescope the 5 zones into just two or three. This can be a way to simplify their design and works well if there is not a lot of items.

After all, the zones are not really separated physically. Try it and see what works best for you.

## Important Terms

This chapter explains some of the most common terms used in Permaculture. I have included examples which may help make things easier to understand. Knowing these terms may help you with many Permaculture texts which include them without clear explanation.

### *Fruit Tree Guild*

**Fruit Tree Guild** is the fruit tree and the collection of plants which you place under its canopy. The benefits of this practice are that you get produce from some of those plants and the others assist the tree to increased health and productivity while the tree shades them!

### *Hugelkultur*

**Hugelkultur** is the practice of constructing raised garden beds which contain compostable material from branches to cardboard.

All raised beds reduce the amount of bending and lifting the gardener has to do, which reduces the effort required to maintain them and their risk of injury.

The bed may only need watering if the area has a long dry spell. The rest of the time, your plants will get enough moisture from the store in the bed.

Some tillage will probably be required through the first year but less after that as the larger pieces of wood break down.

Sepp Holzer, a Permaculture expert, recommends the construction of beds which are more narrow and higher than the common raised beds to maximize the area available for planting . Building them this way also reduces the amount of compaction of the soil and better aeration.

Check that you don't have aggressive perennial weeds where you set this up. They can persist and cause problems if you don't take steps to remove them, including most of the growth underground before you set up your pile.

**Monoculture** is the older gardening system where only one type of plant is planted in a location. This usually means the harvest is less because the

plants don't have the benefit of other plants to support and protect them like they have in a Polyculture system.

**Polyculture** is the name for groups of plants which are planted in the same area for mutual benefit.





**Three Sisters:** This polyculture system was developed by native North American tribes.

The plants in this system are corn (maize), climbing beans and squash.

The corn is planted first – about 4 seeds on each slightly raised soil circle.

The other two types of plants are added when the corn is about six inches (15 cm) high.

Each plant helps the others and is helped in turn:

-  The squash are shaded by the corn.
-  The squash spread over the ground, reducing water evaporation and making it more difficult for weeds to establish themselves.
-  The corn acts as a climbing frame for the beans and give the squash some shade. They also make it easier for the gardener to pick the beans and avoid the cost of buying poles or frames.
-  The beans provide nitrogen for the other plants when the nitrogen fixing bacteria in the bean plants turns the nitrogen into ammonia which all three types of plants can feed on.

### ***Permaculture Sectors***

This is how we learn how and where energy sources affect the property and how the creatures, including humans, wild animals and pets use the area.

A proper analysis is based on observations over a full year.

When that information has been collected and recorded, we are in a better position to make best use of the available resources and act to reduce or remove any negative effects from them.

### *Permaculture Zones*

A part of planning a Permaculture garden.

Zones are five imaginary sections which cover the area between your home and the boundary of your property,

You put the most frequently used items and plants in the zones which are closest to your home. Less-used items and the plantings or facilities (such as ponds and tanks) are placed in the outer Zones.

### *Swale*

A swale is simply a channel which may be a natural feature or one you build to collect rainwater, including that which runs off your roof or a driveway.

The water is held in the swale until it seeps into the soil.

The swale must follow the contour of the land and have a flat bottom to ensure the water collects there and is held until it seeps away.

Building a swale involves using two stakes with a string between them to confirm that the swale is level.

## Useful Plants

These plants provide double-value. They are known to help improve the health and productivity of your main crop plants. Many of them also produce edible or decorative items themselves.

**Clover:** Convert nitrogen which is locked in the soil to a form which other plants as well as the clover can feed on.

**Comfrey:** Draws nutrients from depths other plant’s roots cannot reach and provides some of them for the other plants to use.

**Marigold:** Repel some insects.

**Nasturtiums:** Help to reduce some insects’ attacks on certain productive plants.

**Marigolds, parsley and chives** also repel some types of insects.

**Mint** is a great accessory for your meals. But, always plant whichever mint you choose in a pot as it is likely to take over whatever area it is in and reduce the space and nutrients available for other desirable plants in the area.

If you want to maintain the appearance of a wholly natural garden, bury the pot of mint so only the top half-inch is raised above the level of the soil. You maintain the loose appearance of the plants while limiting how far the mint can cover and interfere with other productive plants.

## **Look before your leap in!**

This is so important, it is set down as part of the original Principles of Permaculture; 'Observe and Interact'.

You need to see what good plants and other assets are in the area where you will be making or renovating your garden.

Also, check the area for problems.

The next thing is to record details of the sectors on your land.

Sectors are natural influences like wind, rain and sunlight. What areas are most affected by winds? At what time of the year are the winds most active?

You should record how these factors affect your area over a full year.

You cannot plan effectively until you have that information.

This will help you for the rest of your time in that location so the time you invest now will be worthwhile.

If you are a very experienced gardener with knowledge of the area, or someone with formal training, you will be able to short-cut this process.

You can also learn from your neighbors if they have been located longer than you and from gardening groups in the location.

The help you get from them as you are just preparing to develop your garden can be repaid with some of your home-grown fresh vegetables when they are ready!

A full soil test is worthwhile if you don't have reliable local feedback about the soil quality and what crops have been successful there.

There will be garden clubs or similar groups in your area. If you can't find anyone with knowledge or interest in permaculture for you to share ideas with, check the listings in the resources section at the back of this book.

You can also ask your Public Library - they usually have a Register of local clubs of all kinds.

## It Depends on Your Soil

The most important requirement for a productive garden that you will enjoy working in is ***good soil!***

Even where most of your soil is good, there will be some parts which need attention.

Permaculture focuses on improving the soil and reducing the amount of nutrients which are removed without being replaced.

Most of us don't understand the importance of the dirt we depend on for producing our food.

Over the centuries man has removed more nutrients than he has put into that thin layer of earth.

And a lot of the replacement nutrients have been less healthy than the natural materials we took out.

We interfere with natural cycles of nutrient replacement by removing the sources from the earth and we discard a lot of valuable enriching waste in the landfill.

Permaculture practices try to mimic the systems which exist in unspoiled soil to put more nutrients back and take only what we need.

The value of these nutrients is much greater than those in the artificial fertilizers we have come to depend on.

Using artificial fertilizers can create an imbalance of important elements in the soil.

Their use can also affect the ability of the soil to retain water so plants will have it readily available when there is little available.

Vermiculite and perlite will help to retain water when the soil can't, but such soil will also not be as good at other tasks either.

So, using Permaculture techniques will mostly cost less money and effort, improve the quality of your soil and ensure that future crops will be more productive and healthier food for you and your family!

When we establish our Permaculture enhanced garden, we will need to dig during the first season to check the quality and composition of the soil and remove any problems we find, like weeds and rocks.

But, in future years the system we create will start to improve the filth in the soil naturally.

That way, we will need less mechanical disturbance of the soil and that will keep more nutrients in the soil for us and the beneficial organisms.

It will also keep the soil friable and easy for the water and nutrients to be moved around in.



## Mulching

Mulching is another common way of improving our gardens that is widely used in Permaculture.

You can mulch:

Any plants you have an excess of.

Plants which have finished their productive season (after removing any seeds or cuttings).

Plants which draw minerals from deep in the earth and store them inside their tissues (Dynamic Accumulators) and those which do the same with nitrogen which they convert from a form which other plants cannot handle.

These plants provide the best results when mulched as the winter (rainy season) starts.

If these plants are mulched when the soil is very dry, the plants dry up and some of the nutrient value is blown away.

### *Sheet Mulching*

This is used to improve the area before planting.

Cut the grass and other plants on the area. Leave what you cut in place except as below.

Remove any which are likely to take too long to start decomposing when the area is fully prepared.

Permaculturists usually resist calling weeds useless but some plants are not only not productive, they delay the mulching process and can interfere with your plantings in that area for a season or more.

Hose the area to assist the mulching process.

Put a thin layer of cardboard over the area. This waste material robs the green matter of sunlight, speeds the decomposition of some weeds and helps keep the stack you are making more stable.

Add a couple of inches of quality soil.

A 4 inch layer of leaves and small twigs will increase the viability of the stack and encourage the development of microbe populations.

Some people add a layer of compost under the cardboard to speed the breakdown of the other matter.

### **Tips**

**Don't make the layers any thicker than suggested as that can encourage spoilage or other problems.**

**Check the growth on the area before cutting. If you have strong, perennials in that area, they may still develop after the cutting and setting up of the pile. With that type of problem plant, setting up your piles when they are dormant may give more reliable results.**

**If the area seems to only have less troublesome plants cut them and set up your pile(s) before they can flower.**

## Useful Permaculture Links and Resources

These sites and other information is provided without endorsement or guarantee of any kind. I think they are potentially useful for anyone involved in learning and using Permaculture. We cannot accept any responsibility for any readers’ use of them at all.

Ownership, content and intent of websites may change at any time. All readers who use these links must accept full personal responsibility for any effects and outcomes which result.

### *Associations etc.*

#### **U.K.**

##### **The Permaculture Association.**

<http://www.permaculture.org.uk/>

A company and registered charity which provides information and support to its members and the public who need advice and training about the theory and practice of Permaculture.

Most activities are led by volunteers who are supported by a paid office staff.

#### **New Zealand**

Permaculture in New Zealand

[www.permaculture.org.nz/frontpage](http://www.permaculture.org.nz/frontpage)

From their website: “Permaculture in New Zealand’s mission is to act as a national hub promoting and empowering Permaculture education, activism and advocacy in Aotearoa NZ.”

#### **Australia**

Permaculture Australia.

<http://www.permacultureaustralia.org.au/>

From their website: “Permaculture Australia acts as a hub, providing accredited Permaculture training, cooperating with other Permaculture organizations etc.”

*Permablitz.*

[www.permablitz.net/](http://www.permablitz.net/) (The Melbourne Australia Site.)

[www.permablitzlondon.com/](http://www.permablitzlondon.com/)

An organization started in Melbourne, Australia They organize free public blitzes where volunteers, including professional Permaculture instructors and designers create a Permaculture environment on a site which may be a school, care facility or similar.

These activities have been held in many places in Australia and other countries.

Each Permablitz starts with a design by a qualified Permaculture designer. All the participants are volunteers. They not only produce a functioning Permaculture system, they improve the ecology of the area and plant ideas about sustainable living in everyone who sees the event or subsequent publicity.

The blitzed properties include schools, assisted living facilities etc.

## Useful Links

### **Calculating the Sun’s path at your location.**

<http://Solardat/Oregon.edu/SunChartPrprogram.html>

This online program requires you to put in your latitude and longitude and other details. It is free to use and you get a printable pdf.

More information at the site.

### **Find the latitude and longitude of any location on our planet.**

At this website, you can quickly find out the latitude and longitude where you are or any place you want to know that about.

[http://worldatlas.com/aatlas/latitude\\_and\\_longitude\\_finder.htm](http://worldatlas.com/aatlas/latitude_and_longitude_finder.htm)

## **Permaculture Pays in Many Ways!**

I sincerely believe that Permaculture has benefits for everyone who has a garden and wants to eat healthier and fresher food.

It seemed a bit technical when I first was told about it but I could see the potential as I looked into it further.

I hope your experience will be all you desire.

There can be no guarantees that everything will always work first time but this system is producing great results for forty years and the various methods which have been incorporated into it have a much longer history of success.

I hope that this book has helped you become more confident about what you and your family can get from a garden where you use Permaculture methods and principles.

It is low-cost, proven, and there are plenty of people with more experience that are always willing to help you.

Remember that one of the most important principles in Permaculture is Share your Excess. That applies to your crops and your knowledge.

***Joe Boxall***

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